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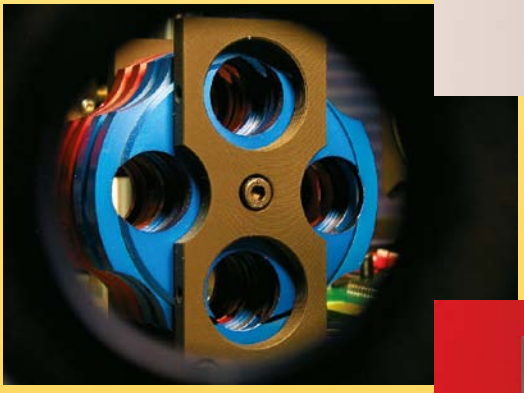

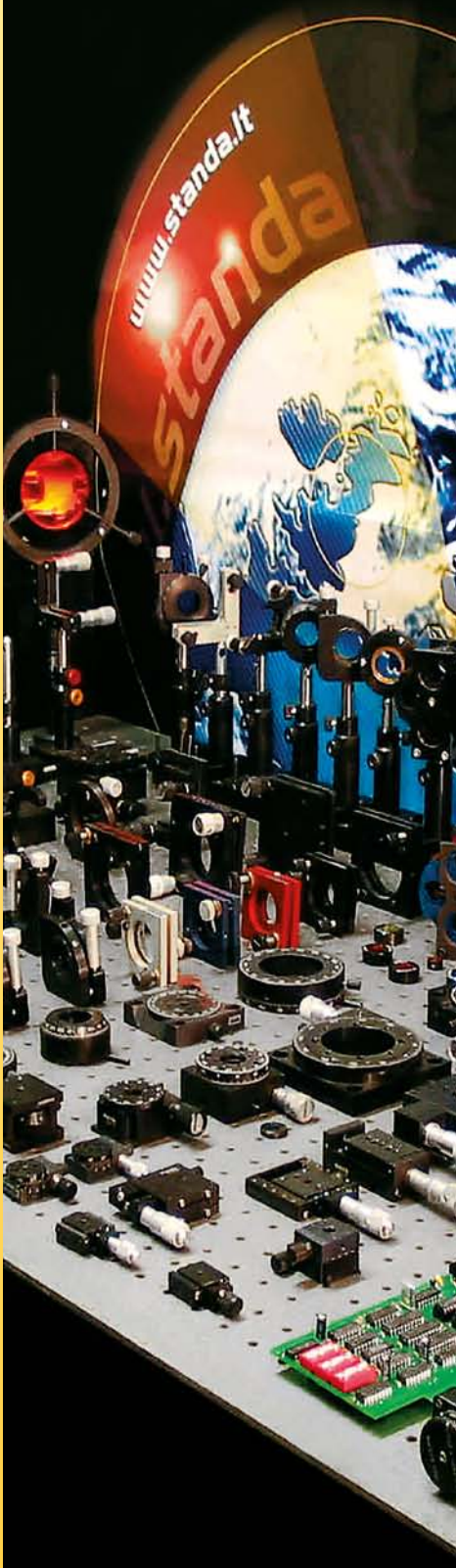

Opto-Mechanical Products

Research, Development and Manufacturing in Lithuania

2016 / 2017

Standa Ltd. was founded in Vilnius, Lithuania in 1987 and now has more than 140 employees working at the company. Standa has it's own industrial base that includes CNC turning, milling, grinding machines. Standa's design department, while developing standard products presented in this catalogue, also develops custom equipment for OEM customers. Some examples may be seen in this catalogue and on **www.standa.LT**. Standa currently has several laser product development laboratories.
In 2017 Standa will continue their development and production of diode pumped lasers. Standa has a highly skilled marketing team, assisting you to make the correct choice of Standa products and together with our OEM customers, create the products you require containing mechanics, optics and lasers. Standa products are distributed to more than 60 countries and represented by more than 25 companies worldwide.
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Michail Berba

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Optical Tables 1

1-1/1-3
1HT series

1-3/1-5
1HB 1HB-AL series

1-6/1-7
1BS-2040-015 1B-ALE series

1-8/1-11
1VIS10 1VIS10W 1VIS22

1-12/1-15
1TS series

1-16/1-17
1TS-140 series

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2-3
2OR6 series

2RC6 series

2-4
2SRC6 series

2MP series

2-5
2OR19 series

2RC19 series

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Base Mounts & Accessories 3

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3-5
3EXC45

3TC5 3TC6

3BP4 series

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5F23 series

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5MBM21 series

5MBM23

5-4
5MBM24 series

5-5
5MBM22S 5MBM22SP series

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5GM25T

5-7
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6-2
6PT110

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6-3
6PT169

6TS series

6-4
6TS29-21

6-4/6-5
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7T173 series

7-3
7T173T series

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7T175 series

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7T167Q

7-7/7-9
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8MT30 series

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8MT177-100

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8MT50 series

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8MT60-200

8-18/8-19
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9SM127M series

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9SH67 series

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10SF130

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10MO series

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10WA168 series

10CWA168

10-9
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10MWA168 series

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for OEM & Custom Opto-Mechanics look at www.standa.lt

1 Optical Tables

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1TS-AVI200LP

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1-23
1IS series

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1LS52 series

1-25
1PS98 series

1-26/1-27
1CB series

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2SR32 series

2AMB

2-7
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2-8
2AB164 2AB128

2-9
2AB38 2AB174

2AB67-6 2AB167-25

2-10
2AB167-50 2AB67

2-11
2AB163

2MAB111

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3UBP series

3-7
3BP7R7 3BP120

3-8
3UBP175

3BP138 series

3RBP series

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3RPC series

3APC series

4 Optical Mounts

4-9
4VFH series

4-10
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4SC series

4-11
5OM100A2 5OM122A2

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5OM60-SQ2 5OM61-RN2

5-12/5-13
5OM37 5OM38 series

5-14
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5PM57

5PMF57

5-15/5-16
5BM57 series

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7-11
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7-12
7T68-25 7T68-25T

7-13
7T67-6 series

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7T125 series

7-15
7T164 7T264

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7T164-10T 7T264-10T

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7VT40 series

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8MRB250-152-59

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9SH127 series

9RK127 9RK137 9RK147

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9SH137 9SH147 series

9-12
9MT

9TW

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10-14
10APF3 series

10-15
10APF3-1CVAF series

10-16
10LBS series

10-17
10ORS6

10-19/10-21
10BE series

12HP02

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Custom design and assistance in building systems from scratch

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3-9 **3RB135 series**

3-10 **3URB111 series**

3A-45D

3AM series

3-11 **3PC series**

3-12 **3MB6**

3CMB series

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5-22 **5OM10T**

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5OM100A2 5OM122A2

5OM100A3 5OM122A3

5OM100A4

5OM100A5 5OM122A5

5-24 **5OBM119T 5BM121T**

5LAM124T 5UM122T

5-25 **5OM101T 5SL-20**

5-26/5-29 **5BM59T 5BM69T 5BM79T**

5APH59T 5APH69T 5APH79T

5-30/5-31 **5PH50 5PH51 series**

5-31 **5PHH50 5PH50-H**

5-32 **5PPH50-1**

5-33 **5ZYP**

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7-18 **7T273 7T273T**

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7-20 **7T128**

7-21 **7T228T**

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11-11 **11SUPER-HP**

11-12 **11XLP12**

11-13/11-17 **11QE series**

11-18 **11PD**

11-19/11-20 **11HSP series**

11-21/11-22 **11THZ-I-BNC 11Beamage-3**

1 Optical Tables
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4 Optical Mounts
5 Optical Positioners
7 Translation & Rotation Stages
8 Motorised Positioners & Controllers
12 Lasers & Laser Accessories

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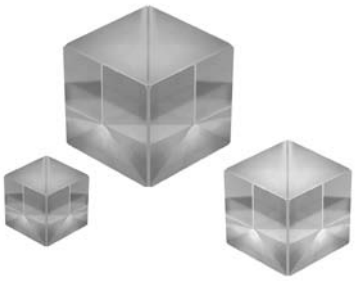

3-13 **3CC4, 3CC6, 3AH, 3HK 3SPS, 3STS, 3W6 Fasteners & Accesories**

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3WFA-01

3SK

Examples of XYZ stacking
Some drawings are on our web-site.
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Custom Engineering and DESCRIPTION

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8-99 **Power Supplies**

STA-01 series

12-3/12-4 **STA-01-MOPA series**

12-6/12-7 **STANDA-Q**

12-8 **STA-01-OEM**

12-9 **10MPIR1 10VIZ**

12-10 **10BD01 10BDWC01**

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Optical Positioners 5
Base Positioners 6
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Honeycomb Table Tops

1HT

- **Sandwich structure with steel honeycomb core**
- **5 mm ferromagnetic stainless steel top skin with a pattern of M6 holes spaced by 25 mm**
- **Surface flatness ±0.1 mm over any 1m² area**
- **Laser Port (optional – see the next page)**

Honeycomb Table Tops 1HT provide the base on which precision optical and laser work is performed. The table tops have a **honeycomb core** inside.

The table tops meet high requirements for rigidity, flatness, vibration isolation and damping. We work constantly to improve the design, weight and cost-effectiveness of the table tops.

Standard Honeycomb Tabletop **1HT** consists of a **5 mm** thick cold-rolled stainless ferromagnetic steel top skin, and **3-5 mm** thick bottom skin, both bound under high pressure to a **honeycomb core**, using a special epoxy resin. **Thickness** of the skins depends on the dimensions of the table top.

The top skin has a pattern (grid) of **M6** holes spaced by **25 mm** with **±0.1 mm** accuracy. It allows to make very quick experimental setups, and, at the same time, ensures a high level of precision and reproducibility. The surface of the **top skin** is ground to **flatness** of **±0.1 mm** over any **1 m²** area over the entire surface. The **bottom skin** is coated in a firm decorative coating.

Our standard **honeycomb core** is made of **0.25 mm** corrosion-resistant plated sheet steel. A special composition of epoxy resin guarantees adhesion, rigidity, stability and damping corresponding to highest requirements.

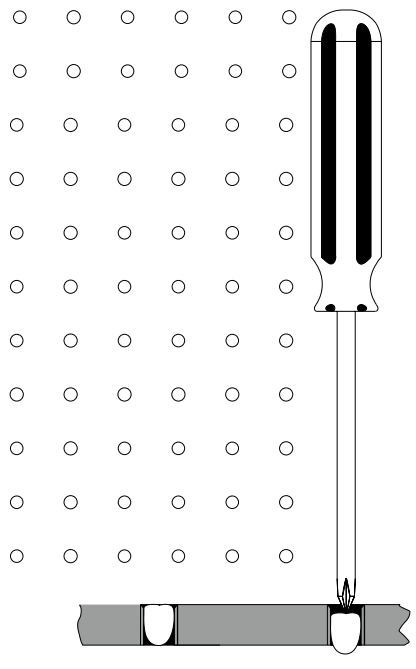
The side-walls of the table top are made of a special acoustically hollow plastic which damps acoustic vibrations. The side-walls are covered in a decorative black leather substitute.

Upon request a **Laser Port** can be embedded in the table top allowing a laser beam to be let through the table (see the next page).

The Honeycomb Table Tops **1HT** have been mechanically and acoustically tested by qualified specialists.

The Concept of Closed Top Honeycomb Tables

Real Closed Top – no way for liquids or tiny particles to get in. Only the holes you do use are open. Make "new" holes by yourself, by pushing in the plug with the help of a screwdriver, a hex key or another thin hard tool. If you need to re-seal the no longer used holes, let us know and we will provide polyethylene plugs that fit snugly into the M6 holes. To clean the Standa "closed" tabletop, simply wipe the surface using a damp cloth (with cleaning agent if necessary). No need to clean each individual hole!



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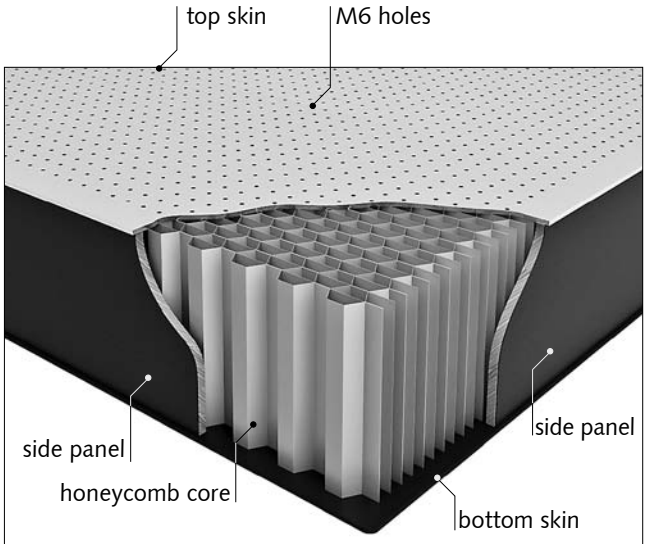
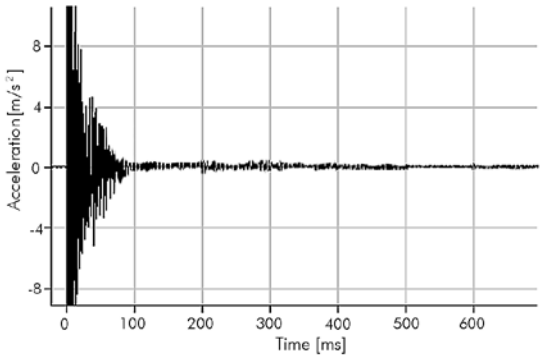
Honeycomb Table Tops 1HT

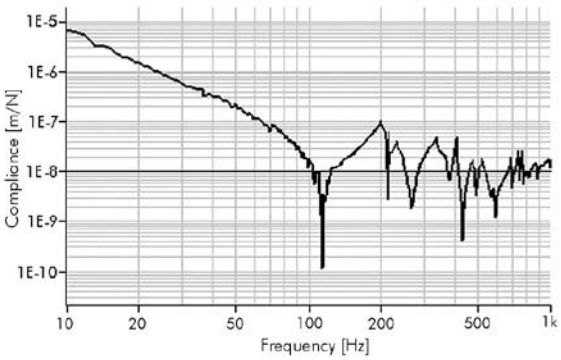
- top skin 5 mm thick ferromagnetic stainless steel
- honeycomb core of 0.25 mm thick steel has a density of 125 – 250 kg/m³ depending on the cell size and its structure
- top skin has a pattern of M6 holes spaced by 25 mm
- flatness ±0.1 mm/m²
- Young's modulus 21x10⁵ kg/cm²
- shear modulus 8.2x10⁵ kg/cm²
- deflection under load 1.5 μm/m
- resonant frequency approx. 200 Hz
- transient excitation delay time 50 ms



Structure of the honeycomb table tops



Acceleration curve
for **1HT12-24-20** Table Top

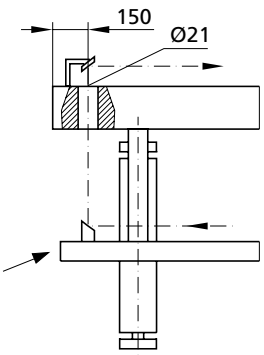


Compliance curve
for **1HT12-24-20** Table Top

Our company produces table tops according to customer's specifications.

Non-Ferromagnetic Table Tops are available for special orders

Example for ordering:
1HT10-20-20-NM – non-ferromagnetic table top.



Laser Ports are designed to lead a laser beam or cables through a Table Top. The standard location of a port is chosen for use with the **Laser Shelves 1LS52**.

To specify a Laser Port in your order please append letter **"H"** to the code for a Honeycomb Table Top e.g. 1HT10-20-20H.

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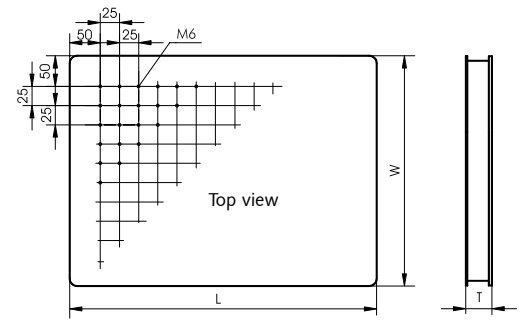
Honeycomb Table Top 1HT Ordering Chart — 1HT

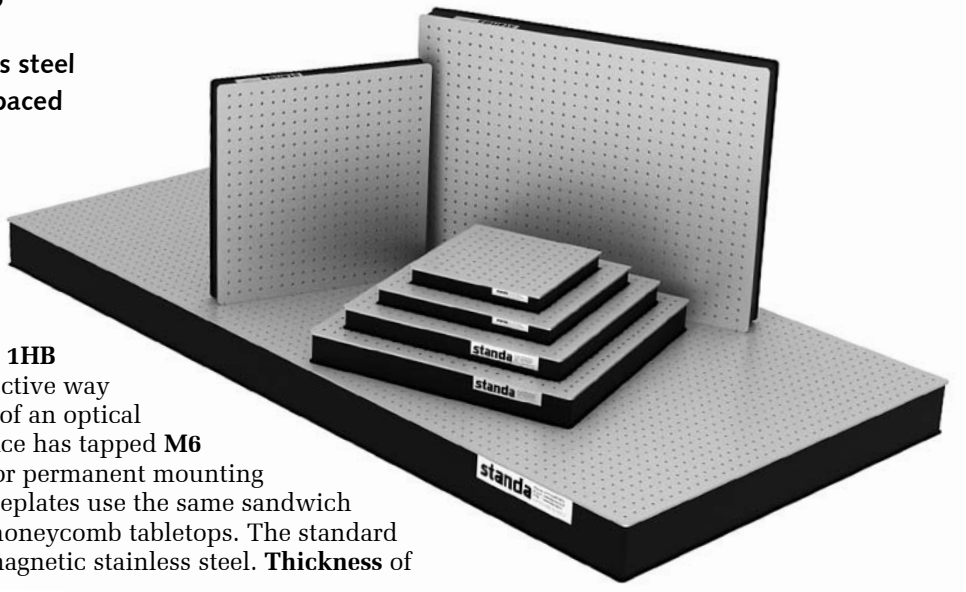
Size, mm	Thickness, mm 200	300	400
600×2400	1HT06-24-20		
800×1000	1HT08-10-20		
800×1200	1HT08-12-20		
800×1500	1HT08-15-20		
800×1800	1HT08-18-20		
800×2000	1HT08-20-20		
800×2400	1HT08-24-20		
900×1000	1HT09-10-20		
900×1200	1HT09-12-20		
900×1400	1HT09-14-20		
900×1500	1HT09-15-20		
900×1600	1HT09-16-20		
900×1800	1HT09-18-20	1HT09-18-30	
900×2400	1HT09-24-20	1HT09-24-30	
1000×1000	1HT10-10-20		
1000×1200	1HT10-12-20		
1000×1500	1HT10-15-20	1HT10-15-30	
1000×1800	1HT10-18-20	1HT10-18-30	
1000×2000	1HT10-20-20	1HT10-20-30	
1000×2400	1HT10-24-20	1HT10-24-30	
1000×3000	1HT10-30-20	1HT10-30-30	
1000×3500	1HT10-35-20	1HT10-35-30	
1200×1200	1HT12-12-20	1HT12-12-30	
1200×1500	1HT12-15-20	1HT12-15-30	
1200×1800	1HT12-18-20	1HT12-18-30	
1200×2400	1HT12-24-20	1HT12-24-30	1HT12-24-40
1200×3000	1HT12-30-20	1HT12-30-30	1HT12-30-40
1200×3500	1HT12-35-20	1HT12-35-30	1HT12-35-40
1200×4000	1HT12-40-20	1HT12-40-30	1HT12-40-40
1500×1500	1HT15-15-20	1HT15-15-30	1HT15-15-40
1500×1800	1HT15-18-20	1HT15-18-30	1HT15-18-40
1500×2000	1HT15-20-20	1HT15-20-30	1HT15-20-40
1500×2400	1HT15-24-20	1HT15-24-30	1HT15-24-40
1500×2500	1HT15-25-20	1HT15-25-30	1HT15-25-40
1500×3000	1HT15-30-20	1HT15-30-30	1HT15-30-40
1500×3500	1HT15-35-20	1HT15-35-30	1HT15-35-40
1500×4000	1HT15-40-20	1HT15-40-30	



Custom sizes available on request

Honeycomb Breadboards — 1HB

- **Core – 265 kg/m³ 0.25 mm thick steel honeycomb**
- **Top skin – 5 mm thick ferromagnetic stainless steel**
- **Pattern of M6 holes spaced by 25 mm**
- **Flatness ±0.1 mm/m²**



Honeycomb Breadboards 1HB provide a particularly effective way to expand the useful area of an optical table. The mounting surface has tapped **M6** holes on **25 mm** centers for permanent mounting of components. These baseplates use the same sandwich structure as our full size honeycomb tabletops. The standard top skin is made of ferromagnetic stainless steel. **Thickness** of the skin is **5 mm**.

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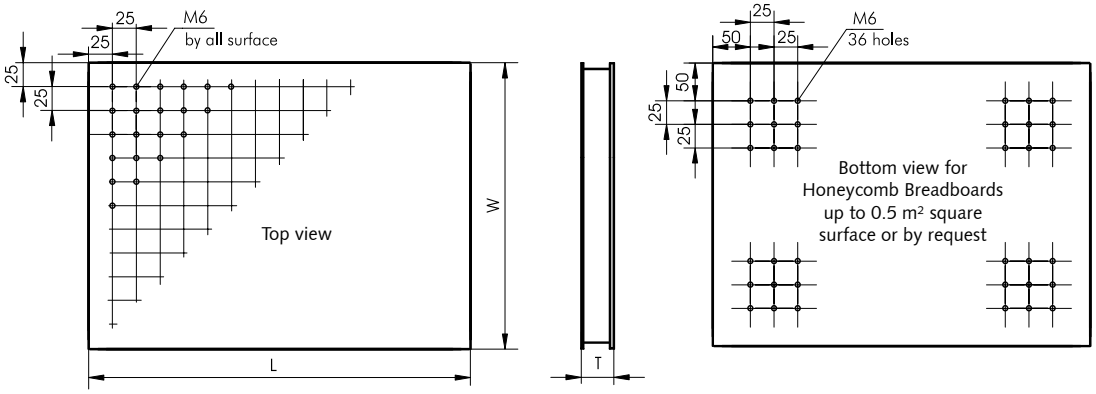
Honeycomb Breadboards 1HB



A breadboard may be mounted on a table by silent rods **2SR-32** or **3MP25**

Honeycomb Breadboards up to 0,5m² have a grid of nine **M6** tapped mounting holes in each corner of the bottom side. Larger Breadboards can have this grid by request. The **1HB** can be mounted at the bottom side of a table or elevated above its surface using the Silent Rods **2SR**.

These **Breadboards are not intended as a substitute for optical tables**. Their size-to-thickness ratio produces relatively low end-to-end rigidity, although their local rigidity over distances of less than about **30 to 60 cm** is excellent. When attached solidly to a dynamically rigid optical table, performance of resulting working surface becomes comparable to that of the table itself.

Honeycomb Breadboards 1HB Ordering Chart

Size WxL, mm	**Thickness T,** mm			
	40	**50**	**70**	**120**
300×300	1HB03-03-04			
300×600	1HB03-06-04	1HB03-06-05		
300×900	1HB03-09-04	1HB03-09-05		
300×1200	1HB03-12-04	1HB03-12-05		
300×1800	1HB03-18-04	1HB03-18-05		
440×440	1HB044-044-04			
500×500	1HB05-05-04	1HB05-05-05	1HB05-05-07	
500×750	1HB05-075-04	1HB05-075-05	1HB05-075-07	
500×1000	1HB05-10-04	1HB05-10-05	1HB05-10-07	
600×600	1HB06-06-04	1HB06-06-05	1HB06-06-07	
600×800	1HB06-08-04	1HB06-08-05	1HB06-08-07	
600×900	1HB06-09-04	1HB06-09-05	1HB06-09-07	1HB06-09-12
600×1200	1HB06-12-04	1HB06-12-05	1HB06-12-07	1HB06-12-12
600×1500			1HB06-15-07	1HB06-15-12
600×1800			1HB06-18-07	1HB06-18-12
600×2400			1HB06-24-07	1HB06-24-12
800×800	1HB08-08-04	1HB08-08-05	1HB08-08-07	1HB08-08-12
800×1000		1HB08-10-05	1HB08-10-07	1HB08-10-12
800×1200		1HB08-12-05	1HB08-12-07	1HB08-12-12
800×1500			1HB08-15-07	1HB08-15-12
800×1800			1HB08-18-07	1HB08-18-12
900×1000		1HB09-10-05	1HB09-10-07	1HB09-10-12
900×1200		1HB09-12-05	1HB09-12-07	1HB09-12-12
900×1400			1HB09-14-07	1HB09-14-12
900×1500		1HB09-15-05	1HB09-15-07	1HB09-15-12
900×1600			1HB09-16-07	1HB09-16-12
900×1800			1HB09-18-07	1HB09-18-12
900×2400			1HB09-24-07	1HB09-24-12
1000×1000		1HB10-10-05	1HB10-10-07	1HB10-10-12
1000×1200			1HB10-12-07	1HB10-12-12
1000×1500			1HB10-15-07	1HB10-15-12
1000×1800			1HB10-18-07	1HB10-18-12
1000×2000				1HB10-20-12
1000×2400				1HB10-24-12
1200×1200			1HB12-12-07	1HB12-12-12
1200×1500				1HB12-15-12
1200×1800				1HB12-18-12
1500×1500			1HB15-15-07	1HB15-15-12
1500×1800				1HB15-18-12
1500×2000				1HB15-20-12

Custom sizes available on request

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Phone: +370-5-2651474

Aluminium Honeycomb Breadboards 1HB-AL

new

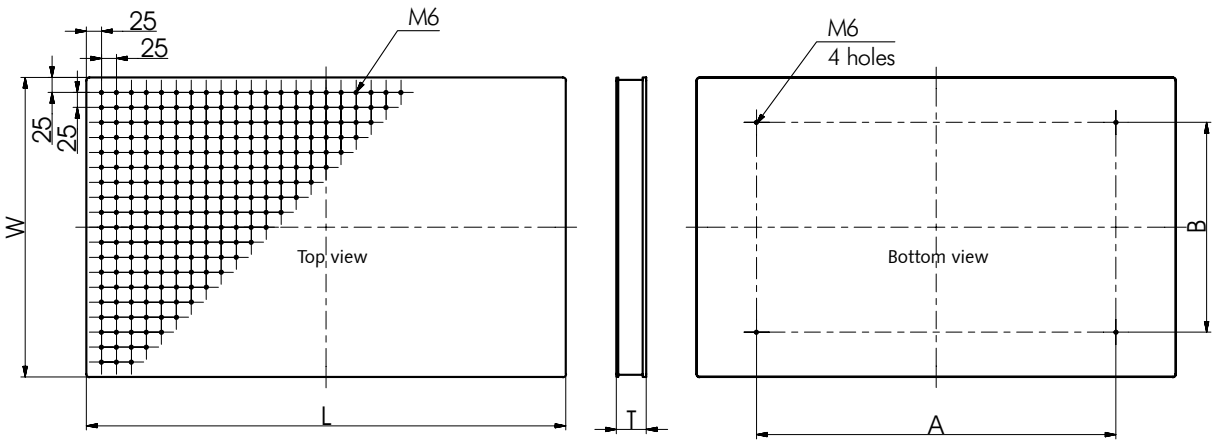
- **Aluminum Honeycomb Breadboards with Black Anodized Top Surface**
- **Metric or imperial holes pattern**
- **Non-magnetic**
- **50 mm overall thickness**
- **Low-weight honeycomb breadboard solution**

Standa technologies allowed to introduce all **aluminum honeycomb** optical breadboards with **black top surface** anodizing which significantly decreases backscatter for any optical setup mounted on such breadboard. Together with sufficient **stiffness** and **flatness** those breadboards have **>10% lower weight** than solid aluminum breadbords of 1BL series and are almost **3 times lighter** than stainless steel honeycomb optical breadboards series - 1HB.

1HB-AL breadboards are ideal for optical setups and are good for portable systems also are great for applications in the environment where non-magnetic instrumentation is a necessity.

SPECIFICATIONS

Flatness	±0.15 mm (± 0.006") over 0.3 m^2
Top skin	
Thickness	6 mm
Material	black anodized aluminium
Mounting Holes	
Metric	M6 tapped holes on 25 mm centers
Imperial	1/4"-20 tapped holes on 1" centers (more info on **www.standa.lt**)
Honeycomb Core	
Material	0.5 mm thick aluminium
Custom Breadboard Capabilities	
Max. Width (W)	900 mm
Max. Length (L)	1800 mm
Max. Thickness	120 mm



Model	W, mm	L, mm	T, mm	B, mm	A, mm	Anodized
1HB-AL-02-04-05-BL	200	400	50	150	300	black
1HB-AL-05-05-05-BL	500	500	50	350	350	black
1HB-AL-05-08-05-BL	500	800	50	350	600	black

Custom sizes available on request on www.standa.lt

*Available **INCH** version **1HB-AL-INCH***
*more info on **WWW.STANDA.LT***

e-mail: sales@standa.lt www.standa.lt
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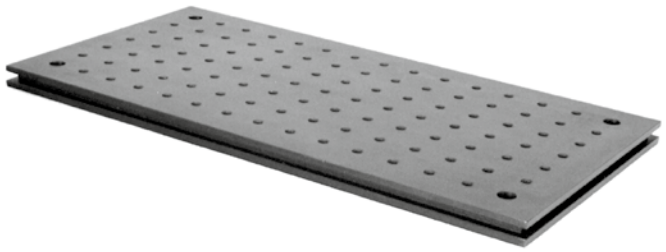
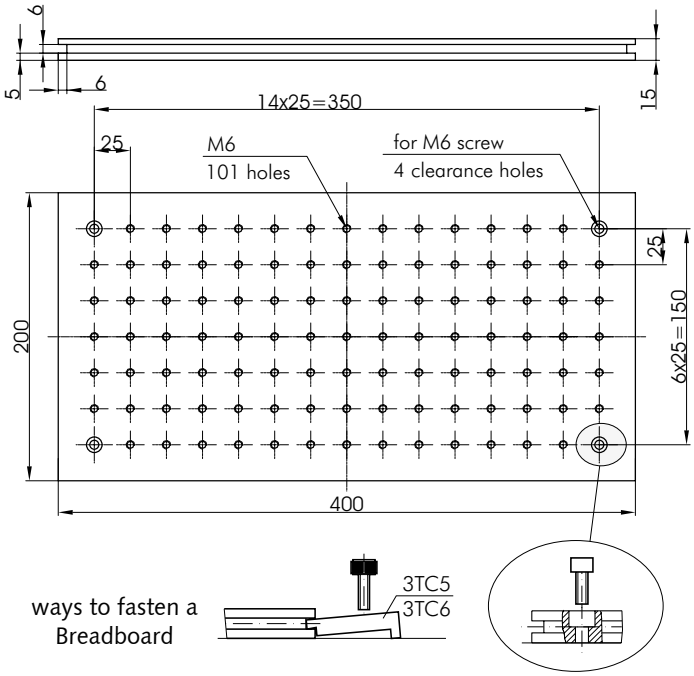
Solid Steel Breadboard
Aluminium Breadboard

1BS-2040-015
1BAL-2040-015





ways to fasten a Breadboard

- **Two types of material**
- **Length 400 mm**
- **Width 200 mm**
- **Thickness 15 mm**
- **M6 tapped holes pattern on 25 mm centres**

Breadboard 1BS-2040-015 (former part number **1B82**) is an alternative to the honeycomb table tops. It is particularly useful in small optical setups.

1BS-2040-015 is a **black finished ferromagnetic steel plate**, of **one size**.

1BAL-2040-015 is a **black anodized aluminium plate**, of **one size**.

The breadboard has **grooves** on all 4 sides, so you can quickly mount it using Table Clamps **3TC5**, **3TC6**. On the corners there are **4** holes for **M6** screw used to mount directly to tables or to fix at a certain height on Silent Rods **2SR32**.

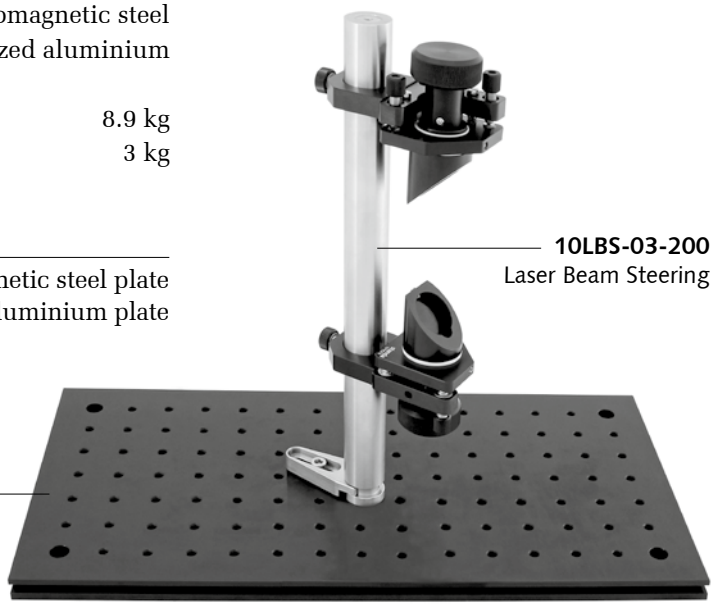
1BS-2040-015 mounted on **Silent Rods 2SR32**

SPECIFICATIONS

Flatness	
1BS-2040-015	±0.03 mm
1BAL-2040-015	±0.15 mm
Pattern	M6 holes spaced by 25 mm
Dimensions	
Length	400 mm
Width	200 mm
Thickness	15 mm
Material	
1BS-2040-015	black finished ferromagnetic steel
1BAL-2040-015	black anodized aluminium
Weight	
1BS-2040-015	8.9 kg
1BAL-2040-015	3 kg

ORDERING INFORMATION

1BS-2040-015 – black finished ferromagnetic steel plate
1BAL-2040-015 – black anodized aluminium plate



10LBS-03-200
Laser Beam Steering

1BS-2040-015
Solid Steel Breadboard

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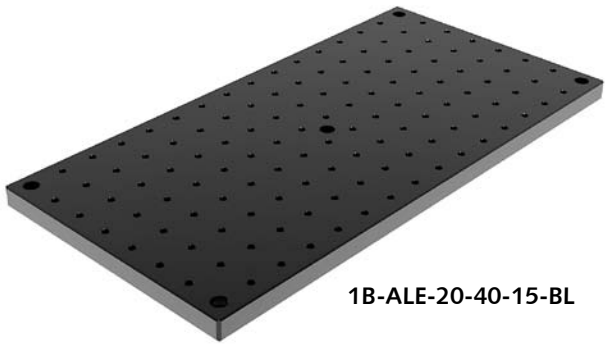
Phone: +370-5-2651474

Aluminium Breadboards

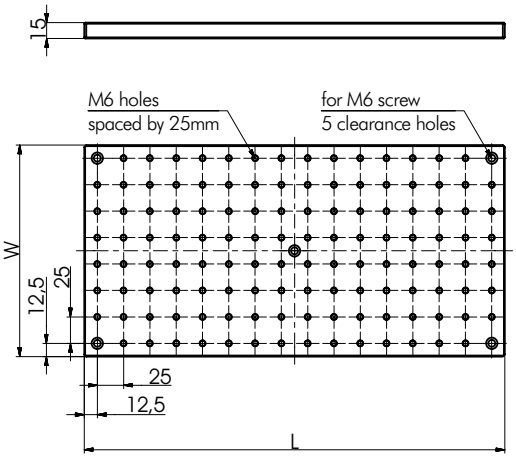
1B-ALE



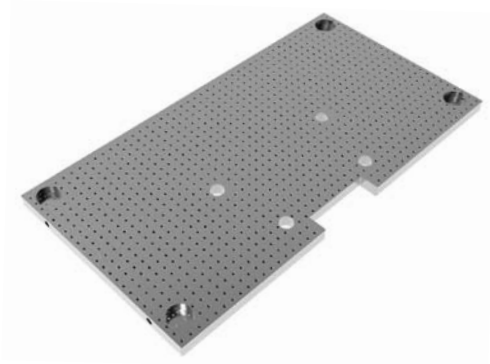
1B-ALE-20-40-15-BL

- **Thickness 15 mm**
- **M6 tapped holes pattern on 25 mm centres**
- **Clear and black anodized**
- **Non-anodized breadboards ready for vacuum available on request**

1TS-140B-ALE Active Vibration Isolation System with Aluminium Breadbord



Custom sizes Non-anodized breadboards ready for vacuum available on request



Circular Aluminium Breadboards available on request

ORDERING EXAMPLE

1B-ALE-D**XXX**-015

The **diameter** of **Circular Aluminium Breadboard** in centimeters:

1B-ALE-D**200**-015

Ø**200**cm=Ø**2000**mm

Model	W, mm	L, mm	Thickness, mm	Anodized	Weight, kg
1B-ALE-10-20-015	100	200	15	no	1.05
1B-ALE-10-20-015-BL	100	200	15	black	1.05
1B-ALE-15-15-015	150	150	15	no	0.95
1B-ALE-15-15-015-BL	150	150	15	black	0.95
1B-ALE-20-20-015	200	200	15	no	1.7
1B-ALE-20-20-015-BL	200	200	15	black	1.7
1B-ALE-20-40-015	200	400	15	no	3.4
1B-ALE-20-40-015-BL	200	400	15	black	3.4
1B-ALE-25-25-015	250	250	15	no	2.65
1B-ALE-25-25-015-BL	250	250	15	black	2.65
1B-ALE-30-30-015	300	300	15	no	3.8
1B-ALE-30-30-015-BL	300	300	15	black	3.8
1B-ALE-30-45-015	300	450	15	no	5.7
1B-ALE-30-45-015-BL	300	450	15	black	5.7
1B-ALE-30-60-015	300	600	15	no	7.6
1B-ALE-30-60-015-BL	300	600	15	black	7.6
1B-ALE-40-80-015	400	800	15	no	13.5
1B-ALE-40-80-015-BL	400	800	15	black	13.5
1B-ALE-45-45-015	450	450	15	no	8.5
1B-ALE-45-45-015-BL	450	450	15	black	8.5
1B-ALE-45-60-015	450	600	15	no	11.35
1B-ALE-45-60-015-BL	450	600	15	black	11.35
1B-ALE-45-75-015	450	750	15	no	14.2
1B-ALE-45-75-015-BL	450	750	15	black	14.2
1B-ALE-60-60-015	600	600	15	no	15.2
1B-ALE-60-60-015-BL	600	600	15	black	15.2
1B-ALE-60-80-015	600	800	15	no	20.1
1B-ALE-60-80-015-BL	600	800	15	black	20.1
1B-ALE-75-75-015	750	750	15	no	23.6
1B-ALE-75-75-015-BL	750	750	15	black	23.6
1B-ALE-80-80-015	800	800	15	no	26.9
1B-ALE-80-80-015-BL	800	800	15	black	26.9

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Pneumatic Vibration Isolation System

1VIS10

1VIS10

- **Vertical resonance frequency: 1.5 Hz (average load)**
- **Horizontal resonance frequency: 1.7 Hz (average load)**
- **Air source pressure: up to 600 KPa (6 bar) (87 PSI)**

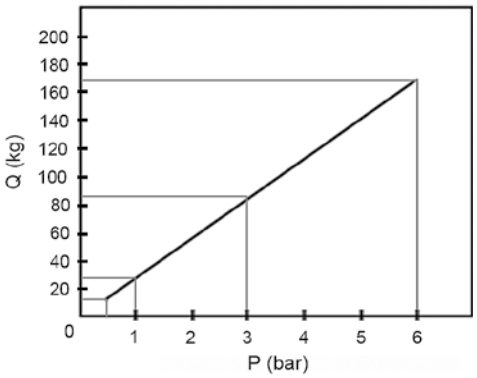
Pneumatic Vibration Isolation System 1VIS10 is an ideal foundation for equipment which is sensitive to vibration, e.g. microscopes, scales, interferometers, and similar devices.

Work surface of the table is separated from the floor by means of a highly effective system of pneumatic supports.

The system features solid and light supports that come in various dimensions to support a wide range of table top sizes. This enables quick creation of vibration isolation systems for a variety of tasks.

Maximum load capacity of each support leg is 168 kg.

Working pressure of the system is 0.5–6 atm (bar). Required minimum system pressure required to support a certain load in kg is shown in the load/pressure diagram.

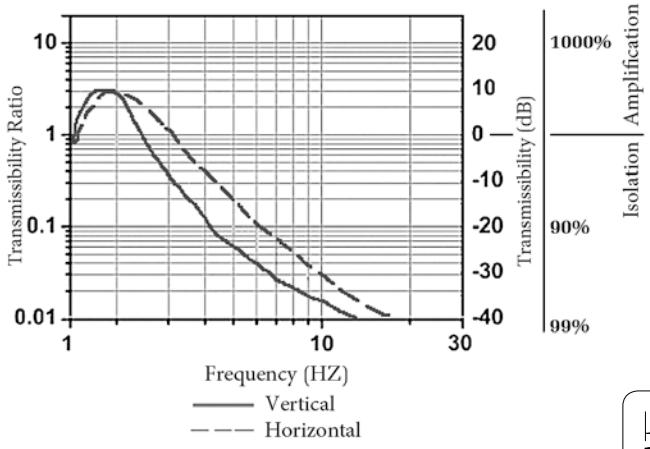


P - required minimal pressure in atm (bar).
Q - load per support leg (kg).

Load/Pressure diagram

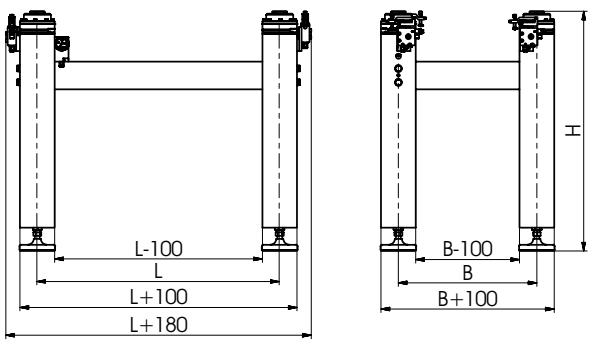
SPECIFICATIONS

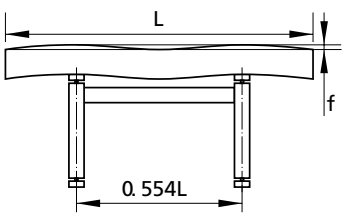
Height of the vibration isolation system	600, 700 mm
Vertical movement range	14 mm
Precision of automatic level control	±0.3 mm
Vertical resonance frequency	1.5 Hz (average load)
Vertical isolation at 5 Hz	85–93%
Vertical isolation at 10 Hz	90–98%
Horizontal resonance frequency	1.7 Hz (average load)
Horizontal isolation at 5 Hz	85–93%
Horizontal isolation at 10 Hz	90–97%
Pressure from source of air	600 KPa (6 bar) (87 PSI)
Air supply socket diameter	Ø 6 mm
Operating humidity (max)	90%
Operating temperature range	10–50 °C
Minimum load capacity	15 kg per isolator
Load-bearing capacity (at 6 bar)	168 kg per isolator



Vibration / Isolation performance

Model	B, mm	L, mm	H, mm
1VIS10-05-07-60	500	700	600
1VIS10-05-07-70	500	700	700
1VIS10-05-12-60	500	1200	600
1VIS10-05-12-70	500	1200	700
1VIS10-065-12-60	650	1200	600
1VIS10-065-12-70	650	1200	700
1VIS10-08-12-60	800	1200	600
1VIS10-08-12-70	800	1200	700
1VIS10-065-18-60	650	1800	600
1VIS10-065-18-70	650	1800	700





Deflection **"f"** is minimal when the distance between supports = **0.554L.**

Air compressor is required for operation

1VIS-BB15V

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Phone: +370-5-2651474

Pneumatic Vibration Isolation Workstation 1VIS10W

1VIS10W-09-17-77-CA

On request we produce workstations with Honeycomb Table Tops of any dimensions.

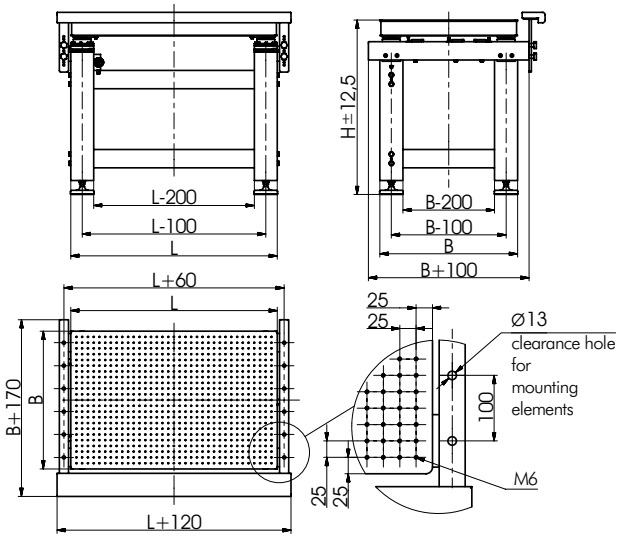
Model	B, mm	L, mm	H, mm
1VIS10W-06-09-77	600	900	770
1VIS10W-075-09-77	750	900	770
1VIS10W-075-12-77	750	1200	770
1VIS10W-09-14-77	900	1400	770

Pneumatic Vibration Isolation Workstation 1VIS10W consists of **1VIS10**, a **Honeycomb Breadboard**, and a protection **Armrest**.

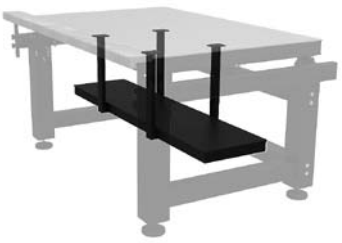
As you lean on the **Armrest**, it guards the honeycomb table from impacts of your body. This allows you to work at the table like at a conventional table, using microscope and other equipment.

The suggested **elevation** of table's surface is **770 mm**.

We produce four standard models of **1VIS10W**.



Laser shelves are optional breadboards. They save space when installing lasers and other equipment beneath honeycomb table tops. The shelf stays mechanically coupled to the table top.



Laser shelves sizes are on **page 1-23**.

1VIS10 system can be optionally equipped with **Castors**, which are made of high-quality nylon, high abrasion resistant, smooth running performance on even floors, shock and impact-resistant, corrosion-resistant.

Armrest guards isolates the honeycomb table from impacts of your body. This allows you to work at the table like at a conventional table, using a microscope or other equipment.

Optionally you may order workstation with two **Armrests** on opposite sides.

ORDERING EXAMPLE

1VIS10W-09-14-77-CA — **1VIS10W workstation** sized **900×1400×770 mm** (B×L×H); **CA – casters.**

Low noise air compressors have been developed for those users where low noise and relatively small flow of air is required. With **sound levels** from **just 40 dB(A)** and almost no vibration when running, the compressors can be located in the work area without causing any noise intrusion. The compressors have a **8 bar** maximum working pressure. Designed to require minimal maintenance and to ensure years of trouble free use, our comprehensive range meets the needs of many applications including; air-brushing, exhibition stands, glue dispensing, pneumatic controls, stapling – anywhere where compressed air is needed silently!

Air compressor is required for operation

1VIS-BB15V

e-mail: sales@standa.lt www.standa.lt
Phone: +370-5-2651474 Fax: +370-5-2651483

Pneumatic Vibration Isolation System

1VIS22

1VIS22

- **Vertical resonance frequency: 1.5 Hz (average load)**
- **Horizontal resonance frequency: 1.7 Hz (average load)**
- **Air source pressure: up to 600 KPa (6 bar) (87 PSI)**

Pneumatic Vibration Isolation System 1VIS22 is an ideal foundation for equipment which is sensitive to vibration, e.g. microscopes, scales, interferometers, and similar devices.

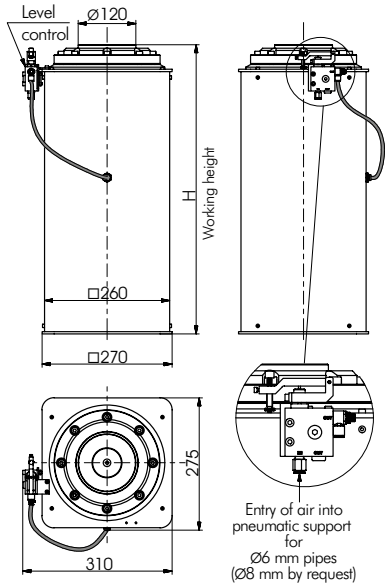
Work surface of the table is separated from the floor by means of a highly effective system of pneumatic supports, i.e. pneumatic springs with hydraulic (oil) dampers.

The system features solid and light supports that come in various dimensions to support a wide range of table top sizes. This enables quick creation of vibration isolation systems for a variety of tasks.

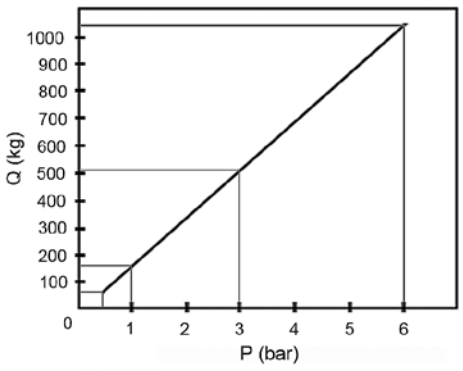
Maximum load capacity of each support leg is **1000 kg.**

SPECIFICATIONS

Height of the vibration isolation system	H= 400, 500, 600, 700, 800 mm
Vertical movement range	14mm
Precision of automatic level control	±0.3 mm
Vertical resonance frequency	1.5 Hz (average load)
Vertical isolation at 5 Hz	85–93%
Vertical isolation at 10 Hz	90–98%
Horizontal resonance frequency	1.7 Hz (average load)
Horizontal isolation at 5 Hz	85–93%
Horizontal isolation at 10 Hz	90–97%
Pressure from source of air	600 KPa (6 bar) (87 PSI)
Air supply socket opening	Ø 6 mm
Operating humidity (max)	90%
Operating temperature range	10–50 °C
Minimum load capacity	90 kg per isolator
Load-bearing capacity (at 6 bar)	1,000 kg per isolator

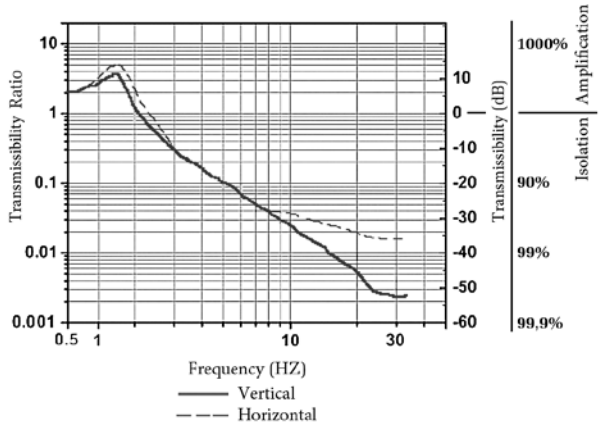


Working pressure of the system is 0.5–6 atm (bar). Required minimum system pressure required to support a certain load in kg is shown in the load/pressure diagram.



P - required minimal pressure in atm (bar).
Q - load on one support leg (kg).

Load/Pressure diagram



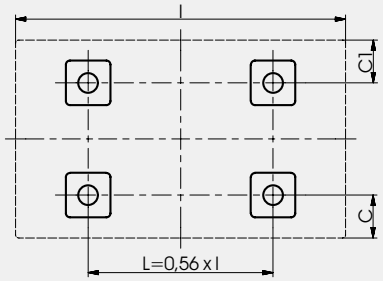
Vibration / Isolation performance

ORDERING EXAMPLE

1VIS22-70-4

70 – height of **isolator 700 mm**.
4 – number of **isolators - 4 pc**.

Standard heights of **1VIS22-XX-X**
400 mm (code 40),
500 mm (code 50),
600 mm (code 60),
700 mm (code 70),
800 mm (code 80).



We offer optimal Vibration Isolation Systems for the optical table of your choice.

Figure shows the correct layout of pneumatic supports for tables with standard dimensions.

C=C1=160...200 mm

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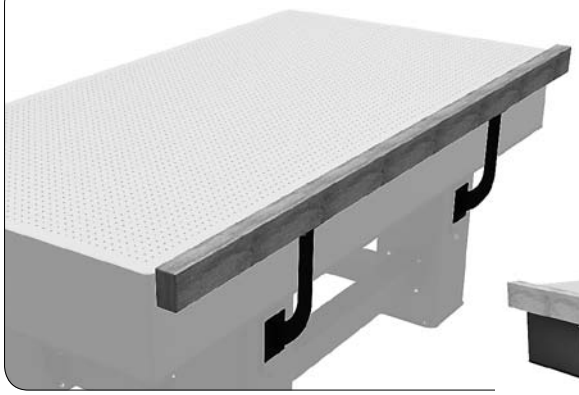
Modifications and Ordering **1VIS22**

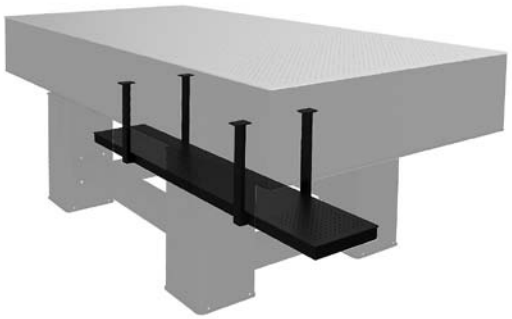


Armrest guards isolates the honeycomb table from impacts of your body. This allows you to work at the table like at a conventional table, using a microscope or other equipment.

Optionally you may order workstation with two **Armrests** on opposite sides.

Castors - made of high-quality nylon, high abrasion resistant, smooth running performance on even floors, shock and impact-resistant, corrosion-resistant.

Laser shelves are optional breadboards. They save space when installing lasers and other equipment beneath honeycomb table tops. The shelf stays mechanically coupled to the table top.



Below are the formulas for calculating optimal dimensions of **1VIS22** with **casters**.

B=0.56×b; L=0.56×l; H=900 – h

Standard dimensions of 1VIS22 are presented below. Select the **closest greater** values matching your calculations.

1VIS22-B-L-H-CA:

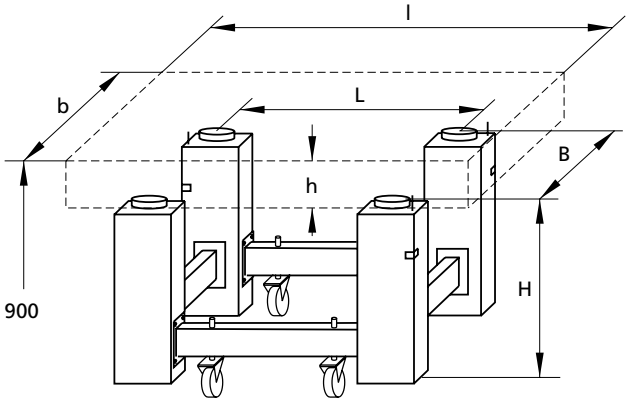
B: **500 mm** (code 05), **650 mm** (code 065), **800 mm** (code 08);

L: **800 mm** (code 08), **1300 mm** (code 13), **1900 mm** (code 19);

H: **400 mm** (code 40), **500 mm** (code 50), **600 mm** (code 60), **700 mm** (code 70), **800 mm** (code 80).

CA: **casters**

Laser shelve sizes can be found on **page 1-23**.



Low noise air compressors have been developed for those users where low noise and relatively small flow of air is required. With **sound levels** from **just 40 dB(A)** and almost no vibration when running, the compressors can be located in the work area without causing any noise intrusion. The compressors have a **8 bar** maximum working pressure. Designed to require minimal maintenance and to ensure years of trouble free use, our comprehensive range meets the needs of many applications including; air-brushing, exhibition stands, glue dispensing, pneumatic controls, stapling – anywhere where compressed air is needed silently!

Air compressor is required for operation

1VIS-BB15V

Car Pumps and **Air Compressors** are available upon request. **Product details** are available on our web page **www.standa.lt.**

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Optical Table Supports

1TS

1TS05-07-06-AP-500

- **Convenient sizes**
- **Optimal height**
- **Multipurpose in use**
- **Handy assembling**

Optionally you may order 2 to 3 extra cross-beams and/or casters

Optical Table Support 1TS with **Honeycomb Table Tops 1HT**

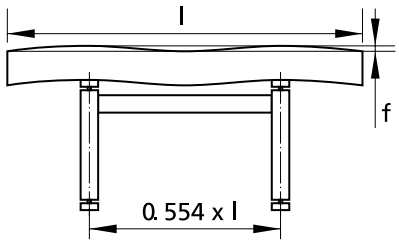
Table supports may be supplied with various leveling and vibration-isolation systems. This allows to meet various needs of our customers.

Optical Table Supports 1TS are primarily designed for the Honeycomb Table Tops **1HT**. Table Supports are produced from steel tubes of **100 mm** square section, in decorative black coating. 1TS is composed of two "П" type supports, bound by a cross-beam.

Optical Table Supports 1TS ideally suit other types of optical plates and other equipment, as well. This is possible because plates are not fastened – they are just laid on top of the supports.

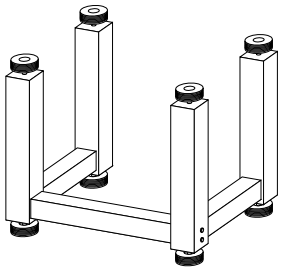
On request we produce table supports of any size, design, and of greater sturdiness.

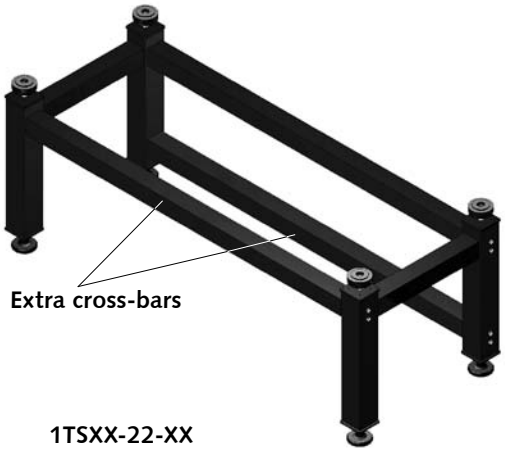
Standard models of 1TS table supports available for short delivery



Deflection **"f"** is minimal when the distance between supports = **0.554 x l.**
More information for choosing the optimal support size for your optical table on **1-12** page.

If required, e.g. when used with a laser shelf **1LS52**, the table support may be assembled upside-down. This doesn't degrade its performance.





1TSXX-22-XX

REINFORCED FRAME FOR LARGE AND HEAVY TABLETOPS!

For heavy tabletops longer than 3500 mm we provide reinforced table support structure by default. Extra cross-bars are added to three sides of the table support frame for increased stability and reliability. Standard length - 2200 mm between support leg centers.

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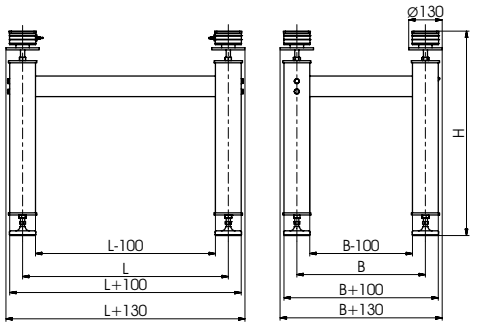
1TS-AR Rubber Leveling Element

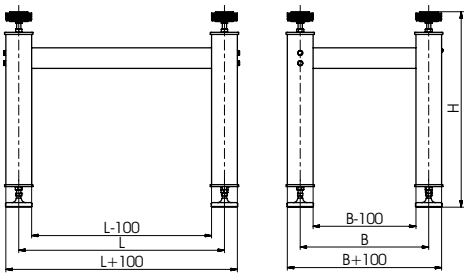
Model	B, mm	L, mm	H, mm
1TS05-07-05-AR	500	700	660±25
1TS05-07-06-AR	500	700	760±25
1TS05-12-05-AR	500	1200	660±25
1TS05-12-06-AR	500	1200	760±25
1TS065-12-05-AR	650	1200	660±25
1TS065-12-06-AR	650	1200	760±25
1TS065-18-05-AR	650	1800	660±25
1TS065-18-06-AR	650	1800	760±25
1TS065-22-05-AR	650	2200	660±25
1TS065-22-06-AR	650	2200	760±25
1TS08-12-05-AR	800	1200	660±25
1TS08-12-06-AR	800	1200	760±25



1TSXX-XX-XX-AP

1TS-AS Solid Leveling Element

Model	B, mm	L, mm	H, mm
1TS05-07-05-AS	500	700	660±25
1TS05-07-06-AS	500	700	760±25
1TS05-12-05-AS	500	1200	660±25
1TS05-12-06-AS	500	1200	760±25
1TS065-12-05-AS	650	1200	660±25
1TS065-12-06-AS	650	1200	760±25
1TS065-18-05-AS	650	1800	660±25
1TS065-18-06-AS	650	1800	760±25
1TS065-22-05-AS	650	2200	660±25
1TS065-22-06-AS	650	2200	760±25
1TS08-12-05-AS	800	1200	660±25
1TS08-12-06-AS	800	1200	760±25

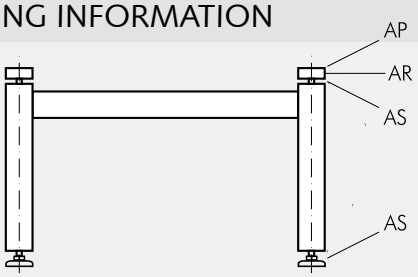


1TSXX-XX-XX-AR / 1TSXX-XX-XX-AS

1TS-AP Passive Air Leveling Vibration Isolator

Model	B, mm	L, mm	H, mm
1TS05-07-05-AP-200	500	700	700±15
1TS05-07-05-AP-500	500	700	700±15
1TS05-07-05-AP-1000	500	700	700±15
1TS05-07-06-AP-200	500	700	800±15
1TS05-07-06-AP-500	500	700	800±15
1TS05-07-06-AP-1000	500	700	800±15
1TS05-12-05-AP-200	500	1200	700±15
1TS05-12-05-AP-500	500	1200	700±15
1TS05-12-05-AP-1000	500	1200	700±15
1TS05-12-06-AP-200	500	1200	800±15
1TS05-12-06-AP-500	500	1200	800±15
1TS05-12-06-AP-1000	500	1200	800±15
1TS065-12-05-AP-200	650	1200	700±15
1TS065-12-05-AP-500	650	1200	700±15
1TS065-12-05-AP-1000	650	1200	700±15
1TS065-12-06-AP-200	650	1200	800±15
1TS065-12-06-AP-500	650	1200	800±15
1TS065-12-06-AP-1000	650	1200	800±15
1TS065-18-05-AP-200	650	1800	700±15
1TS065-18-05-AP-500	650	1800	700±15
1TS065-18-05-AP-1000	650	1800	700±15
1TS065-18-06-AP-200	650	1800	800±15
1TS065-18-06-AP-500	650	1800	800±15
1TS065-18-06-AP-1000	650	1800	800±15
1TS065-22-05-AP-200	650	2200	700±15
1TS065-22-05-AP-500	650	2200	700±15
1TS065-22-05-AP-1000	650	2200	700±15
1TS065-22-06-AP-200	650	2200	800±15
1TS065-22-06-AP-500	650	2200	800±15
1TS065-22-06-AP-1000	650	2200	800±15
1TS08-12-05-AP-200	800	1200	700±15
1TS08-12-05-AP-500	800	1200	700±15
1TS08-12-05-AP-1000	800	1200	700±15
1TS08-12-06-AP-200	800	1200	800±15
1TS08-12-06-AP-500	800	1200	800±15
1TS08-12-06-AP-1000	800	1200	800±15

ORDERING INFORMATION



Type of **upper** leveling elements of **1TS** can be chosen from **1TS-AS**, **1TS-AR** or **1TS-AP** (see descriptions below). **Bottom** elements on **1TS** are of type **1TS-AS**.

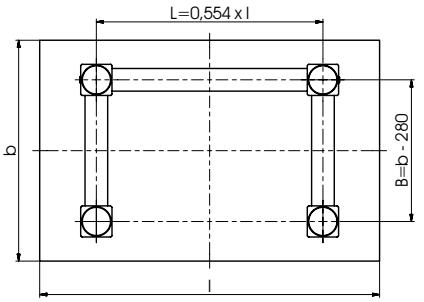
Default choice for **upper** elements of **1TS** is **1TS-AR** rubber leveling elements. Example:

1TS05-07-05-AR – table support sized **600×800×660 mm** (Width×Length×Height) with **4** pieces of **1TS-AR** leveling elements on top and **4** pieces of **1TS-AS** leveling element at the bottom.

For other types of leveling elements please append element abbreviation to product code. Examples:

1TS05-07-06-AS – size **600×800×760 mm** (Width×Length×Height), type of leveling elements – **1TS-AS** (**8** pieces, **4** on **top** and **4** at the **bottom**).

1TS065-12-06-AP-200 – size **750×1300×800 mm** (Width×Length×Height), with **4** pieces of leveling elements type **1TS-AP-200** on top and **4** pieces of leveling elements type **1TS-AS** at the bottom.



Choosing the optimal support size for optical table

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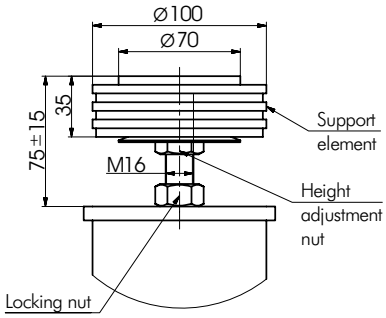
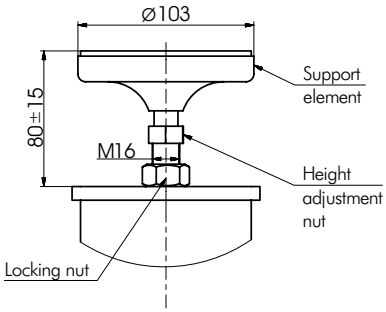
Rubber Leveling Element — 1TS-AR

Rubber leveling element (1TS-AR) ensures sufficient vibration isolation.
Max. load per 4 isolators – **1500 kg**
Natural frequency – 15-20 Hz

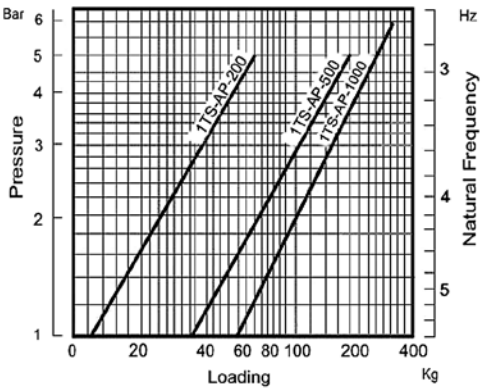


Solid Leveling Element — 1TS-AS

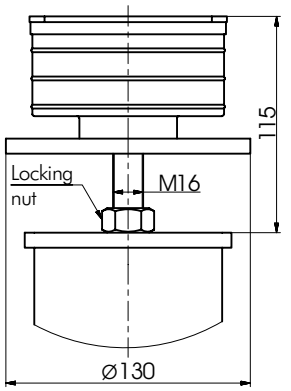
Solid leveling element (1TS-AS) is used, when no damping is needed.
Max. load per 4 isolators – **3000 kg**

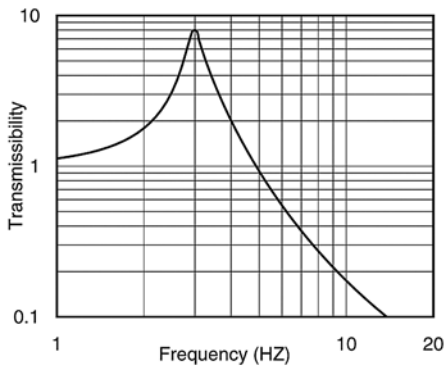


Passive Air Leveling Vibration Isolator — 1TS-AP

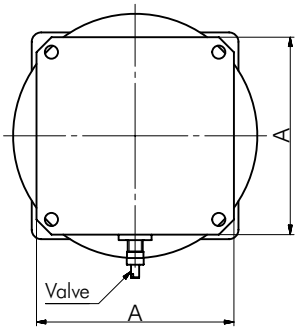


Load/Pressure diagram





Transmissibility Curve



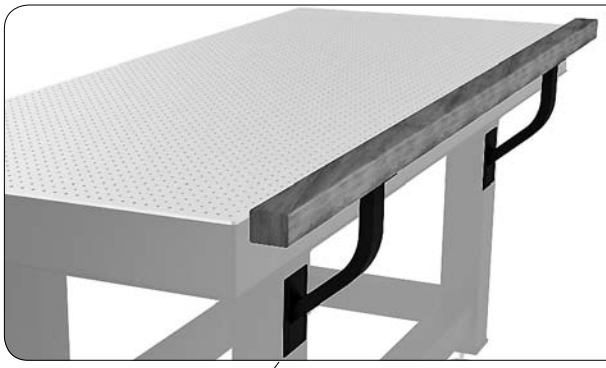
Passive air leveling vibration isolator 1TS-AP is a low height, low stiffness air spring isolator mount suitable for both passive and dynamic applications where a support natural frequency as low as 3-5Hz is required.

Typical passive applications include the protection of vibration sensitive equipment such as co-ordinate measuring machines, metrology inspection devices, isolation tables and electron microscopes.

The **1TS-AP** isolator body is made of high elasticity, oil resistant and non-aging CR grade elastomer. Pressure and bottom plates made of galvanized steel.

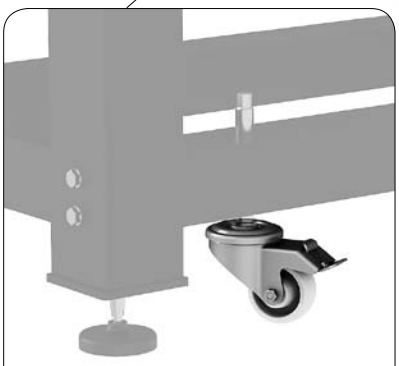
Inflation is either through the 'moulded in' standard tyre valve or by connection to a permanent air supply.

Model	Max. load, kg (for 4 isolators)	Max. pressure, bar	A, mm
1TS-AP-200	195	5	75
1TS-AP-500	540	5	105
1TS-AP-1000	840	6	130



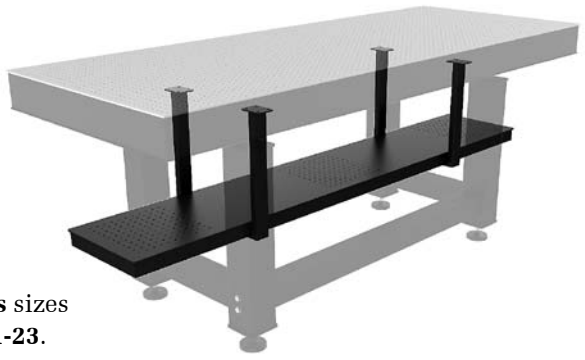
Armrest guards the honeycomb table from impacts of your body. This allows you to work at the table like at a conventional table, using microscope and other equipment.

Optionally you may order workstation with two **Armrests** on the opposite sides.



Casters – made of high-quality nylon, high abrasion resistant, low rolling resistant, smooth running performance on even floors, shock and impact-resistant, corrosion-resistant.

Laser shelves are optional breadboards. They save space when installing a laser and other equipment beneath the honeycomb table tops. A shelf stays mechanically coupled to the table top.



Laser shelves sizes are on **page 1-23**.

ORDERING EXAMPLE

1TS065-12-06-AR-CA

Table support sized **750×1300×760 mm** (Width×Length×Height);
4 pieces of **1TS-AR** leveling elements on top;
4 pieces of **1TS-AS** leveling element at the bottom;
CA – casters.

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Active Vibration Isolation System

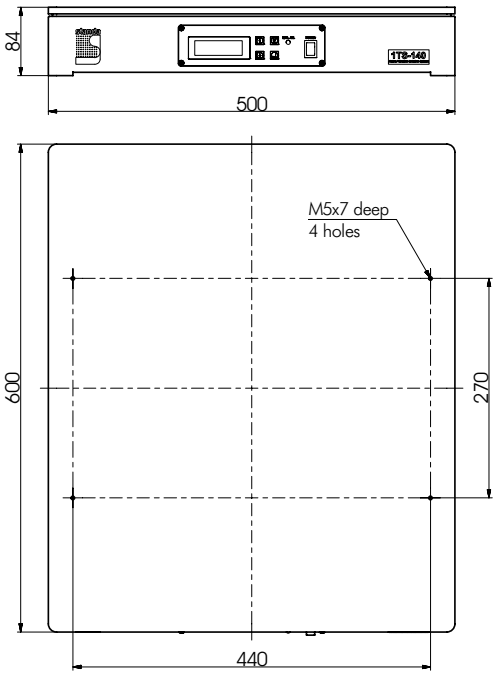
1TS-140
1TS-140B
1TS-140B-ALE

1TS-140

- **The isolation of the 1TS-140 begins at 0,7 Hz, increasing rapidly to 40 dB beyond 10 Hz**
- **The lack of any low frequency resonance means much better performance than with common passive damping approaches**
- **The inherent stiffness of the 1TS-140 imparts excellent directional + positional stability**
- **The outstanding isolation performance of the 1TS-140 includes all six translational and rotational vibration modes**

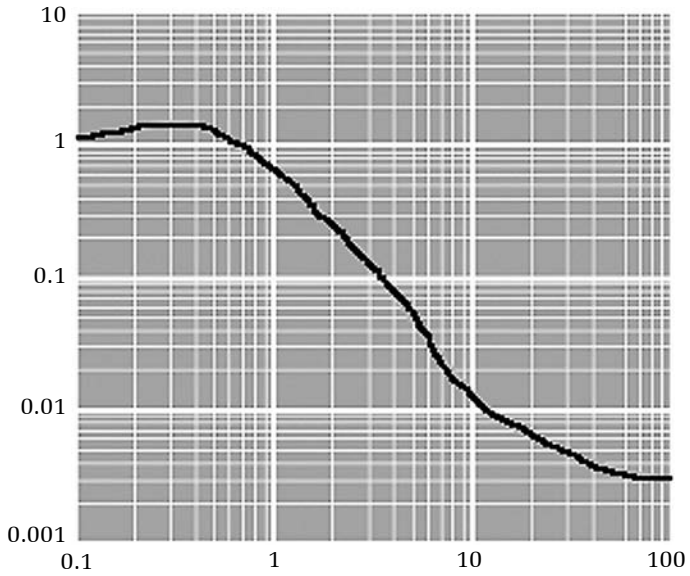
SPECIFICATIONS

Isolation	dynamic 0.7 Hz to 200 Hz, mainly passive at higher frequencies, although for good stability the feedback is active to at least 2 KHz
Transmissibility	See attached curve. Above 10 Hz transmissibility <0.01 (-40dB)
Maximum load	140 kg
Dimensions	500x600x84 mm
Self - weight	23 kg
Electrical	
Safety class	1
Power consumption	maximum 10 W when isolating, maximum 20W during load adjustment
Input voltage	90 – 120V AC, 47 – 63 Hz 200 – 240V AC, 47 – 63 Hzz
Fuses	2x1.6A/250V slow, located in the power socket on the rear side of the unit
Normal Environmental Conditions	
Protection class	IP 20
Temperature range	5°C - 40°C
Relative Humidity	10 - 90% (5 - 30°C) 10 - 60% (30 - 40°C)
Application	Indoor
Altitude	up to 2000 m (6.500 ft)



1TS-140

Transmissibility Curve (z)



1TS-140 is **compact dynamic anti-vibration system**, which offers isolation against all six translational and rotational vibration modes. These moderately priced dynamic vibration isolation systems achieve in a very small volume better isolation than is possible with the biggest and most expensive passive systems. Inertial feedback using piezoelectric force motors provides not only isolation from building vibrations, but also isolation from vibration sources placed on the system itself. This means, for example, that a delicate microscope isolated by the system will remain at rest despite forces being applied via the operator's hands.
The inherent stiffness of the systems, some 200 – 500 times greater than that of a 1 Hz resonance passive isolator, imparts excellent directional and positional stability.

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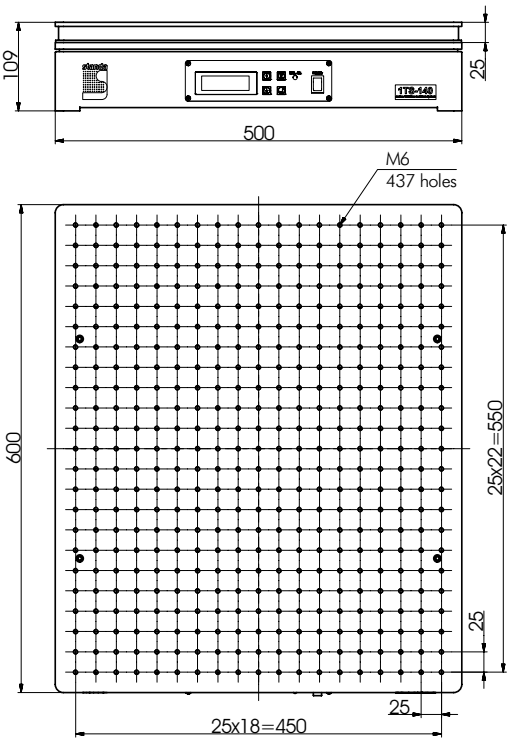
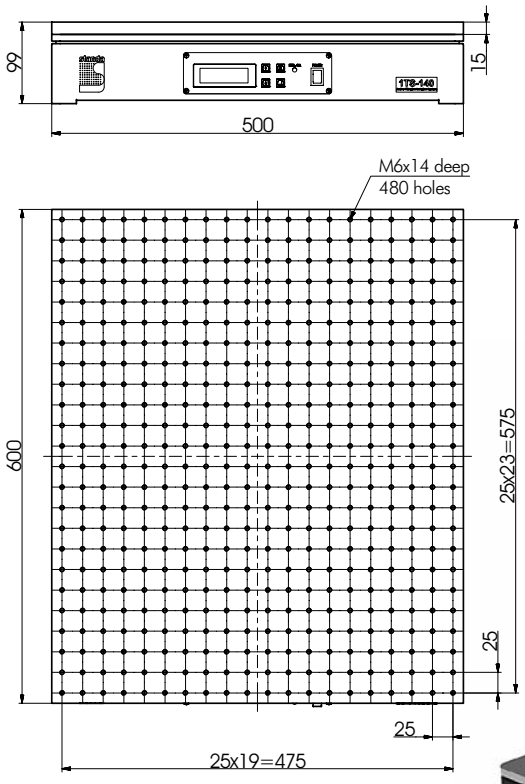
Active Vibration Isolation System with Breadbord

1TS-140B



Active Vibration Isolation System with Aluminium Breadbord

1TS-140B-ALE



1TS-140
Example of use

ORDERING INFORMATION

1TS-140	– solid board without holes
1TS-140B	– with breadboard **1HB05-06-025-001**
1TS-140B-ALE	– with aluminium breadbord **1B-ALE-50-60-015**

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Active Vibration Isolation Workstation

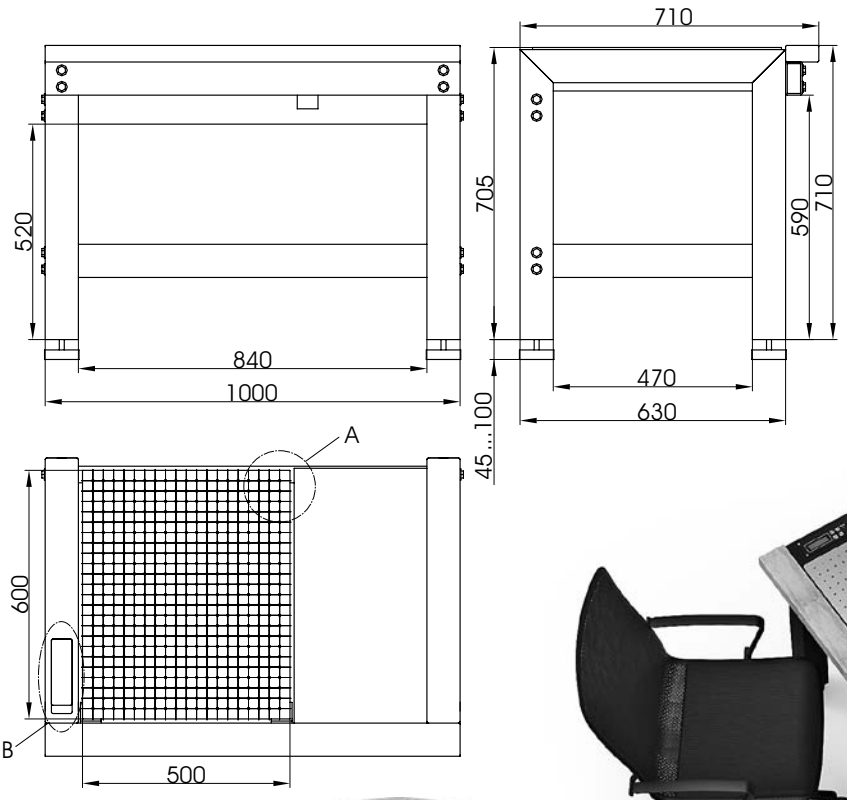
1TS-140W
1TS-140WB
1TS-140WB-ALE

APPLICATIONS

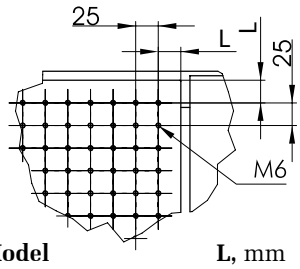
- Scanning probe microscopy
- Scanning electron microscopy
- Scanning near-field optical microscopy / NSOM
- Control laser microscopy
- Interferometry
- Metrology / Profilometry
- Nano indentation
- Nano lithography
- Ultrathin film applications
- Analytical balances
- Bio-physical measurement
  - * Single molecule investigations
  - * Cell micro infection
  - * Cell manipulation
  - * Patch clamp
  - * IVF techniques

Active vibration isolation workstation comprises of ergonomic rigid frame, guarding armrest and supplied with three modifications of active vibration isolation system: 1TS-140 with solid surface, 1TS-140B with honeycomb breadbord 1HB05-06-025-001 and 1TS-140B-ALE with aluminium breadbord 1B-ALE-50-60-015. The control panel is built into the frame and allows comfortable work. This system is extremely convenient to use. Load compensation is performed automatically on switching on the power. If the load is changed whilst the system is isolating, it automatically readjusts and then returns to the isolation mode. The workstation is design is optimized for such delicate instruments as AFM's, Laser Scanning Microscopes, SNOM's, profilometers, nanoindenters, etc.

Upon request we can make custom workstations with working surfaces 400 x 450 mm (maximum load 150 kg) and 600 x 800 mm (maximum load 120 kg).



view A for **1TS-140WB** and **1TS-140WB-ALE**



Model	L, mm
1TS-140WB	25
1TS-140WB-ALE	12.5

view B
control panel

ORDERING INFORMATION

1TS-140W	– with active system **1TS-140**
1TS-140WB	– with active system **1TS-140B**
1TS-140WB-ALE	– with active system **1TS-140B-ALE**

more info about **Active System 1TS-140** on **page 1-16**.

Ideal for use with **interferometers**, **atomic force microscopes**, scanning near field **optical microscopes**, and other equipment sensitive to low frequency vibrations.

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Active Vibration Isolation System

1TS-AVI200LP

This moderately priced dynamic vibration isolation system achieves in a very small volume better isolation than is possible with the biggest and most expensive passive systems. Inertial feedback is used via force transducers to provide not only isolation from building vibrations, but also isolation from vibration sources placed on the system itself. This means, for example, that a delicate microscope isolated by the system will remain at rest despite forces being applied via the operator's hands.

The inherent stiffness of the system, typically 500 times greater than that of a 1 Hz resonance passive isolator, imparts excellent directional and positional stability. The lack of any low frequency resonance, a resonance which plagues all passive systems, allows the systems to be stacked for super-isolation in severe environments.

The system is ideal for supporting delicate Fabry-Perot interferometers and tunnel-microscopes, allowing the ultimate performance to be achieved from these and other high resolution instruments. The tables have also proved to be extremely successful for supporting sensitive experiments, such as the troughs for liquids used in measurements on Langmuir-Blodgett films.

1TS-AVI200LP is an adaptable system consisting of two modules. Each module by itself isolates against vertical and horizontal translations and against rotations about one horizontal axis. The combination of two modules isolates against all six possible translational and rotational vibrations. The modules cannot be used separately.

Isolation of the standard **1TS-AVI200LP** system begins at about 1 Hz, increasing rapidly to at least 35 dB beyond 10 Hz. This system offers excellent isolation in the typical laboratory environment.

1TS-AVI200LP, a compact modular dynamic antivibration system offering isolation against all six translational and rotational vibrations.

SPECIFICATIONS	1TS-AVI200LPS-LP	1TS-AVI200LPM-LP
Isolation	dynamic 1.2 Hz to 200 Hz passive beyond 200 Hz	
Transmissibility	See transmission curve. Above 10 Hz transmissibility <0.017 (-35 dB)	
Correction forces	max. horizontal 4 N vertical 8 N	
Static Compliance	approx. 3,5 μm/N vertical and 7 μm/N horizontal	
Maximum Load	400 kg (single unit: 200 kg)	
Size (single unit)	350×90×115 mm	600×90×115 mm
Weight	10 kg – (single unit)	

Control Unit

Safety class	1
Power consumption	typically 9 W
Input voltage	90–125 VAC / 200–250 VAC, +/- 10% , 50–60 Hz
Fuses	2×1.6 A / 250 V slow, located in the power socket on the rear side of the unit
Overload Indication	8 LEDs
Monitor Signal	A multiplexed signal for display on oscilloscope shows vibration levels with and without isolation – for diagnostic purpose only

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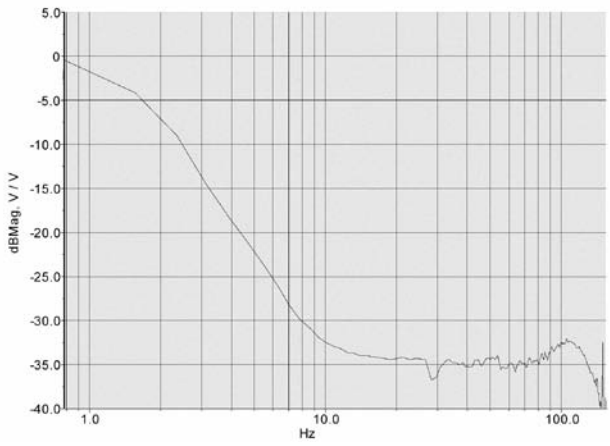
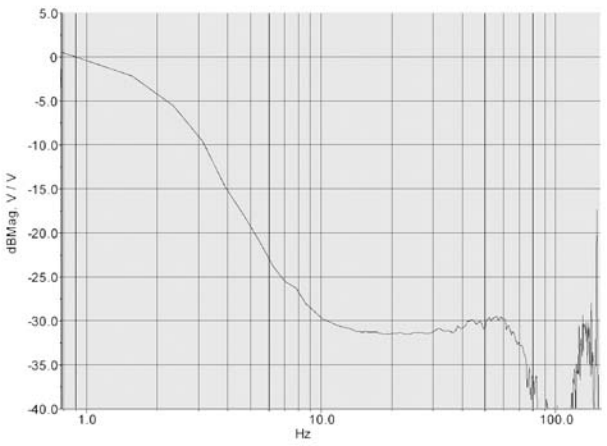
TRANSMISSIBILITY

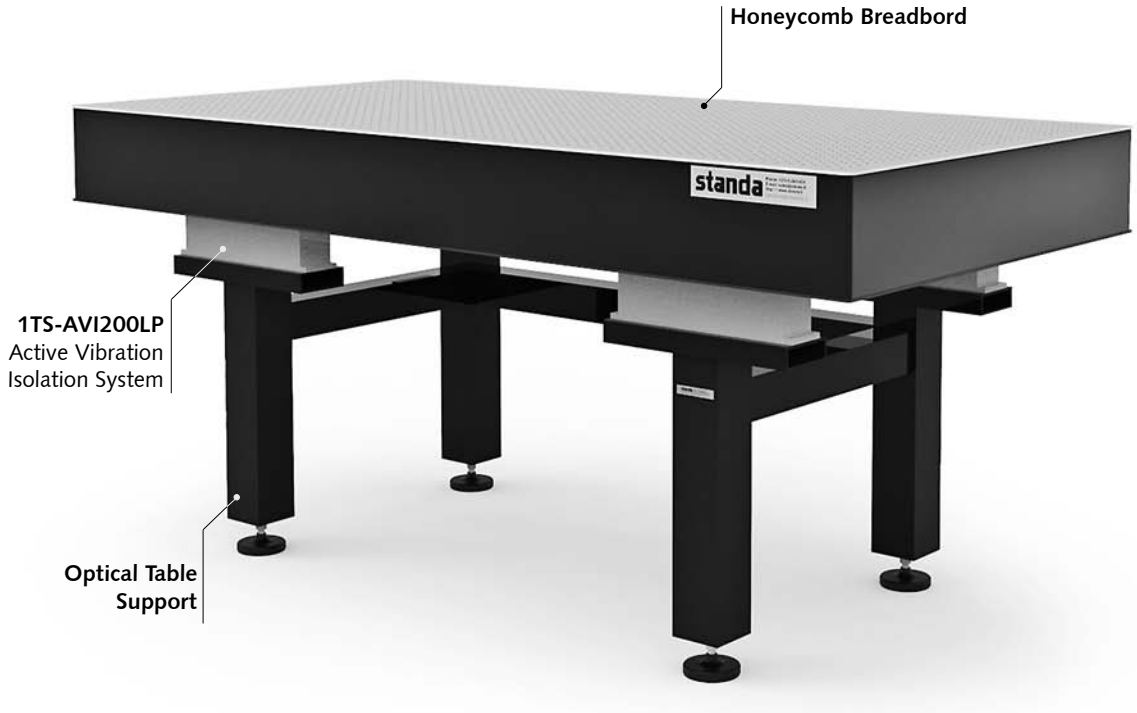


Vertical



Horizontal

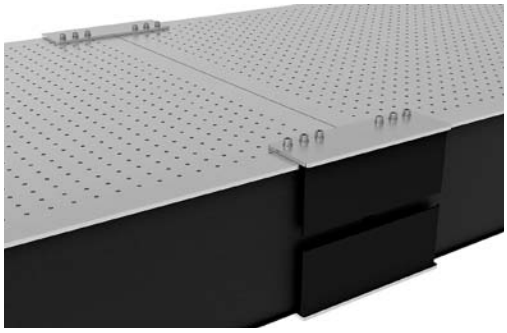
1TS-AVI200LP with a standard honeycomb board for loads 0–400 kg.
(Loads up to 200 kg per unit)



1TS-AVI200LP with a standard **Honeycomb Breadbord** and with **1TS Table Support**

Table Connectors

1C



- **Link table tops together in various configurations**
- **Easy assemblage**
- **On request easily adapted to any Table Top**

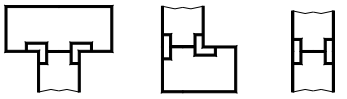


Table Connectors **1C** enable to connect most table tops in any configuration: T, L, or I.

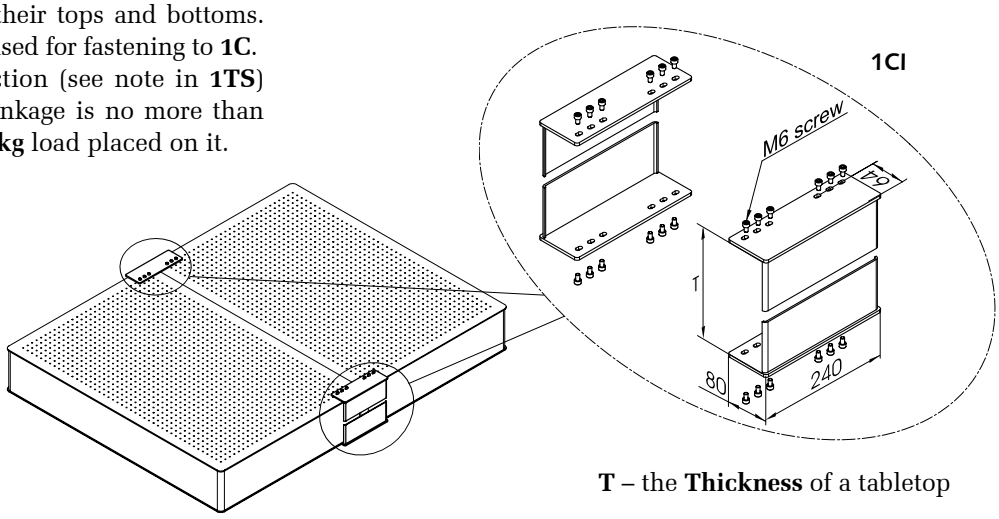
Table Connectors 1C render quick and reliable way to link table tops together. The tables, being linked, usually have **M6** tapped mounting holes on their tops and bottoms. The same holes are used for fastening to **1C**.

At minimal deflection (see note in **1TS**) the rigidity of the linkage is no more than **15 μm/m** under **100 kg** load placed on it.

Below is the table of codes for ordering of a **standard** Table Connecting system.

You are welcome to request custom systems.

Model	**T**, mm
1CT	200
1CL	200
1CI	200
1CT-120	120
1CL-120	120
1CI-120	120
1CT-70	70
1CL-70	70
1CI-70	70



T – the **Thickness** of a tabletop

*for more **Optical Table** connection options*
*please visit **WWW.STANDA.LT***

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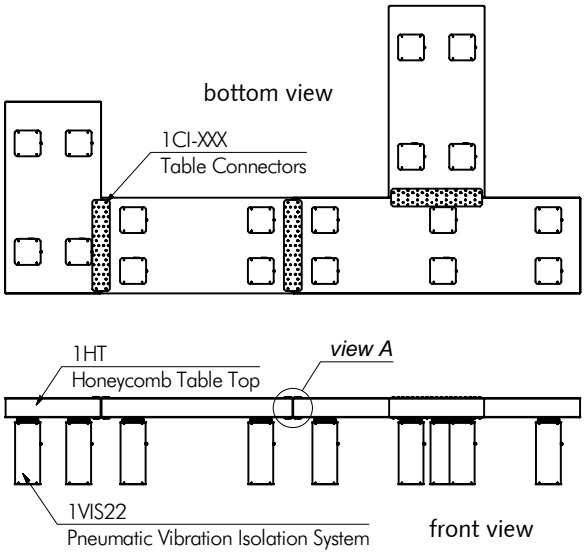
Table Connectors

new

1CI-XXX



- **Recommended for use with pneumatic vibration isolation systems**
- **End-to-end, side-to-side or side-to-end connectivity**
- **Individual assembly and testing of each system**

STANDA **optical table connector system 1CI-XXX** allow users to connect two or more optical tables without compromising on rigidity or damping properties. Various combinations like "T", "U" or "L" shaped table systems can be obtained using STANDA connecting system. The **connecting system** uses **two** 5 mm thick **stainless steel plates** attached to the **top** and **bottom** of holding area. This distributes the shear forces equally along the joined area (see drawing below). Once connected, the table system can be handled like monolithic structure.

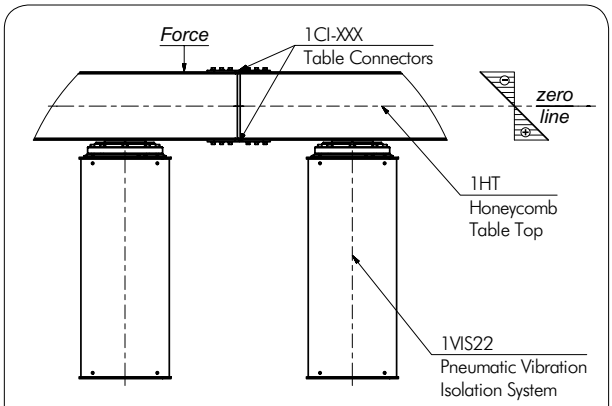
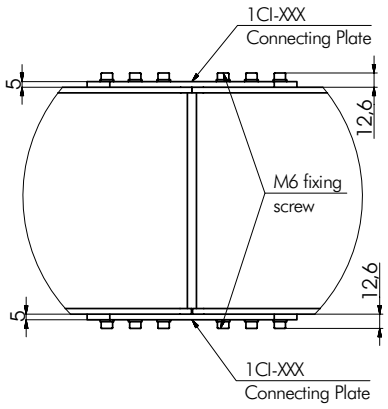
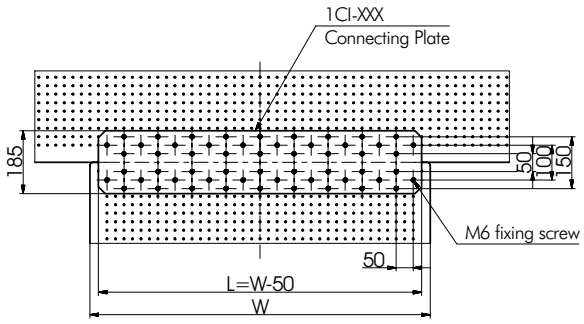


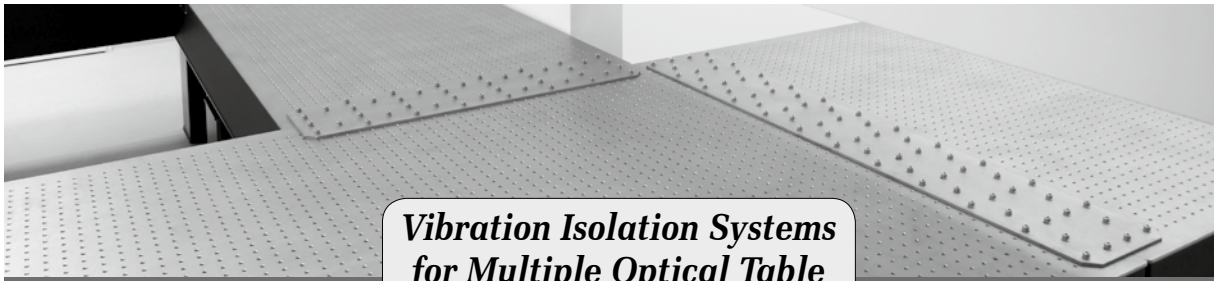
Diagram of Forces in the Table Tops



view A



view B



Vibration Isolation Systems for Multiple Optical Table set-ups on Request

ORDERING EXAMPLE

1CI-**XXX**

XXX=L=W-50

The **lenght "L"** of **Table Connectors** equal the **width "W"** of **Honeycomb Table Top 1HT/1HB** minus **50mm**

Examples of codes for 1CI-XXX:

1CI-950	for connection of **1000**mm width Honeycomb Tables 1HT**10**-XX-XX
1CI-1150	for connection of **1200**mm width Honeycomb Tables 1HT**12**-XX-XX

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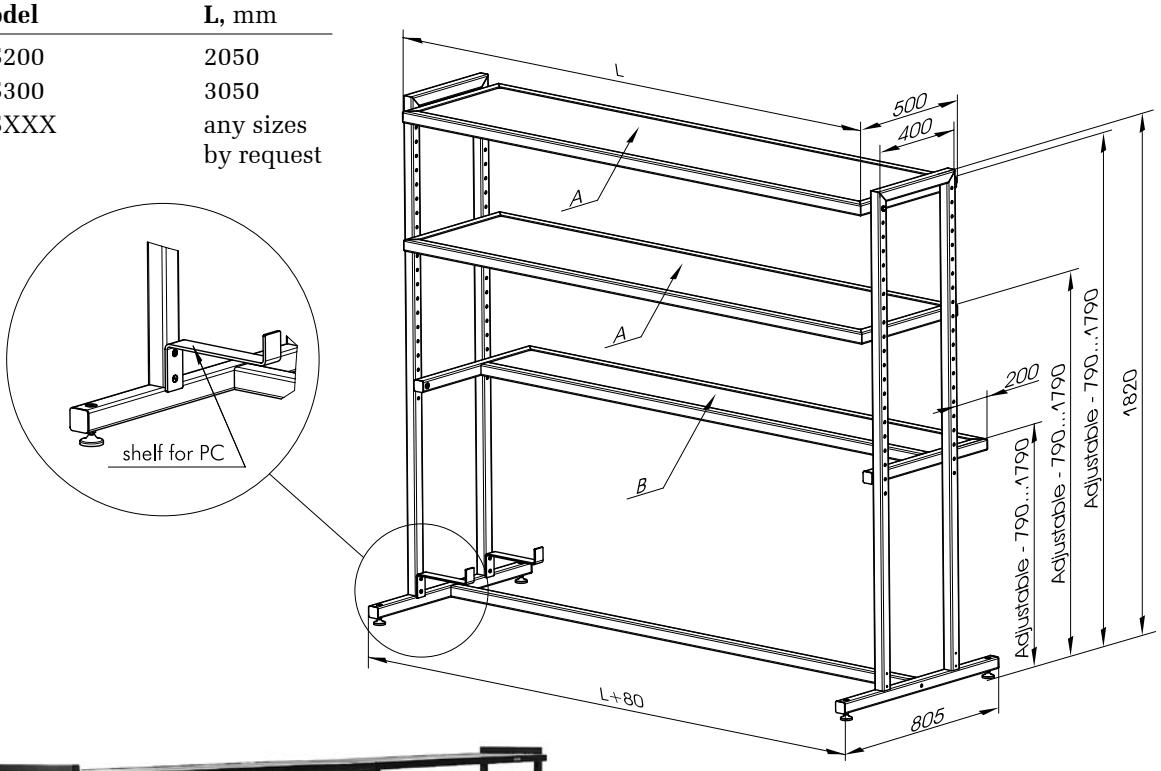
Instrument Shelves

1IS

- **Free-standing**
- **Can be positioned anywhere over the table**
- **Does not affect vibration isolation**
- **Adjustable shelf height**
- **Sturdy metal frame supports heavy loads**

Instrument Shelves 1IS provide convenient off-the-table mounting and storage for power supplies, controllers, oscilloscopes and other instruments. They are not connected with the table and does not affect vibration isolation. The height of shelves can be adjusted easily. The space saving shelf also allows wires and cables to be neatly routed away from critical setups.

Model	**L**, mm
1IS200	2050
1IS300	3050
1ISXXX	any sizes by request



Examples of codes for 1IS200:

1IS200-A	one A shelf
1IS200-B	one B shelf
1IS200-AA	two A shelves
1IS200-AB	one A shelf and one B shelf
1IS200-AAB	two A shelves and one B shelf

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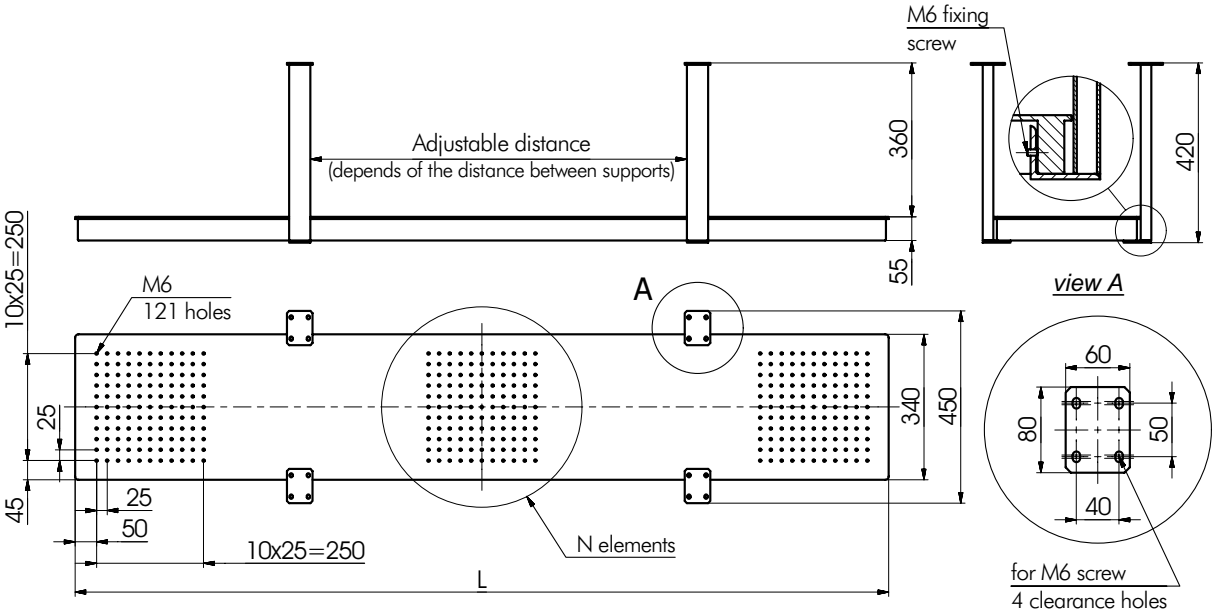
Laser Shelves

1LS52

1LS52-19

Laser shelves 1LS52 are optional breadboards. They save space when installing a laser and other equipment beneath optical table tops. A shelf stays mechanically coupled to the table top. The shelves have a pattern of **M6** holes.

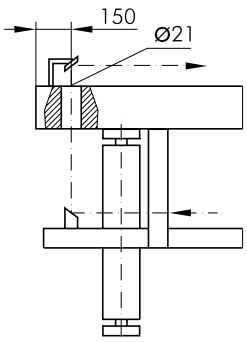
1LS52 has **M6** screws to attach **directly** to the bottom of a table top. So it can be used with any table top, with any support, or vibration isolation. Location of attachment (holes) can be standard, or specified by a customer.



1LS52 attach anywhere – no restrictions.

Model	L, mm	N	Weight, kg	Load capacity, kg
1LS52-09	900	2	26	200
1LS52-19	1900	3	47	200

Shelves of custom sizes are available.



Laser Ports in a **Table Top** are used to let a laser beam or cables through. Standard location of a port is chosen for use with the Laser Shelves **1LS52**.

When ordering, append letter **"H"** to the code of a Honeycomb Table Top e.g. 1HT10-20-20H (**see article 1HT**).

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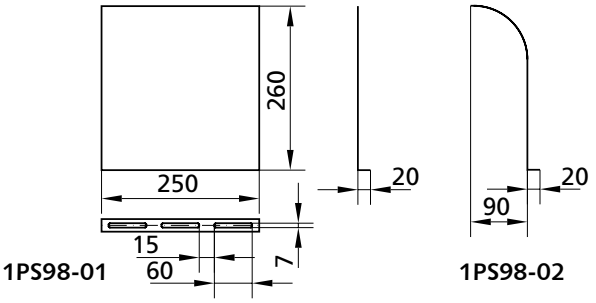
Protective Screens

1PS98

1PS98-01

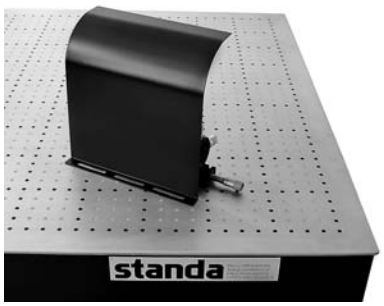
1PS98-02



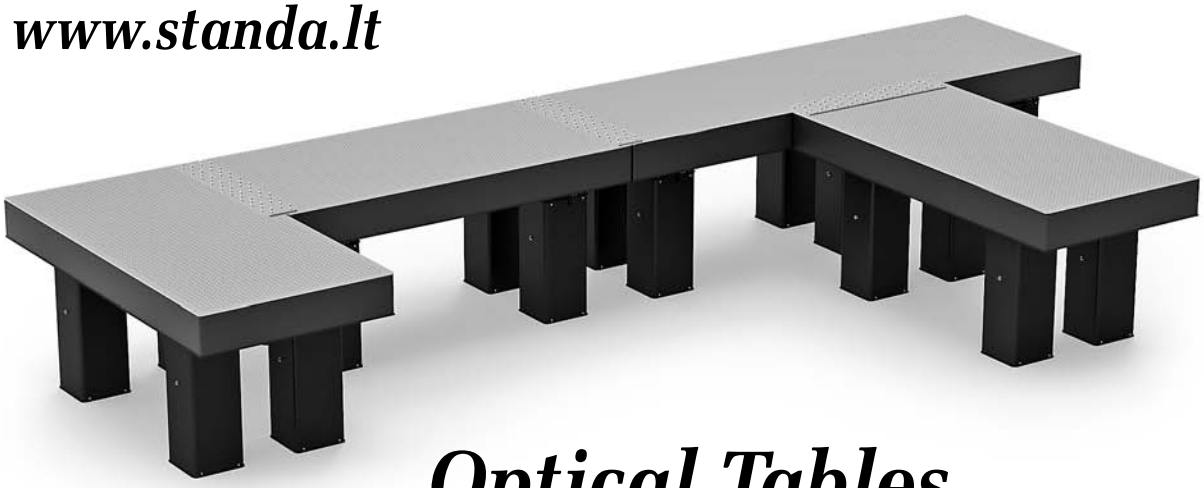
Protective Screens 1PS98 are designed to protect an optical setup from flashes, glitters and other undesired optical disturbances. The Protective Screens 1PS98-02 and 1PS98-02 are provided with three mounting slots and can be mounted anywhere on the table.

The screens are produced from steel tin-plate of black finish.

Model	**Shape**	**Weight**, kg
1PS98-01	Straight	0.5
1PS98-02	Bent	0.5



More information at
www.standa.lt



Optical Tables
of any sizes and configurations !!!

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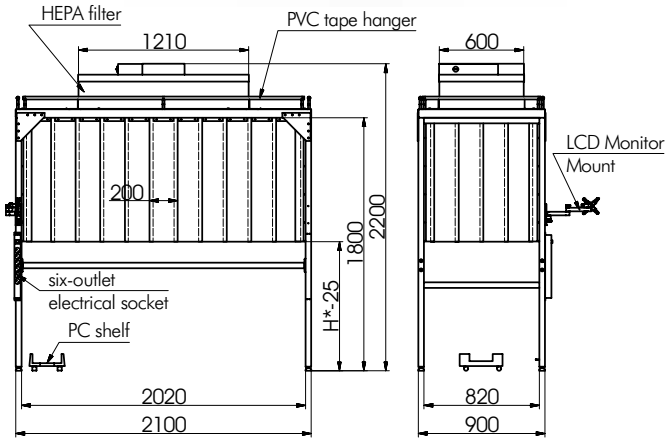
Laminar Tabletop Workstation

1CB

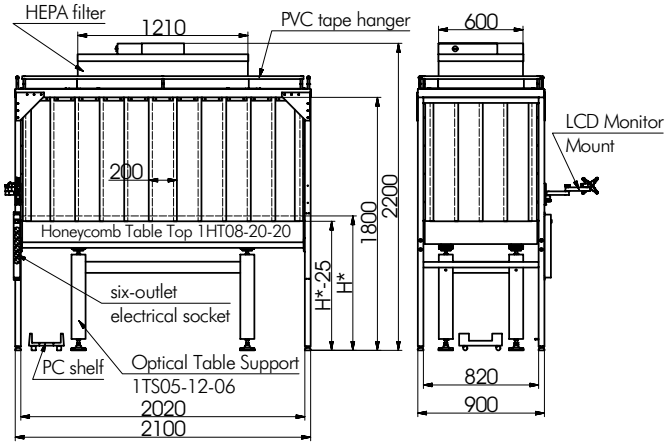
- **Extremely quiet fan <50 dBA**
- **Odorless plastic curtains**
- **HEPA air filter**

Laminar Flow Workstation 1CB is designed to provide a clean environment in any laboratory or workshop. Our filtering unit **1CB** consists of a H**EPA air filter** and **a steel frame** complete with odorless plastic curtains. The vertical aligned flow of filtered air ensures that clean air flows uniformly over the workstation, keeping your samples, or optics in a clean managed environment.

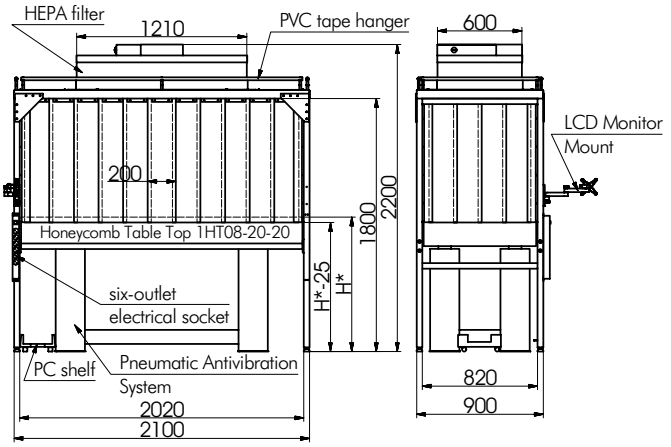
In a laser optics manufacturing, a laser repair or research environment, cleanliness of optical surfaces is imperative. The millions of particles present in most laboratories can fall onto optical surfaces, or they can be carried to optical surfaces by the energy in a laser beam. Once on the surface the lasing beam will burn the particles onto the coating, causing attenuation of the intra cavity energy. In addition the burnt particle will absorb more energy and cause localized heating on the surface of the optic. The localized heating can cause thermal lensing and damage to the optical coating. When adding the **1CB** to your optical table you remove the particles and therefore the potential damage to your optics.



1CB-08-20



1CB-08-20-TS



1CB-08-20-VIS

ORDERING INFORMATION

As an example model – **1CB-08-20-TS** combines the proven **1HT08-20-20 (800 × 2000 × 200 mm) honeycomb tabletop**, the sturdy **1TS05-12-06-AR table support** and the NEW **1CT-08-20 air filter** unit complete with curtains. For greater **stability** and **performance** we suggest ordering a **Vibration Isolation System 1VIS (1CB-08-20-VIS)** instead of static rigid supports 1TS.

If you already have your optical table set up and wish to add the filtered air unit to your table, we can provide any custom size to suit your needs. Quantity of **HEPA filters** can be increased according to the customer's application dimensions.

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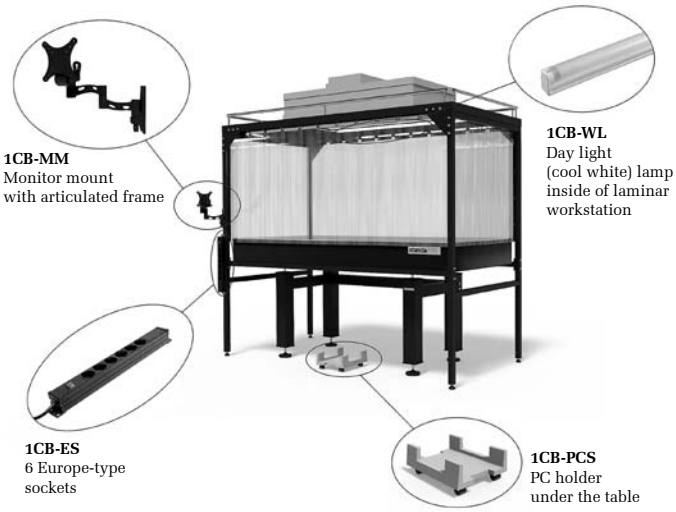

Laminar Tabletop workstation included features:

1CB-MM – Monitor mount with articulated frame
1CB-ES – 6 Europe-type sockets
1CB-WL – Day light (cool white) lamp
1CB-PCS – PC holder under the table

Featured units can be also ordered separately.

Filter specification

- Low sound, low watts, low profile, and low operating costs.
- Three speed switch features low, medium, and high settings; standard on all 2 ft × 4 ft (600 mm × 1210 mm) and 2 ft × 3.5 ft (600 mm × 1057 mm) units.
- Solid-state speed control standard on 2 ft × 2 ft (600 mm × 600 mm) and 2 ft × 3 ft (600 mm × 905 mm) units.
- Forward-inclined centrifugal-type fan.
- High Efficiency Particulate Air (HEPA) UL 900 Filter: 99.99 % efficient @ 0.3 micron.
- Extremely quiet <50 dBA.
- Snap-in pre filter allows for easy replacement and maintenance.
- Mill finished aluminum exterior.
- Tested to IEST recommended RPC standards.
- UL listed (120 V, 240 V, 277 V) with standard UL 900 filter.

ORDERING INFORMATION

1CB-08-20 — **Laminar Flow Workstation**
Air filter unit complete with curtains, for tabletop sized 800x2000 mm. Does not include tabletop or its legs.

1CB-08-20-TS — **Laminar Flow Workstation with rigid Table Supports**
Includes:
- tabletop 1HT08-20-20 (800 x 2000 x 200 mm);
- rigid table support 1TS05-12-06-AR;
- 1CB-08-20 air filter unit complete with curtains.

1CB-08-20-VIS — **Laminar Flow Workstation with Vibration Isolation System**
Includes:
tabletop 1HT08-20-20 (800 x 2000 x 200 mm);
- pneumatic vibration isolation system 1VIS22-70-4;
- 1CB-08-20 air filter unit complete with curtains.

1CB-ES — **Europe-type sockets** (additional)
1CB-MM — **Monitor mount with articulated frame** (additional)
1CB-PCS — **PC holder under the table** (additional)
1CB-WL — **Day light (cool white) lamp** (additional)

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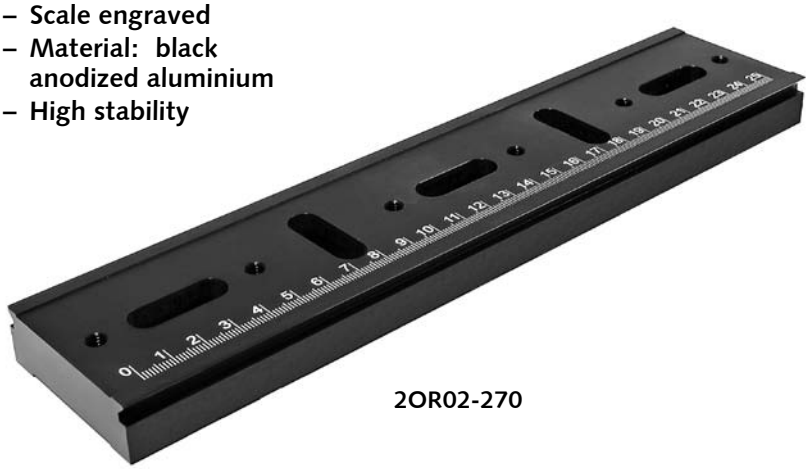
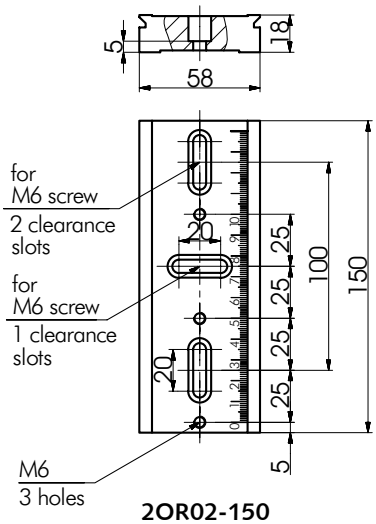
Aluminium Optical Rails

2OR02

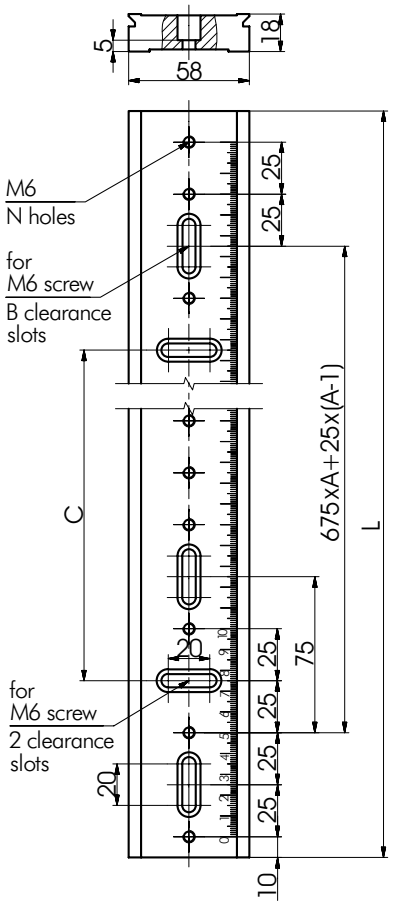
- **Easy sliding and fixing**
- **Scale engraved**
- **Material: black anodized aluminium**
- **High stability**



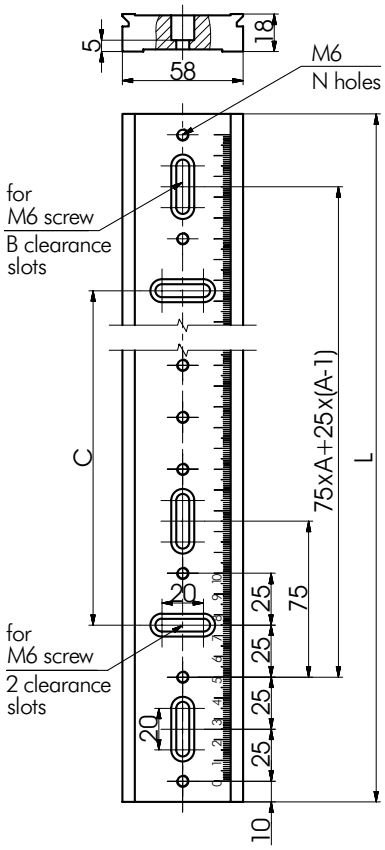
2OR02-270



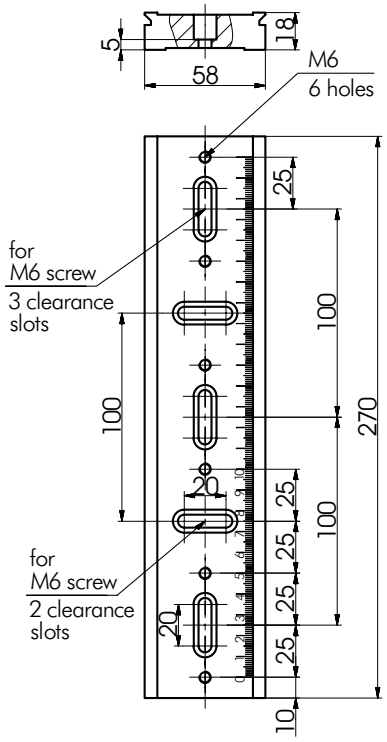
2OR02-150



2OR02-800
2OR02-1000

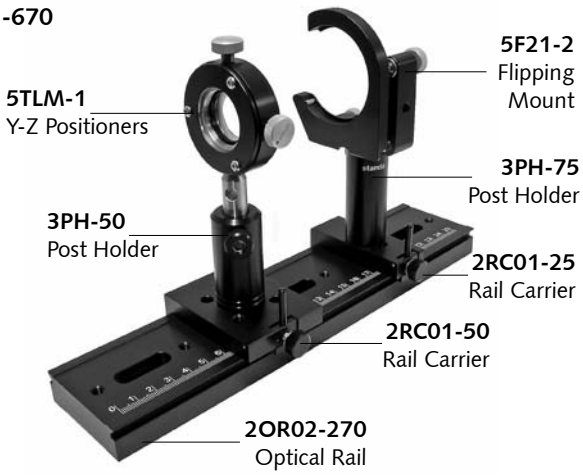


2OR02-470
2OR02-670



2OR02-270

Model	Length, mm	A	N	B	D	C	Weight, kg
2OR02-150	150	-	3	2	1	-	0.36
2OR02-270	270	2	6	3	2	100	0.66
2OR02-470	470	4	12	5	2	300	1.16
2OR02-670	670	6	18	7	2	500	1.65
2OR02-800	800	7	22	8	2	600	2.00
2OR02-1000	1000	9	28	10	2	800	2.40



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Aluminium Rail Carriers

2RC01-25 • 2RC01-50

2RC01-25

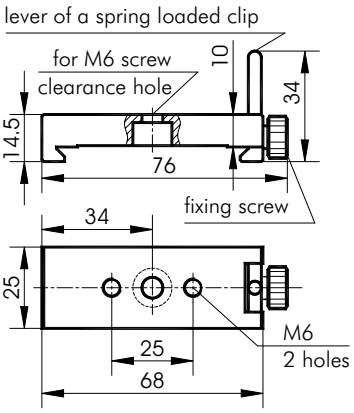
2RC01-50

- **Two locking options: by integrated spring clip, and by a fixing screw**
- **Quick and easy sliding**
- **Material: black anodized aluminium**

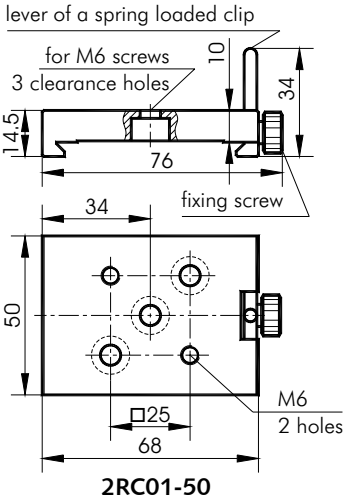
To release and to move, or to lift the carrier you push the lever of the **clip**. To stop the carrier firmly, use the fixing screw. Rather than grinding against, and damaging the rail with its tip, the screw gently clamps to the rail the wide tenon of the clip.

The **clip** is preloaded by a spring. Its **lever is removable** (on a thread).

Model	**Weight**, kg
2RC01-25	0.05
2RC01-50	0.09



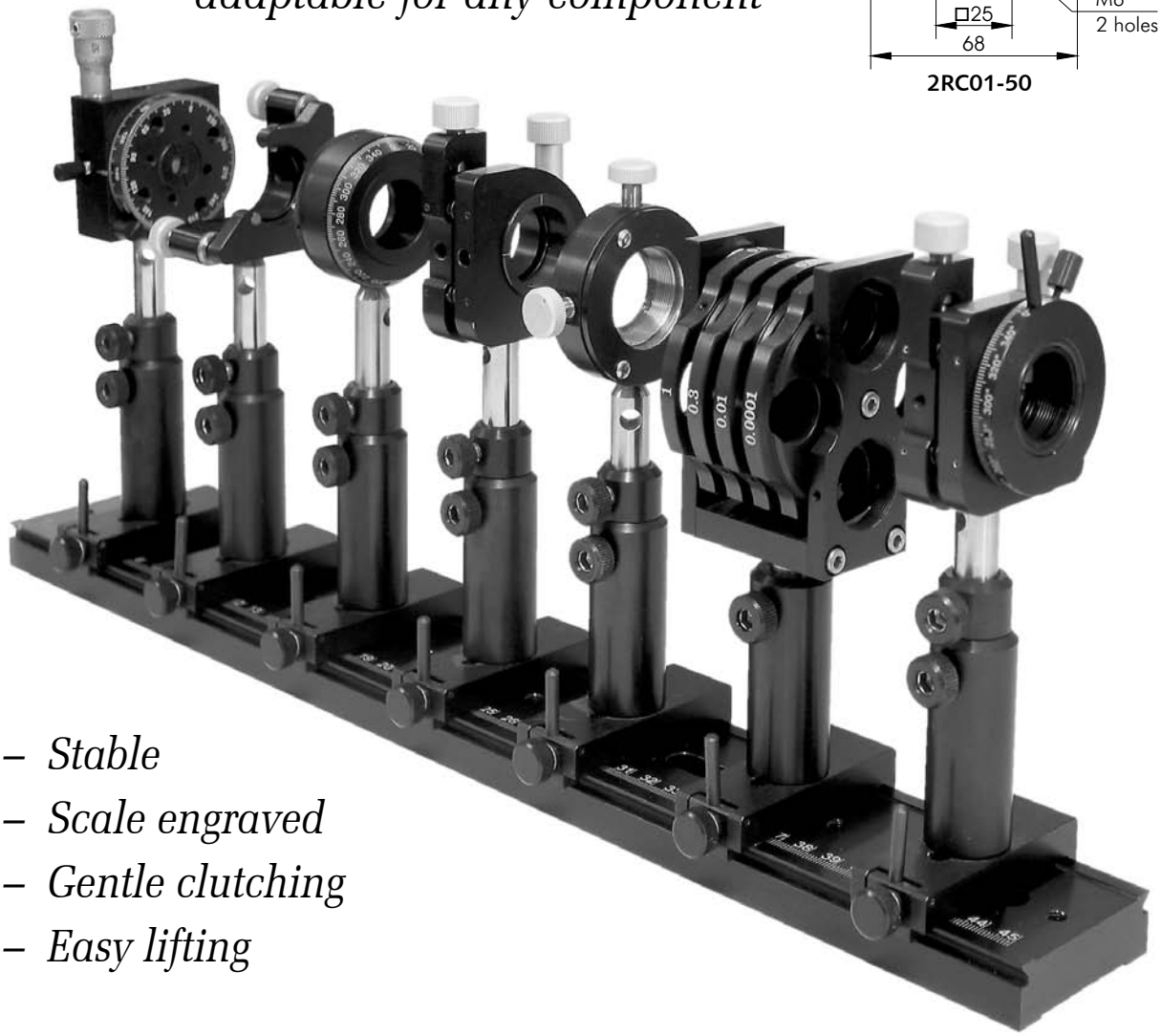
2RC01-25



2RC01-50

Optical Rail System 2OR02

adaptable for any component



- *Stable*
- *Scale engraved*
- *Gentle clutching*
- *Easy lifting*

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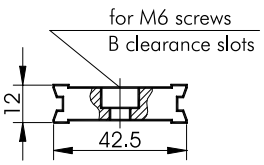
Steel Optical Rails

2OR6

Biger sizes available on request.

Rails with **transversal** clearance slots **2OR6-55T** are available to special orders.

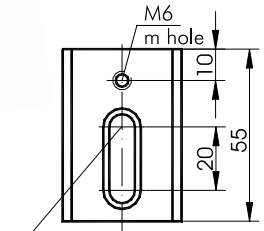


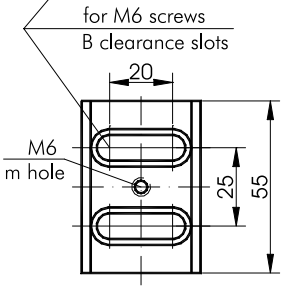
The Optical Rails 2OR6 have low profile and are made of hardened steel. Rails have patterns of **M6** tapped holes and of **6.4 mm** clearance slots. The holes and slots are used for mounting on optical plates, on opto-mechanical elements and for interconnections.

See related article **10ORS6**.

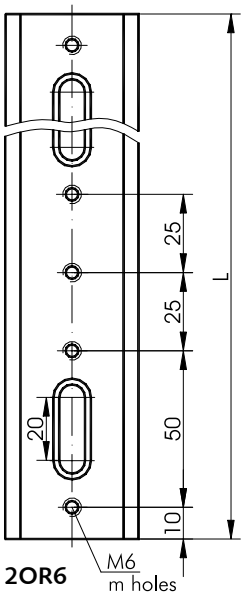
Model	L, mm	B	m	Weight, kg
2OR6-55	55	1	1	0.15
2OR6-55T	55	2	1	0.15
2OR6-270	270	2	8	0.76
2OR6-470	470	4	14	1.36
2OR6-670	670	6	20	1.93

2OR6-55





2OR6-55T



2OR6

Steel Rail Carriers

2RC6

2RC6-50

2RC6-50H

2RC6-25

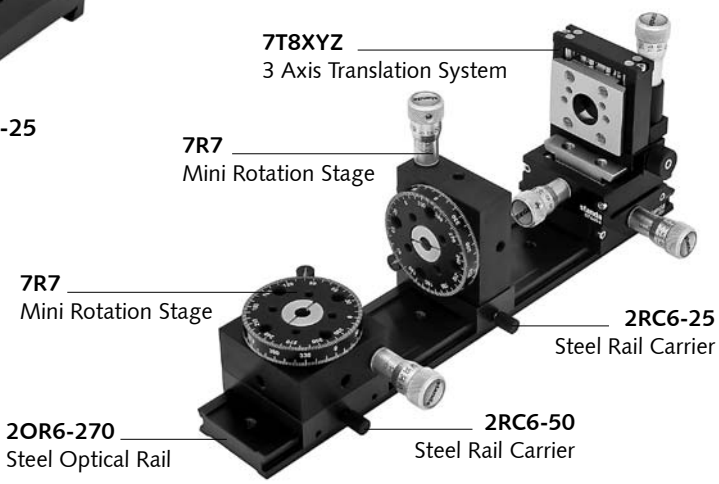
The Rail Carriers 2RC6-50, 2RC6-25 may be quickly lifted and set again on a rail. Slide the carrier to any point on the rail and secure it with the fixing screw.

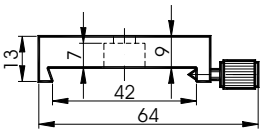
The carriers have patterns of **M6** and ∅**6.4 mm** mounting holes used to fasten other units. **2RC6-50H** has a ∅**18 mm** clear aperture. An article **Mini Optical Rail System 10ORS6** gives examples of use of the carriers.

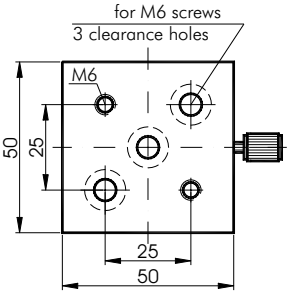
Precision Carriers 2RC6 come in two widths: **25 mm** and **50 mm**. Carrier 2RC6 may be used as a reference for repeated positioning. Units, such as **2RC6-50H**, **7T8-01**, may be reinserted exactly into the same position next to the reference carrier.

Rail Carriers are made of black finished hardened steel.

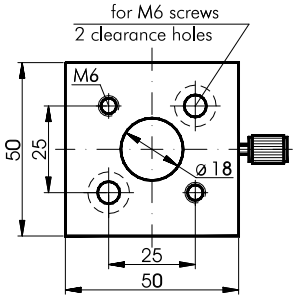
Weight:	2RC6-50	**0.16 kg**
	2RC6-50H	**0.15 kg**
	2RC6-25	**0.08 kg**



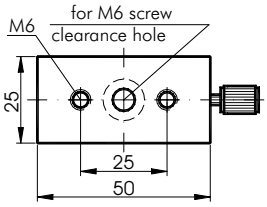




2RC6-50



2RC6-50H



2RC6-25

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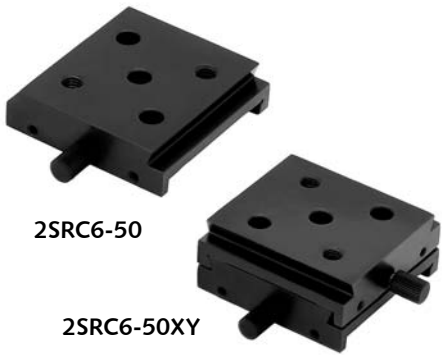
Steel Sliding Rail Carrier

2SRC6-50

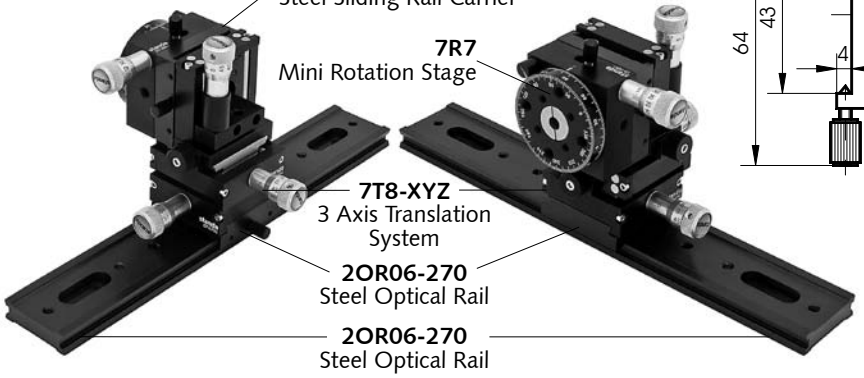


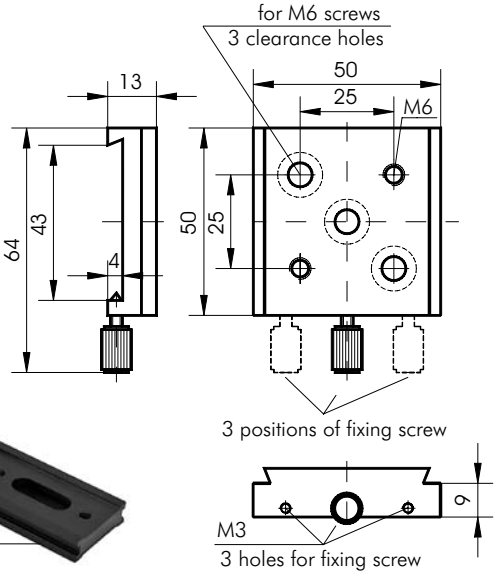
Sliding Rail Carrier 2SRC6-50 – a universal platform, which has additional upper rails, orthogonal to lower base rails.

The Carrier allows to attach any unit of **10ORS6 system** on the rail **2OR6**, to move it easily along the Optical Rail and to fix it across within **±15 mm**.

The carrier has a pattern of **M6** and ∅**6.4** mounting holes. Sliding Rail Carrier is made of black finished hardened steel.

Weight **0.14 kg**





Stacked rail carriers enable **only coarse** adjustment on axes X-Y. For **fine** adjustment use horizontal translators **7T8-01.**

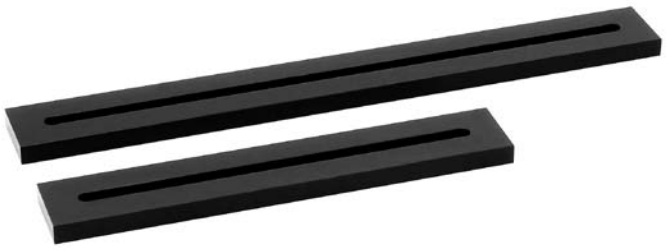
Z axis translator **7T8-02** can point its ∅**15** aperture 90° to the side – on single – or along the rail – on stacked carriers.

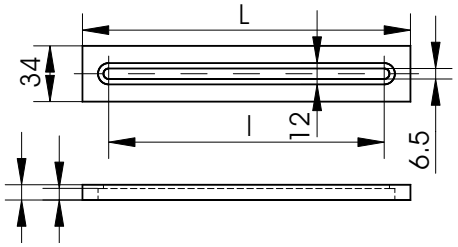
See also: optical rails 2OR6; 7R7 and 7T8 – a rotator and integrated rail carriers/translators; Optical Rail Systems (Section 10).

Multiple Mounting Plates

for **METRIC** and **INCH**

2MP





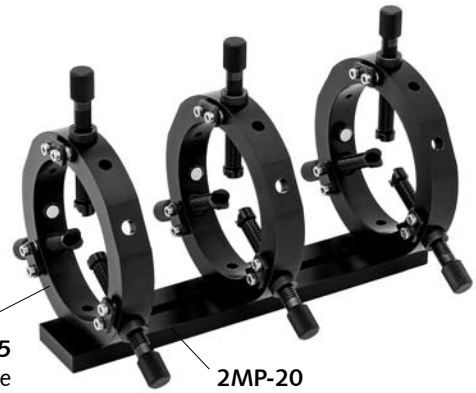
Multiple Mounting Plates 2MP allow to assemble **groups** of accessories **mounted** in close proximity and acting **as one unit** (e.g. a compound lens).

For example, the slot of the plate 2MP allows to mount Lens Holders **4LM149** using **M6** screws from beneath. Their positions can be adjusted on the plate.

2MP can be attached to tables, breadboards and rods of both metric and imperial standards at the desired height and orientation.

Material – black anodized aluminium.

Model	L, mm	l, mm	Weight, kg
2MP-30	300	265	0.5
2MP-20	200	165	0.35



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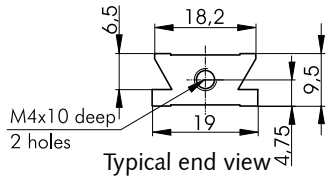
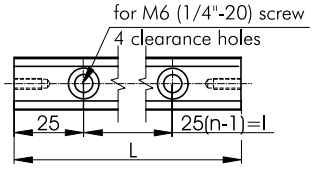
Construction Rails / Optical Rails

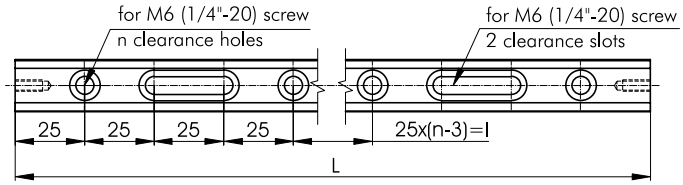
2OR19



Typical end view



2OR19-75; 2OR19-125; 2OR19-150



2OR19-300; 2OR19-450; 2OR19-600;

- **Optical Rail System**
- **Small Optical Rails**
- **Available in sizes ranging from 75 mm (3") to 600 mm (24")**
- **Compact Low-profile dovetail design**
- **Precision CNC machined on all surfaces**
- **Material: black anodized aluminium**

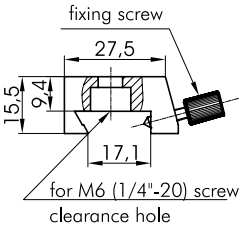
Model	L, mm	n	l	Weight, kg
2OR19-75	75	2	25	0.025
2OR19-125	125	4	75	0.04
2OR19-150	150	5	100	0.05
2OR19-300	300	7	100	0.1
2OR19-450	450	13	250	0.15
2OR19-600	600	19	400	0.2

Optical Rail Accesories

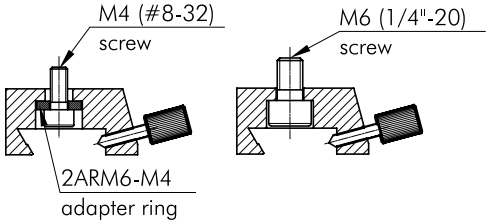
2RC19-25 • 2RC19-50

2RC19-25

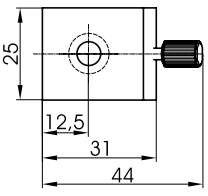
- **Rail carrier**
- **Essential Carriers for Optical Rail Setups**
- **Compact Dovetail design**
- **Precision Machined dovetail clamps**
- **Material: black anodized aluminium**



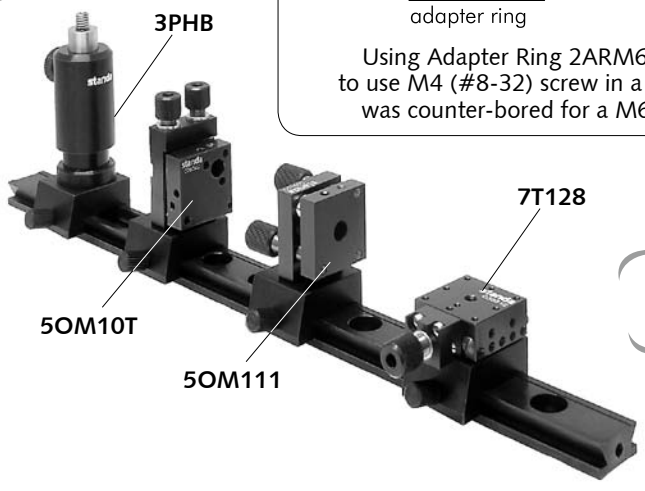
2ARM6-M4 - Adapter Ring



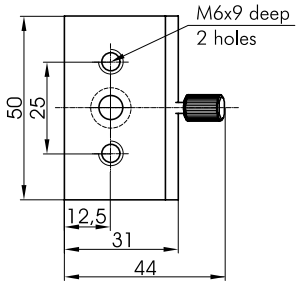
Using Adapter Ring 2ARM6-M4 it is possible to use M4 (#8-32) screw in a mounting hole that was counter-bored for a M6 (1/4"-20) screw.



2RC19-25



for METRIC and INCH



2RC19-50

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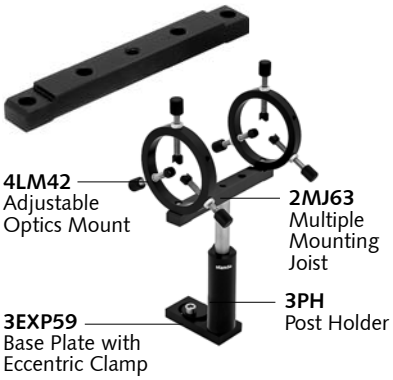
Multiple Mounting Joist

for METRIC and INCH

2MJ63

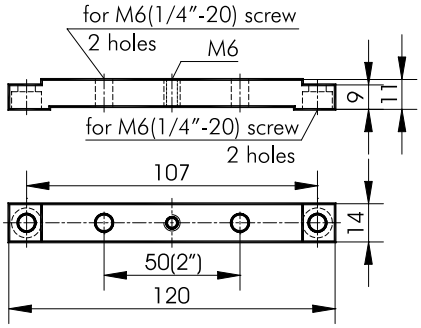


Joist 2MJ63 may be used, for example, to hold an assembly of long optical elements kept by two lens mounts (**4LM42**, **4LM149**).

The joist can be attached to tables, posts, and rods at the desired elevation and orientation.

Material: black finished steel.

Weight **0.1 kg**



Silent Rods

2SR32

- **Antivibration filling**
- **Ø32 mm stainless steel rod**
- **M6 tapped holes on both ends**
- **Designed for use with breadboards up to 0.5 m² square surface**

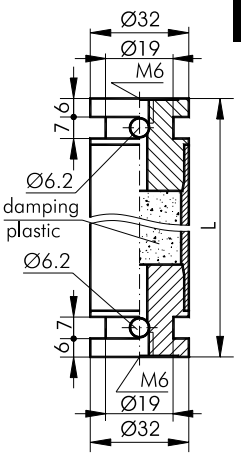
Great stiffness, sturdiness and strength of steel allow the rods to support large loads with great stability.

Each rod has **M6** tapped holes on, and a groove around both ends. So, for mounting to tables, you may use adapters **3AH**, and clamps like **3UTC**, **3TC5**.

A Silent Rod consists of a stainless steel tube filled with **vibration damping plastic**. Even without external damping elements applied, the rods have high resonant frequency and low vibration amplitudes.

Steel ensures strength and thermal stability.

3UTC clamp the rod exactly at the middle (page 3-4)



Model	L, mm	Weight, kg
2SR32-10	100	0.26
2SR32-20	200	0.54
2SR32-30	300	0.77

Adjustable Mounting Block

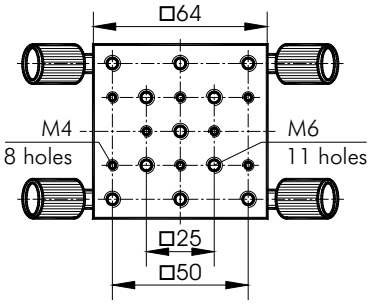
2AMB

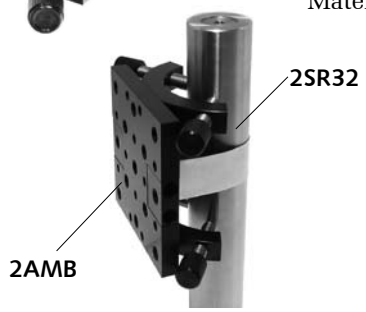
Adjustable Mounting Block 2AMB is a platform, which attaches to Silent Rods **2SR32**. It has a pattern of **M6** and **M4** holes for attachment of components.

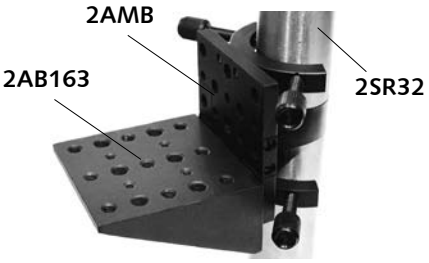
The orientation is adjusted by **4** screws in the range of **5°** in all angular coordinates.

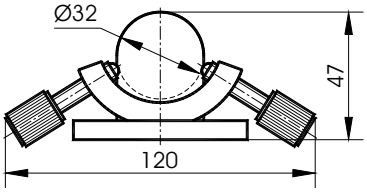
The same screws are used to fix the unit on the Silent Rod.

Material: black anodized aluminium.









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Angle Brackets

2AB

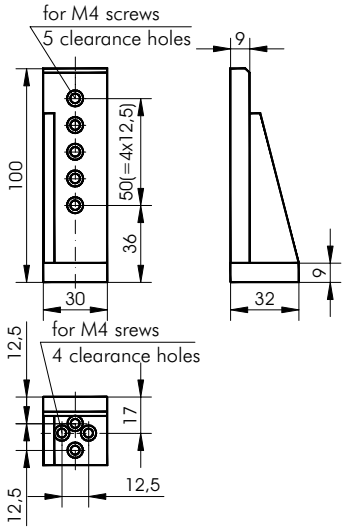
Rigid, **90°** angled mounting plates. Use them to transform "horizontal" translators into vertical ones. Orient rod mounted accessories parallel to the table surface. Create adjustable height supports for most optical accessories.

Angle Bracket

2AB173-20

- Weight – 0.11 kg
- Black anodized aluminium
- Designed to be used with

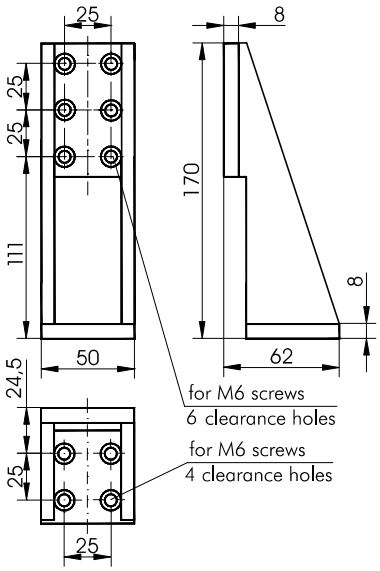
7T173-10
7T173-20
8MT173-20



8MT173-20XYZ

Angle Bracket

2AB175



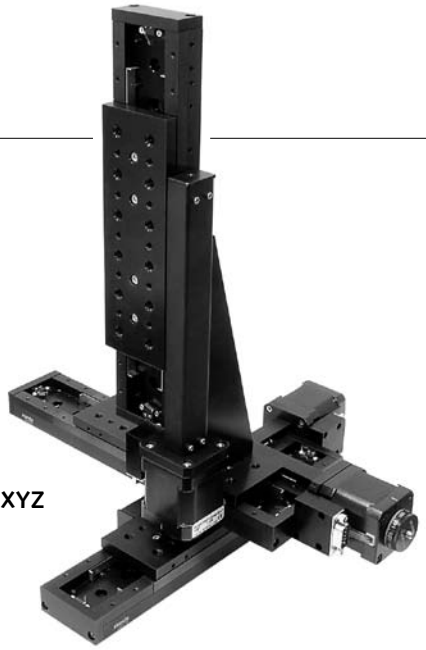
- Weight – 0.45 kg
- Black anodized aluminium
- Designed to be used with

7T175-50
7T175-100
7T175-150
8MT175-50
8MT175-100
8MT175-150
8MT175-200
8MT177-100
8MT50-100
8MT50-150
8MT50-200

7T175 series

8MT177-100

8MT175 series



8MT175-100XYZ

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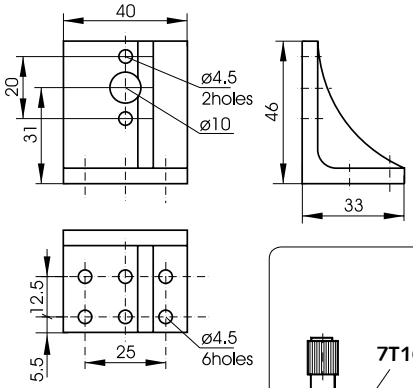
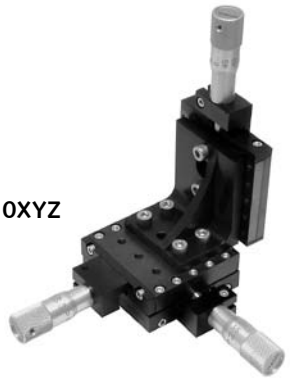
Angle Bracket — 2AB164

2AB164

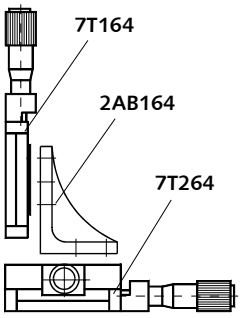


- Weight – 0.06 kg
- Black anodized aluminium
- Designed to be used with

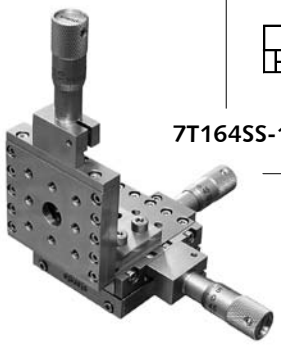
7T164-10
7T264-10
7T273-10



7T164-10XYZ



2AB164SS

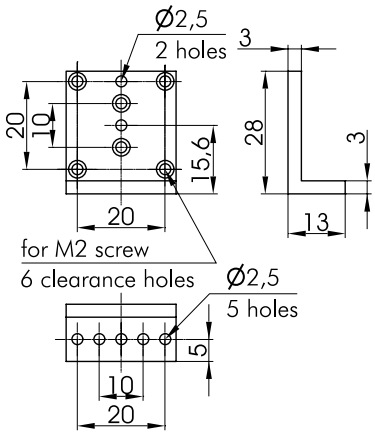


7T164SS-10XYZ

- Weight – 1.13 kg
- Stainless Steel
- Designed to be used with

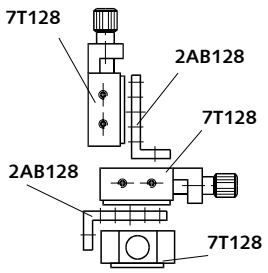
7T164SS-10
7T264SS-10

Angle Bracket — 2AB128



- Weight – 0.02 kg
- Black anodized aluminium
- Designed to be used with

7T128
7R128
7T228T



7T128XYZ

2AB111-128

- Weight – 0.02 kg
- Black anodized aluminium
- Designed to be used with

5OM111 **7R128**
7T128 **7T228T**

7T128XYZ

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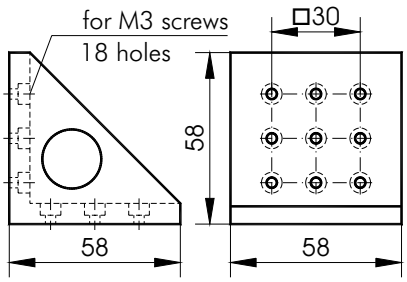
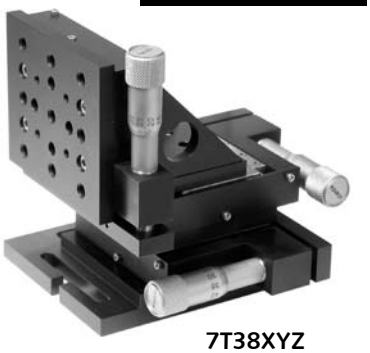
Angle Bracket

2AB38



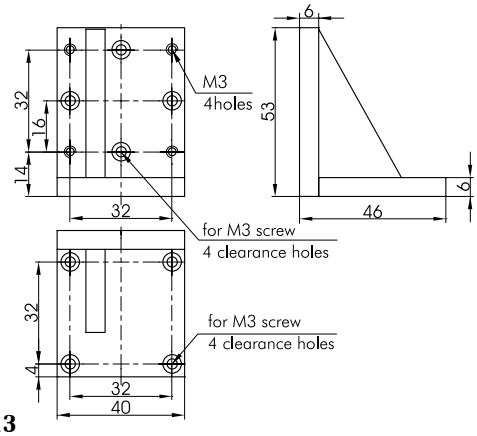


7T38XYZ

- Weight – 0.13 kg
- Black anodized aluminium
- Designed to be used with **7T38**

Angle Bracket

2AB174

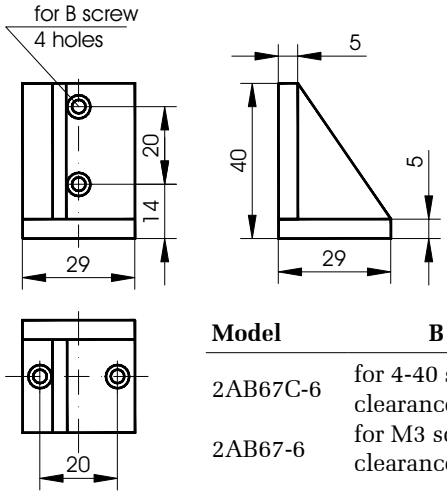


7T184-13XYZ

- Weight – 0.1 kg
- Black anodized aluminium
- Designed to be used with **7R174, 7T184-13, 8MT184-13**

Angle Bracket

2AB67-6



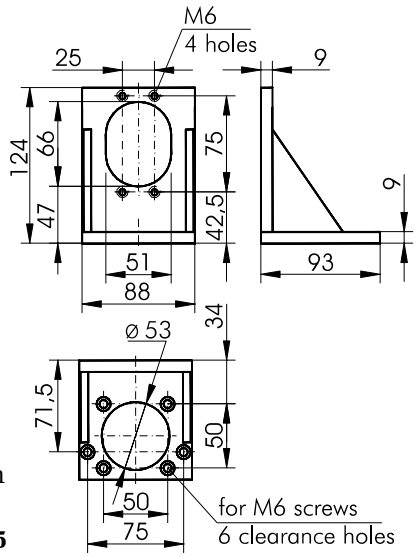
Model	B
2AB67C-6	for 4-40 screw clearance hole
2AB67-6	for M3 screw clearance hole

7T67-6XYZ

- Weight – 0.13 kg
- Stainless steel
- Designed to be used with **7T67-6**

Angle Bracket

2AB167-25



7T167-25XYZ

- Weight – 0.3 kg
- Black anodized aluminium
- Designed to be used with **7T167-25**
  8MT167-25

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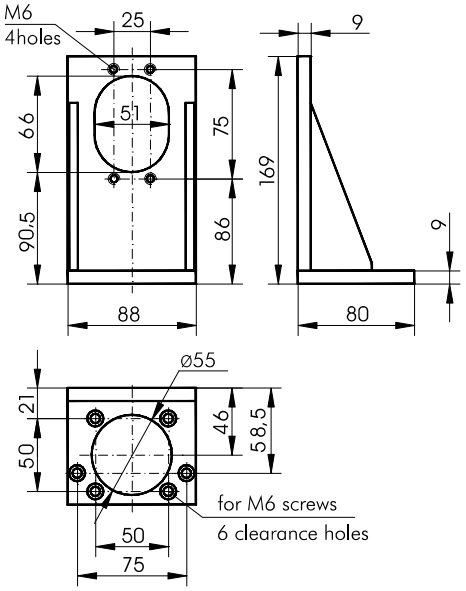
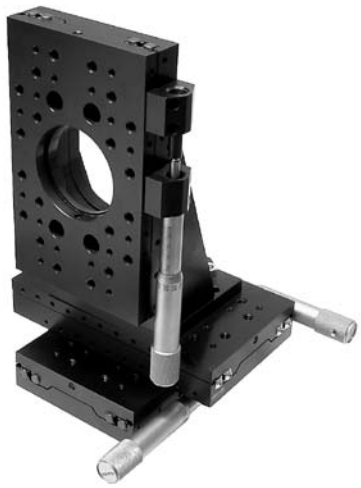
Angle Bracket

2AB167-50





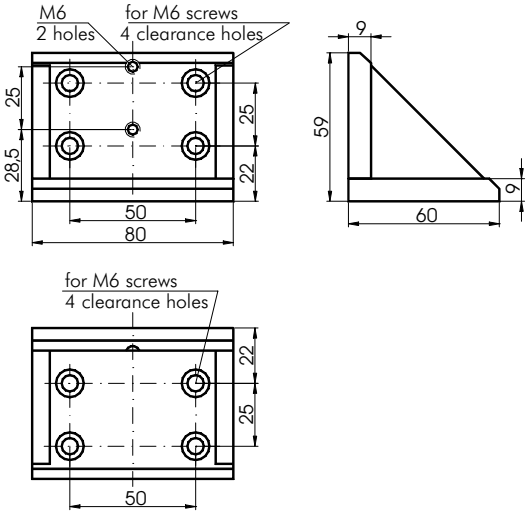
- Weight – 0.4 kg
- Black anodized aluminium
- Designed to be used with
  7T167-50
  8MT167-100

7T167-50XYZ

Angle Bracket

2AB67-25

2AB67SS-25



2AB67-25
2AB67-25-Al

7T67SS-25XYZ

- Weight
  2AB67-25 – 0.24 kg
  2AB67SS-25 – 0.24 kg
  2AB67-25-Al – 0.16 kg

7T67-25XYZ

- Material
  2AB67-25 – steel
  2AB67SS-25 – stainless steel
  2AB67-25-Al – black anodized aluminium

7T68-25XYZ

- Designed to be used with
  2AB67-25 – 7T67-25
  2AB67SS-25 – 7T67SS-25
  2AB67-25-Al – 7T68-25, 7T68-25T

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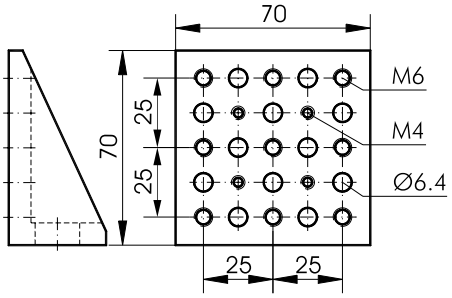
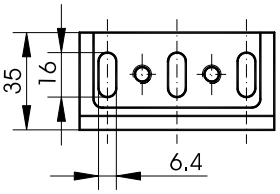
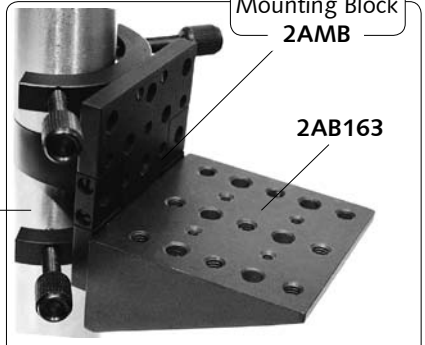
Angle Bracket

2AB163

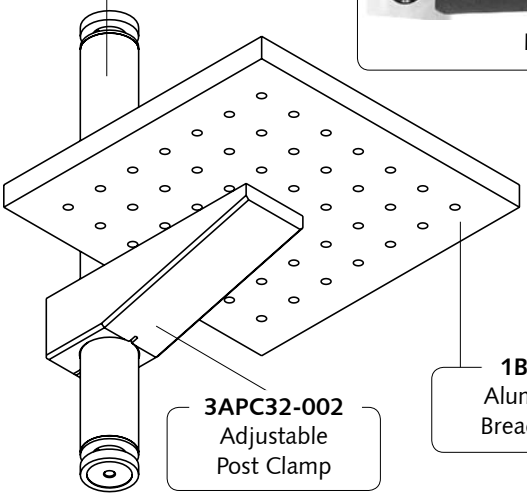
- Angle bracket for multi-purpose applications
- Weight – 0.15 kg
- Black anodized aluminium



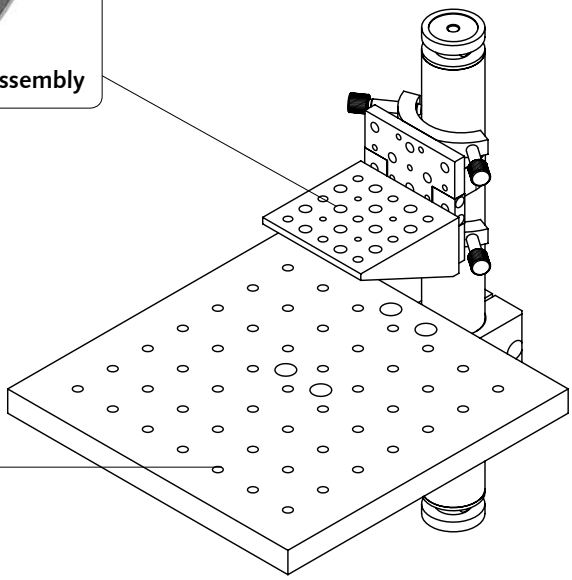




Silent Rods
2SR32



1B-ALE
Aluminium Breadboard



Mini Angle Brackets

2MAB111

5OM111
Optics Mount

2MAB111-01
Mini Angle Bracket

3SMP4-47
Mounting Post

3PH-33
Post Holder

3RBP-39
Round Base Plate

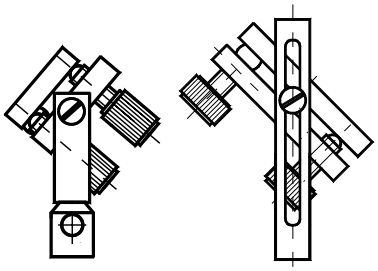
For coarse adjustment about horizontal axis compact Mirror mounts can be used with Mini Angle Brackets.

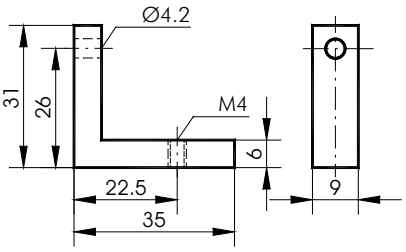
Mini Angle Brackets 2MAB111 are used to increase functions of **Mini** and **Micro** series Optical positioners **5BM121** and **5OM111**.

Model **2MAB111-01** allows to establish any angle of a positioner. **2MAB111-02** also allows height and position adjustment, as it has two **4.2 mm** clearance slots.

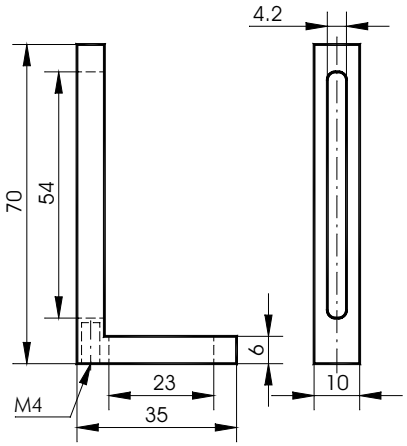
Mini Angle Brackets are made from black anodized aluminium.

Weight: 2MAB111-01 **0.01 kg**
2MAB111-02 **0.01 kg**





2MAB111-01



2MAB111-02

Post Mounting

Mounting Posts **3MP • 3SMP**

Series **12 mm**
Series **0.5 Inch**

Stainless Steel **Mounting Posts** have **M4** (**8-32** in imperial) and **M6** (**1/4-20** in imperial) holes on the ends.

Components can be mounted using **screws** or **3AH** adapters for different threads.

Each post can be attached directly to a base surface using adapters **3AH**.

See page 3-13 on Fasteners and Accessories.

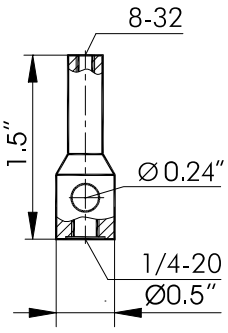
3MP-05-3 Riser post is designed for small units (see illustration below).

Special Mounting Post **3SMP** is designed for small units. Consider the narrow space between the knobs of mirror mount **5OM111** (see illustration below).

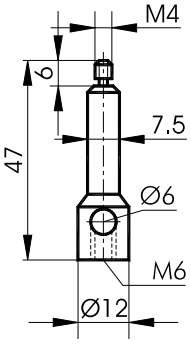
Adjustable Angle post clamps **3APC** can be used to couple the posts at varying angles.

Each post has a ∅**6.2 hole**. You use any wrench on this hole to tighten the post in a stable manner. A hex key 3HK-5 is quite suitable as a wrench.

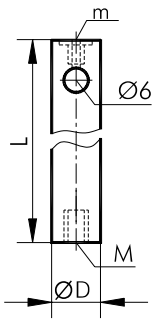
Please contact us for posts of custom sizes.



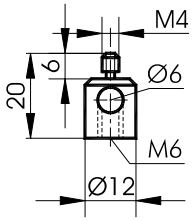
3SMP-Inch-05-1.5



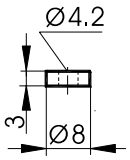
3SMP4-47



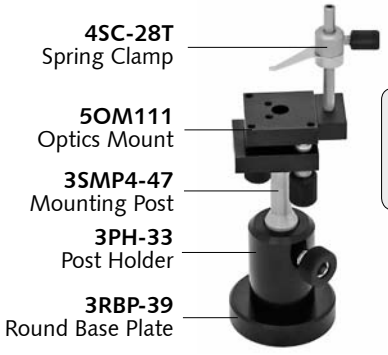
3MP



3MP4-20



3MP-05-3

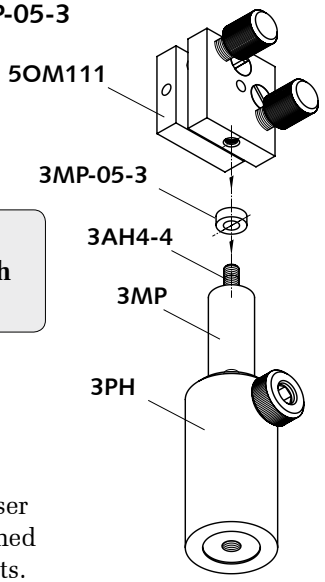


Ordering

Post mounting components of 0.5 inch series are produced on request.

Special Mounting Post **3SMP** is designed for small units. Consider the narrow space between the knobs of mirror mount **5OM111**

Use of **3SMP-05-3** riser post



3MP-05-3 Riser post is designed for small units.

Model *Metric*	L, mm	D, mm	M, mm	m, mm	Weight, kg
3MP-25	25	12	M6	M4	0.02
3MP-50	50	12	M6	M4	0.04
3MP-75	75	12	M6	M4	0.06
3MP-100	100	12	M6	M4	0.085
3MP-150	150	12	M6	M4	0.125
3MP4-20	–	–	–	–	0.01
3SMP4-47	–	–	–	–	0.02

Model *Inch*	L, inch	D, inch	M, inch	m, inch	Weight, kg
3MP-Inch-05-1	1	0.5	1/4-20	8-32	0.02
3MP-Inch-05-2	2	0.5	1/4-20	8-32	0.04
3MP-Inch-05-3	3	0.5	1/4-20	8-32	0.06
3MP-Inch-05-4	4	0.5	1/4-20	8-32	0.085
3MP-Inch-05-6	6	0.5	1/4-20	8-32	0.125
3SMP-Inch-05-1.5	–	–	–	–	0.01
3MP-05-3	–	–	–	–	0.01

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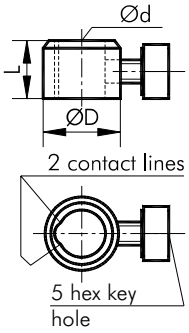
Post Collar 3PC

3PC8

3PC8-01



Placing an aluminium **Post Collar 3PC** onto the posts at specific height allows the post to be rotated without changing height. It fits **Ø12 mm** (**Ø0.5"** in imperial) posts.

Model ***Metric***	**L,** mm	**D,** mm	**d,** mm	**Weight,** kg
3PC8 3PC8-01	15	20	12	0.03

Model ***Inch***	**L,** inch	**D,** inch	**d,** inch	**Weight,** kg
3PC-05 3PC-05-1	0.6	0.83	0.5	0.03

Translating Post Holder 3TPH-13
see page 3-4

Posts/Post Holders Kit 3AK

ORDERING INFORMATION

3AK1 – posts/clamps kit
3AK2 – post holders/base plates kit

3AK1 CONTAINS:

Model	Name	Quantity
2MAB111-02	Mini angle bracket	5
3AH6-4	Thread adapter	50
3MP-05-3	Mounting post	5
3MP-25	Mounting post	10
3MP-50	Mounting post	15
3MP-75	Mounting post	15
3MP-100	Mounting post	5
3MP-150	Mounting post	5
3PC8	Post collar	5
3APC-12-12	Adjustable angle post clamp	3
3RPC-12	Right angle fixed post clamp	10
4SC-28M4	Spring clamp	2
4SC-52M4	Spring clamp	4
4PH132	Universal plate holder	2
4H29	Push holder	2

3AK2 CONTAINS:

Model	Name	Quantity
3PH(B)-33	Post holder	15
3PH(B)-50	Post holder	15
3PH(B)-75	Post holder	10
3PH(B)-100	Post holder	5
3PH(B)-150	Post holder	5
3TC7	Table clamp	10
3BP4-01	Base plate	10
3BP4-02	Base plate	10
3SBP1-02	Base plate	10
3UTC	Universal fork clamp	2
3EXC45	Rotary clamp	1
3RBP-39	Round Base Plate	2

Detailed information on **kits content** is provided at **www.STANDA.LT**

3AK-1

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Post Holders 3PH • 3PHB

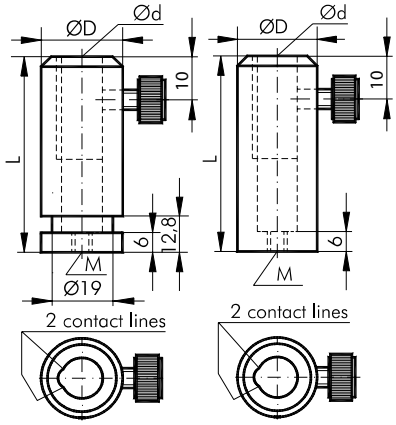
3PH

Aluminium **Post Holders 3PH** have a precise mounting opening for mounting posts **12 mm** (∅**0,5"** in imperial) in diameter. It provides two lines of contact, thus the position of a precision mounting post becomes definite. A mounting post is locked in position by a screw (included).

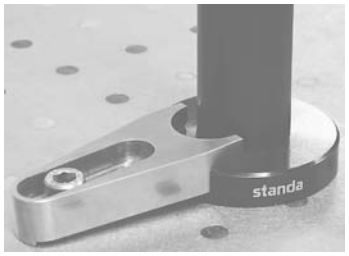
The post holders **3PH** can be mounted to other components using **screws**, or to breadboards and tables directly using adapters **3AH** (see article **Fasteners and Accessories** on page 3-13).

3PHB

We offer a **New Original Design** of **Post Holders 3PHB**, which offers more usage convenience and flexibility. This solution was influenced by many requests for more compact optical schemes. Previous design is modified by introducing a slot, which allows clamping post holders to mounting surface using clamps like **3UTC**, no additional parts required. Width of post holder with clamp does not exceed 1" (25 mm).



3PHB 3PH

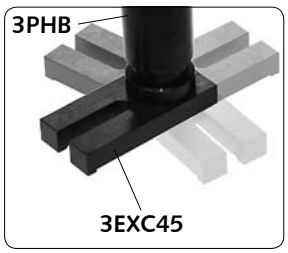


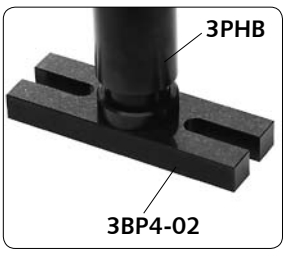
Ability to fasten post holders **3PHB** in the way of previous design **3PH** and the way of our competitors.

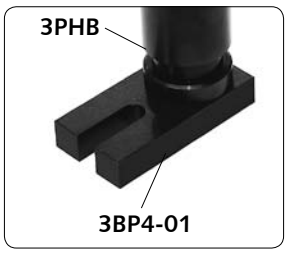
New original Standa solution. (Universal Clamp **3UTC** and New Post Holder **3PHB**)

Model *Metric*	L, mm	D, mm	d, mm	M, mm	Weight, kg
3PH-33	33	24	12	M6	0.035
3PH-50	50	24	12	M6	0.050
3PH-75	75	24	12	M6	0.075
3PH-100	100	24	12	M6	0.090
3PHB-33	33	24	12	M6	0.035
3PHB-50	50	24	12	M6	0.050
3PHB-75	75	24	12	M6	0.075
3PHB-100	100	24	12	M6	0.090
3PHB-150	150	24	12	M6	0.150

Model *Inch*	L, inch	D, inch	d, inch	M, inch	Weight, kg
3PH-Inch-05-1.2	1.2	0.98	0.5	1/4-20	0.035
3PH-Inch-05-2	2	0.98	0.5	1/4-20	0.050
3PH-Inch-05-3	3	0.98	0.5	1/4-20	0.075
3PH-Inch-05-4	4	0.98	0.5	1/4-20	0.090
3PHB-Inch-05-1.2	1.2	0.98	0.5	1/4-20	0.035
3PHB-Inch-05-2	2	0.98	0.5	1/4-20	0.050
3PHB-Inch-05-3	3	0.98	0.5	1/4-20	0.075
3PHB-Inch-05-4	4	0.98	0.5	1/4-20	0.090

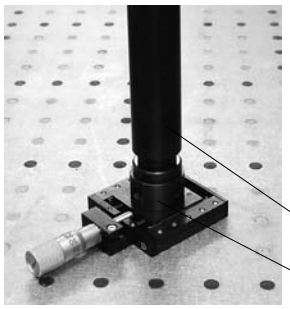


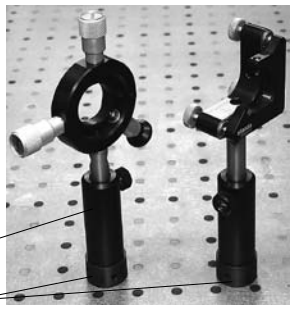




All possibilities of using post holders **3PHB** as in previous design **3PH** remain.

We draw your attention to very **convenient**, **fast** and **flexible** use of **post holders 3PHB** in experiments together with **Compact Magnetic Base 3CMB**, eliminating the need of coarse positioners.





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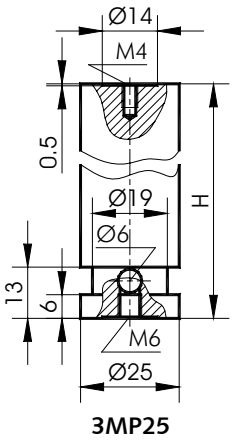
Fixed Pedestals

3MP25

- **Solid (Ø25 mm) stainless steel rod**
- **Random positioning**
- **Exceptional stability**

Model	Height H, mm	Weight, kg
3MP25-25	25	0.08
3MP25-50	50	0.17
3MP25-75	75	0.26
3MP25-100	100	0.36
3MP25-150	150	0.55

Thread adapters sold separately.



3MP25

Universal Fork Clamp

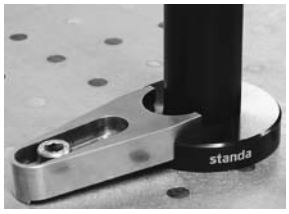
3UTC

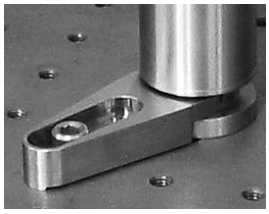
for **METRIC** *and* **INCH**

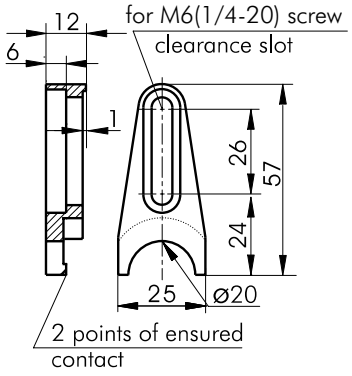
Material: stainless steel.
Weight: **0.05 kg**

For mounting **2SR32 rods** (page 2-6) or **3MP25 pedestals** (page 3-4) to tables, you may use **3AH adapters** or **3UTC clamp**.

For **adapters** and **screws** see page 3-13 on Fasteners and Accessories.







Translating Post Holder

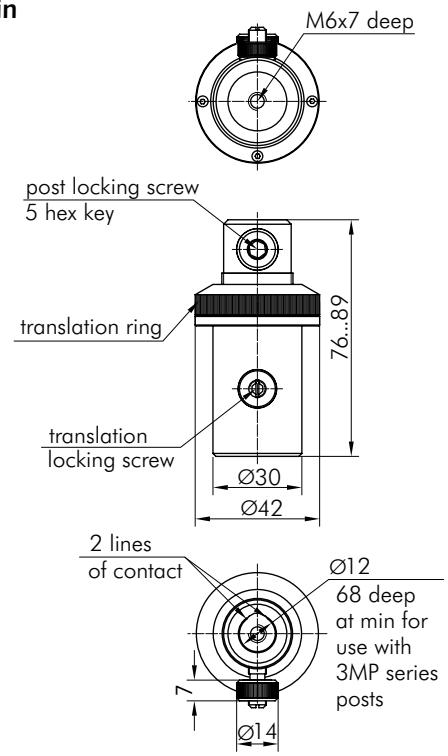
3TPH-13

Material: black anodized aluminum.
Weight: **0.15 kg**

- **Fine post height adjustment within 13 mm without rotation**
- **One rotation of adjustment ring adjusts height of post by 1 mm**
- **High stability position locking**

Translation Post Holder 3TPH-13 is used for height adjustment of components mounted on 12 mm posts **3MP** or equivalent. Range of coarse height setting is 50 mm. After coarsely setting position, post is locked inside the 12 mm round bore with stable two-line contact using upper thumbscrew with hex socket. Precise height adjustment is then done by a handy knurled adjustment ring. One rotation of the ring moves the post up or down 1 mm to a total of 13 mm. Precise position can be locked using the lower thumbscrew.

M6 threaded hole in the base can be used **for attaching directly to optical table**, to other positioners or to **magnetic bases 3CMB**.



Rotary Clamp

3EXC45

Material: steel with chemical black finish.

Weight: **0.08 kg**

Unique Rotary Clamp 3EXC45 is used to fasten components at random positions where they can not be fastened directly to the optical table.

Screw a post or post holder onto the clamp's knob. Then locate the component at the required position. While the knob is firmly attached to the component, it allows the plate to rotate freely. Position the plate's slot over a tapped hole and screw it down to clutch the knob. The component will remain stable.

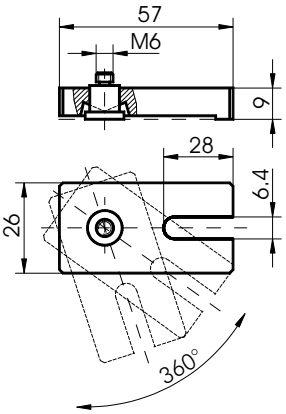


Table Clamp

for **METRIC** and **INCH**

3TC5

Using Table Clamps 3TC5 you can position any STANDA base and most base mounted components at any angle on the table and have not to be limited by mounting hole pattern of the optical table. For using clamps the device is positioned so the slot of the clamp is over the base and so the screw can be inserted into a tapped hole. Tightening this screw can generate sufficient force for most mounting applications.

Material: steel with chemical black finish.

Weight: **0.03 kg**

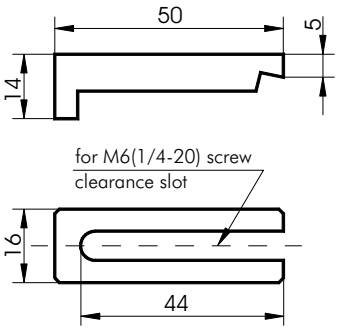


Table Clamps

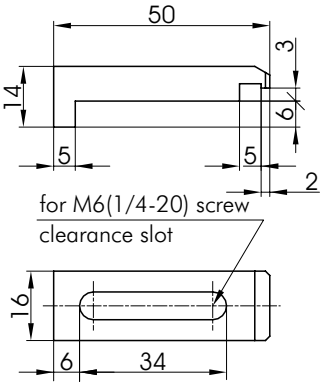
for **METRIC** and **INCH**

3TC6/3TC7

Using Table Clamps 3TC6 you can position any STANDA base and most base mounted components at any angle on the table and have not to be limited by mounting hole pattern of the optical table. For using clamps the device is positioned so the slot of the clamp is over the base and so the screw can be inserted into a tapped hole. Tightening this screw can generate sufficient force for most mounting applications.

Material: **3TC6** – steel with chemical black finish.
3TC7 – black anodized aluminum.

Weight: **0.03 kg**



Base Plates

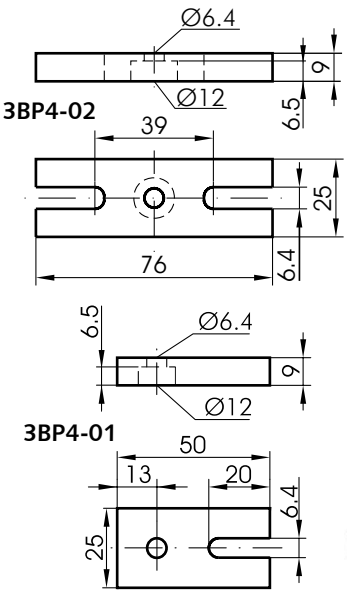
3BP4

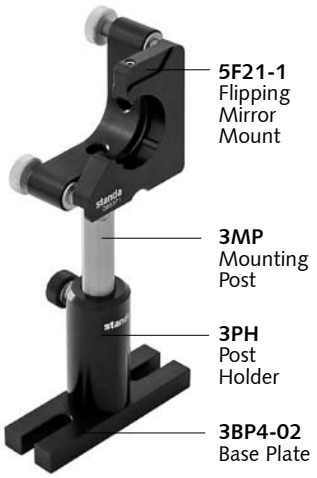
for **METRIC** and **INCH**

Base Plates 3BP4 are designed to position posts and post holders. The base is fastened by mounting slots, which allow to slide the base to positions independent of the pattern of holes.

Material: steel of black finish, or black anodized aluminum.

Weight: 3BP4-01 **0.07 kg**
3BP4-02 **0.10 kg**





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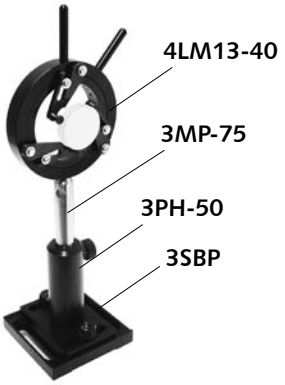
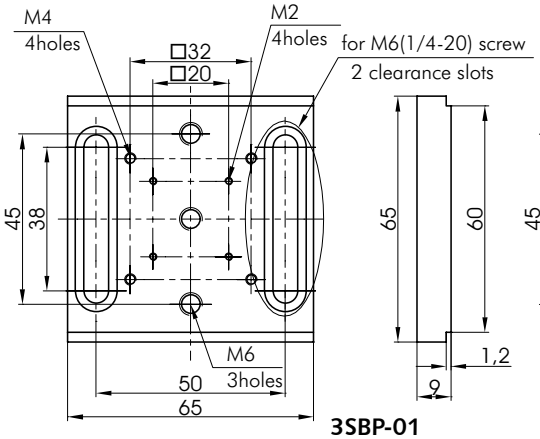
Sliding Base Plate

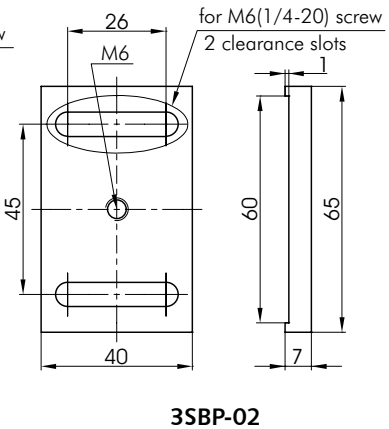
3SBP

3SBP





3SBP-01



3SBP-02

Sliding Base Plate 3SBP allows an M6 threaded post holder 3PH or other component to be cost effectively positioned and locked on **X and Y axes**. Adjustment range along **X** axis is within **26 mm**. **Y** axis – **38 mm**. **3SBP-01** is designed for attaching translation stages 7T184-13, 7VT174-13 and rotation stages 7R174-11, 7R128 to STANDA optical tables or to another stages.

Material: black anodized aluminium.

Weight: 3SBP-01 – **0.03 kg**;
3SBP-02 – **0.07 kg;**
3SBP – **0.18 kg**

Universal Base Plates

3UBP

3UBP-04

3UBP-02

3UBP-03

Universal Base Plates 3UBP are designed for attaching translation and rotation stages to STANDA optical tables or to another stages.

3UBP-03 is designed for 7T164-10, 7T264-10, 7T273-10, 7T273-10T, 7T184-13, 7VT174, 7T67-6, 7VT173-25, 7T34-20, 7R174-11, 7G174-30, 8MR174-11.

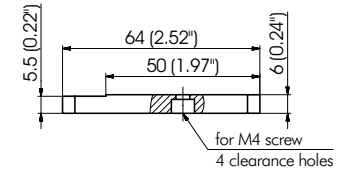
3UBP-02 is designed for the same stages like **3UBP-03**, plus 7T173-10, 7T173-20, 8MT173-10, 8MT173-20.

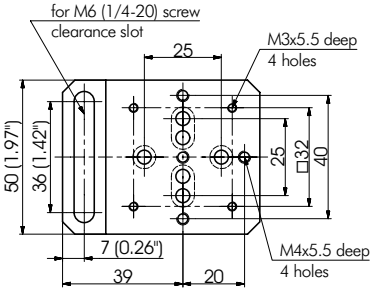
3UBP-04 is designed for the same stages like **3UBP-03**, plus 7T173 and 8MT173.

Material: black anodized aluminium.

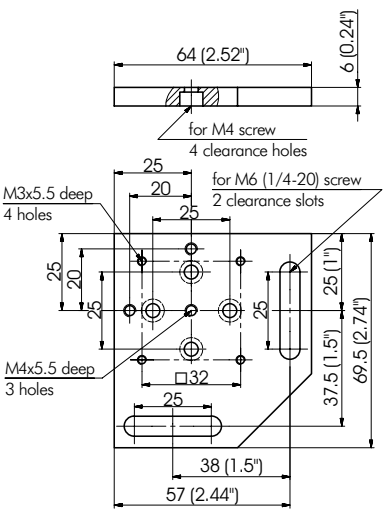
for **METRIC** and **INCH**

Weight:
3UBP-02: **0.04 kg**
3UBP-03: **0.06 kg**
3UBP-04: **0.05 kg**

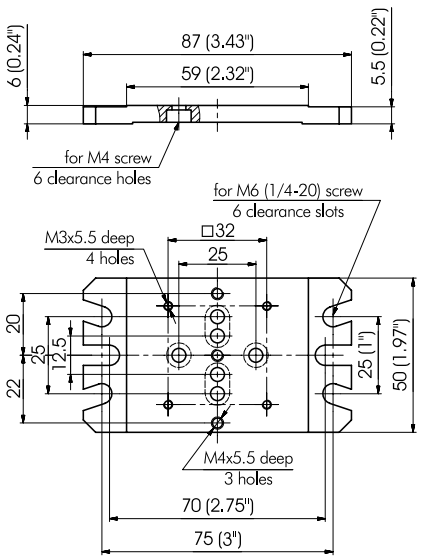




3UBP-02



3UBP-03



3UBP-04

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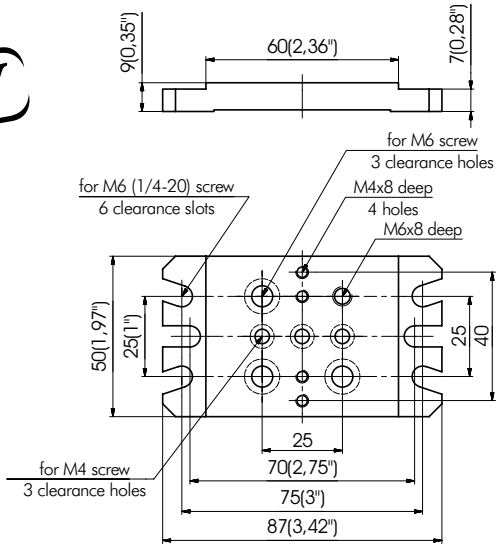
Base Plate

for METRIC and INCH

3BP7R7

new



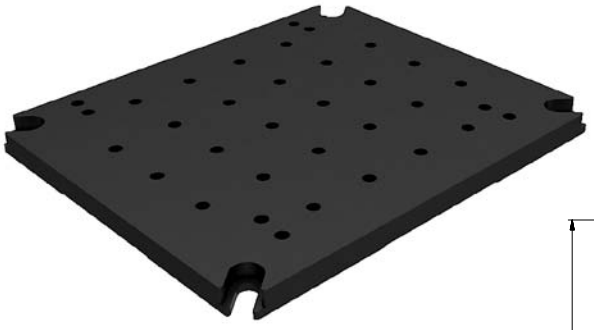
Base Plate 3BP7R7 is designed for fastening **7R7 Mini Rotation Stage** on **optical tables** and **other surfaces**. 7R7 Mini Rotation Stage is attached to 3BP7R7 Base Plate using M6 screws through 3 clearance holes on the base plate. Base plate can be attached to metric table tops using M6 screws through 2 clearance slots, or attached to imperial table tops using 1/4-20 screws through 1 of the clearance slots.
Designed for:

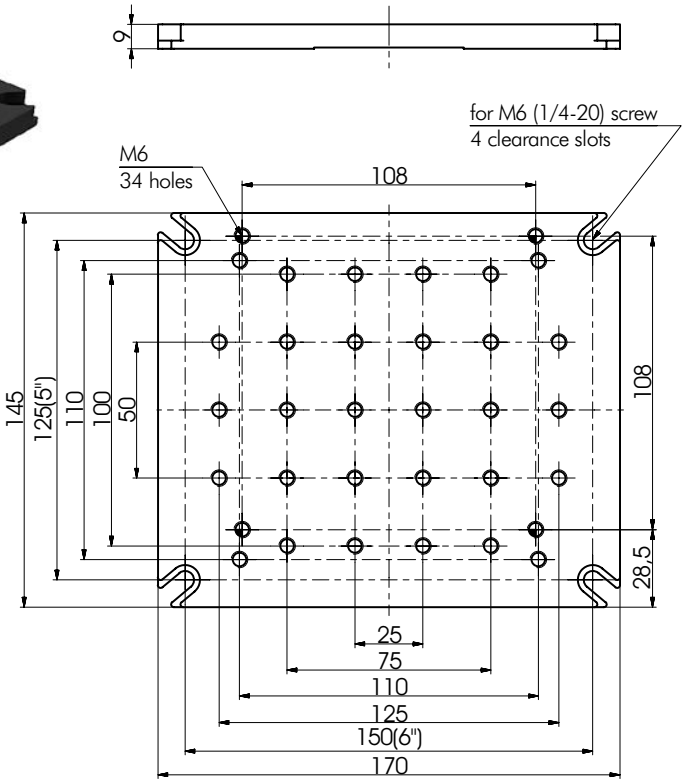
7R7, **7T175** series, **7T164** series, **7T264** series, **7T67-6** series, **8MT175** series, **8MT177** series, **8MT193-100** , **8MDS** series

The **base plate** is of **black anodized aluminium**.

Base Plate

3BP120





Base plate 3BP120 is designed for fastening **8MVT120** series **Motorized Vertical Lift Stages** on **optical tables** and **other surfaces**. Besides, the **base plate 3BP120** could be useful in small optical setups. The mounting surface has tapped M6 holes on 25 mm centers for permanent mounting of components.
The **base plate** can be attached to metric table tops using M6 screws through 4 clearance slots, or attached to imperial table tops using 1/4-20 screws.
The **base plate** are made of **black anodized aluminium**.

new

for METRIC and INCH

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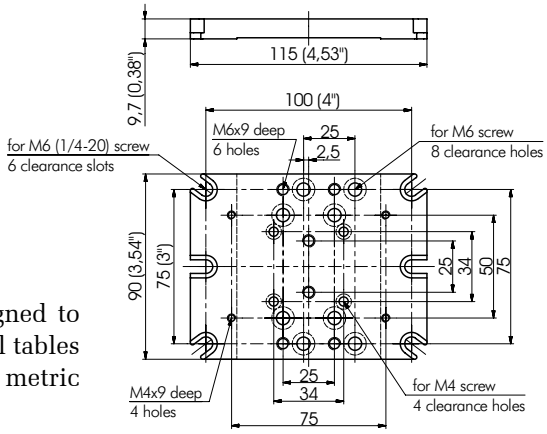
Base Plate

3UBP175



Base Plate 3UBP175 is designed to fix listed translators to optical tables and other flat surfaces. Fits metric and imperial hole patterns.

Designed for:

7T68 / **7T67** series, **7T175** series, **8MT167-25** series, **8MT177** series, **8MT193** series, **8MT200-100** series, **8MT50** series, **8MT175** series.

The base plate is of black anodized aluminium.

Weight: **0.3 kg**

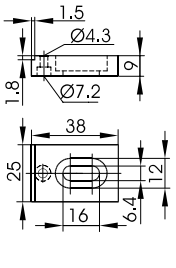
Base Plates

3BP138

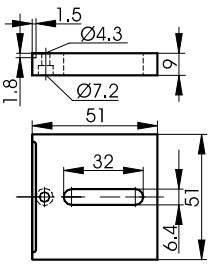
Base Plates 3BP138 are flat, slotted plates designed to ensure mounting of various opto-mechanical components at random position. The bases can be translated on limited range depending on the size of the base plate slot.

The base plates are made of black anodized aluminium and are available in different dimensions for use with mounts for specific components.

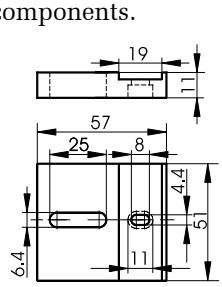
Model	Weight, kg
3BP138-01	0.02
3BP138-02	0.06
3BP138-03	0.07
3BP138-04	0.1
3BP138-05	0.18



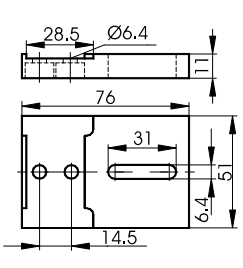
3BP138-01



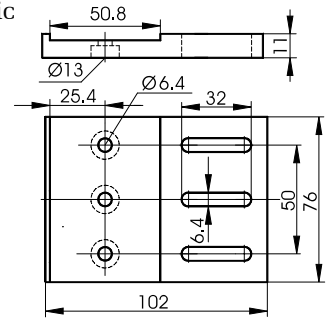
3BP138-02



3BP138-03



3BP138-04



3BP138-05

Round Base Plates

3RBP

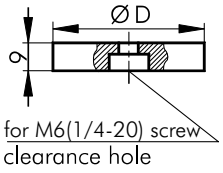
3RBP-39

3RBP-49

Round Base Plates 3RBP are used for mounting posts and posts holders to position them at random. The post stays stable without fastening. If required, the plate can be fastened using Table Clamps 3TC5 or 3TC6.

Material: black anodized aluminum.

Model	D, mm	Weight, kg
3RBP-49	49	0.12
3RBP-39	39	0.07



Base Plates with Eccentric Clamp

for **METRIC** and **INCH**

3EXP59

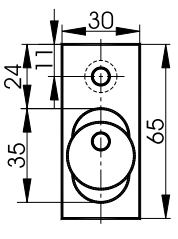
3EXP59-01

Bases 3EXP59 are used to clamp posts and post holders in random positions.

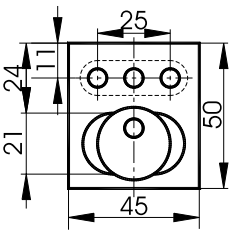
Attach a post to the base using an **M6** screw. Set the position. The base rotates around the clamp through **360°** and translates within **10 mm**. Fix the clamp with an **M6** screw.

The base is of black anodized aluminium.

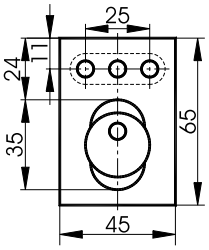
Model	Weight, kg
3EXP59-01	0.11
3EXP59-02	0.12
3EXP59-03	0.15



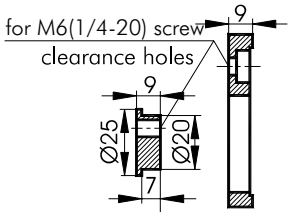
3EXP59-01



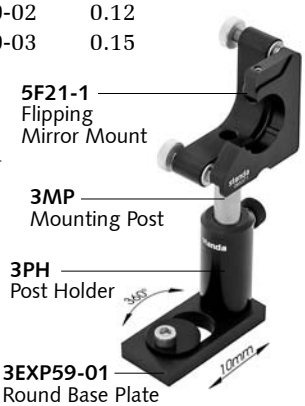
3EXP59-02



3EXP59-03



side view of the bases



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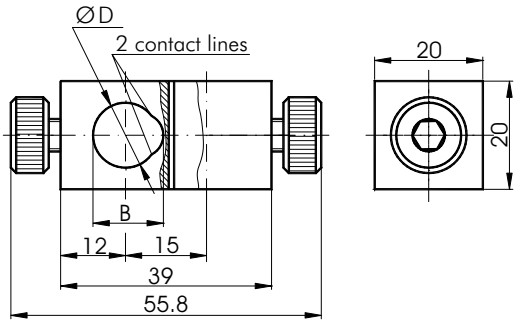
Right Angle Fixed Post Clamp

3RPC

Aluminium **Fixed** (non-adjustable) **90°** (right angle) clamps **3RPC-12** (for 12 mm posts) and **3RPC-05** (for 0.5" posts).

Model	D, mm	B, mm
3RPC-12	12	13
3RPC-05	12.7	13.7



Adjustable Angle Post Clamps

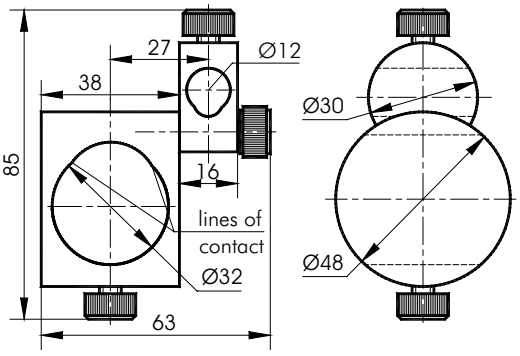
3APC

3APC-12-12

Adjustable Angle Post Clamps allow Mounting Posts **3MP** of ∅12 mm and Silent Rods **2SR32** of ∅32 mm to be mounted to one another at any angle and at any point.

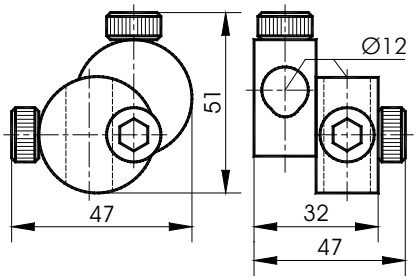
The Posts can be adjusted in height and angle and then securely locked in position with independent thumbscrews M6.

The clamps are made of black anodized aluminium.



3APC-12-32

3APC-12-12



3APC-12-12

Model	Weight, kg
3APC-12-12	0.11
3APC-12-25	0.25
3APC-12-32	0.45

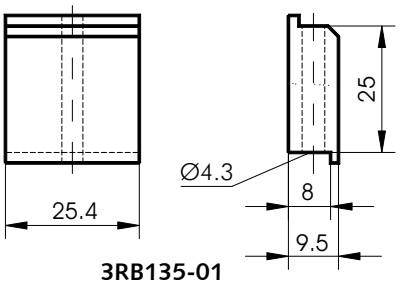
Riser Blocks

3RB135

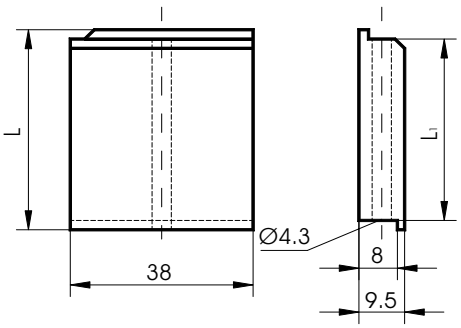
3RBP135-01

3RBP135-03 3RBP135-02

Riser Blocks 3RB135 are designed to be used with appropriate base plates to elevate the optical axis of mirror and lens mounts. Also another component mounts are assembled to base plate through the Riser Blocks using an M4 socket-thread cap screw. The Riser Blocks are made from black anodized aluminium and have a lip on the edge for aligning it with the base and for prevention of its rotation.



3RB135-01



3RB135-02 and 3RB135-03

Model	L, mm	L_1, mm	Weight, kg
3RB135-01	28	25	0.015
3RB135-02	18.5	15.3	0.015
3RB135-03	43.5	40.3	0.04

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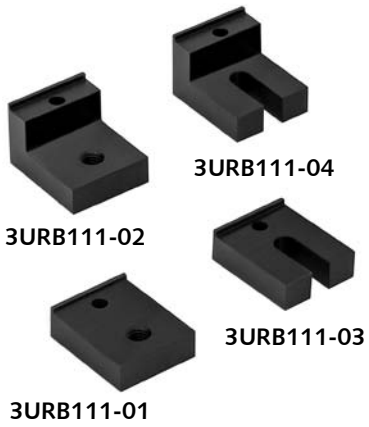
Universal Riser Blocks

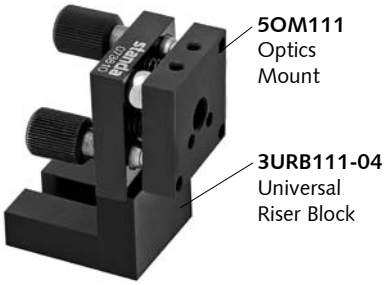
3URB111

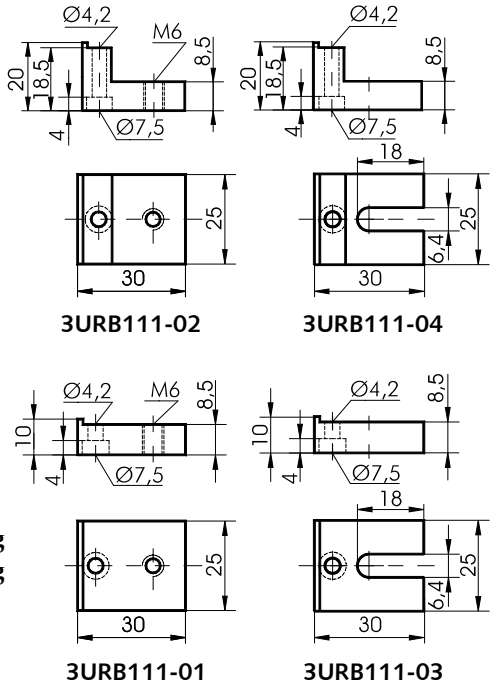


The Universal Riser Blocks 3URB111 is the combination of the Riser Block and the Base Plate. They allow all components to be mounted at fixed axis height 10 mm using 3URB111-01(03) or 20 mm using 3URB111-02(04). The Universal Riser Blocks are made from black anodized aluminium.

Weight:

3URB111-01(03)	**0.015 kg**
3URB111-02(04)	**0.020 kg**

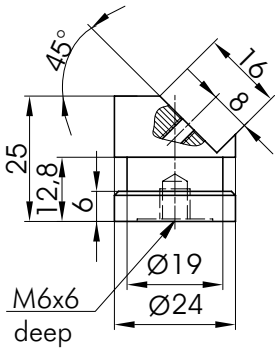


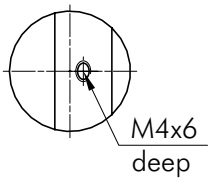


Angular Adapter

3A-45D

- **Turns/fixes Mirrors and Mounts by 45°**
- **Compatible with:**
  - **5MBM21**
  - **5MBM22**
  - **5MBM24**
  - **and others**
- **Material: black anodized aluminium**
- **Weight: 0.025 kg**





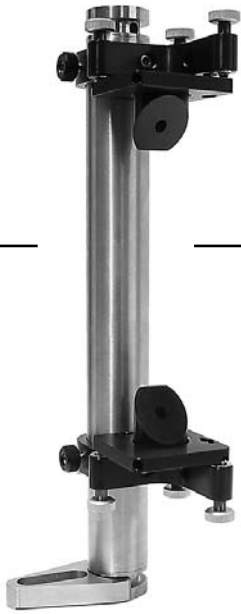
45 degree Mirror Adapters

3AM

3AM-1-45D

Optics is firmly held by a plastic securing screw and it rests against two contact lines formed at the interface. Adapter easily accommodates any optical mount designed for 1" optics.

For fine adjustment adapter can be mounted into **5MBM21-1** Kinematic Mirror/Beamsplitter Mount.



Example of Assembly 10LBS, page 10-16

3AM-1-15-45D
clear aperture Ø15 mm

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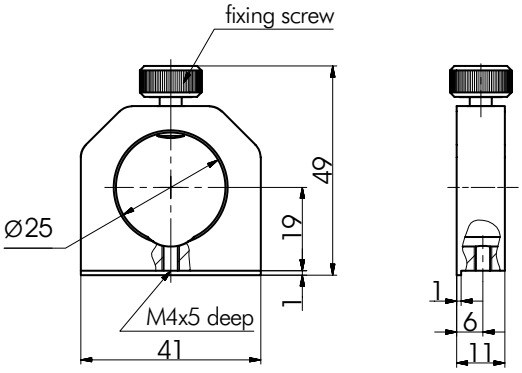
Post Clamps

3PC

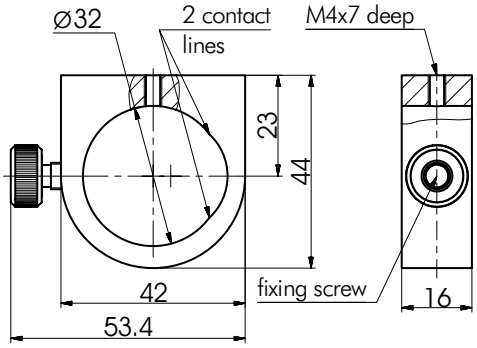
Tool to secure mirror holders and other tools on **Ø32 mm** (**3PC32**) and **Ø25 mm** (**3PC25-01**) posts.

3PC25-01



3PC25-01

3PC32



3PC32

*Examples of use of **3PC** in **10LBS***

Combination of **Laser Shelf 1LS52** and **Laser Port** equipped tabletop ready for laser beam routing.

Periscope assembly combined with **Solid Steel Breadboard 1BS** or **Aluminium Breadboard 1B-ALE**.

more info on the 10-16 page

Model	**Ø of posts to be used with,** mm
3PC25-01	25
3PC32	32

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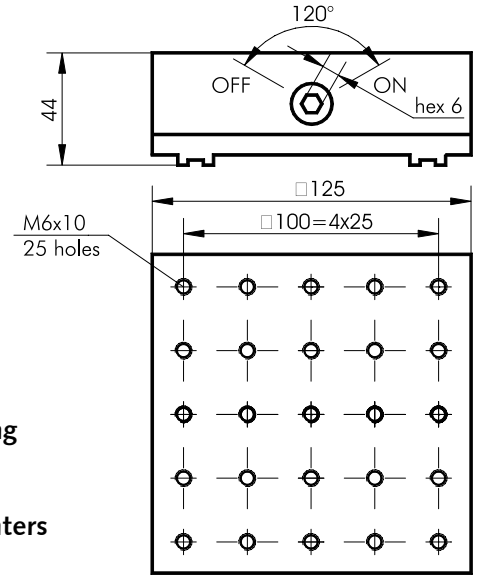
Low-profile Magnetic Base

3MB6



- **Highest holding force – up to 140 kg**
- **Nonmagnetic mounting surface**
- **M6 mounting holes pattern on 25 mm centers**
- **Low field leakage**

Our magnetic bases feature: a high holding force that does not degrade with time, a low profile, generous mounting provisions, a non magnetic mounting surface, a holding force which you may vary continuously by the easy to reach inset adjustment screw.

An exclusive stable magnetic circuit ensures that the magnetic elements move linearly.

A Hex Key **3HK-5** (**5 mm**) comes with each base.

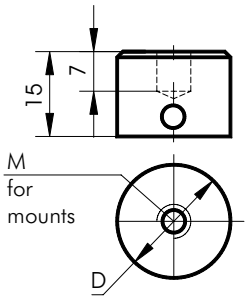
Weight: **2.8 kg**

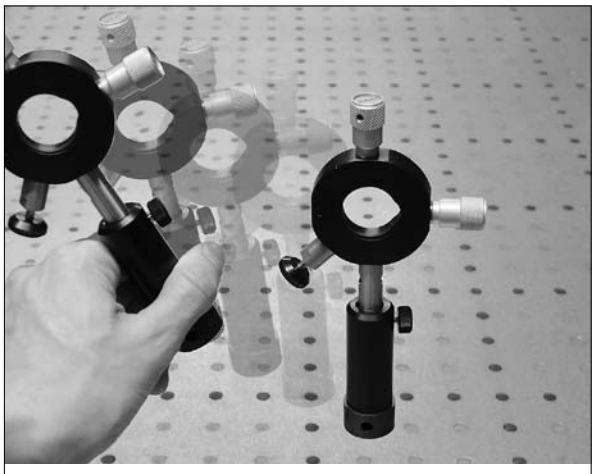
Compact Magnetic Bases

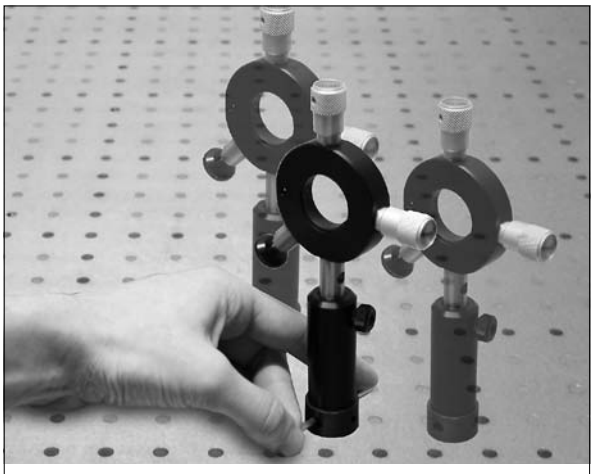
3CMB

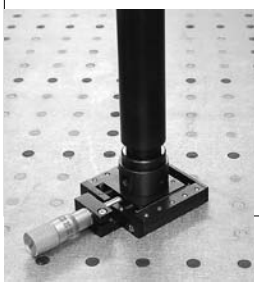
Small components may be quickly positioned on ferromagnetic optical tables and breadboards or translation stages using our **Compact Magnetic Bases**.

Model	D	M	holds loads	Weight, kg
3CMB6-19	19	M6	upto 5 kg	0.03
3CMB4-19	19	M4	upto 5 kg	0.03
3CMB6-27	27	M6	upto 10 kg	0.06
3CMB4-27	27	M4	upto 10 kg	0.06



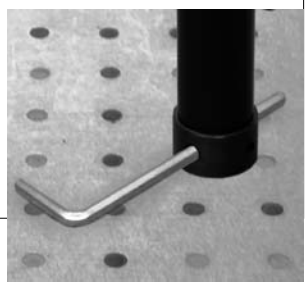






With the **3CMB Compact Magnetic Bases** post mounted optics holders can be quickly and securely positioned on an optical table.

Support holes allow **quick** and **easy** positioning of optics holders.



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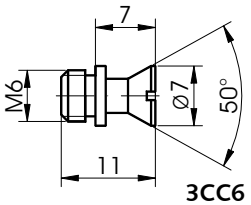
Fasteners & Accessories

Connecting Cone — 3CC4 • 3CC6

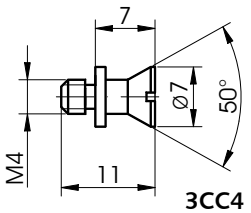
A Connecting Cone 3CC4, 3CC6 is useful in connecting elements when specific orientation plane is required. E.g. in Spatial Filter **10SF130**, or in **Narrow 7T173** translation stages joined for **X-Y-Z** motion.

There is an **M6** thread at one end and **50°** cone at another. A component is fastened to the cone using an additional fastening screw.

3CC is of stainless steel.



3CC6



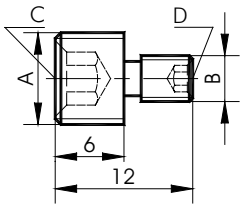
3CC4

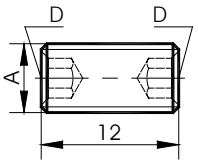
Thread Adapters — 3AH

Adapters 3AH connect components when precise orientation in plane is not required. Some adapters have different threads on ends. So, you can connect components with **M3, M4, M6, M8** threaded holes. Material: stainless steel.

Metric/imperial thread adapters are available on request.

Model	A	B	C	D
3AH4-3	M4	M3	2	1.5
3AH6-3	M6	M3	3	1.5
3AH6-4	M6	M4	3	2
3AH8-4	M8	M4	4	2
3AH4-8-32	M4	8-32	2	2
3AH6-8-32	M6	8-32	3	2
3AH4-1/4-20	M4	1/4-20	2	3
3AH6-1/4-20	M6	1/4-20	3	3
3AH8-32-1/4-20	8-32	1/4-20	2	3
3AH4-4	M4	-	-	2
3AH6-6	M6	-	-	3
3AH8-32	8-32	-	-	2
3AH1/4-20	1/4-20	-	-	3



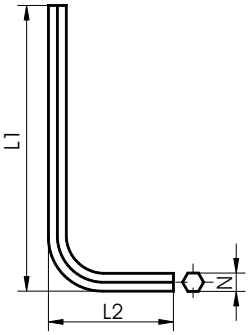


C and D denote hex key sizes

Hex Key — 3HK

A Hex key 3HK is suitable for tightening all standard Hex Screws. It is made of steel with chemical black finish.

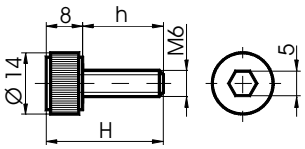
Model	N, mm	L1, mm	L2, mm
3HK-1.5	1.5	46	15
3HK-2	2	51	18
3HK-3	3	63	20
3HK-5	5	80	28



Special Screw — 3SPS

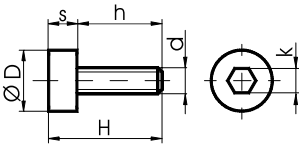
Special Screws 3SPS can be screwed by hand and tightened using a spanner. Special screws are provided in two lengths **24 mm** and **28 mm**. Thread size is **M6**.

Model	h, mm	H, mm
3SPS-20	20	28
3SPS-16	16	24



Standard Screw — 3STS

Model	h, mm	H, mm	s, mm	D, mm	d, mm	k, mm
3STSM6-6SS	6	12	6	10	M6	5
3STSM6-8SS	8	14	6	10	M6	5
3STSM6-16SS	16	22	6	10	M6	5
3STSM6-20SS	20	26	6	10	M6	5
3STSM4-8SS	8	12	4	7	M4	3
3STSM4-16SS	16	20	4	7	M4	3
3STSM4-20SS	20	24	4	7	M4	3
3STSM3-8SS	8	11	3	5.5	M3	2.5
3STSM3-16SS	16	19	3	5.5	M3	2.5
3STSM3-20SS	20	23	3	5.5	M3	2.5



Material: stainless steel.

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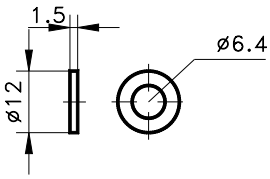
Washer 3W6

3W6SS

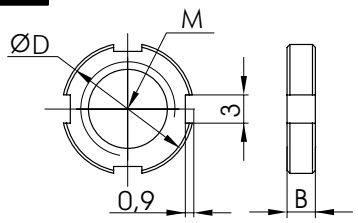
A Washer is used to protect surfaces from scratches and to provide more stable tightening. Material: **3W6 –** black finished steel. **3W6SS –** stainless steel.



Fastening Nuts 3N

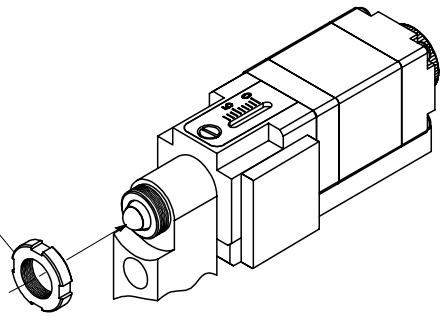
Model	D, mm	M	B, mm
3N6X05	10	M6x0,5	2.5
3N8X1	12	M8x1	3.5
3N10X05	14	M10x0,5	3
3N12X1	16	M12x1	3.5

Material: stainless steel.



Used for fastening **motorized actuators** and in **other applications.**

nut **3N10X05**

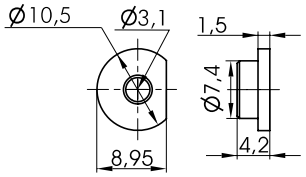


sample of assembling

8MBM24-1-2

Lock-Down Clamp 3WFA-01

This clamps are used to fix the accessories to the mounting platform. Material: stainless steel.



Screw Kits 3SK

ORDERING INFORMATION

3SK1 CONTAINS:

Model	Quantity
3STSM6-8SS – Standard M6 8 mm deep stainless steel screw	50
3STSM6-10SS – Standard M6 10 mm deep stainless steel screw	50
3STSM6-16SS – Standard M6 16 mm deep stainless steel screw	150
3STSM6-20SS – Standard M6 20 mm deep stainless steel screw	50
3W6SS – Stainless steel washer for M6 screw	50
3HK-5SS – Stainless steel hex key 5	10

3SK2 CONTAINS:

Model	Quantity
3STSM4-8SS – Standard M4 8 mm deep stainless steel screw	20
3STSM4-10SS – Standard M4 10 mm deep stainless steel screw	20
3STSM4-16SS – Standard M4 16 mm deep stainless steel screw	20
3STSM4-20SS – Standard M4 20 mm deep stainless steel screw	20
3STSM6-8SS – Standard M6 8 mm deep stainless steel screw	20
3STSM6-10SS – Standard M6 10 mm deep stainless steel screw	20
3STSM6-16SS – Standard M6 16 mm deep stainless steel screw	20
3STSM6-20SS – Standard M6 20 mm deep stainless steel screw	20
3W4SS – Stainless steel washer for M4 screw	25
3W6SS – Stainless steel washer for M6 screw	25

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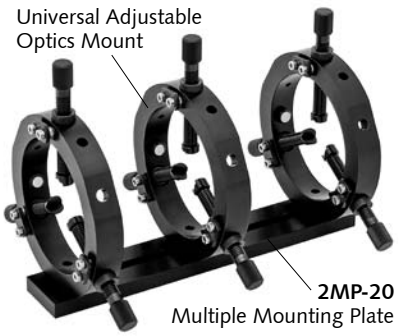
Universal Adjustable Lens/Optics Mounts

4LM149

for METRIC and INCH

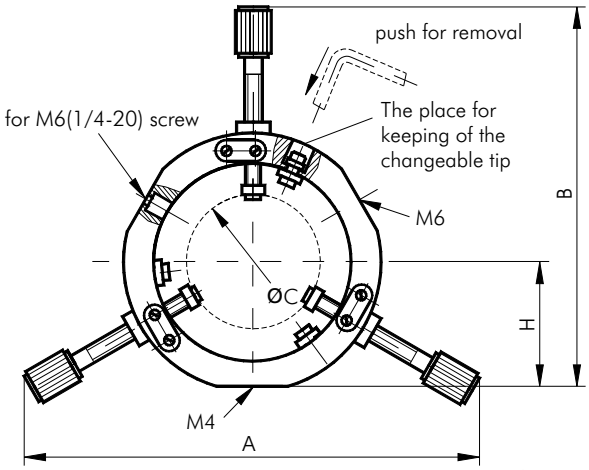
- **Holding of cylindrical objects of various diameters**
- **Three mounting options**
- **Convenient storage of tips which are not used at the moment**
- **Quick coarse positioning and diameter setting possibility**
- **Made of black anodized aluminium**

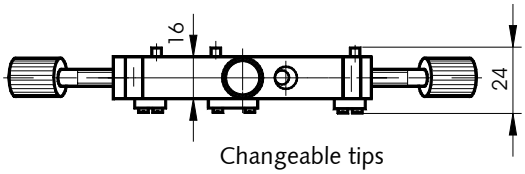


Universal Adjustable Lens/Optics Mounts 4LM149-10 and 4LM149-05 are used to accommodate any round any thickness objects as lenses, mirrors and lasers. Three support shafts of holder are assembled with non-rotating V-groove aluminium universal interchangeable tips for lenses mirrors, etc. While not in use the new non-abrasive flat teflon face aluminium tips for lasers are kept in special holes on **aluminium** support ring. Long objects like cylindrical laser heads can be held with two chucks together with Multiple Mounting Plates 2MP.

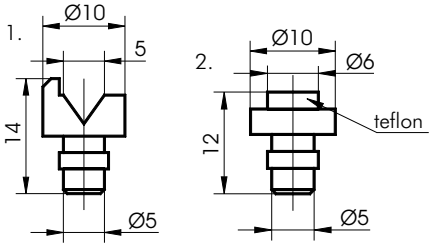
Each individual adjustable shaft of holder incorporates threaded thumbscrew, sliding sleeve and fixation tool for rough positioning and diameter setting. It is enough to give only a twist thumbscrew of the shaft to provide a fine adjustment travel.

Three various mounting holes M4, M6, and ∅6.4, ∅11x4 provides various and easy attachment possibilities to the Tables, Breadboards and the STANDA Rod Holder system.





Changeable tips



Model	A, mm	B, mm	C, mm	H, mm	Weight, kg
4LM149-10	164-210	158-185	38-103	65.7	0.3
4LM149-05	134-164	124-141	10-66	49.1	0.25

Optical Component Mounts

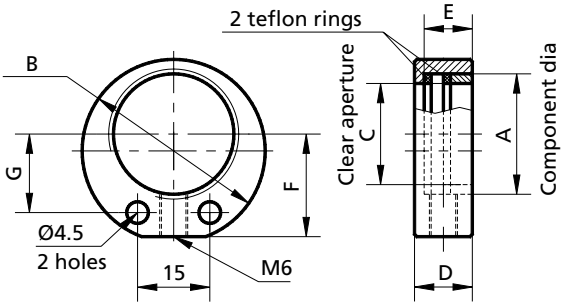
4OCM

4OCM-20

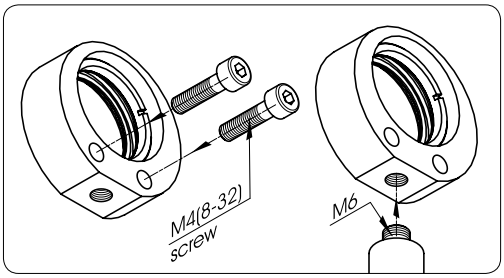
Optical Component Mounts 4OCM can be used to hold round and thin optical elements of standard sizes. Mounts vary in dimensions so as to support diameters from 10 to 50 mm (0.5" to 2"). Original design allows to decrease the mount's dimensions and weight.

Mounting holes: one M6 and two ∅4.5 mm.

Material: black aluminium.



	A	B	C	D	E	F	G	Weight
4OCM-10	12.7 (0.5")	26	8	12	10	13.5	8.5	0.01kg
4OCM-20	20)	33	17	12	10	18.8	13.8	0.02kg
4OCM-25	25.4 (1")	38	23	12	10	21.3	16.3	0.02kg
4OCM-40	40	53	37	18	16	28.8	23.8	0.04kg
4OCM-50	50.8 (2")	65	48	18	16	34.8	29.8	0.05kg
4OCM-75	75	89	72	18	16	46.5	42	0.06kg



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Self-Centering Lens/Optics Mounts

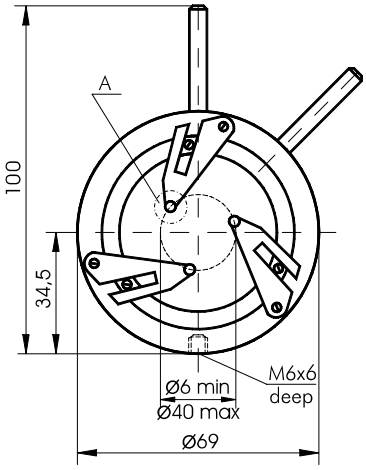
4SCML

- **40 mm, 2", 4" optics mounts**
- **Easy insertion and removal of optics**

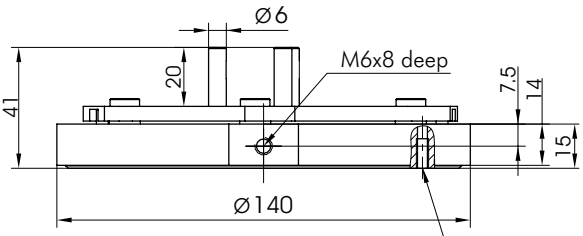
4SCML-4

4SCML-2

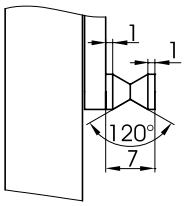
4LM13-40

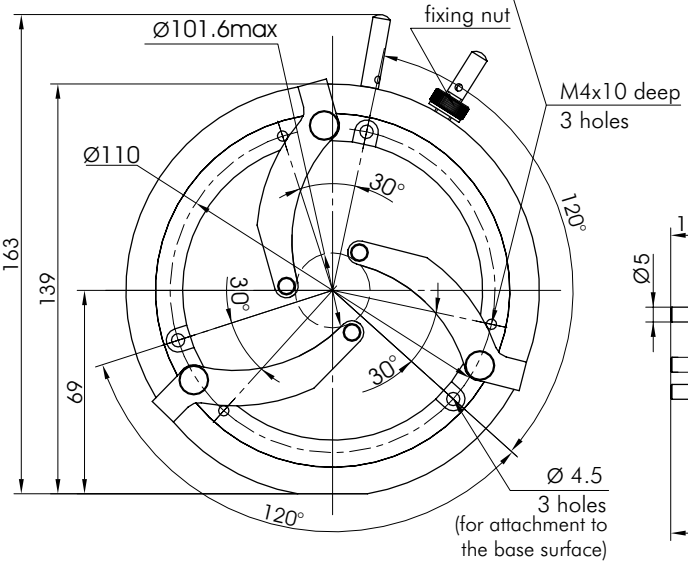


4LM13-40

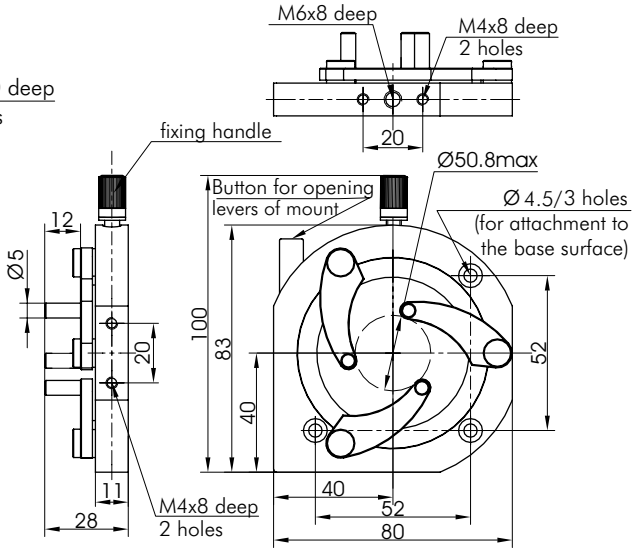


View A





4SCML-4



4SCML-2

Self-Centering Lens/Optics Mounts reliably centres and securely holds round optics and cylindrical objects. This device is particularly valuable when lenses of different diameters are being used interchangeably, as repeated centering at constant height is necessary.

When released the three arms grip the lens in deep grooved jaws, automatically centering the lens within the holder.

The Self-Centering Lens/Optics Mounts can mount on STANDA Posts for easy adjustment of vertical height and azimuthal angle.

Model	Weight, kg
4LM13-40	0.07
4SCML-2	0.19
4SCML-4	0.38

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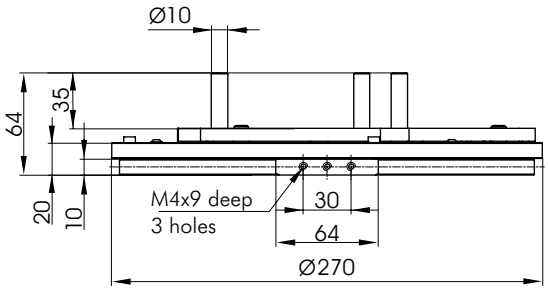
Self-Centering Lens/Optics Mount

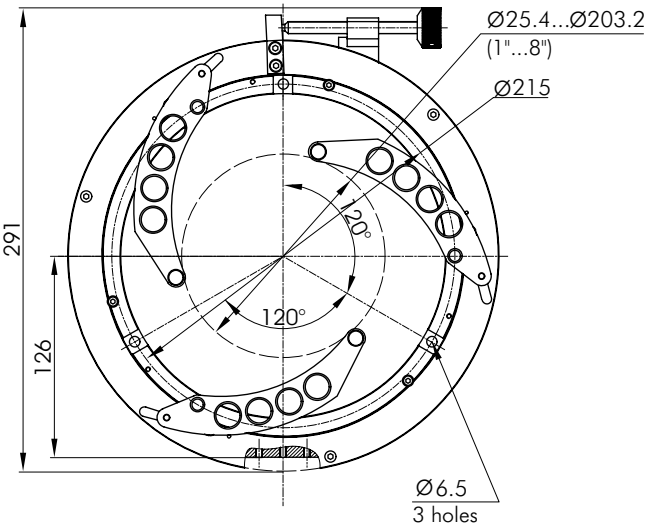
4SCML-8

4SCML-8

- **For optics up to 8" in diameter**
- **Adjustable range from 1" (25 mm) to 8" (203 mm)**
- **3 mounting holes Ø6.5 mm are made for mounting to flat object**
- **Reverse operation – holding hollow objects from inside**
- **Made of black anodized aluminium and black oxidation steel**

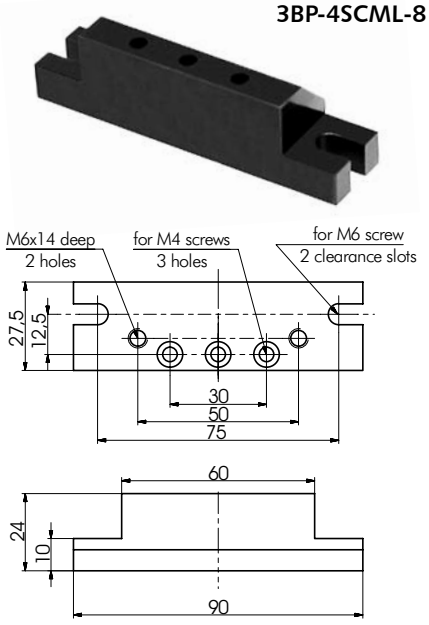
Self-Centering Optics Mount 4SCML reliably centres and securely holds round optics and cylindrical objects. This device is particularly valuable when lenses of different diameters are being used interchangeably and repeated centering at constant height is necessary. The Self-Centering Optics Mount **4SCML-8** accommodates optics up to **8 inch** (**203.2 mm**) and is oversized to provide easy finger access for inserting and remouing optics. Optical elements are fixed and centered at the same time by adjusting driving screw at the top of the device. Heavy optical components are secured by wedged rods.



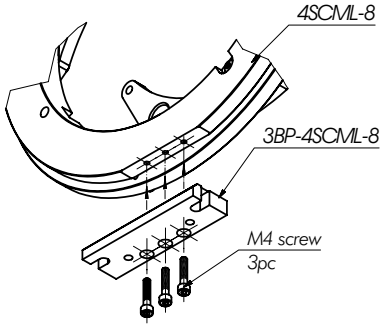


4SCML-8

3BP-4SCML-8



3BP-4SCML-8 is our recommended **Base Plate** used to fix **4SCML-8** to optical table or other suitable bases. Mounting base plates of different shapes can be manufactured to customer's order. **3BP-4SCML-8 Base Plate** is included with **4SCML-8** by default. You can oder additional baseplates separately.



Model	Weight, kg
4SCML-8	1.8
3BP-4SCML-8	0.05

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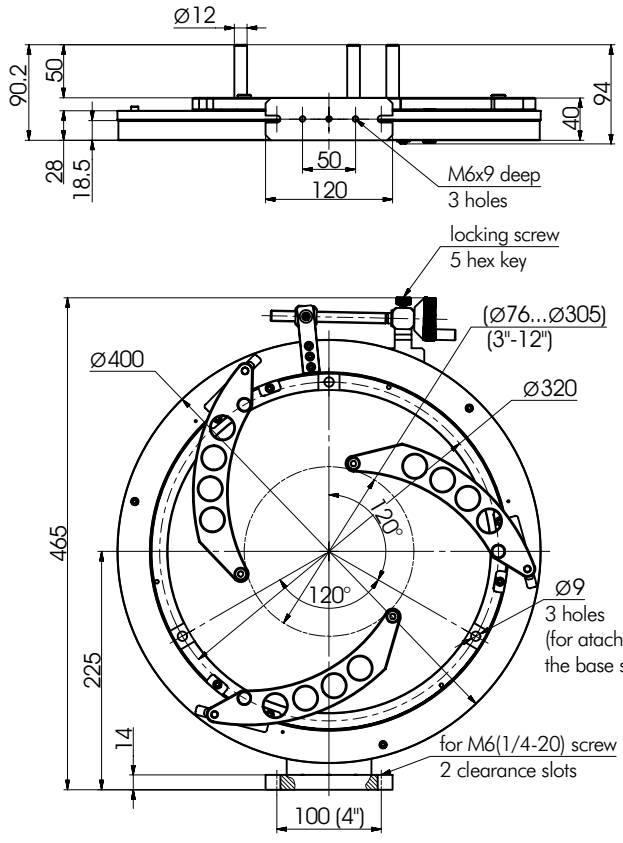
Self-Centering Lens/Optics Mount

4SCML-12

4SCML-12

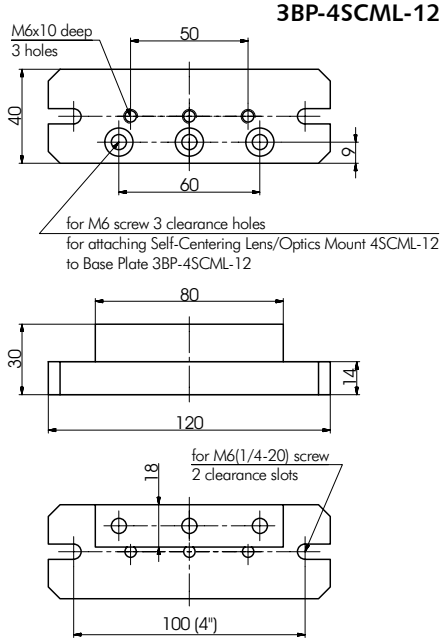
- For optics up to 12" in diameter
- Locking screw for secure mounting
- Adjustable range from 3" (76 mm) to 12" (305 mm)
- 3 mounting holes Ø9 mm are made for mounting to flat object
- Reverse operation - holding hollow objects from inside
- Made of black anodized aluminium and black oxidation steel

Self-Centering Optics Mount 4SCML-12 reliably centres and securely holds round optics and cylindrical objects. This device is particularly valuable when lenses of different diameters are being used interchangeably and repeated centering at constant height is necessary. The Self-Centering Optics Mount **4SCML-12** – up to **12 inch** (**305 mm**) and is oversized to provide easy finger access for inserting and remouing optics. Optical elements are fixed and centered at the same time by adjusting driving screw at the top of the device. Heavy optical components are secured by wedged rods.

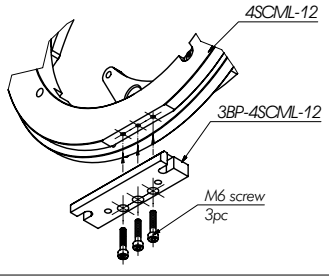


4SCML-12

3BP-4SCML-12



3BP-4SCML-12 is our recommended **Base Plate** used to fix **4SCML-12** to optical table or other suitable bases. Mounting base plates of different shapes can be manufactured to customer's order. **3BP-4SCML-12 Base Plate** is included with **4SCML-12** by default. You can oder additional baseplates separately if needed.



Model	Weight, kg
4SCML-12	7.35
3BP-4SCML-12	0.05

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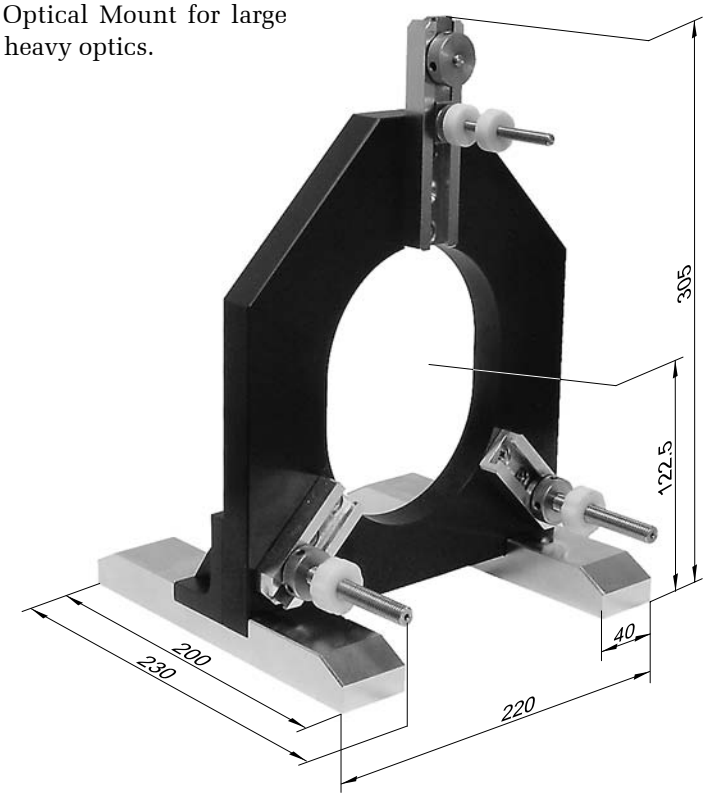
Big Optical Mount

4BM-250

- **Optics diameter 115÷250 mm**
- **Optics thickness 52 mm**
- **Load capacity 6 kg**
- **Weight 5.3 kg**

Big Optical Mount for large and heavy optics.



5AM-100

See page **5-46** for details.

Adjustable Radius Optics Mounts

4LM42

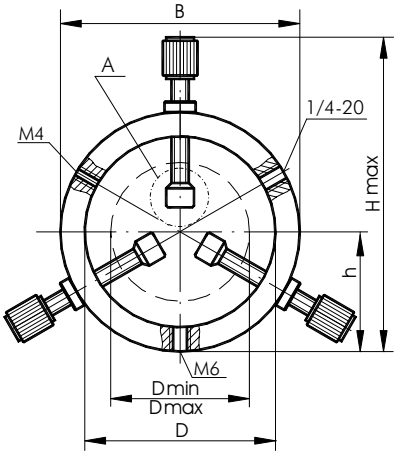
for **METRIC** and **INCH**

- **For lenses, mirrors, lasers - any round objects**
- **Lenses are easily removed and replaced**
- **Accommodate any lens shape and thickness**

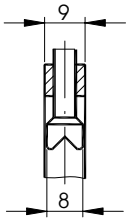
An Adjustable Radius Optics Mount 4LM42 provide rigid support and assured orientation for round objects of virtually any thickness and length.

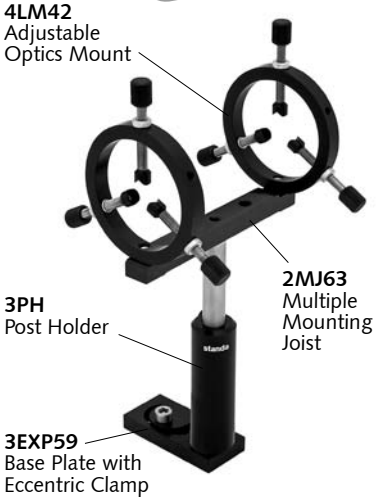
Installing optics is easy: set the lower support rods at any desired radius, insert your element, and adjust the top rod downward for secure hold of the optics. Long objects can be held by two holders together with the Multiple Mounting Joist 2MJ63.

The black anodized aluminium rings have M6 tapped hole for attachment to any STANDA Stage, Table or Support, including STANDA Mounting Posts 3MP6. The Adjustable Radius Optics Mount 4LM42 has three black finished steel plungers and all of them are screw adjustable. This mount accepts lenses with edge thickness of up to 6.5 mm.



View A





Model	B, mm	D, mm	H_{max}, mm	h, mm	d_{min}, mm	d_{max}, mm	Weight, kg
4LM42-40	Ø69	Ø55	100	34.5	Ø6	Ø40	0.06
4LM42-2	Ø82	Ø68	120	41	Ø12.7	Ø50.8	0.07

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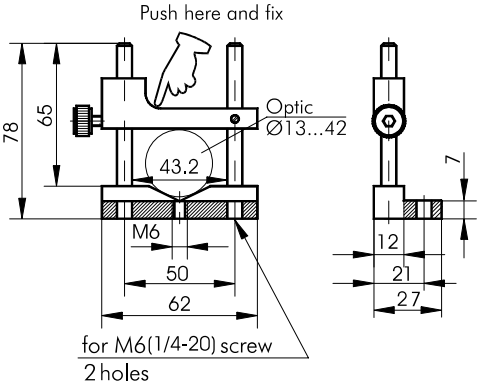
Push Holder

4H29

- **Special method of fixation**
- **Holds optics of 12.5 to 42 mm diameter**
- **Holds thin lenses or long-barrel lens assemblies**

Push Holders 4H29 holds optics of any shape or configuration: round and rectangular, with negligible loss of clear aperture, even at large angles of incidence. The top support is clamped in position pushing the special place and tightening the knurled screw. This provides gentle but firm fixation. After mounting the component and holder can be exchanged completely as one unit. The Push Holder 4H29 are made of black anodized aluminium.

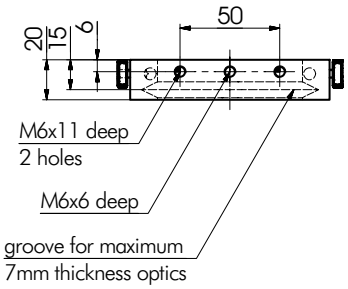


Weight: **0.14 kg**

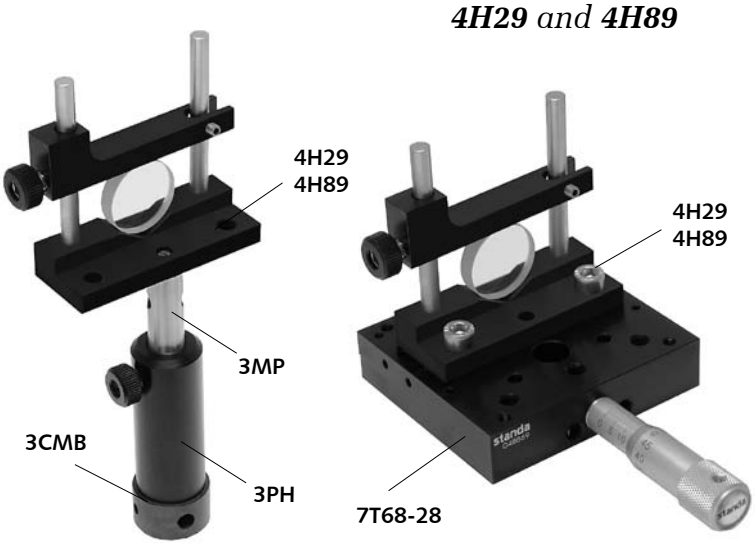
Adjustable Height V-Mount

4H89

- **Special method of fixation**
- **Holds optics of 12.5 mm (0.5") to 89 mm (3.5") diameter**
- **Clamping screw with V-shaped swivel head**
- **Material: black anodized aluminium**
- **Weight 0.1 kg**



Application suggestion
4H29** and **4H89



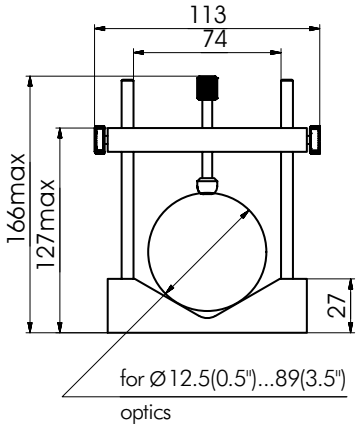


Plate Clamp

4PC69

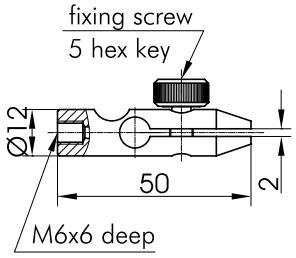


Plate Clamp 4PC69 holds thin light-weight plates, like filters, transparencies, resolution targets and razor blades used in knife edge experiments.

These black anodized aluminium Clamps may be **directly** screwed for example to the mounting stud of a Mounting Post **3MP6** or to a Base Plate with Rotary Clamp **3EXC45**.

Weight: **0.04 kg**

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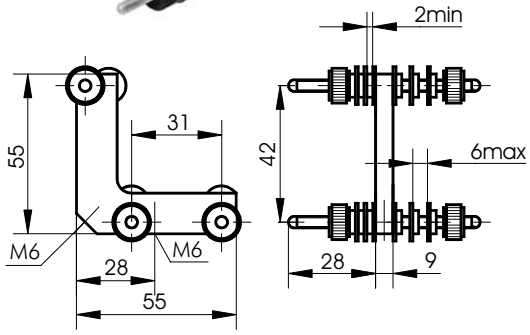
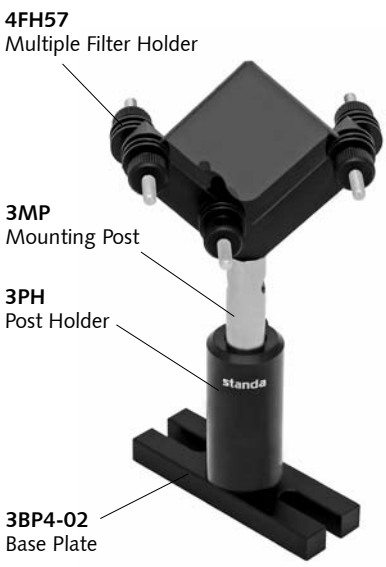
Multiple Filter Holder

4FH57

Multiple Filter Holder 4FH57 allows fixation of up to **6 filters**. The thickness of the optical filter or plate to be held is from **2 mm** to **6 mm**. The Holder is made of black finished aluminium. Separators are made of plastic. **M6** tapped mounting holes provide L and V oriented filter positioning.

Weight: **0.12 kg**





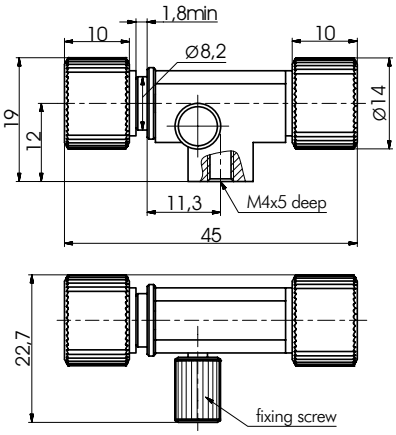
Holder for Circular Filters

4CFH

- **14CNDF Circular Variable Neutral Density Filters**
- **3MP Mounting Posts**

Holder for Circular Filters 4CFH is designed for Circular Variable Neutral Density Filters **14CNDF**. Holder's ergonomic design saves space in optical system.

Model	**Filter's inner diameter,** mm
4CFH-7.5	Ø7.5
4CFH-8.0	Ø8.0
4CFH-8.3	Ø8.3

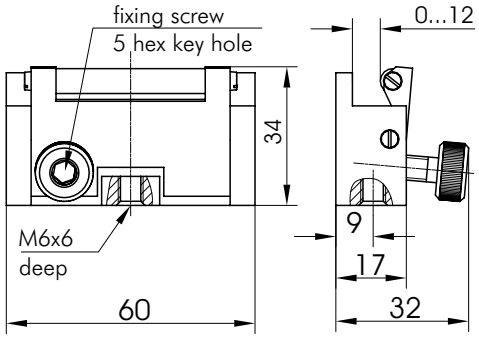


Universal Plate Holder

4PH132

Universal Plate Holder 4PH132 holds long and thick components, and can fix elements from **0** to **12 mm** in thickness. **M6** hole for mounting on posts provided in base.

Weight: **0.07 kg**



Suitable for Optics of Various Shapes
UNIVERSAL PLATE HOLDER 4PH132

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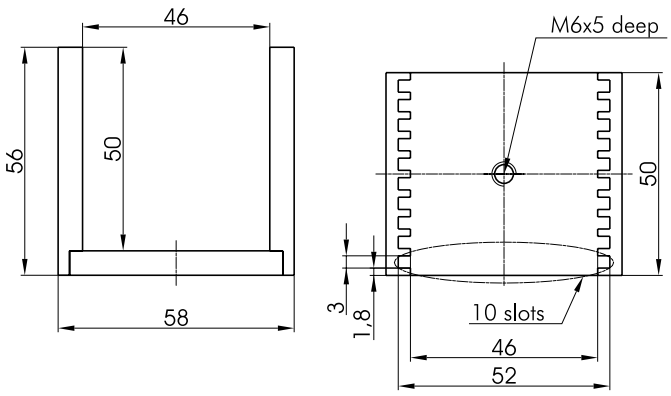
Multiple Filters Holder

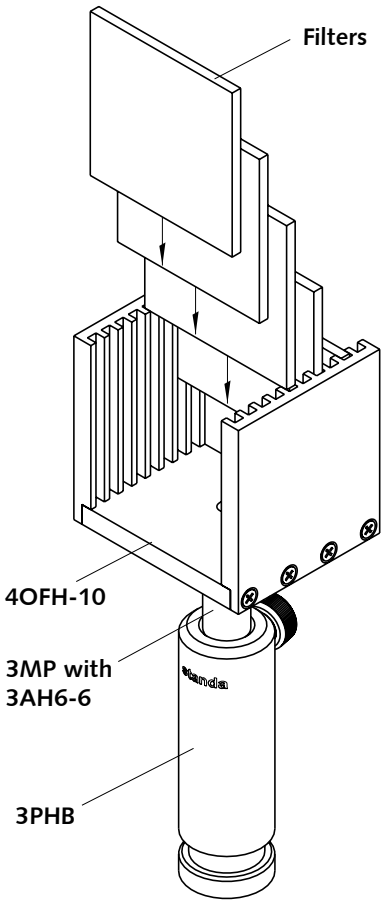
4OFH-10

- Designed for 2" Square Filters
- Filter Thickness 3mm
- Can Mount 10 Filters
- Material: black anodized aluminium

4OFH-10 Multiple Filter Holder provides convenient means of working with large number of optical, filters, especially when filters are changed frequently.

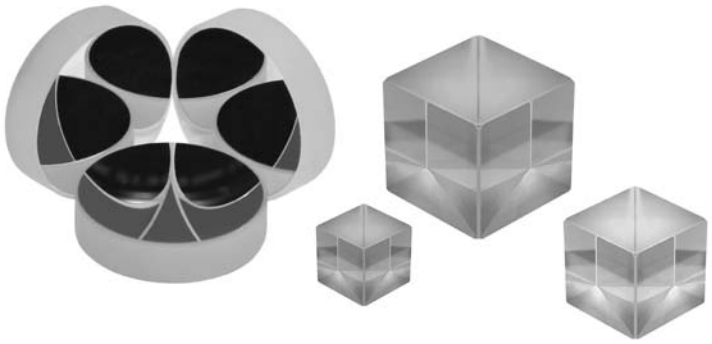
Can be used as a low-cost replacement of filter attenuator.





Application suggestion
4OFH-10

Visit www.standaphotonics.com



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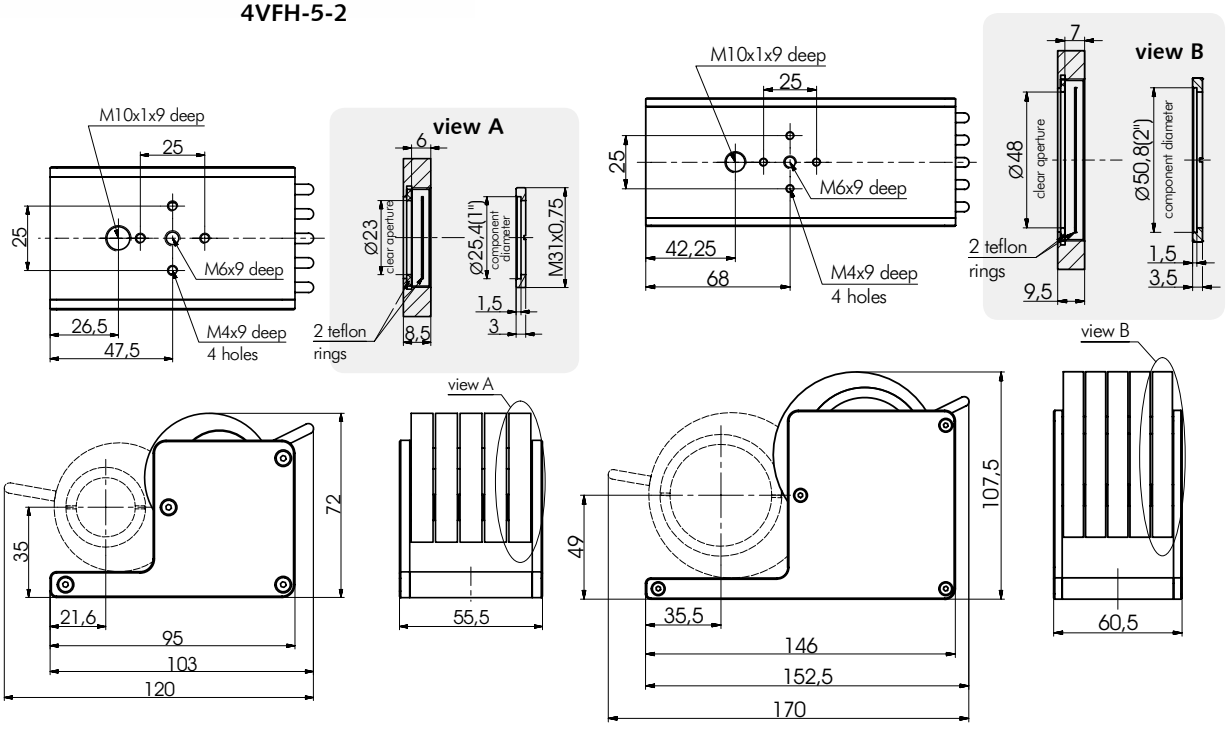
Variable Filter Holder

new

4VFH

4VFH-5-2

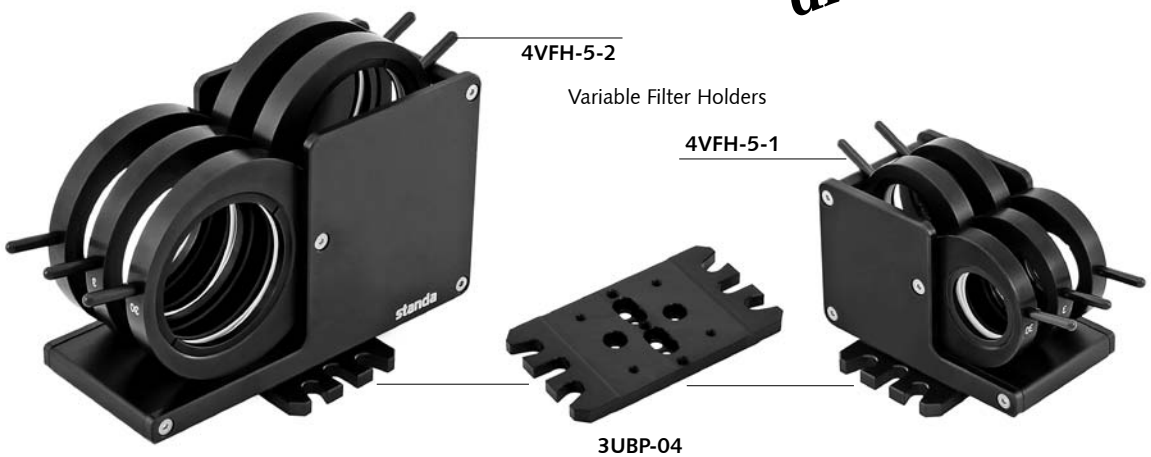
4VFH Variable Filter Holder provides a possibility flipping filters in and out of the optical path. Filter replacement is fast and easy. Two models are available - for **25.4 (1") mm** and for **50.8 mm (2")** optical filters. Maximum filter **thickness** for **1"** models is **4.5 mm**, and **4 mm** for **2"** model. Standard models have five slots for filter mounting. All contact surfaces are covered with plastic to prevent scratches. Holders with different mounting slot quantity are available on request. M10x1 mouting hole is made in the base of the holder for fastening on optical tables or post holders. **4VFH** is made of **black anodized aluminium** (body and mounting slots). The standard models come **without filters**.



4VFH-5-1 4VFH-5-2

SPECIFICATIONS	4VFH-5-1	4VFH-5-2
Optics diameter	25.4 mm (1")	50.8 mm (2")
Maximum optics thickness	4 mm	4.5 mm
Filter slots	5	5

Custom requests are welcome!!!



3UBP-04
Universal Base Plate

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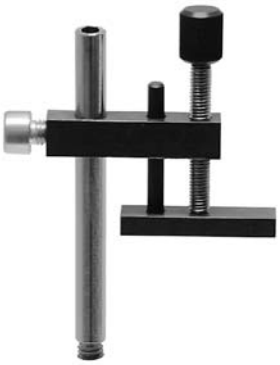
Bar Clamp • V-Clamp

4BC32 • 4VC41

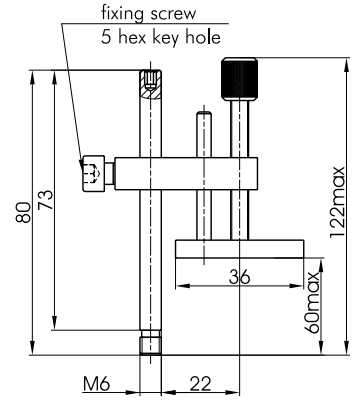


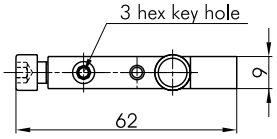
4BC32

4VC41

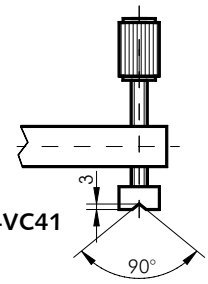
Bar Clamp 4BC32 and **V-Clamp 4VC41** are used for clamping of components directly to flats like a surface of an optical table or translation stage. The V-Clamp **4VC41** is used to hold round optical elements such as lenses. The Bar Clamp **4BC32** is used to hold prismatic elements like glass blocks, prisms, cells. Clamp adjustment range (maximal gap) is **59 mm**. The Bar Clamp 4BC32 and V-Clamp 4VC41 can be mounted anywhere where **M6** threaded holes are available.

Weight: **0.07 kg**



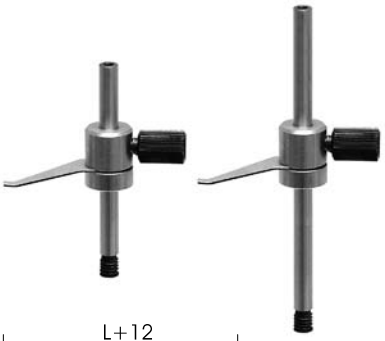


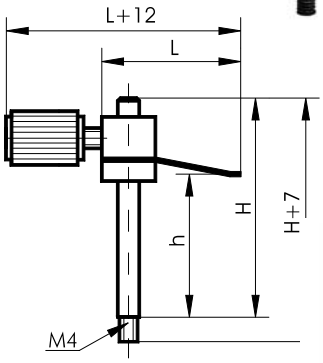
4BC32



Spring Clamps

4SC



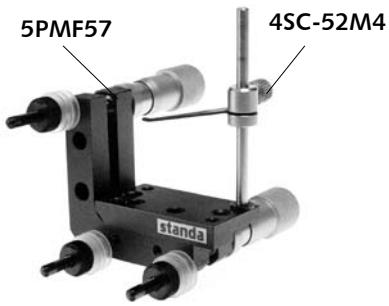


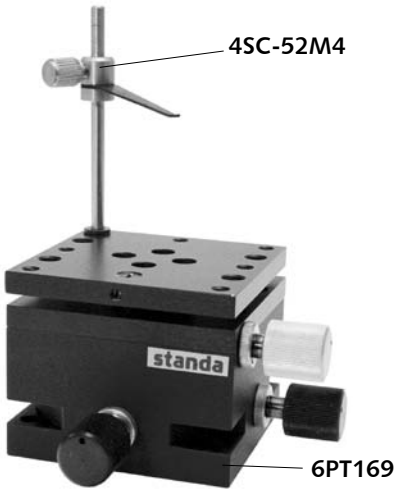
Spring Clamps 4SC are used to clamp components directly to surfaces of optical tables or translation stages. These Clamps are used to hold prismatic elements like glass blocks, prisms, cells.

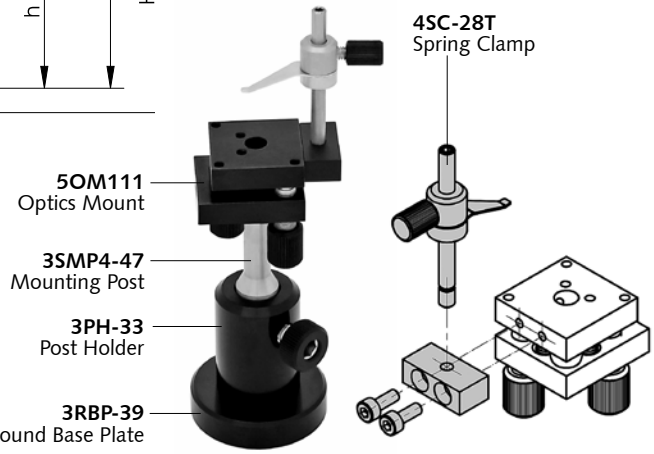
The Spring Clamps **4SC** have an **M4** external screw and can be mounted anywhere where **M4** threaded holes are available.

Weight **0.02 kg**

Model	h, mm	H, mm	L, mm
4SC-52M4	0...52	65.5	40
4SC-28M4	0...28	41.5	26
4SC-28T	0...28	41.5	26







4SC-28T (includes the adapter) is designed for Mirror/Optics Mount **5OM111** when it is used as a tilting table.

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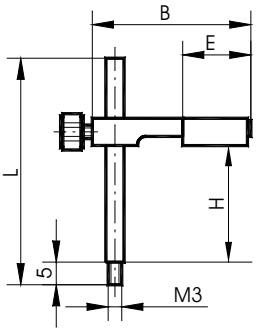
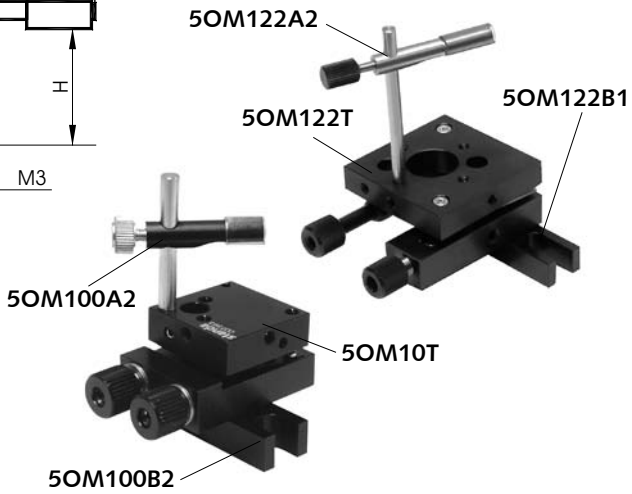
Miniature Clamps

5OM100A2
5OM122A2





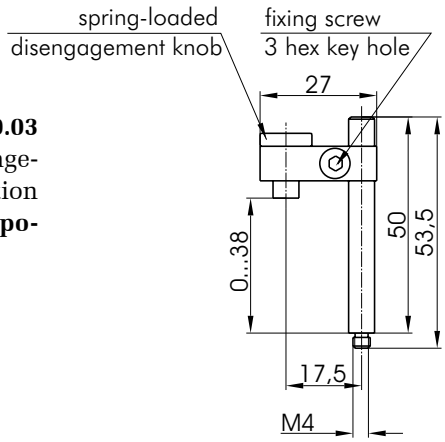
Ideal if the mount is used as a tilt platform. A plastic clutching pad with a fixing screw allows clutching of optical elements up to 1". The rod has a mounting thread **M3**. So the clamp combines with any units, which has **M3** holes.

Model	**H**, mm	**L**, mm	**B**, mm	**E**, mm
5OM100A2	0...25.4	35	25	8
5OM122A2	0...40	50	35	15

Mounting Clamp

6PT110.03

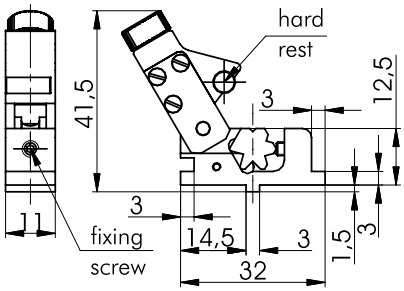
The Mounting Clamp 6PT110.03 with a spring-loaded disengagement knob allows easy insertion and removal of **optical components** up to **38 mm**.



Adjustable Force Fiber Clamp

7FA1

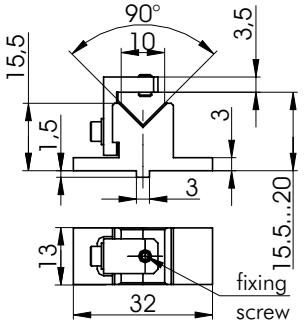
- **V-Grooved insert has 5 different V-Grooves and one flat surface**
- **V-Grooves are suitable for fibers or cylindrical optical elements in the range of 125 μm to 2 mm in diameter (5 places) + one flat surface**
- **Adjustable force fiber clamping arm, 20 to 250 g**
- **Knob on the top is for adjusting the clamping force**
- **Compatible with 7TF2**



Fiber Cable Clamp

7FA4

- **This acessory prevents cabled fiber from being accidentally disturbed. Designed for cables fiber of 900 μm – 3 mm diameter**
- **Compatible with 7TF2**



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Flipping Mirror/Beamsplitter Mounts

5F21

5F21-1
(left hand version)

5F21M-1
(right hand "Mirror" version)

- **Flip optics in and out of the experiment**
- **Repeatability 20 μrad**
- **Kinematic design**
- **Precise and handy angular adjustment in two orthogonal planes**
- **Stable vertical mounting**
- **Adjustment range of 8°**
- **Sensitivity of 3 arcsec**
- **Made of black anodized aluminium**
- **Weight 0.09 kg**
- **5F21M-1 "Mirror" version**

Use the **Flipping Mount 5F21-1** to place optics **in** and **out** of the optical scheme. Flip the platform out and back again – it sits on the adjustment screws in a repeated position.

Precise alignment of various optical elements to desired **angles** is done by **2 adjustment screws**.

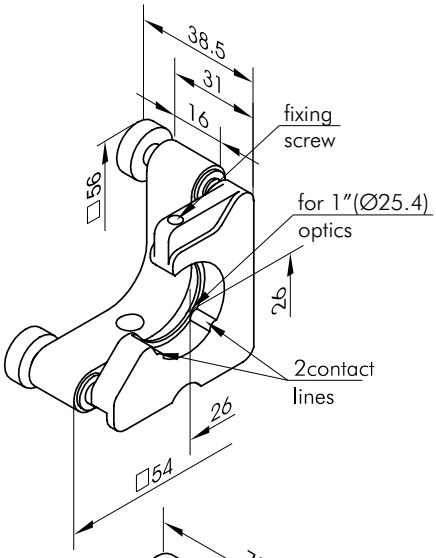
3 seats form 3 kinematic points for definite position of the platform. The seats are of hardened steel. This increases the service life, as they counter the hardened steel tips of adjustment screws and pivot balls.

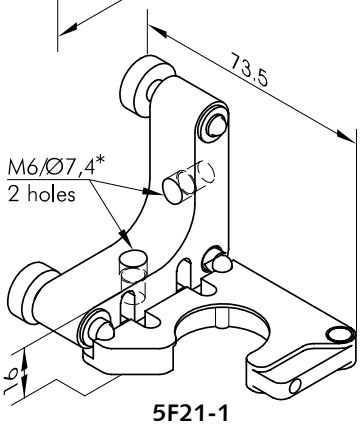
Mount **5F21-1** has a **1"** mounting hole with ∅**24 mm** clear aperture. A fixing screw secures the optics against **2 contact lines**, which make **2 contact points**. To prevent damage to the optics, the tip of the fixing screw is made of **plastic**.

On one side the **edge** of the optics stays **clear**. So you can use the optics close to the edge in schemes where you work with a beam very closely situated to another beam.

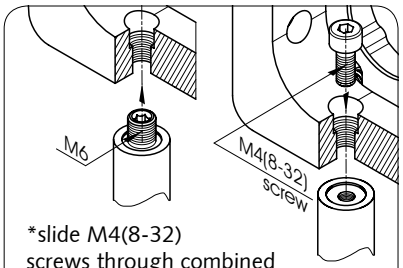
Fine Screws **9S127** or **9SH127** come as standard (one screw has its tip modified to form a kinematic point).

Depending on which side you mount the unit, you flip the platform either vertically or horizontally. By flipping out vertically the optics goes **beneath** the **common level** of the optical scheme. Still one leg of the base, with a **adjustment screw on it**, stays up. Yet this wouldn't obstruct the optical path, as it wouldn't when the optics was flipped in. Legs protruding upwards ease your access to the **adjustment screws**, with less risk of obscuring the beam. No need to design the legs extended down, so as to clear the space totally, like in some flippers from other manufacturers.

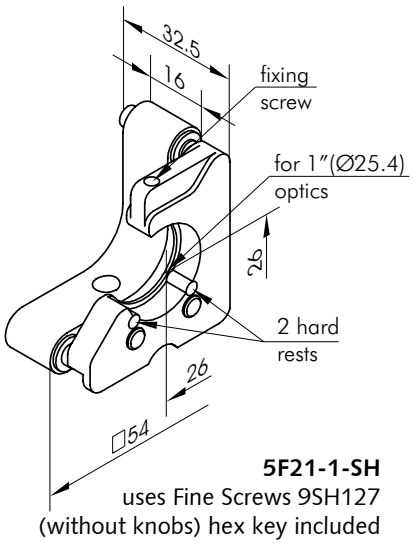




5F21-1
uses Fine Screws 9S127 (with knobs)



*slide M4(8-32) screws through combined M6/Ø7.4 mounting/clearance holes to mount the unit immediately to M4(8-32) holes, or mount the unit directly on any M6 tip



5F21-1-SH
uses Fine Screws 9SH127
(without knobs) hex key included

optics stays in the experiment

optics flipped down

optics flipped to the side

Note: "Mirror" version is a right hand version of the standard model.

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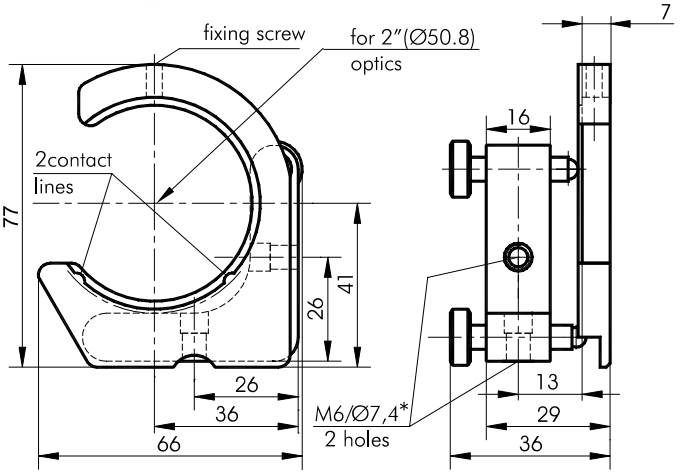
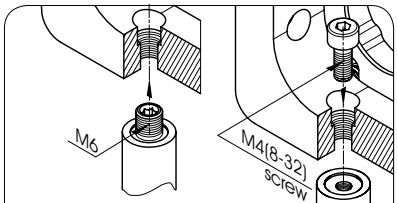
Flipping Mirror/Beamsplitter Mount

5F21-2

- Flip optics in and out of the optical scheme
- Tilt/tip range 8°, sensitivity 3 arcsec
- Kinematic design
- For Ø50.8 mm optics (2 inch)
- 49 mm clear aperture
- Repeatability 20 μrad
- Clear edge design
- Hex key drive optional
- Material: black anodized aluminium
- 5F21M-2 "Mirror" version

5F21M-2





*slide **M4(8-32)** screws through combined **M6/Ø7.4** mounting/clearance holes to mount the unit immediately to **M4(8-32)** holes, or mount the unit directly on any **M6** tip

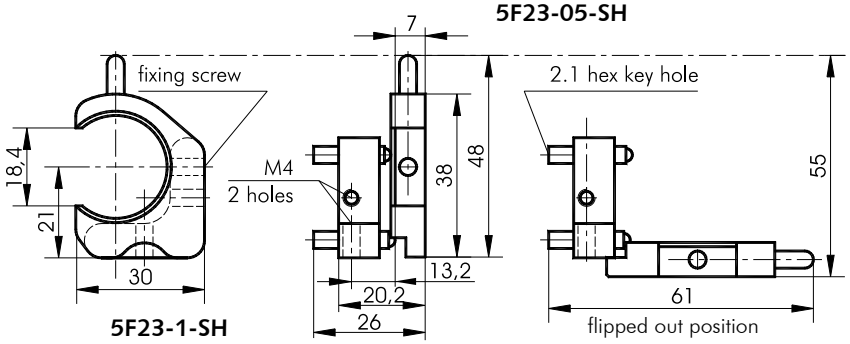
Miniature Flipping Mirror/Beamsplitter Mounts

5F23-1-SH
5F23-05-SH

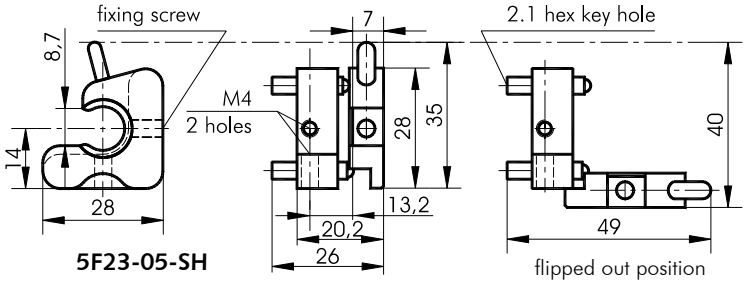
5F23-1-SH

5F23-05-SH

- Flip optics in and out of the optical scheme
- Repeatability 20 μrad
- Tilt/tip range 9°
- Sensitivity 8 arcsec
- For Ø12.7 and Ø25.4 mm (0.5" and 1") optics
- Clear edge design suits schemes where beam passes close to optics' edge
- Kinematic design
- High stability
- Hex key drive
- Material: black anodized aluminium
- Weight 0.02 kg
- "Mirror" versions available 5F23M-1-SH, 5F23M-05-SH



5F23-1-SH



5F23-05-SH

Model	Type	Accepts optics	Clear aperture
5F23-05-SH		Ø12.7 mm (0.5 inch)	Ø10.2 mm
5F23M-05-SH	"Mirror"	Ø12.7 mm (0.5 inch)	Ø10.2 mm
5F23-1-SH		Ø25.4 mm (1 inch)	Ø24 mm
5F23M-1-SH	"Mirror"	Ø25.4 mm (1 inch)	Ø24 mm

Note: "Mirror" version is a right hand version of the standard model.

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Kinematic Mirror/Beamsplitter Mounts

5MBM21-1

5MBM21-1-3

5MBM21-1-2

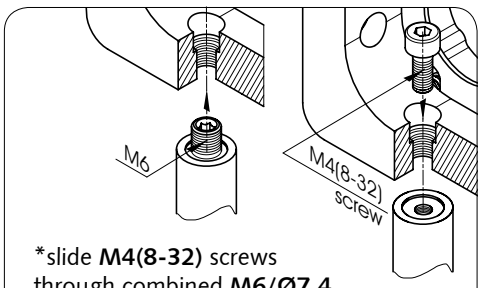
- **Precise and easy adjustment, angular in two orthogonal planes, and linear**
- **Stable vertical mounting**
- **Adjustment range of 9° or 5 mm**
- **Sensitivity of 3 arcsec or 1 μm**
- **Made of black anodized aluminium**
- **Weight 0.09 kg**
- **Available 2 inch version-5MBM21-2**
- **Available motorized version-8MBM21**

Kinematic Mirror/Beamsplitter Mounts 5MBM21-1 are designed for precise alignment of various optical elements to desired **angular** and **linear** orientation. Models with **2** or **3** screws are available (see ordering).

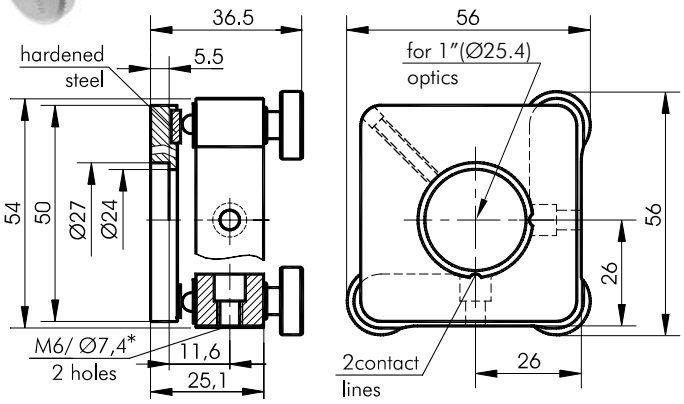
The base of the mount has holes ∅**8.7 mm** for adjustment screws of your choice. As standard, we fit Fine Screws **9S127** or **9SH127**. Each screw has a hardened steel ball tip.

The mounts have a **one inch** mounting hole with ∅**24 mm** clear aperture.

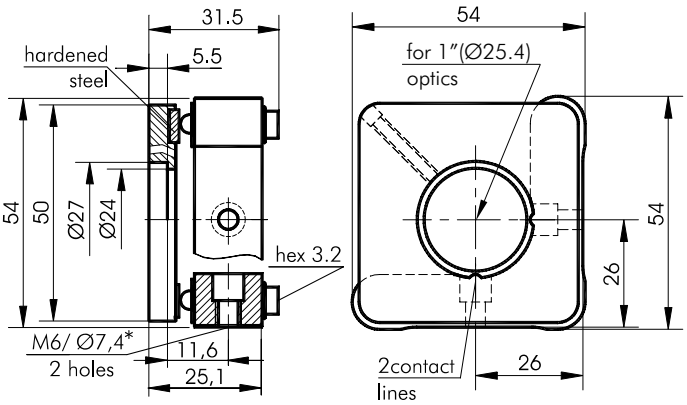
5MBM21-1 may be mounted on one side or another, e.g. to swap left/right hand side of access to the drive relative to the beam. It mounts to an **M6** screw or directly to **Mounting Posts** on their **M6** tips. Put an **M4** screw through the combined ∅**7**/**M6** hole to fasten the mount to units with **M4** holes.



*slide **M4(8-32)** screws through combined **M6**/**Ø7.4** mounting/clearance holes to mount the unit immediately to **M4(8-32)** holes, or mount the unit directly on any **M6** tip



5MBM21-1-3 uses three Fine Screws **9S127**



5MBM21-1-3SH uses three Fine Screws **9SH127**

Ordering 5MBM21-1

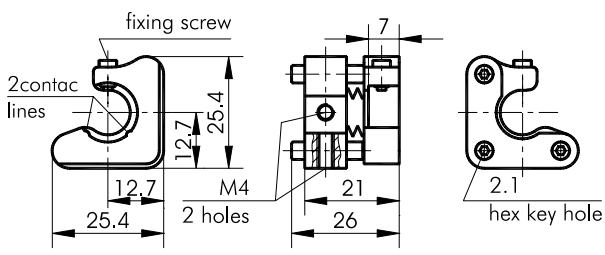
To specify how many screws you want in a mount, append the number to the code. Suffix "SH" specifies hex screws.

Examples:

5MBM21-1-3	3 screws
5MBM21-1-2	2 screws
5MBM21-1-2SH	2 **hex** screws

Miniature Kinematic Mirror/ Beamsplitter Mount

5MBM23-05-3SH



- **For Ø12.7 mm optics (0.5 inch)**
- **Kinematic**
- **Clear edge design**
- **Hex key drive**
- **Tilt/tip range 14°**
- **Sensitivity 8 arcsec**
- **Black anodized aluminium**
- **Weight 0.03 kg**
- **"Mirror" version available 5MBM23M-05-3SH**

Model	Type	Accepts optics	Clear aperture
5MBM23-05-3SH		Ø12.7 mm (0.5 inch)	Ø10.2 mm
5MBM23M-05-3SH	"Mirror"	Ø12.7 mm (0.5 inch)	Ø10.2 mm

Note: "Mirror" version is a right hand version of the standard model.

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Kinematic Mirror/Beamsplitter Mounts 5MBM24

5MBM24-1-3

5MBM24-2-3SQ

- 1", 2", 3" optics mounts
- Tilt range 9° (about two axes)
- Travel range 4 mm
- Sensitivity of 3 arcsec and 1 μm
- Mounting on either of 2 sides
- Two models – round and square aperture
- Kinematic
- Clear edge design
- A screw pushes via seat of hardened stainless steel
- "Mirror" versions available
- Black anodized aluminium
- Available motorized version – 8MBM24

Kinematic Mirror/Beamsplitter Mounts 5MBM24 are used for precise angular and linear alignment of optical elements.

There are **two series**: one for **round** (**5MBM24-1, 5MBM24-2, 5MBM24-3**) and one for **square** (**5MBM24-1SQ, 5MBM24-2SQ, 5MBM24-3SQ**) optical elements.

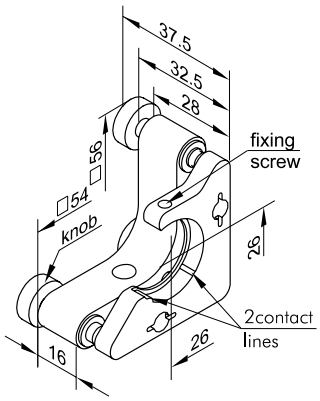
5MBM24 has a resting flange to stop the optics. One fixing screw (two in "square" mounts) secures the optics against **2 contact lines**, which make **2 contact points**. To prevent damage to the optics, the **tip** of the fixing screw is made of **plastic**.

Square mount additionally has **4 fixing screws** for **thin optics**. They have conic tips to work as wedges to clutch a thin plate of optics to the resting flange. For thick optics it has **2** screws rather than one.

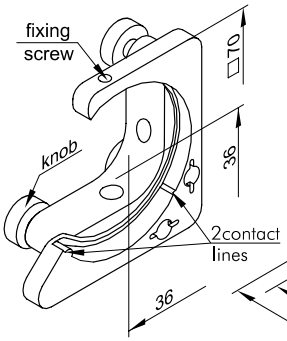
A platform is preloaded by two strong coil springs, ensuring tight kinematic fit. A thick base adds to stability.

This allowed us to eliminate part of the mount, keeping **clear** one **edge** of the optics. Useful in schemes where **beams** go very **close to each other**.

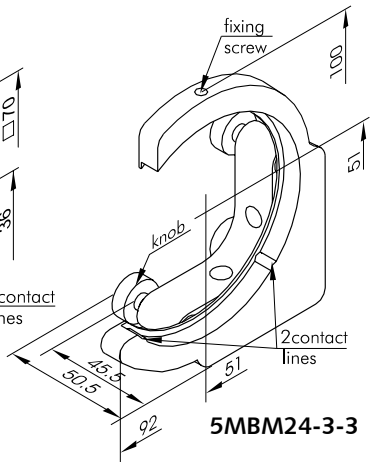
As standard, we fit screws 9S127. You may order the mounts with **2** or **3 adjustment screws**. Choose any **screw** and **removable knob** found in **section 9**.



5MBM24-1-3
uses three Fine Screws 9S127 (with knobs)
5MBM24-1-3SH
uses three Fine Screws 9SH127 (without knobs)
risk of tampering is reduced (hex key included)



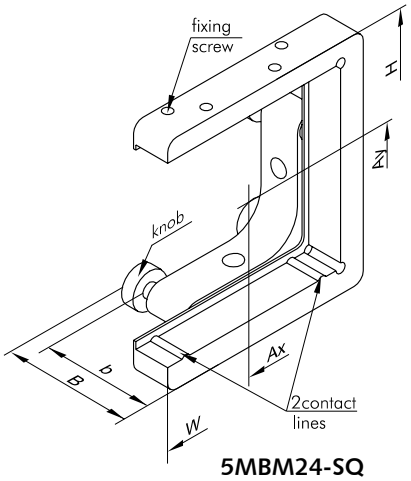
5MBM24-2-3



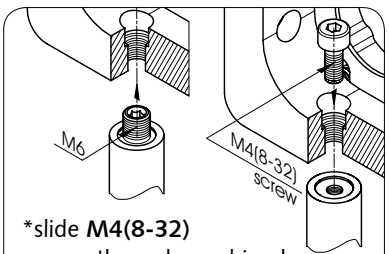
5MBM24-3-3

Available motorized version – 8MBM24

Model	H, mm	W, mm	B, mm	b, mm	Ax, mm	Ay, mm
5MBM24-1-3SQ	56	56	37.5	32.5	26	26
5MBM24-2-3SQ	72.5	64	37.5	32.5	37.4	38.2
5MBM24-3-3SQ	102.5	92.5	50.5	45.5	53.6	55.4



5MBM24-SQ



*slide **M4(8-32)** screws through combined **M6/Ø7.4** mounting/clearance holes to mount the unit immediately to **M4(8-32)** holes, or mount the unit directly on any **M6** tip

Examples of codes:	Screws:
5MBM24-1-**3**	3
5MBM24-1-**2**	2
5MBM24-1-**2SH**	2 hex
5MBM24-1-**3SH**	3 hex

"**SH**" – hex screws. Removable hex **knobs 9RK127** are available separately.

5MBM24-**1**-3	for 1" optics
5MBM24-**2**-3	for 2" optics
5MBM24-**3**-3	for 3" optics
5MBM24-1-3**SQ**	square aperture
5MBM24-1-3	round aperture
5MBM24**M**-1-3	"Mirror" version

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Mounts with hard seats

5MBM22S-1
5MBM22SP-1
5MBM22S-2
5MBM22SP-2

5MBM22S-1-3SH

5MBM22S-2-3

- **Original stabilized L-shaped flat spring**
- **1″ and 2″ optics mounts**
- **Precise (sensitivity of 3 arcsec and 1 μm)**
- **Stable, with hard steel or sapphire seats under adjustment screws**
- **Tilt range of 5° in two orthogonal planes**
- **Travel range 4 mm**
- **Vertical mounting on either of two sides**
- **"Mirror" versions available**
- **Material: black anodized aluminium**

Each screw has a hardened steel ball tip. It pushes the aluminium platform against a **hard seat**. This results in increased durability, stability, and fine motion.

M6/∅**7,4** mounting/clearance holes are centered against the center of the mounted optics.

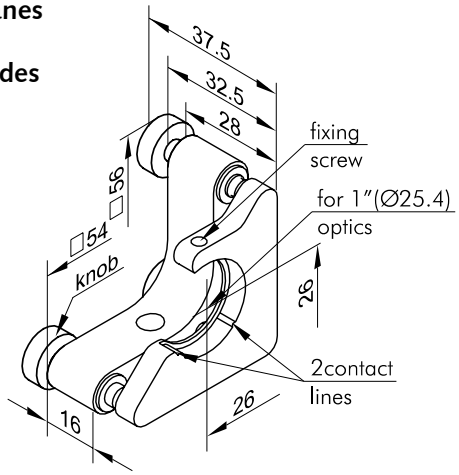
The platform has an original L-shaped flat spring. It performs two functions: preloading the platform, and reducing its drift. The high tension spring and the thick base of the unit increase its stability. This allowed to eliminate a part of the mount, keeping clear one side of the optics.

Mounts **5MBM22S, 5MBM22SP** have a **1"** and **2"** mounting hole. A fixing screw secures the optics against **2 contact lines**, which make **2 contact points**. To prevent damage to the optics, the **tip** of the fixing screw is made of **plastic**.

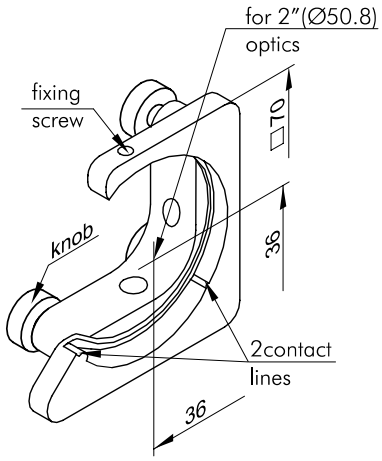
On one side the **edge** of the optics stays **clear**. So you can use the optics close to the edge in schemes where beams are very closely situated to one another.

You may order mounts with **2** and **3** adjustment screws.

5MBM22SM-1-2SH



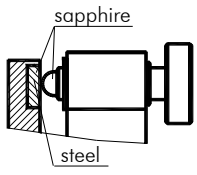
5MBM22S-1-3
uses three Fine Screws 9S127 (with knobs). **5MBM22S-1-3SH** uses three Fine Screws 9SH127 (without knobs) risk of tampering is reduced (hex key included)



5MBM22S-2-3
uses three Fine Screws 9S127 (with knobs). **5MBM22S-2-3SH** uses three Fine Screws 9SH127 (without knobs) risk of tampering is reduced (hex key included). Other dimensions are like in **5MBM22S-1**

SPECIFICATIONS	**5MBM22S(P)-1**	**5MBM22S(P)-2**
Tilt/tip range	5°	5°
Sensitivity	5(3) arcsec	5(3) arcsec
Travel range	4 mm	4 mm
Sensitivity	1(0.5) μm	1(0.5) μm
Optics diameter	≤ ∅25.4 mm	≤ ∅50.8 mm
Clear aperture	24 mm	45 mm
Weight	0.09 kg	0.14 kg

5MBM22SP

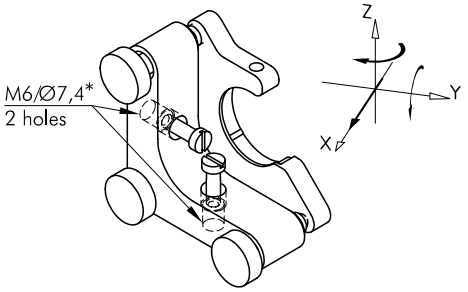


5MBM22S

A screw pushes via a seat of **hardened stainless steel** or **sapphire**.

Examples of codes:	Screws:
5MBM22**S**-1-**3**	3
5MBM22**S**-1-**2**	2
5MBM22**S**-2-**2SH**	2 hex
5MBM22**SPM**-1-**3SH**	3 hex

"S" – a screw pushes via a seat of **hardened stainless steel**
"SP" – a screw pushes via a seat of **sapphire**
"M" – **"Mirror"** version
"-1-" – for **1"** optics
"-2-" – for **2"** optics
"-2" or **"-3"** – number of screws
"SH" – hex screws. Removable hex **knobs 9RK127** are available separately.



*slide **M4(8-32)** screws through combined **M6/Ø7.4** mounting/clearance holes to mount the unit immediately to **M4(8-32)** holes, or mount the unit directly on any **M6** tip

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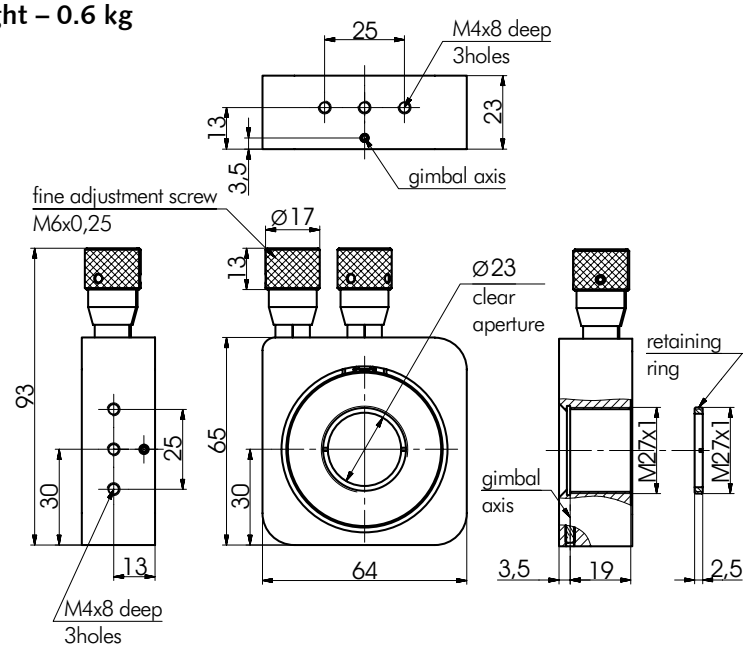
True Gimbal Mount

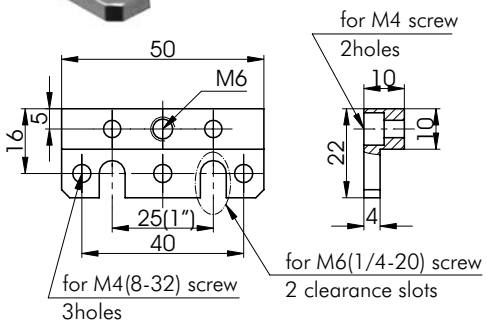
5GM25T-1

- **True Gimbal design**
- **Adjustment knobs with engraved scale**
- **±2.5° angular range**
- **Hardened steel drive for stability**
- **Lightweight aluminium body**
- **Weight – 0.6 kg**

Completely independent axis!



3BPVDOM
Base Plate



Two plastic padding rings and a retaining ring M27x1 to fix the optics are included.

A tightening key **3K-25** for the retaining ring is available on request.

*Motorized version **8MGM25T-1***

SPECIFICATIONS

Optics diameter	25,4 mm
Clear aperture	23 mm
Angular range	±2,5°
Type of actuator	8CMA20-8/15
Resolution*	
in full step	1,25 μm
in 1/8 step	0,156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
Maximum speed	4 mm/s
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	0.7 kg

*Dependence between actuators' movement and angular displacement of optical element is not linear.

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Precision Kinematic Optical Mounts

- **Precise and handy two orthogonal angular adjustments**
- **Stable vertical mounting**
- **9° adjustment range**
- **Various modifications with sensitivity from 10 arcsec to 3 arcsec**
- **M6×0.35 adjustment screws provide precise kinematic control**
- **Made of black anodized aluminium**

Precision Kinematic Optical Mounts are designed for precise angular alignment of optical elements, in a range of 9° in both orthogonal axes.

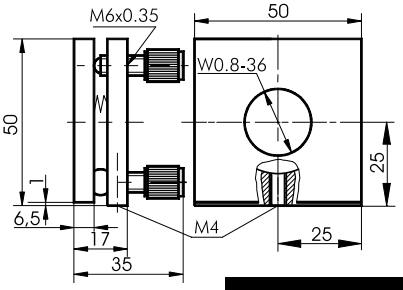
The **tilting** element is always true-kinematic-registered.

The Mounts are produced of **black anodized aluminium.** Custom colors are available on request.

Objective Mount — 5OBM119

Objective Mount 5OBM119 has W0.8-36 aperture and is used for precise adjustments of standard microscope objective lenses and allows low-cost positioning of a focus point. Applications - it can also be used in fiber optics.

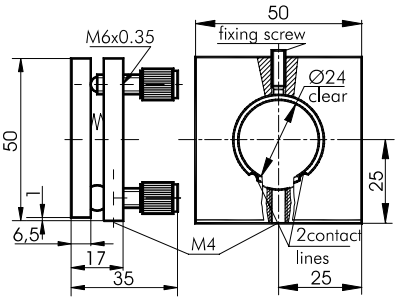
Weight **0.08 kg**



Beamsplitter/Optics Mount — 5BM121

Beamsplitters/Optics Mount 5BM121 is designed for beamsplitters of ∅**25.4 mm (1 inch)**. Fixing screw with a plastic tip clutches a beamsplitter against **2 contact lines**. Mounting opening has a **rest-flange** designed to stop optics inside – its clear aperture is ∅**24 mm**.

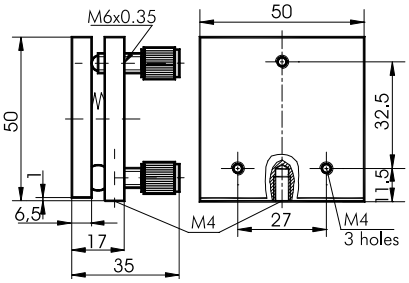
Weight **0.09 kg**



Universal Mirror Mount/Platform — 5UM122

Universal Mirror Mount/Platform 5UM122 is suited for precise adjustments of standard mirrors which can be directly bound to it. The mount may also be used in horizontal position as a tilt table. Then it can be used to align opto-mechanics around two axes. For such mounting the Mount has an **M4** hole on its back.

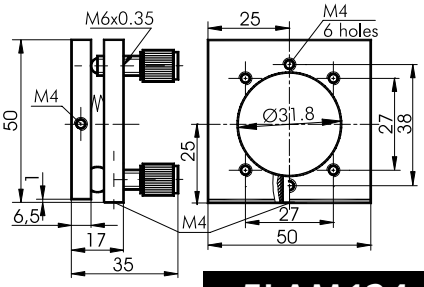
Weight **0.11 kg**



Large Aperture Optical Mount — 5LAM124

Large Aperture Optical Mount 5LAM124 on its platform has ∅**31.8** aperture and **six M4** mounting holes. It is designed for precise orthogonal adjustment of mirrors.

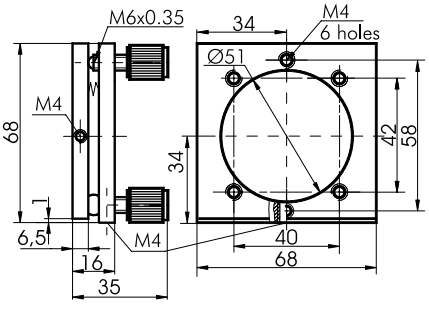
Weight **0.08 kg**



Large Aperture Optical Mount — 5LAM124-2

Large Aperture Optical Mount 5LAM124-2 has ∅**51 mm** aperture and is designed for precise kinematic orthogonal adjustment of mirrors.

Weight **0.1 kg**



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Budget Kinematic Optical Mounts

- **Handy two orthogonal angular adjustments**
- **9° range**
- **Sensitivity 3 arcsec**
- **M6×0.25 adjustment screws provide precise kinematic control**
- **Made of black anodized aluminium**

LOW-COST VERSION

Budget Kinematic Optical Mounts are designed for angular alignment of optical elements, in a range of 9° in both orthogonal axes.

The **tilting** element is always true-kinematic-registered.

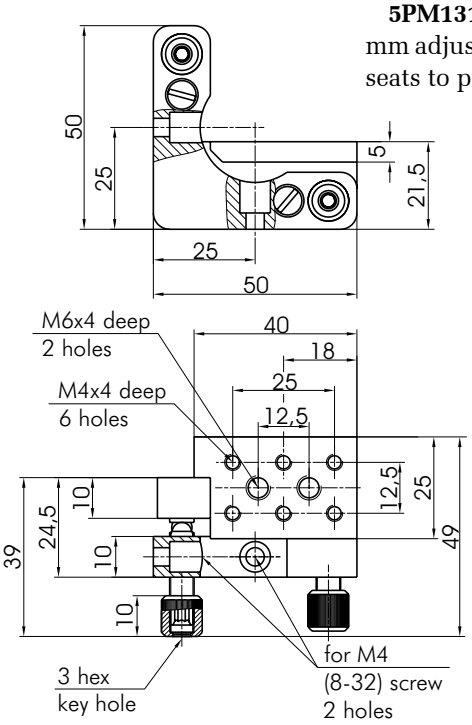
The Mounts are produced of **black anodized aluminium.** Custom colors are available on request.

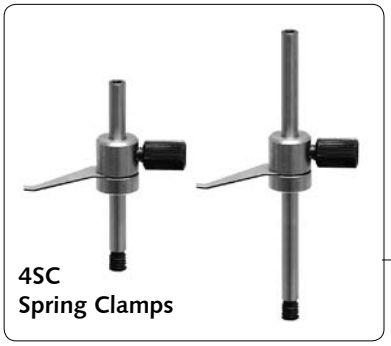
Prism/Optics Mount — 5PM131

Prism Mount 5PM131 provides basic mounting for prisms, beamsplitter, cubes and etc. **Spring clamps 4SC** series should be ordered seperately. This mount is metric compatible.

5PM131 Mounts are equipped with fine pitch M6x0.25 mm adjustment screws, which rest upon hardened steel seats to provide reliable and repeatable adjustment.

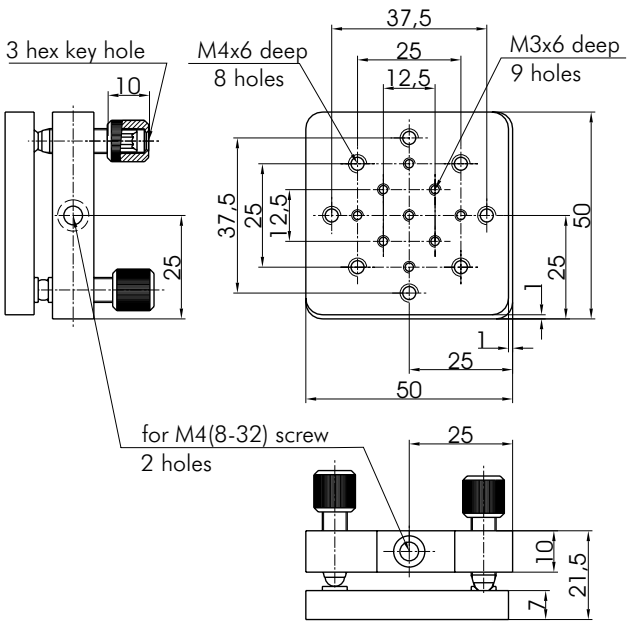
Weight **0.1 kg**





"Right-hand" version available

Universal Platform Mount — 5UM131



Universal Platform Mount 5UM131 is designed for precise adjustments of various optical components which can be directly bound to it. The mount can be also used horizontally for tip/tilt adjustment.

Weight **0.11 kg**

Ordering information on the next page.

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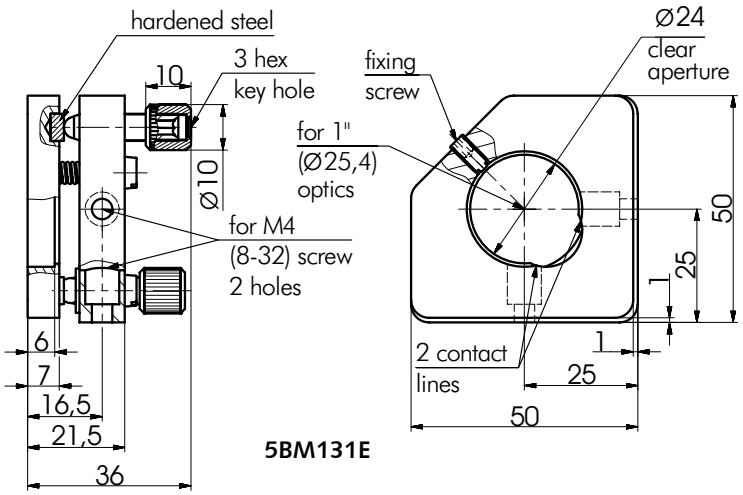
Beamsplitter/Mirror Mounts

Beamsplitter/Mirror Mount **5BM131E**

"Right-hand" version available

- **for Ø25.4 mm (1 inch) optics**
- **Reset-flange inside the central aperture stops the optic**
- **Nylon-tipped fixing screw secures the optic**
- **M6×0.25 adjustment screws provide precise kinematic control**
- **Weight 0.08 kg**

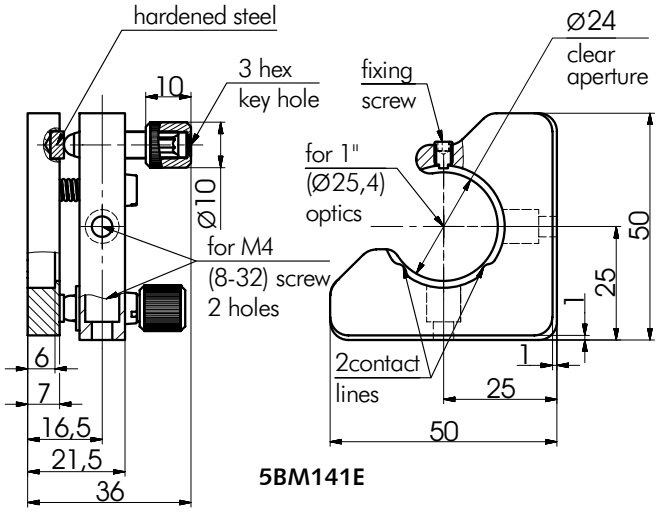


5BM131E

Mirror Optical Mount **5BM141E**

"Right-hand" version available

- **for Ø25.4 mm (1 inch) optics**
- **2 contact points for optimum stability**
- **One edge of the optics stays clear, helpful in schemes where beams are very closely situated to one another**
- **M6×0.25 adjustment screws provide precise kinematic control**
- **Weight 0.08 kg**



5BM141E

Ordering Information

for 5PM131, 5UM131, 5BM131E and 5BM141E

To specify how many adjustment screws you want in a mount, append the number to the code.

Examples of codes:

5UM131-3	3 adjustment screws
5BM131E-1-2	2 adjustment screws
5BM141EM-1-2	"Right-hand" version with 2 screws
5PM131M-3	"Right-hand" version with 3 screws

Other **modifications** are available

5BM141-1-3R

more info on **www.standa.lt**

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Precision and High Stability Optics Mounts

5OM60 • 5OM61

5OM60-3-9S67M

5OM61-2-9S67M

Precision and High Stability Optic Mounts 5OM60 and 5OM61 are universal, durable, and render very stable adjustment.

Independent **tilt** about two horizontal axes – **6°** with **3 arcsec** sensitivity. Linear **translation – 5 mm,** sensitivity – **1 μm**. For translation a third actuator replaces the removable socket and the pivot bearing.

To enhance stability: the platform is preloaded by **three special spring blocks**; actuators push against hardened steel **seats**.

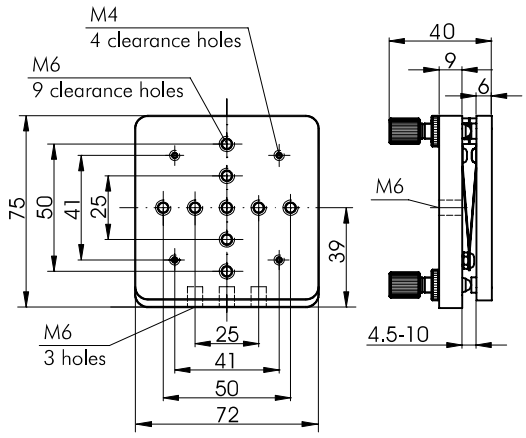
The mounts have **M6** mounting holes. Mount **5OM61** also has a ∅**42 mm** clear aperture.

The mounts can be fastened on any mounting post on its **M6** tip. Additionally, mount **5OM60** has a hole on its back and can be mounted in **horizontal** position to be used as a **tilt** platform.

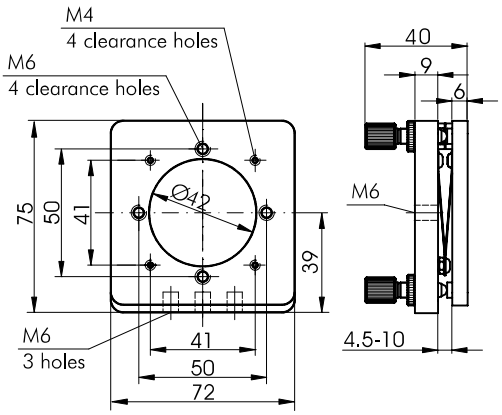
The base of the stage has three holes **M10x1** for adjustment screws of your choice. Standard screws have a pitch of **0.5 mm**. For greater **sensitivity** you may request actuators with **0.35** or **0.25** pitch.

Material: black anodized **aluminium** (default), black finished **steel** (on request). The codes for steel mounts are: **5OM60S, 5OM61S**.

Weight **0.35 kg**



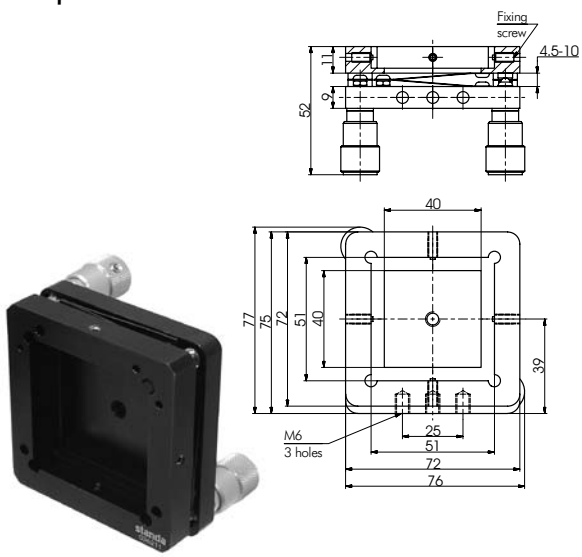
5OM60-3-9S67M



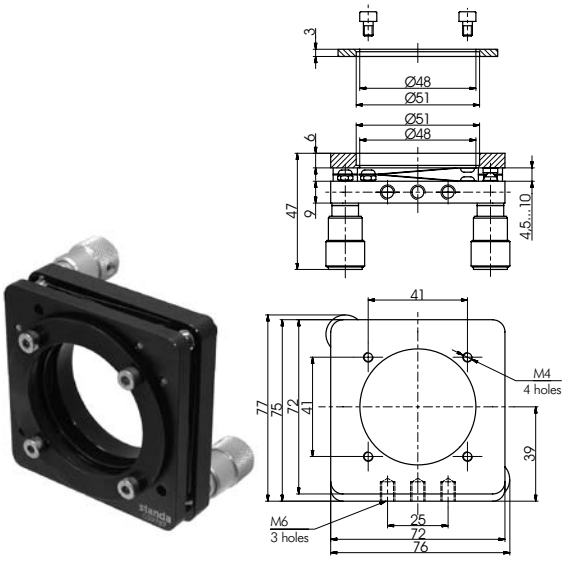
5OM61-3-9S67M

See the next page
"Modifications and ordering 5OM60 and 5OM61"

We modify our standard articles according to your request even for one piece order



5OM60-SQ2
With square type frame of 50.8 mm (2 inches)



5OM61-RN2
With ring type frame of 50.8 mm (2 inches)

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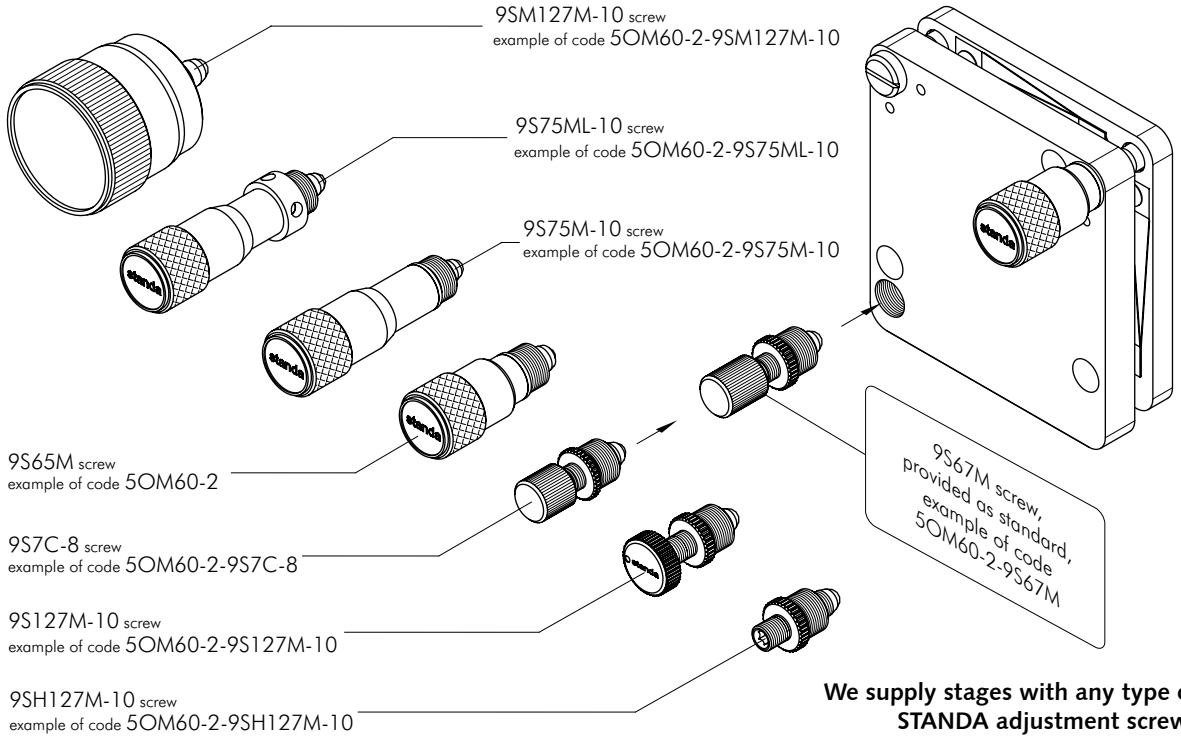
Modifications and ordering

5OM60 and 5OM61

Examples of codes for 5OM60 stages:

5OM60-3	has three 9S65M adjustment screws
5OM60-2	has two 9S65M adjustment screws and 1 ball
5OM60S-3	made of steel, and has three 9S65M screws
5OM60-3-9S67M	has three 9S67M adjustment screws
5OM60-2-9S127M-10	has two 9S127M-10 screws and 1 ball
5OM60-2-9S127M-10-K15	has two 9S127M-10-K15 screws and 1 ball
5OM60-2-9S7C-8	has two 9S7C-8 screws and 1 ball

The stage may be fitted with **2 or 3** screws. A variant with **2** adjustment screws has a ball ∅**8** as a third base-point. The stage comes with **9S67M** screw as standard. You don't have to specify this screw in your order. If you order the stage with alternative screws, please specify this in order, by appending the screw code name to the stage code.



We supply stages with any type of STANDA adjustment screws (see section 9).

Combination of standard **Optics Mount, Translation Stages** and **Beam Expander**

See page 10-19 for details

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Highly Stable Precision L-shaped Steel Optical Mounts

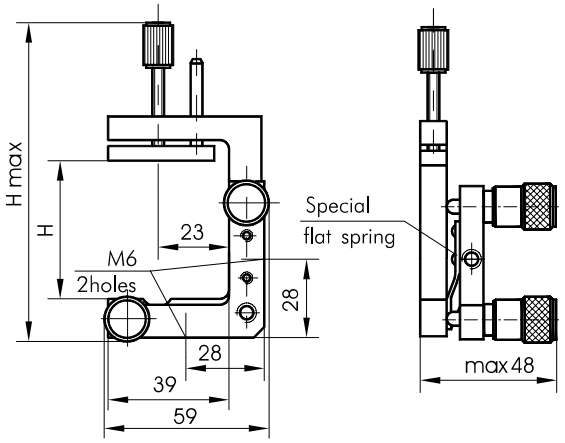
- **Special flat spring for improved stability, versatility and durability**
- **Kinematics, orthogonal angular adjustments**
- **9° range, 5 arcsec sensitivity**
- **Left or right hand mountable**
- **Vertical and horizontal mounting**

Highly Stable Precision L-shaped Optical Mounts are designed on the basis of two angular adjustment mount, and are produced of steel with black chemical finishing. Special figure spring is used in these Mounts for two purposes:

1. It provides pre-loading against the tips of two precise adjustment screws for elimination of backlash.
2. It ensures the absence of the roll coordinate.

The Highly Stable Precision L-shaped Optical Mounts have two M10x1 threaded holes for actuator mounting. This allows using all STANDA adjustment screws with these mounts. M6 tapped holes on the sides provide a wide variety of mounting configurations, either horizontal or vertical. A special L-shaped design of the Mounts allows for maximum clear aperture.

Two Angular Fine Adjustment Mounts — 5OM37



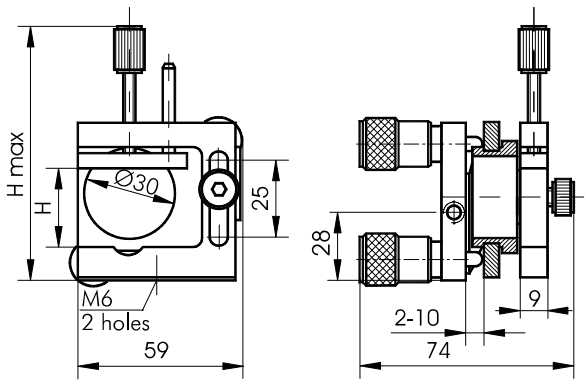
Two models - for optical elements sized 0-28 mm and 22-52 mm - are available. Adjustment about two angular coordinates. A clamping bar is used to fix optical elements, ensuring gentle but firm clutch.

5OM37M - "Mirror" version is a right hand version of the standard.

Model	**H**, mm	**H_{max}**, mm	**Weight**, kg
5OM37-20	0-28	89	0.23
5OM37-50	22-52	122	0.28
5OM37M-20	0-28	89	0.23
5OM37M-50	22-52	122	0.28

Polarization Optics Mount — 5OM38

The same functions as 5OM37, but additionally provides 360° rotation around the optical axis. Ideally suitable for positioning of polarization filters.



Model	**H**, mm	**H_{max}**, mm	**Weight**, kg
5OM38-20	0-26	108	0.43
5OM38-40	18-46	127	0.42

Modified **Optical Positioners** with **Motorized Actuators** are available

8MBM57-6

8MBM21-1-2

8MBM24-1-2

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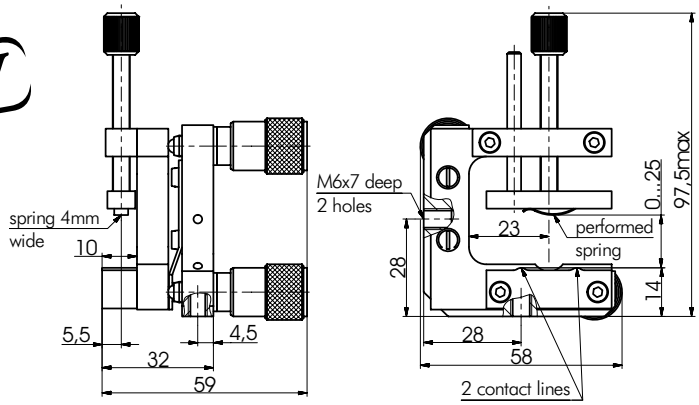
Two Angular Fine Adjustment Mounts

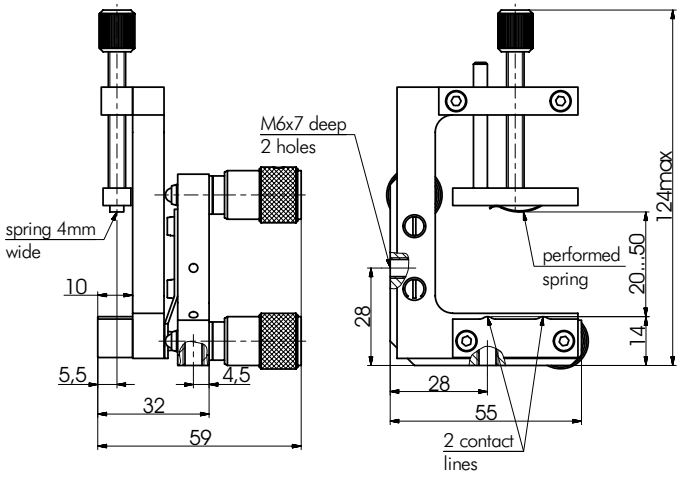
5OM37-TPF

5OM37-50TPF

new



5OM37-20TPF



5OM37-50TPF

Optics Mount 5OM37-TPF offers possibility not only to hold optics of different size and shape but also grants orthogonal angular adjustment. Accepts objects from 20 mm to 50 mm in height. Unique property of this mount is that the length is not limited – this comes handy when application requires optics to be centered. Smooth and gentle securing of the inserted element is provided by the metal spring from above and two contact lines from below.

Model	**Weight,** kg
5OM37-20TPF	0.23
5OM37-50TPF	0.28
5OM37-20TPF-9S7C	0.23
5OM37-50TPF-9S7C	0.28

Application suggestions

5FM57
Multiple Filter Mount

5OM37-20
Two Angular Fine Adjustment Mount

5PMF57
Universal Prism/Optics Mount

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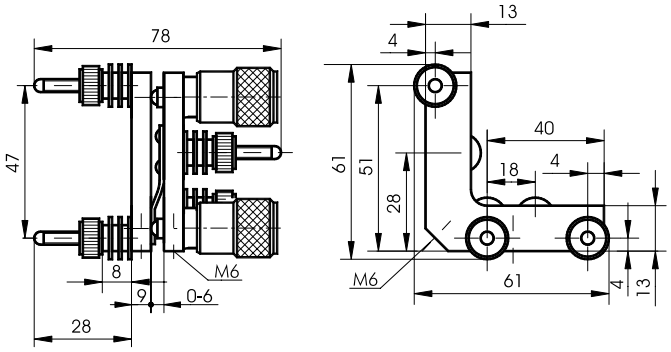
Multiple Filter Mount — 5FM57

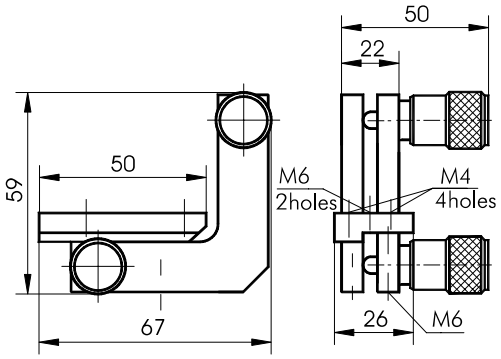


Provides fixation and adjustments of up to 6 filters about two angular coordinates. Filter thickness can be from 2 mm to 6 mm.

Weight **0.27 kg**

Prism/Optics Mount — 5PM57

Sold separately see page 4-10



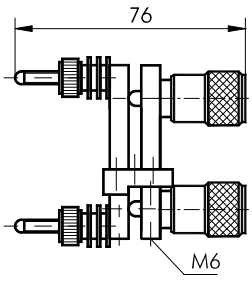
Platform of this holder allows to hold wider optics. Clamps 4BC32 and 4VC41 (ordered separately) used for fastening optical elements like prisms, cubes and etc.

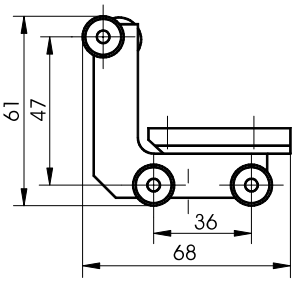
Weight **0.29 kg**

LOW-COST page 5-8
versions are available

Universal Prism/Optics Mount — 5PMF57

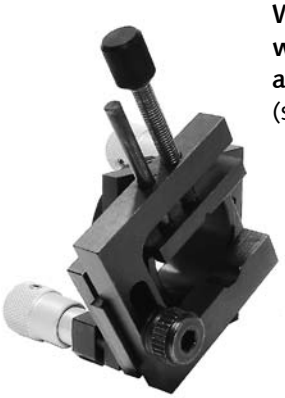
Sold separately see page 4-10





The same as 5PM57 with filter holder as in 5FM57. Weight **0.31 kg**

Modifications and ordering — Optical Mounts



We supply optical mounts with any of STANDA adjustment screws (see section 9).

Examples of codes for mounts:

5OM38-20	with 9S65M screws
5OM38-20-9S67M	with 9S67M screws
5OM38-20-9S127M-K5	with 9S127M-K5 screws
5OM38-20-9S7C	with 9S7C screws

Standard stages come with 9S65M adjustment screw. You don't have to specify this screw in your order. If you order the stage with alternative screws, please specify this in order, by appending the screw code name to the stage code.

See section 9 for screws and their codes.

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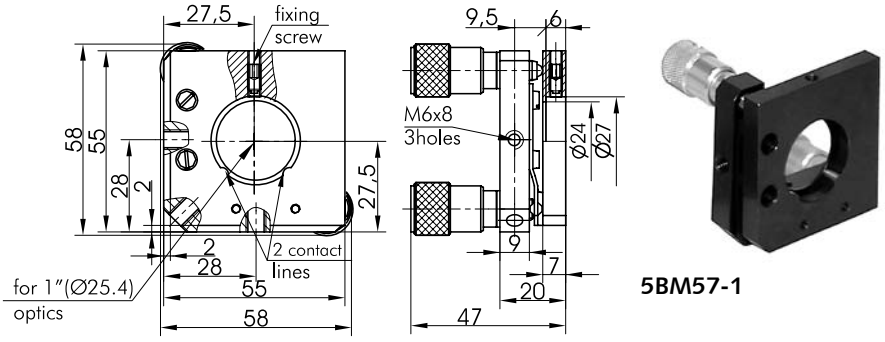
Stable Steel Mirror/Beamsplitter Mounts

5BM57

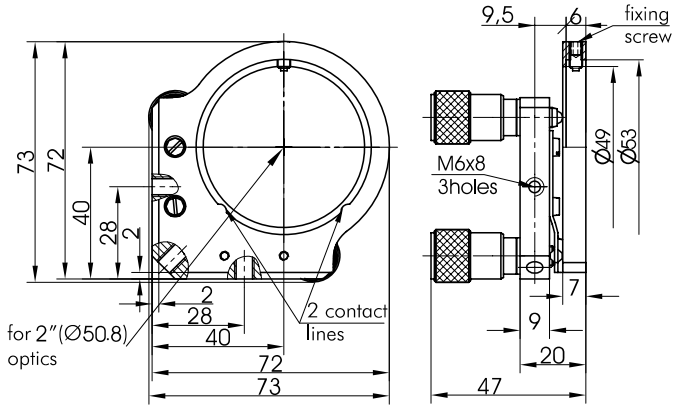
- **Special flat spring for improved stability versatility and durability**
- **Suitable for 1", 2", 3", 4", 6" optics**
- **Tip/tilt range 6°**

The mount comes with 9S65M screw as standard. You may choose different screws. If you order the mount with alternative screws, please specify this in order, by appending the screw code name to the mount code. See section 9 for screws and their codes.

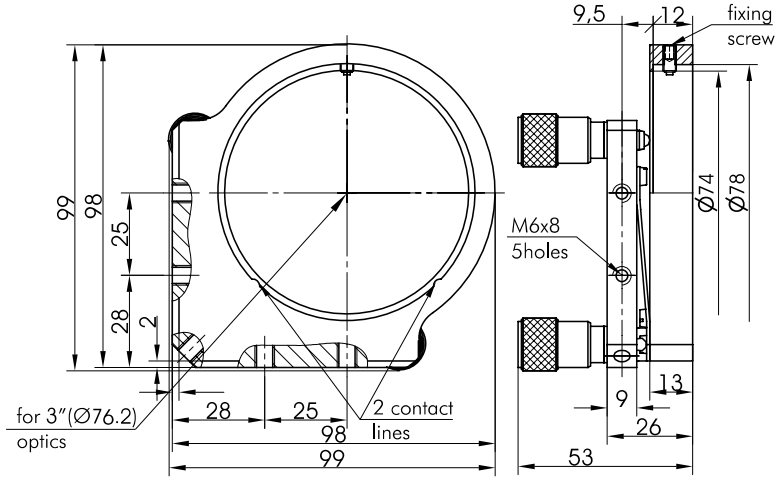
A special holder with two contact lines for optics and plastic fixing screw.



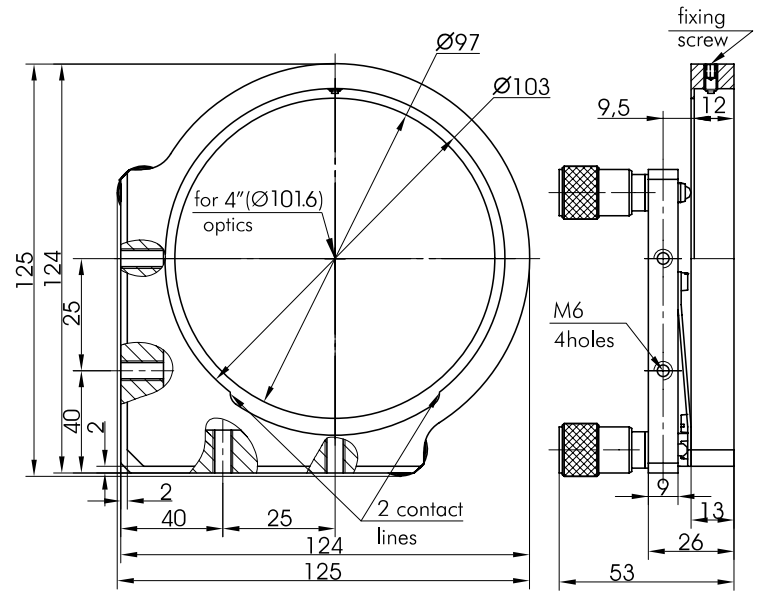
5BM57-1



5BM57-2



5BM57-3



5BM57-4

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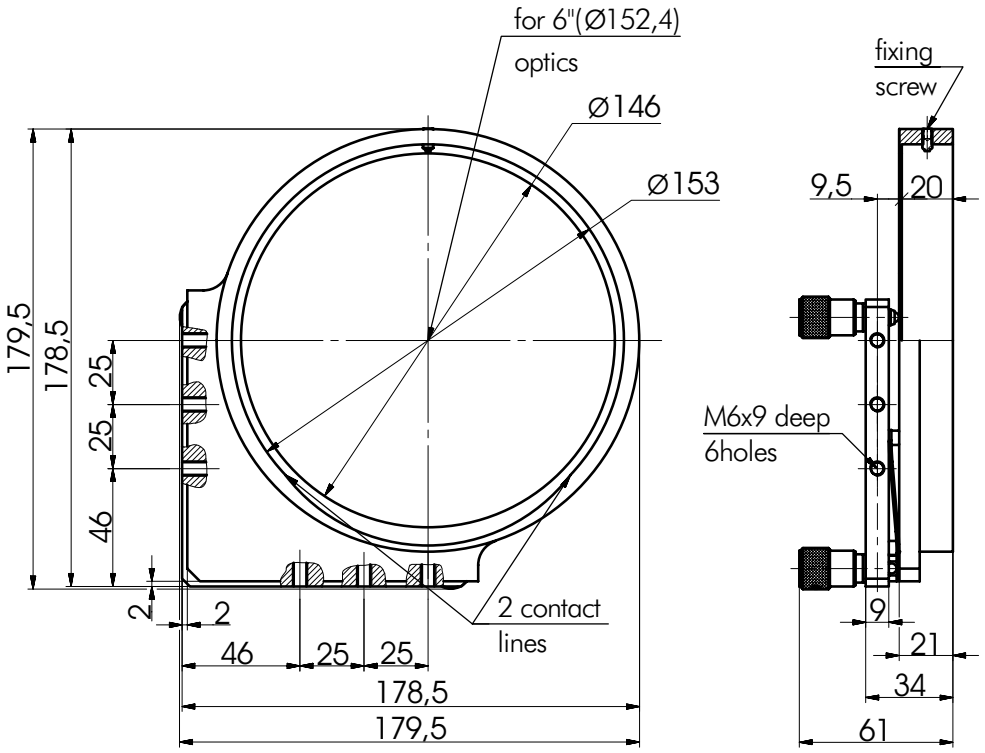

5BM57-6

Ordering Information

Model		**Weight**, kg
5BM57-1	for 1”(∅25.4) optics	0.07
5BM57-2	for 2”(∅50.8) optics	0.18
5BM57-3	for 3”(∅76.2) optics	0.44
5BM57-4	for 4”(∅101.4) optics	1.04
5BM57-6	for 6”(∅152.4) optics	1.4

Available motorized version

8MBM57-2

8MBM57-4

8MBM57-6

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Miniature Precision Mirror Mounts

- **Miniature mounts for small optical elements**
- **±10° tilt adjustments about two orthogonal axes**
- **High degree of versatility**
- **Made of black anodized aluminium**

Miniature Precision Mirror Mounts ensure precise angular adjustments of small optics about two orthogonal axes with 10 arcsec sensitivity. M4 and M6 taped holes are provided for mounting. These black anodized aluminium mounts are ideal for holding 25 mm and smaller optics in tight spaces.

Mirror/Optics Mount — 5OM111

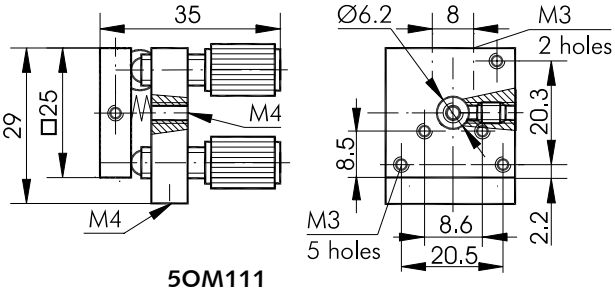
Mirror/Optics Mount 5OM111 provides smooth and precise adjustment with sensitivity of **10 arcsec**.

It can be used as a tilt platform – with Spring Clamp **4SC-28M4** and Mounting Post **3SMP4-47**.

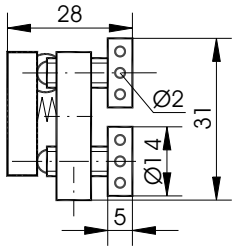
Platform of the mount has a clear aperture of **6.2 mm** in diameter.

The mount has **M6×0.35 mm** holes on its base for adjustment screws. Alternatively, to order the mount with wrench driven screws, you append the code of that screw: **5OM111-9S127H**.

Weight **0.04 kg**



5OM111

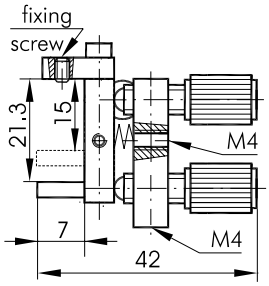


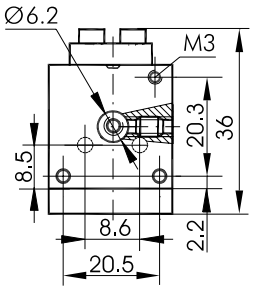
mount with wrench driven screws is smaller

5OM111-9S127H

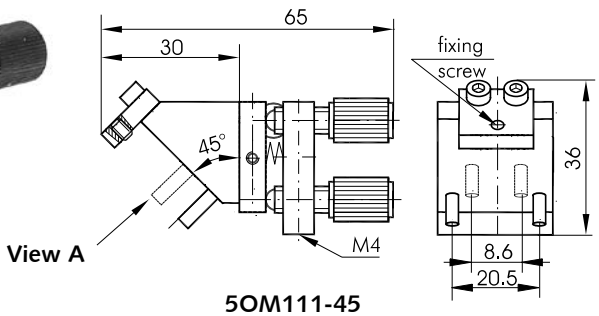
Modifications — 5OM111-0 • 5OM111-45

Mirror/Optics Mount 5OM111 with adapters 5OM111A0 and 5OM111A45 are suitable for round (Ø25.4 (1") and Ø12.7(0.5")) and square (15x15 mm and 20x20 mm) optical elements.

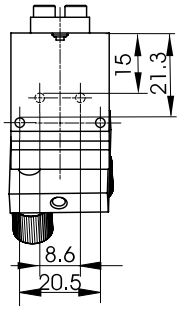




5OM111-0



5OM111-45



View A

ORDERING INFORMATION

Examples of codes:

- **5OM111 -** standard mount.
- **5OM111-0** - Mount **5OM111** with adapter **5OM111A0**.
- **5OM111-9S127H-45** - Mount **5OM111** with **9S127H** screws and with adapter **5OM111A45**.

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Mirror/Optics Mount 5OM111-0
with **round 1"** high reflectivity mirror.

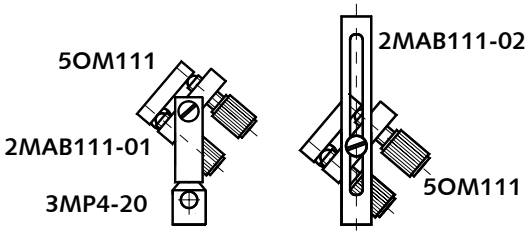
Mirror/Optics Mount 5OM111-0
with **round 0.5"** high reflectivity mirror.

Mirror/Optics Mount 5OM111-0
with a **20x20x20mm** polarizing beamsplitter cube.

Mirror/Optics Mount 5OM111-0
with a **15x15x15mm** polarizing beamsplitter cube.

Mirror/Optics Mount 5OM111
with **adapter 5OM100A3** and with **round 1"** high reflectivity mirror.

For optical elements see page **14-1**.



For coarse adjustments about horizontal or vertical axes compact Mirror mounts can be used with Mini Angle Brackets **2MAB111**.

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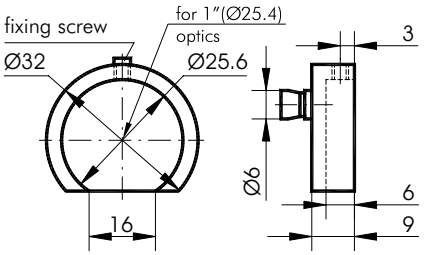
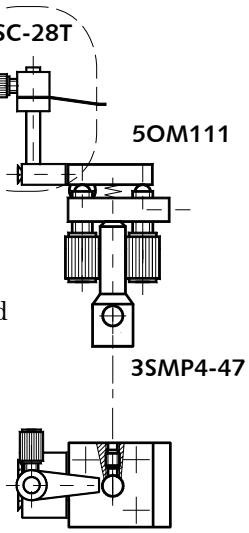
Mirror Adapter — 5OM100A3



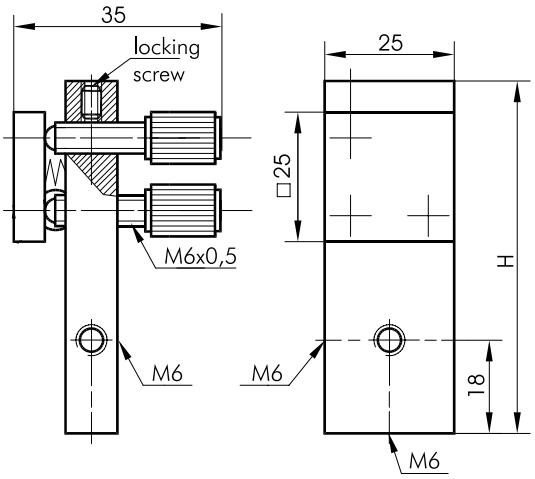
Connecting cone facilitates adjustment of the adapter to the required position. The cut-off side clears the edge of the optics for working with a beam that is very closely situated to another beam. Optics is firmly held in place by a teflon set screw and rests against the two contact lines formed at the cut-off side. *(See also adapters in articles 5OM10T, and 5OM122T.)*

Weight **0.01 kg**



Mounting Post 3SMP4-47, and Spring Clamp 4SC-28T designed for 5OM111 to be used as a small tilt platform.

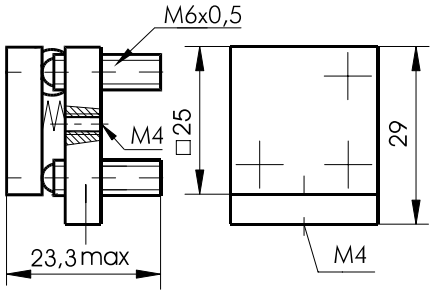
Mirror Mounts with Locking Screws — 5LSM110



Mirror Mount with Locking Screws 5LSM110 are provided with extended back for convenient mounting in horizontal or vertical position. Teflon locking screw tips ensure stability.

Model	**H,** mm	**Weight,** kg
5LSM110-01	68	0.07
5LSM110-02	33	0.04

Compact Mirror Mount — 5CM123

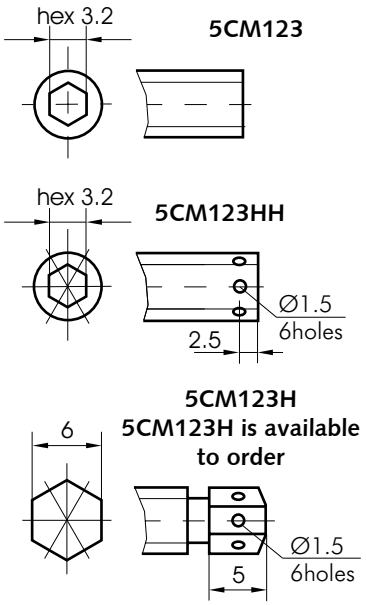


The extremely small mount has small adjustment screws with a hexagonal head or a hexagonal keyhole.

A suffix to the unit code specifies adjustment screws of a desired type:

5CM123 hexagonal keyhole
5CM123HH hexagonal keyhole and six holes for a wrench
5CM123H hexagonal head and six holes for a wrench

Weight **0.04 kg**



Mirror Mounts/Tilt Platforms of Side Drive

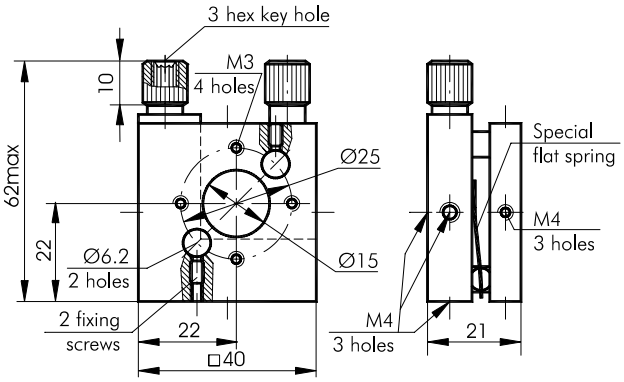
5OM122T • 5OM122TE

Mirror Mount of Side Regulation 5OM122T enables to greatly increase the thickness of optical elements as it has a convenient access to the regulation handles. L-shaped flat spring of original design renders the great stability of the mount's platform. Angular range is **±2.5°** about each of two orthogonal axes. Precision screws with pitch of **0.25 mm** render sensitivity of **3 arcsec**.

M4 tapped holes on the sides of the base allow a variety of mounting configurations, e.g. horizontal and vertical.

The mount is produced from black anodized aluminium. L-shaped spring is produced from high quality stainless spring steel.

Weight **0.09 kg**



5OM122T

5OM122T

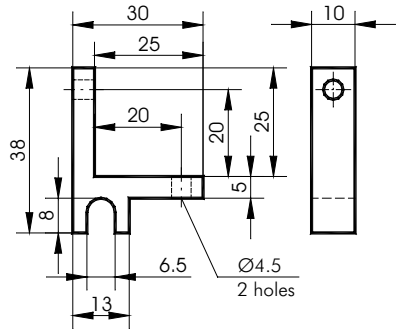
Mirror Mount of Side Regulation 5OM122T. Eccentric mounting holes ∅**6.2** for connecting cone allow handy replacement and adjustment of Adapters to required place.

Mirror Mount of Side Regulation 5OM122TE. This variant has no clear aperture. This makes it an ideal tilt platform. The clear of holes flat surface allows to mount or paste mirrors on it.

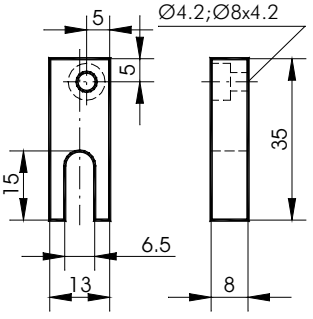
5OM122TE

Special Base Mounts 5OM122B **allow 5OM122T to be mounted in different positions.**
5OM122T may be mounted as a tilt platform using 5OM122B1.

5OM122B1
allows mounting with extremely low-profile

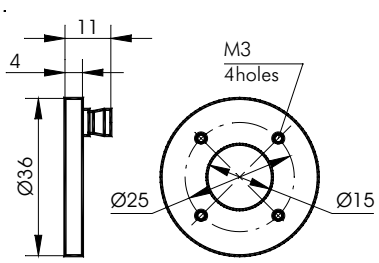


5OM122B2
attaches to 5OM122T both immediately and through intermediate accessories.



Platform Adapter 5OM122A5

Allows to turn optics to a convenient position.



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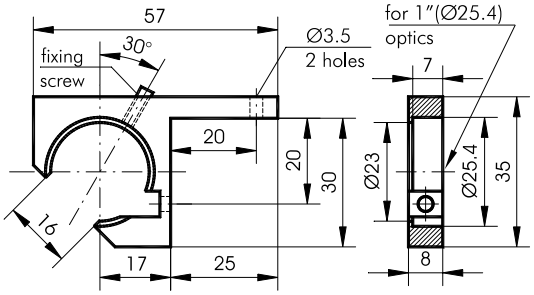
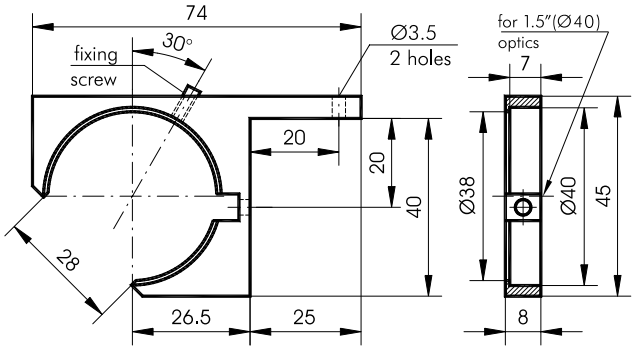
Round Optics Adapters 5OM122A1

5OM122A1 can be attached to the platform of 5OM122T mount on any side. Optics is firmly held by a stainless steel fixing screw, and it rests against two contact lines – the edges of the cut-off corner. The frame doesn't obstruct the view. It allows to work with two beams going very close to each other.
5OM122A1-40 fixes thin optical elements ∅**30**-∅**40 mm** in diameter.
5OM122A1-25 fixes elements ∅**20** to ∅**25 (1")** in diameter.

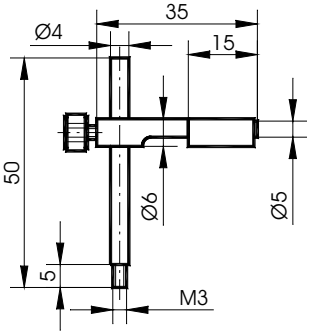


5OM122A1-25



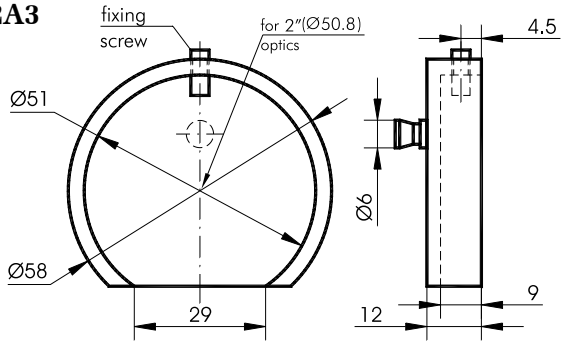
5OM122A1-40

Miniature Clamp 5OM122A2



Ideal if a Mount is used as a Tilt platform. **Plastic** clutching **pad** clamps elements upto ∅**40 mm** (1.5").

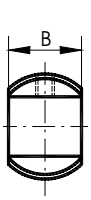
Mirror Adapter 5OM122A3

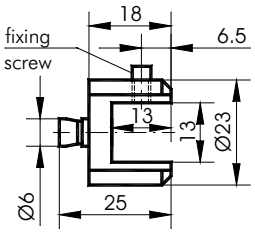


For **optics upto 1"** see **5OM100A3** in article **5OM10T**

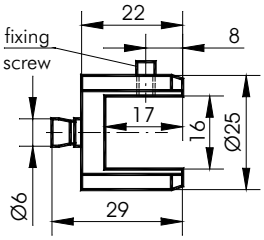
Connecting cone facilitates adjustment of the adapter. The cut-off side clears the edge of the optics for working with a beam very closely situated to another beam. Optics is firmly clutched by a stainless steel fixing screw and rests against the two contact lines formed at the cut-off side. The adapter is suitable for optical elements upto ∅**50 mm** (2 inch) in diameter.

Prism and Polarizing Cube Adapters 5OM100A4





5OM100A4-13 (B=16)



5OM100A4-16 (B=18)

Connecting cone allows to adjust the adapter to the required angle by hand. The adapter allows to work with two beams going close to each other. Stainless steel fixing screw clutches optics firmly. There are two models: **5OM100A4-13**, and **5OM100A4-16** (apertures **13** and **16 mm**).

Many of these adapters may be used with other mounts, e.g. 5OM111, 5OM10T. For more adapters browse this catalogue, e.g. in article 5OM10T.

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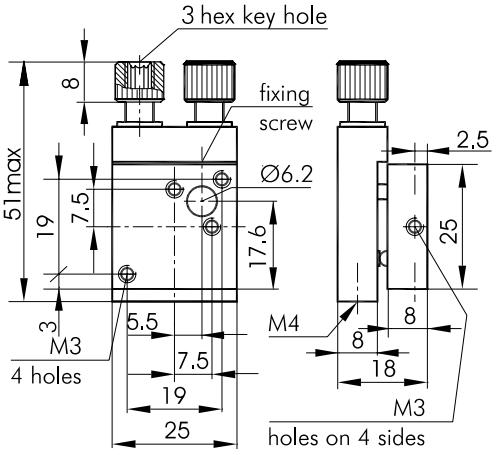
Small Optical Mount of Side Drive

5OM10T

- **Single side drive**
- **Tilt/tip ±5° about two orthogonal axes**
- **Fine adjustment screws with 0.25 mm pitch**
- **Hardened seats under adjustment screws**
- **Sensitivity 10 arcsec**
- **Large assortment of additional adapters**
- **Material: black anodized aluminium**
- **Weight: 0.05 kg**



5OM10T is designed to hold optics in schemes of high density. **Adapters** are available for round and rectangular lenses, mirrors and beamsplitters or polarizing cubes (see below and next page).

The unit mounts on one **M4** hole in its base. **Special Base Mounts** (see below) and standard ones are available in order to **mount the unit in various orientations**.

A platform has four **M3** holes on its face for mounting of optics, and three **M4** holes on the sides for adapters.

Adapters with connecting cones match the ∅**6.2 mm** hole, where a cone is clutched by the fixing screw.

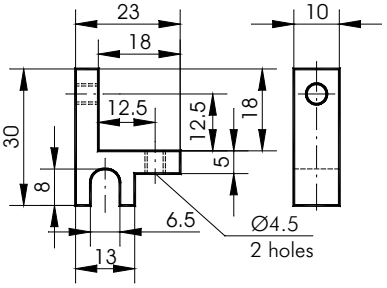
A platform is preloaded against a base by coil springs. The mount is held together and stabilized by a flat spring.

Note: 5OM10T replaces the older mount 5OM100T.
The pictures on this and on the next page show how to combine bases and adapters with the old mount 5OM100T.
These adapters combine in the same manner with the new mount 5OM10T.

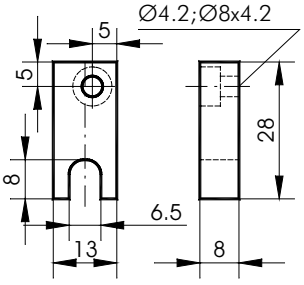
See this and next page for special base mounts and optics adapters

Special Base Mounts 5OM100B **allow 5OM10T to be mounted in different positions.**
5OM10T may be mounted as a tilt platform.

5OM100B1
allows mounting with extremely low-profile



5OM100B2
attaches to 5OM10T both immediately and through the intermediate accessories.



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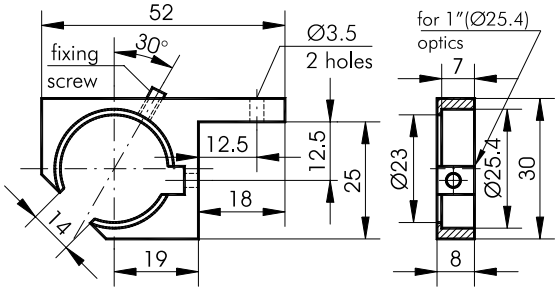
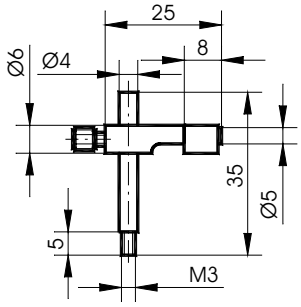
Round Optics Adapter 5OM100A1



5OM100A1 may be attached to the platform of 5OM10T mount on any side. Optics is firmly held by a stainless steel fixing screw, and it rests against two contact lines – the edges of the cut-off corner. The frame doesn't obstruct the view. It allows to work with two beams going very close to each other.

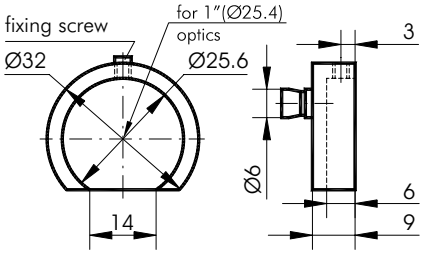
Miniature Clamp 5OM100A2



Ideal if the mount is used as a tilt platform. It has a fixing screw, and a plastic fastening pad. Allows fastening of optical elements upto 1". The rod has a mounting thread **M3**. So the clamp combines with any units, which has **M3** holes.

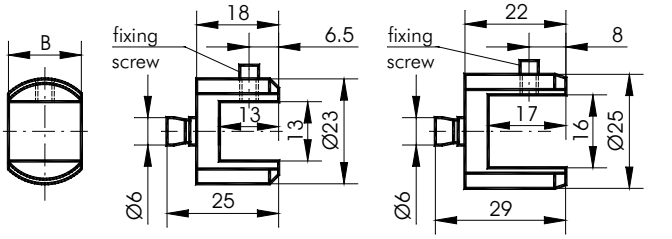
Mirror Adapter 5OM100A3

For **optics up to 2"** see **5OM122A3** in article **5OM122T**



Connecting cone facilitates adjustment of the adapter to required position. The cut-off side clears the edge of the optics for working with a beam very closely situated to another beam. A fixing screw of stainless steel clutches optics firmly against two contact lines formed at the cut-off side.

Prism and Polarizing Cube Adapters 5OM100A4

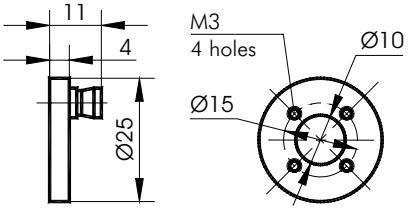


5OM100A4-13 (B=16) 5OM100A4-16 (B=18)

Connecting cone allows to adjust the adapter to the required angle by hand. The adapter allows to work with two beams going close to each other. Stainless steel fixing screw clutches optics firmly. There are two models: **5OM100A4-13**, and **5OM100A4-16** (apertures **13** and **16 mm**).

Platform Adapter 5OM100A5

Allows to turn optics to a convenient position.



Many of these adapters may be used with other mounts, e.g. 5OM111, 5OM122T. For more adapters browse this catalogue, e.g. in article 5OM122T.

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Budget Precision Optical Mounts of Side Control **Series T**

- **Original L-shaped flat spring**
- **Adjustment of both angles is controlled from one side**
- **Ideal for high density optical schemes**
- **Fine adjustment screws with 0.25 mm pitch**
- **Travel range ±2°**
- **Hardened inserts under adjusters**

Budget Precision Optical Mounts of Side Control enable to greatly increase thickness of optical elements as it has a convenient access to the adjustment handles.

L-shaped flat spring of original design provides great stability of the mount's platform. The spring performs two functions: that of a usual spring, and also eliminates polarizing rotation of the platform.

Angular range is **±2°** about each of the two orthogonal axes. Precision screws with pitch of **0.25 mm** provide sensitivity of **10 arcsec**.

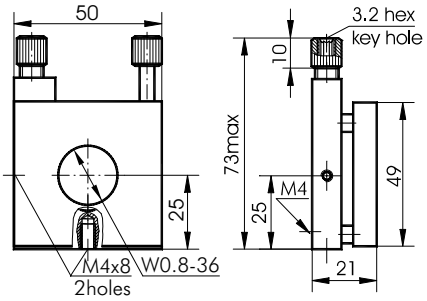
Three M4 tapped holes on the sides of the base and on its back allow a variety of mounting configurations, e.g. horizontal and vertical.

The mount is produced from black anodized aluminium. L-shaped spring is produced from high quality stainless spring steel.

Objective Mount **5OBM119T**

The Objective Mount of Side Control 5OBM119T has W0.8-36 aperture and is used for precise adjustments of standard microscope objective lenses and ensures low-cost positioning of a focus point. Also it can be used in the fiber optics.

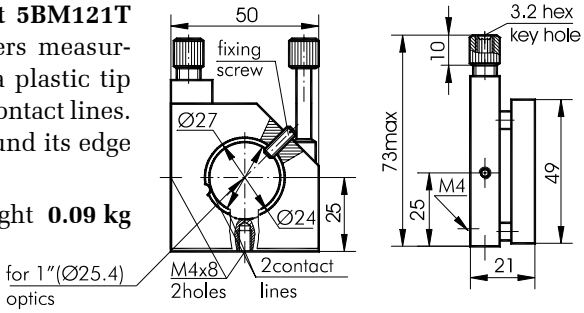
Weight **0.1 kg**



Beamsplitters/Optics Mount **5BM121T**

The Beamsplitters/Optics Mount 5BM121T is designed to adjust beamsplitters measuring ∅**25 mm**. Fixing screw with a plastic tip clutches a beamsplitter against 2 contact lines. The aperture has a **rest-blade** around its edge designed to stop optics inside.

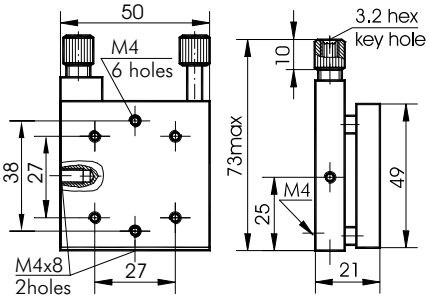
Weight **0.09 kg**



Universal Mirror Mount/Platform **5UM122T**

The Universal Mirror Mount/Platform 5UM122T is suited for precise adjustments of standard mirrors which can be directly bound to it. The Mount may also be used in horizontal position as a tilt table. Then it can be used to align opto-mechanics around two axes.

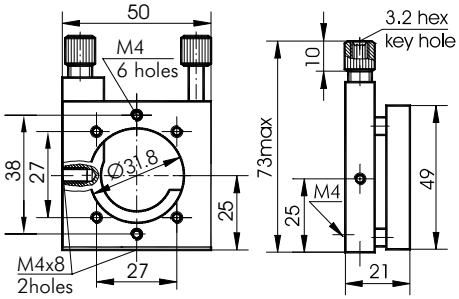
Weight **0.12 kg**



Large Aperture Optical Mount **5LAM124T**

The Large Aperture Optical Mount 5LAM124T on its platform has ∅**31.8** aperture and **three M4** mounting holes. It is designed for precise orthogonal adjustment of mirrors.

Weight **0.09 kg**



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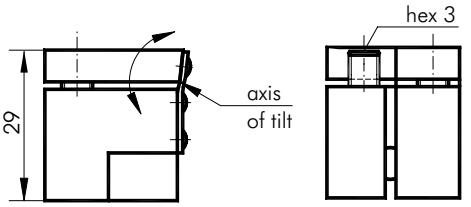
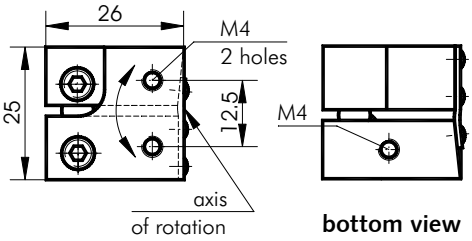
Miniature Tilt/Rotation Mount of Side Control 5OM101T

- **6° tilt and in-plane rotation**
- **Top side drive**
- **Compact design for dense optical schemes**
- **Stable design**
- **Material: black anodized aluminium**





Miniature Tilt/Rotation Mount 5OM101T allows to **tilt** and **rotate** an optical component.

A flat spring preloads three main pieces of the mount which make it bend on two separate pivot axes. Mounts of other designs have a common pivot point for all adjustments. The design ensures that both adjustment movements are independent and do not cause mutual distortions, so the adjustment scheme is very close to an ideal kinematic model.

Mounting surface with two **M4** holes in the platform is on the same side with the adjustment screws.

Best for crystal adjustment!

Base of the mount has an **M4** hole for mounting to other positioners.

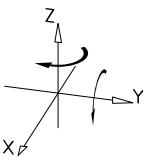
The adjustment screws have a pitch of **0.25 mm**. Each screw can be driven with a **3 mm** hex key.

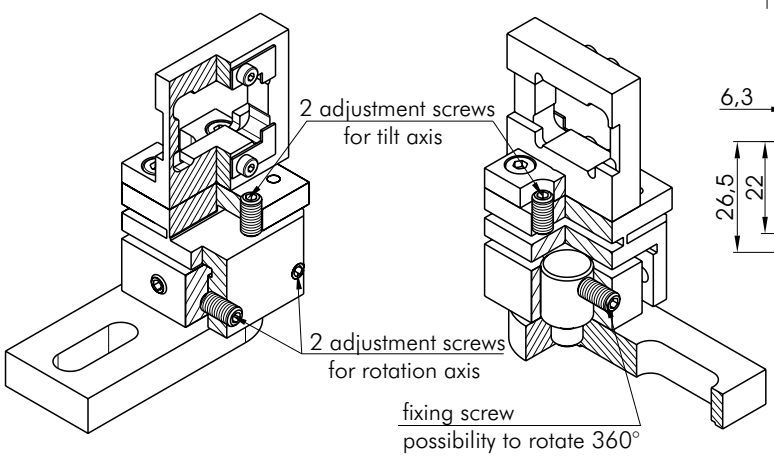
SPECIFICATIONS

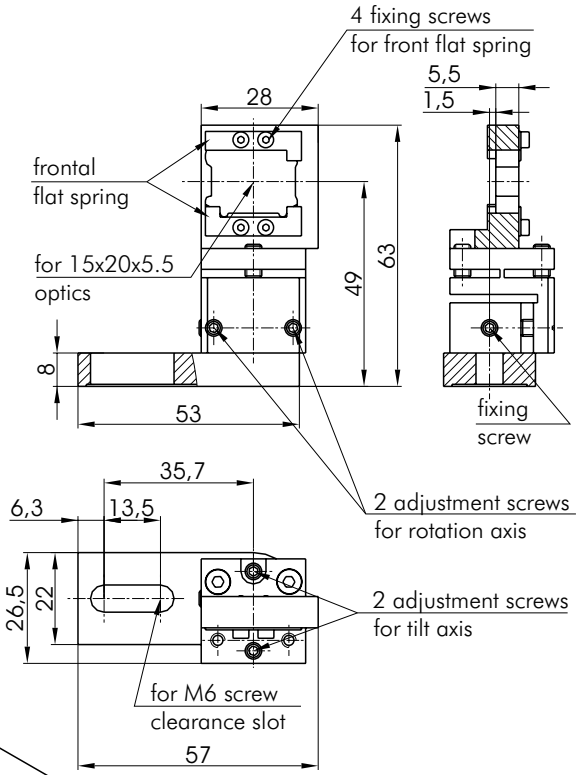
Tilt range	6°
Rotation range	6°
Sensitivity	10 arcsec
Weight	0.06 kg

Ultra-Stable Steel Tilt/Tip Stage 5SL-20

Produced for a custom OEM order for **use** in **photonics devices** (lasers), providing **high stability** in operation.







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Beamsplitter Mount of Side Drive

5BM59T-1

- **Original stabilized L-shaped flat spring**
- **Dimensions most compact among 1″ optics mounts**
- **Both tilt and tip are controlled from aside the optical path**
- **Ideal for dense optical schemes**
- **Fine adjustment screws with 0.25 mm pitch**
- **Hardened inserts under adjusters**
- **Accepts optics 25.4 mm (1 inch) in diameter**
- **Tilt/tip travel range ±2°**
- **Two pick-hollows allow gripping optics while reinserting**
- **Horizontal and Vertical mounting**
- **Mounting holes M4 on three sides**

Pick-hollows ease lifting of optics

Adjustable Beamsplitter Mount 5BM59T-1 complements our range of **Series T** mounts with additional features, like pick-hollows yet more stabilized spring. The style of the mount relates to such units as 5APH59T-1 and 5MBM21-1.

The mount accepts optics **25.4 mm** in diameter. Optics is stopped by a **rest-flange** inside the central aperture of the platform, and is secured by a steel hex fixing screw.

The fixing screw has a hard plastic tip to prevent damage to the optics.

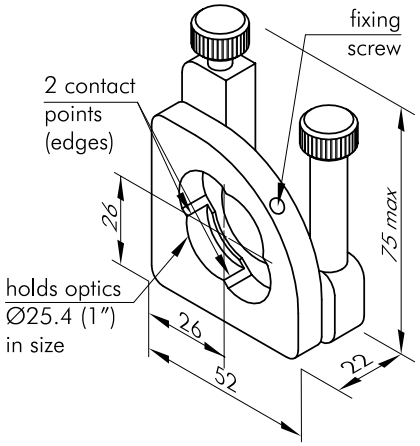
To allow an **unimpeded** access for your fingers there are two **pick-hollows**. Now you may forget about problems like: hassle and stains while picking the optics out, or dropping the optics before you secure it.

Pick-hollows form two lines of contact in the aperture. Clamped by the fixing screw, optics rests against these two lines, so its position stays definite.

Angular adjustment range of **tilt/tip** is **±2°**.

Side control of tilt and tip is done by two stainless steel fine adjustment screws with pitch of **0.25 mm**. The screws push rolling balls against **hardened seats**, ensuring smooth operation and sensitivity of **3 arcsec**.

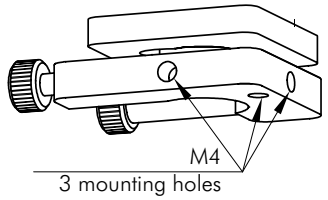
Large knobs ease the strain on your fingers that this tight and stable system might cause. Both screws protrude from the top. Control from one side allows easy access, and dense placement of surrounding instruments.



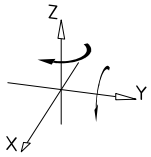
The platform is preloaded with L-shaped flat spring of our **original design** which renders the great stability and eliminates induced polarization.

Three M4 tapped holes on the sides of the base and on its back allow **horizontal** or **vertical** mounting. The holder easily mounts on posts and bases.

Material: black anodized aluminium. L-shaped spring is made of high quality stainless spring steel.



3 mounting holes allow different mounting orientations



SPECIFICATIONS

Tilt/tip range	±2°
Sensitivity	3 arcsec
Optics accepted	
Diameter	≤ Ø25.4 mm
Clear aperture	23 mm
Weight	0.1 kg

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Adjustable Polarizer Holder of Side Drive **5APH59T-1**

- **Original stabilized L-shaped flat spring**
- **Dimensions most compact among 1″ optics mounts**
- **Both tilt and tip are controlled from aside the optical path**
- **Ideal for dense optical schemes**
- **Fine adjustment screws with 0.25 mm pitch**
- **Hardened inserts under adjusters**
- **Accepts optics 25.4 mm (1″) in diameter**
- **Accepts optics upto 10.5 mm thick**
- **Tilt/tip travel range ±2°**
- **Roller bearings**
- **Lockable**
- **Continuous 360° rotation**
- **Horizontal and Vertical mounting**
- **Mounting holes M4 on three sides**

Super slim hybrid saves space, gives extra precision, saves cost and time

Adjustable Polarizer Holder 5APH59T-1 is a **1 inch** polarizer with an **integrated** adjustment of **tilt** and **tip** about two orthogonal axes within **±2°.** The design **is the slimmest ever**.

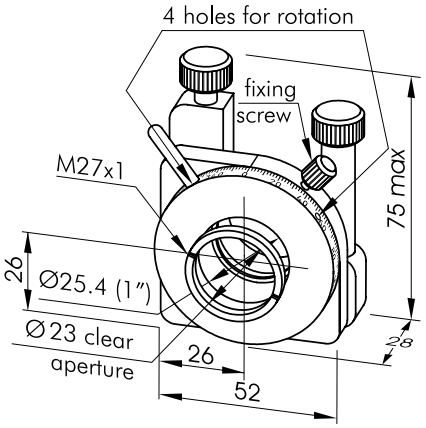
The polarizer platform is graduated in **2°** on a **360°** angular scale. The platform has a **removable rod** by which you rotate it continuously the whole **360°, without obscuring the aperture**. You can use the rod on any of the 4 holes on the perimeter.

The holder accepts ∅**25.4 mm** optics. Optics is stopped by a **rest-flange**, and is secured by a threaded retaining ring with ∅**23 mm** clear aperture. A tightening key **3K-25** for the retaining ring is available on request.

Tilt and tip is done by two stainless steel fine adjustment screws with pitch of **0.25 mm**. The screws push rolling balls against **hardened seats**, ensuring smooth operation and sensitivity of **3 arcsec**.

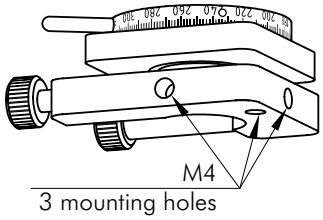
Large knobs ease the strain on your fingers. Both screws protrude from the top side, allowing easy access in dense schemes.

For **tilting**, the platform is preloaded against the base with L-shaped flat spring of our original design which renders great stability and eliminates induced polarization.



Three M4 tapped holes on the sides of the base and on its back allow **horizontal** or **vertical** mounting. The holder easily mounts on posts and bases.

Material: black anodized aluminium. L-shaped spring is made of high quality stainless spring steel.



3 mounting holes allow different mounting orientations, e.g. as a rotation stage.

SPECIFICATIONS

Tilt/tip range	±2°
Sensitivity	3 arcsec
Rotation range	360°
Scale gradation	2°
Optics accepted	
Diameter	≤ ∅25.4 mm
Thickness	≤ 10.5 mm
Clear aperture	23 mm
Weight	0.15 kg

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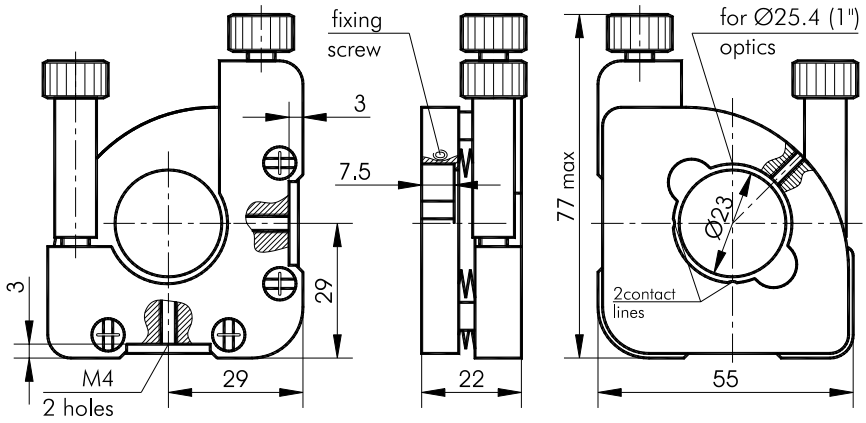
Kinematic Optical Mount of Side Drive — 5BM69T-1

- For Ø25.4 mm (1 inch) optics
- Clear aperture 23 mm
- Kinematic design
- Dimensions most compact among 1 inch optics mounts
- Tilt/tip range ±2°
- Sensitivity 3 arcsec
- Both tilt and tip controlled from aside the optical path
- Ideal for dense optical schemes
- Fine adjustment screws with 0.25 mm pitch
- Hardened seats under adjustment screws
- Weight 0.12 kg



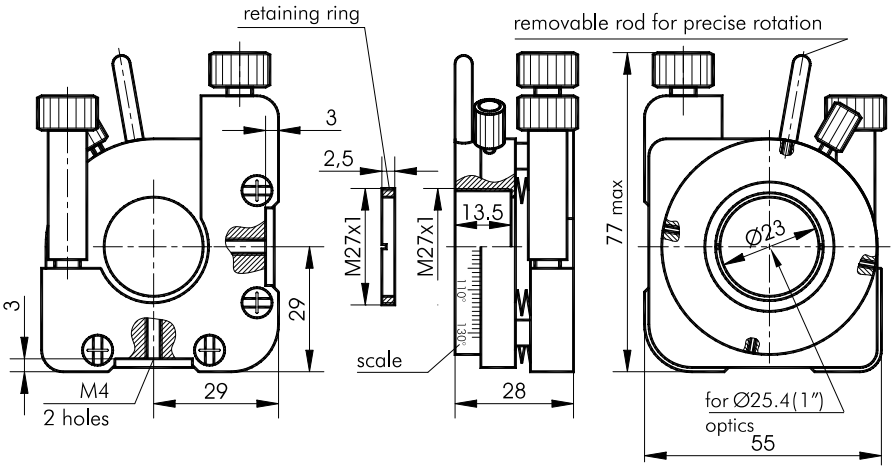
To prevent damage to the optics the fixing screw has a plastic tip.

Kinematic Adjustable Polarizer Holder of Side Drive — 5APH69T-1

- For Ø25.4 mm (1 inch) optics
- Clear aperture 23 mm
- Kinematic design
- Dimensions most compact among 1 inch optics mounts
- Tilt/tip range ±2°
- Sensitivity 3 arcsec
- Both tilt and tip controlled from aside the optical path
- Ideal for dense optical schemes
- Fine adjustment screws with 0.25 mm pitch
- Hardened seats under adjustment screws
- Rotation range 360°
- Scale gradation 2°
- Weight 0.12 kg

A retaining ring M27x1 to fix the optics is included.

A tightening key **3K-25** for the retaining ring is available on request.



10APF2-1
Five axis combination

Model	Accepts optics, diameter	Places for optics	Weight, kg
5APH69T-1	25.4 mm (1 inch)	1	0.13
5APH79T-1	25.4 mm (1 inch)	2	0.13
5BM69T-1	25.4 mm (1 inch)	1	0.10
5BM79T-1	25.4 mm (1 inch)	2	0.10

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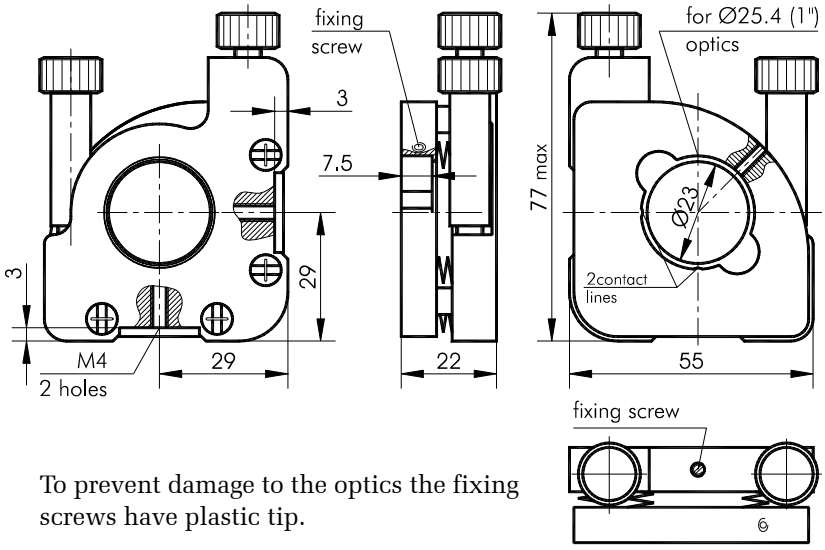
Kinematic Double Optical Mount of Side Drive **5BM79T-1**

- **For Ø25.4 mm (1 inch) optics**
- **Clear aperture 23 mm**
- **Kinematic design**
- **Dimensions most compact among 1 inch optics mounts**
- **Tilt/tip range ±2°**
- **Sensitivity 3 arcsec**
- **Both tilt and tip controlled from aside the optical path**
- **Ideal for dense optical schemes**
- **Fine adjustment screws with 0.25 mm pitch**
- **Hardened seats under adjustment screws**
- **Accepts two pieces of optics: on the platform (adjustable), and on the base (not adjustable)**

5BM79T-1-SH
front and rear view – the base has an aperture for the second optics (not adjustable)

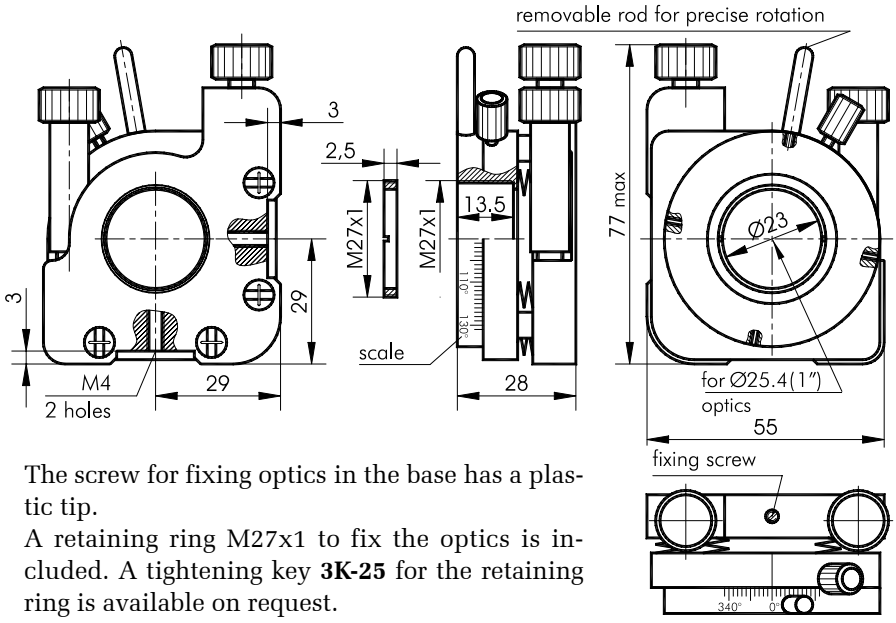


To prevent damage to the optics the fixing screws have plastic tip.

Kinematic Double Optical Mount of Side Drive with Adjustable Polarizer Holder **5APH79T-1**

back view – the base has an aperture for the second optics (not adjustable)

- **For Ø25.4 mm (1 inch) optics**
- **Clear aperture 23 mm**
- **Kinematic design**
- **Dimensions most compact among 1 inch optics mounts**
- **Tilt/tip range ±2°**
- **Sensitivity 3 arcsec**
- **Both tilt and tip controlled from aside the optical path**
- **Ideal for dense optical schemes**
- **Fine adjustment screws with 0.25 mm pitch**
- **Hardened seats under adjustment screws**
- **Rotation range 360°**
- **Scale gradation 2°**
- **Accepts two pieces of optics: on the platform (adjustable), and on the base (not adjustable)**



The screw for fixing optics in the base has a plastic tip.
A retaining ring M27x1 to fix the optics is included. A tightening key **3K-25** for the retaining ring is available on request.

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Polarizer Holders

Polarizer Holders 5PH50

Two scales extend viewing range

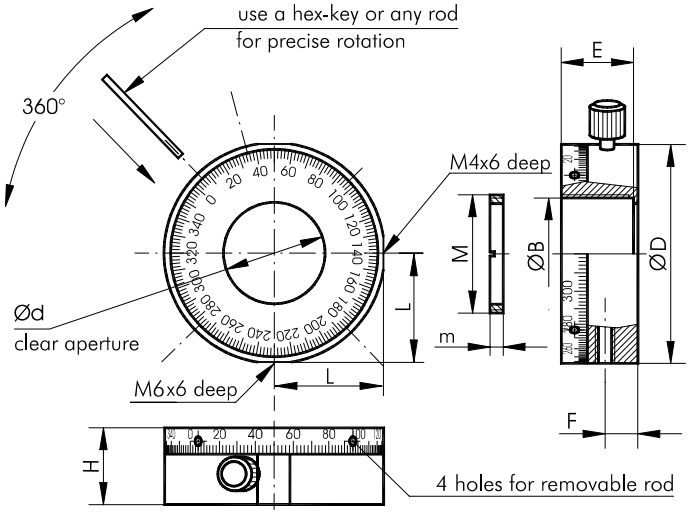
- **2 engraved scales located on face and outer surfaces**
- **Compact design with roller bearings**
- **Lockable**
- **Continuous 360° rotation**
- **Direct mounting of optics 1", 2" or 3" in diameter**

Polarizer Holders 5PH50 are ideal for positioning rotation sensitive optics such as polarizers or waveplates. Holders are offered for optics **1", 2"** and **3"** in diameter. Optics is placed inside central aperture, where it is securely held in place by a threaded retaining ring. The position is indicated on two **360°** angular scales, with gradation **of 2°**. Where space doesn't allow to read **one scale**, you always will be able to view **another**.

The base of a holder has threaded holes **M6** and **M4** for mounting on posts or bases.

5PH50 has a removable rod to rotate the platform by any of its 4 holes.

Material: black anodized aluminium.



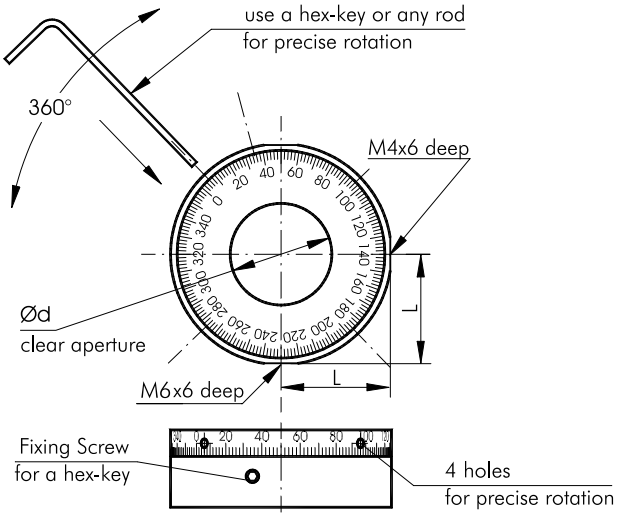
5PH50-1, 5PH50-2

Model	**D**, mm	**E**, mm	**H**, mm	**B**, mm	**d**, mm	**L**, mm	**M**, mm	**F**, mm	**m**, mm	**Weight**, kg
5PH50-1	51	16.5	17.5	25.5	23	25	M27x1	7.5	2.5	0.08
5PH50-1-H	51	16.5	17.5	25.5	23	25	M27x1	7.5	2.5	0.08
5PH50-2	82	19	20	51.5	48	40.5	M53x1	9.5	2.5	0.18
5PH50-2-H	82	19	20	51.5	48	40.5	M53x1	9.5	2.5	0.17
5PH50-3	115	24.5	26.5	76.9	72	57	M78x1	12	3.5	0.46
5PH50-3-H	115	24.5	26.5	76.9	72	57	M78x1	12	3.5	0.45

Polarizer Holders 5PH50-H

Polarizer Holders 5PH50-H are the same as **5PH50**, except that their fixing screw is tightened with a **hex-key** (included), this way fixing screw doesn't stand out from the surface.

Like in **5PH50**, the platform is rotated by any rod or the same **hex key**.



5PH50-1-H, 5PH50-2-H

Ordering Polarizer Holders 5PH50, 5PHH50, 5PH51 – 1 and 2 inch

1" polarizer holders 5PH50-1, 5PH50-1-H, 5PH51-1, 5PHH50-1, are available from stock.
2" polarizer holders 5PH50-2, 5PH50-2-H, 5PH51-2, 5PHH50-2 are produced on demand.
A tightening key for the retaining ring is available on request: **3K-25** for 1", or **3K-50** for 2" holders.

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Polarizer Holders

5PH51-1 • 5PH51-2

Scale with variable origin

- **Revolving scale resets the angular position**
- **Conical scale easily read from a wide angle**
- **Continuous 360° rotation**
- **Lockable**
- **Accepts 1″ optics (25.4 mm); 2″ model available**
- **Accepts optics up to 19 mm thick**
- **Mounting holes M6 and M4**
- **Compact design with roller bearings**

Polarizer Holder 5PH51 is an original mount with **revolving** conical angular scale on the face of the holder. This enables the user to set the current position on the scale to any chosen angle independently of the position of the holder.

The optical element is secured inside central aperture of the platform of the holder by the threaded **retaining ring**. The **zero** on the revolving scale is **aligned** to the desired axis of transmission.

For example rotate the platform to choose the required orientation of polarization. **Lock** the platform with its fixing screw. Revolve the scale to reset its **zero origin**. **Lock** the scale by retightening its own two fixing screws. Now the scale moves simultaneously with the platform of the holder, so you measure angles relative to any initial position.

The holder accepts rotation sensitive optics **1" (25.4 mm)** or **2" (50.8 mm)** in diameter.

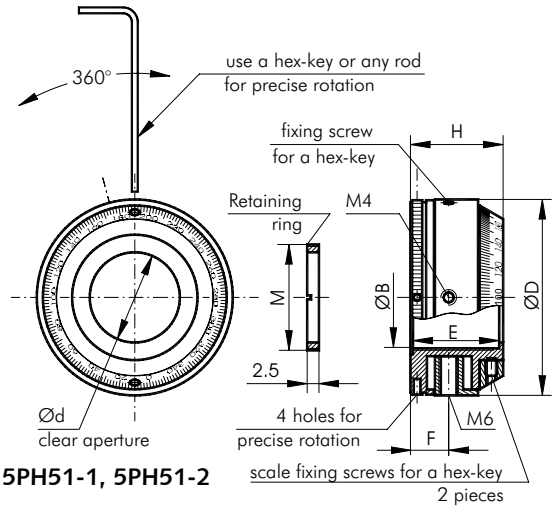
The scale is graduated into **2° increments**. It is engraved on a conical surface. Angle of the cone is **60°**. So the **scale** is read from a wide angle.

The platform rotates a full **360°**. It has a **knurled edge** for easy grip. Also it has **4** holes on its perimeter.

Use the same **1.5 mm hex-key** to rotate the platform by these holes, to lock the platform, and to lock the revolving conical scale.

To mount on posts or bases the holder has **M6** and **M4** holes in its base. Yet the design is compact.

Material: black anodized aluminium.



5PH51-1, 5PH51-2

Model	D, mm	E, mm	H, mm	B, mm	d, mm	M, mm	F, mm	Weight, kg
5PH51-1	50	23	24	25.5	23	M27x1	10	0.09
5PH51-2	81	26	27	51.5	48	M53x1	11	0.19

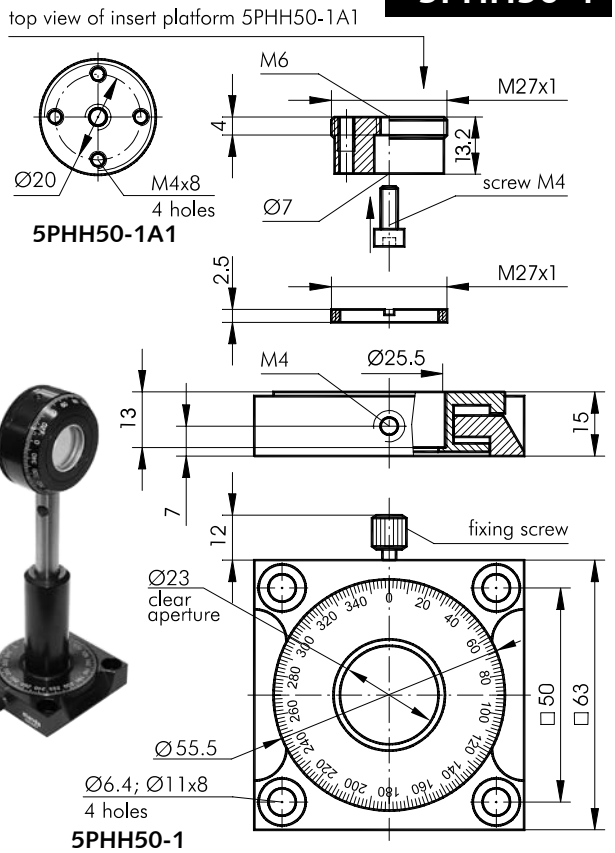
Polarizer Holders

5PHH50-1

Base of **5PHH50** has beveled sides for fingers to rotate the platform by its knurled edge.

You may transform a polarizer holder into a rotation stage. For this you'd need to order an insert platform **5PHH50-1A1** separately. To mount components on it the platform has a pattern of **M4** holes and a central ∅**7**-to-**M6** hole. If you need to fasten to the central hole a unit with **M4** mounting hole, you can slip an **M4 screw** through this ∅**7**-to-**M6 combined** hole (see the drawing for 5PHH50-1).

top view of insert platform 5PHH50-1A1



5PHH50-1A1

5PHH50-1

Precision Polarizer Holder

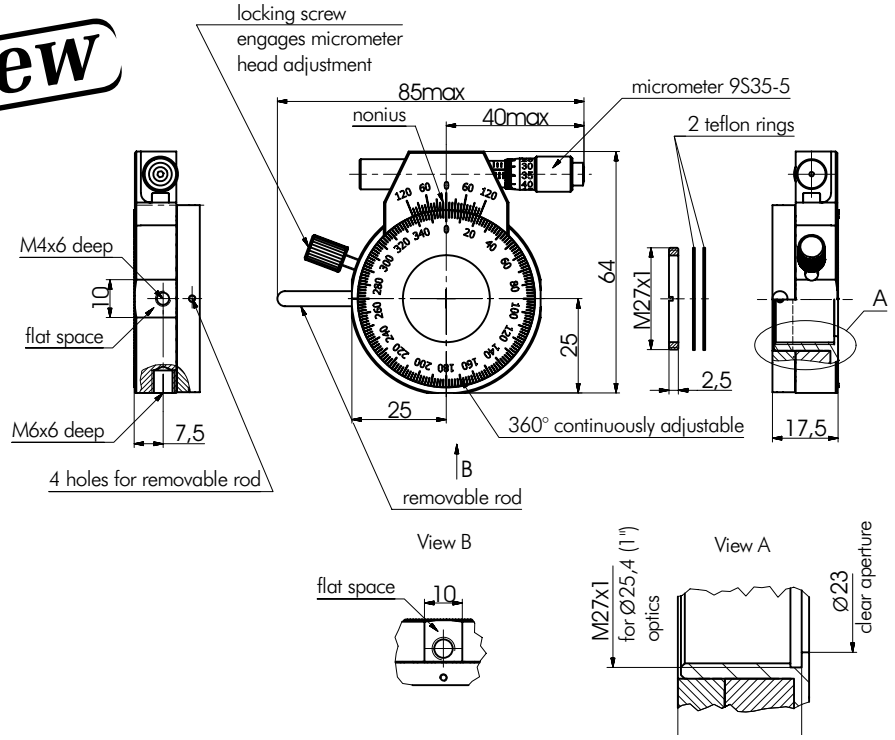
5PPH50

5PPH50-1

- For Ø25.4 mm (1 inch) optics
- One retaining ring included
- Accepts optics up to 13 mm thick
- Continuous 360° rotation with 2° scale gradation
- Lockable
- ±5° of fine micrometer adjustment when locked
- Sensitivity 1 arcmin
- Vernier scale provides 10 arcmin resolution
- Micrometer screw 9S35 installed
- Roller bearings design
- M6 threaded holes for mounting on posts or bases
- Material: black anodized aluminum

High Precision Rotation Mount 5PPH50-1 is ideal for manual rotation positioning sensitive optics such as polarizers or waveplates. The most common requirement for polarizers is to rotate them about their optical axis. Optics are placed inside central aperture, where it is securely held in place by a threaded retaining ring. The position is indicated on **360° angular scale** with **gradation** of **2°**. Once mount is fixed in desired position it can be fine ajusted within **5° range** with **1 arcmin accuracy**. Vernier scale above optical mount provides effective reference tool for angular positioning. **Micrometer screw 9S35** is used, can be optionally replaced with **9SH147 fine hex adjustment screw**. The base and side of the polarizer holder has **M6** threaded holes for mounting on posts or bases. Surface around mounting holes is flattened so the mount stays rigid once fixed on a mounting post or any other flat base. **5PPH50-1** has a removable rod to rotate the platform by any of its 4 holes.

new



SPECIFICATIONS

Continuous rotation	360°
Fine rotation	±5°
Graduation on main dial	2°
Sensitivity	1 arcmin
Optics diameter	1"
Optics thickness (max)	13 mm
Body material	Aluminium
Finish	Black anodized

5PPH50-1-9SH147

ORDERING INFORMATION

5PPH50-1 – with micrometer screw **9S35**
5PPH50-1-9SH147 – with fine hex adjustment screw **9SH147**

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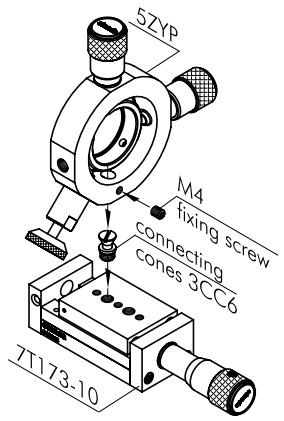
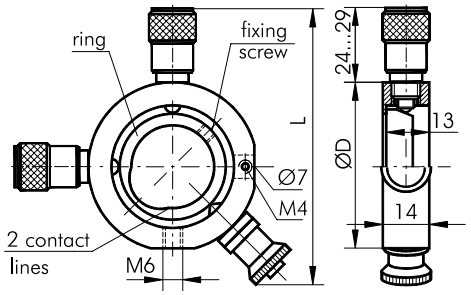
Y-Z Positioner for Lens, Pinholes, and Objectives 5ZYP

Y-Z Positioners for Lens, Pinholes and Objectives 5ZYP are compact mounts designed to precisely position optical components in the plane orthogonal to the optical axis. Ideal for microscope objectives, mounted pinholes, fiber optics chucks, and diode lasers.

The mounts provide **5 mm** translation with sensitivity of **2 μm**.

Two Standa adjustment screws are used for positioning. They can be replaced with any screw or micrometer with **M10x1** mounting thread.





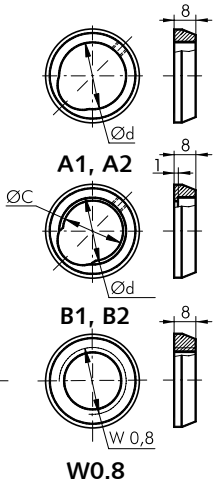
Model	D, mm	d, mm	C, mm	L, mm	Weight, kg
5ZYP-1	58	25.5	24	102	0.26
5ZYP-2	83	51	48	127	0.38

The stage comes with 9S65M screw as standard. You don't have to specify this screw in your order. If you order the stage with alternative screws, please specify this in order, by appending the screw code name to the stage code. See section 9 for screws and their codes.

Two ways to fasten **5ZYP**: by an **M6** hole or on a connecting cone **3CC4, 3CC6** by a ∅**7** hole.

Material: black anodized aluminium.

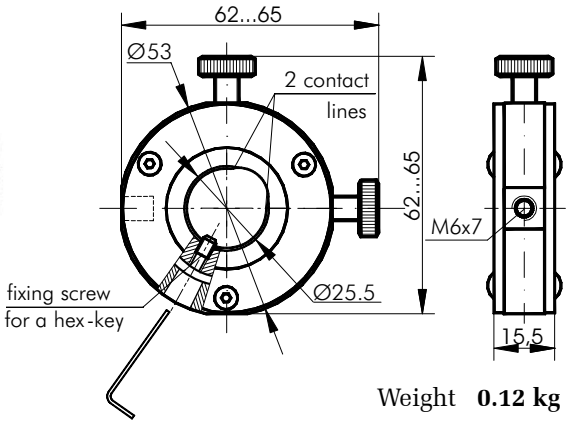
Insert rings for 5ZYP



ORDERING INFORMATION

5ZYP-1-A1 – **1" Positioner** with ring **A1**
5ZYP-1-B1 – **1" Positioner** with ring **B1**
5ZYP-1-W0.8 – **1" Positioner** with ring **W0.8**
5ZYP-2-A2 – **2" Positioner** with ring **A2**
5ZYP-2-B2 – **2" Positioner** with ring **B2**

Y-Z Positioner for Lens, Pinholes and Objectives 5TLM-1

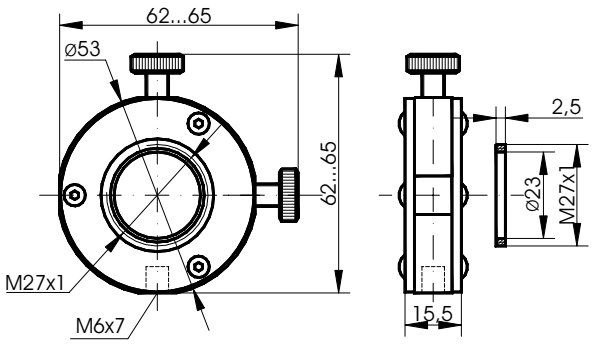


Weight **0.12 kg**

– Travel range 3 mm

Y-Z Positioner 5TLM-1 accepts optics of Ø25.4 mm. Optics is stopped by a rest-flange inside the central aperture of the platform and is secured by a hex fixing screw with hard plastic tip. 5TLM-1 is ideal for microscope objectives, mounted pinholes, fiber optics chucks and diode lasers.

Y-Z Positioner for Lens, Pinholes and Objectives 5TLM-1TH



– Travel range 3 mm

Two plastic padding rings and a retaining ring **M27x1** to fix the optics are included.

A tightening key **3K-25** for the retaining ring is available on request.

Weight **0.12 kg**

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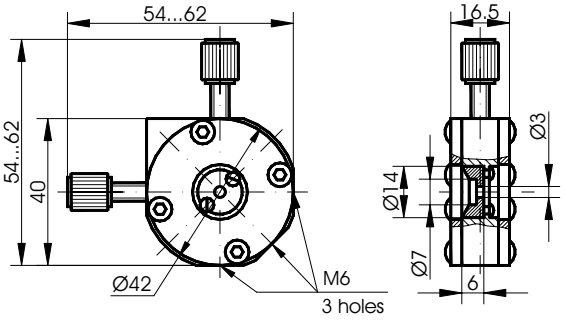
Self-made Pinholes Y-Z Mount

5ZYPS



5ZYPS
standard configuration with screws **9S7C.**

Self-made Pinholes Y-Z Mount 5ZYPS has two screws to adjust the pinhole about two axes in **8 mm** range. 5ZYPS has a pinhole holder mounted – **14 mm** in diameter with **3 mm** clear aperture, made of steel. On request we supply pinholes. Or you may insert a ∅**7** disk of thin sheet of any material into this holder, and you will be able to make a hole at any desired position using any available method (e.g. with a needle).

5ZYPS has three **M6** holes and it can be mounted on Mounting Posts **3MP6**.

Weight **0.1 kg**

Translating Post Holder

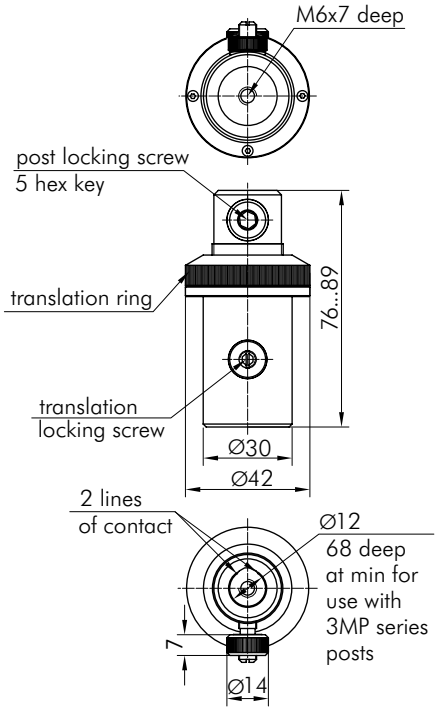
3TPH-13

- **Fine post height adjustment within 13 mm without rotation**
- **One rotation of adjustment ring adjusts height of post by 1 mm**
- **High stability position locking**

Translation Post Holder 3TPH-13 is used for height adjustment of components mounted on 12 mm posts **3MP** or equivalent. Range of coarse height setting is 50 mm. After coarsely setting position, post is locked inside the 12 mm round bore with stable two-line contact using upper thumbscrew with hex socket. Precise height adjustment is then done by a handy knurled adjustment ring. One rotation of the ring moves the post up or down 1 mm to a total of 13 mm. Precise position can be locked using the lower thumbscrew.

M6 threaded hole in the base can be used **for attaching directly to optical table**, to other positioners or to **magnetic bases 3CMB**.

Material: black anodized aluminum.
Weight: **0.15 kg**



Locking Option

5MBM22SL

5OBM119TL

7T228TL

example –
lockable versions of these standard units:
5MBM22S, 5OBM119T, 7T228T

You may order lockable versions of our mounts.

There are different locking mechanisms. They lock a Fine Screw, while causing a slightest displacement possible. A lock at each Fine Screw is tightened with a hex key.

For lockable versions the code is formed by appending letter "L" to the code of the standard unit.

Some models of our Ultra Fine Screws (see Section 9) have locking mechanisms of their own. You may use them, just make sure a given unit has the appropriate mounting holes for these screws.

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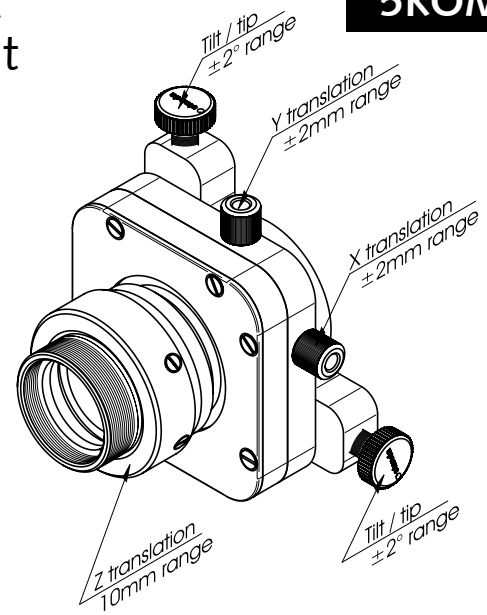
Kinematic Optical Mount
Translation Optical Mount

5KOM • 5TOM



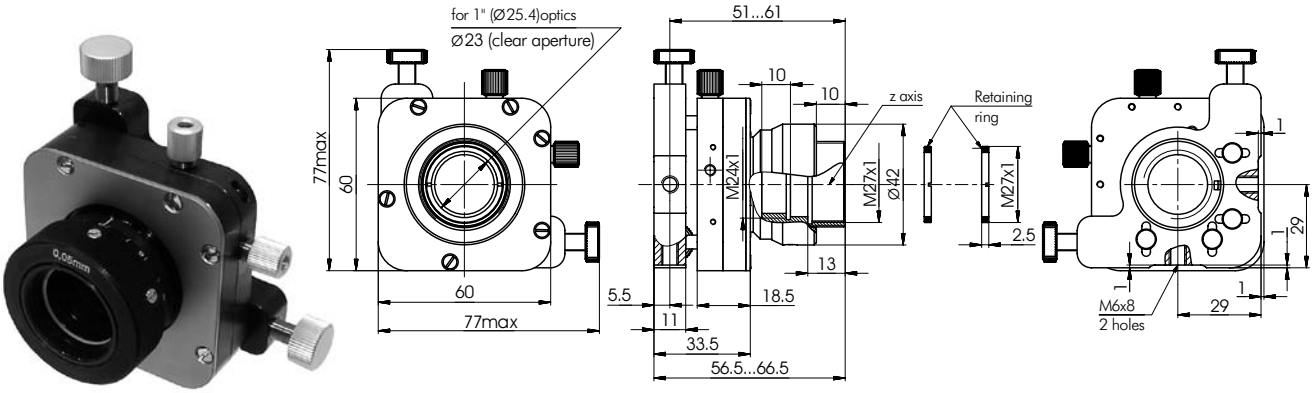
SPECIFICATIONS

Optics diameter	Ø25.4 mm
Tilt/tip range	±2°
screw thread pitch 250 μm (100TPI)	
Sensitivity	3 arcsec
XY translation range	±2 mm
screw thread pitch 250 μm (100TPI)	
Sensitivity for XY translation	1 μm
Sensitivity for Z translation	1 μm
Z translation range	10 mm
Material	black anodized aluminium
Weight	0.28 kg

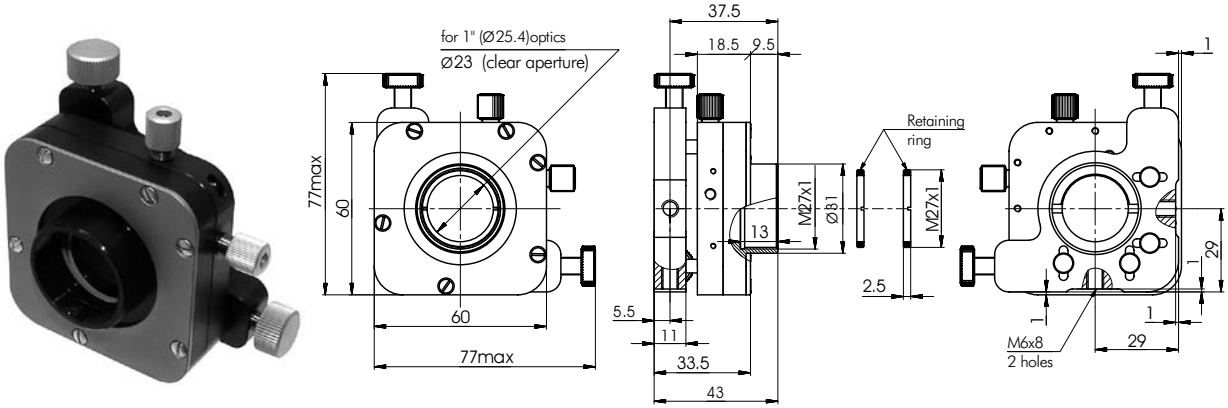
ORDERING INFORMATION

5KOM5-1	Five Axis Kinematic Optical Mount	- **Tilt/tip** range; - **XY** translation range; - **Z** translation range
5KOM5F-1	Five Axis Kinematic Optical Mount	- with reinforced springs for mounting of heavy objects
5KOM5V-1	Five Axis Vacuum Compatible Kinematic Optical Mount	- **Tilt/tip** range; - **XY** translation range; - **Z** translation range
5KOM4-1	Four Axis Kinematic Optical Mount	- **Tilt/tip** range; - **XY** translation range
5KOM4F-1	Four Axis Kinematic Optical Mount	- with reinforced springs for mounting of heavy objects
5TOM3-1	Three Axis Translation Optical Mount	- **XY** translation range; - **Z** translation range
5TOM2-1	Two Axis Translation Optical Mount	- **XY** translation range

Five Axis Kinematic Optical Mount — 5KOM5-1



Four Axis Kinematic Optical Mount — 5KOM4-1



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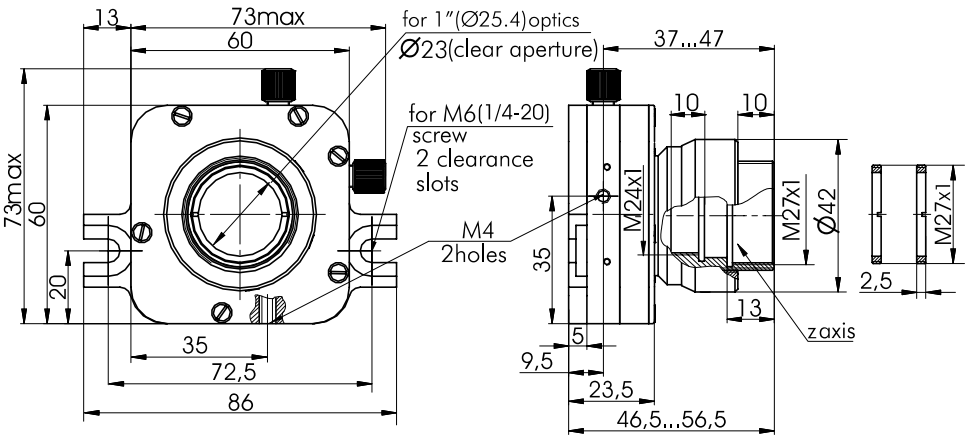
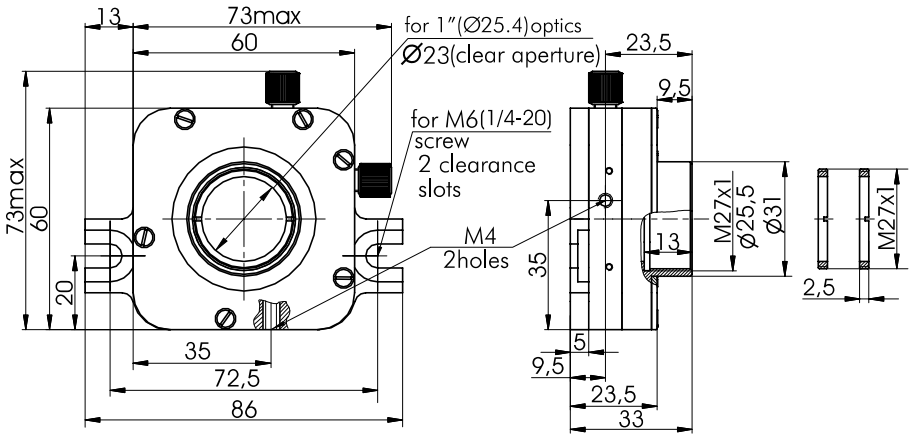
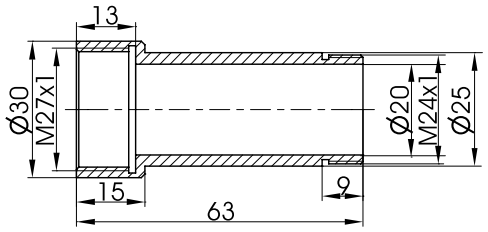
Three Axis Translation Optical Mount — 5TOM3-1



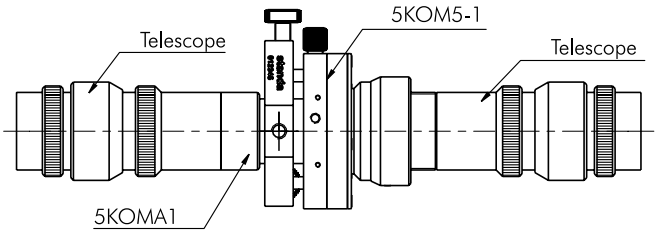
Two Axis Translation Optical Mount — 5TOM2-1



Adapter — 5KOMA1



Material: aluminium with black finish.
Adapter 5KOMA1 is used with **5KOM5-1**, **5KOM5F-1** and **5TOM3-1** for mounting objects that have **M27x1** thread on the back side of the mount.



Telescopes mounted from both side of **5KOM5-1**.

Two-Axis Optical Mount 5TOM2-1 with Compact Motorized Actuators 8CMA20-8/15
page 8-63

8MT0M2-1

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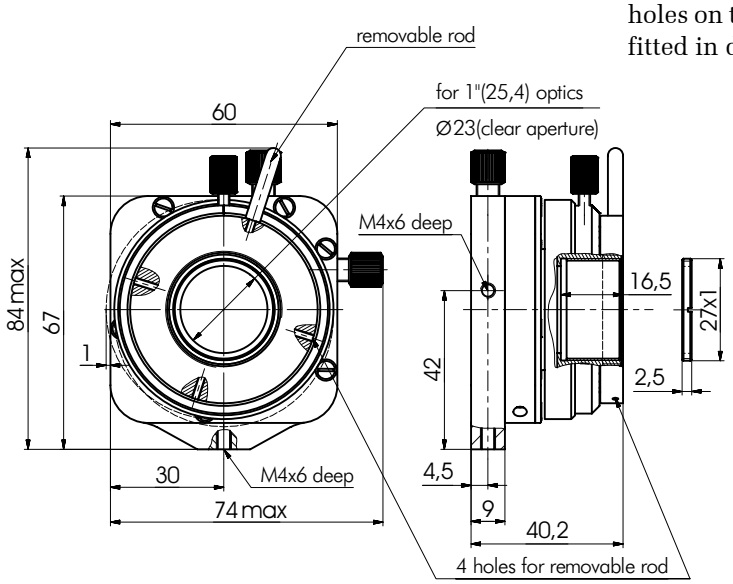
Polarizer Rotation Translation Mount

5TPH2-1

- **For Ø1" optics by default, adapters for smaller polarization optics available**
- **Roller bearings design**
- **Lockable rotating platform**
- **Continuous 360° rotation with 2° scale gradation**
- **Y-Z travel range ±2 mm**
- **Fine adjustment screws with 0.25 mm thread pitch**
- **2 reataining & 2 teflon rings for optics fixation included**
- **Mounting M4 holes on 3 sides**

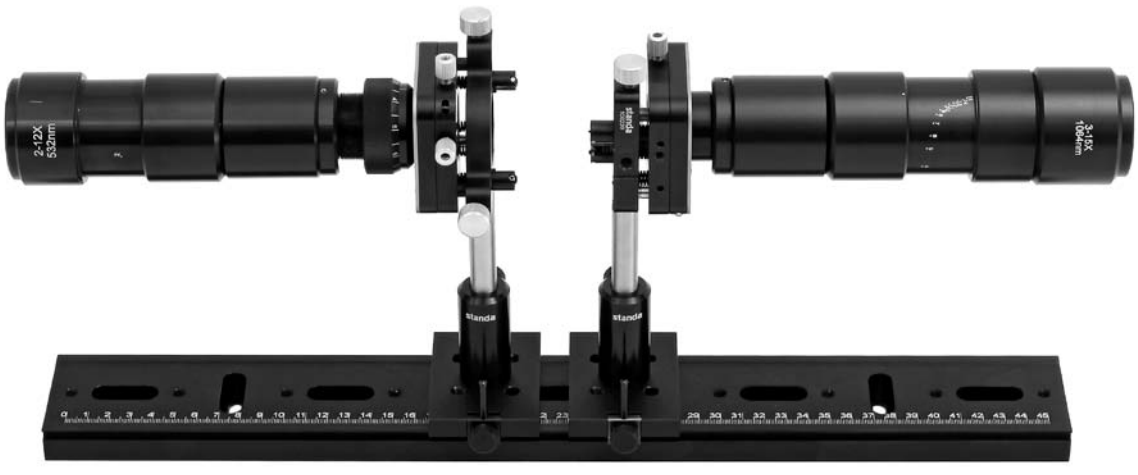
Polarizer rotation translation mount accepts optics of 25.4 mm diameter or with additionally provided adapter can accommodate different polarization optics. The rotation position (X axis) is indicated on 360° angular scale with a gradation of 2°. Two fine adjustment screws (0.25 thread pitch) provide smooth precision Y-Z optics translation in the range of ±2 mm.

A retaining ring M27×1, two teflon rings and optics tightening key are included. The rotation platform has a removable rod that allows continuous 360° rotation without obscuring the aperture. This removable rod can be fitted into any of the four holes (10°, 100°, 290°, 280°) on the perimeter. Polarizer rotator position can be fixed by locking screw which could be fitted into three positions as well. Polarizer holder has M4 holes on the bottom, butt-end, back wall and can be fitted in different mounting systems.



SPECIFICATIONS

Rotation range	360°
Scale gradation	2°
Y-Z travel range	±2 mm
Fine screw thread	M6x0.25
Sensitivity	1 μm
Optics accepted	
Diameter	≤25.4mm
Thickness	≤10.5mm
Clear aperture	23 mm
Weight	0.27 kg



Variable laser beam expanders (2-12X (left); 3-15X (right)) mounted in **5KOM5F-1** (5-axis strengthen optical mount), **5KOM4F-1** (4-axis strengthen optical mount)

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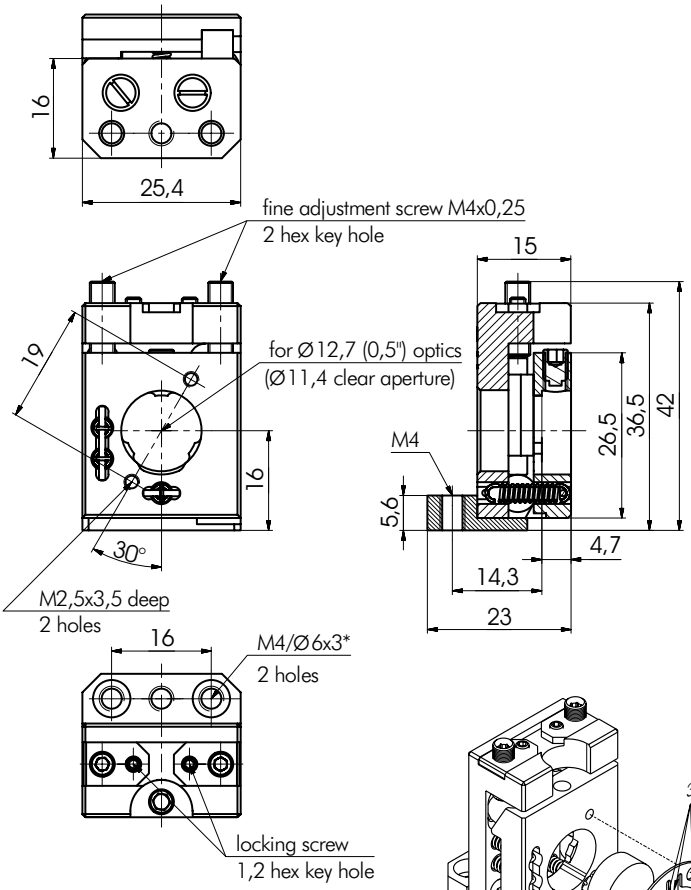
Kinematic Vertical Drive Optical Mount **5KVDOM-05**

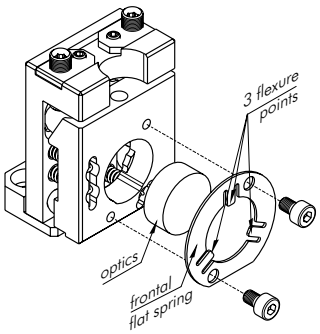
- **For Ø12.7 mm (0.5 inch) optics**
- **Stainless steel**
- **Compact/robust design**
- **Lockable adjustment screws**
- **Fine screws pitch 0.25 mm (101,6 TPI)**
- **Tilt/tip range ±2.5°**
- **Sensitivity 2 arcsec**
- **Vacuum compatible version is available on request**
- **Weight 0.1 kg**

ORDERING INFORMATION

5KVDOM-05	Ultra-stable **Kinematic** Mirror Mount
5KVDOM-05.10	Frontal flat spring



5KVDOM mirror mounts use secure 3-points mirror suspension in between the **frontal flat spring** and the back plate.

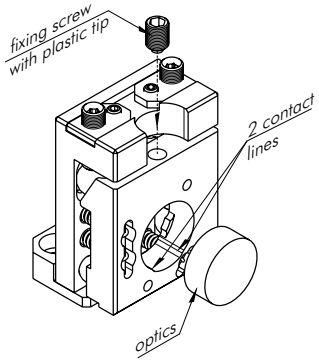


Kinematic Vertical Drive Optical Mount **5KVDOM-05** is designed to minimize mount-induced wavefront distortions. In conventional mounts, the mirror is tightened by a side screw. Radial forces acting on the mirror induces parasitic wavefront distortion, such as astigmatism.

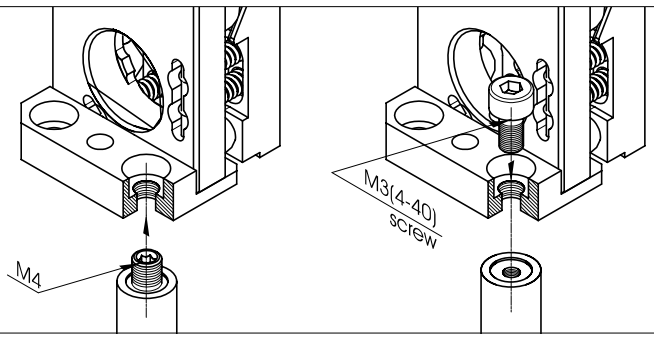
Uniformly distributed axial forces eliminate wavefront distortion.

This mount is ideal for industrial applications in different optical devices (laser cavities, optical sub-assemblies, limited space applications) because of their long-term stability.

A fixing screw secures the optics against **contact lines**, which make **2 contact points**. To prevent damage to the optics, the tip of the fixing screw is made of **plastic**.



A fixing screw secures the optics against **contact lines**, which make **2 contact points**. To prevent damage to the optics, the tip of the fixing screw is made of **plastic**.



*slide **M3(4-40)** screws through combined **M4/Ø6** mounting/clearance holes to mount the unit immediately to **M3(4-40)** holes, or mount the unit directly on any **M4** tip

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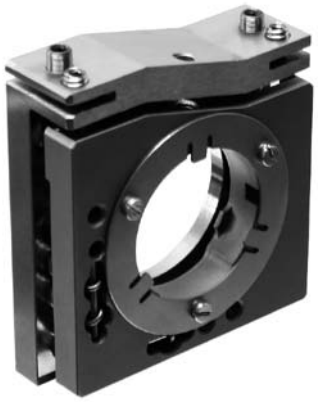
Kinematic Vertical Drive Optical Mounts
Vertical Drive Optical Mounts

5KVDOM
5VDOM

- **For 1", 1,5", 2" or 3" optics**
- **Stainless steel**
- **Compact/robust design**
- **Lockable adjustment screws**
- **Fine screws pitch 0.25 mm (101.6 TPI)**
- **Tilt/tip range ±2.5°**
- **Sensitivity 2 arcsec**
- **Vacuum compatible version is available on request**

5VDOM **5KVDOM**

Vertical drive Optical mount is manufactured in two modifications:
- **5VDOM** with flat L-form spring
- **5KVDOM** with spiral spring



Ultra-stable Kinematic Mirror Mounts 5VDOM and **5KVDOM** are designed to minimize mount-induced wavefront distortions. In conventional mounts, the mirror is tightened by a side screw. Radial forces acting on the mirror induces parasitic wavefront distortion, such as astigmatism. **5VDOM** mirror mounts use secure 3-points mirror suspension in between frontal flat spring and the back plate. Uniformly distributed axial forces eliminate wavefront distortion.

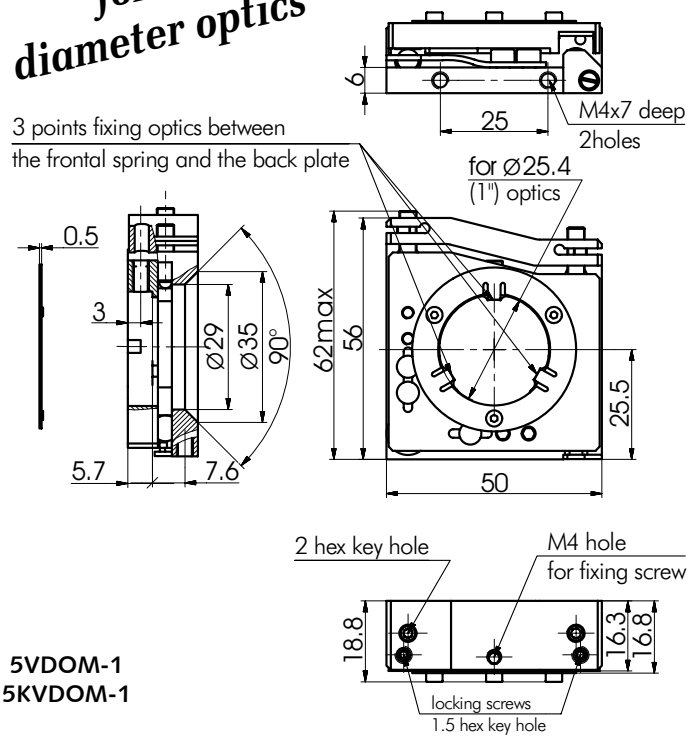
Due thermal processes on optic holding part, all metal inner tensions were removed and part makes none micro movements.

These mounts are ideal for industrial applications in different optical devices (laser cavities, optical sub-assemblies, limited space applications) because of their long-term stability.

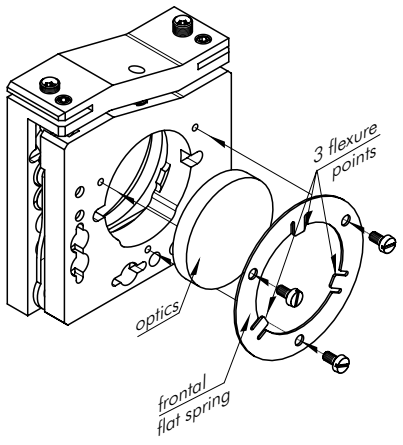
Vertical Drive Optical Mount

5KVDOM-1
5VDOM-1

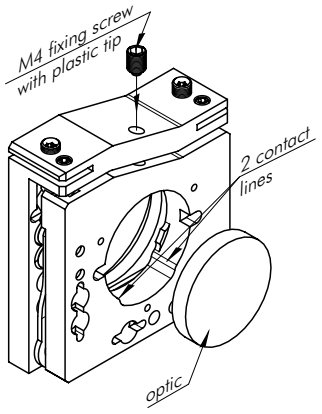
for 1" diameter optics



5VDOM-1
5KVDOM-1



5KVDOM and 5VDOM mirror mounts use secure 3-points mirror suspension in between the **frontal flat spring** and the back plate.



A fixing screw secures the optics against **contact lines**, which make **2 contact points**. To prevent damage to the optics, the tip of the fixing screw is made of **plastic**.

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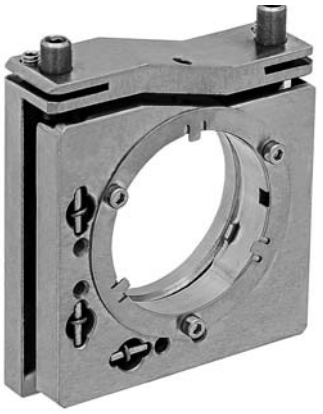
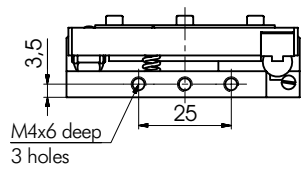
Vertical Drive Optical Mount

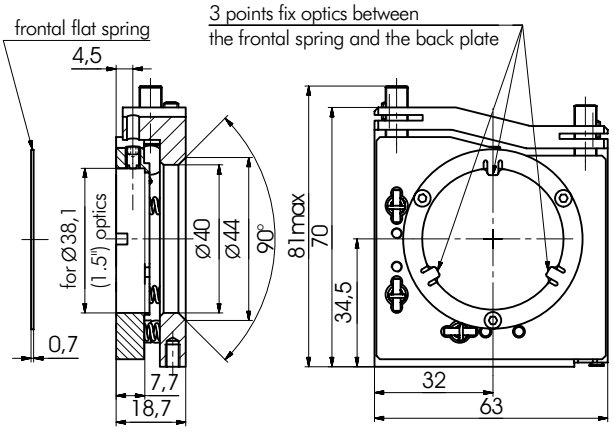
5KVDOM-1.5
5KVDOM-1.5W
5VDOM-1.5
5VDOM-1.5W

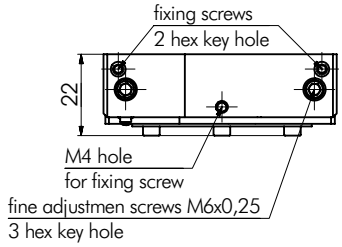
for 1.5" diameter optics



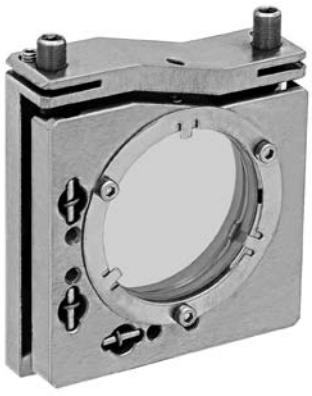
5KVDOM-1.5



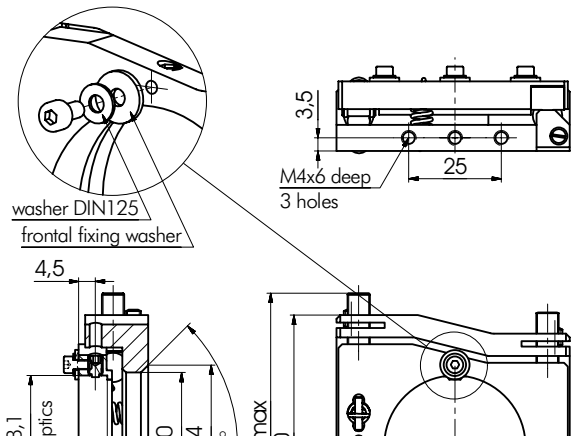


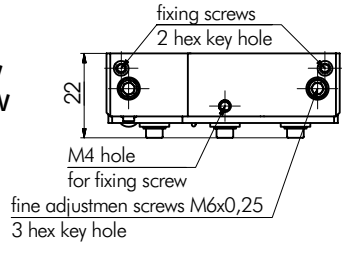


5VDOM-1.5
5KVDOM-1.5



5KVDOM-1.5
Optics fixed with 3 spots on flat spring.
For 8±0.2 mm thickness optics.





5VDOM-1.5W
5KVDOM-1.5W

5KVDOM-1.5W
Optics fixed with 3 spots by plastic washers.
For 8±0.2 mm thickness optics.

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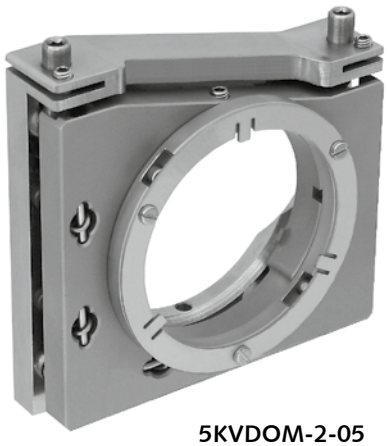
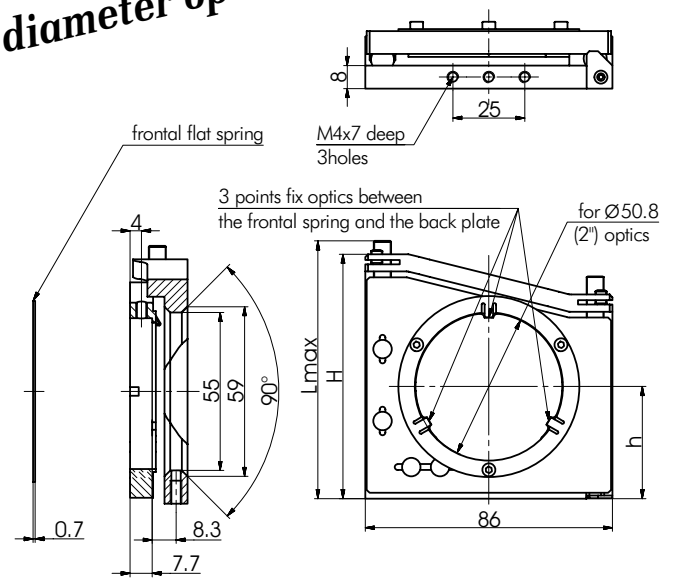
Vertical Drive Optical Mount

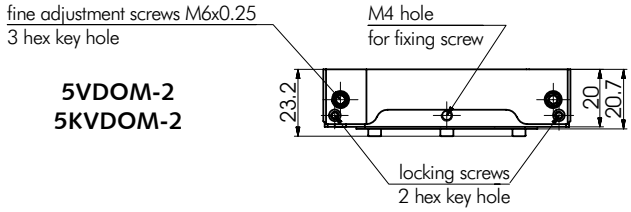
5KVDOM-2
5KVDOM-2-05
5VDOM-2
5VDOM-2-05



5KVDOM-2-05

for 2" diameter optics

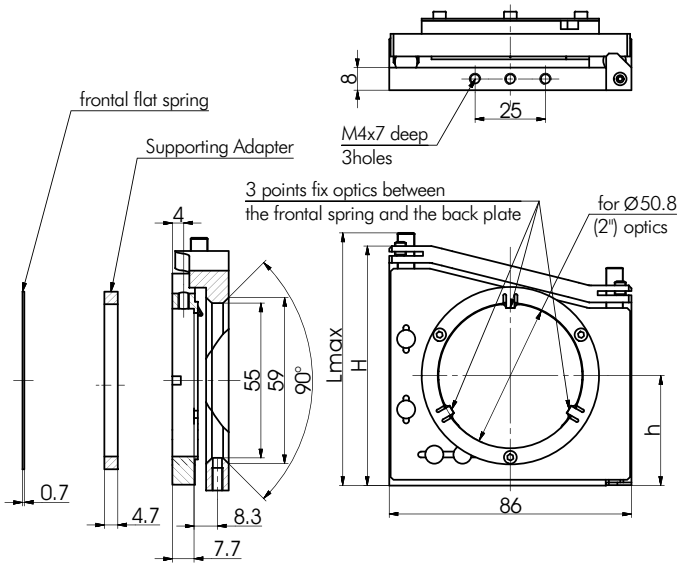


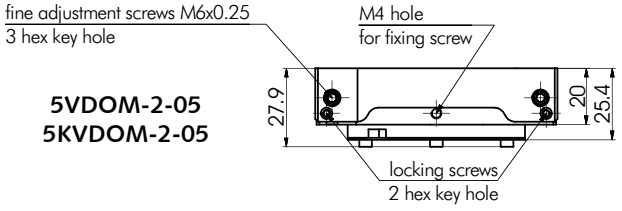


5VDOM-2
5KVDOM-2

Motorized version with DC motor 8MKVDOMV-2

for vacuum





5VDOM-2-05
5KVDOM-2-05

Model	Lmax, mm	H, mm	h, mm
5VDOM-2	99	89	43
5KVDOM-2	95	85	39
5VDOM-2-05	99	89	43
5KVDOM-2-05	95	85	39

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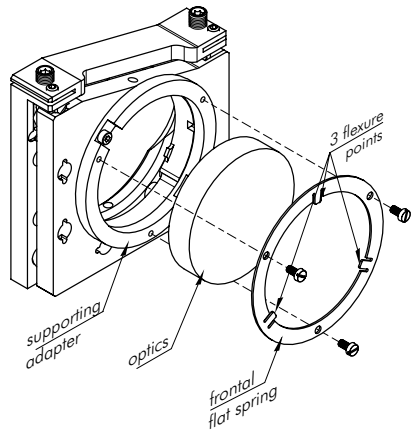
Vertical Drive Optical Mount

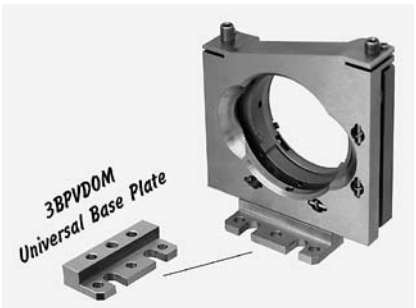
5KVDOM-3
5KVDOM-3-05

5KVDOM-3

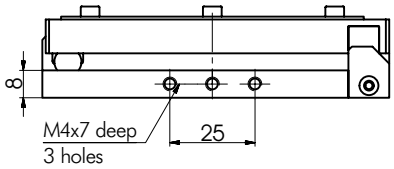
for 3" diameter optics

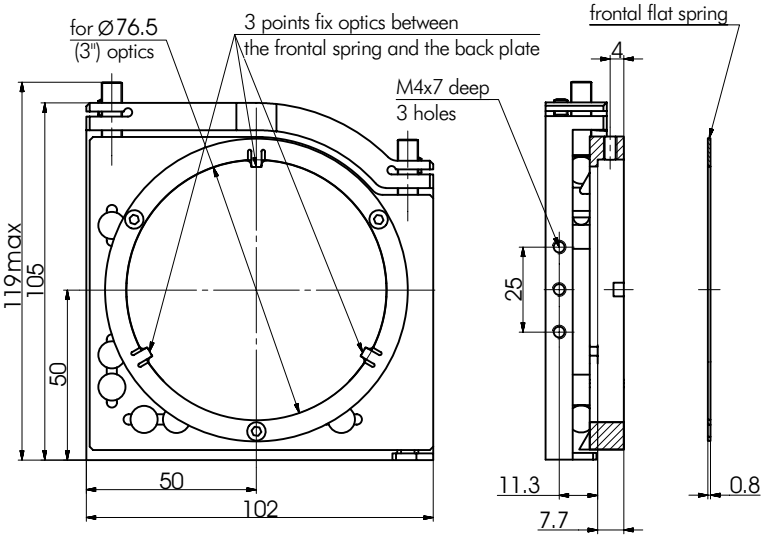


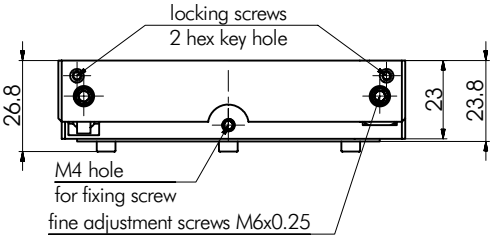
5VDOM-2-05
5KVDOM-2-05
5KVDOM-3-05
For 12.7 mm thickness optics, we recommend Optical Mount with Supporting Adapter



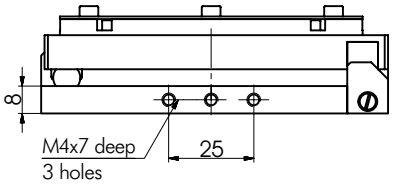
Universal Base Plate 3BPVDOM is designed to fix Optical Mounts **5KVDOM** series to optical tables and other flat surfaces. Fits metric and imperial hole patterns.

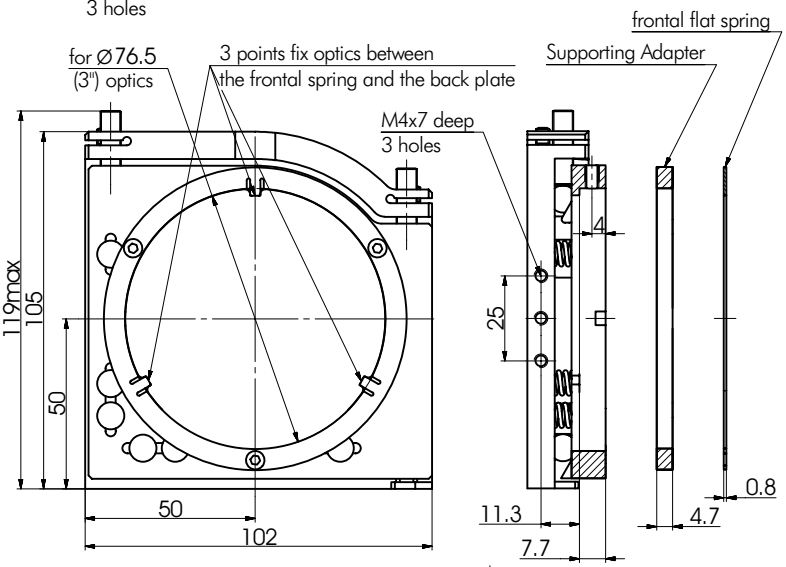


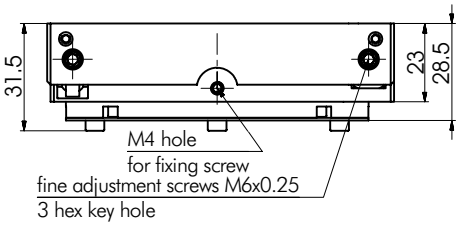




5KVDOM-3







5KVDOM-3-05

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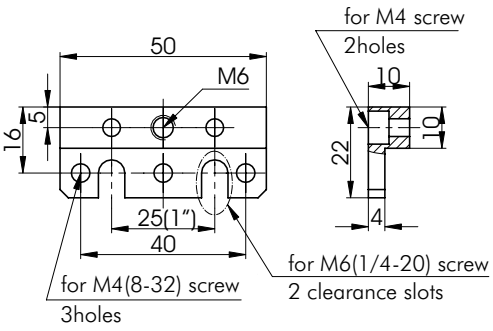
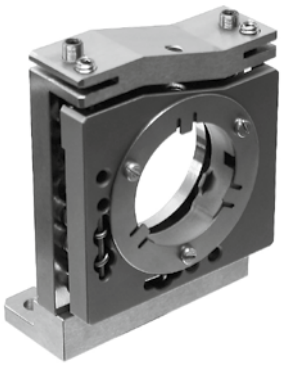
Universal Base Plate 3BPVDOM





Motorized version with STEPPER motor

8MKVDOM-1

Available motor version

8MKVDOM-1-DC

- **Compact design**
- **Stainless steel**
- **Super stable**

Motorized version with DC motor

ORDERING INFORMATION

5KVDOM-1	**Kinematic** Mirror Mount with **spiral spring** for **Ø25.4 mm** (**1 inch**) and **6 mm thickness** optics
5VDOM-1	Mirror Mount with **L-shaped flat spring** for **Ø25.4 mm** (**1 inch**) and **6 mm thickness** optics
5KVDOM-1.5	**Kinematic** Mirror Mount with **spiral spring** for **Ø38.1 mm** (**1.5 inch**) and **8 mm thickness** optics
5KVDOM-1.5W	**Kinematic** Mirror Mount with **spiral spring** for **Ø38.1 mm** (**1.5 inch**) and **8 mm thickness** optics
5VDOM-1.5	Mirror Mount with **L-shaped flat spring** for **Ø38.1 mm** (**1.5 inch**) and **8 mm thickness** optics
5VDOM-1.5W	Mirror Mount with **L-shaped flat spring** for **Ø38.1 mm** (**1.5 inch**) and **8 mm thickness** optics
5KVDOM-2	**Kinematic** Mirror Mount with **spiral spring** for **Ø50.8 mm** (**2 inch**) and **8 mm thickness** optics
5KVDOM-2-05	**Kinematic** Mirror Mount with **spiral spring** for **Ø50.8 mm** (**2 inch**) and **12.7 mm thickness** optics
5VDOM-2	Mirror Mount with **L-shaped flat spring** for **Ø50.8 mm** (**2 inch**) and **8 mm thickness** optics
5VDOM-2-05	Mirror Mount with **L-shaped flat spring** for **Ø50.8 mm** (**2 inch**) and **12.7 mm thickness** optics
5KVDOM-3	**Kinematic** Mirror Mount for **Ø76.5 mm** (**3 inch**) and **8 mm thickness** optics
5KVDOM-3-05	**Kinematic** Mirror Mount for **Ø76.5 mm** (**3 inch**) and **12.7mm thickness** optics

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Examples of Custom Design

We will gladly assist you in building your own system from scratch or adapting it to an existing setup. We design, test, and remodel custom gadgets till they work as you specify.
Here are some examples.

8-0023
3-axis Continuous Rotation System

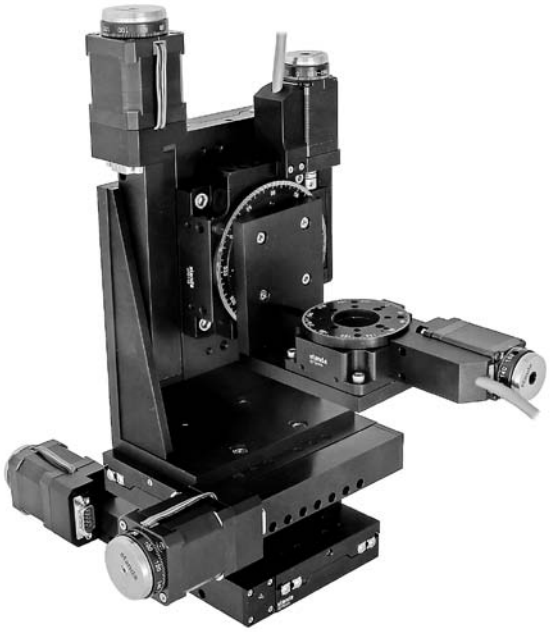
Motorized **XYZ** rotation **360° continuous**, rotators used **8MR190-2-28**

8-0029
Custom system

8MR151-30 – motorized **Y** rotation stage **±45°**
8MR190-2-28 – motorized **Z** rotation stage/system **360°**
7R7 – manual **Z** rotation stage/table **continuous**

7-0027
6 Axis System

7T68-25XY – manual **XY** translation stage travel **25 mm**
7T68-25T – manual **Z** translation stage travel **25 mm**
7R172-2 – manual **X** rotation stage **continuous**
7R190-2 – manual **Y** rotation stage **continuous**
7R172-2 – manual **Z** rotation stage **continuous**



8MT167-100-XYZ-8MR191-8MR151
Standa Robotics For Photonics

8MT167-100XYZ – motorized **XYZ** stage travel **100 mm**
8MR191-28 – motorized **X** rotation stage **360°**
8MR151 – motorized **Z** rotation stage **360°**

We modify our standard products according to your request even for one piece order

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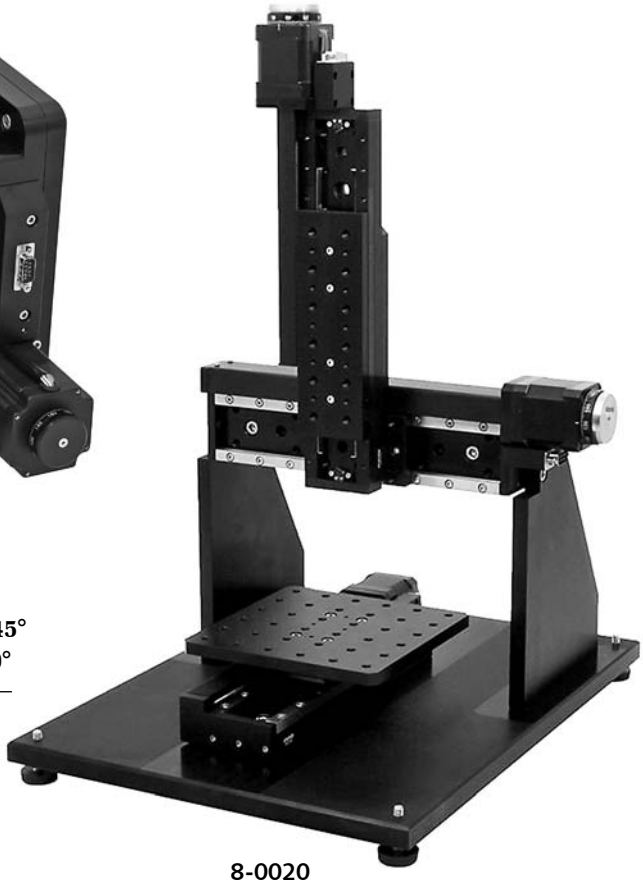
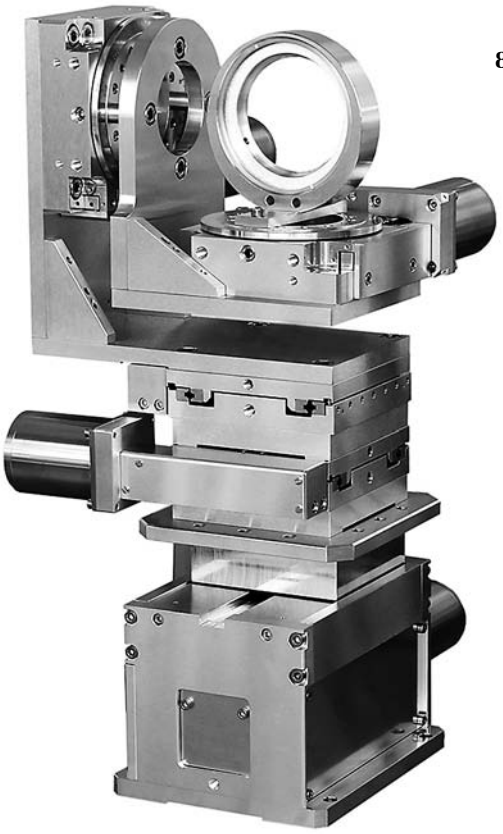
8-0025
High load capacity goniometer system

8MR190-90-59-001 – motorized **X** rotation stage **±45°**
8MR190-90-4247 – motorized **Z** rotation stage **360°**



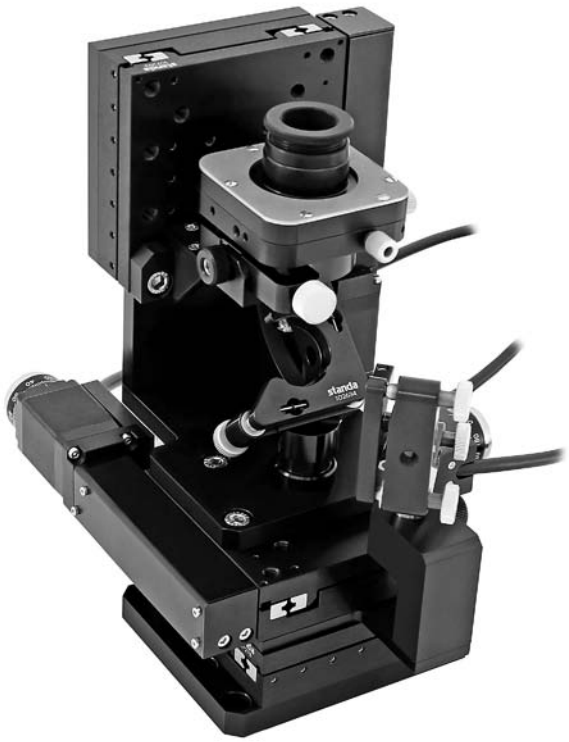
8-0020
Linear XYZ Portal

8MT50-150BS1 – motorized working platform travel **150 mm**
8MT50-150BS1– motorized head horizontal travel **150 mm**
8MT50-100BS1– motorized head vertical travel **100 mm**



8-0038
5 Axis Vacuum Compatible System

8MT167V-25LS-VSS42XY –
motorized **XY** stage travel **25 mm**
8MVT120V-25-VSS43 –
motorized vertical translation stage travel **120 mm**
8MR190V-2-VSS42 – motorized **Z** rotation stage **360°**
4OCMV-75 – optical mount



8-0035
Low-end Mobile Microscopy Device

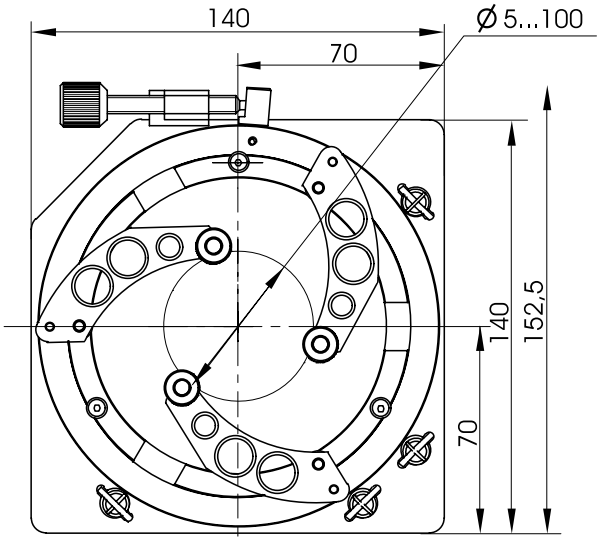
8MT167-25LSXYZ – motorized
XYZ stage travel **25 mm**
5MBM24-1-3– Kinematic Mirror mount
5KOM4-1 – four-axis kinematic optical mount

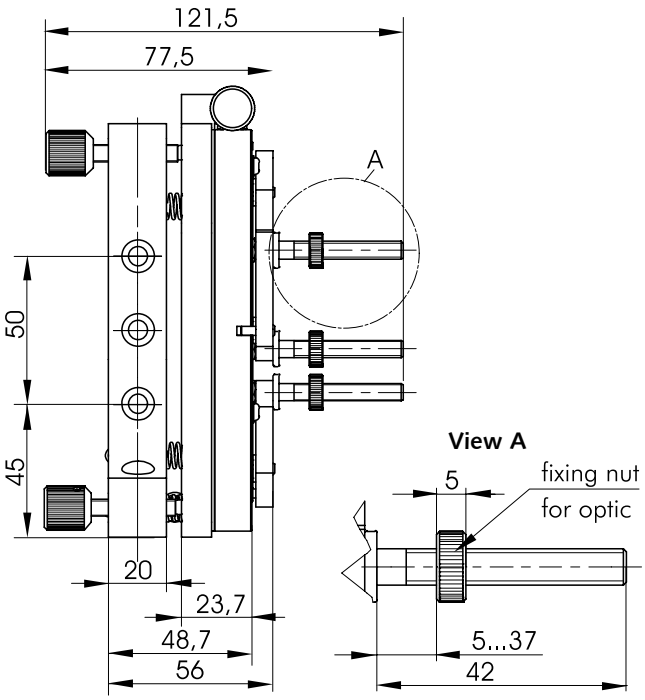
Self-centring Large Aperture Optical Mount 5AM-100

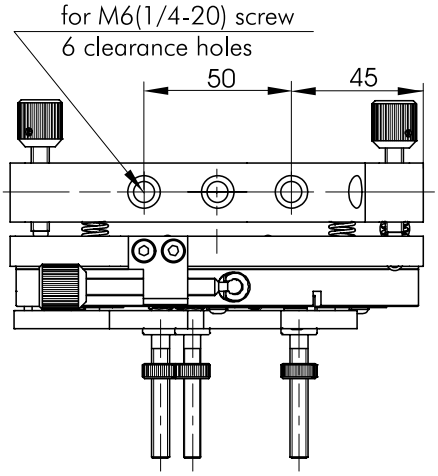
- **Tilt/tip range ±2.2°**
- **Linear adjustment of X axis is possible on request**
- **More linear axes are possible on request**
- **Great variety of optics diameters can be used with this mount**
- **Weight 1.1 kg**

SPECIFICATIONS

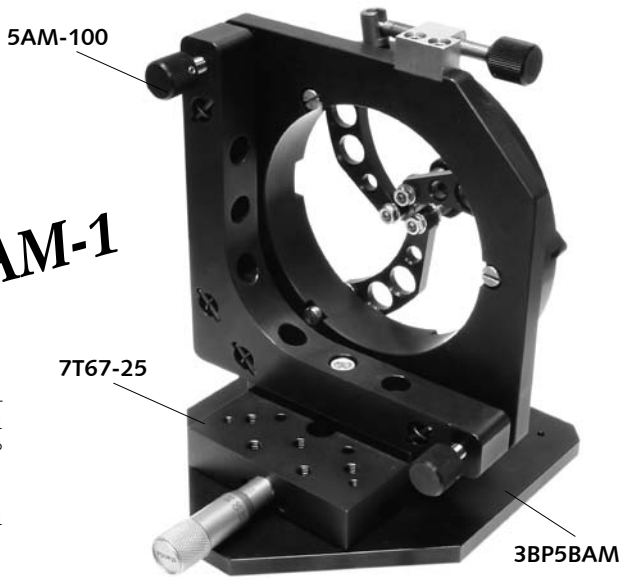
Optics diameter range	5-100 mm
Tilt/tip range	± 2.2°







5BAM-1



SPECIFICATIONS

Optics diameter range	5-100 mm
Tilt/tip range	± 2,2°
Option	
Translation stage **7T67-25**	25 mm
Base plate **3BP5BAM**	

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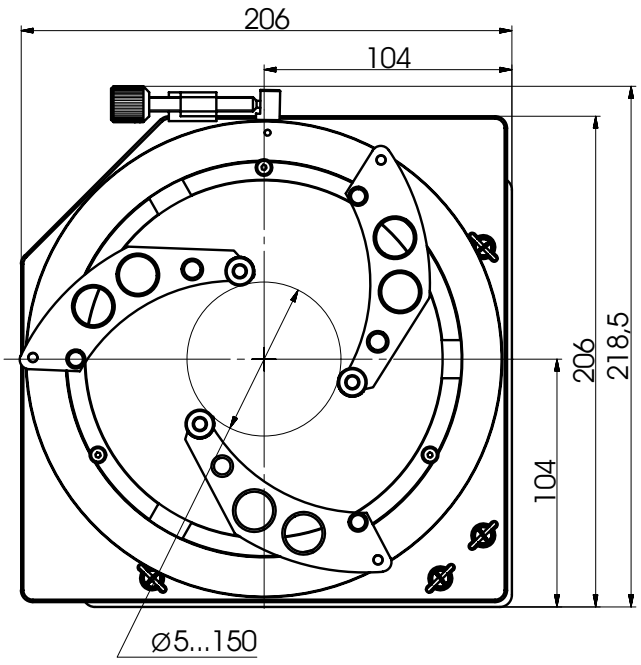
Self-centring Large Aperture Optical Mount **5AM-150**

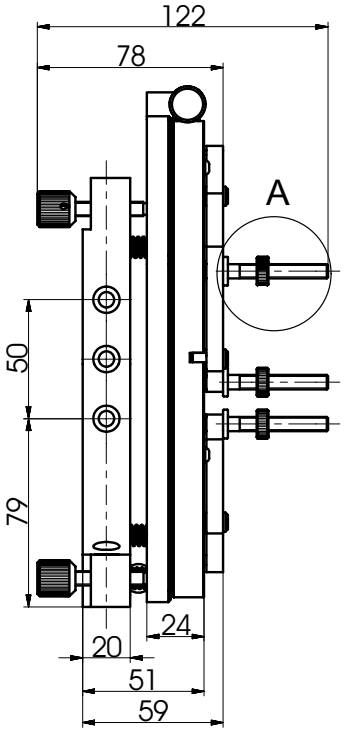
- **Tilt/tip range ±2°**
- **Linear adjustment of X axis is possible on request**
- **More linear axes are possible on request**
- **Great variety of optics diameters can be used with this mount**
- **Weight 1.9 kg**

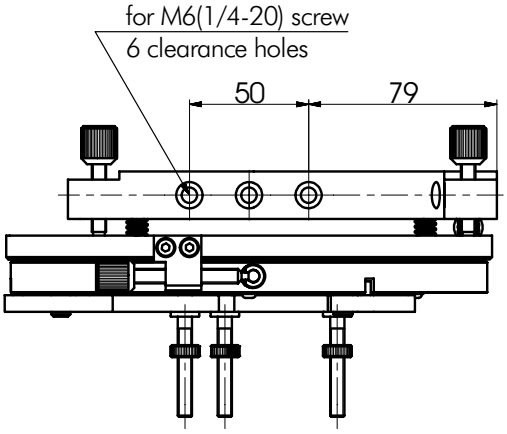
SPECIFICATIONS

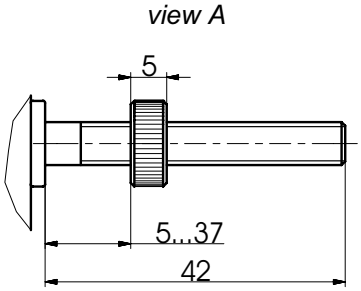
Optics diameter range	5-150 mm
Tilt/tip range	± 2°

new









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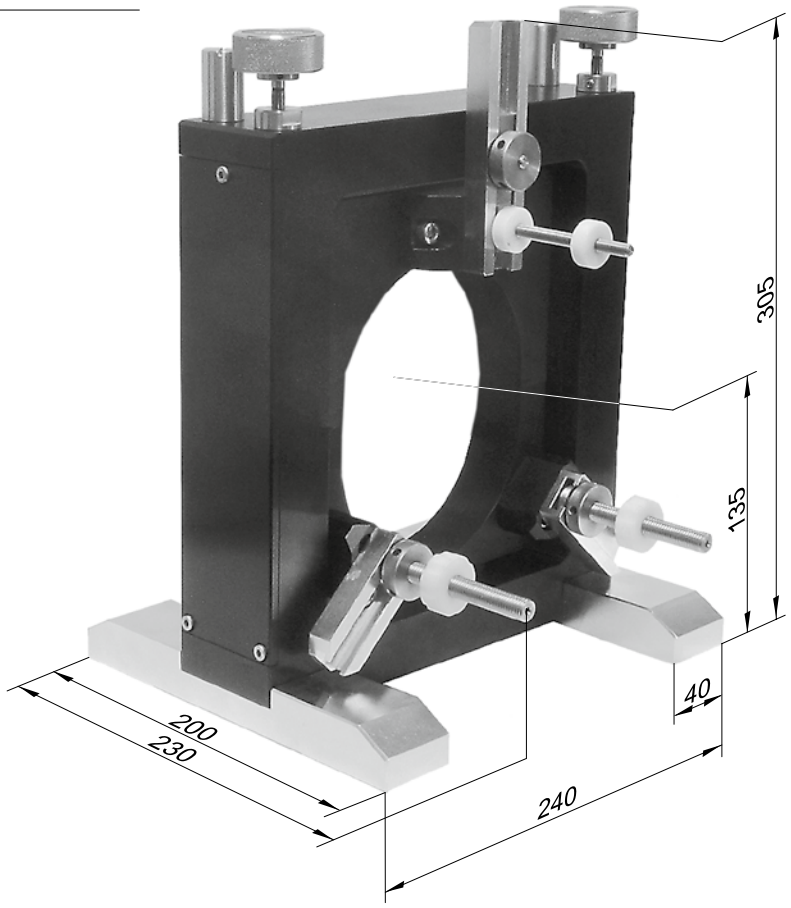
Large Adjustable Kinematic Optical Mount

5AM-250
5TAM-250

5AM-250

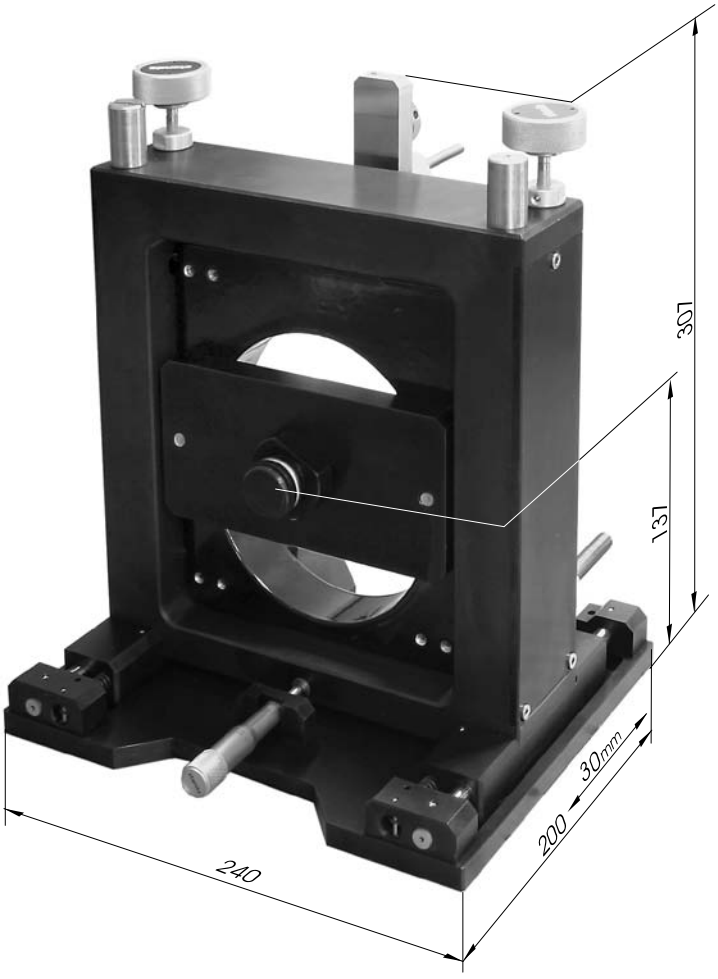
- **2 axis**
- **Tilt/tip travel range ±1.5°**
- **Optics diameter 115÷250 mm**
- **Optics thickness 52 mm**
- **Sensitivity 0.5 arcsec**
- **Load capacity 10 kg**
- **Weight 10.1 kg**



Super fine and stable Kinematic Optical Mounts **5AM-250** and **5TAM-250** for large and heavy optics. Optionally universal element holder can be mounted from the backside of the holder to easily adapt the holder for test parts of various sizes and shapes.

5TAM-250

- **3 axis**
- **Tilt/tip travel range ±1,5°**
- **X axis translation range 30 mm**
- **Optics diameter 115÷250 mm**
- **Optics thickness 52 mm**
- **Sensitivity 0.5 arcsec.**
- **Load capacity 6 kg**
- **Weight 10.3 kg**



4BM-250

See page 4-5 for details

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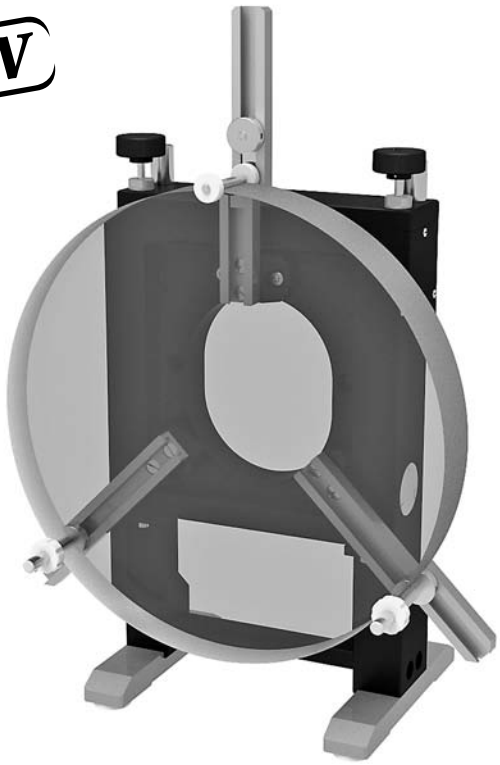
Precise Adjustable Kinematic Mount for Large Optics

5AM-500

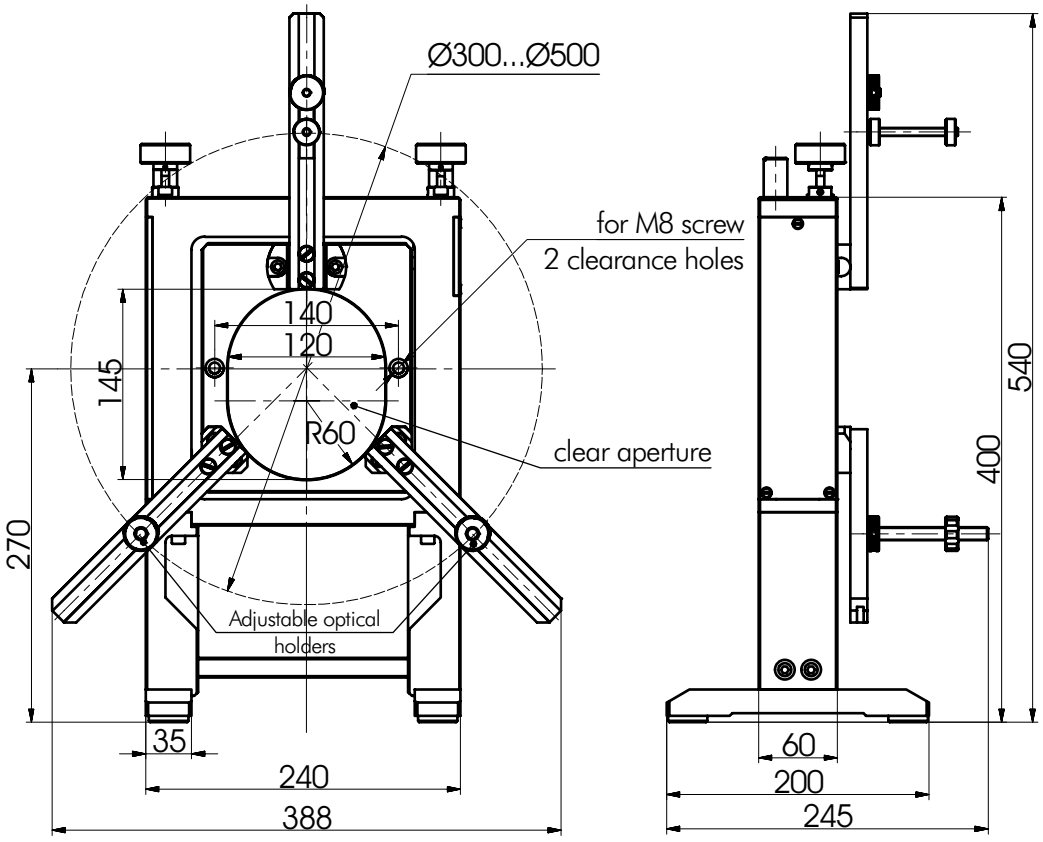
SPECIFICATIONS

Fine screw thread	M6×0.35
Horizontal rotation range	±1.5°
Vertical yaw range	±1.5°
Sensitivity	0.5 arcsecond
Load capacity	10 kg
Compatible with optical elements	
Diameter	300÷500 mm
Thickness	up to 52 mm
Weight	11 kg

new



5AM-500 is a modification of our standard version of the **Precise Adjustable Kinematic Mount for Large Optics 5AM-250**. This model is designed for **optics** with diameter up to **500 mm**, while retaining mechanical parameters of the standard version.



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Adjustable Optical Mount for Large Heavy Mirrors

5AMR-500

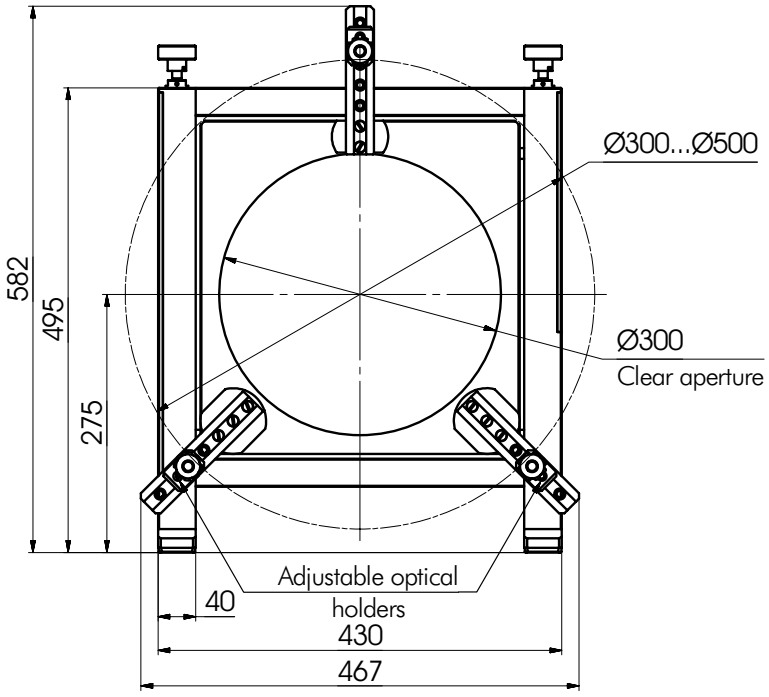
new

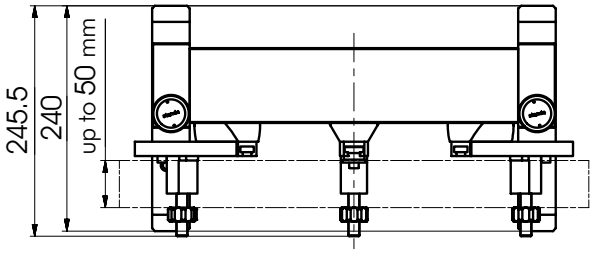
- **Rigid design**
- **Long-term stability**
- **High load capacity**
- **High sensitivity tilt/tip travel**
- **For variable optics diameters**
- **Vertical screws placement from one side**
- **Locking available**

SPECIFICATIONS

Compatible with optical elements	
Diameter	300÷500 mm
Thickness	up to 80 mm
Clear aperture	Ø 300 mm
Fine screw thread	M10x0.5
Horizontal rotation range	±1.55°
Vertical yaw range	±1.52°
Sensitivity	1.5 arcsecond
Locking	both axis
Load capacity	up to 30 kg
Weight	21 kg

5AMR-500
Adjustable Optical Mount
with
4SCML-12
Self-Centering Lens/Optics Mount
compatible with optical elements
Diameter: 76-500 mm
Thickness: up to 80 mm
Clear Aperture: ~300 mm (12")





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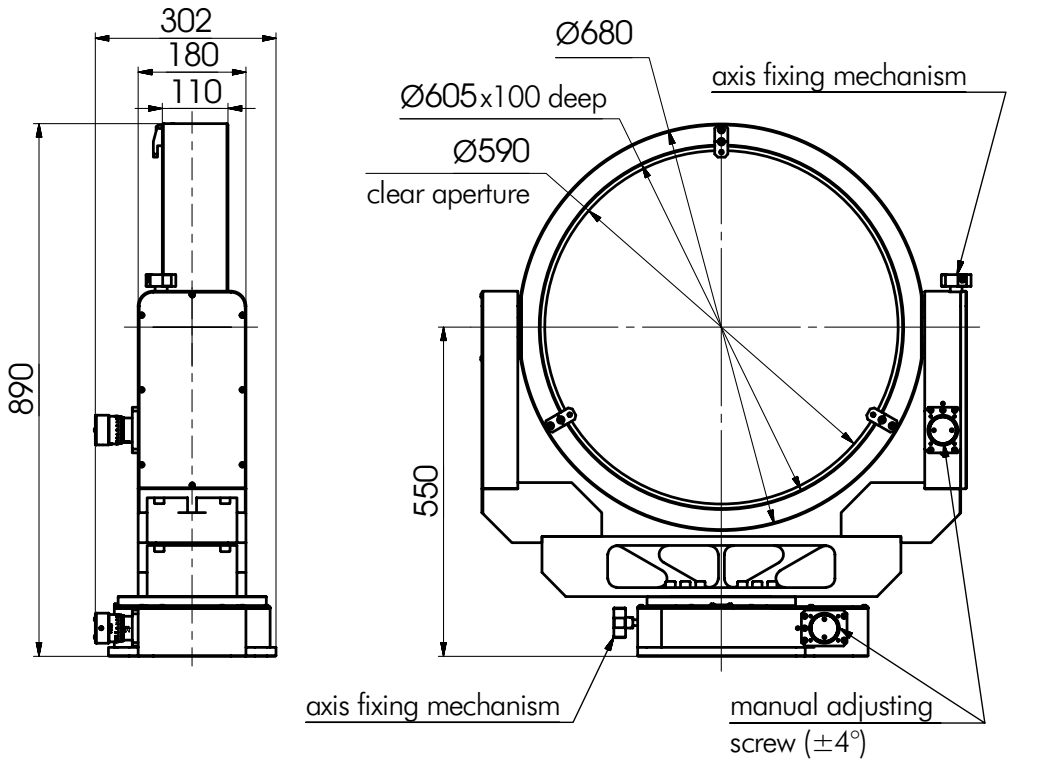
Large Aperture Optical Mount

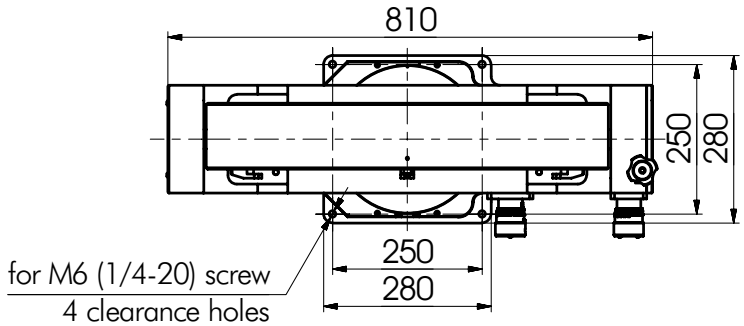
5LAOM-600

new

- Rotation range in azimuth and elevation: 360° / 360°
- Fine adjustment range: ±4° / ±4°
- High positioning sensitivity: 1arcsec
- Maximum acceptable thickness of optical element: 100 mm.
- Maximum acceptable weight of optical element: 150 kg
- High thermal and vibration stability
- Near zero backlash
- Various range of apertures can be customized on request
- Motorized version of optical mount 8MLAOM-600 is available. See page 8-70
- Vacuum compatible version is available

5LAOM-600





5LAOM-600
5LAOMV-600

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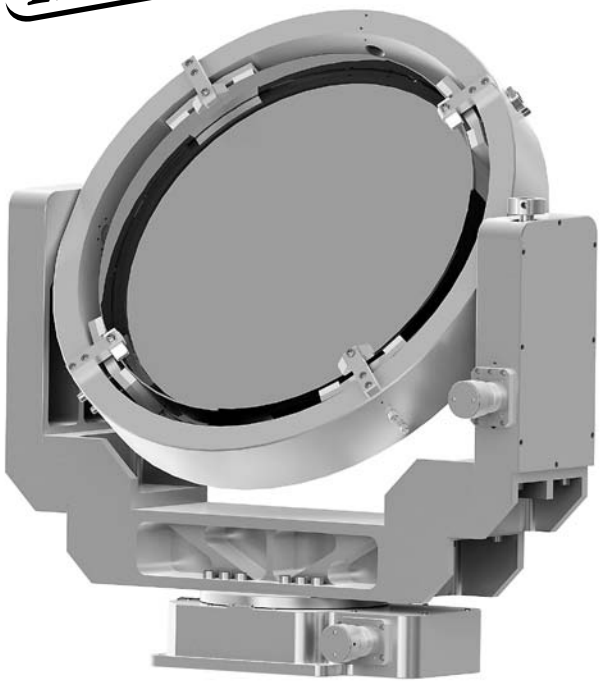
new

5LAOM Large Aperture Optical Mount has been designed for positioning of **large optical elements** up to **600 mm**. Commonly **LAOM** optical mount is extremely efficient solution in applications such as: high power laser systems and astronomy.

LAOM series optical mounts have complete **360 degree rotation** in azimuth and elevation axes if transmission of both coordinates is decoupled. Special spring preloaded internal mechanisms result **near zero backlash** motion. Fine adjustment in **±4°** range results high quality motion with sensitivity less than 1arcsec.

Age hardened aluminum alloy guarantees softness of assembly, high thermal stability and high vibration stability.



5LAOMV-600
Vacuum version

SPECIFICATIONS

Kinematics and Feedback information	
Azimuth/Elevation (coarse)	360° / 360°
Azimuth/Elevation (fine)	±4° / ±4°
Resolution	3 arcsec
Sensitivity	1 arcsec
Accuracy	on request
Bidirectional repeatability	3 arcsec
Unidirectional repeatability	3 arcsec
Backlash	0
Load and Transmission information	
Horizontal load capacity	150 kg
Lead Screw Pitch	1 mm
Material and environment conditions	
Base material	aluminum / stainless steel
Finish	
5LAOM-600	powder coating
5LAOMV-600	uncoated
Environment pressure	
5LAOM-600	atmosphere (10^{-3} torr / 10^{-6} on request
5LAOMV-600	10^{-8} torr
Ambient temperature	on request
Additional Details	
Measurement system	Metric
Weight	79 kg
Aperture	Ø590 mm
Max optic diameter	Ø600 mm
Min optic diameter	Ø500 mm
Max optic thickness	100 mm

Motorized Version of Optical Mount *is Available*

See page 8-70

ORDERING INFORMATION

5LAOM-600 – Large Aperture Optical Mount
5LAOMV-600 – Vacuum Compatible Gimbal Optical Mount

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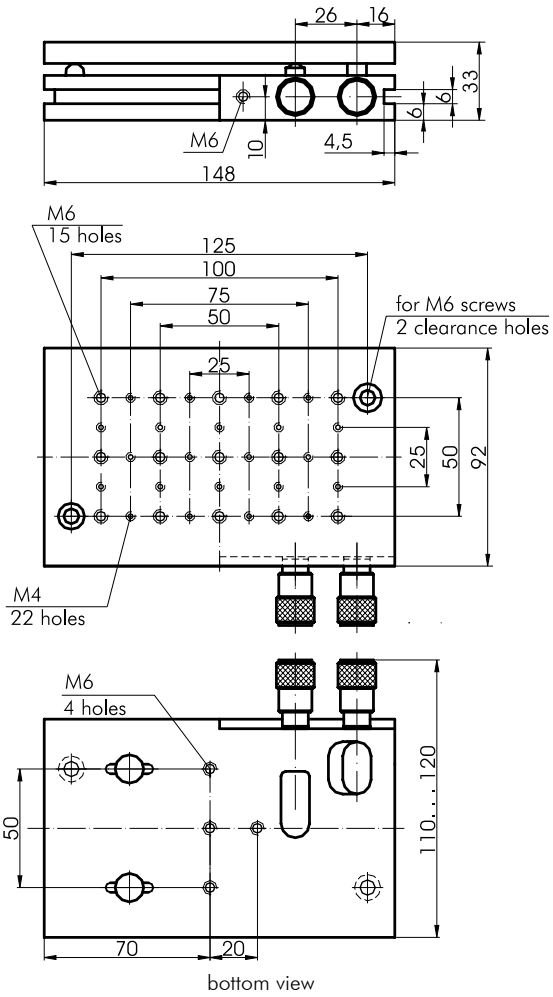
Multi-Axis Tilt Platform

6TP116



Multi-Axis Tilt Platform 6TP116 provides angular adjustment about two-axis – tilting and in-plane rotation.

The mounting platform is rotated around kinematic pivot point by two micrometers. The out-of-plane tilting range is **±2°** and the in-plane rotation ranges is **±2.5°**. Two micrometer screws are located side by side for a handy use. The adjustment movements are not calibrated, and they are uncoupled.

The mounting platform has a **25 mm** grid of tapped holes **M6** and **M4**.

Two clearance holes ∅**6.2** are provided in the base of the unit. This allows to attach **6TP116** to tables and breadboards. Also you can clamp the base of the unit by STANDA Table Clamp **3TC5**; this way you can orient the unit on the table in any direction.

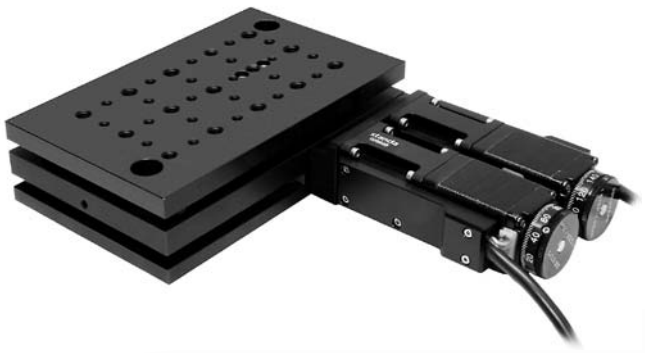
The tilt platform is made of black anodized aluminium.

ways to mount the unit

SPECIFICATIONS

Tilt Θy	**±2°**
Rotation Θz	**±2.5°**
Load capacity	**15 kg**
Weight	**1 kg**

*Available Motorized version **8MTP116***



SPECIFICATIONS

Tilt y	±2°
Rotation z	±2.5°
Resolution	
in full step	1.25 μm
in 1/8 step	0.156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
Maximum load capacity	10 kg
Type of actuator	8CMA28-10
Cable	1.2 m length cable included
Motor connector	DB15(M)
Weight	1.3 kg

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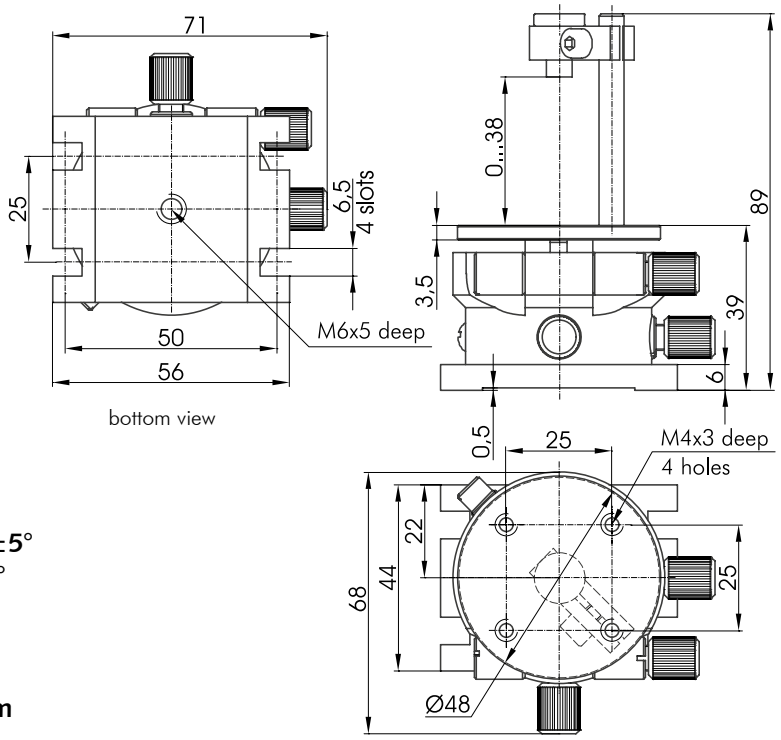
Tilt/Rotation Stage

6PT110



- **in-plane rotation in the range of ±5°**
- **tilt of two axis in the range of ±5°**
- **precision screws are included**
- **spring-loaded mounting clamp**
- **stage could be easily mounted**
- **maximal component height 38 mm**

Tilt / rotation stage 6PT110 provides **two independent tilt adjustments** within **±5°** range and **±5° in-plane rotation adjustment**. Precision screws provide **9 arcsec** resolution in rotation and both tilt planes (adjustment screws **M6×0.25**, 3 pcs.). The mounting clamp with a spring-loaded disengagement knob allows easy insertion and removal of **optical components** up to **38 mm** height and **30×30 mm** in square. Stage is attached to tables through clearance holes in its base. The main elements of the stage are finished with **black anodized aliuminium**.

SPECIFICATIONS

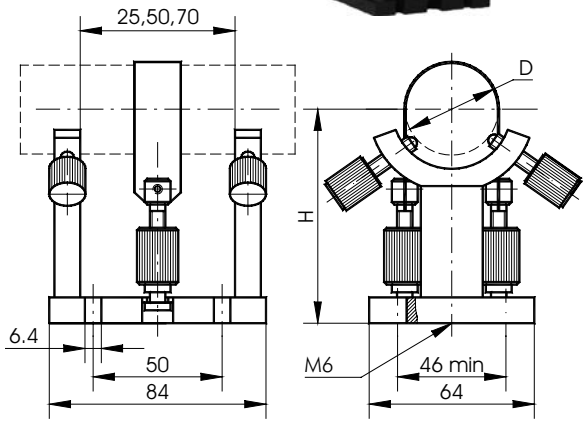
Tilt Θx and Θy	±5°
Rotation Θz	±5°
Weight	0.23 kg

Adjustable Laser/Laser Head Holder

6LH

- **Stable design**
- **Precise adjustment about linear and angular coordinates**
- **Wide adjustment angle**
- **High load capacity**
- **Convenient mounting**

4 adjustable degrees of freedom!



Adjustable Laser/Laser Head Holder 6LH is used for repeatable mounting and drift-free pointing of laser heads and other cylindrical objects.

You may easily reposition the two supports to select an optimal **basis** for cylindrical objects of differing **lengths** (basis of **25**, **50**, or **70 mm**).

6LH is made of black anodized aluminium and is equipped with **6.4 mm** clearance slots and **M6** tapped holes to attach to STANDA tables and breadboards.

Model	**D**, mm	**H**, mm	**Weight**, kg
6LH-25	∅25 - ∅36	≈75	0.26
6LH-50	∅48 - ∅55	≈65	0.20

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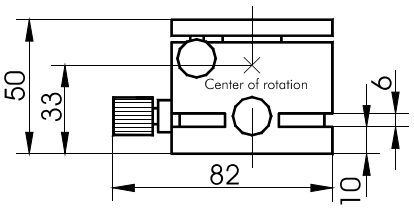
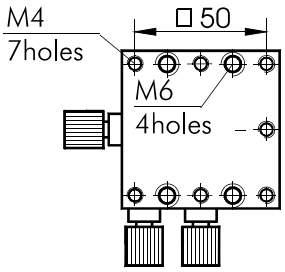
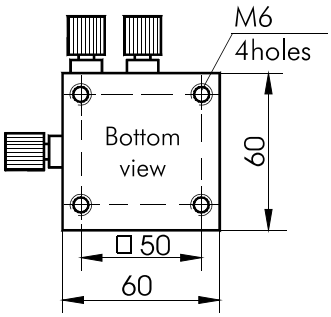
Three Angle Prism/Beamsplitter Table

6PT169

- **Three degrees of freedom with common centre of rotation**
- **For precision alignment of prisms, beamsplitters, etc.**
- **Mounts horizontally or vertically**





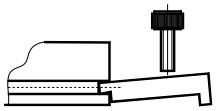


Sold separately see page 4-10.

Three Angle Prism/Beamsplitter Table 6PT169 provides non-calibrated tilt motion in three planes. It is ideal work platform for prisms, beamsplitters and mirrors, which need to be precisely adjusted in angle about three orthogonal axes. Various opto-mechanical mechanisms can be quickly and conformably attached to the top of the table stage using Spring Clamps 4SC. Prisms can be fixed to the top of the Table using Bar Clamp 4BC32 or V-Clamp 4VC41.

Every Three Angle Prism/Beamsplitter Table 6PT169 is provided with three drives ensuring rotation about three different axis. Two lower screws turns the top of the table around two orthogonal horizontal axes, upper screw ensures rotation around vertical axe in plane. All three rotations are fully independent and all three axes are full orthogonal. Fine pitch screw threads ensure high resolution and strong springs provide a stable platform. All three rotations are about a point 17 mm below the centre of the top plate.

Three Angle Prism/Beamsplitter Table 6PT169 can be attached to STANDA optical table or to another stages with Table Clamp 3TC5. Also four attachment thread M6 holes in the bottom of the table are provided. The main elements of the table are made from black anodized aluminium.



Methods of fastening: by clamps or by screws through holes

SPECIFICATIONS

Tilt Θx and Θy	±4°
Rotation Θz	±4°
Sensitivity	8 arcsec
Weight	0.43 kg
Hole pattern	4×M6; 7×M4
Load capacity	1.5 kg

Single-Axis Tilt Stage

6TS

6TS62

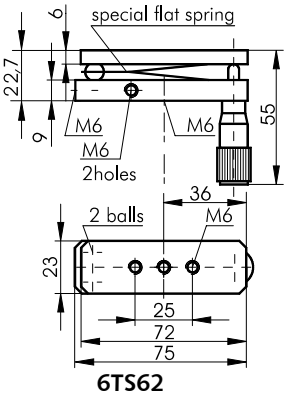
6TS72-72

A Single-Axis Tilt Stage 6TS provides **tilt** range of **6°** with **6 μrad** sensitivity. Pivot is done on two hardened steel balls.

The base has **M6** tapped holes on four sides, to fasten the platform, for example on mounting posts **3MP**.

Material – black anodized aluminium.

Weight: **6TS62** – 0.11 kg
6TS72-72 – 0.16 kg

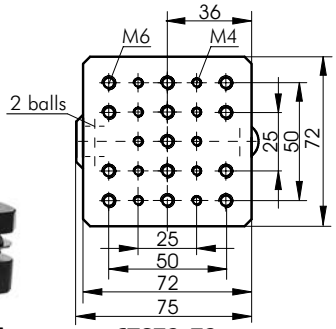


6TS62

Examples of order codes	fine driving screw
6TS62 (6TS72-72)	9S65M (comes as standard – omit the screw code)
6TS62-9S67M (6TS72-72-9S67M)	9S67M (alternative screw – append the code)
6TS62-9S127M (6TS72-72-9S127M)	9S127M-10

See **section 9** for screws.
The platform of other dimensions is available.

6TS62-9S127M



6TS72-72

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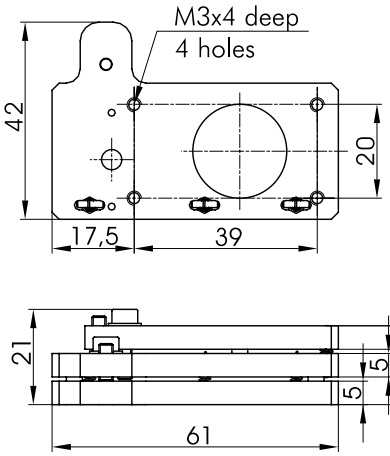
Tilt Stage

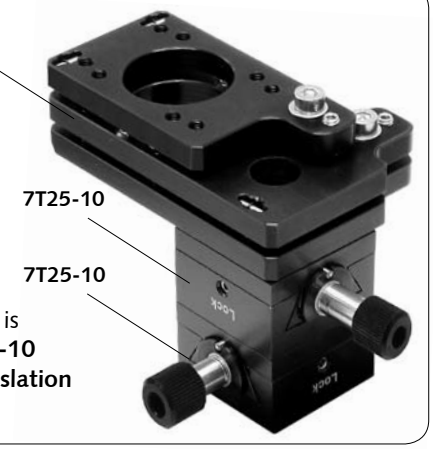
6TS29-21



- **Tip/tilt range of ±3°**
- **Compatible with 7T25-10 series**
- **Material: black anodized**
- **aluminium**

SPECIFICATIONS

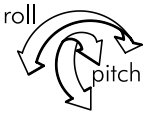
Tilt Θx and Θy	±3°
Load capacity	1.5 kg
Weight	0.025 kg

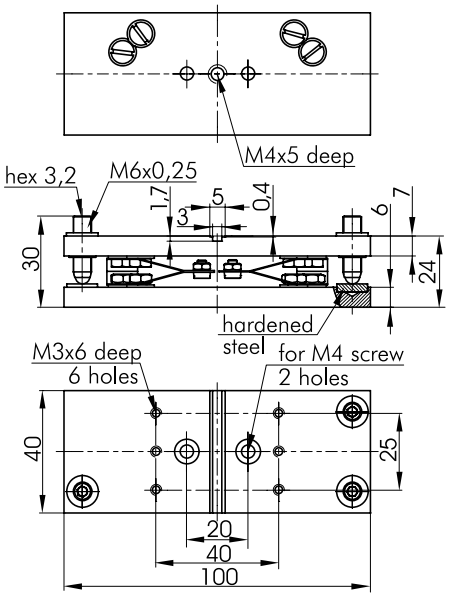


Tilt Stage 6TS29-21 is combined with **7T25-10 Dovetail Linear Translation Stage**

Roll & Pitch Tilt Platform

7FA3





- **Tilt (roll & pitch) platform**
- **Travel in z axis: -2 mm, +4 mm**
- **Travel roll, pitch ±4°**
- **Resolution 10 arcsec**
- **Compatible with 7TF2**
- **Load capacity: 4 kg**

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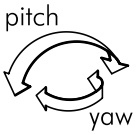
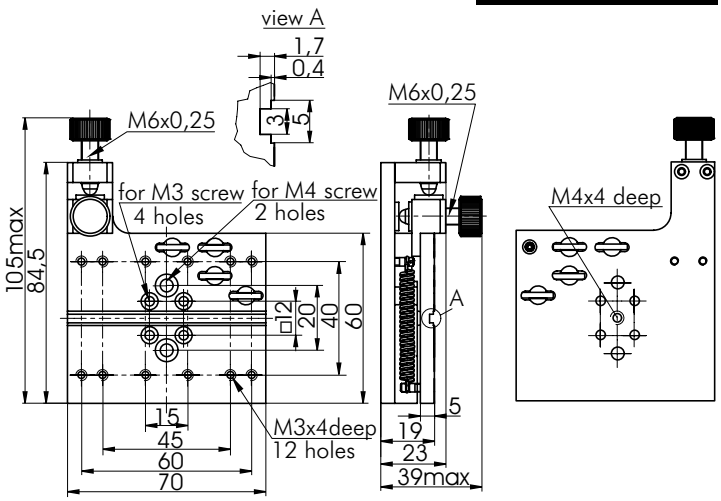
Pitch & Yaw Platform

7FA5

- **Pitch yaw platform**
- **Yaw ±4°**
- **Pitch ±3°**
- **Resolution 10 arcsec**
- **Compatible with 7TF2**
- **Load capacity: 4 kg**





TWO-AXIS TILT PLATFORMS

APPLICATION SUGGESTIONS

5OM10T
with
5OM100A2/5OM100B1

5UM122
with
3MP/3RBP

5OM122T
with
5OM122A2/5OM122B2

5OM101T
with
3MP/3PH/3CMB

5OM60
with
3MP/3PH/3BP4

5OM37-20
with
3MP/3PH/3CMB

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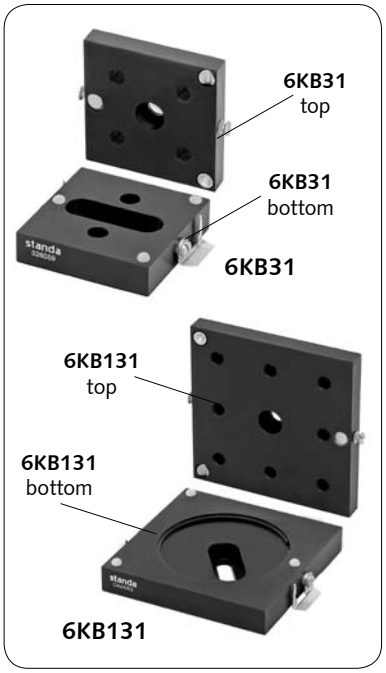
Kinematic Bases

6KB131 • 6KB31

6KB31

6KB131



- **Kinematic repositioning with repeatability of several arcsec**
- **Exclusive mounting disk for extra freedom in positioning (6KB131 only)**
- **Hooks of spring steel for reliable locking and quick-release**

A kinematic base is used for repeated positioning of groups of units mounted on its platform.

A platform has **M6** mounting holes. Alternatively, fit an **M6** screw through a clearance hole from beneath.

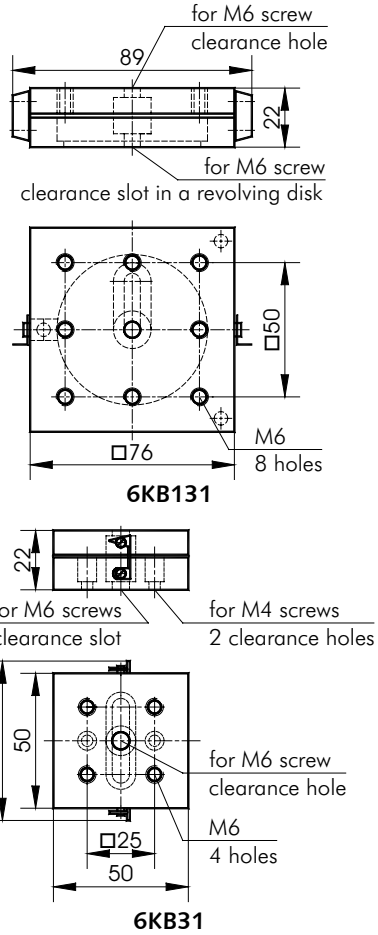
You unhook the platform from the bottom plate and stow it away with all the units still mounted.

Later you **replace** the platform, just as it was, with a **repeatability of several arcsec**.

The bases use a kinematic scheme, where three steel balls register with a cone, a v-groove, and a flat. The balls and registers are of hardened polished steel.

Hooks of spring steel prevent accidental movement platform .

Bottom plate is fastened through clearance holes or a slot. **6KB131** has a revolving mounting disk – a degree of freedom of positioning.



SPECIFICATIONS

Material	Aluminium
Finish	Black anodized
Weight	
6KB31	0.14 kg
6KB131	0.30 kg

Magnetic Kinematic Base

6MKB175

6MKB175

6MKB175 top

6MKB175 bottom

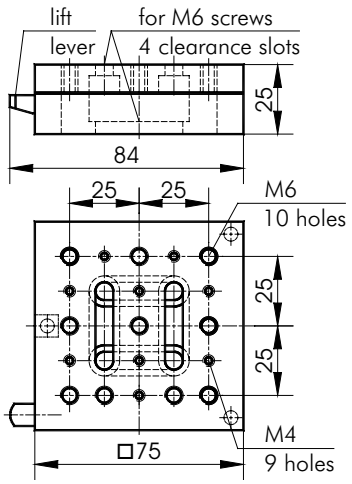
You lift the units mounted on the platform as a group. The platform is **replaced** with a **repeatability** of **50 μm**.

The platform has patterns of **M4** and **M6** mounting holes. Alternatively, fit **M6** screws through its clearance slots from beneath.

Two high strength **magnets** lock the platform to the bottom plate.

The bottom plate is fastened by **M6** screws through a pair of transversal clearance slots.

Push the special **lever** to **lift** the platform with minimal jolts.



SPECIFICATIONS

Material	Aluminium
Finish	Black anodized
Weight	0.36 kg

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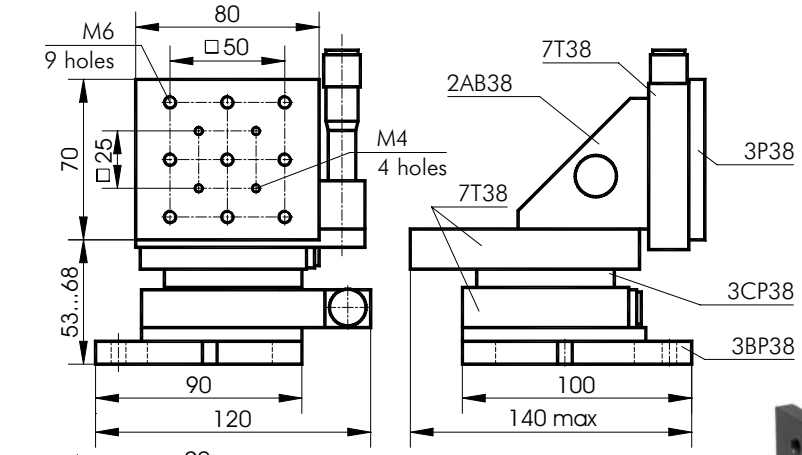
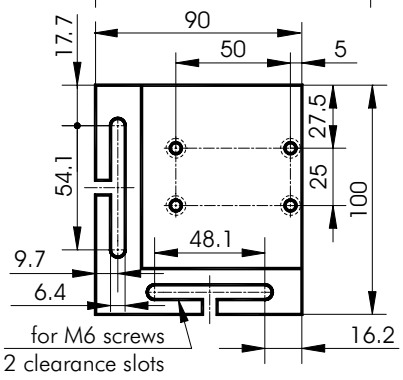
We show only some examples of standard multi-axis assemblies.

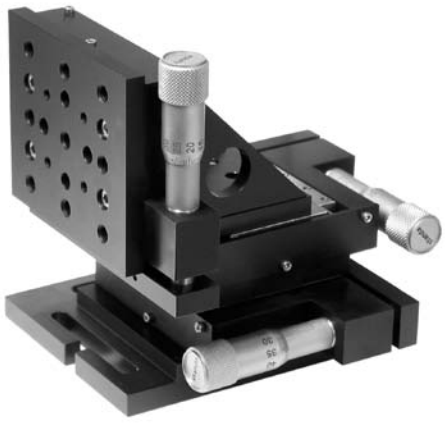
We promptly produce custom connection plates and other accessories required for any non-standard assembly of 3 axis systems. Terms of delivery of the main items are not affected.
At **www.standa.lt** you will find other X-Y-Z assemblies.

7T38XYZ

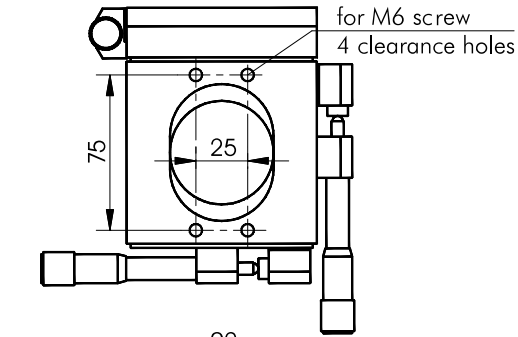


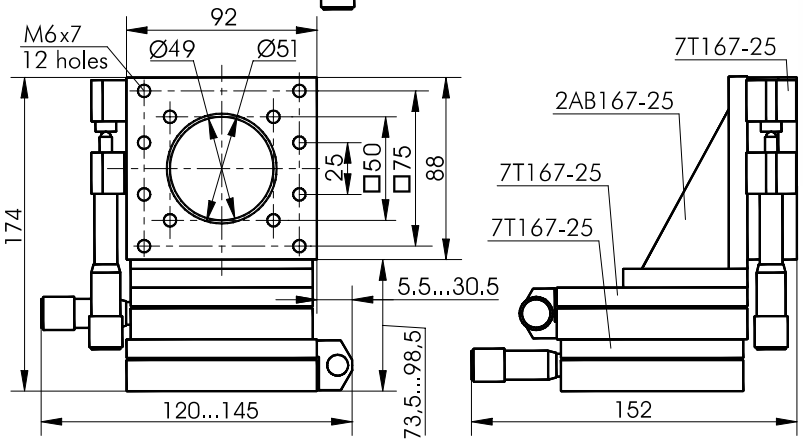


3BP38 top view

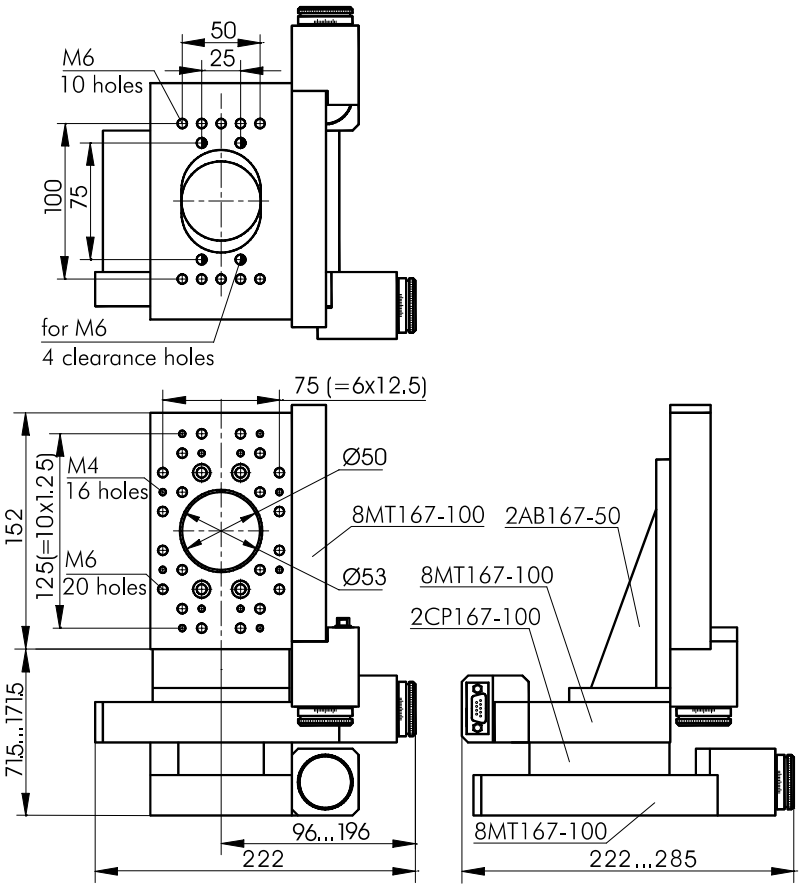


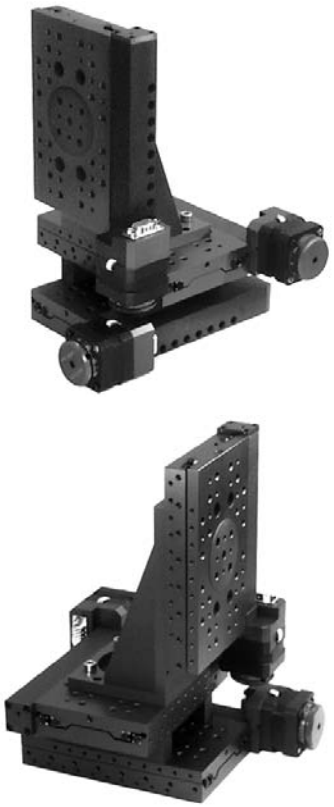
7T167-25XYZ



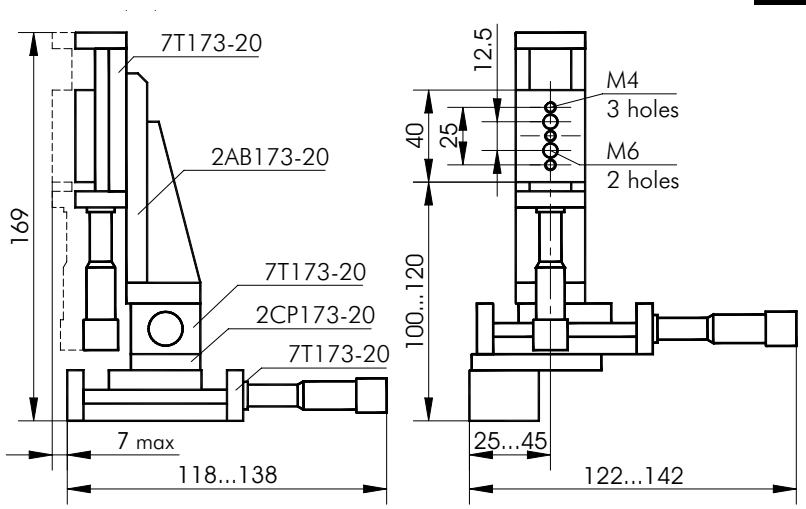


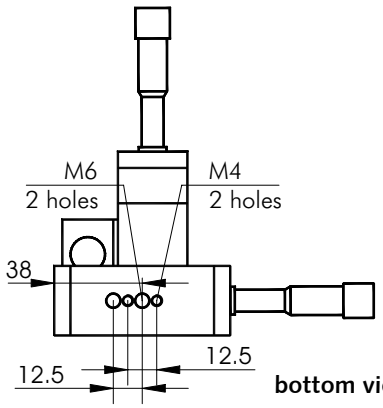
8MT167-100XYZ





7T173-20XYZ





bottom view

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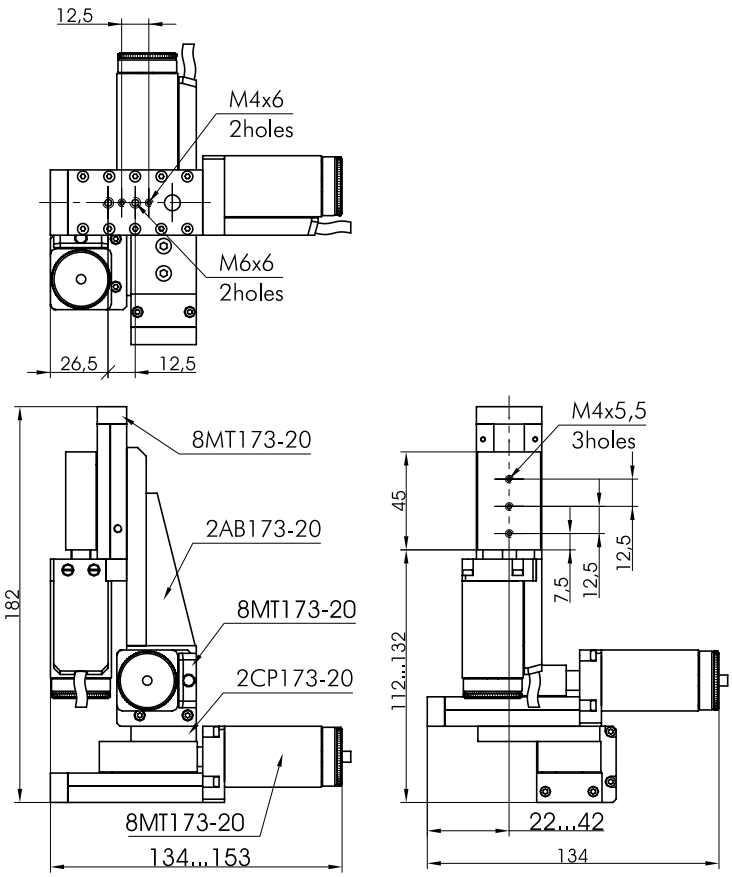
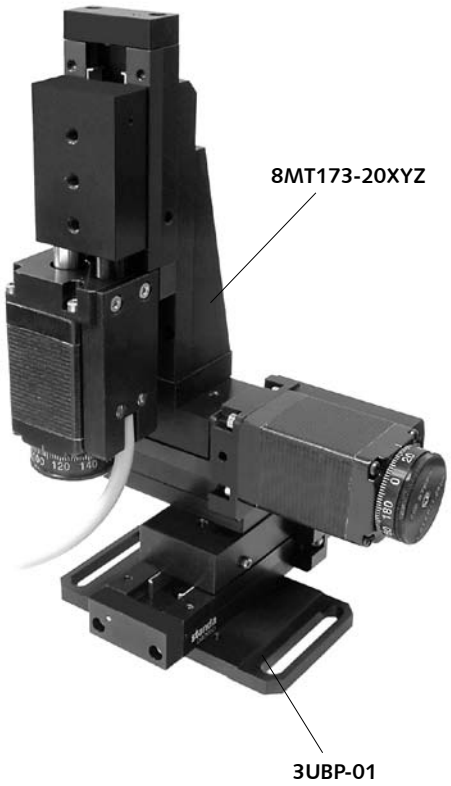
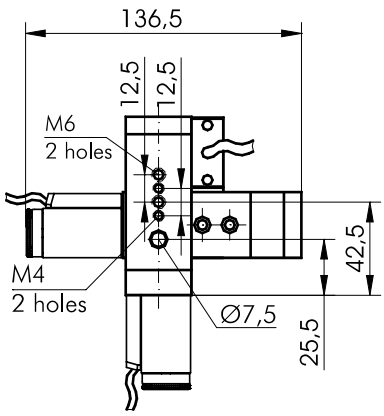
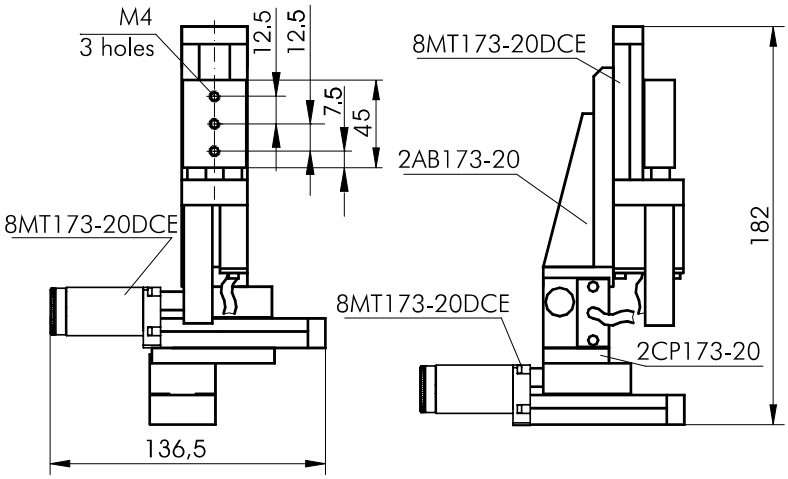
8MT173-20XYZ



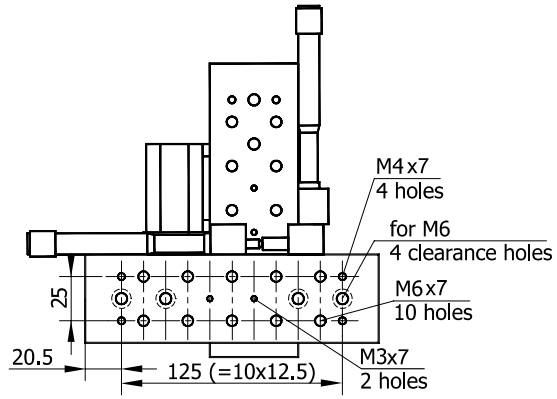


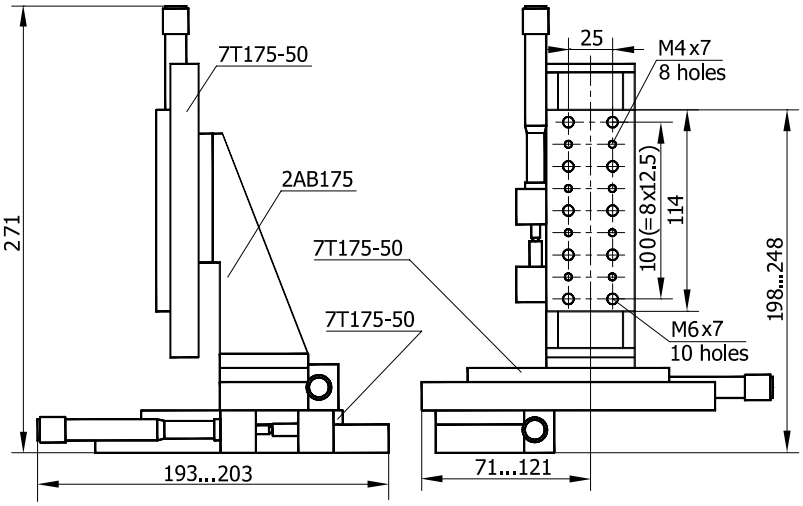
8MT173-20 DCE2XYZ

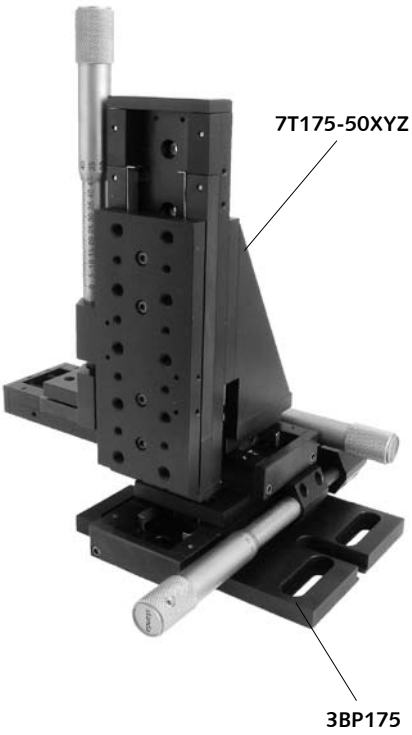




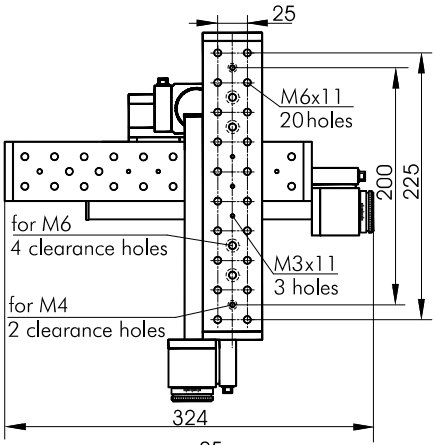
7T175-50XYZ

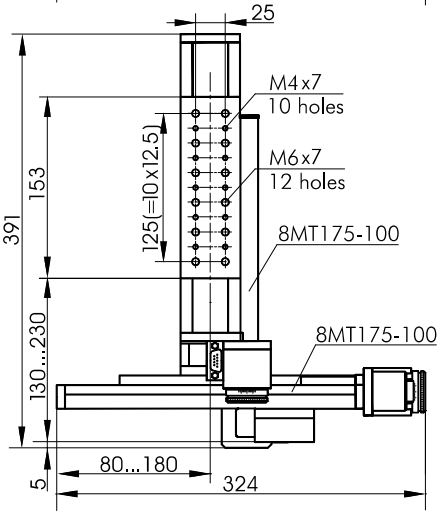


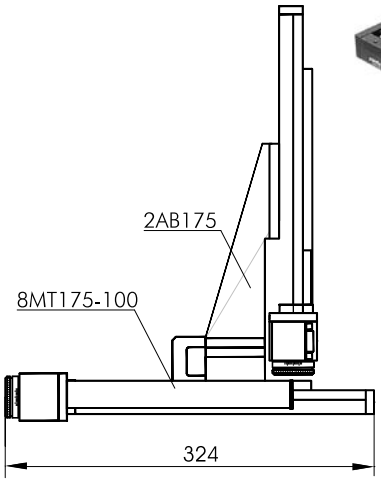




8MT175-100XYZ







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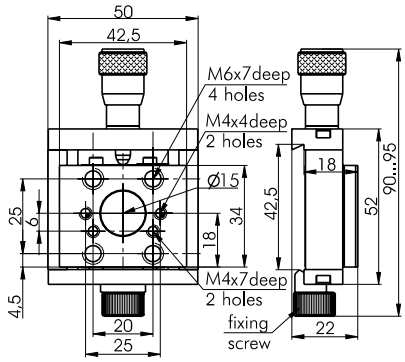
Mini Rail System Ball Slide Positioners

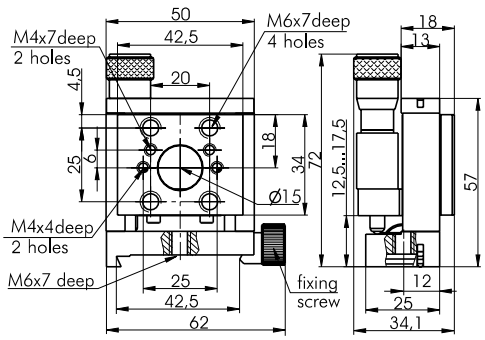
7T8-01 • 7T8-02

7T8-01

7T8-02



7T8-01



7T8-02

The Mini Rail System Ball Slide Positioners 7T8-01 and **7T8-02** have travel range of **5 mm**. Using a micrometer driving screw mounted into **M10x1** tapped hole, resolution of **10 μm** is achieved. Positioners have clamps for mounting onto Steel Optical Rail System rails and can be locked in position using a fixing screw. With help of Rail Carriers the Mini Rail System Ball Slide Positioner **7T8-01** can be coarsely positioned in a range of **30 mm**. Two **7T8-01** and one **7T8-02** can be stacked to X-Y-Z directly. Article **Optical Rail System 10ORS6** provides examples of use of 7T8-01 and 7T8-02 positioners (page **10-17**).

SPECIFICATIONS

Precision travel range	5 mm
Rough XY travel range	±20 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Reading accuracy	5 μm (half division)
Load capacity:	
Horizontal	3 kg
Vertical	1 kg
Weight:	
7T8-01	0.18 kg
7T8-02	0.23 kg

Optical Rails 2OR6-55 or **2OR6-55T** can be used as base plates for stacking translation stages **7T8-01** and **7T8-02** to STANDA optical tables or to other stages.

7T8XYZ

You may stack the stages for **X-Y-Z** applications directly, **without screws**. **Default base plate** choice for **7T8XYZ** is **2OR6-55** or **2OR6-55T** optical rail.

Steel Optical Rail **2OR6-55T**

Steel Optical Rail **2OR6-270**

2OR6-55
Steel Optical Rail

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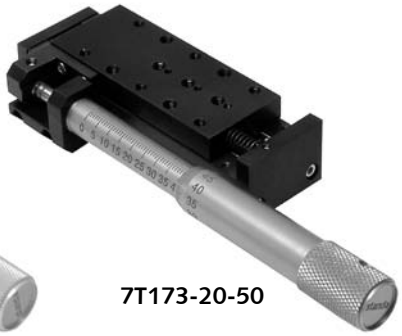
Aluminium Translation Stages Narrow (30 mm) 7T173

- 10, 20, 50 mm travel ranges
- Optional travel: 5, 6, 25, 30 mm
- Stackable for compact X-Y-Z configuration
- Custom angle brackets are made promptly
- Driving micrometer screw
- Precise ball bearing
- Material: black anodized aluminium

7T173-10

7T173-20

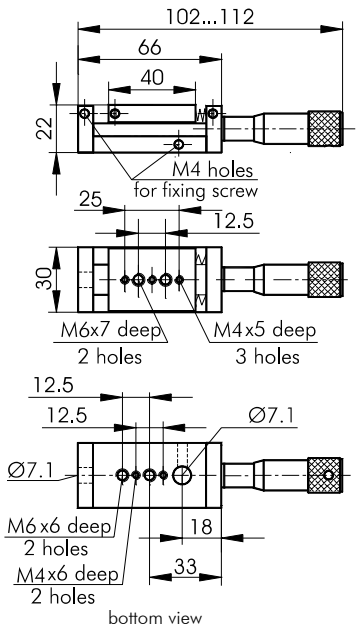

7T173-20-50

Stages **7T173** provide manual linear motion.

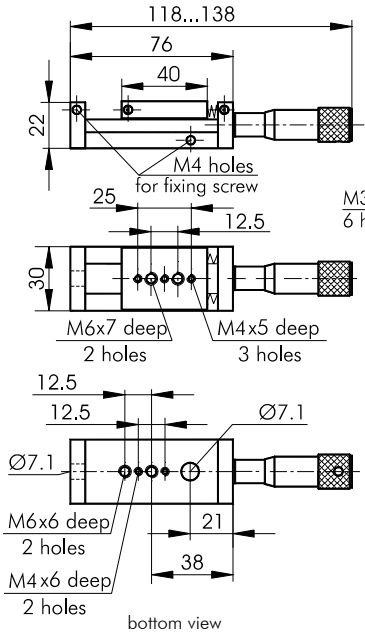
Our standard micrometers **9S75M** are used as driving screws. Customer may specify other screws, e.g. with non-matching travel range to save space.

A platform is spring preloaded against the driving screw to provide high resolution, low backlash, smooth and accurate motion.

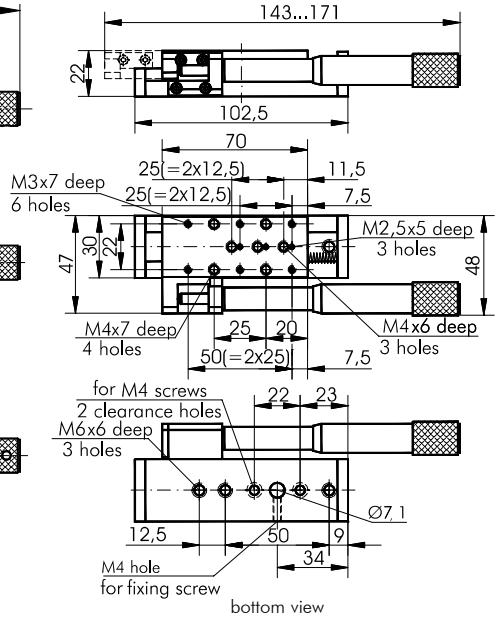
An array of mounting holes on a platform and on a base provide a variety of convenient mounting options, including mounting on **3MP** series **Posts**.



7T173-10



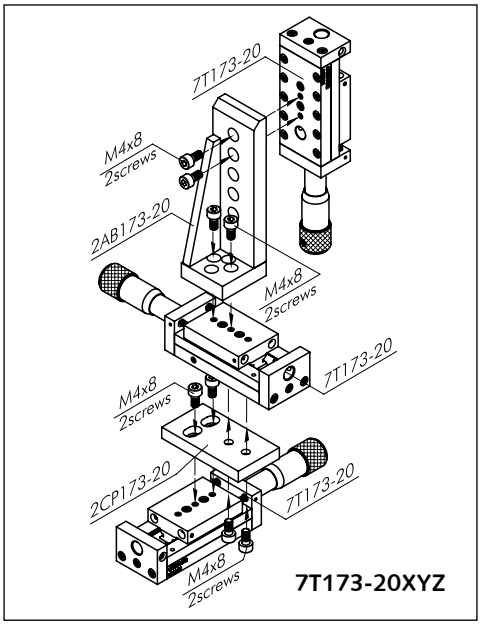
7T173-20



7T173-20-50

SPECIFICATIONS	7T173-10	7T173-20	7T173-20-50
Travel range	10 mm	20 mm	50 mm
Sensitivity	1 μm	1 μm	1 μm
Tracking accuracy	2 μm	2 μm	2 μm
Reading accuracy	5 μm	5 μm	5 μm
(½ division)	(½division)	(½ division)	
Load capacity:			
Horizontal	10 kg	10 kg	10 kg
Vertical	5 kg	5 kg	5 kg
Weight	0.16 kg	0.2 kg	0.31 kg
Assemblies:			
X-Y		2CP173-20	directly
Z		2AB173-20	2AB173-20-50

2CP173-20
connecting plate for stacking the narrow stages in X-Y motion



7T173-20XYZ

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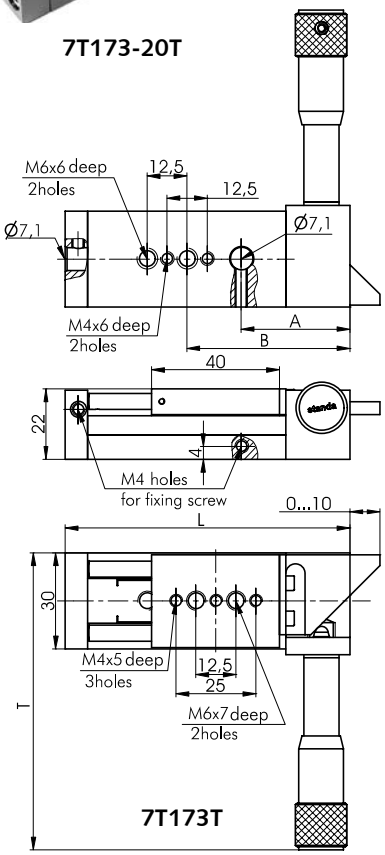
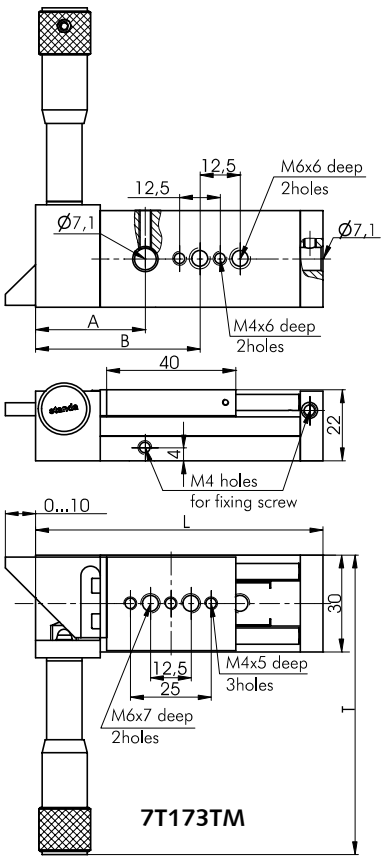
Side Control Linear Stages

7T173T

- 10, 20 mm travel ranges
- Side Control Linear Stage
- Driving micrometer screw
- Precise ball bearings
- Compact XYZ configuration with all screws from one side
- RIight Hand 7T173TM and Left Hand 7T173T versions are available

Side control linear translation stages are equipped with **9S75M series micrometer screws** and provide convenient control in limited space setups. Both **left-hand** (**7T173T** series) and **right-hand** (**7T173TM** series) versions are available. These stages can be used in multi-axis combinations and are compatible with **7T173** series stages. In dense optical schemes with limited access to multi-axis stages you have a possibility to control all three axes from one side.





Model	A, mm	B, mm	L, mm	T, mm
7T173-10T	31	46	79	67-77
7T173-10TM	31	46	79	67-77
7T173-20T	34	51	89	74-94
7T173-20TM	34	51	89	74-94

SPECIFICATIONS	7T173-10T 7T173-10TM	7T173-20T 7T173-20TM
Travel range	10 mm	20 mm
Sensitivity	1 μm	1 μm
Tracking accuracy	2 μm	2 μm
Reading accuracy	5 μm (½ division)	5 μm (½ division)
Load capacity:		
Horizontal	10 kg	10 kg
Vertical	5 kg	5 kg
Weight	0.18 kg	0.23 kg
Assemblies:		
X-Y	2CP173-20	
Z	2AB173-20	

Similar Products

7T273-10T

7T164-10T

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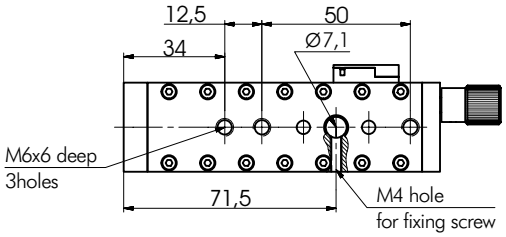
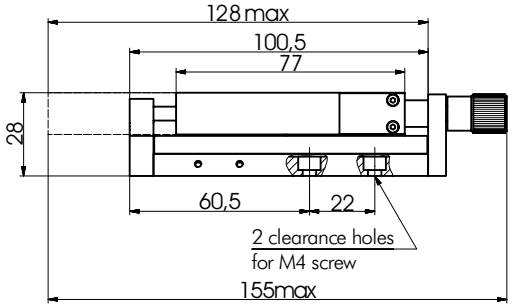
Narrow Translation Stage

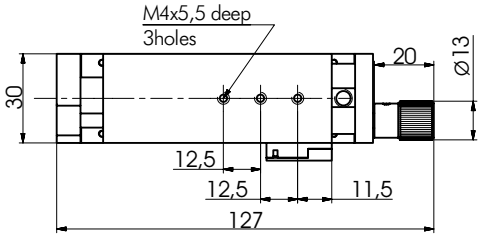
7T30-50

new

- **50 mm travel range**
- **Precise ball bearing**
- **Narrow and low-profile**
- **Lead screw pitch 0.25 mm**
- **Stackable compact X-Y-Z configuration**







Narrow translation stage 7T30-50 is a manual modification to the newly developed **motorized stage 8MT30-50**, which incorporates all the improvements and modifications implemented since its predecessor 8MT173-20-50 was launched. **7T30-50** boasts possibility to operate in any orientation, which means that the stage can be hung upside-down or be operated vertically with platform facing upward or downward. Durability of stage was taken seriously into consideration and now you can apply grease directly to the screw without disassembling the stage. **Vertical load capacity** is increased to **5 kg**. Stage is **spring preloaded** to **eliminate backslash**. Design of 7T30-50 ensures more stable and precise motion over full translation range. An array of mounting holes on a platform and on a base allow a variety of convenient mounting options, including mounting on 3MP series Posts. For **vertical (Z axis)** mounting we offer **angle bracket 2AB173-20-50**. Angle brackets of custom design can be manufactured on request. **Body** and **platform** of **7T30-50** are **made** of **black finished aluminum**. **Functional parts** are **made** of **steel**.

SPECIFICATIONS

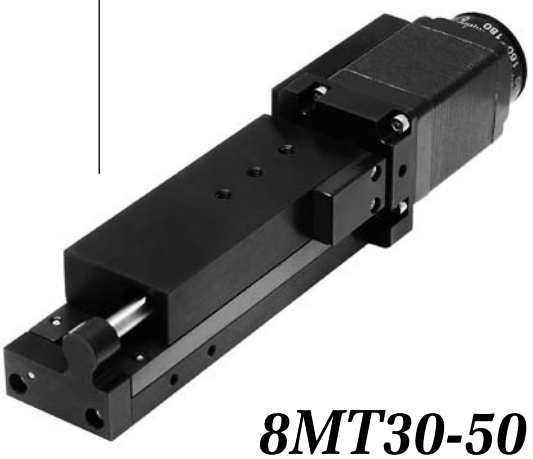
Travel range	50 mm
Sensitivity	2.5 μm
Tracking accuracy	2 μm
Lead screw pitch	5 mm
Load capacity:	
Horizontal	10 kg
Vertical	5 kg
Weight	0.25 kg
Assemblies:	
X-Y	2CP173-50-20
Z	2AB173-20-50

2AB173-20-50
Angle Bracket is used to fix stages in Z configuration

3UBP-04
Universal Base Plates are designed for attaching translation stage to STANDA optical tables or to another stages

2CP173-50-20
connecting plate for stacking the narrow stages in X-Y motion

Motorized version



8MT30-50
page 8-8

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Aluminium Translation Stages Medium Width (50 mm)

7T175

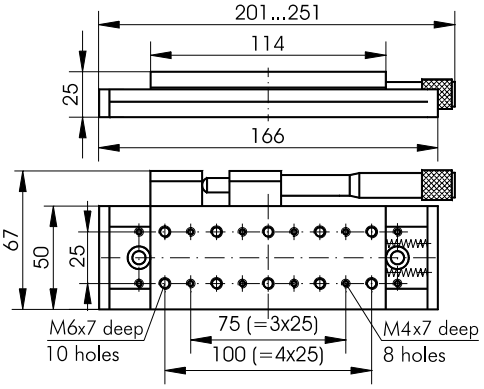
- **50, 100, 150 mm travel ranges**
- **Stackable for X-Y-Z configuration**
- **Custom angle brackets we make promptly**
- **Convenient patterns of mounting holes**
- **Precise ball bearings**
- **Material: black anodized aluminium**

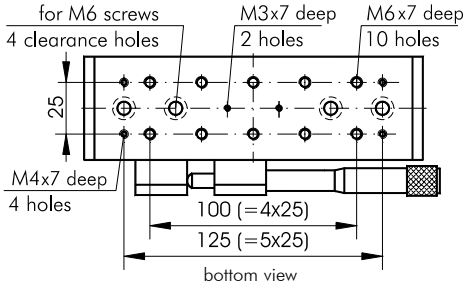
7T175-50 uses **9S75M** micrometer as a driving screw. The platform is spring preloaded against the screw.

7T175-100 and **7T175-150** use their own integrated driving screws. The screw has a micrometric scale (on the body and knob). The pitch of the screw is **0.5 mm**. Custom pitch and gears are available on request.

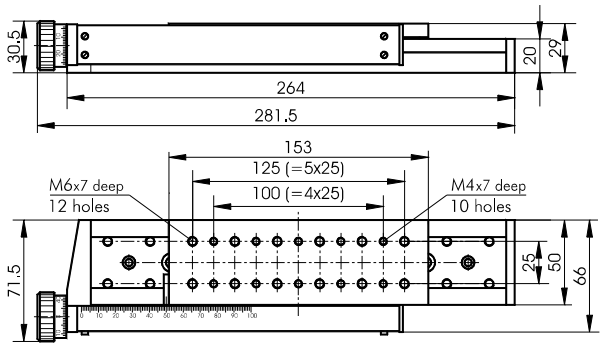
The platform of **7T175-100 (-150)** is preloaded by a collar of our original design on the screw, rendering an increased load capacity, stability, and reduced backlash.

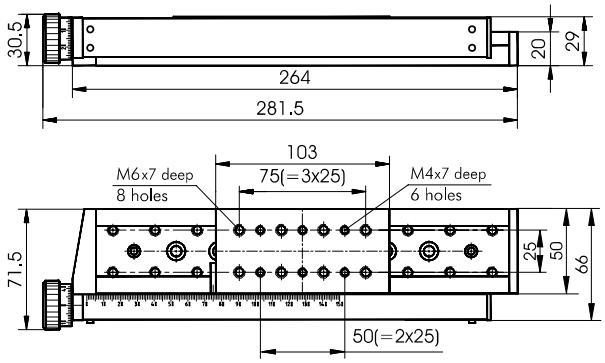
SPECIFICATIONS	7T175-50	7T175-100	7T175-150
Travel range	50 mm	100 mm	150 mm
Sensitivity	1 μm	1 μm	1 μm
Tracking accuracy	2 μm	2 μm	2 μm
Reading accuracy	10 μm	10 μm	10 μm
Load capacity:			
Horizontal	40 kg	40 kg	40 kg
Vertical	9 kg	20 kg	20 kg
Weight	0.74 kg	1.24 kg	1.15 kg
Assembles:			
X-Y		directly	
Z		2AB175	

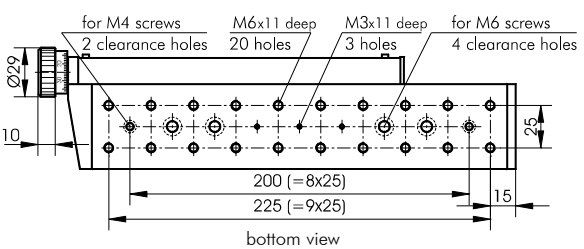




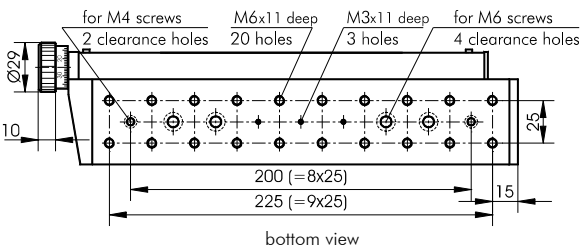
7T175-50







7T175-100



7T175-150

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Low Profile Translation Stage with Quick Move Lever

7T167-100Q

7T167-100Q

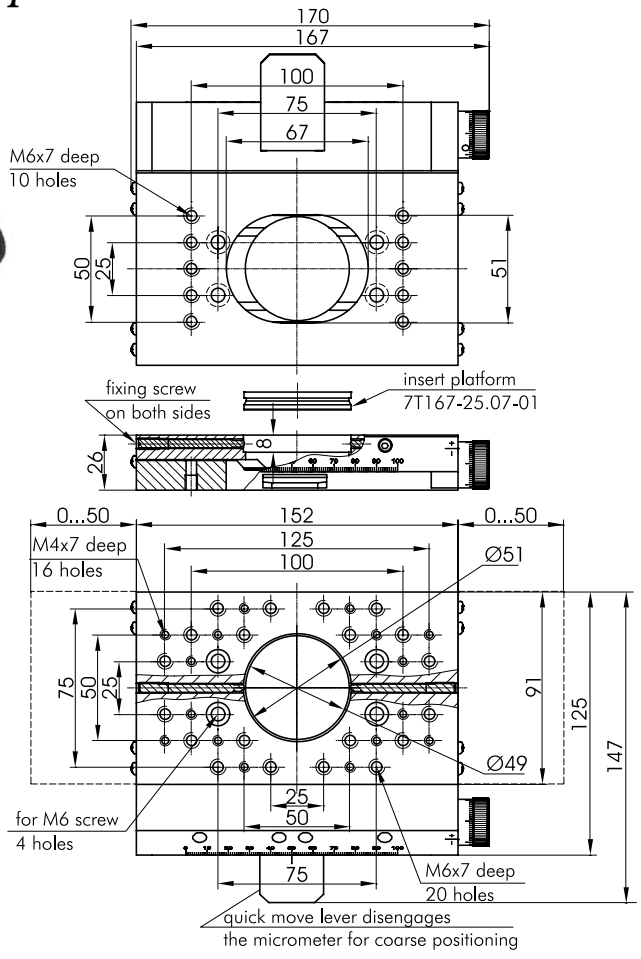
- **Lever for quick movement bypassing the driving screw**
- **100 mm travel range**
- **2 inches (Ø50 mm) clear aperture**
- **Precise movement**
- **Stackable for multi-axis positioning**
- **Insert platform with M6, M4 and clearance holes**
- **Lead screw pitch 1 mm**

SPECIFICATIONS

Travel range	100 mm
Sensitivity	1 μm
Scale graduation	10 μm
Load capacity	16 kg
Weight	0.6 kg

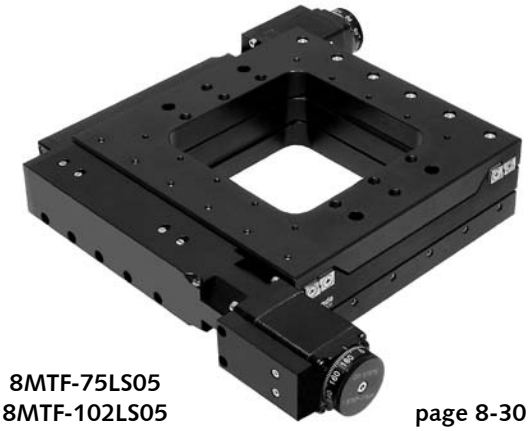
Designed to use with microscope!

7T167-100QXY



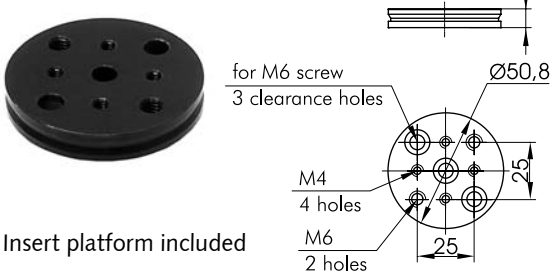
Motorized XY Scanning Stages

- Travel range XY – 75 mm (3") or 102 mm (4");
- Resolution – 2.5 μm;
- Max. speed – 10 mm/s;
- Clear aperture – 53...90 mm or 64...115 mm;
- Load capacity
  Horizontal – 50 kg;
  Vertical – 6kg.



8MTF-75LS05
8MTF-102LS05

page 8-30



Insert platform included

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Aluminium Translation Stages Low Profile — 7T167

- **Precision movement**
- **25 mm, 50 mm travel range**
- **Stackable for multi-axis positioning**
- **Reversible for left or right hand applications**
- **2 inches (Ø50 mm) clear aperture**
- **Insert platform with M6, M4 and clearance holes**
- **Versions with solid platform available**

Low Profile Aluminium Translation Stages 7T167 provide single axis movement.

Items are fixed on a platform by **M6** tapped holes. **7T167-50** has **M4** holes in addition.

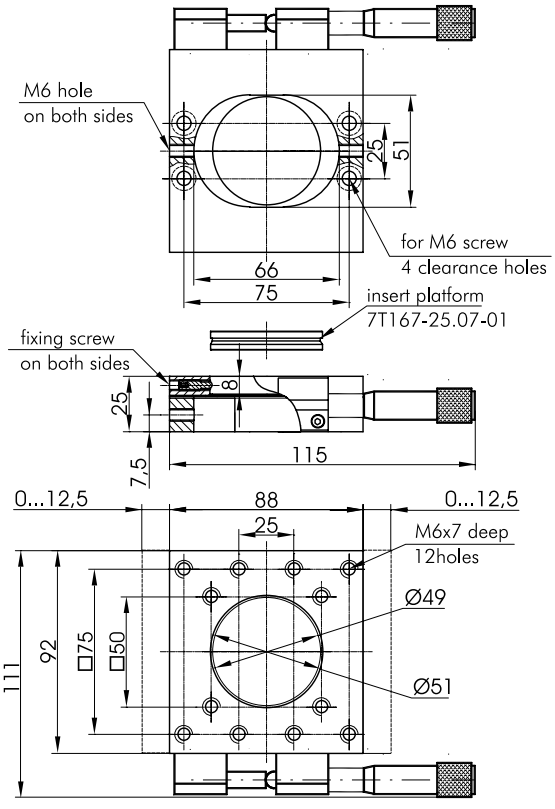
7T167S models are made with solid platform.

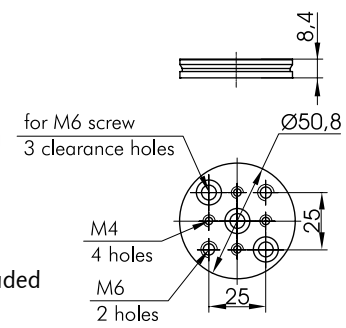
The stages **7T167** have a central ∅**50 mm** (**2 inch**) clear aperture, which remains unobstructed over some **15 mm** of travel. You close the aperture with an insert platform – laid against the resting flange. The insert platform provides **additional mounting** holes, which you can rotate. It is locked by two fixing screws.

Angle brackets **2AB167-25, -50** tie the stages **7T167** in **X-Y-Z** translation systems.

SPECIFICATIONS	7T167-25	7T167S-25	7T167-50	7T167S-50
Travel range	25 mm	25mm	50 mm	50mm
Sensitivity	1 μm	1 μm	1 μm	1 μm
Reading accuracy	5 μm (½ division)	5 μm (½ division)	5 μm (½ division)	5 μm (½ division)
2 inches (Ø50 mm) clear aperture	Yes	No	Yes	No
Solid platform	No	Yes	No	Yes
Load capacity:				
Horizontal	16 kg	16 kg	16 kg	16 kg
Vertical	7 kg	7 kg	7 kg	7 kg
Weight	0.5 kg	0.5 kg	1.2 kg	1.2 kg
Assemblies:				
X-Y	directly	directly	directly	directly
Z	2AB167-25	2AB167-25	2AB167-50	2AB167-50

Aluminium Translate Stage with 2 inches (Ø50 mm) clear aperture — 7T167-25





Insert platform included

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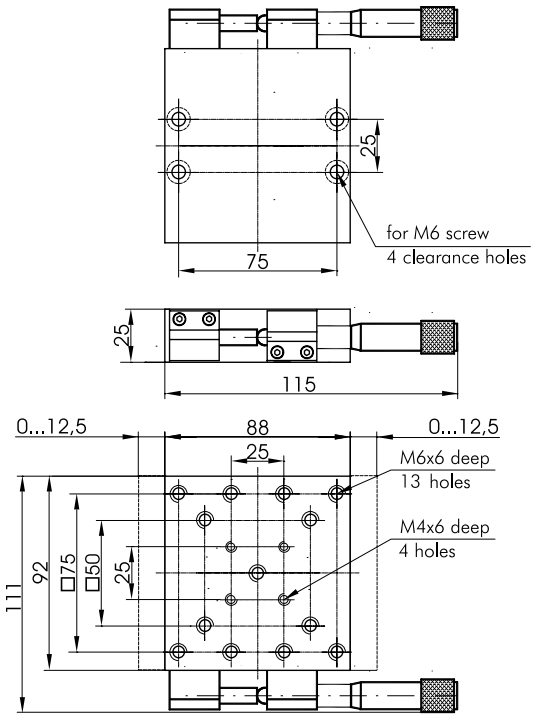
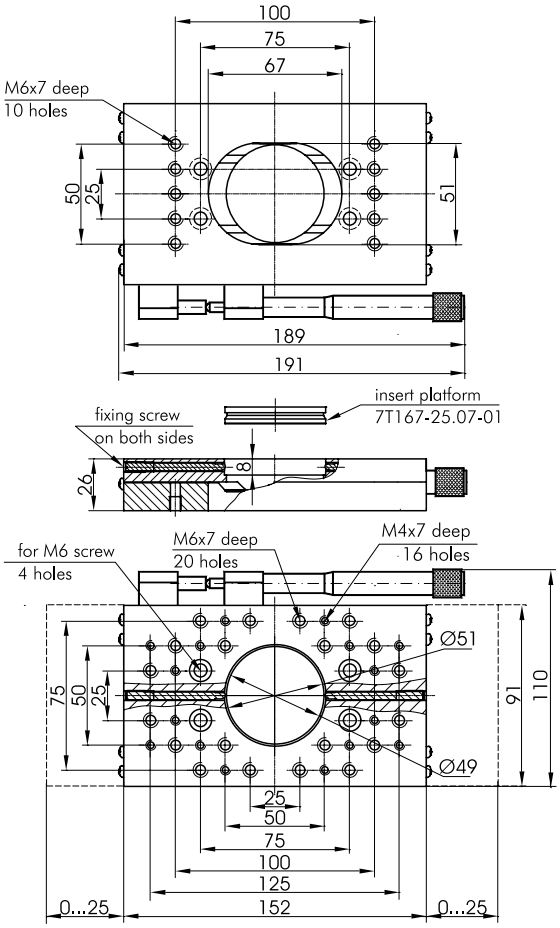
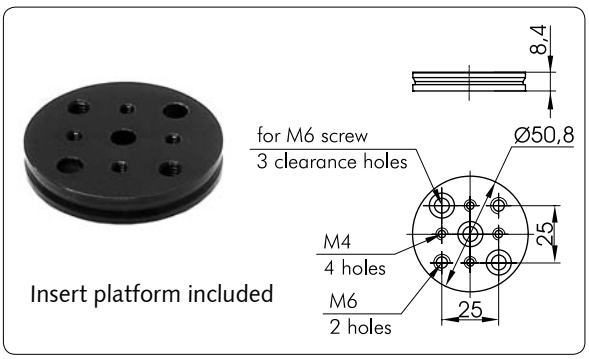
Aluminium Translate Stage with solid platform — 7T167S-25

new



Aluminium Translate Stage with 2 inches (Ø50 mm) clear aperture — 7T167-50





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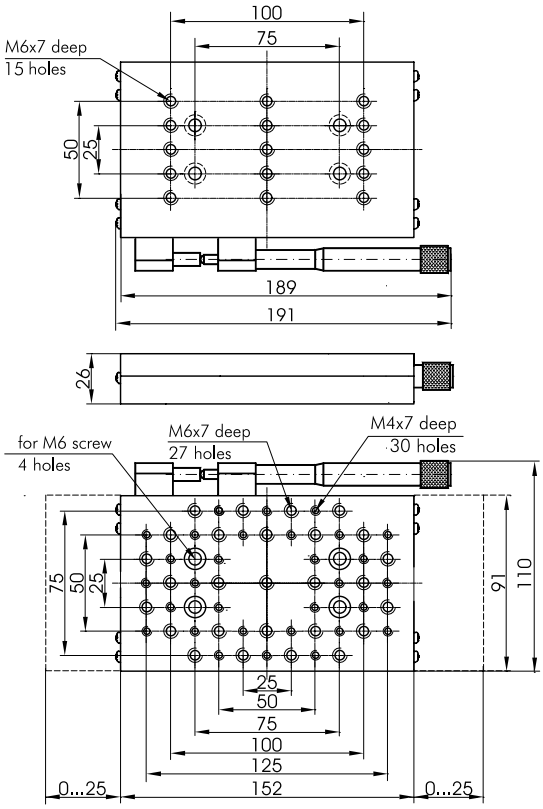
Aluminium Translate Stage with solid platform

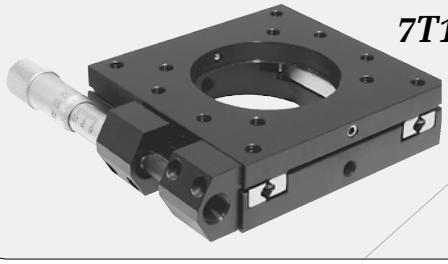
7T167S-50



new

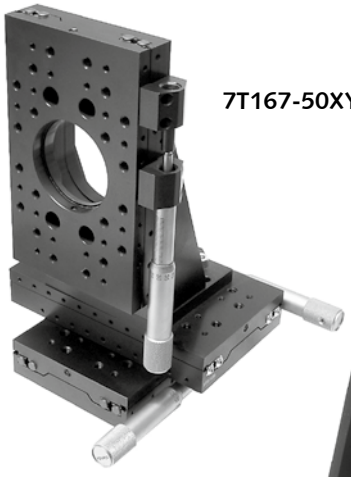
Available "right-hand" version

7T167MS-25
7T167M-25



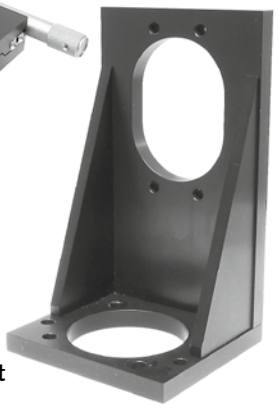
7T167MS-50
7T167M-50

Available "left-hand" version



7T167-50XYZ

7T167-50 stacked in **XYZ** using **2AB167-50** angle bracket



Angle Bracket 2AB167-50

Motorized versions with different motors are in Section 8

8MT167-25BS1

8MT167-100DCE

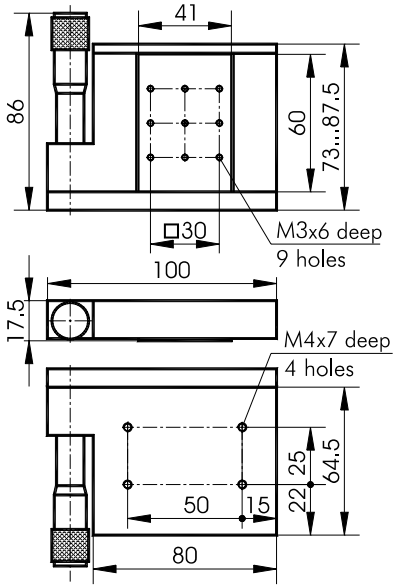
Translation Stage

7T38

- **Micrometer drive**
- **X-Y-Z configuration available**

SPECIFICATIONS

Travel range	15 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Scale graduation	10 μm
Load capacity	
Horizontal	10 kg
Vertical	5 kg
Weight	0.41 kg

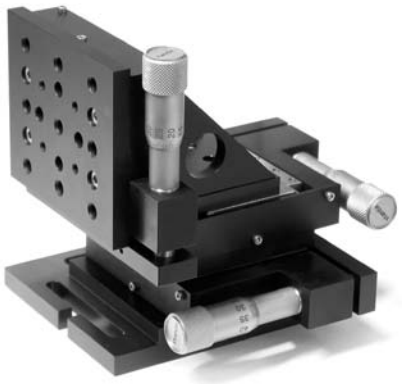


7T38

Translation Stage

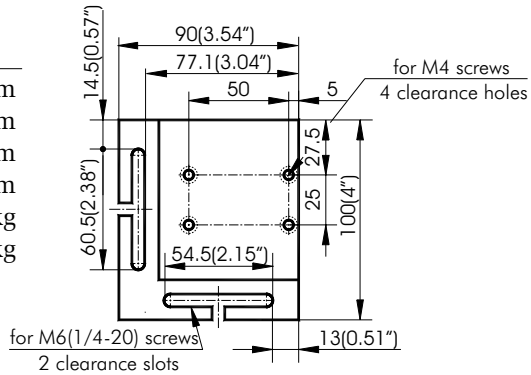
for **METRIC** *and* **INCH**

7T38XYZ
7T38XY

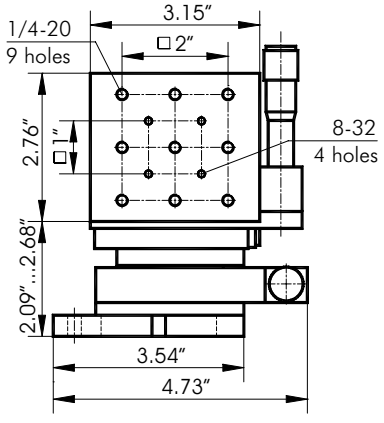


SPECIFICATIONS

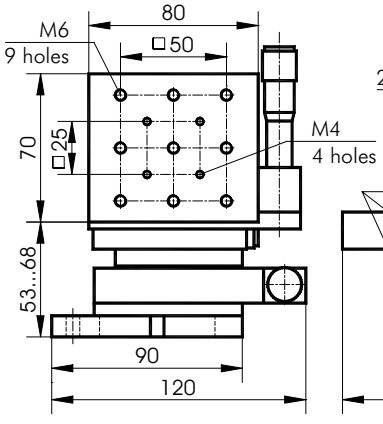
Travel range	15 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Scale graduation	10 μm
Load capacity	5 kg
Weight	1.35 kg



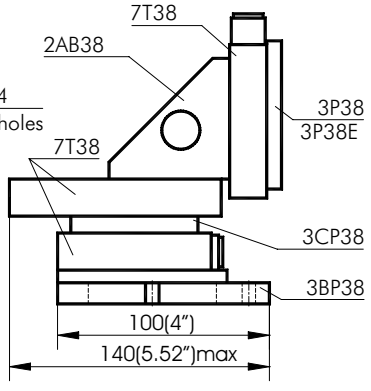
3BP38 top view



7T38EXYZ



7T38XYZ



ORDERING INFORMATION

7T38XYZ (for Metric)	**7T38EXYZ** (for Inch)	**7T38XY**
stage is assembled of these components:		
7T38 – 3 pieces,	7T38 – 3 pieces,	7T38 – 2 pieces,
3P38 – 1 piece,	3P38E – 1 piece,	3P38 – 1 piece,
2AB38 – 1 piece,	2AB38 – 1 piece,	3BP38 – 1 piece,
3CP38 – 1 piece,	3CP38 – 1 piece,	3CP38 – 1 piece.
3BP38 – 1 piece.	3BP38 – 1 piece.	

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Stable Steel Translation Stage

7T67-25

- **Solid box design**
- **25 mm travel range**
- **Variety of mounting holes and options**
- **Easily stacked in X-Y configuration**
- **For Z axis add 2AB67-25**
- **Large mounting surface**
- **Made of steel**

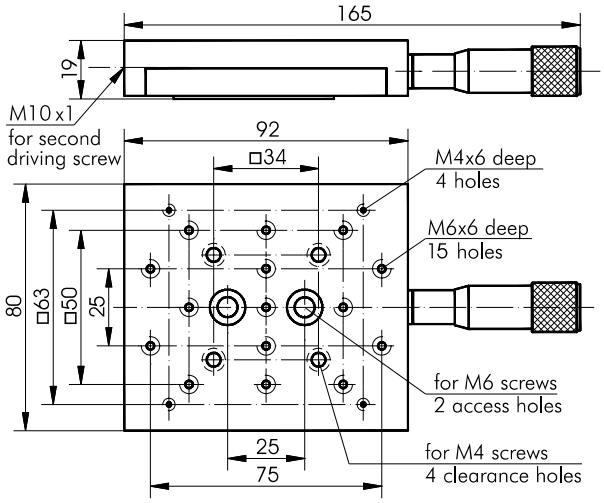
Stable Steel Translation Stages 7T67-25 have large mounting surface, great travel range for this relatively small size, low profile, and increased stability and precision. Box design reinforces the stage, reducing flex. Steel, as a material, adds to stability.

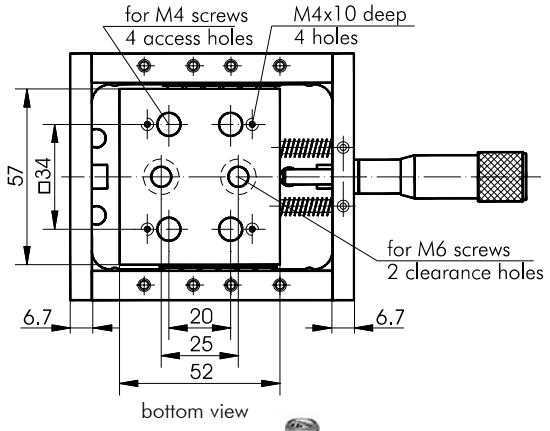
You can mount a second driving screw on the other end (to lock the platform in fixed positioning applications).

The platform is preloaded by springs.

The stages can be **stacked immediately** to other units, or to their own type (e.g. in **X-Y** configuration). The stages can be used upside-down. For immediate attachment the **base** has **2 clearance** holes for **M6** screws. Similarly, the **platform** has **4 clearance** holes for **M4** screws. Slip the screws from top or under through the **access holes** in a platform/base.

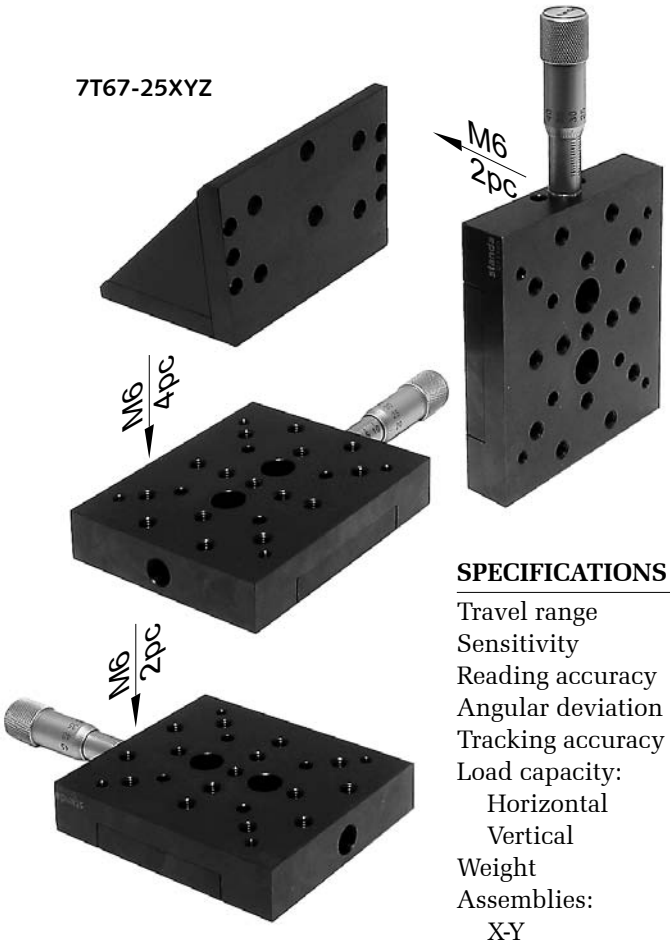
Micrometer 9S75M-25 comes as standard. The stage has black anodized finish.





bottom view

7T67-25XYZ



7T67-25

7T67SSV-25XYZ

SPECIFICATIONS

Travel range	25 mm
Sensitivity	1 μm
Reading accuracy	10 μm
Angular deviation	<200 μRad
Tracking accuracy	2 μm
Load capacity:	
Horizontal	20 kg
Vertical	5 kg
Weight	0.78 kg
Assemblies:	
X-Y	directly
Z	2AB67-25

ORDERING INFORMATION

7T67-25	steel version
7T67-25XYZ	
7T67SS-25	stainless steel
7T67SS-25XYZ	version
7T67SSV-25	version
7T67SSV-25XYZ	for vacum

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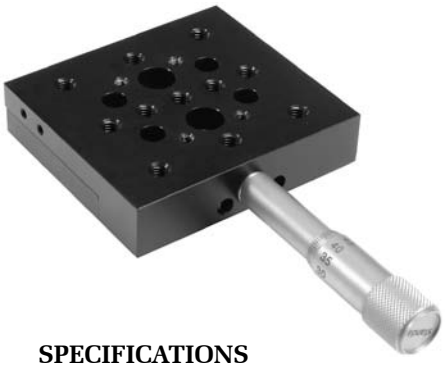
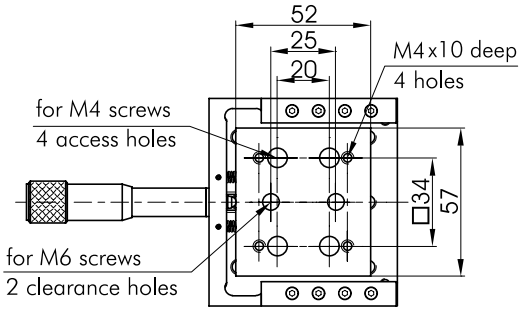
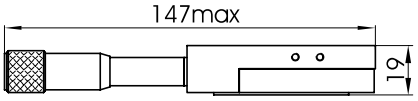
Low Cost Linear Translation Stage

7T68-25



- **Solid box design**
- **25 mm travel range**
- **Variety of mounting holes and options**
- **Easily stacked in X-Y configuration. For Z axis add 2AB67-25-Al**
- **Large mounting surface**
- **Made of aluminium**



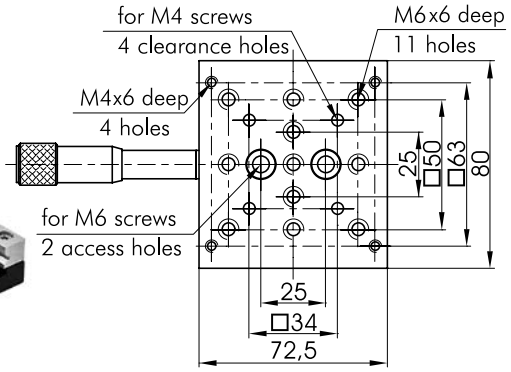


SPECIFICATIONS

Travel range	25 mm
Sensitivity	1 μm
Reading accuracy	10 μm
Angular deviation	<200 μRad
Tracking accuracy	2 μm
Load capacity:	
Horizontal	20 kg
Vertical	5 kg
Material	black anodized aluminium
Weight	0.4 kg
Assemblies:	
X-Y	directly
Z	2AB67-25-AL

Non-Magnetic version available

7T68-25T-NM

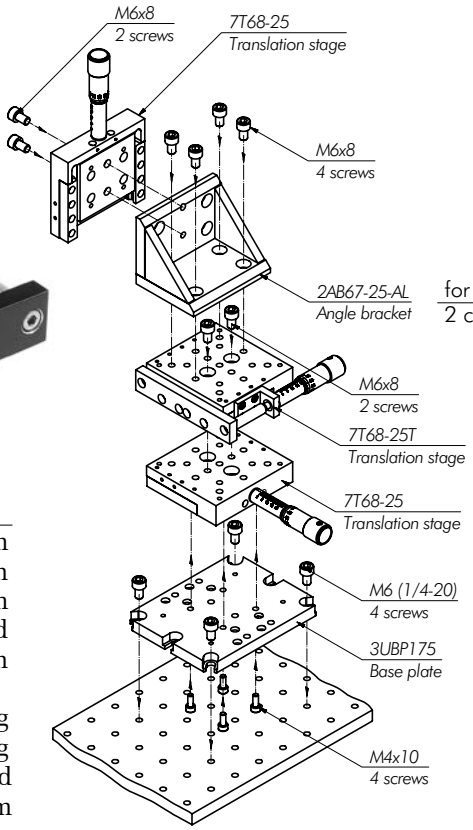


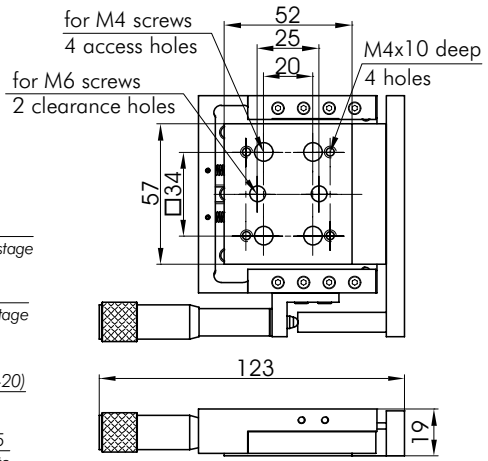
Low Cost Linear Translation Stage

7T68-25T

7T68-25TM

7T68-25T



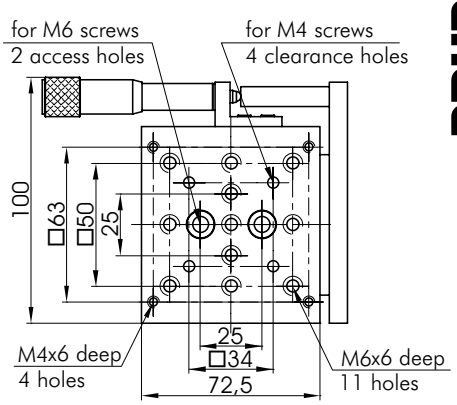


SPECIFICATIONS

Travel range	25 mm
Sensitivity	1 μm
Reading accuracy	10 μm
Angular deviation	<200 μRad
Tracking accuracy	2 μm
Load capacity:	
Horizontal	20 kg
Vertical	5 kg
Material	black anodized aluminium
Weight	0.4 kg
Assemblies:	
X-Y	directly
Z	2AB67-25-AL

"Right-hand" version available

7T68-25TM



7T68-25T

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Stable Stainless Steel Linear Stage

7T67-6

- **Miniature**
- **Solid box design**
- **6 mm travel range**
- **Compact design**
- **Large mounting surface**
- **Easily stacked in X-Y configuration**
- **Made entirely of stainless steel – easily adapted for vacuum applications**

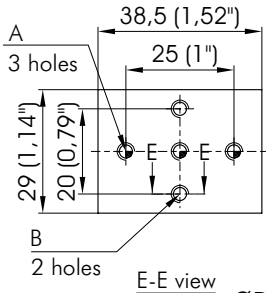
Stable Steel Translation Stages 7T67-6 and **7T67E-6** have low profile, and increased stability and precision.

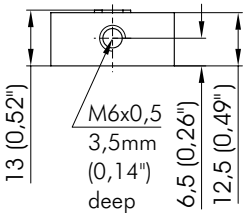
Box design reinforces the stage, reducing flex. Steel, as a material, adds to stability.

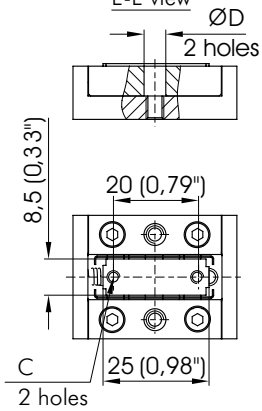
The platform is preloaded by springs.

The stages can be **stacked immediately** to other units, or to their own type (e.g. in **X-Y** configuration). The stages can be used upside-down.

The stages are entirely made of **stainless steel.**







7T67-6, 7T67E-6

7T67E-6 and **7T67-6**

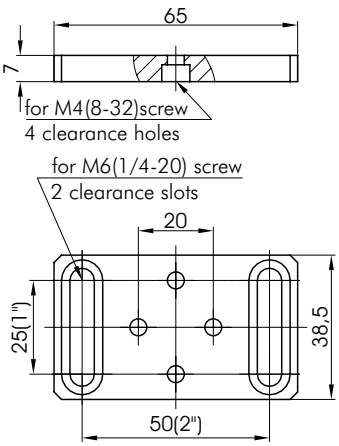
7T67-6-9S35M-5

SPECIFICATIONS

Travel range	6 mm
Sensitivity	1 μm
Reading accuracy	10 μm
Angular deviation	<150 μRad
Tracking accuracy	2 μm
Load capacity:	
Horizontal	45 kg
Vertical	3 kg
Weight	0.1 kg

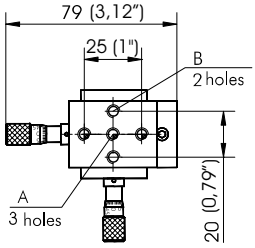
7T67-6-9SH137ML

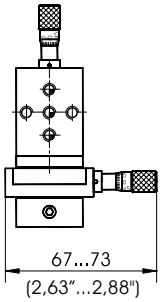
7T67-6-9SH137MN

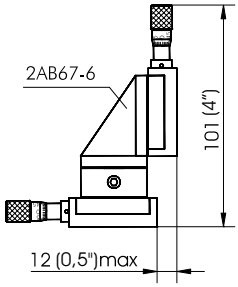


3BP67-6 Base Plate
(or 3UBP series base plates)

Dimension	7T67E-6 *(imperial)*	7T67-6 *(metric)*
A	#8-32x0,11" deep	M4x3 deep
B	#8-32x0,19" deep	M4x5 deep
C	#4-40x0,23" deep	M3x6 deep
D	0,2x0,27" deep	6x7 deep







7T67-6-9S35M-5XYZ

ORDERING INFORMATION

7T67-6 – model of **metric** dimensions – the **standard** version.

7T67E-6 – model of **imperial** dimensions – is produced **on demand**.

7T67V-6 - version for **vacuum**

Note: adjustment screw is **not included**. It can be ordered separately. Suitable micrometers are: **9S35M-5, 9SH137M, 9SH137MN**.

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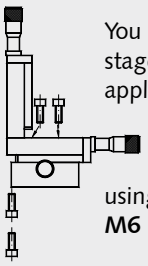
Basic Translation Stages

7T125

7T125Z-10

7T125X-10

- **10 mm travel**
- **Low profile**
- **X-Y-Z direct stacking**
- **Ball bearing design**
- **Spring preloaded**

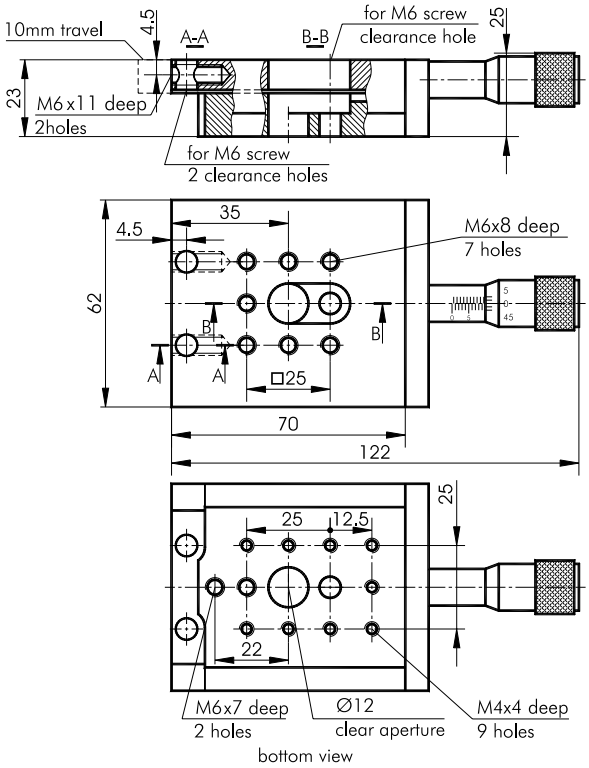


You may stack the stages for **X-Y-Z** applications directly using **4** standard **M6** screws only.

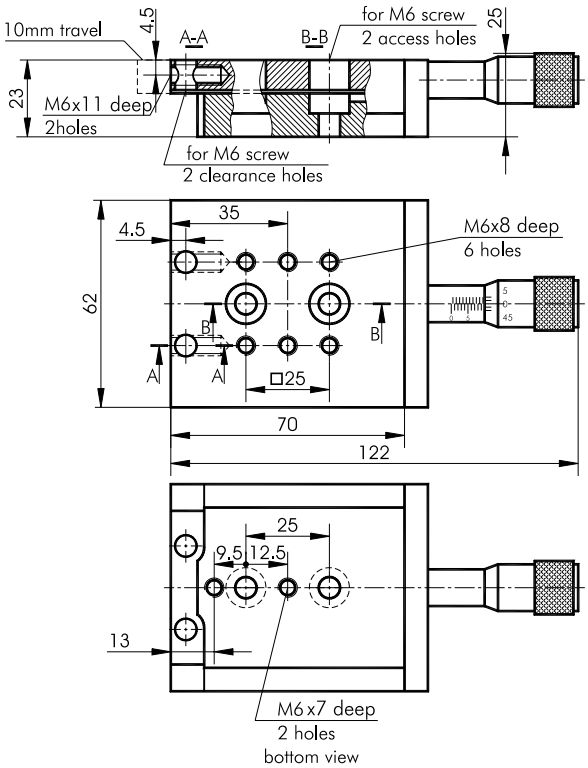
7T125X-10 is designed for stacking to **X** and **XY** configurations and **7T125Z-10** is intended for use in **Z**-axis. They differ in mounting hole patterns. 7**T125Z-10** has a ∅**12 mm clear aperture** unobstructed throughout the travel range.

SPECIFICATIONS

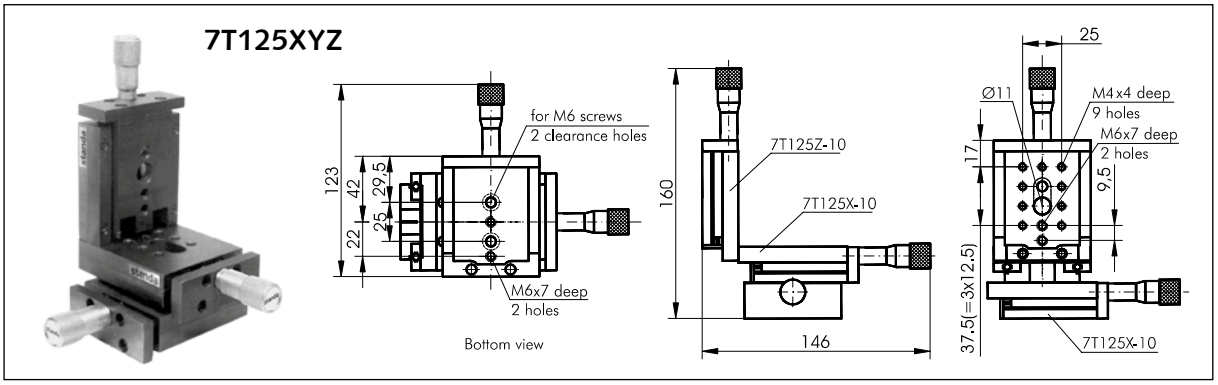
Travel range	10mm
Sensitivity	1 μm
Angular deviation	< 200 μrad
Tracking accuracy	2 μm
Reading accuracy	5 μm (½ division)
Load capacity:	
Horizontal	10 kg
Vertical (relative to driving screw)	
against	3 kg
away	0.5 kg
Material	black finished aluminium
Weight	0.3 kg



7T125Z-10



7T125X-10



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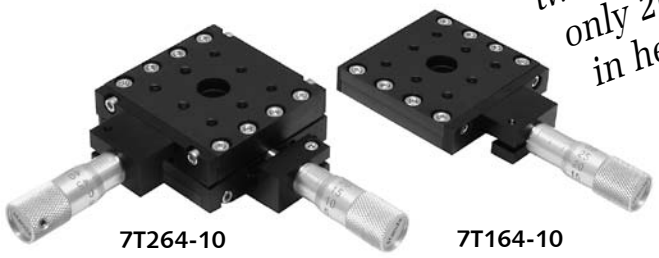
Ultra Low Profile STEEL Translation Stages Single and Two-Axis

7T164-10 • 7T264-10

two axis stages only 20 mm in height !

- **Only 20 mm in height**
- **Compact X-Y configuration**
- **Exceptionally precise orientation of axes at 90°**
- **Precision movement**
- **10 mm travel range**
- **Precision ball bearings**



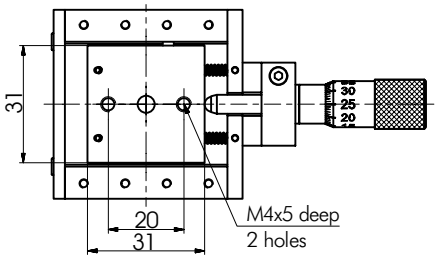
7T264-10 **7T164-10**

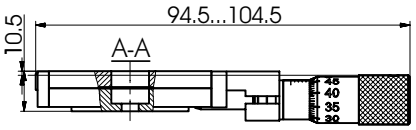
Ultra Low Profile Steel Two Axis 7T264-10 and Single Axis 7T164-10 Translation Stages. The height of single axis translation stage is **10.5 mm**, and of two axis translation stage – **20 mm**. To match the low height of the stages **Thin Micrometers 9S55-10** with small knob diameter (13 mm) are used as driving screws.

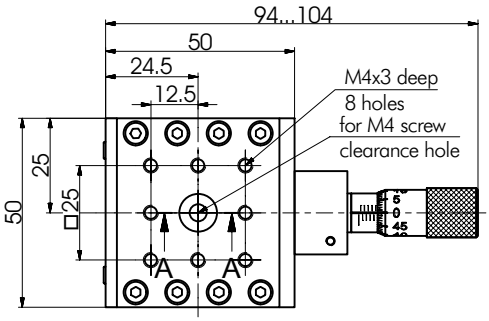
SPECIFICATIONS

Travel range	10 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Reading accuracy (½ division)	5 μm
Load capacity:	
Horizontal	6 kg
Vertical	3 kg
Weight:	
7T164-10	0.14 kg
7T264-10	0.34 kg
7T264-10U	0.34 kg

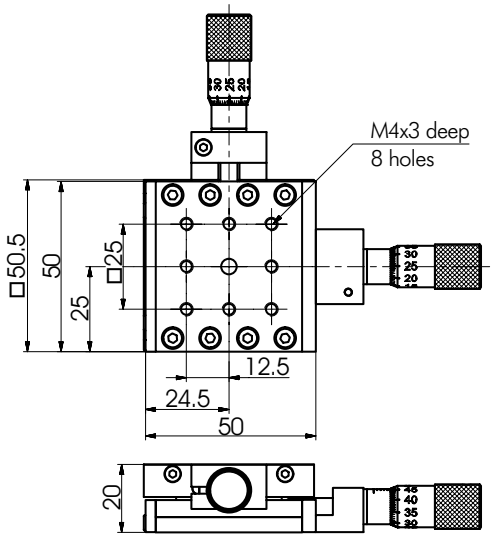
Ordering information on the **7-17 page**.

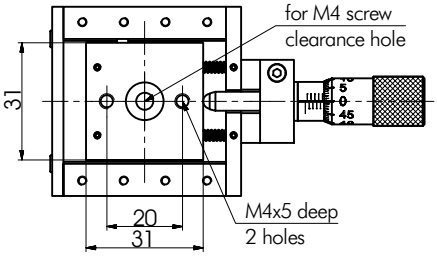


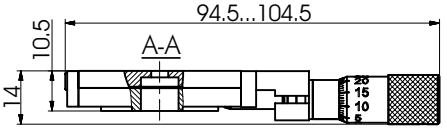


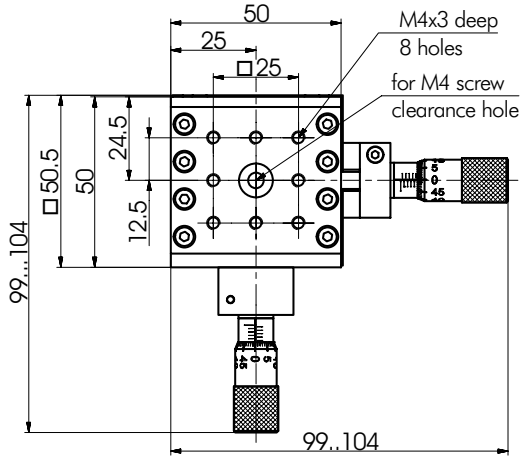


7T164-10

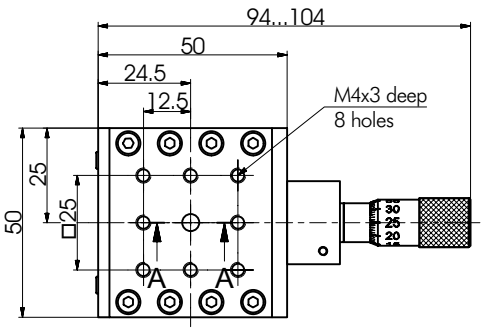








7T264-10



7T164-10U

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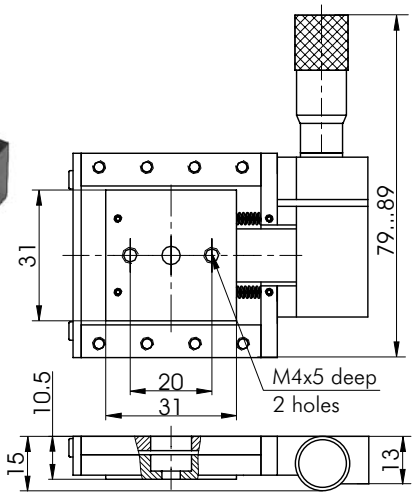
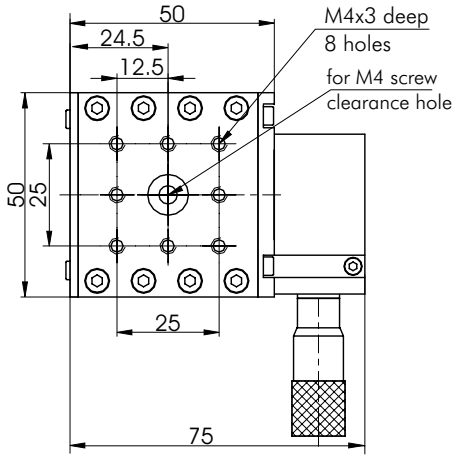
Side Control Linear STEEL Stages **7T164-10T • 7T264-10T**

Ordering information on the **7-17 page**.

- **Stable Steel stage**
- **10mm travel range**
- **Side Control Linear Stage**
- **Driving micrometer screw**
- **Precise ball bearings**
- **Compact XYZ configuration with all screws from one side**

7T164-10T

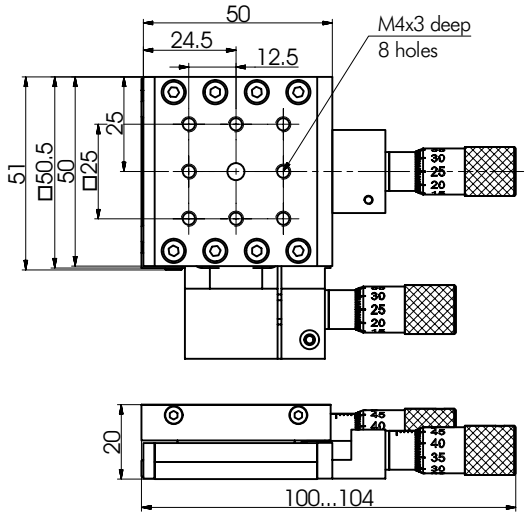


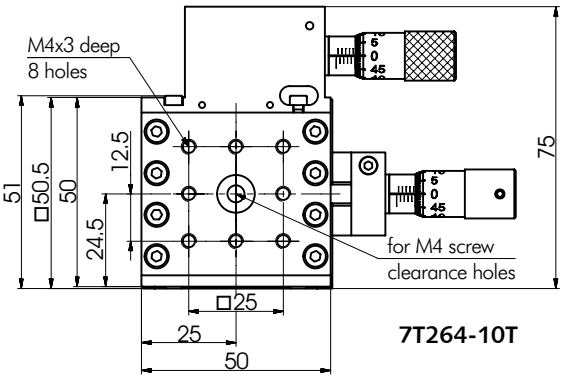


7T164-10T

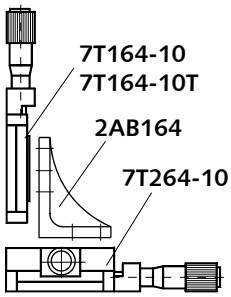
SPECIFICATIONS

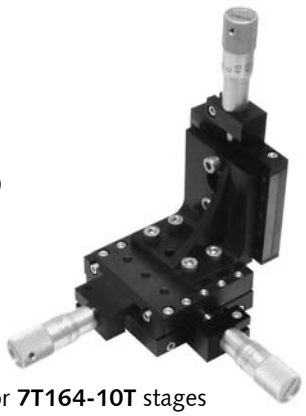
Travel range	10 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Reading accuracy	5 μm (½ division)
Load capacity:	
Horizontal	6 kg
Vertical	3 kg
Weight:	
7T164-10T	0.15 kg
7T264-10T	0.35 kg



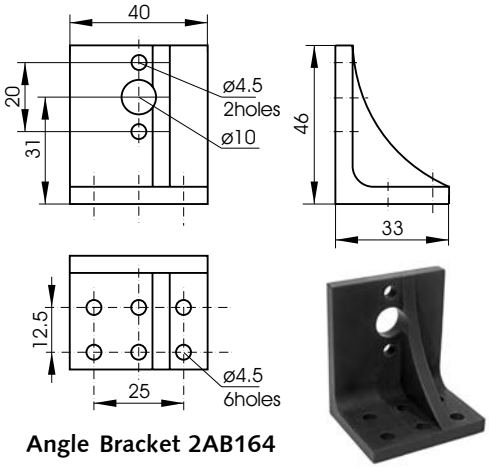


7T264-10T





7T164-10XYZ
XY Stage **7T264-10**,
for Z axis **7T164-10** or **7T164-10T** stages
and angle bracket **2AB164**



Angle Bracket 2AB164

3UBP-04
Universal base plate for stacking the translation stages to STANDA optical tables or to another stages

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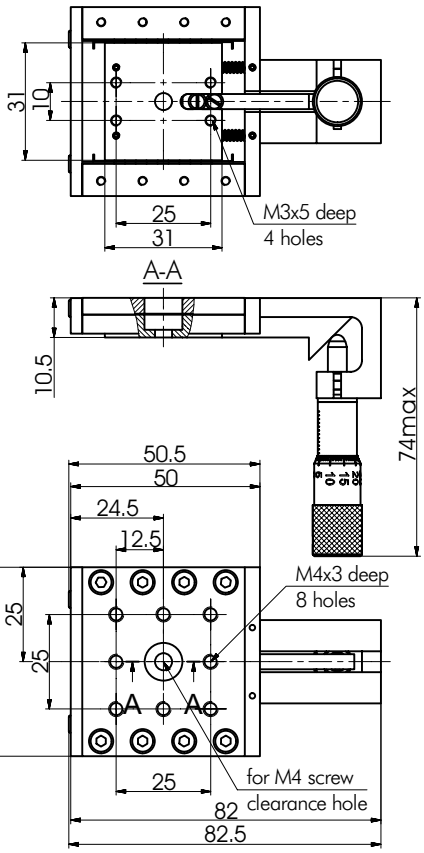
Vertical Drive Ultra Low Profile STEEL Translation Stages

7T164-10VD • 7T264-10VD

- **Stable Steel stage**
- **10mm travel range**
- **Driving micrometer screw**
- **Precise ball bearings**

7T264-10VD



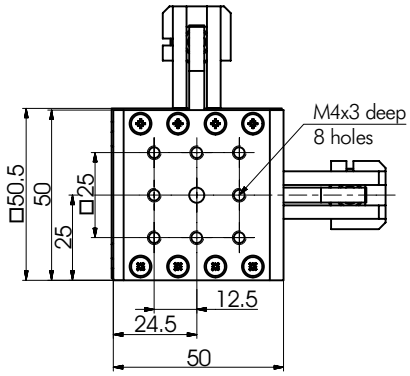
7T164-10VD

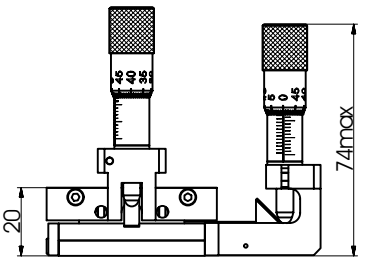
SPECIFICATIONS

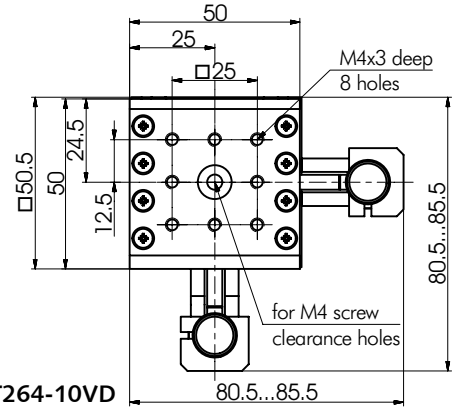
Travel range	10 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Reading accuracy	5 μm (½ division)
Load capacity:	
Horizontal	6 kg
Vertical	3 kg
Weight:	
7T164-10VD	0.15 kg
7T264-10VD	0.35 kg

ORDERING INFORMATION

Application	Model	Note
X axis	7T164-10 7T164-10U 7T164-10T 7T164-10VD	Steel Version
X axis	7T164SS-10 7T164SS-10U 7T164SS-10T 7T164SS-10VD	Stainless Steel Version
X axis	7T164SSV-10 7T164SSV-10U 7T164SSV-10T 7T164SSV-10VD	Vacuum Version **Vacuum 10^{-6} Torr compatible**
XY system	7T264-10 7T264-10T 7T264-10VD	Steel Version
XY system	7T264SS-10 7T264SS-10T 7T264SS-10VD	Stainless Steel Version
XY system	7T264SSV-10 7T264SSV-10T 7T264SSV-10VD	Vacuum Version **Vacuum 10^{-6} Torr compatible**







7T264-10VD

2AB164SS

Angle Bracket 2AB164 is used to transform "horizontal" translators into vertical ones.

2AB164 – steel version
2AB164SS – stainless steel version and version for **vacuum**

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Low Profile Two-Axis Aluminium Translation Stage

7T273-10

- **Compact X-Y configuration**
- **Exceptionally precise orientation of axes at 90°**
- **Precision movement**
- **10 mm travel range**
- **Precision ball bearings**
- **Perpendicular and side control configuration**

Low Profile Two-Axis Aluminium Translation Stage 7T273-10 provides smooth, precise, **X-Y** axis movement.

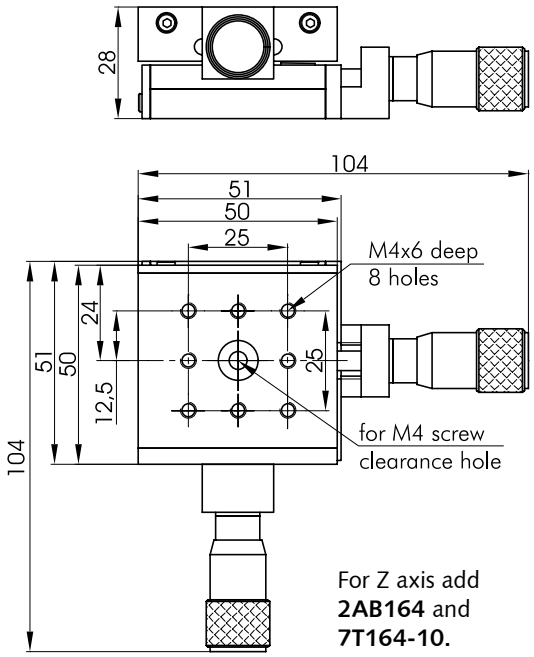
The travel of this Stage is **10 mm** with resolution **10μm**.

Eight **M4** tapped holes are provided in order to mount other components. It can be directly mounted to breadboards and other equipment from Standa by use of mounting holes ∅**4.5 mm** and **M4**.

The base and the platform are produced from the black anodized aluminium.

SPECIFICATIONS

Travel range	10 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Reading accuracy	5 μm (½ division)
Load capacity:	
Horizontal	15 kg
Vertical	5 kg
Weight	0.38 kg



For Z axis add **2AB164** and **7T164-10.**

7T273-10

3UBP-04universal base plate for stacking the translation stages to STANDA optical tables or to another stages. **Page 3-6**

Low Profile Two-Axis Aluminium Translation Stage of Side Control

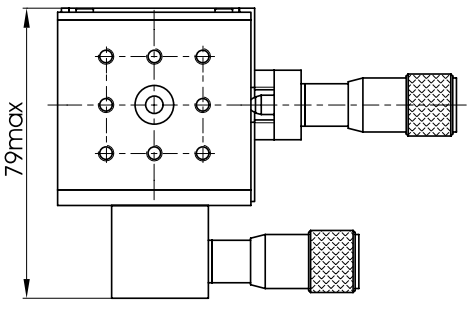
7T273-10T

A rare opportunity to control an X-Y translation stage from one side! Try it and feel the advantage!

Translation Stage 7T273-10T. For your convenience we have rotated by **90°** the driving screw for **X** axis. Now it sits parallel to the other screw (for **Y** axis). So the stage is controlled from a single side. This helps in optical schemes of great concentration.

In other respects, including the **specifications**, the stage is the same as **7T273-10**.

Weight – 0.38 kg



7T273-10T

Other dimensions such as **7T273-10**

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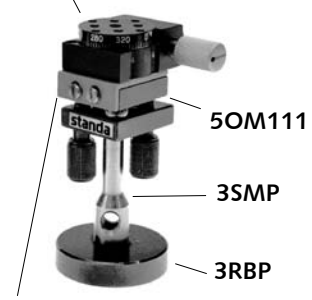
Micro Rotation Stage

7R128

7R128



2AB111-128

Micro Rotation Stage 7R128 is a compact **360°** rotation platform.

Using a fine screw it's possible to rotate the platform precisely. Pitch of the screw is **0.25 mm**.

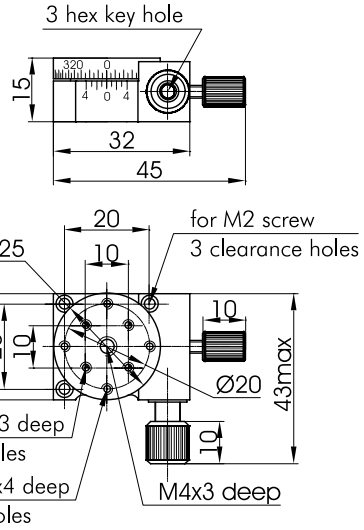
Vernier can be read to **1°**.

Using **M2** screws and an angle bracket **2AB128**, this compact stage may be attached to other **micro stages** (like **7T128**). **Other angle brackets** are available in order to attach the stage to **other units**, for example to 5OM111.

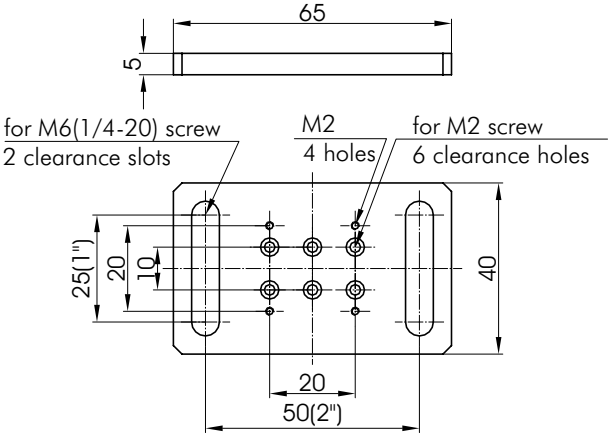
The stage is produced from black anodized aluminium.

SPECIFICATIONS

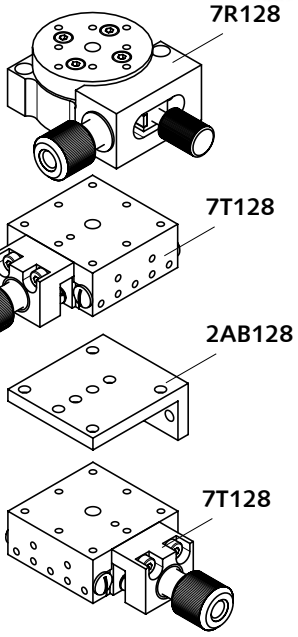
Rotation range	360° coarse;
15° fine	
Reading accuracy	1°
Sensitivity	0.5 arcmin.
Wobble	1 arcmin.
Load capacity	
Horizontal	0.1 kg
Vertical	0.1 kg
Weight	0.05 kg



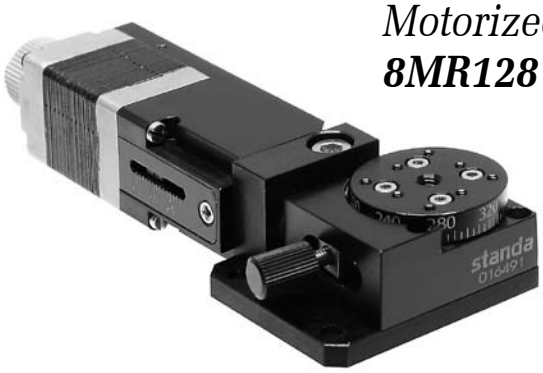
7R128-9S35-5BL
(with mini micrometer **9S35-5BL** installed)



3BP7T128 base plate
for stacking the translation stages **7T128**, **7T228T** and rotation stage **7R128** to STANDA optical tables or to another stages.



7R128
stacked on **7T128XY**



Motorized version ***8MR128*** *available*

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Micro Translation Stage

7T128

top wiev

bottom wiev

7T128

7T128XY

- **Compact design**
- **Precision movement**
- **5 mm travel range**
- **Precision ball bearings**

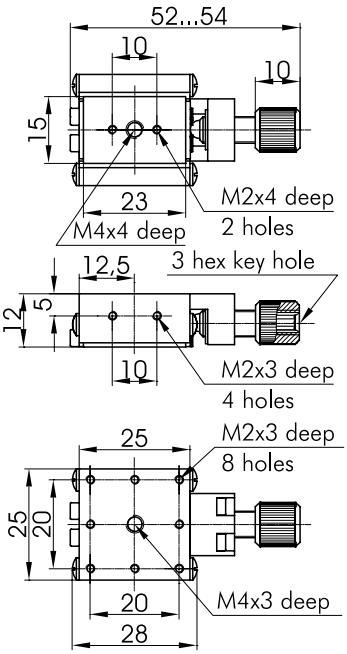
Micro Translation Stage 7T128 provides smooth, precise single axis movement.

M2 and **M4** mounting holes are provided.

Material: black anodized aluminium.

SPECIFICATIONS

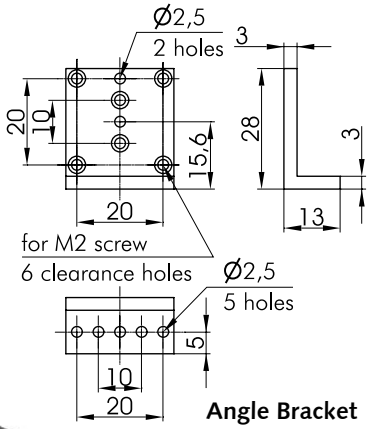
Travel range	5 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Load capacity:	
Horizontal	0.5 kg
Vertical	0.2 kg
Weight	0.04 kg



7T128 – 9S35-5BL
(with mini micrometer **9S35-5BL** installed)

Angle brackets 2AB128
allow to stack the stages for **X-Y-Z** motion.

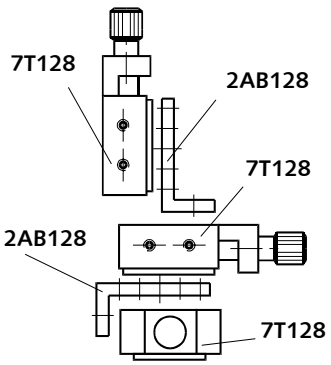
2AB128



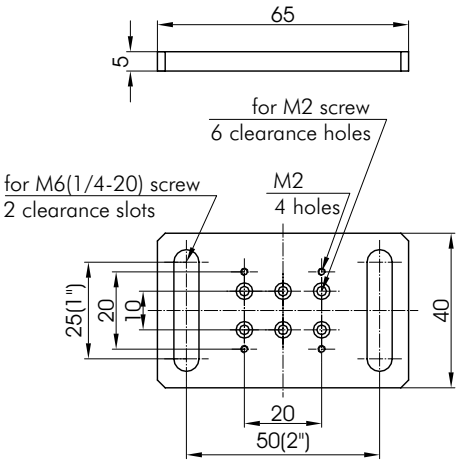
Angle Bracket 2AB128

7T128XY

7T128XYZ



usage of angle bracket 2AB128



3BP7T128 base plate
for stacking the translation stages **7T128, 7T228T** and rotation stage **7R128** to STANDA optical tables or to another stages.

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XZ Micro Translation Stage of Side Regulation

7T228T

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7T228T

7T228T – 9S35M-5BL
(with mini micrometer **9S35M-5BL** installed)

- **Ultra Compact configuration**
- **Precise rectilineal movement**
- **4 mm X-Z or X-Y travel range**
- **Precision ball bearings**

XZ Micro Translation Stage 7T228T provides smooth, precise two axis movement.

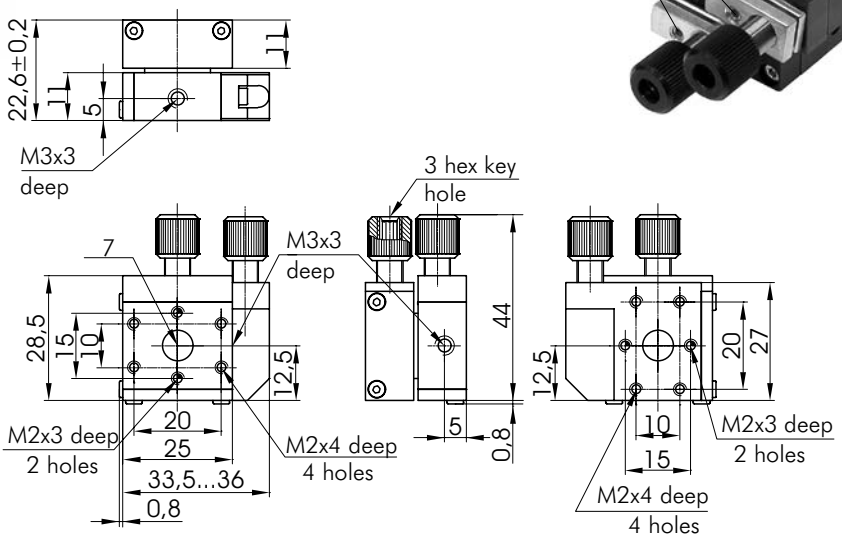
The driving screws are positioned so that the unit is **controlled only from one side**.

The **travel** of this stage is **4mm** with **sensitivity** of **5μm**. To mount components on it, **M2** tapped holes are provided. The unit has a clear **aperture** of ∅**7**.

So it is ideally suited for use as a **holder of diaphragms**.

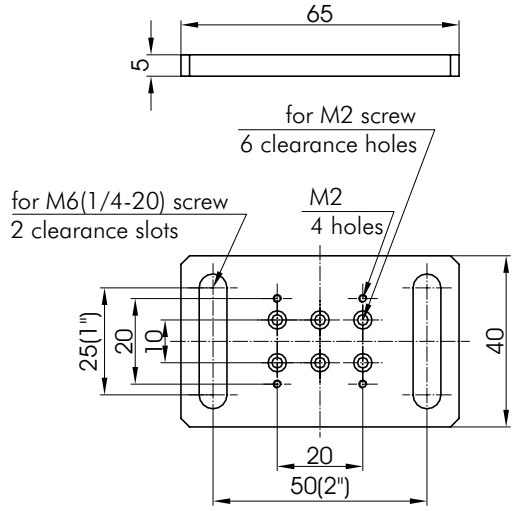
The base and the platform are made of black anodized aluminium.

7T228TL
lockable version



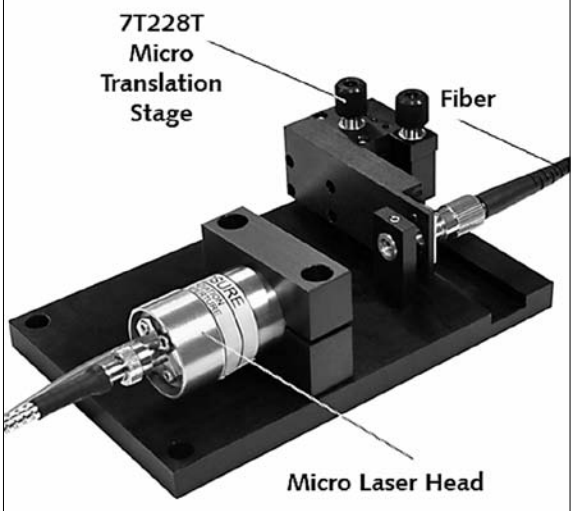
SPECIFICATIONS

Travel range	4 mm
Sensitivity	1 μm
Tracking accuracy	2 μm
Load capacity:	
Horizontal	0.3 kg
Vertical	0.1 kg
Weight	0.06 kg



3BP7T128 base plate
for stacking the translation stages **7T128, 7T228T** and rotation stage **7R128** to STANDA optical tables or to another stages.

example of **7T228T** application

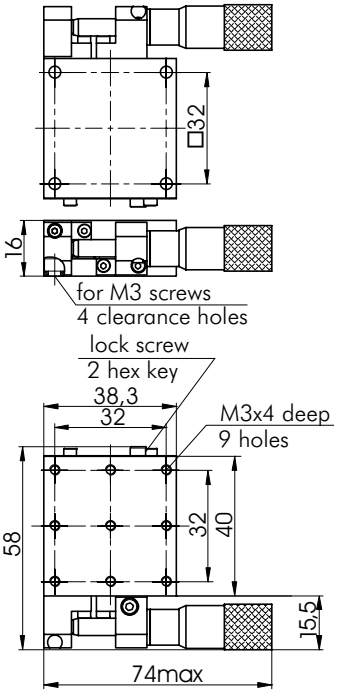


Example of Fiber coupling assembly

Aluminium Ball Bearing Stage

7T184-13

- **Compact design**
- **Precise movement**
- **13 mm travel range**
- **Lockable**
- **X-Y direct stacking**
- **Stacks directly with stages of 174 series**



SPECIFICATIONS

Drive type	Side
Travel range	13 mm
Sensitivity	1 μm
Angular deviation	< 200 μrad
Tracking accuracy	2 μm
Reading accuracy	5 μm (half division)
Load capacity	
Horizontal	10 kg
Vertical	3 kg
Material	Aluminium
Finish	Black anodized
Weight	0.12 kg
Assemblies:	
X-Y	directly
Z	2AB174

3UBP-02
universal base plate for stacking the translation stages to STANDA optical tables or to other stages.
Page 3-6

7T184-13 (2 pieces)
stacked in XY coordinates

7R174-11
stacked on **7T184-13**

7R174-11, 7T184-13 (2 pieces), and **7VT174** or **7VT40** stacked

7T184-13 (3 pieces)
stacked in XYZ coordinates

7T184-13 (2 pieces) and **7VT174** or **7VT40-13**
stacked in XYZ coordinates
7T184 may be stacked with **7VT174** or **7VT40** on top or under

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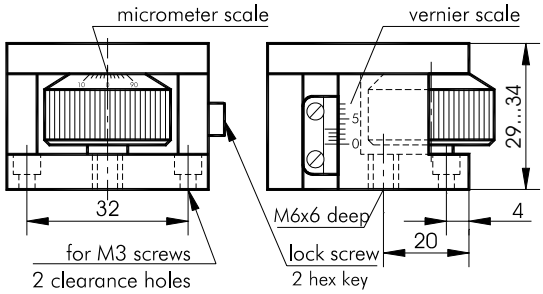
Aluminium Ball Bearing Vertical Stages

7VT174-5

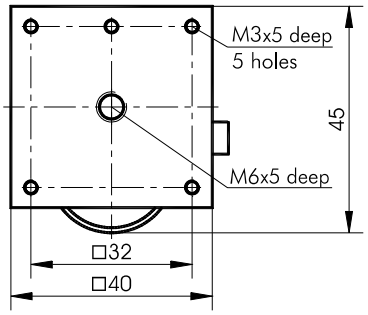
- Travel range 5 mm
- Lockable
- Stacks directly with stages of 174 and 184 series



Adjustable Height Post Holder 3TPH-13 see page 5-34

SPECIFICATIONS

Travel range	5 mm
Sensitivity	1 μm
Tracking accuracy	1 μm
Reading accuracy	5 μm
Load capacity	3 kg
Material	Aluminium
Finish	Black anodized
Weight	0.15 kg

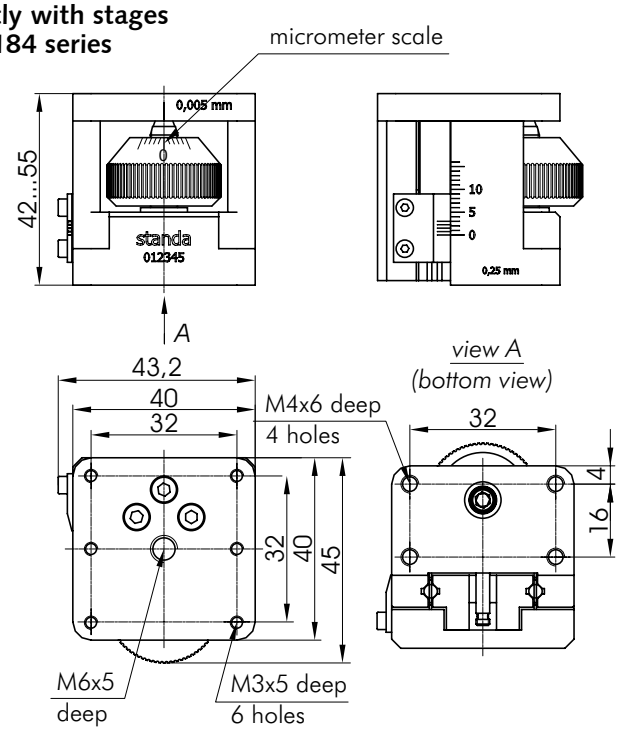


7R174 stacked on **7VT174-5**

Vertical Stage

7VT40-13

- Travel range 13 mm
- Stacks directly with stages of 174 and 184 series



SPECIFICATIONS

Travel range	13 mm
Sensitivity	1 μm
Tracking accuracy	1 μm
Reading accuracy	5 μm
Load capacity	5 kg
Material	Aluminium
Finish	Black anodized
Weight	0.25 kg

Resolution up to 0.03 μm

Specifications of Motorized Vertical Stage 8MVT40-13

See page 8-73

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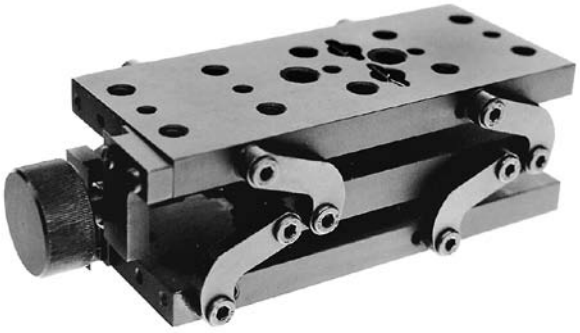
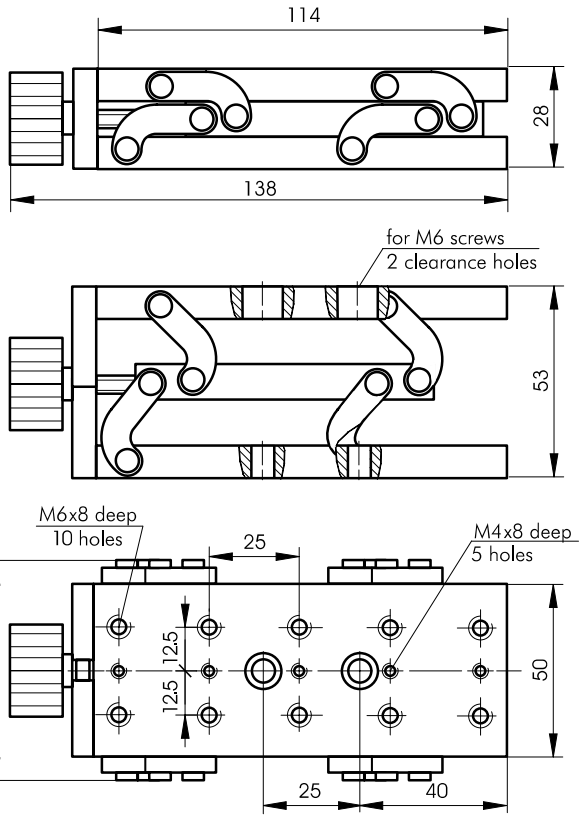
Adjustable Height Platform

7VT173-25





Adjustable Height Platform 7VT173-25 of original design is a stable **vertical** translation stage of **25 mm** travel range. Maximum load capacity – **3 kg**. A polished lead screw has **0.5 mm** pitch. It allows to define the height of a platform with **20 μm** sensitivity.

Arrays of mounting holes **M6** and ∅**6.5** with **25 mm** spacing are identical on the upper and lower plates.

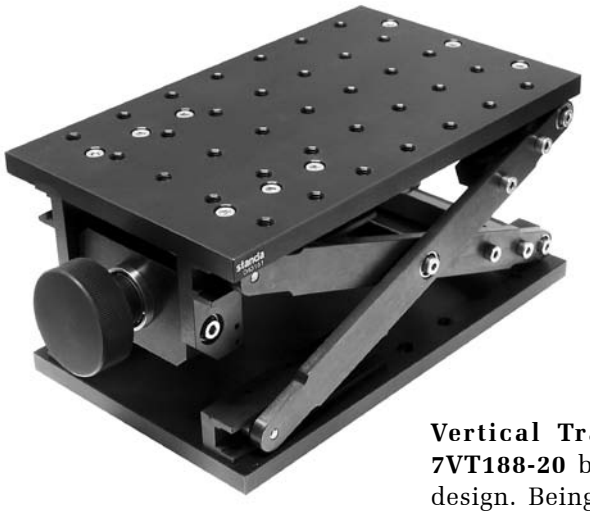
Adjustable Height Platform is ideal for use with **7T175-50** or **8MT175-50** Translation Stages when it is necessary to define one or two horizontal coordinates at a certain height.

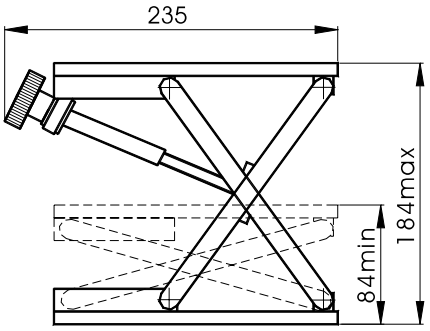
The platform is produced from black anodized aluminium, the lead screw block is produced from stainless steel and bronze.

Weight **0.5 kg**

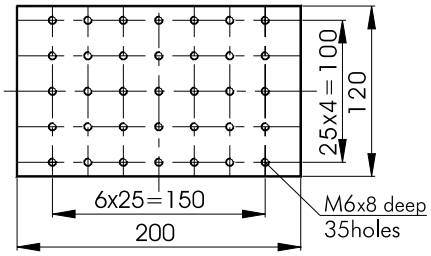
Vertical Translation Stage

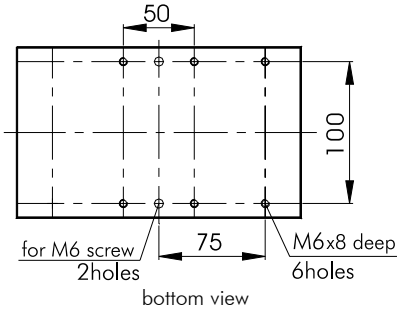
7VT188-20





Available Motorized version ***8MVT188-20***





- **Pantograph design**
- **16 ball bearings**
- **Precision lead screw**
- **100 mm vertical travel**
- **Height: min 84 mm**
  max 184 mm
- **Top and bottom plates parallel to 1 mm**
- **Load capacity 7 kg**

Vertical Translation Stage 7VT188-20 boasts our unique design. Being very compact, it provides smooth and stable adjustment of height. It has a large travel range, and it supports large loads. While moving the platform stays parallel to the base.

The lead screw acts at a varying angle, so the resolution of the stage varies with position.

The platform has an array of **M6** holes spaced by **25 mm**. The base has **six M6** and **two** ∅**6.5** holes.

Material: black anodized aluminum.

Weight **2.52 kg**

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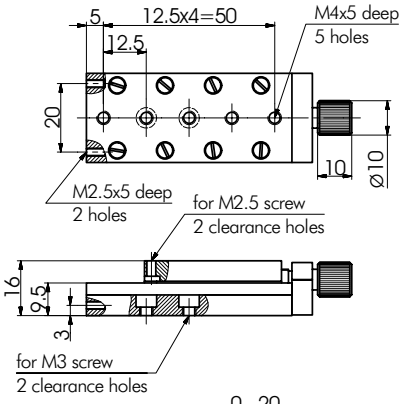
Non-Magnetic Translation Stage

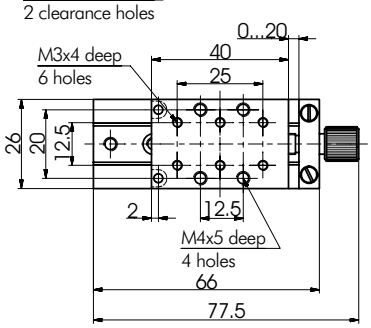
7T34-20

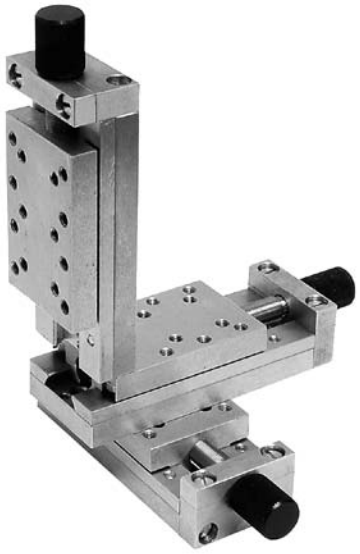
- **Precision non-magnetic translation stage**
- **In this stage are used only non-magnetic materials (brass, bronze, aluminium)**
- **X-Y-Z configurations available**



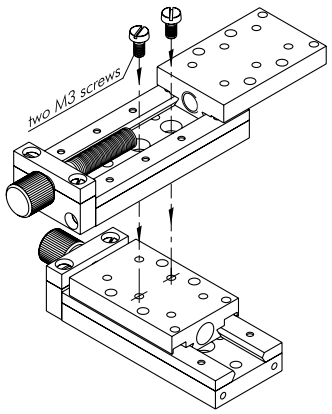
SPECIFICATIONS

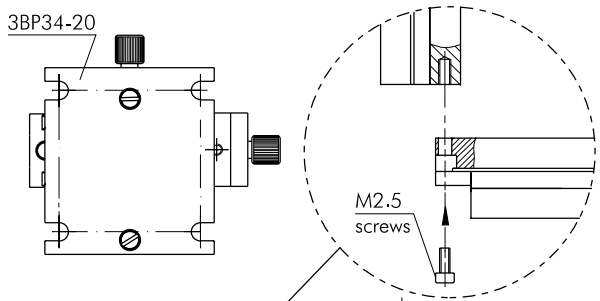
Travel range	20 mm
Sensitivity	5 μm
Screw backlash	0.02 mm
Load capacity	
Horizontal	2 kg
Vertical	1 kg
Weight	0.19 kg

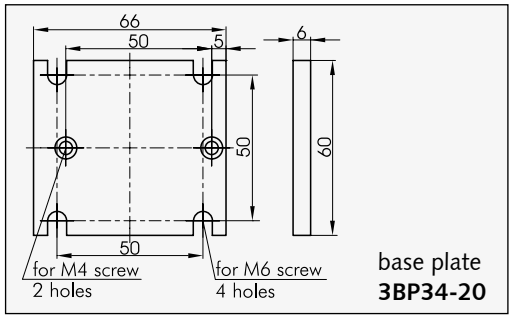


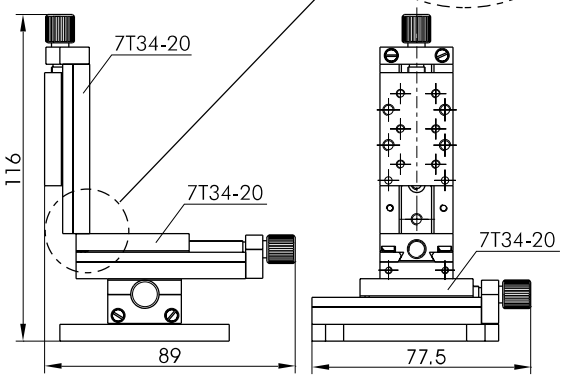


You may stack the stages for **XY** applications directly only using two **non-magnetic M3 screws**

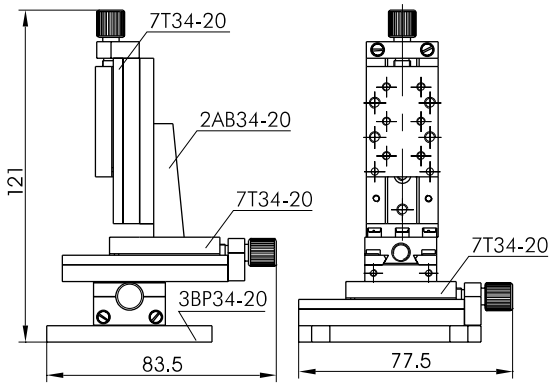








7T34-20XYZ
For quick YZ assembly stages may be stacked using two non-magnetic M2.5 screws



7T34-20XYZ
Angle bracket 2AB34-20 allow to stabilize stack the stages for YZ motion

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Dovetail Linear Translation Stage

7T25-10

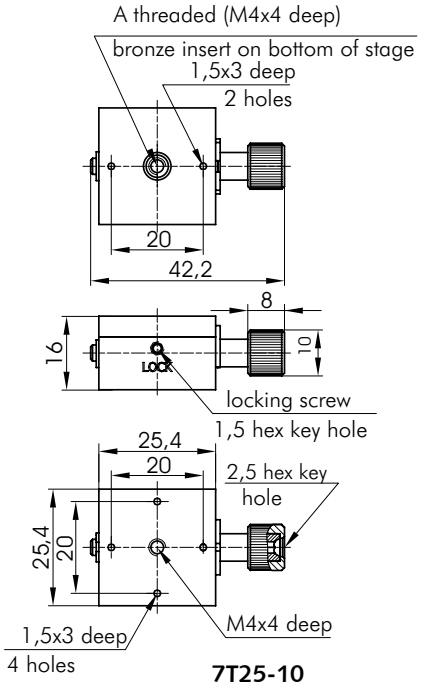
7T25-10

- **Compact design**
- **Rebust Dovetail Mechanism**
- **Rapid, Smooth Positioning**
- **Lockable Moving Platform**
- **XY Miniature Dovetail Stages**

The **Dovetail Translation Stage** is **miniature**, ideal for **use** in **applications where space is limited**. The design uses a precision **M4x0.25mm pitch lead screw** for smooth linear positioning along the entire range of travel. The moving **platform** is **lockable**. Various application accessories are also available.

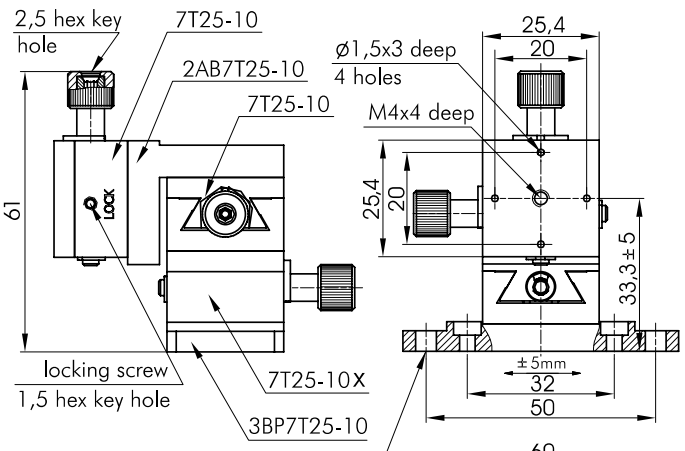
SPECIFICATIONS

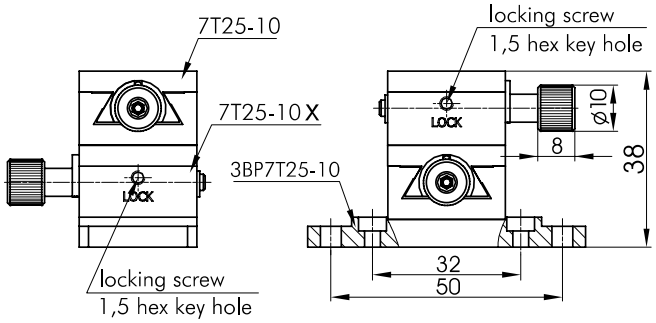
Travel range	10 mm
Fine Screw pitch	0,25 mm
Sensitivity	1 μm
Resolution	1 μm
Drive Location	Center drive
Bearings	Dovetail
Load capacity	
Horizontal	1.5 kg
Vertical	1 kg
Material	Aluminium
Finish	Black anodized
Weight:	
7T25-10	0.03 kg

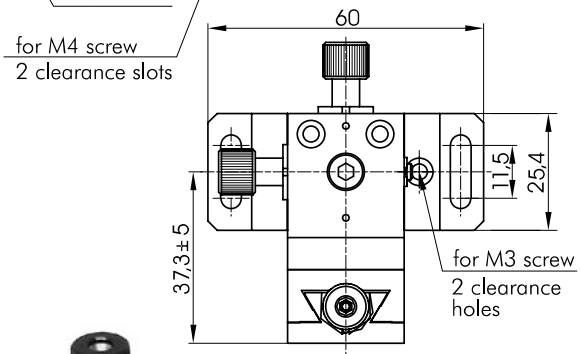


7T25-10

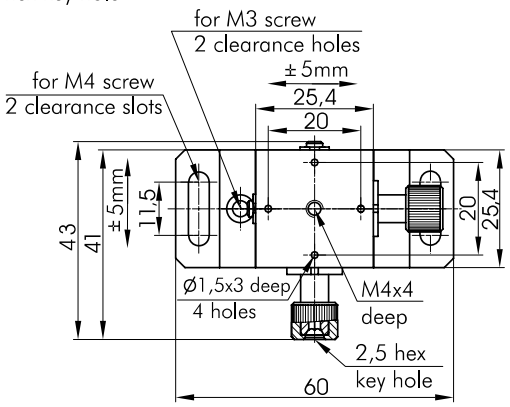
7T25-10XY







7T25-10XYZ



7T25-10XY

7T25-10XYZ

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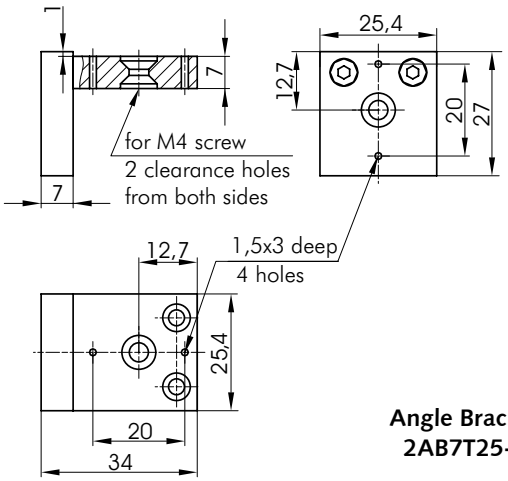
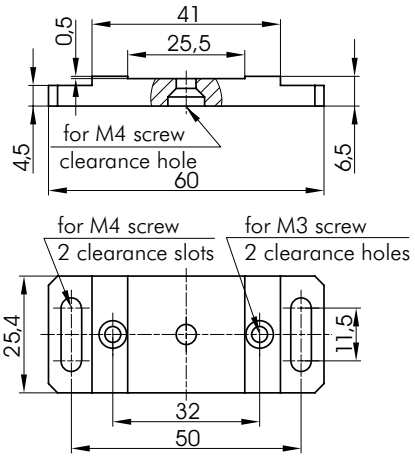
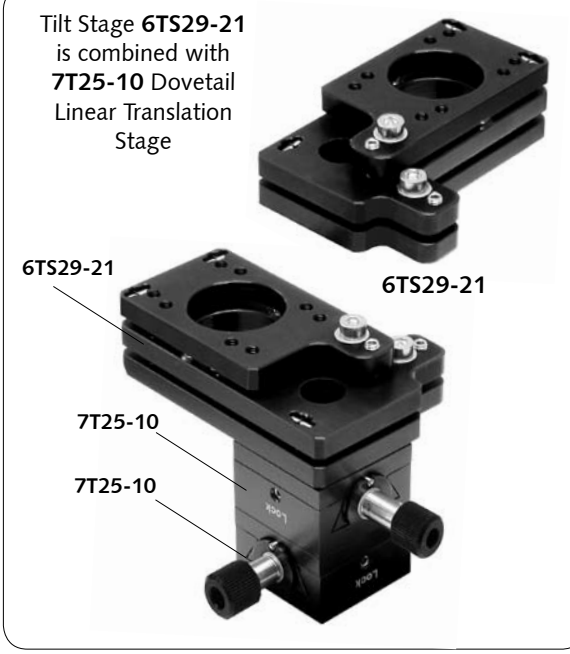


Angle Bracket
2AB7T25-10



Base Plate
3BP7T25-10

Tilt Stage **6TS29-21** is combined with **7T25-10** Dovetail Linear Translation Stage



ORDERING INFORMATION

Application	Model	Note
X axis	**7T25-10**	For use as a single axis stage. Not for assembly to XY orXYZ configurations
XY system	**7T25-10XY**	3BP7T25-10 is included
XYZ system	**7T25-10XYZ**	3BP7T25-10 and 2AB7T25-10 are included
Angle bracket	**2AB7T25-10**	
Base plate	**3BP7T25-10**	

Other Modifications are Available !!!

XY Custom stage with increased sensitivity actuators 7T25-10.08.01. Adjustment can be done using hex screw or, more conveniently and with higher sensitivity by using 6 holes in head of screw.

Detailed information at ***www.STANDA.LT***

Customer Base Plate

7-0005

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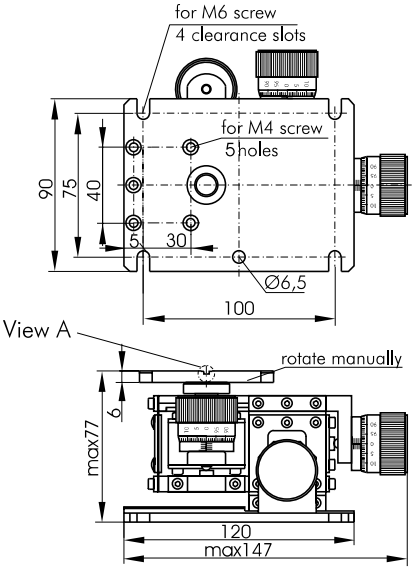
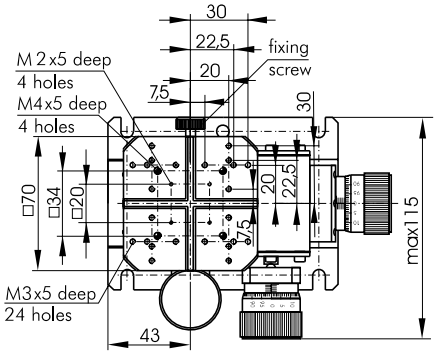
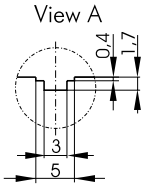
Fiber Coupling Stage

7TF2

- **Three axis**
- **Fiber coupling stage of flexure design**
- **Rotating platform on the top**
- **Compact block design**
- **Long-term stability**
- **Smooth motion**







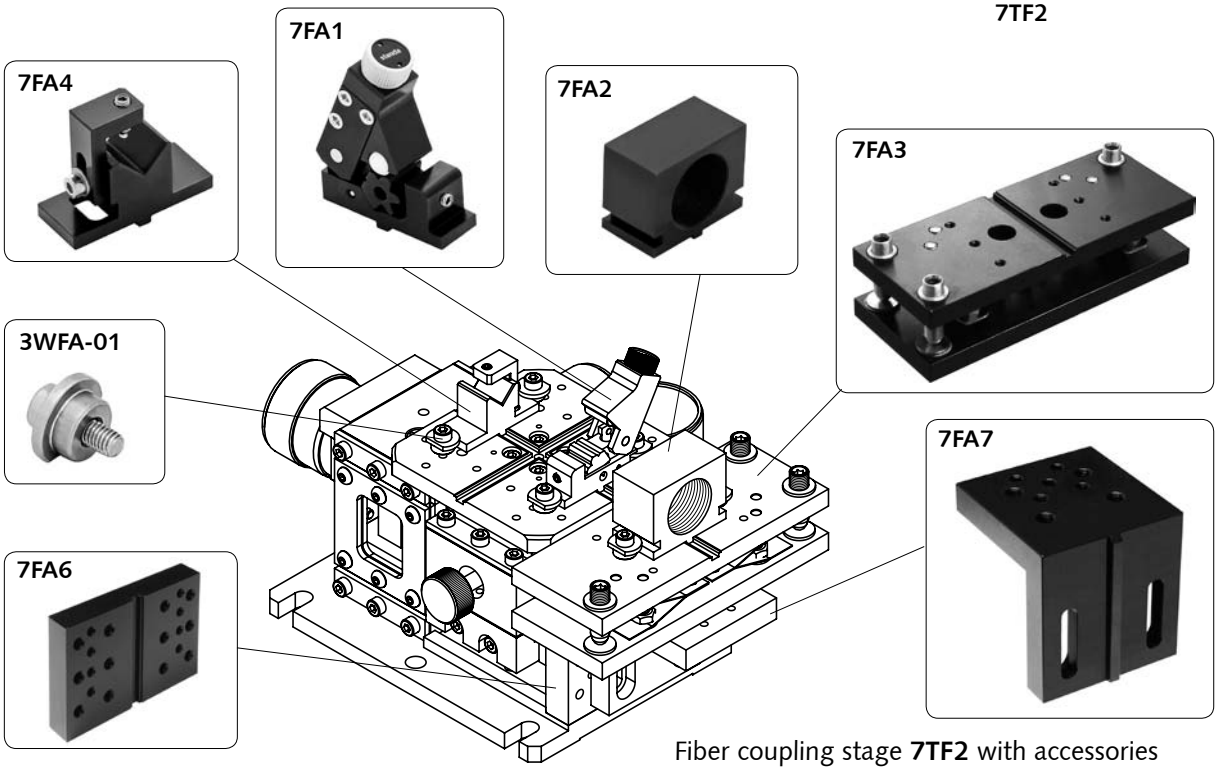
7TF2

Flexure stages 7TF2 are ideal for high precision device manipulation. This stage suits almost any micropositioning applications range, for example, from fiber launch systems for singlemode, multimode and polarization maintaining fibers as well as waveguide alignment, through to the manipulation of microstructures in bioscience. **Fiber Coupling Stage** of flexure compact block design with high-resolution micrometers ensures long-termed stability and good stiffness together with smooth motion without the severe limitations of stiction and friction. Flexure stages have a combination of overall size, travel, resolution, and low cost that makes them unique decision to meet the stringent requirements of photonics laboratory applications.

Vacuum compatible versions are delivered **on request.** Also as an option **fiber coupling stage** could be provided with **differential screws**.

SPECIFICATIONS

Travel range in each XYZ direction	2 mm
Sensitivity	0.2 μm
Reading accuracy	1.25 μm (1/2 division)
Cross-Talk	20 μm/mm
Mechanical stability	flexure design with Stainless Steel Spring
Load capacity	1.5 kg
Weight	1.6 kg



Fiber coupling stage **7TF2** with accessories

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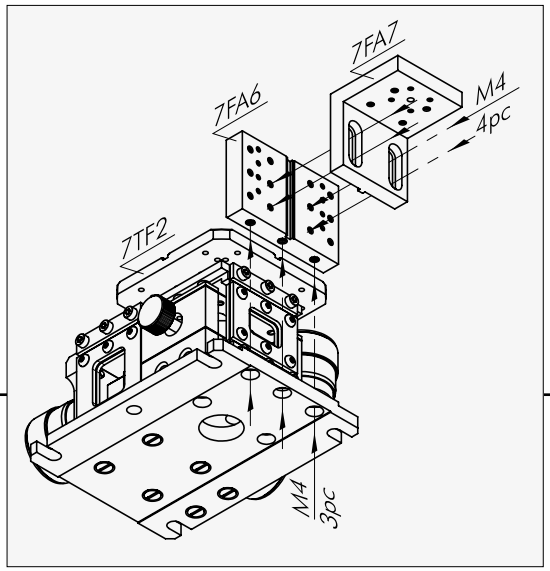
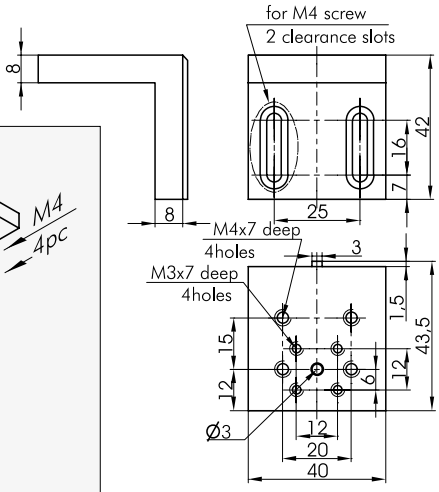
Fixed Angle Bracket

7FA7

– **Compatible with 7TF2**

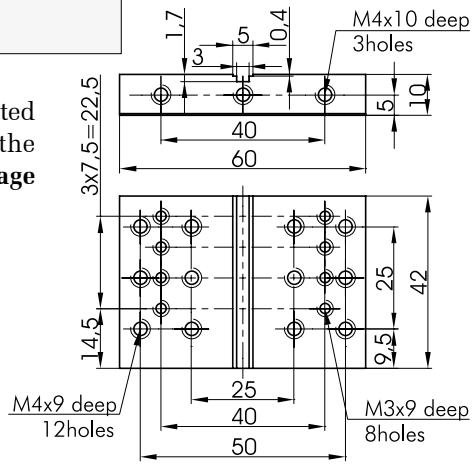




Adapter Plate

7FA6

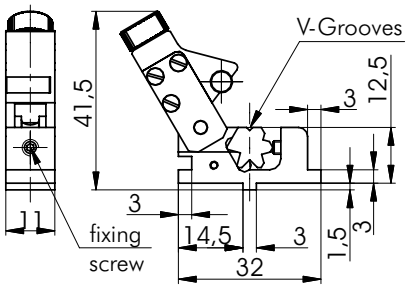
Fixed Angle Bracket 7FA7 is mounted through **Adapter Plate 7FA6** to the fixed part of **Fiber Coupling Stage 7TF2.**



Adjustable Force Fiber Clamp

7FA1

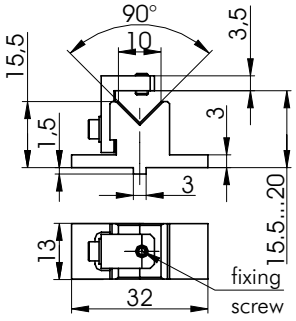
– **V-Grooved insert has 5 different V-Grooves and one flat surface**
– **V-Grooves are suitable for fibers or cylindrical optical elements in the range of 125 μm to 2 mm in diameter (5 places) + one flat surface**
– **Adjustable force fiber clamping arm, 20 to 250 g**
– **Knob on the top is for adjusting the clamping force**
– **Compatible with 7TF2**



Fiber Cable Clamp

7FA4

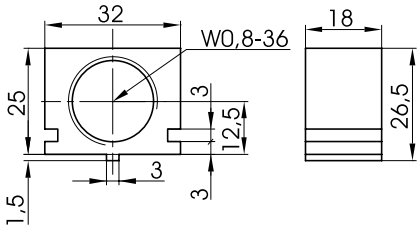
– **This acessory prevents cabled fiber from being accidentally disturbed. Designed for cables fiber of 900 μm – 3 mm diameter**
– **Compatible with 7TF2**



Microscope Objective Holder

7FA2

- **Standard RMS**
- **Microscope objective thread**
- **Wide range of micro objectives** (see page 10-2)
- **Compatible with 7TF2**

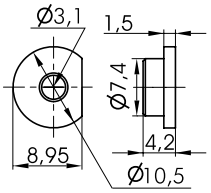


Lock-Down Clamp

3WFA-01

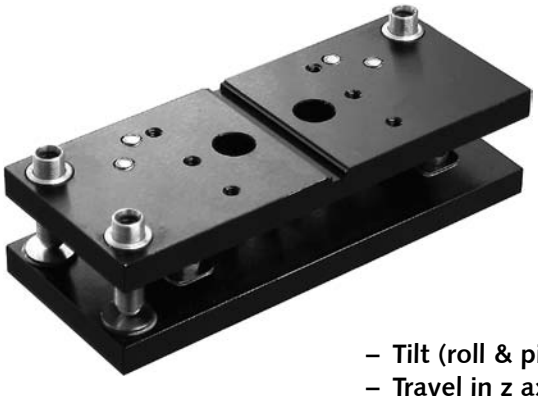
- **Compatible with 7TF2**

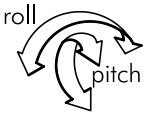
This clamps are used to fix the accessories to the mounting platform of the **7TF2**.



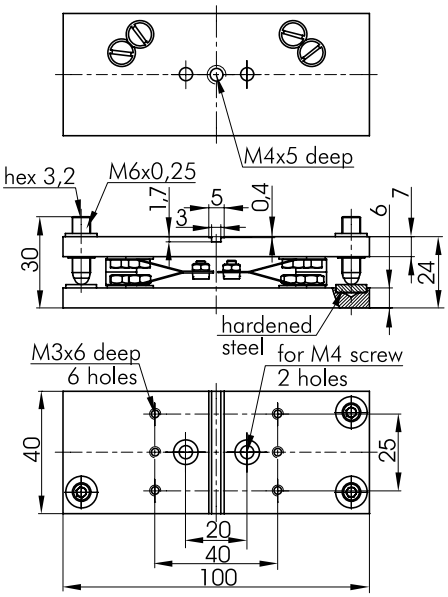
Roll & Pitch Tilt Platform

7FA3





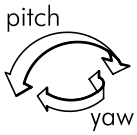
- **Tilt (roll & pitch) platform**
- **Travel in z axis: -2mm, +4mm**
- **Travel roll, pitch ±4°**
- **Resolution 10arcsec**
- **Compatible with 7TF2**

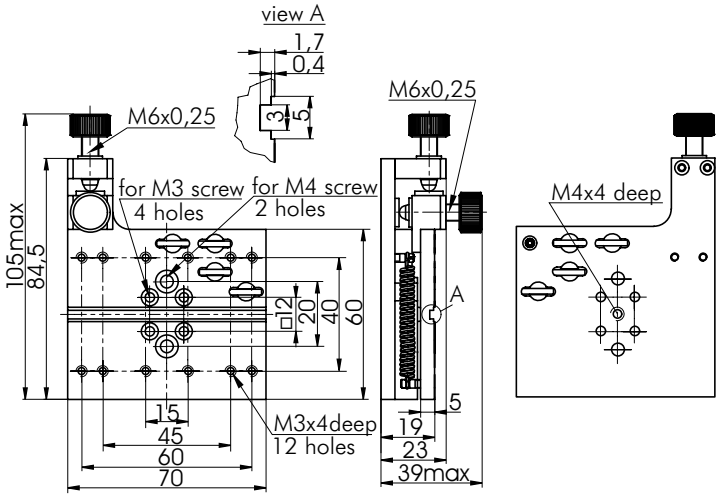


Pitch & Yaw Platform

7FA5

- **Pitch yaw platform**
- **Yaw ±4°**
- **Pitch ±3°**
- **Resolution 10 arcsec**
- **Compatible with 7TF2**





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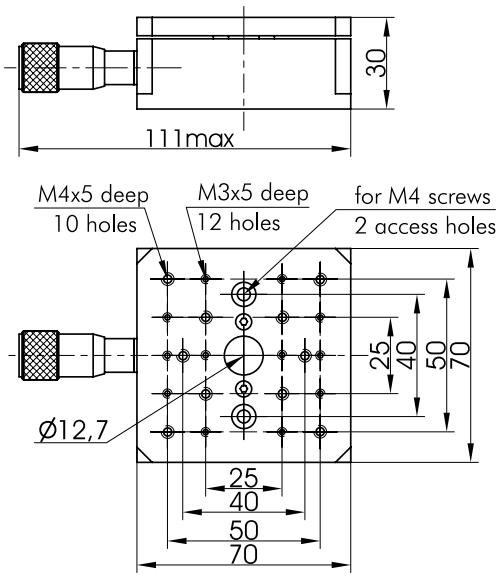
Linear Flexure Translation Stage

7TLF1

– **Ultra smooth**
– **High stability**

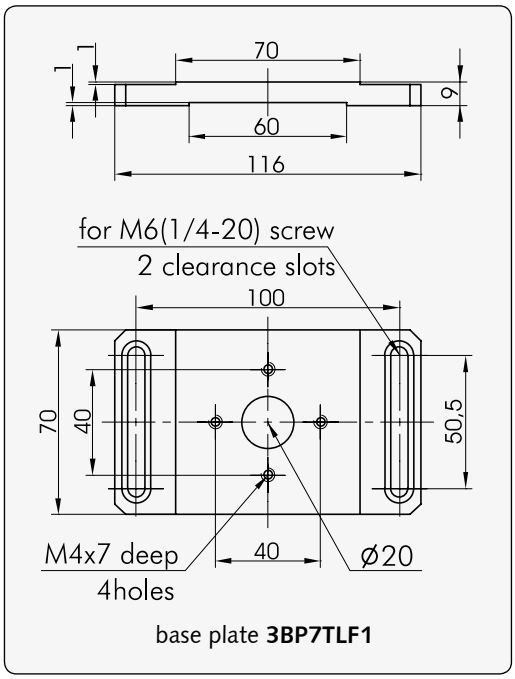


The **7TLF1** linear flexure translation stages provide **ultra smooth** translation for optical assemblies and other components. These stages guarantee linearity of motion over the whole travel range. **High stability** and **smoothness** of translation of the stages is ideal for applications in interferometry, biomedicine, microscopy and other nanoprecision adjustment.

Extremely low friction.

Stackable for **X-Y-Z** configurations.

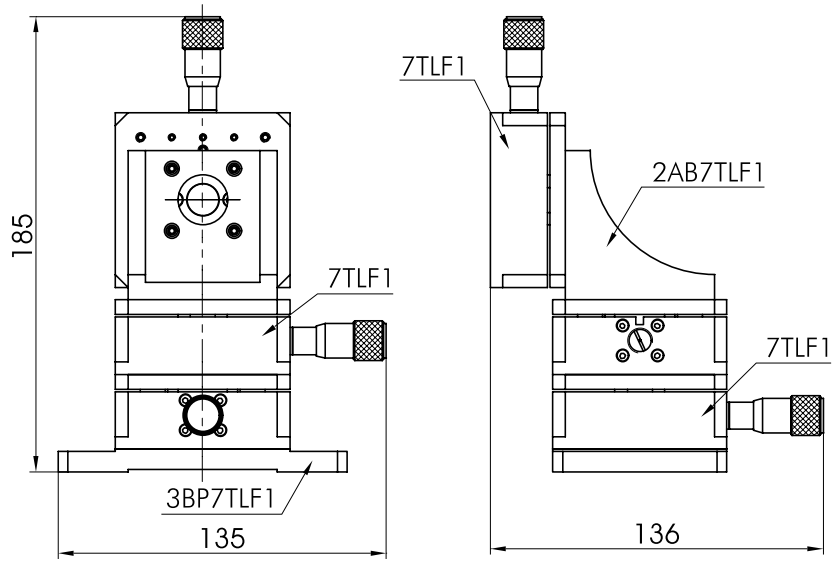
Available options include linear flexure stage equipped with **stepper motor** actuator, **DC motor** actuator and **piezo** actuator.



base plate **3BP7TLF1**

SPECIFICATIONS

Travel range	5 mm
Sensitivity with Micrometer screw	1 μm
Sensitivity with Differential screw	0.1 μm
Tracking accuracy	2 μm
Reading accuracy	10 μm
Load capacity:	1 kg
Weight:	0.4 kg
Assemblies:	
X-Y	directly
Z	2AB7TLF1



7TLF1XYZ
You may stack the stages for **XY** applications directly only using two **M4x8 screws.**
Angle bracket 2AB7TLF1 allow to stabilize stack the stages for **YZ** motion

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Mini Rotation Stage

7R174-11

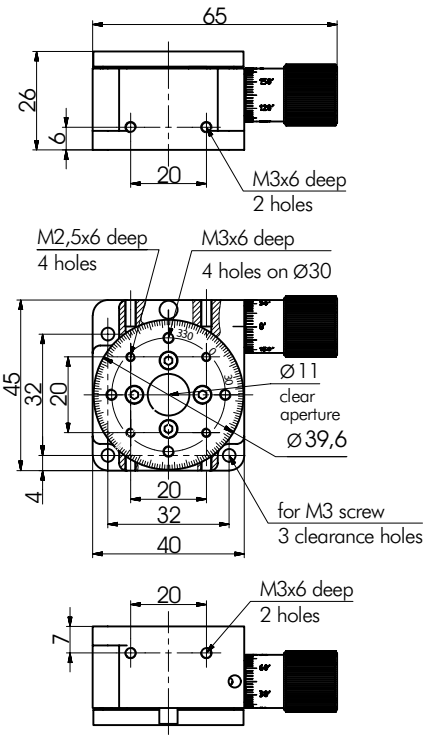
- **Worm gear design**
- **Ø11 mm clear aperture**
- **Stacks directly with stages of 174 and 184 series**

Available INCH version ***7R174E-11***

SPECIFICATIONS

Rotation range	360° (continuous)
Sensitivity	1 arcmin
Reading accuracy	3 arcmin
Wobble	1 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	4 kg
Radial	1.5 kg
Clear aperture	Ø11 mm
Weight	0.14 kg

8MR174-11 (motorized rotation stage), **7T184-13** (2 pieces), and **7VT174** or **7VT40** stacked



7R174-11, **7T184-13** (2 pieces), and **7VT174** or **7VT40** stacked

Base Plate from 3UBP series *Page 3-6*

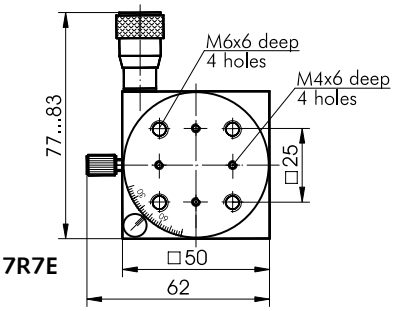
7R174-11 stacked on **7T184-13**

Mini Rotation Stage

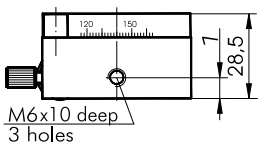
7R7

SPECIFICATIONS

Rotation	coarse / fine
range	360° / 15°
resolution	1° / 1'
Load capacity:	
Horizontal	5 kg
Vertical	2 kg
Weight	0.23 kg
Wobble	3 arcmin



3BP7R7 base plate for stacking **7R7** to STANDA optical tables or to another stages.

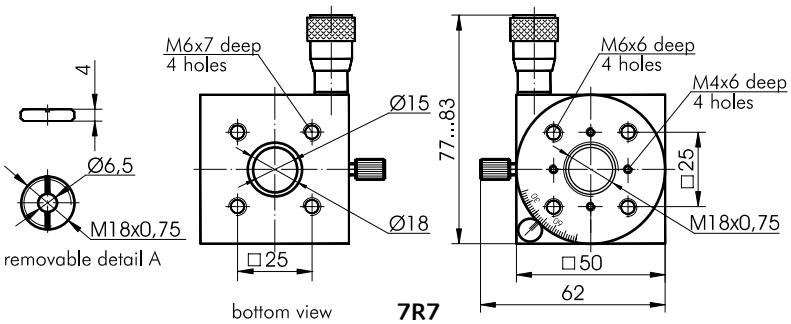


Mini Rotation Stage 7R7 provides smooth, low friction **360°** rotation.

A micrometer driving screw renders resolution of **1'**. A clear aperture of ∅**15 mm** allows attachment of lenses and filters directly in front of the stage.

A removable ring (included) can be screwed into the aperture. The ring's hole is of ∅**6.5 mm**, so you can put an **M6** screw from underneath to mount some component directly onto the stage.

7R7 can be mounted to optical rails using rail carriers. "Clear top" design allows attachment of larger components.



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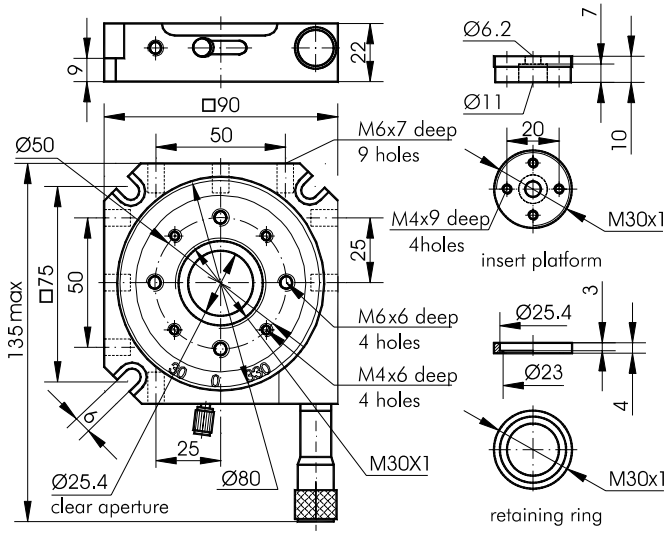
Precision Rotary Stage

7R129



- **M30x1 diameter platform insert**
- **Two 25 mm (1 inch) retaining rings**
- **Centered platform insert**

We offer you a fine rotary stage with micrometer screw. Fine motion range is **15°** with resolution of **1arcmin**. For coarse adjustment release the fixing screw and turn the platform.

The platform has mounting holes **M6**, **M4**.

It also has an aperture **M30x1** with clear aperture of **25 mm**. Two retaining rings with **1 inch** clear aperture are included.

To close the platform's aperture you can thread in an insert platform (included) with a centered clearance hole and **M6**, **M4** holes.

The stage can be fastened horizontally and vertically using **M6** screws.

SPECIFICATIONS

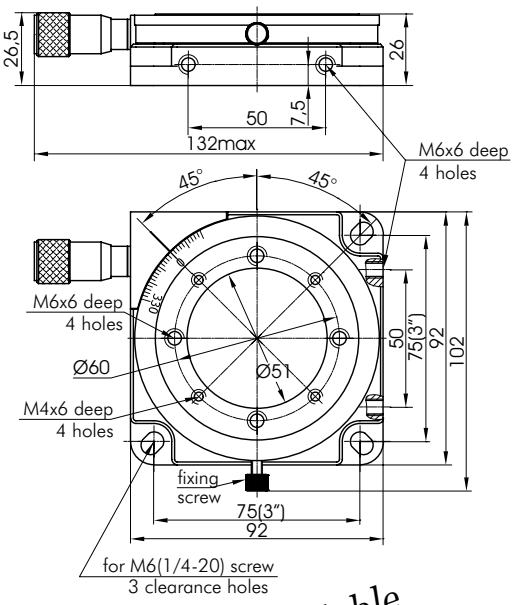
Rotation range	
coarse	360°, resolution 1°
fine	15°, resolution 1 arcmin
Sensitivity	20 arcsec
Reading accuracy	1 arcmin
Wobble	1 arcmin
Load capacity	
Horizontal	12 kg
Radial	5 kg
Max drive torque	0.3 kgm
Weight	0.63 kg

Available INCH version ***7R129E***

2 inch Aperture Rotation Stage

7R172-2

- **Rolling ball movement**
- **360° rotation**
- **10° fine adjustment**
- **Ø50.8 mm (2") clear aperture**



2 inch Aperture Rotation Stage 7R172-2 allows full **360°** coarse rotation by hand. You may lock coarse adjustment. Then fine adjustment can be done over a range of **10°** using the micrometer.

Angular position is read on 360° graduated **scale** on the platform, which is marked every **1°**.

The stage has a central aperture of ∅**50.8 mm**.

For horizontal fastening three corners of the base have clearance holes for **M6** screws.

SPECIFICATIONS

Rotation range	
fine:	10°, resolution 1 arcmin
coarse:	360°, resolution 1°
Sensitivity	20 arcsec
Reading accuracy	1 arcmin
Wobble	1 arcmin
Load capacity:	
Horizontal	15 kg
Radial	7 kg
Weight	0.58 kg

Available INCH version ***7R172E-2***

Vertical mounting: 2 sides of the base each has two **M6** holes spaced by 50 mm.

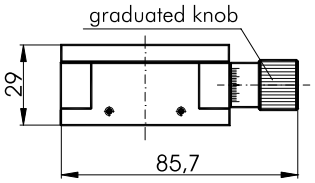
Rotation Stages

Available INCH version ***7R150E***

7R150-1 • 7R150-30

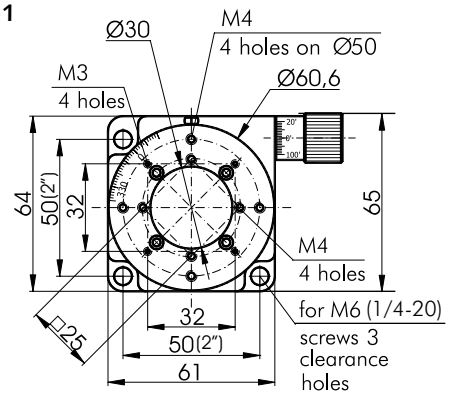
7R150-1

7R150-1 has M27x1 for 1" optics mounting (Ø23 mm clear aperture).
7R150-30 has a 30 mm aperture in the platform.

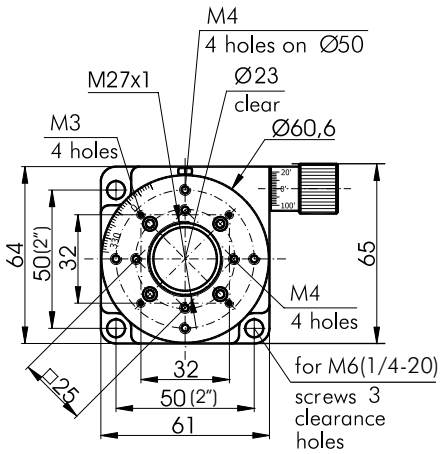


SPECIFICATIONS

Rotation Range	360°
Sensitivity	0.4 arcmin
Reading accuracy	2 arcmin
Resolution	2 arcmin
Wobble	0.6 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	8 kg
Radial	1.7 kg
Weight	0.55 kg



7R150-30



7R150-1

Available Motorized Version ***8MR151***

page 8-49

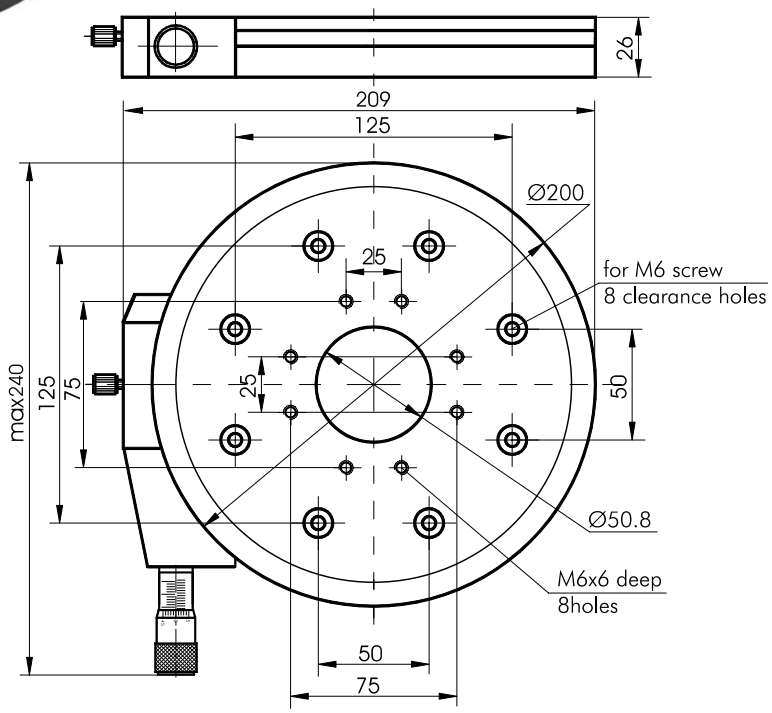
Rotation Stage of Big Platform

7R171-200

The Rotation Stage of Big Platform 7R171-200 is used to rotate manually large optical components through continuous **360°** with accuracy of **1°**, and finely adjust them within **10°** by a micrometer, with accuracy of **0.5 arcmin**.

The stage has **50.8 mm** clear aperture. The platform has a pattern of **M6** mounting holes for components.

- **200 mm platform**
- **360° rotation**
- **10° Fine adjustment**
- **Ø50.8 mm (2") clear aperture**



SPECIFICATIONS

Rotation range	
coarse	360°
fine	10°
Reading accuracy	0.5 arcmin
Sensitivity	0.1 arcmin
Wobble	1 arcmin
Load capacity	
Horizontal	15 kg
Weight	2.55 kg

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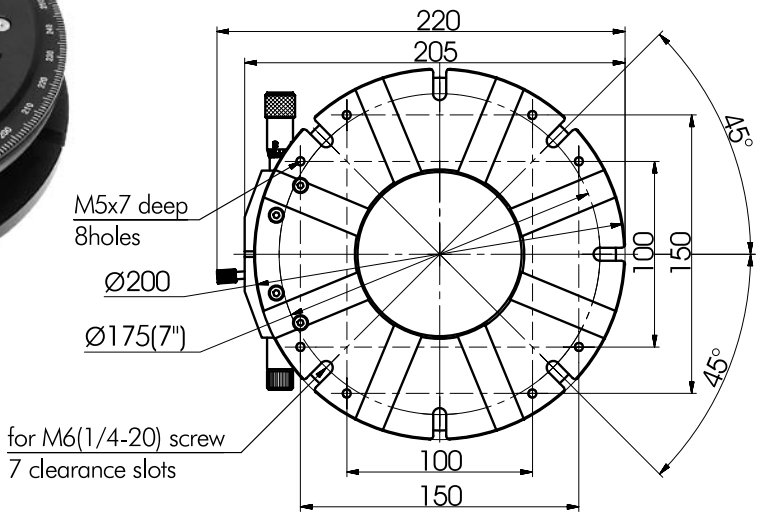
Rotation Stage of Big Platform

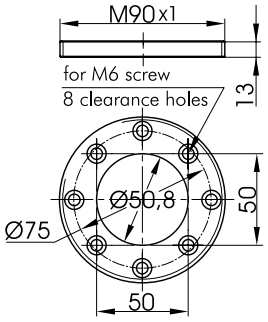
7R170-190

- 190 mm platform
- 360° rotation
- 10° Fine adjustment
- Ø88.9 mm clear aperture
- Available for vacum (7R170-190V)

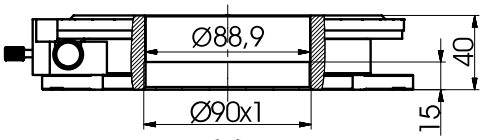


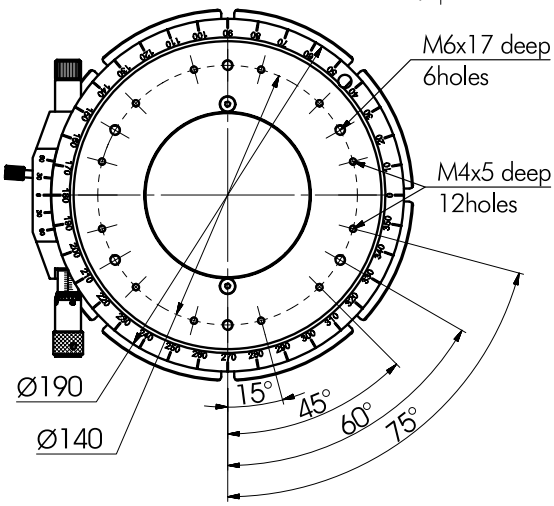
The Rotation Stage of Big Platform 7R170-190 is used to rotate manually large optical components through continuous **360°** with accuracy of **1°**, and finely adjust them within **10°** by a micrometer, with accuracy of **0.5 arcmin**.

The stage has **88,9 mm** clear aperture. The platform has a pattern of **M6** and **M4** mounting holes for components.



an insert base plate for 7R170-190



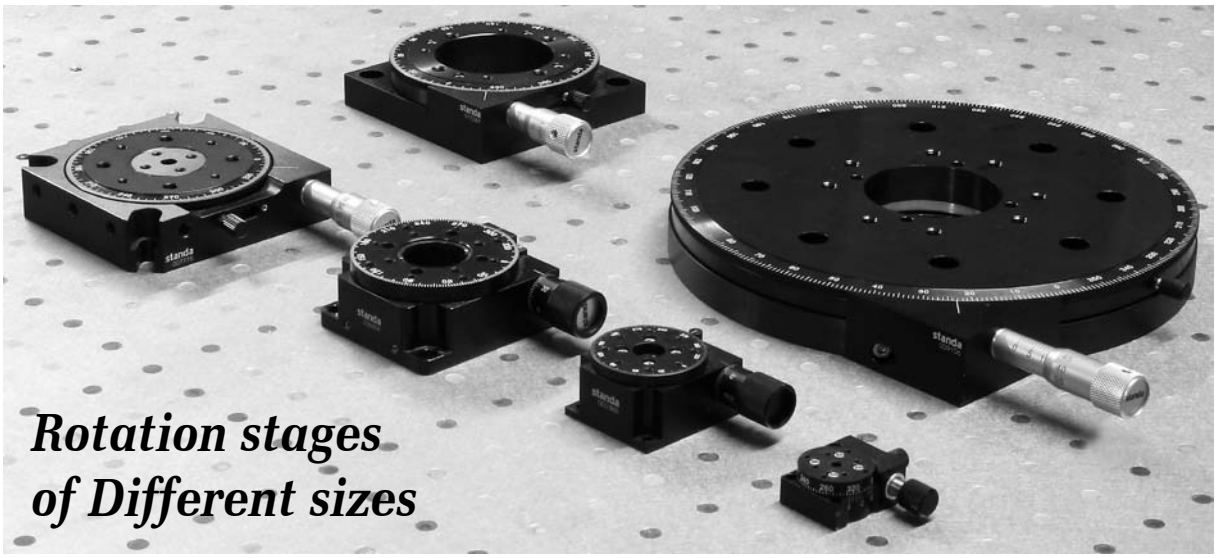


Available INCH version ***7R170E-190***

SPECIFICATIONS

Rotation range	
coarse	360°
fine	10°
Reading accuracy	0.5 arcmin
Sensitivity	0.1 arcmin
Wobble	1 arcmin
Load capacity	
Horizontal	60 kg
Material	Aluminium
Finish	Black anodized
Weight	3 kg

*Available Motorized Version **8MR170-190***



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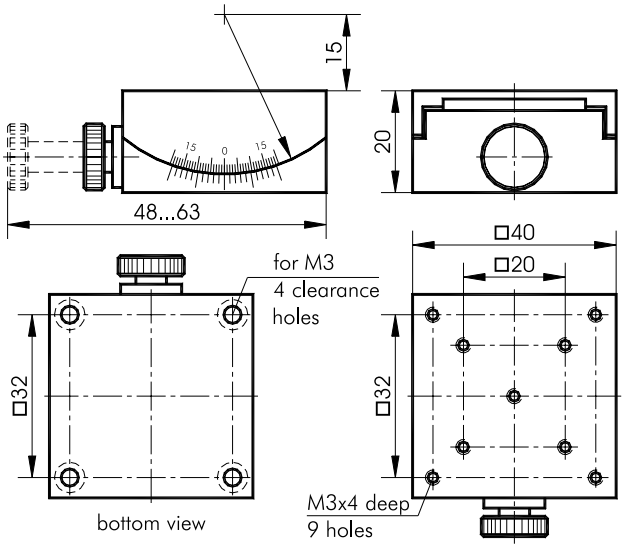
Small Goniometer

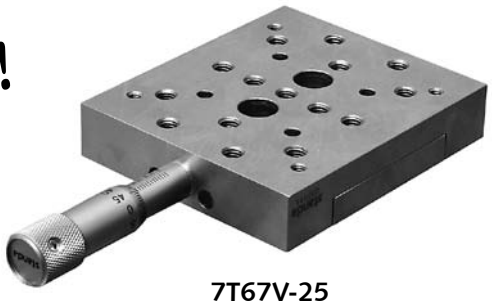
7G174-30



SPECIFICATIONS

Rotation range	±15°
Reading resolution	0.1° (vernier scale)
Drive geometry	Lever (tangential)
Driving screw pitch	0.25 mm
Transmission ratio	0°27'59"...0°30'45"
ratio decimal	0.4665°...0.5126°
(the ratio is per revolution)	
Load capacity: horizontal	1 kg
Material	Aluminium
Finish	Black anodized
Weight	0.1 kg

Available for Vacuum!



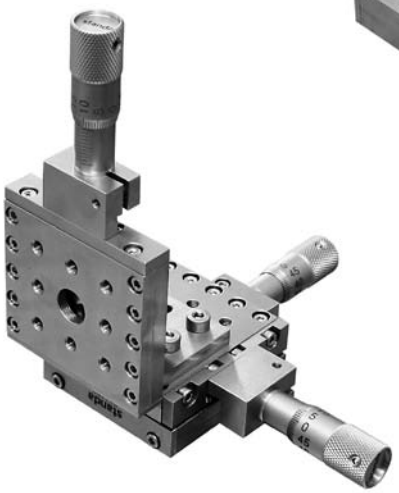
7T67V-25

7T67V-6-9SH137ML

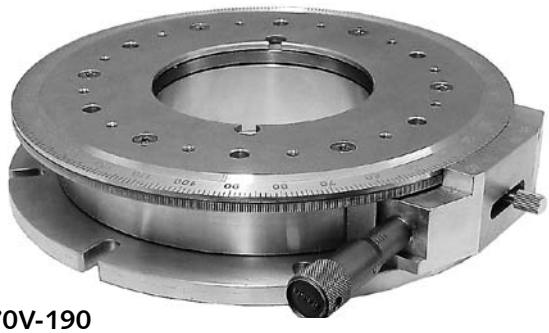
7T67V-25XYZ

7T164V-10

more info on ***www.standa.lt***



7T164V-10XYZ



7R170V-190

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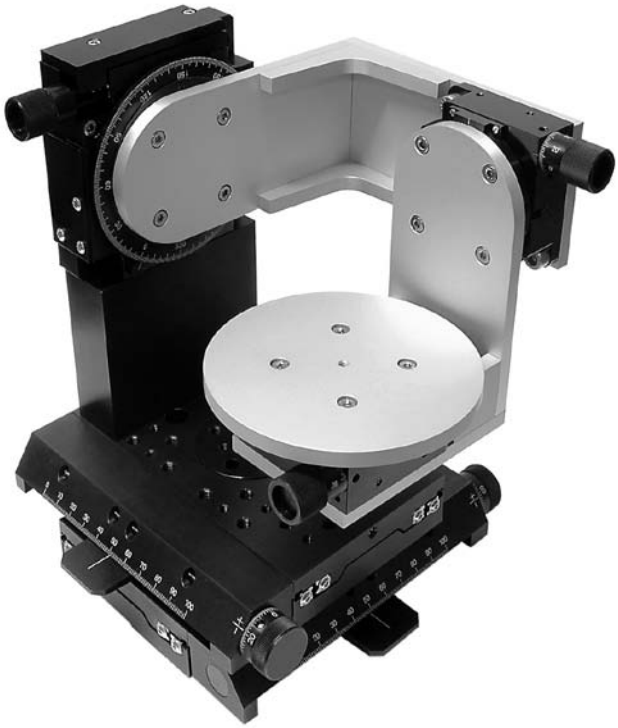
10NMC-1
5 Axis Manual Motion System



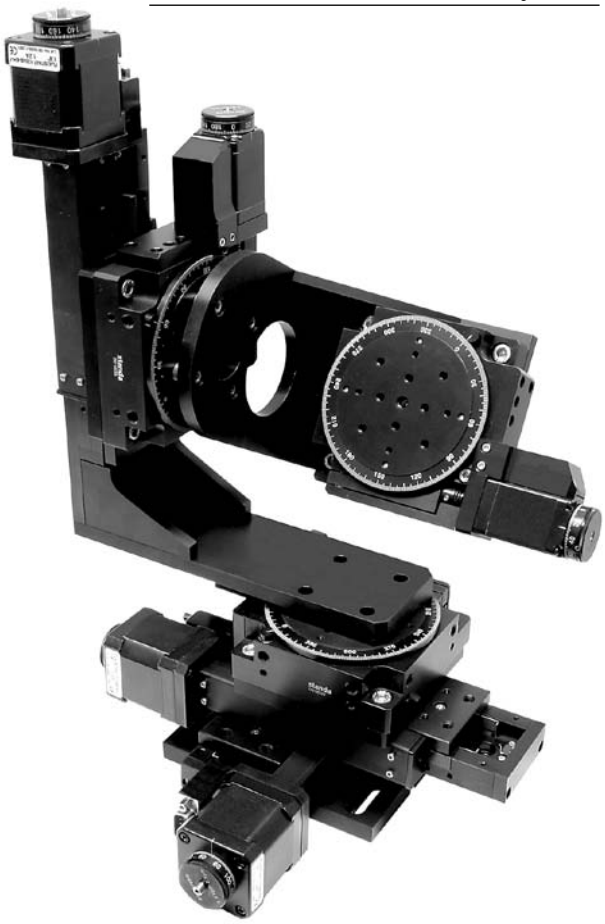
10MS-2R200
2 Axis Motorized Motion System

Detailed information available at **CUSTOM ENGINEERING and DESCRIPTION**

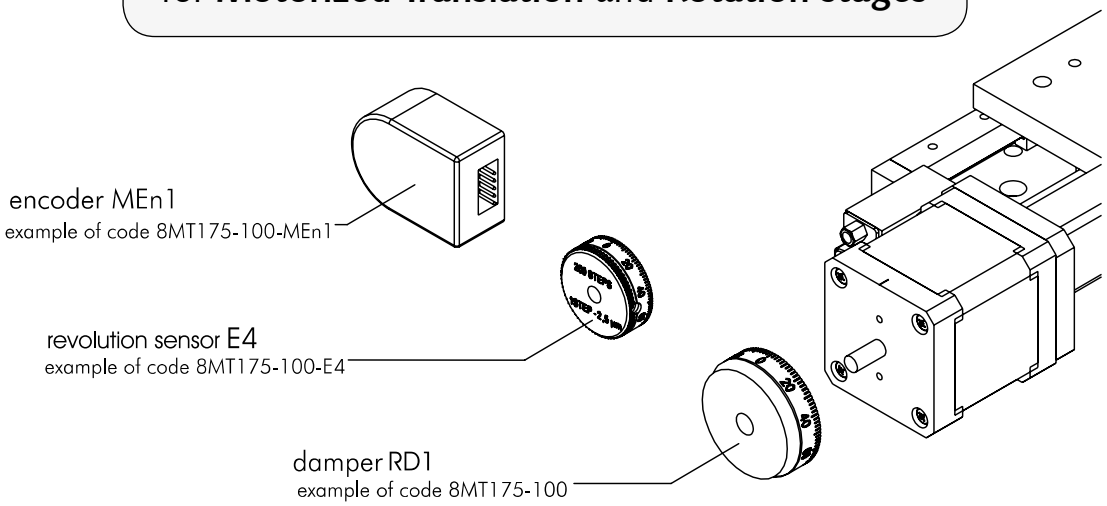
WWW.STANDA.LT/PRODUCTS/CATALOG/CUSTOM_ENGINEERING

10RSB-081658
5 Axis Motorized Motion System

8MT175-50XYZ-8MR191-28-3
6 Axis Motorized Motion System



ORDERING INFORMATION
for **Motorized Translation** and **Rotation stages**



DEFAULT CHOICE

Default choice for **ordering motorized translation** or **rotation** stages is with **damper RD1.** When **damper RD** is used, **vibrations** and **motor noise** is greatly **reduced**, **settling time** is **improved** and **system resonances** are **suppressed**.

Example:
8MT175-100 - translation stage **8MT175-100** with **damper RD1**.
8MR190-2-28 - rotation stage **8MR190-2-28** with **damper RD1**.

REVOLUTION SENSOR

Revolution sensor counts stepper motor axis revolutions. It consists of Codewheel with one mark and Optointerrupter. When motor is connected to Standa controller **8SMC1-USBhF**, signal from **revolution sensor** allows monitoring of motor axis revolutions, possible loss of steps and detecting motor stalling. It is not as accurate as encoder, which provides feedback for each step of motor. **Revolution sensor** determines whether there was any loss of steps within one revolution of motor axis. This information is reported to the controller and corrective actions can be taken.
Revolution sensor can also be used for precise home position setting.

For **ordering motorized stages** with **revolution sensor**, please **add symbols E4** to the code of motorized stages.

Example:
8MT175-100-E4 - translation stage **8MT175-100** with **revolution sensor E4**.
8MR190-2-28-E4 - rotation stage **8MR190-2-28** with **revolution sensor E4**.

Continued on next page

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ORDERING INFORMATION: for **Motorized Translation** and **Rotation stages**

ENCODER

Our **2-channel encoder** is compact and lightweight.

Technical Characteristics of encoder

Operating Voltage	DC 4,5 V to 5,5 V
max. Current Consumption	(at 5 V) 57 mA
Pulse Width	180 ±45 degree
Signal-Phase Shift	(Channel A vs. B) 90 ±15 degree
Signal-Rise/-Fall Time	0.25 / 0.25 μS
Limit Frequency	up to 100 kHz
Output Signals	rectangular 2
Pulses per Revolution	1000
Operating Temperature	0 °C to +70 °C

Encoder measures motor axis position change and direction and provides feedback to controller. **Encoder** type **HEDS-5540-B14** with **1000 pulses per revolution** is used by default. Standa controller **8SMC4-USBh** can use signal **from the encoder for motion monitoring**. Result of the monitoring is high system reliability – controller can detect motor stall situation very quickly. Threshold level of motor stall detection is programmable using program SMCVieW included with controller **8SMC4-USBh**. User specific software can get feedback from encoder through Standa controller **8SMC4-USBh** and send motion correction commands back to it using provided software libraries. Unlike servo motors, stepper motors do not necessarily require encoders for operation. **Encoder provides monitoring option. 1000 pulses per revolution ensure precise step monitoring down to 1/4 microstep mode**.

For **ordering motorized stages** with **encoder**, please **add symbols MEn1** to the code of motorized stages.

Example:
8MT175-100-MEn1 – translation stage **8MT175-100** with **encoder MEn1**.
8MR190-2-28-MEn1 – rotation stage **8MR190-2-28** with **encoder MEn1**.

8MR151-1-MEn1

Rotation stage **8MR151-1** with stepper motor **28** and with **encoder MEn1**

8MR191-28-E4

Rotation stage **8MR191** with stepper motor **28** and with **revolution sensor E4**

8MR190-90

Rotation stage **8MR190-90** with stepper motor **4247** and with **damper RD1**

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STEPPER MOTORS

Model	Wiring scheme	Design Voltage, V	Phase Current, A	Holding Torque, Nm	Detent Torque, mNm	Phase Resistance, Ohm	Inductance, mH	Steps/Revolution
PG15/50	bipolar	5	0.2....0.5	0.049	60	10±10%	3.0	20·50 (0.36°)
20	bipolar	3.9	0.6	0.018	0.9	6.5±15%	1.7±20%	200 (1.8°)
28	bipolar	4.56	0.67	0.106	3.75	6.8±15%	4.8±20%	200 (1.8°)
28S	bipolar	3.75	0.67	0.071	2.5	5.6±15%	4±20%	200 (1.8°)
4233	bipolar	12	0.4	0.25	8.5	30±10%	37±20%	200 (1.8°)
4247	bipolar	3.84	1.2	0.45	15.5	3.2±10%	6±20%	200 (1.8°)
5618	bipolar	4.82	2.01	1.84	39	2.4±15%	8.4±20%	200 (1.8°)
5909	bipolar	3	2.12	1.77	68	2±10%	10.4±20%	400 (0.9°)
5918	bipolar	3	2.1	1.98	68	2±10%	8.8±20%	200 (1.8°)
ZSS43	bipolar	42	1.2	0.26	7	19	22.9	200 (1.8°)

STEPPER MOTORS WITH BRAKE

Model	Wiring scheme	Design Voltage, V	Phase Current, A	Holding Torque, Nm	Detent Torque, mNm	Phase Resistance, Ohm	Inductance, mH	Steps/ Revolution	Braking Power
5918-B	bipolar	2.4	2.82	1.05	40	0.85±10%	3.6±20%	200 (1.8°)	0.4 Nm; 24 V; 10 W

VACUUM 10^{-6} Torr COMPATIBLE STEPPER MOTORS

Model	Wiring scheme	Design Voltage, V	Phase Current, A	Holding Torque, Nm	Detent Torque, mNm	Phase Resistance, Ohm	Inductance, mH	Steps/Revolution
VSS42	bipolar	42	1.2	0.13	5	1.7	3	200 (1.8°)
VSS43	bipolar	42	1.2	0.235	7	2.6	5.2	200 (1.8°)
V423	bipolar	48	1	0.450	20	8.5	19	200 (1.8°)

DC MOTORS

Model	Design Voltage, V	Continuous Current, A	Continuous Torque, Nm	Continuous Power, W	Resistance, Ohm	Inductance, mH	Max Speed, rpm	Gearbox	Encoder
DCE369751	3.6	0.587	0.3	2	3.5	0.114	120	67:1	16 CPT, 2 channels
DCJ252445	1.8	0.72	0.3	1.2	1.07	0.0216	7	1119:1	-
DCE1524	6	0.63	0.3	1.7	5.1	0.07	35	141:1	256 CPT, 2 channels
DCE RE25	24	1.37	0.5	20	1.53	0.186	1800	4.4:1	1000 CPT, 3 channels

VACUUM 10^{-6} Torr COMPATIBLE DC MOTORS

Model	Design Voltage, V	Continuous Current, A	Continuous Torque, Nm	Continuous Power, W	Resistance, Ohm	Inductance, mH	Max Speed, rpm	Gearbox	Encoder
DCE1841	6	0.63	0.3	1.7	5.1	0.07	37	134:1	16 CPT, 2 channels

INFORMATION about **STANDA Motors**

Narrow Motorized Translation Stages

8MT173

Motorized Translation Stages 8MT173 are created on the basis of 7T173 manual translation stages.

Mechanical parameters of the motorized stages are identical to the parameters of manual **7T173**.

Resolution, speed and load capacity all depend on parameters of the motor, translation stages, as well as on the controller and driving mode a user chooses to use.

For vertical (Z axis) mounting we offer angle bracket **2AB173-20** (**page 2-7**). Angle brackets of custom design can be manufactured on request.

- **Narrow (30 mm)**
- **Compact design**
- **High guide way accuracy**
- **Lead screw pitch 0.25 mm**
- **Travel 10, 20, 25, 30 mm**
- **Optional travel 5, 6, 8 mm and other**
- **X-Y-Z configurations available**

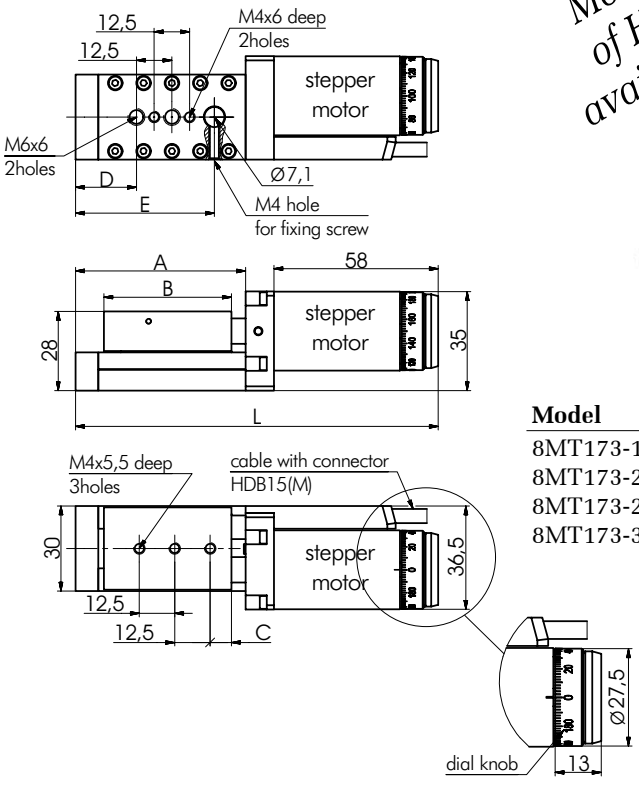
Two mechanical limit switches built into each translation stage used for emergency stop at ends of travel range or to establish a reference position with accuracy of several motor steps (use **E4** option for more accurate zero position setting, see page 8-1).

Motor position can be visually determined with accuracy of one step by reading a scale engraved on dial knob fitted on motor shaft (use **Encoder** for monitoring exact position using PC).

Body and platform of **8MT173** are made of black finished aluminum. Functional parts are made of steel.

Narrow Motorized Translation Stage with stepper motor

8MT173



Motorized Stages of Higher Speed available on request

8MT173-20

Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173-10	124	60	45	7.5	21.5	49
8MT173-20	134	70	45	7.5	26.5	56
8MT173-25	138	74	49	11	30.5	60
8MT173-30	144	80	55	11.5	36.5	66

SPECIFICATIONS	8MT173-10	8MT173-20	8MT173-25	8MT173-30
Travel range, mm	10	20	25	30
Lead screw pitch, mm	0.25			
Resolution in full step*, μm	1.25			
Max. speed*, mm/s	5			
Load capacity:				
Horizontal, kg	5			
Vertical, kg	2			
Cable	integrated, 1.6 m length			
Motor connector	HDB15(M)			
Stepper motor	28			
Weight, kg	0.43	0.46	0.47	0.48
Assemblies:				
X-Y	**2CP173-20**			
Z	**2AB173-20**			

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

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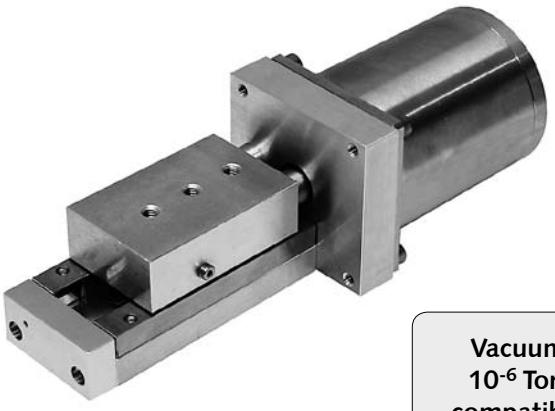
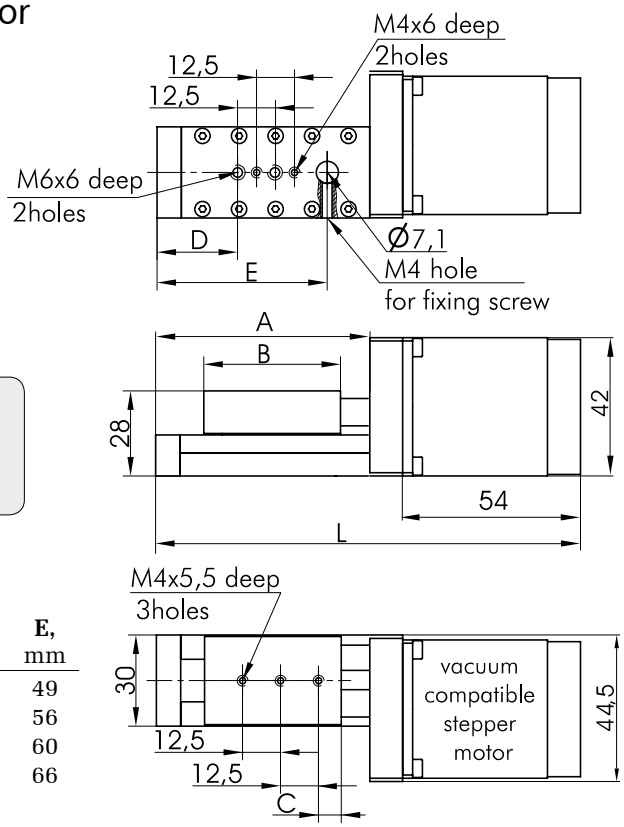
Narrow Motorized Translation Stage with Vacuum compatible stepper motor

8MT173V



8MT173V-20-VSS42

Vacuum 10^{-6} Torr compatible



Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173V-10-VSS42	124	60	45	7.5	21.5	49
8MT173V-20-VSS42	134	70	45	7.5	26.5	56
8MT173V-25-VSS42	138	74	49	11	30.5	60
8MT173V-30-VSS42	144	80	55	11.5	36.5	66

Many applications require **vacuum compatible stages**. **8MT173V** series stages are equipped with **10^{-6} Torr vacuum compatible stepper motor**, all mechanical parts are **lubricated** with **High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

SPECIFICATIONS	8MT173V-10-VSS42	8MT173V-20-VSS42	8MT173V-25-VSS42	8MT173V-30-VSS42
Travel range, mm	10	20	25	30
Lead screw pitch, mm		0.25		
Resolution in full step*, μm		1.25		
Max. speed*, mm/s		2.5		
Load capacity:				
Horizontal, kg		3		
Vertical, kg		1		
Fluoroplastic cable		integrated, 2 m length		
Motor connector		HDB15(M)		
Vacuum compatible stepper motor		VSS42		
Weight, kg	0.42	0.48	0.49	0.5
Assemblies:				
X-Y		**2CP173V-20**		
Z		**2AB173V-20**		

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

Recommended Controllers

more info on **www.standa.lt**

Stepper/DC Motor Controller

8SMC4-USB-B8-1
1 axis Controller in box

Stepper/DC Motor Controller

8SMC4-USB-B9-2
2 axis Controller in box

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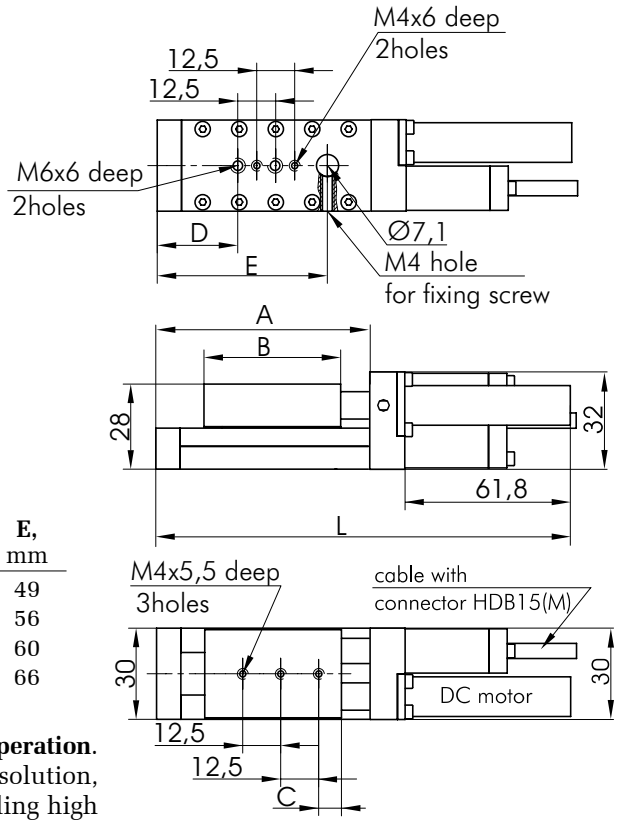
Narrow Motorized Translation Stage with DC motor

8MT173-DCE2

8MT173-20DCE2



Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173-10DCE2	133.5	60	45	7.5	21.5	49
8MT173-20DCE2	143.5	70	45	7.5	26.5	56
8MT173-25DCE2	147.5	74	49	11	30.5	60
8MT173-30DCE2	153.5	80	55	11.5	36.5	66

DC motor provides **smoother motion** and **closed loop operation**. High number of motor reduction gear provides high resolution, but low speed in turn. Ideal for applications demanding high accuracy, but not sensitive to speed limitations.

SPECIFICATIONS	8MT173-10DCE2	8MT173-20DCE2	8MT173-25DCE2	8MT173-30DCE2
Travel range, mm	10	20	25	30
Lead screw pitch, mm	0.25			
Resolution, μm	0.058			
Minimal incremental motion, μm	0.1			
Bi-directional Repeatability, μm	0.4			
Max. speed, mm/s	0.5			
Load capacity:				
Horizontal, kg	5			
Vertical, kg	1			
Cable	integrated, 1.6 m length			
Motor connector	HDB15(M)			
DC motor	DCE369751			
Weight, kg	0.43	0.46	0.47	0.48
Assemblies:				
X-Y	**2CP173-20**			
Z	**2AB173-20**			

Recommended Controllers

more info on **www.standa.lt**

Three Axis Stepper/DC Motor Controller 8SMC4-USB-B8-B9
with
Power Supply

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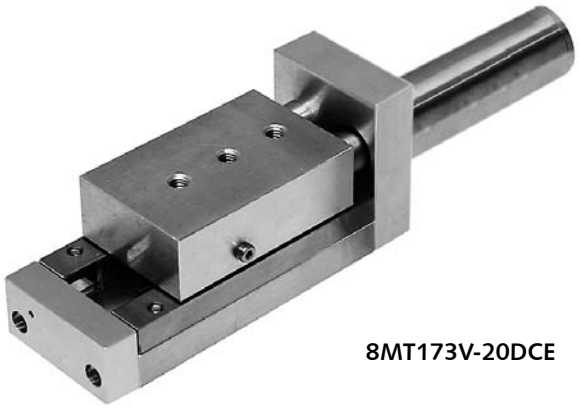
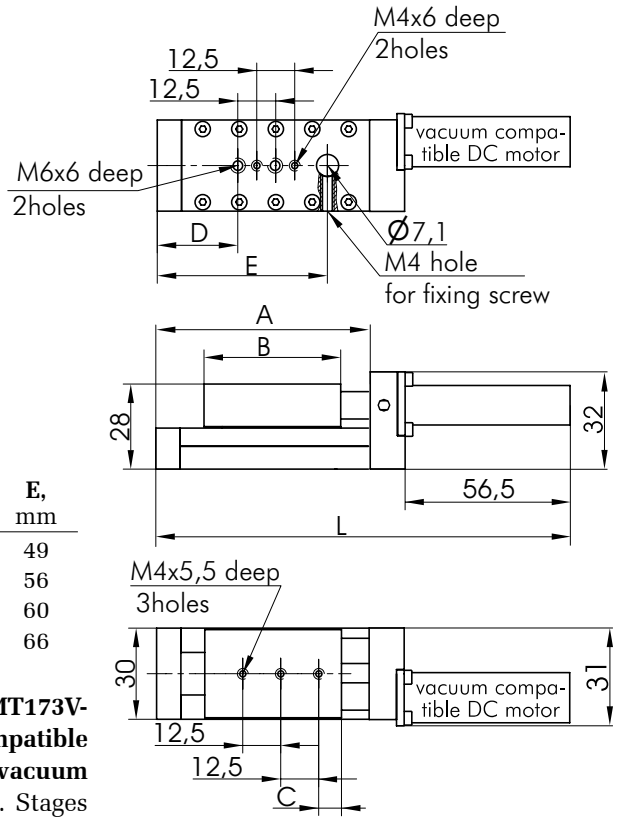
Narrow Motorized Translation Stage with Vacuum compatible DC motor

8MT173V-DCE



8MT173V-20DCE



Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173V-10DCE	128	60	45	7.5	21.5	49
8MT173V-20DCE	138	70	45	7.5	26.5	56
8MT173V-25DCE	142	74	49	11	30.5	60
8MT173V-30DCE	148	80	55	11.5	36.5	66

Many applications require **vacuum compatible stages**. **8MT173V-DCE** series stages are equipped with **10^{-6} Torr vacuum compatible DC motor**, all mechanical parts are **lubricated** with **High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

SPECIFICATIONS	8MT173V-10DCE	8MT173V-20DCE	8MT173V-25DCE	8MT173V-30DCE
Travel range, mm	10	20	25	30
Lead screw pitch, mm	0.25			
Resolution, μm	0.029			
Minimal incremental motion, μm	0.1			
Bi-directional Repeatability, μm	0.4			
Max. speed, mm/s	0.16			
Load capacity:				
Horizontal, kg	5			
Vertical, kg	1			
Fluoroplastic cable	integrated, 2 m length			
Motor connector	HDB15(M)			
Vacuum compatible DC motor	DCE1841			
Weight, kg	0.43	0.46	0.47	0.48
Assemblies:				
X-Y	**2CP173V-20**			
Z	**2AB173V-20**			

Recommended Power Supply and Controller

more info on **www.standa.lt**

PS36-3.4-4
Power Supply

8SMC4-USB-B8-1
One Axis Stepper/DC Motor Controller

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Narrow Motorized Translation Stages

8MT30

- **Narrow (30 mm)**
- **Compact design**
- **High guide way accuracy**
- **Resolution 0.156 μm (1/8 step)**
- **X-Y-Z configurations available**

Motorized translation stage 8MT30-50 is a newly developed stage, which incorporates all the improvements and modifications implemented since its predecessor 8MT173-20-50 was launched. 8MT30-50 replaces older stage 8MT173-20-50.

It boasts possibility to operate in any orientation, which means that the stage can be hung upside-down or be operated vertically with motor facing upward or downward. Durability of stage was taken seriously into consideration and now you can apply grease directly to the screw without disassembling the stage. Vertical load capacity is increased to 3 kg. Stage is spring preloaded to eliminate backlash. Design of 8MT30-50 ensures more stable and precise motion over full translation range.

For vertical (Z axis) mounting we offer angle bracket **2AB173-20-50**. Angle brackets of custom design can be manufactured on request.

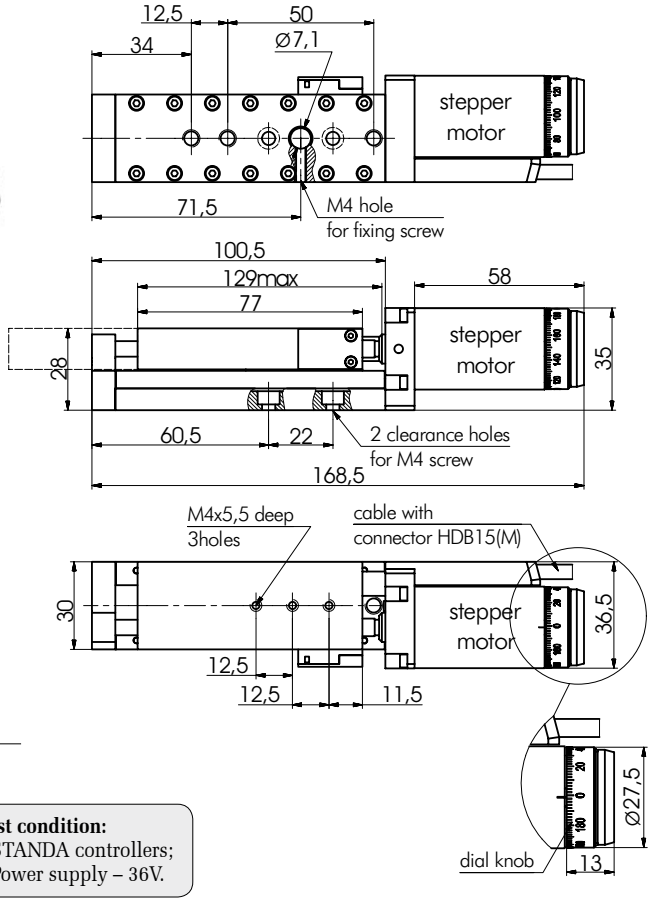
Two mechanical limit switches built into each translation stage used for emergency stop at ends of travel range or to establish a reference position with accuracy of several motor steps (use **E4** option for more accurate zero position setting, see **page 8-1**).

Motor position can be visually determined with accuracy of one step by reading a scale engraved on dial knob fitted on motor shaft (use **Encoder** for monitoring exact position using PC (see **page 8-2**)).

Body and platform of **8MT30** are made of black finished aluminum. Functional parts are made of steel.

Narrow Motorized Translation Stage with stepper motor

8MT30-50



SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution in full step*	1.25 μm
Max. speed*	5 mm/s
Load capacity	
Horizontal	5 kg
Vertical	3 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	0.5 kg
Assemblies:	
X-Y	**2CP173-50-20**
Z	**2AB173-20-50**

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

Motorized Stages of Higher Speed available on request

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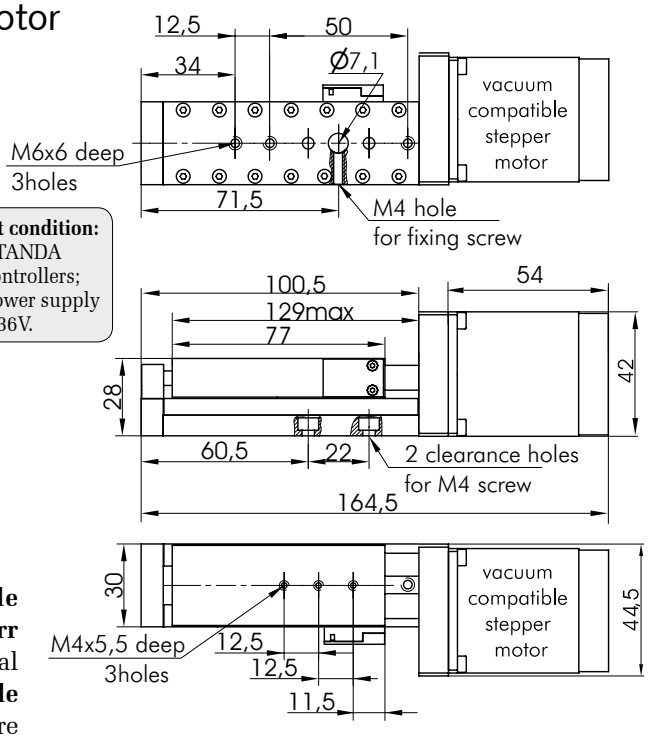
Narrow Motorized Translation Stage with Vacuum compatible stepper motor — 8MT30V-50-VSS42

SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution in full step*	1.25 μm
Max. speed*	2.5 mm/s
Load capacity	
Horizontal	3 kg
Vertical	1 kg
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Vacuum compatible stepper motor	VSS42
Weight	0.55 kg
Assemblies:	
X-Y	**2CP173V-50-20**
Z	**2AB173V-20-50**

***Test condition:**
- STANDA controllers;
- Power supply – 36V.



Many applications require **vacuum compatible stages**. **8MT30V-50** stage is equipped with **10^{-6} Torr vacuum compatible stepper motor**, all mechanical parts are **lubricated** with **High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

Stepper/DC Motor Controller

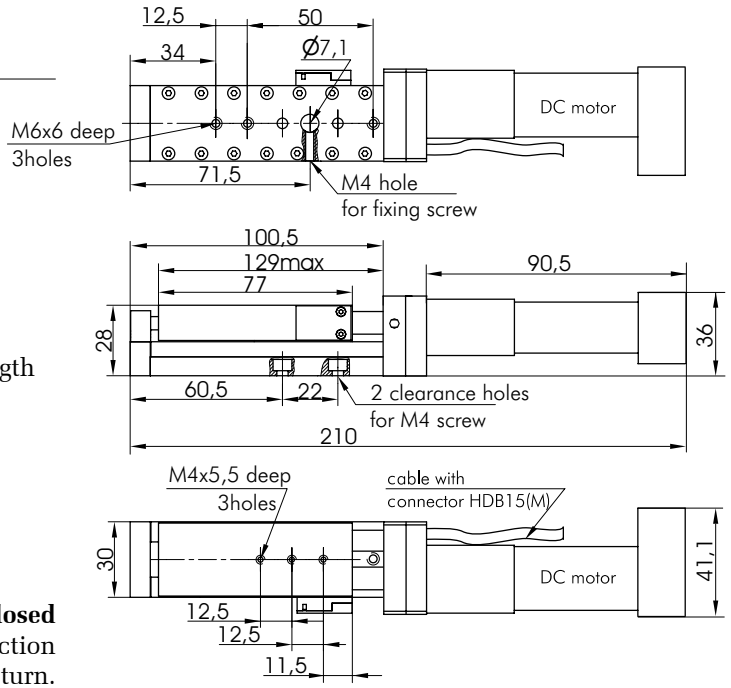
8SMC4-USB-B8-1
1 axis Controller in box

8SMC4-USB-B9-2
2 axis Controller in box

Narrow Motorized Translation Stage with DC motor — 8MT30-50DCE

SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution	0.014 μm
Minimal incremental motion	0.1 μm
Bi-directional Repeatability	0.4 μm
Max. speed	7 mm/s
Load capacity	
Horizontal	5 kg
Vertical	1 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
DC motor	DCE RE25
Weight	0.5 kg
Assemblies:	
X-Y	**2CP173-50-20**
Z	**2AB173-20-50**



DC motor provides **smoother motion** and **closed loop operation**. High number of motor reduction gear provides high resolution, but low speed in turn. Ideal for applications demanding high accuracy but not sensitive to speed limitations.

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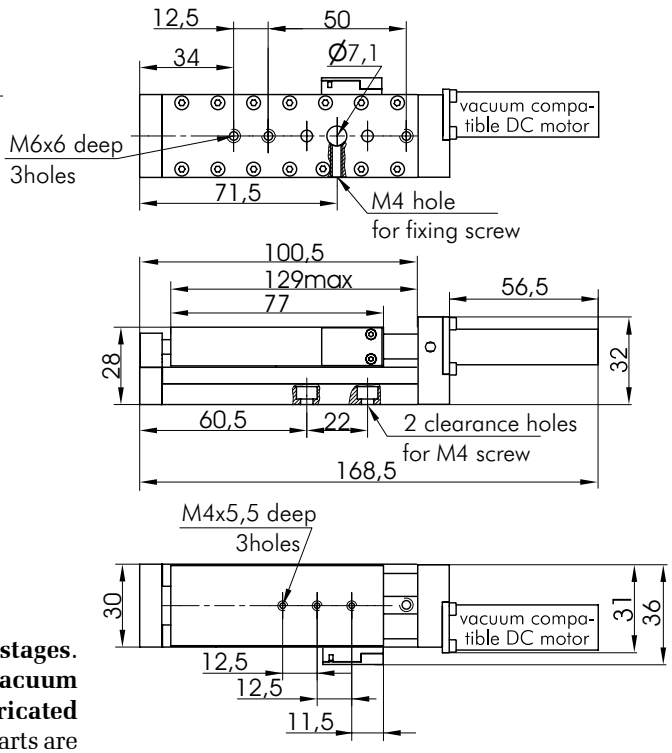
Narrow Motorized Translation Stage with Vacuum compatible DC motor

8MT30V-50DCE



SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution	0.029 μm
Minimal incremental motion	0.1 μm
Bi-directional Repeatability	0.4 μm
Max. speed	0.5 mm/s
Load capacity	
Horizontal	5 kg
Vertical	1 kg
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Vacuum compatible DC motor	DCE1841
Weight	0.5 kg
Assemblies:	
X-Y	**2CP173V-50-20**
Z	**2AB173V-20-50**

Many applications require **vacuum compatible stages**. **8MT30V-50DCE** stage is equipped with **10^{-6} Torr vacuum compatible DC motor**, all mechanical parts are **lubricated** with **High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

Recommended Controllers more info on **page 8-90**

Stepper/DC Motor Controller

new

Close relation between our customers influenced **Standa** to modify its **8SMC1**. Tens of thousands of **8SMC1 stepper motor controllers** take part in the market.

With respect to our users, **Standa** has developed the n**ew controller - 8SMC4** with a **modern design** and **increased functionalities** for **photonics** and **industrial applications**.

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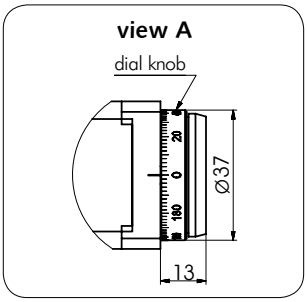
Medium Width Motorized Translation Stages

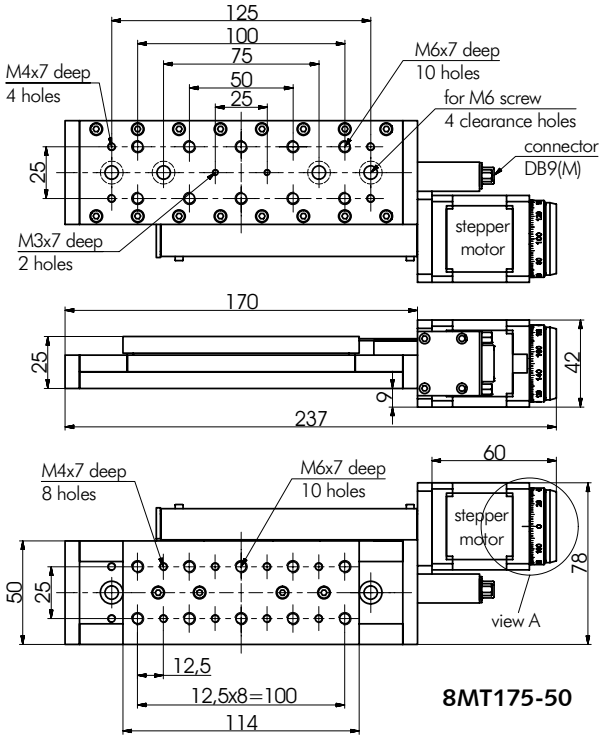
8MT175

8MT175-50

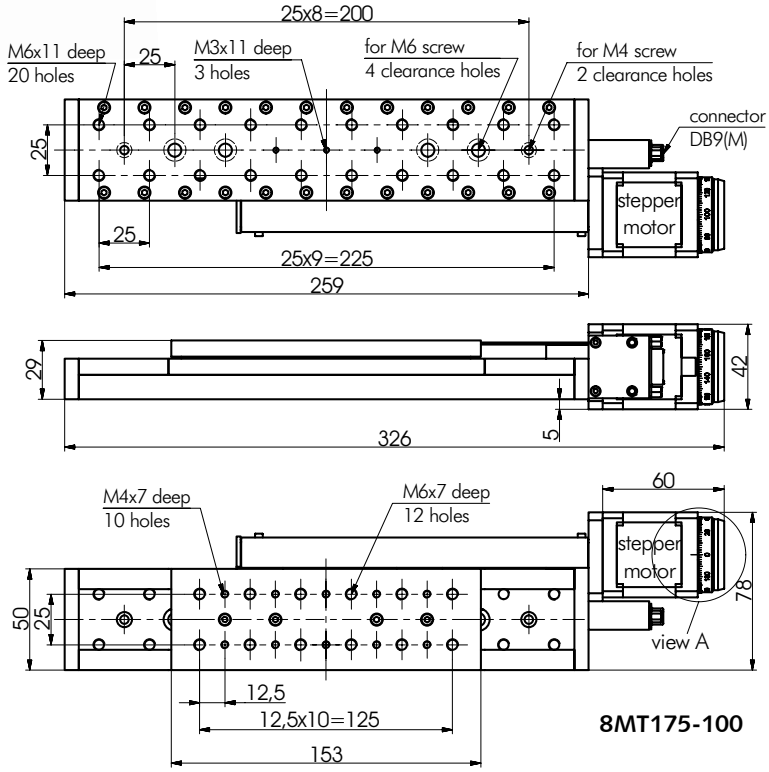
8MT175-150

- **Narrow (50 mm)**
- **Compact design**
- **High guide way accuracy**
- **Resolution 0.31 μm (1/8 step)**
- **Travel 50, 100, 150, 200 mm**
- **X-Y-Z configurations available**





8MT175-50



8MT175-100

SPECIFICATIONS	8MT175-50	8MT175-100	8MT175-150	8MT175-200
Travel range, mm	50	100	150	200
Lead screw pitch, mm		0.5		
Resolution in full step*, μm		2.5		
Max. speed*, mm/s		10		
Load capacity				
Horizontal, kg		8		
Vertical, kg		3		
Motor connector		DB9(M)		
Stepper motor		4247		
Weight, kg	1	1.5	1.5	1.6
Assemblies:				
X-Y		**directly**		
Z		**2AB175**		

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

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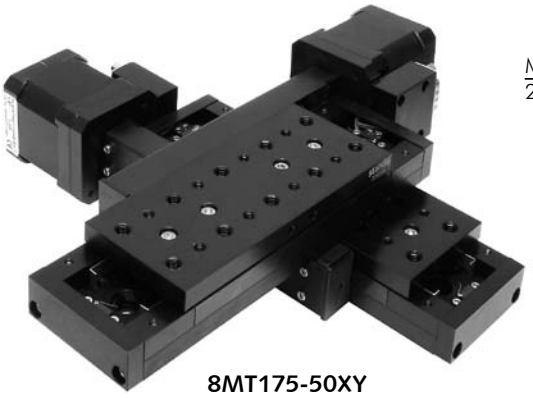


8MT175-50XY

In X-Y configuration medium width stages are stacked directly using M6 screws.

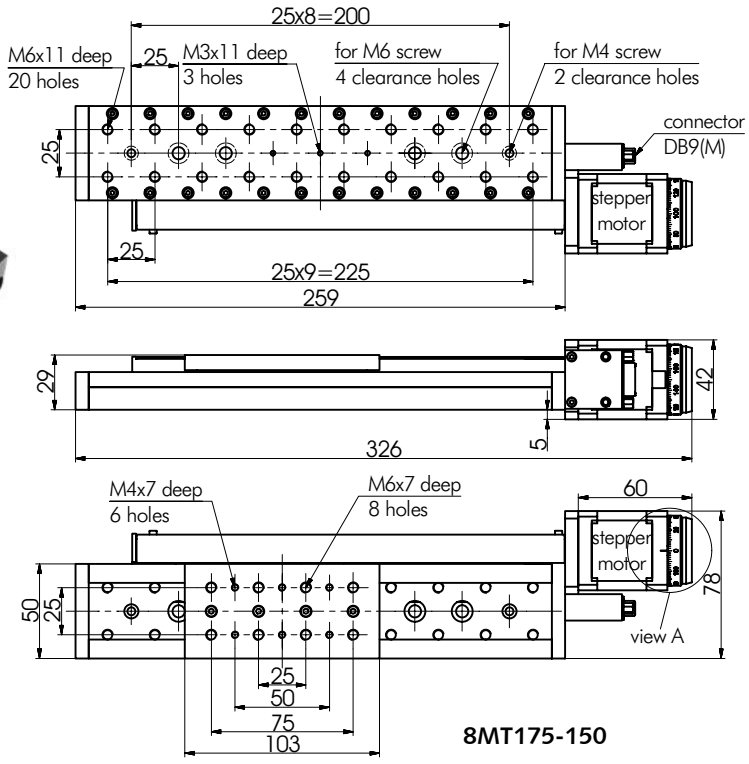
2AB175

Angle Bracket 2AB175 is used to transform "horizontal" translators into vertical ones.

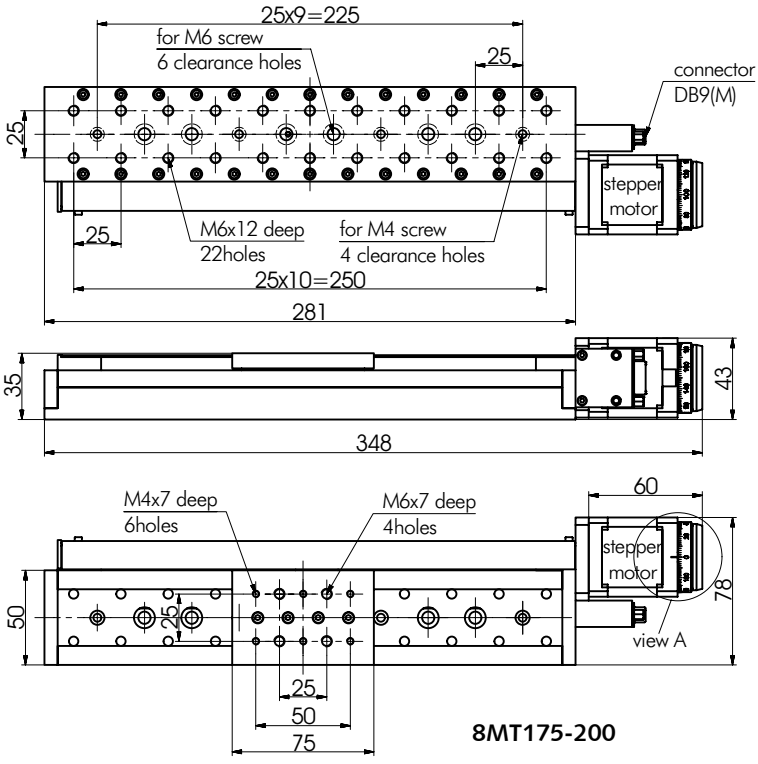
3UBP175

Base Plate 3UBP175 is designed to fix listed translators **8MT175** series to optical tables and other flat surfaces. Fits metric and imperial hole patterns.

Motorized medium width stages have a motor protruding from the **bottom**. To place such stages on flat surfaces you need a base plate **3UBP175** (see **3-8 page**).



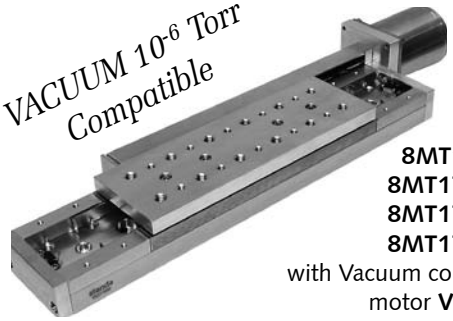
8MT175-150



8MT175-200

Motorized Stages of Higher Speed available on request

VACUUM 10^{-6} Torr Compatible



8MT175V-50-VSS42
8MT175V-100-VSS42
8MT175V-150-VSS42
8MT175V-200-VSS42
with Vacuum compatible stepper motor **VSS42** (page 8-3)

Available with VACUUM 10^{-6} Torr Compatible DC motor

8MT175V-50-DCE
8MT175V-100-DCE
8MT175V-150-DCE
8MT175V-200-DCE

Available with DC motor

8MT175-50-DCE
8MT175-100-DCE
8MT175-150-DCE
8MT175-200-DCE

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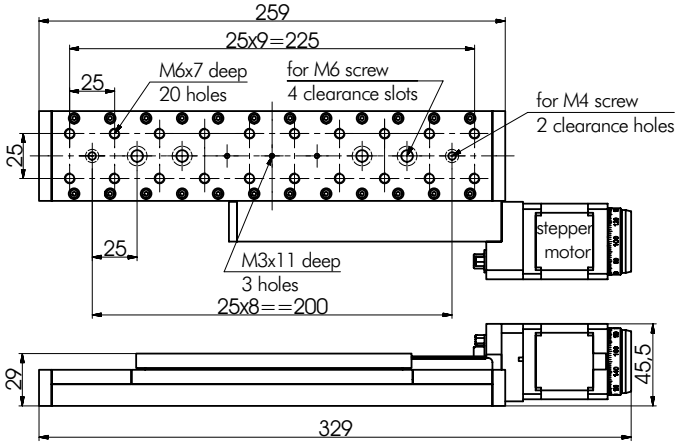
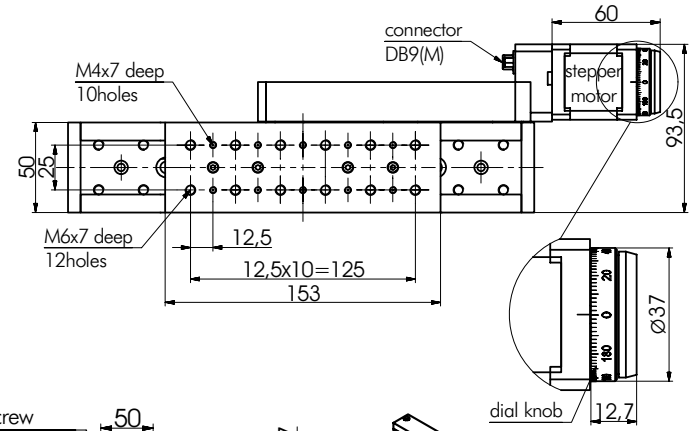
Motorized Translation Stage

8MT177-100

- **Narrow**
- **Compact design**
- **Resolution 0.125 μm (1/8 step)**
- **X-Y-Z configurations available**
- **Motors of other types are available**

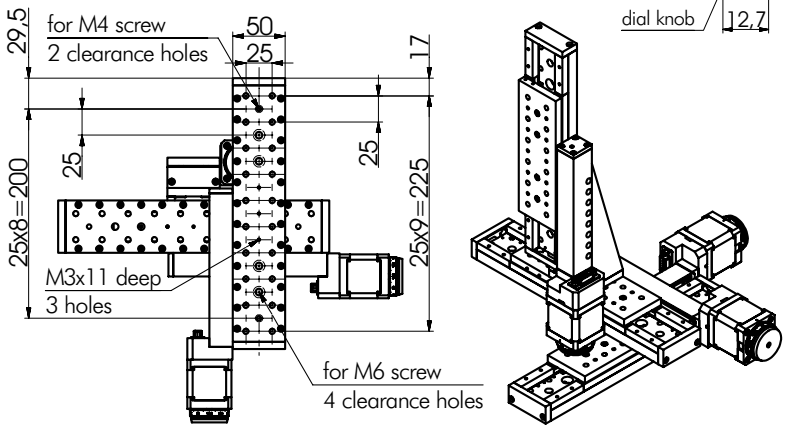




SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	1 μm
in 1/8 step*	0.125 μm
Reduction motor/screw	2.5:1
Max. speed*	5 mm/s
Load capacity	
Horizontal	8 kg
Vertical	3 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	1.5 kg
Assemblies:	
X-Y	**directly**
Z	**2AB175**

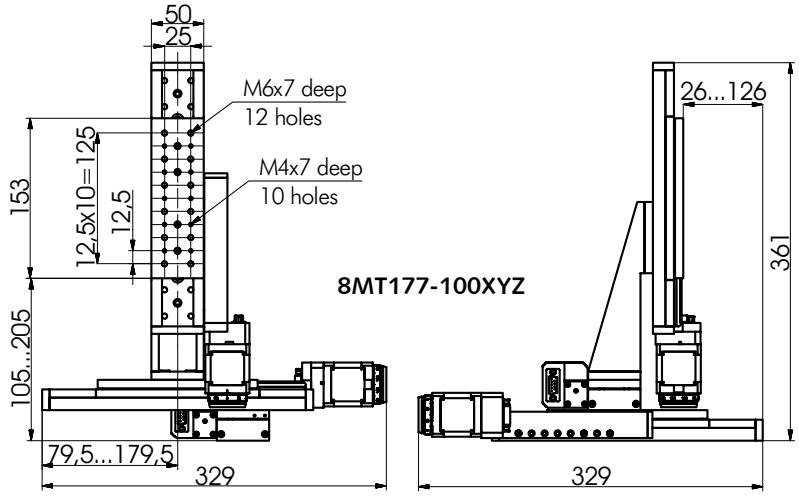
***Test condition:**
- STANDA controllers;
- Power supply – 36V.



8SMC4-USB-B8-1
1 axis Controller in box

Joystick developed for manual control of one or two-axis all Stepper motor equipped motorized stages

8JXY-03
Joystick for 8SMC4-USB controller



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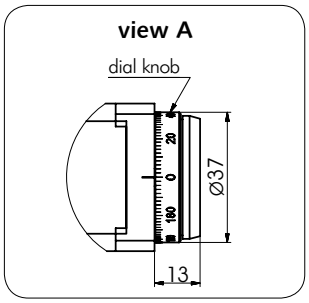
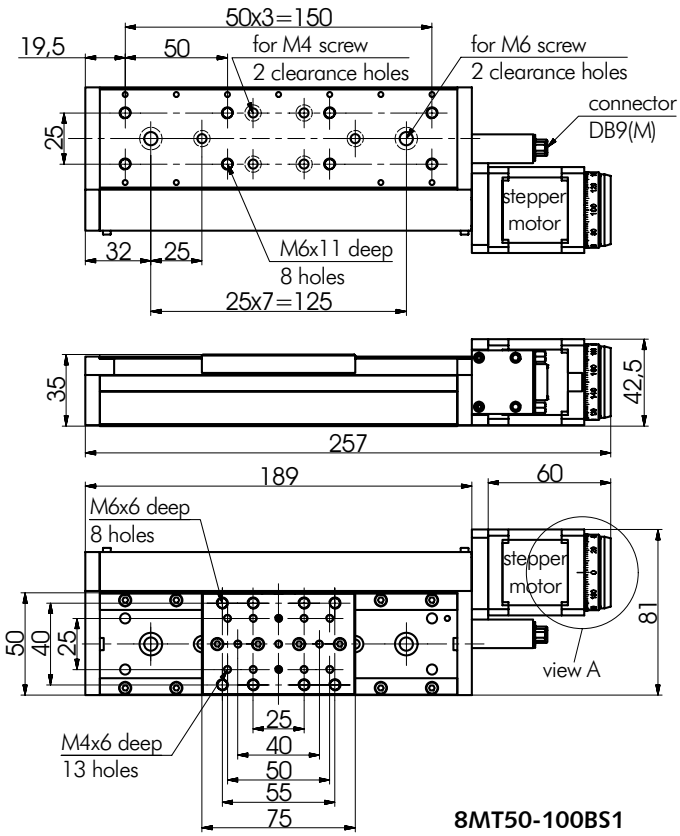
Motorized Translation Stage

8MT50

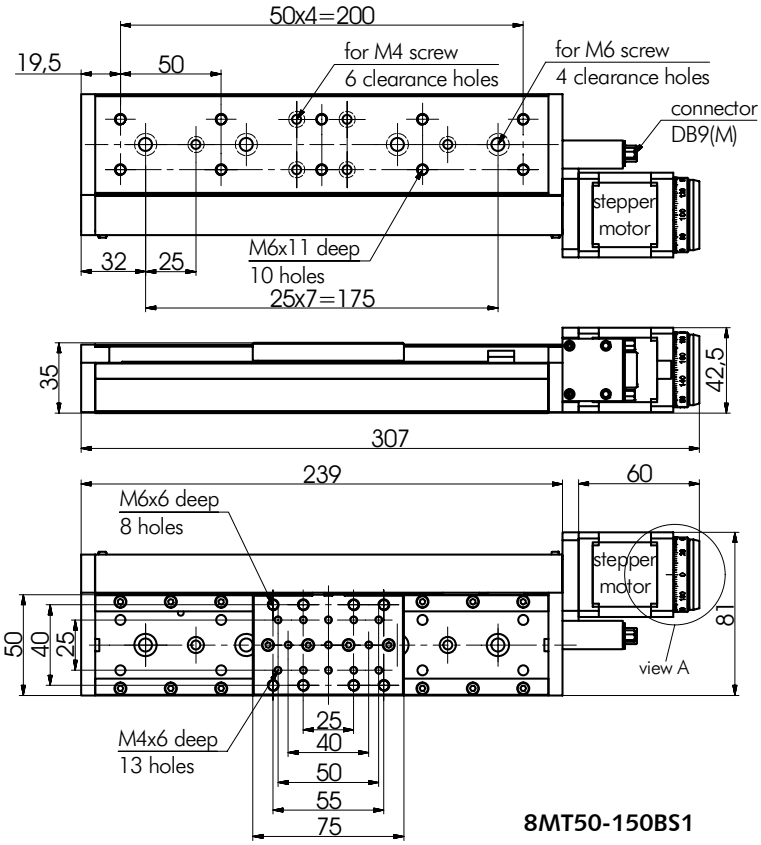
8MT50-200BS1

- **Narrow**
- **Compact design**
- **High speed**
- **Heavy load capacity**
- **X-Y-Z configurations available**
- **Motors of other types are available**





8MT50-100BS1



8MT50-150BS1

SPECIFICATIONS

Travel range	
8MT50-100BS1	100 mm
8MT50-150BS1	150 mm
8MT50-200BS1	200 mm
Ball screw pitch	1 mm
Resolution in full step*	5 μm
Max. speed*	20 mm/s
Load capacity	
Horizontal	30 kg
Vertical	8 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	
8MT50-100BS1	1.1 kg
8MT50-150BS1	1.4 kg
8MT50-200BS1	1.65 kg
Assemblies:	
X-Y	**directly**
Z	**2AB175**

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

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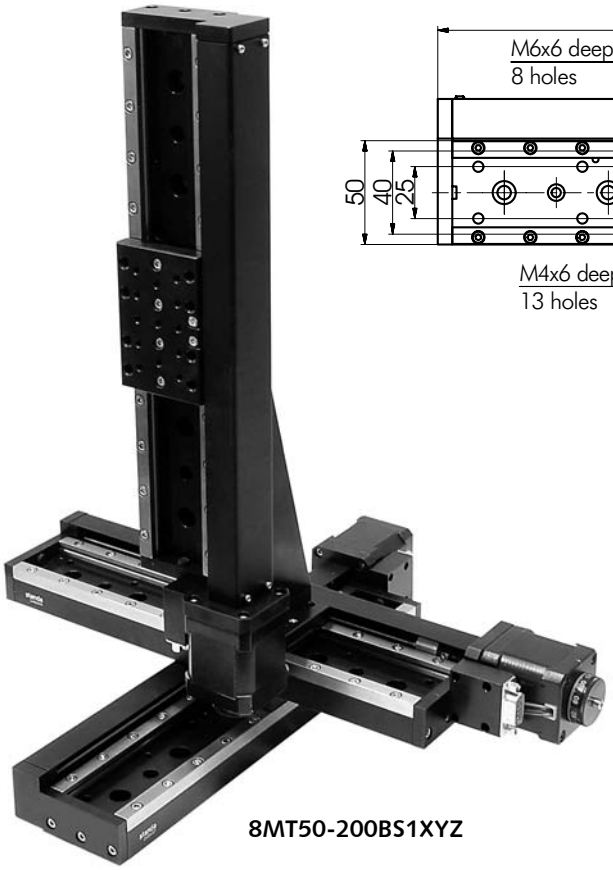
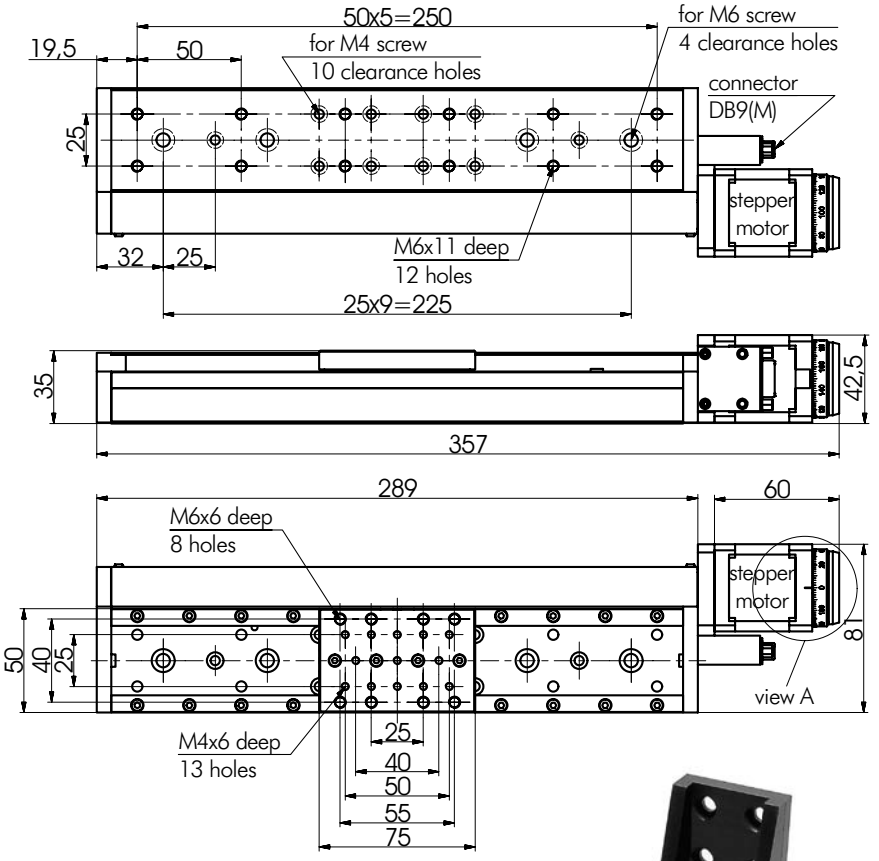
Phone: +370-5-2651474 Fax: +370-5-2651483



8MT50-200BS1XYZ



8MT50-200BS1

2AB175

Angle Bracket 2AB175 is used to transform "horizontal" translators into vertical ones.

Recommended Controllers

more info on **www.standa.lt**

8SMC4-36
Universal motion controller/driver

Universal motion controller/driver 8SMC4-36 is designed especially to control up to 36 mechatronic systems based on standard **DC**, **Servo**, **Stepper** or **BLDC technologies**. The housing of **8SMC4-36** has 7U height and can be mounted in standard 19 inch industrial cabinets. Up to six **8SMC4-36** systems can be installed in a standard 42U 19 inch cabinet. This allows to have 216 axes per cabinet which saves space and lets avoid cable clutter.

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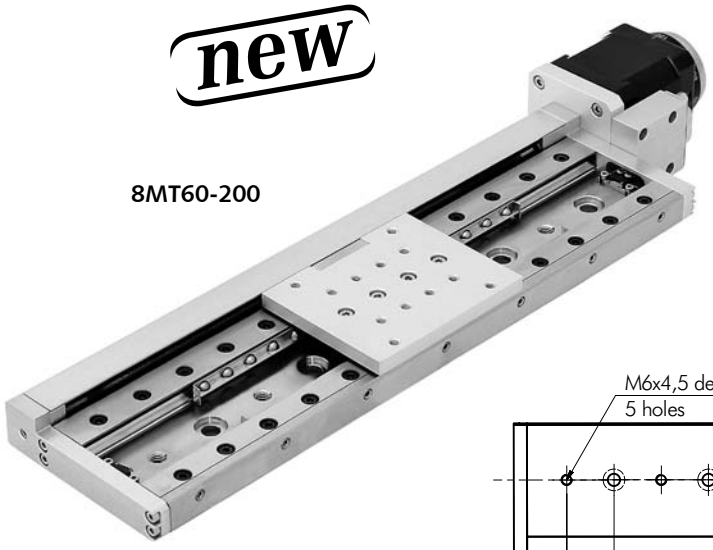
Motorized Delay Line

8MT60-200



8MT60-200

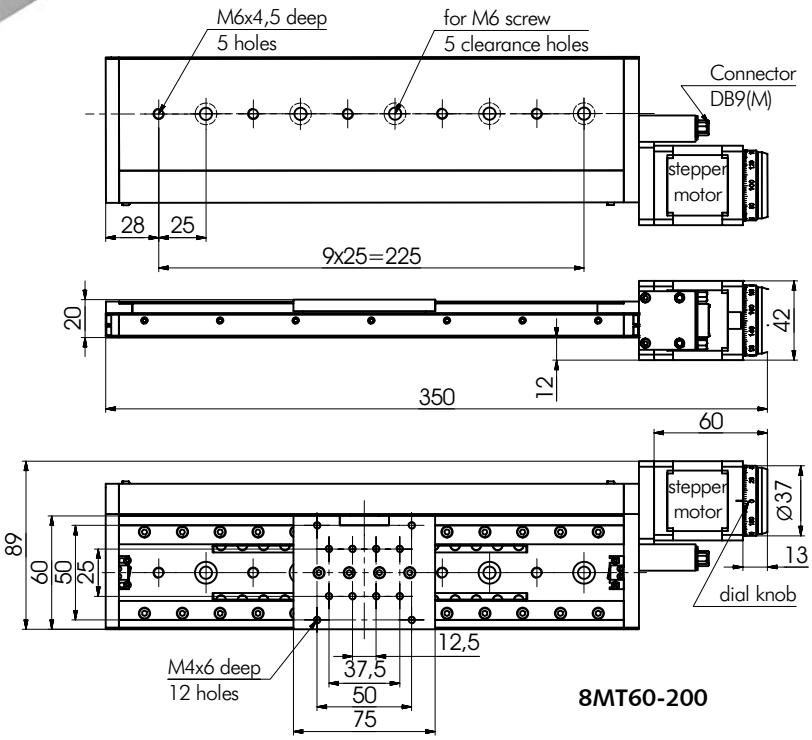
- **Ultra low profile and compact design**
- **Main body made of stainless steel**
- **Available vacuum version (8MT60V-200-VSS42)**

Low profile motorized stage 8MT60-200-4247 designed to minimize height of the system. Optimizing dimensions of entire assembly – height from base up to the top of the moving platform is 20 mm.

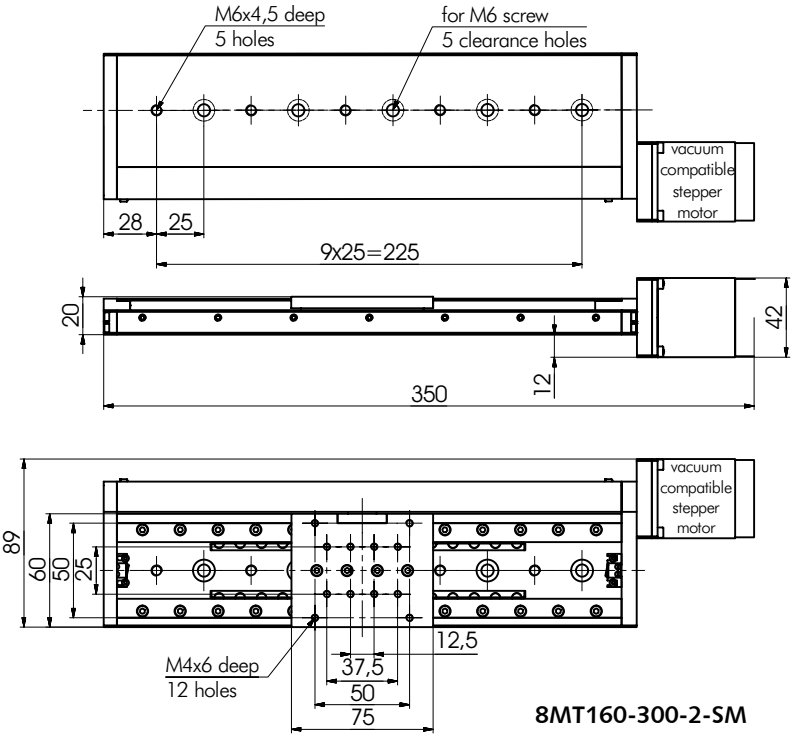
Main body is made of stainless steel that guarantees possibility to achieve maximum stability of automatic system during operation.

Low profile motorized stage 8MT60-200 is perfectly suitable for vacuum application. We offer primary vacuum (up to 10^{-3} torr) solution or motorized system for high vacuum (up to 10^{-6} torr). High vacuum includes: vacuum motors, special cleaning and packing.

We recommend to use our **8SMC4-USB universal controller** for better performance of automatic system.



8MT60-200



8MT160-300-2-SM

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Fax: +370-5-2651483
Phone: +370-5-2651474

SPECIFICATIONS	8MT60-200-4247	8MT60V-200-VSS42
Travel range	200 mm	
Resolution in full step	2.5 μm	
Lead screw pitch	0.5 mm	
Bidirectional repeatability	On-request	
Unidirectional repeatability	On-request	
Absolute On-axis accuracy	On-request	
Pitch	On-request	
Yaw	On-request	
Backlash	On-request	
Maximal speed	10 mm/s	5 mm/s
Horizontal load capacity	8 kg	
Vertical load capacity	3 kg	
Moving platform dimensions	75x60 mm	
Base material	Stainless steel/Aluminum	Stainless steel
Finish	Uncoated/White anodized	Uncoated
Stepper motor	4247	VSS42
Environment pressure	Atmosphere (10^{-3} torr on request)	10^{-6} torr
DC motor	On-request	
Connector	DB9(M)	HDB15(M)
Limit Switches	2 Mechanical	
Switch polarity	Pushed is closed	
Measurement system	Metric	
Weight	1.9 kg	
Base plate	3BP60-A	3BP60V-A
XY configuration	2CP60	2CP60V
Z configuration	2AB60	2AB60V
Cable	1.6 m	
Recommended controllers	8SMC4-USB	
Recommended power supply	PS36-3.4-4	

ORDERING INFORMATION

2AB60	Angle bracket for Z assembly
2AB60V	Angle bracket for Z assembly in vacuum
2CP60	Connecting plate to assemble 2 stages in XY configuration
2CP60V	Connecting plate to assemble 2 stages in XY configuration in vacuum
3BP60-A	Base plate to fix stage on optical table
3BP60V-A	Base plate to fix stage on optical table in vacuum
8MT60-200-4247	Regular stage
8MT60-200-4247-XY	XY assembly
8MT60-200-4247-XYZ	XYZ assembly
8MT60V-200-VSS42	Stage for vacuum
8MT60V-200-VSS42-XY	XY assembly for vacuum
8MT60V-200-VSS42-XYZ	XYZ assembly for vacuum

Recommended Power Supply and Controller

more info on **www.standa.lt**

Stepper/DC Motor Controller
with **USB Interface**

2 axis Controller in box
8SMC4-USB-B9-2

Assembly kit
5AK-B9-B9

Assembly kit to fix two
or more controller boxes together

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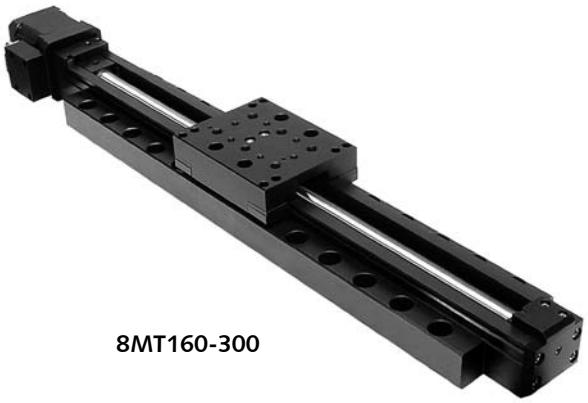
Motorized Delay Line

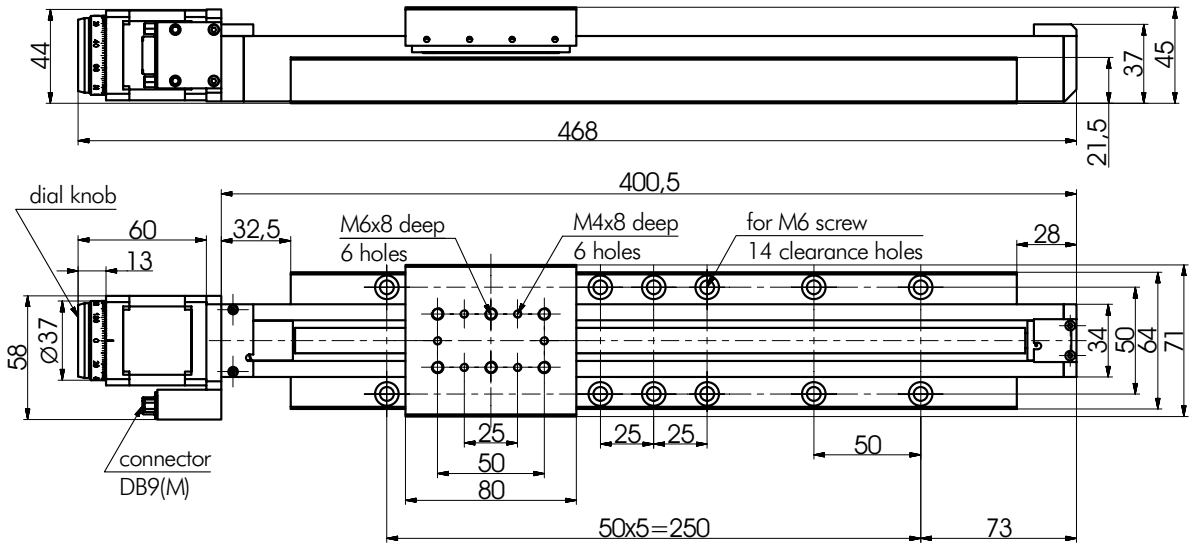
8MT160-300



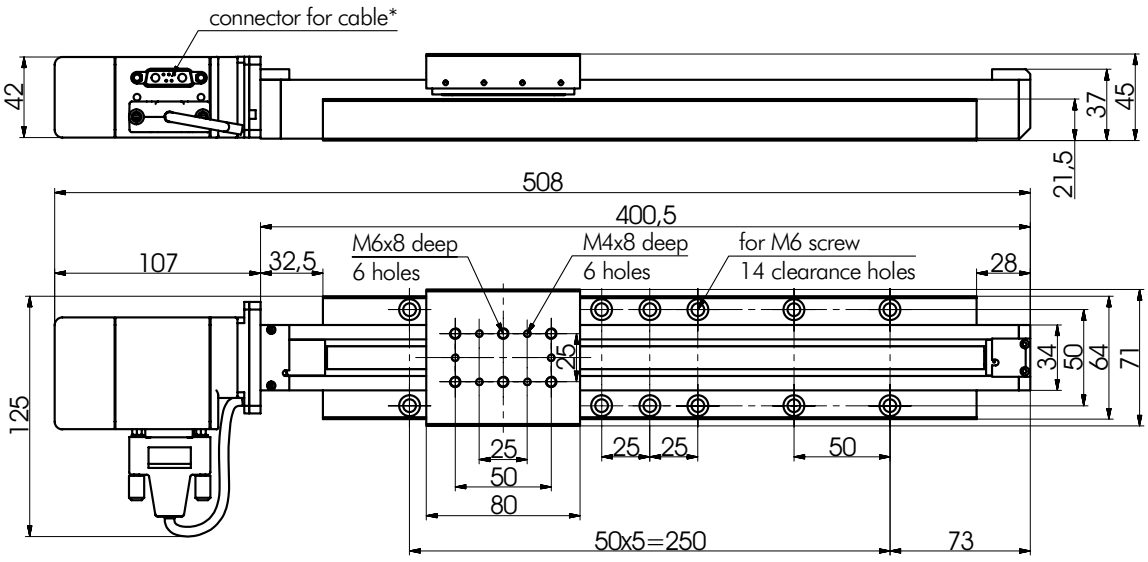
8MT160-300

- **Travel range 300 mm**
- **2.5 μm nominal resolution**
- **Steel rail design. Stability and rigidity ensured**
- **Recirculating ball modules are incorporated in the platform**
- **Stepper motor with 200 steps per revolution**
- **Vacuum version available**

Motorized Delay Line 8MT160-300 provides precision path delays of up to **300 mm**. Driven by a stepper motor with integrated limit switches, the motorized delay line offers a **high-resolution delay** of **2.5 μm**. The main feature of this delay line are its high-stability, compact and monolithic design as well as high resolution which makes the device ideal for integration in high precision measurement systems. Such delay line is in great demand in laboratories for precision optical path length control or other experiments (spectrum analysis, interferometry, etc.). Motorized delay line can be controlled manually by means of dial knob with increments located on the end of the stage. This device also could be considered as a long travel (300 mm) **motorized translation stage**. Resolution could be improved by means of steps division in motor using our up-to-date stepper motor controllers.



8MT160-300



8MT160-300-2-SM

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e-mail: sales@standa.lt
Fax: +370-5-2651483
Phone: +370-5-2651474

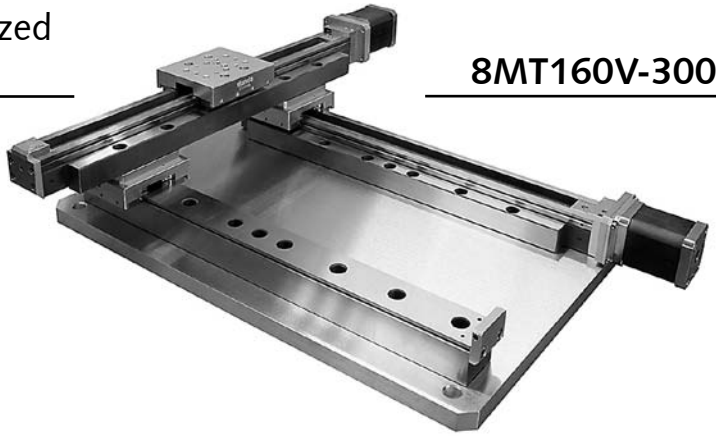
SPECIFICATIONS	8MT160-300	8MT160-300-2-SM
Travel range, mm	300	300
Resolution in full step, μm	2.5	-
in 1/8 step, μm	0.31	-
Encoder resolution, counts/rev.	-	4000
Lead screw pitch, mm	0.5	2
Maximum speed, mm/s	8*	50
Minimal incremental motion, μm	-	0.5
Load capacity		
Horizontal, kg	10	10
Vertical, kg	3	3
Limit switches	2 pc mechanical	2 pc mechanical
Supply voltage, V	36	36
Motor connector	DB9(M)	RS232
Motor	4247	SM
Weight, kg	4.28	4.55
Recommended controllers	8SMC4-USB	PC

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

Vacuum Compatible Motorized XY Linear Translation Stage

8MT160V-300XY

- **Travel range 300x300 mm**
- **Stainless steel rail design**
- **Stability and rigidity ensured**
- **Recirculating ball modules are incorporated in the platform**



Motorized Translation Stage

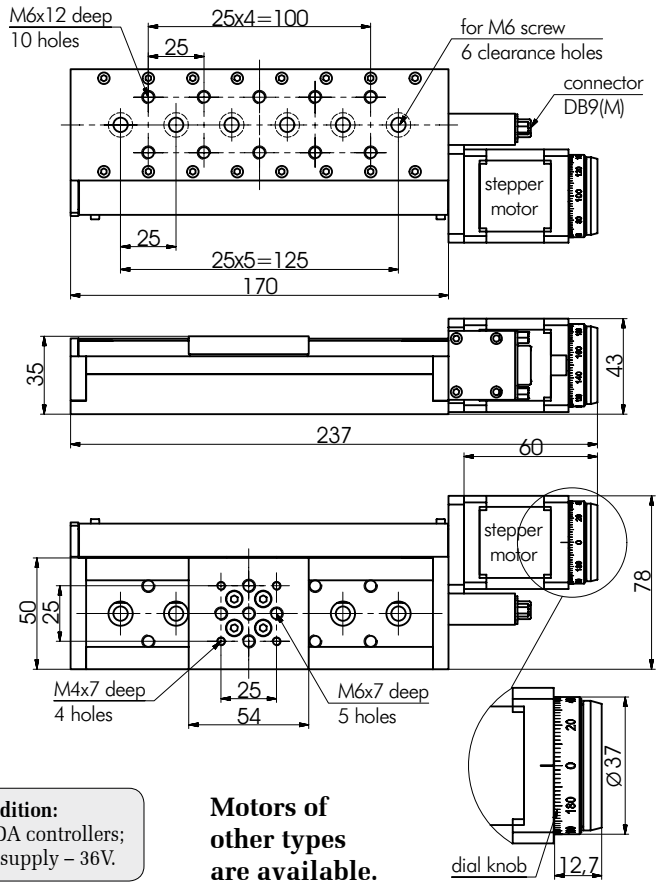
8MT193-100

Short stage, Great travel!

SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 μm
in 1/8 step*	0.31 μm
Max. speed*	10 mm/s
on request we fit alternative motors	
Load capacity	
Horizontal	8 kg
Vertical	3 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	1.3 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.



Motors of other types are available.

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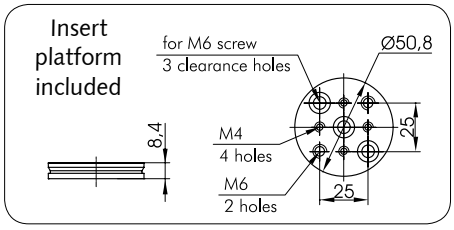
Motorized Translation Stages

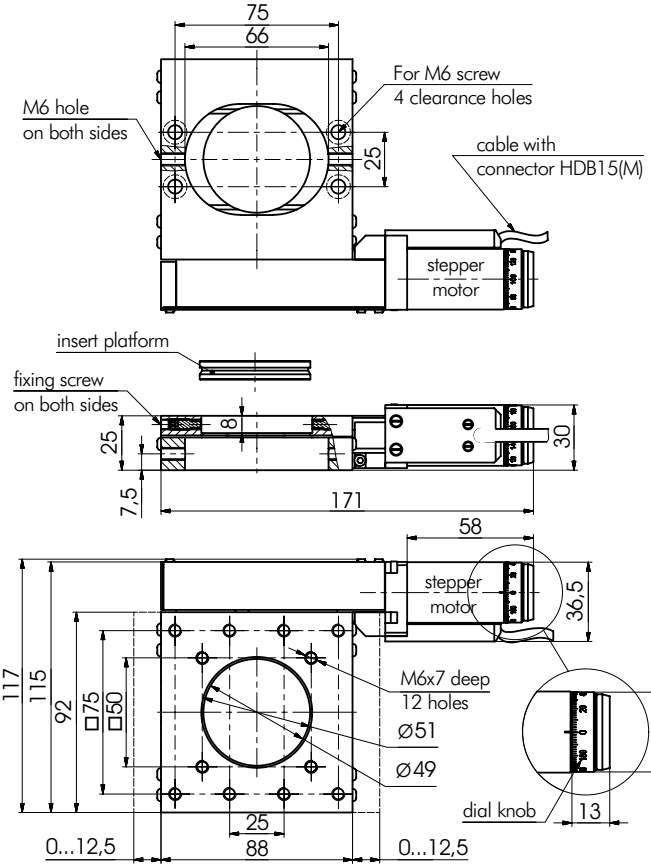
8MT167-25BS1
8MT167-25LS

8MT167-25BS1/8MT167-25LS

8MT167-25BS1, unlike the **8MT167-25LS**, is designed for **high-speed movement**. Used ball bearing lead screw makes movement fast and smooth.

The positioner also can be used with microscope on XY axles. As shown in the pictures, the upper plate has a removable insert in the center, the size of which is 2 inches, the base plate is made with slot size of 51 x 76 mm, on the same vertical.



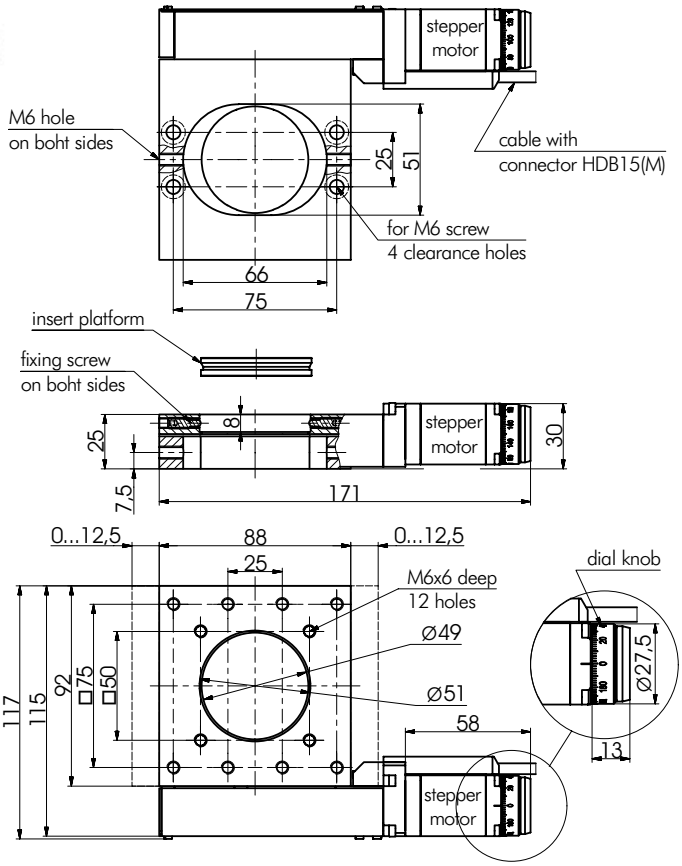


Motorized Translation Stages

8MT167M-25BS1
8MT167M-25LS

8MT167M-25BS1/8MT167M-25LS

"Mirror" version of **8MT167-25BS1** *and* **8MT167-25LS**



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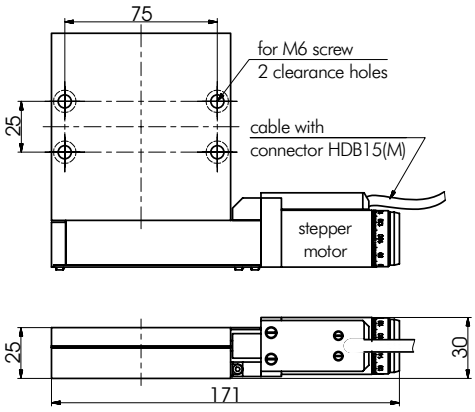
Motorized Translation Stages

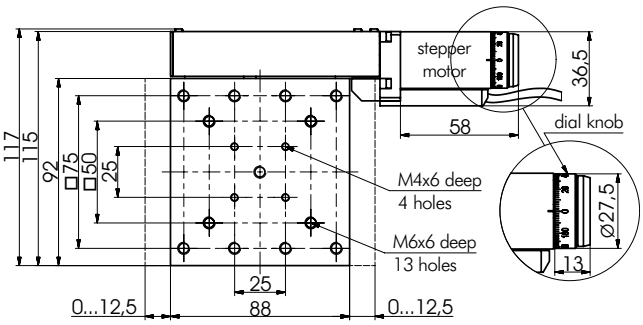
8MT167S-25BS1
8MT167S-25LS

new



8MT167S-25BS1/8MT167S-25LS

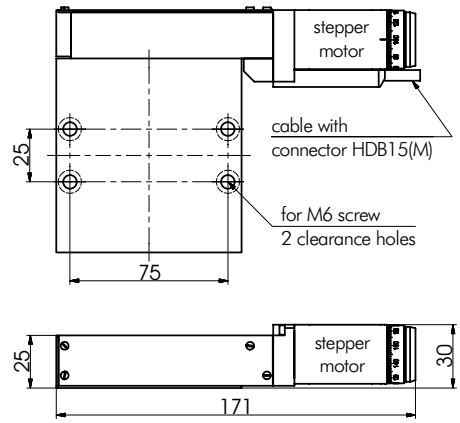
8MT167S-25 models are made with solid platform. **8MT167S-25BS1**, unlike the **8MT167S-25LS**, is designed for **high-speed movement**. Used ball bearing lead screw makes movement fast and smooth.



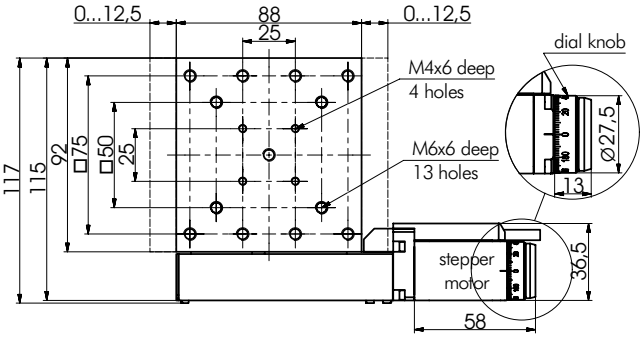
Motorized Translation Stages

8MT167MS-25BS1
8MT167MS-25LS

new



8MT167MS-25BS1/8MT167MS-25LS



"Mirror" version
of
8MT167S-25BS1
and
8MT167S-25LS

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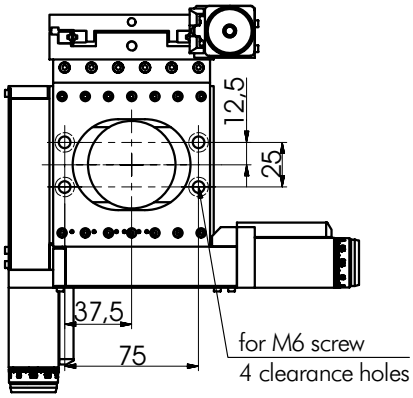
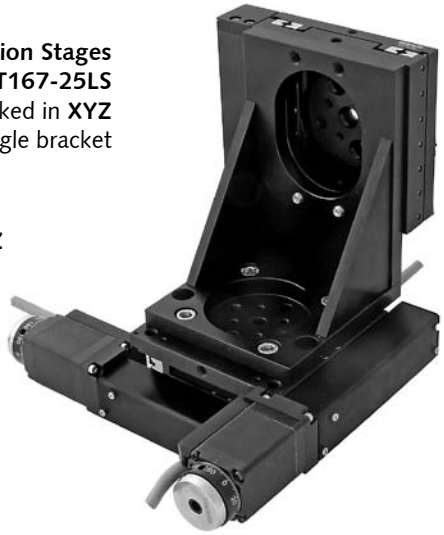
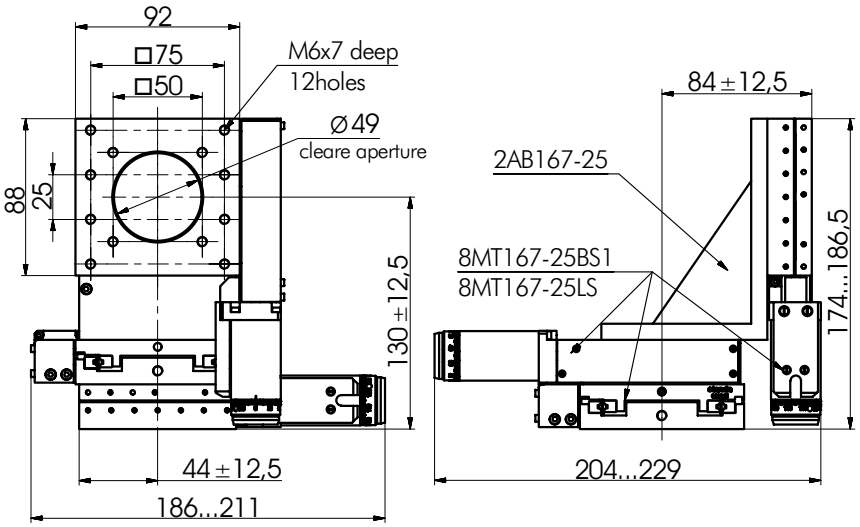


Motorized Translation Stages
8MT167-25BS1 or **8MT167-25LS**
stacked in **XYZ**
using **2AB167-25** angle bracket

8MT167-25BS1XYZ
8MT167-25LSXYZ





Angle Bracket
2AB167-25

SPECIFICATIONS	**8MT167-25BS1** **8MT167S-25BS1**	**8MT167-25LS** **8MT167S-25LS**
Travel range, mm	25	25
Resolution in full step, μm	5	1.25
in 1/8 step, μm	0.625	0.156
Ball screw pitch, mm	1	–
Lead screw pitch, mm	–	0.25
Repeatability, μm	1.5	1
Maximum speed, mm/s	25	6
Maximum load capacity		
Horizontal, kg	30	30
Vertical, kg	7	7
Limit switches	2 pc mechanical	
Type of actuator	–	–
Cable	1.6 m length	1.6 m length
Motor connector	HDB15(M)	HDB15(M)
Stepper motor	28	28
Weight, kg	0.8	0.8

Recommended Power Supply and Controller

more info on **www.standa.lt**

Stepper / DC Motor Controller
with **USB Interface**

2 axis Controller in box
8SMC4-USB-B9-2

Assembly kit
5AK-B9-B9

Assembly kit to fix two
or more controller boxes together

Motorized Translation Stages

8MT167-100

Motorized translation stages series 8MT167-100 and **8MT167S-100** is designed to have a low profile large platform with high stability. The large platform also provides more space for mounting optical elements and other equipment.

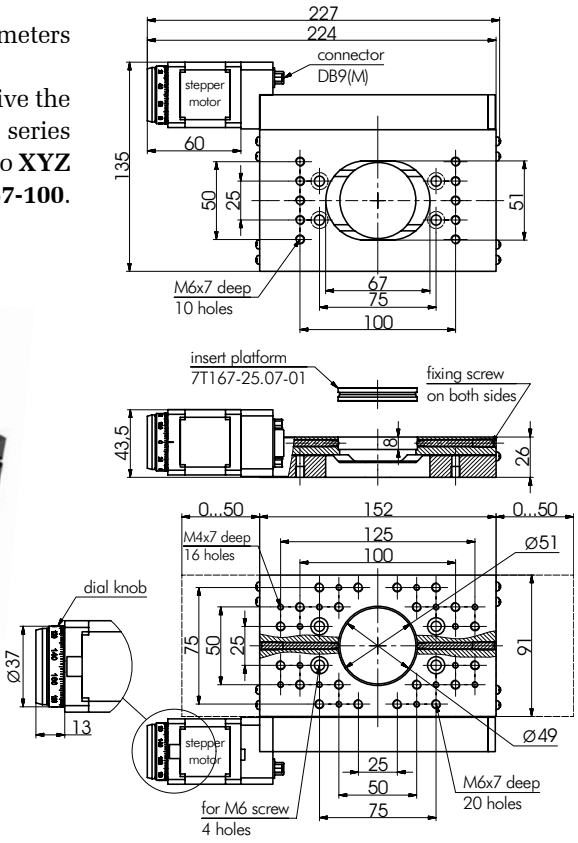
8MT167S-100 models are made with solid platform.

Movement is produced by stepper or DC motor through reduction gear and lead screw. Reduction gear provides better resolution compared to direct drive stages.

Each unit is supplied with specification of electrical parameters and connection diagram of the motor.

We offer a range of stepper and DC motor controllers to drive the stages, see page 8-24. To assemble stages of **8MT167-100** series into **XY** use connecting plate **2CP167-100**. To assemble into **XYZ** use connecting plate **2CP167-100** and angle bracket **2AB167-100**.

8MT167-100

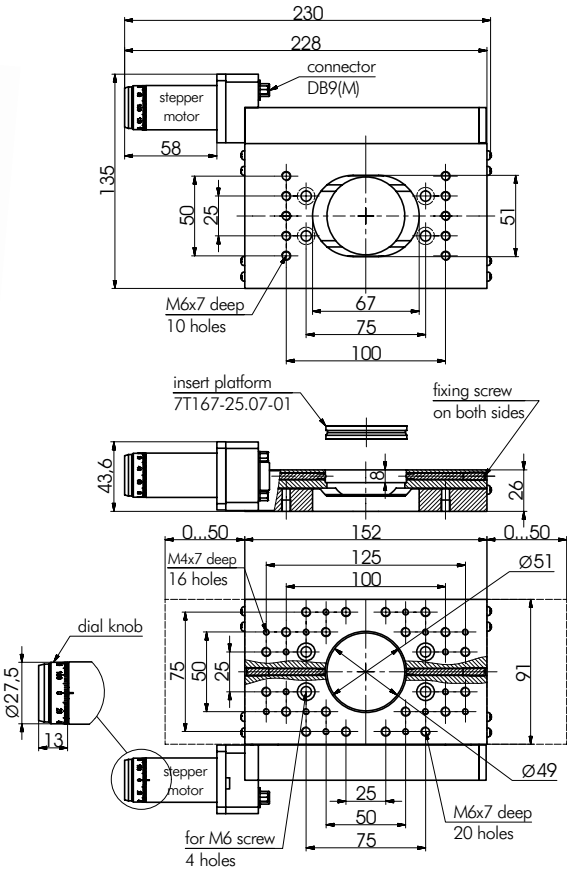


Motorized Translation Stage 8MT167-100 with stepper motor **4247**.

Motorized Translation Stage

8MT167-100C28

8MT167-100C28



Motorized Translation Stage 8MT167-100C28 with stepper motor **28** with connector DB9(M) on motor itself.

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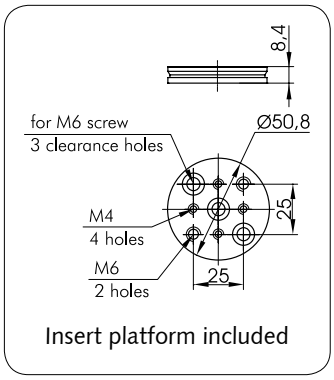
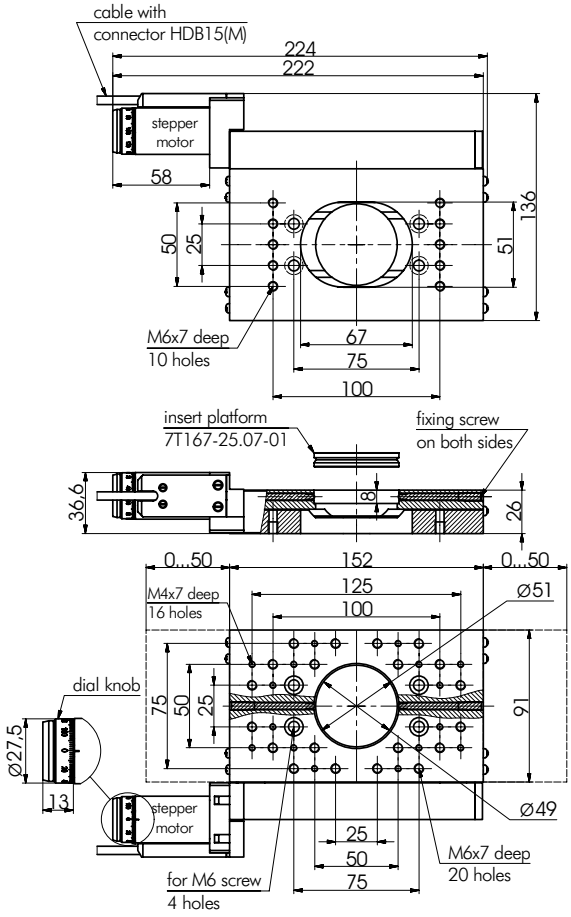
Motorized Translation Stage — 8MT167-100-28

8MT167-100-28

Motorized Translation Stage 8MT167-100-28 with stepper motor **28**.



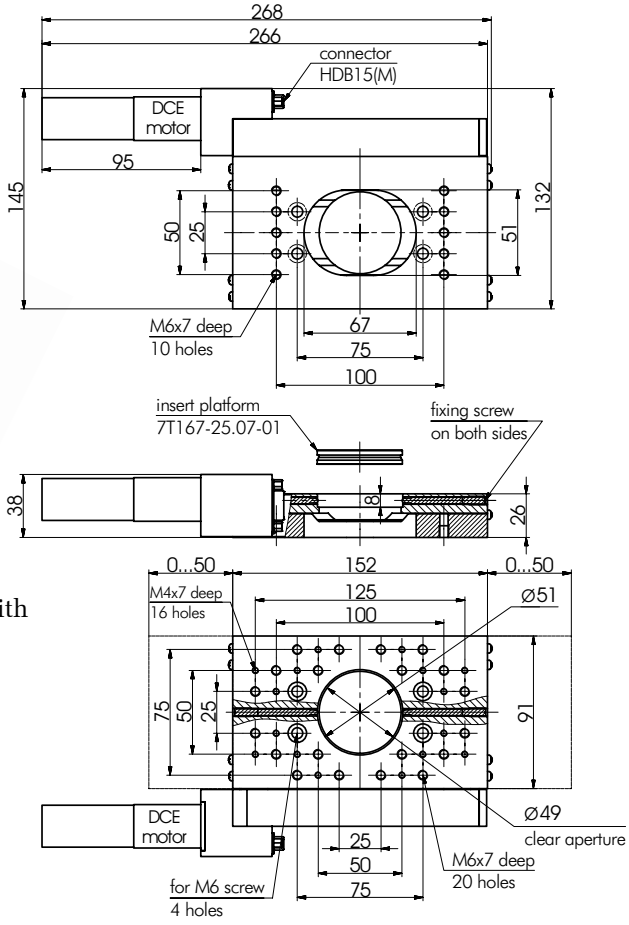
Insert platform included



Motorized Translation Stage (DC motor) — 8MT167-100DCE2

8MT167-100DCE2

Motorized Translation Stage 8MT167-100DCE2 with DC motor **DCE RE25**.



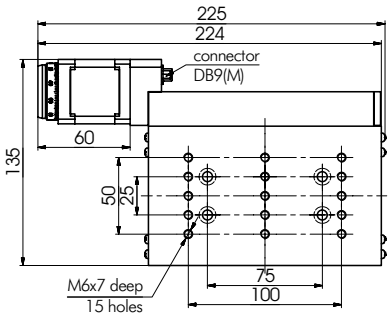
Motorized Translation Stages

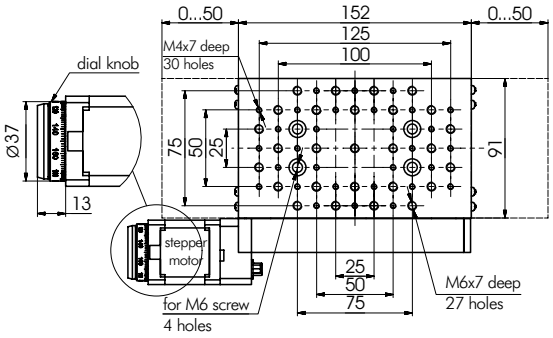
8MT167S-100

8MT167S-100 models are made with solid platform

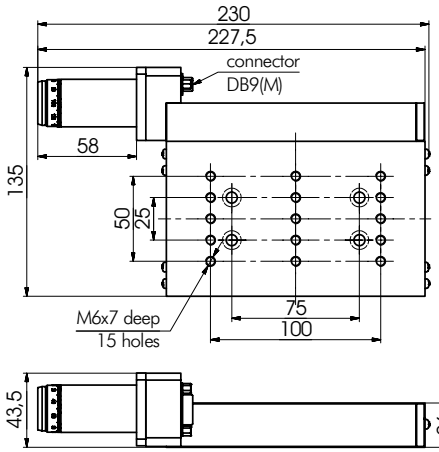
new

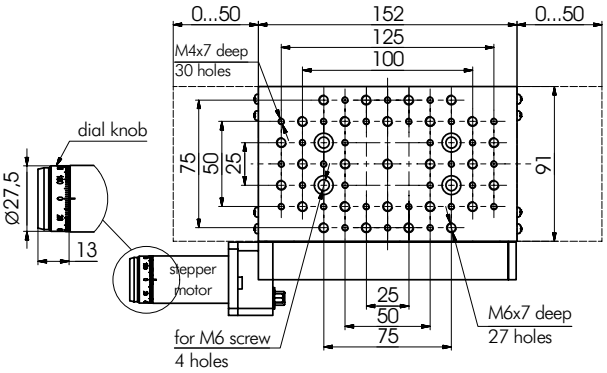
8MT167S-100



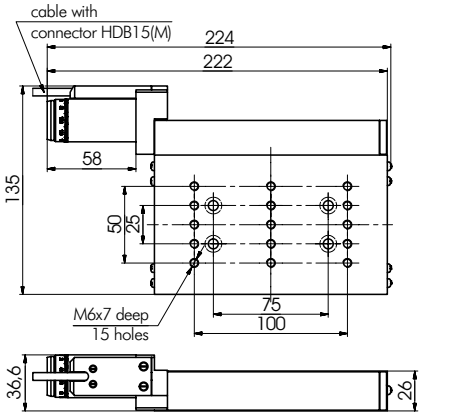


8MT167S-100

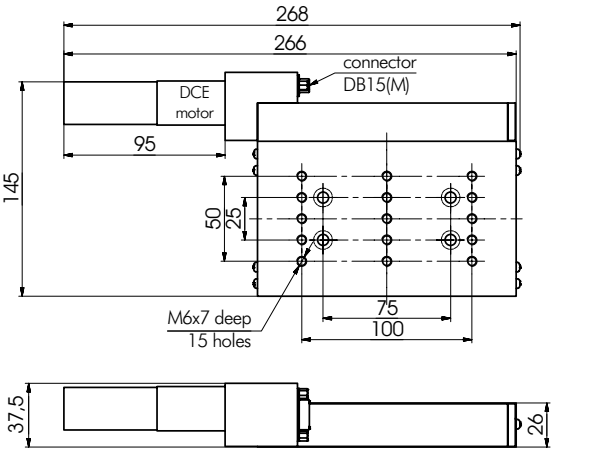


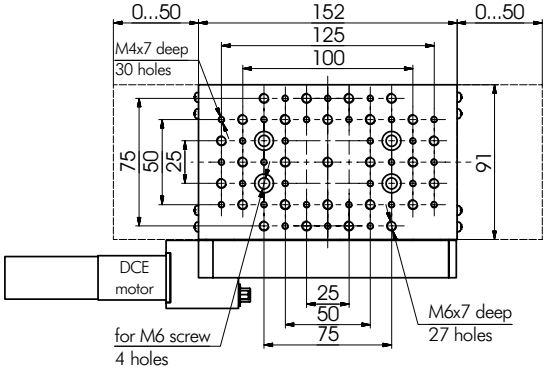


8MT167S-100C28



8MT167S-100-28





8MT167S-100DCE

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SPECIFICATIONS	8MT167-100 8MT167S-100	8MT167-100C28 8MT167S-100C28	8MT167-100-28 8MT167S-100-28	8MT167-100DCE2 8MT167S-100DCE2
Travel range, mm	100	100	100	100
Resolution in full step, μm	1	1	1	–
in 1/8 step, μm	0.125	0.125	0.125	–
Lead screw pitch, mm	0.5	0.5	0.5	0.5
Reduction motor/screw	2.5:1	2.5:1	2.5:1	11:1
Bi-direction repeatability, μm	2	2	2	0.8
Minimal incremental motion, μm	–	–	–	0.2
Resolution (calculated), μm	–	–	–	0.023
Maximum speed, mm/s	5	5	5	5.5
Maximum load capacity				
Horizontal, kg	7	7	7	7
Vertical, kg	3	3	3	3
Limit switches	2 pc mechanical			
Cable	1.6 m length			
Motor connector	DB9(M)	DB9(M)	HDB15(M)	HDB15(M)
Stepper motor	4247	28	28	–
DC motor	–	–	–	DCE RE25
Weight, kg	1.4	1.4	1.4	1.5

8MT167-100XYZ

To stack the **8MT167** stages in **X-Y-Z** coordinates you need a connecting plate **2CP167-100** and an angle bracket **2AB167-50**.

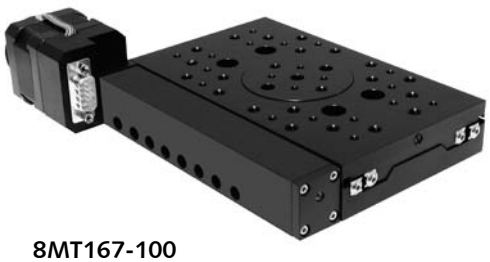
Motorized Stages of Higher Speed available on request

Motors of other types are available

Recommended Controller

Three Axis Stepper/DC Motor Controller 8SMC4-USB-B8-B9 with **Power Supply**

8MT167-100DCE2



8MT167-100

more info on **www.standa.lt**

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Motorized Translation Stage

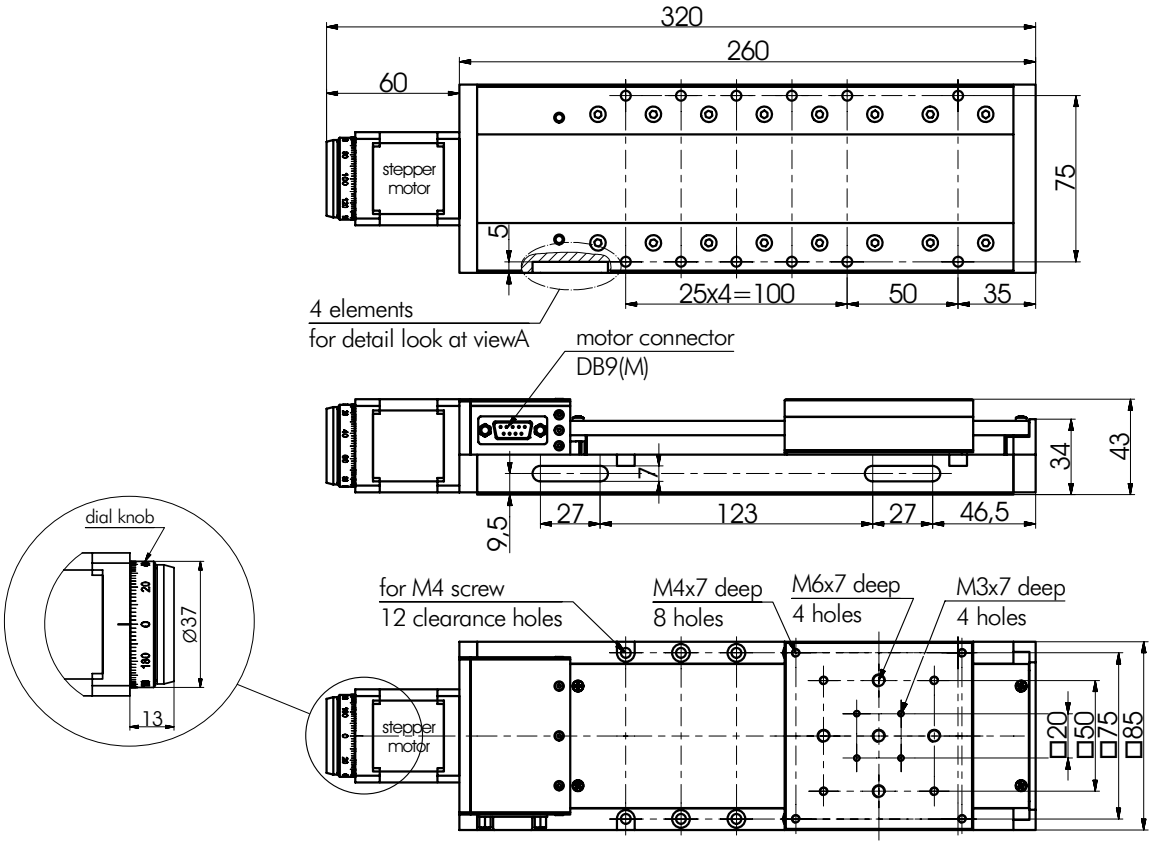
8MT200-100

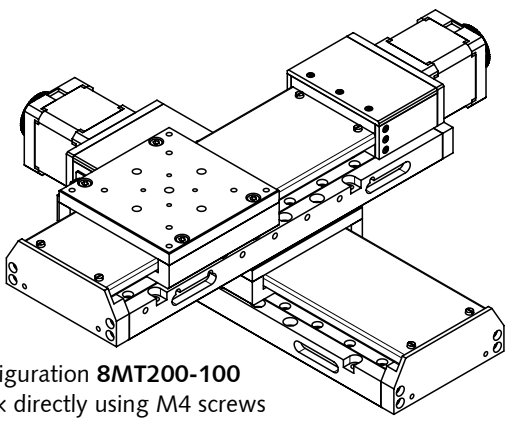
SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 μm
in 1/8 step*	0.31 μm
Max. speed*	10 mm/s
on request we fit alternative motors	
Load capacity	
Horizontal	40 kg
Vertical	6 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	2.2 kg

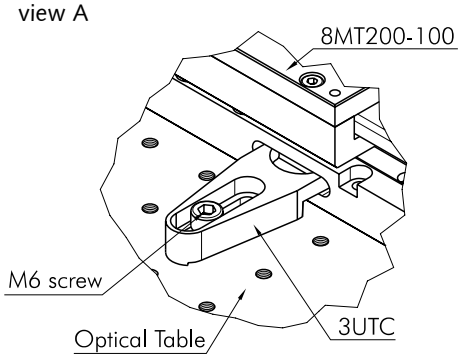
***Test condition:**
- STANDA controllers;
- Power supply – 36V.

Motors of other types are available





In X-Y configuration **8MT200-100** stages stack directly using M4 screws



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Motorized Translation Stage with SM system

8MT200-100SM

SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Encoder resolution counts/rev	4000
Minimal incremental motion	0.125 μm
Max. speed	25 mm/s
Load capacity	
Horizontal	40 kg
Vertical	6 kg
Cable*	2 m
Motor	SM
Weight	2.5 kg

The **SM system** is a complete, compact and user-friendly integrated control system that features a brushless DC servo motor, motion controller, encoder and amplifier.

It is a decentralized drive system. It is a fully integrated motor system that includes a Brushless D.C. Servo-Motor (BLDC), Motion Controller, Drive-Electronics, Position Feedback Encoder and Fully Programmable Points of I/O (Inputs/Outputs). All these components are placed inside one integral frame or housing.

Each decentralized drive system is fully programmable as a stand-alone system or as part of a network fieldbus - Profibus, DeviceNet or RS232, RS485.

The integration of motor, controller and drive reduces complexity in an application and significantly increases reliability. The command set and firmware enables the **SM system** to perform a wide range of motion controls, arithmetic and conditional logic functions. The unit is a highly capable, stand-alone, complete motion control system that is easy to implement and use.

The **SM system** has more features than most full-size controls:

- Brushless DC servo motor
- S-232 & RS-485
- Stand alone capability
- Torque to 2000+ oz. in. / 15 NM
- Network up to 100 Servida Motors
- 4kHz PID
- Speeds 0 - 10,000 RPM
- Expandable and programmable I/O expandable to 800 inputs and 800 outputs
- CE marked & UL registered
- On-the-fly parameter changes
- Position Mode
- Velocity Mode
- Torque Mode
- Infinite Ratio Gearing
- Electronic Gearing/ Following Mode
- Step & Direction Mode
- Limit switch inputs
- Closed loop on external encoder
- Single voltage input
- Standard NEMA mount
- 32k user EEPROM
- Software current limit
- Thermal protection
- Easy Windows Software
- Contouring mode from host PC

*__Cable__ supplied with **8MT200-100SM** consists of power cable and RS232 communication cable and includes connector to computer RS232 (DSUB9), connector to motor (DSUB 7W2) and power connector (SOCKET DC 2.1/5.5 mm for Cable).

8MT200-100SM consists of DC servo motor, motion controller, encoder and amplifier.

Requires only POWER SUPPLY!!!

Power supply PS36-3.4-4
36 V; 3.34 A
167 x 65 x 37 mm*
640 g
Mini-DIN male 4-pin power connector
*Dimensions are subject to changes without advance notice.

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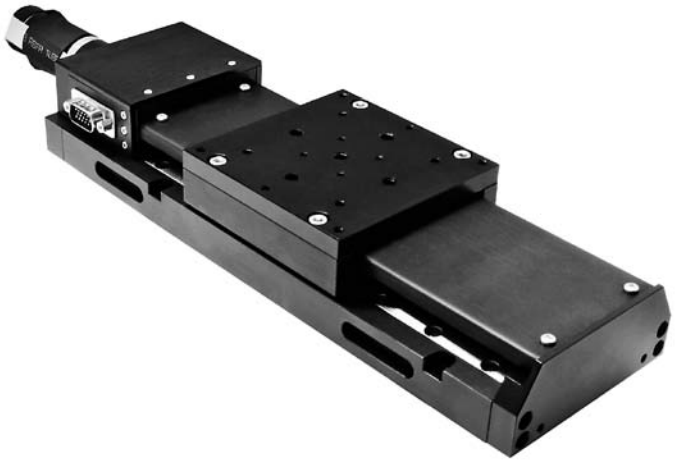
Motorized Translation Stage with DC motor

8MT200-100DCE



SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution	0.028 μm
Minimal incremental motion	0.2 μm
Max. speed	13 mm/s
Load capacity	
Horizontal	30 kg
Vertical	5 kg
Motor connector	HDB15(M)
DC motor	DCE RE25
Weight	2.2 kg

ORDERING INFORMATION

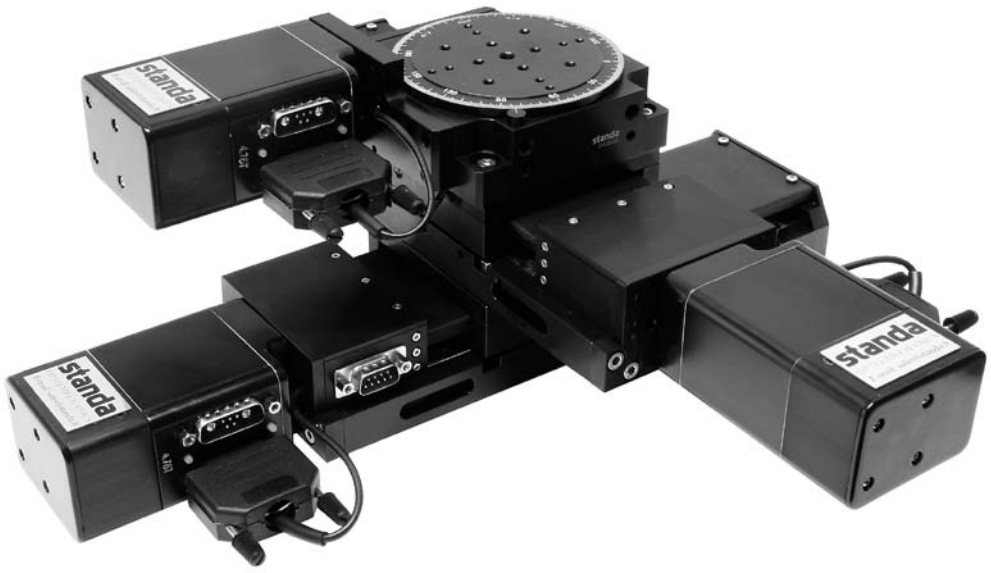
8MT200-100	Motorized Translation Stage with stepper motor **4247**
8MT200-100DCE	Motorized Translation Stage with **DC motor DCE336548**
8MT200-100SM	Motorized Translation Stage with **SM system**

8MT200-100SM-XY-8MR191-SM

3 Axis Motorized Translation-Rotation System

SPECIFICATIONS

Translation xy	100x100 mm
	8MT200-100SMXY
Rotation z	360°
	8MR191-SM
Load capacity	5 kg on rotation stage



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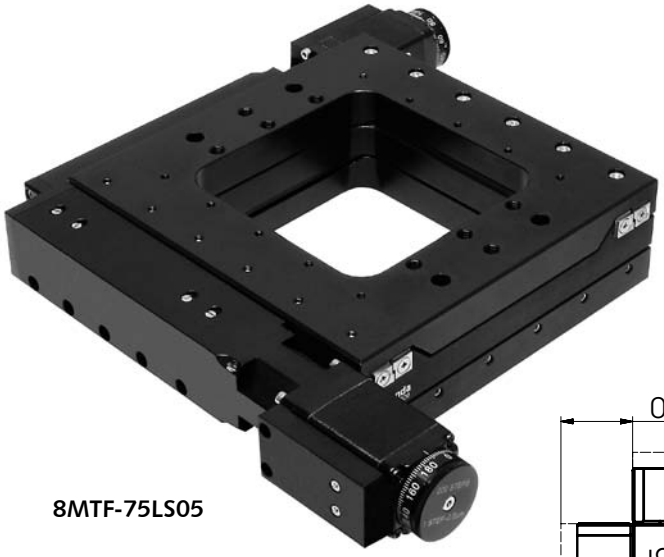
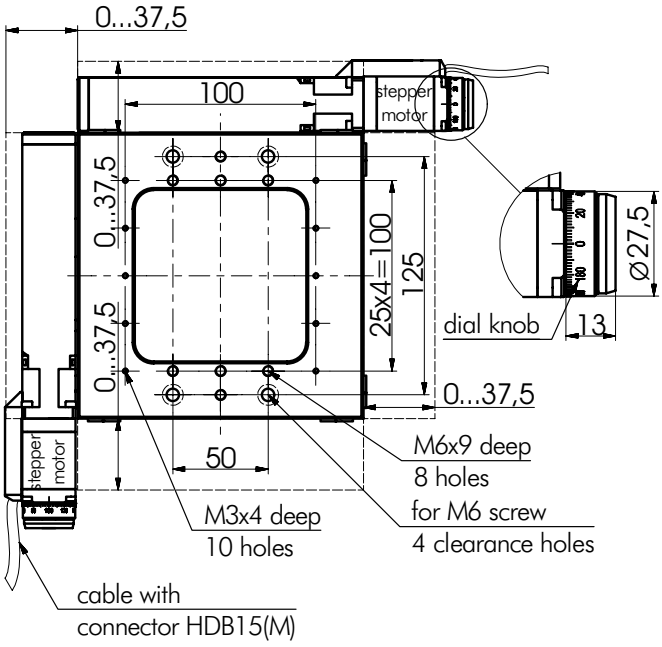
Motorized XY Scanning Stage

8MTF

- **Travel range 75x75 mm (3") or 102x102 mm (4")**
- **Accepts linear encoders**
- **RS232 and USB controll**
- **For image analysys**
- **Suitable for most major brand Microscopes and Macroviewers**
- **Custom support brackets available for various microscope types**

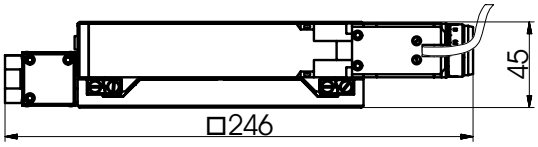


8MTF-75LS05



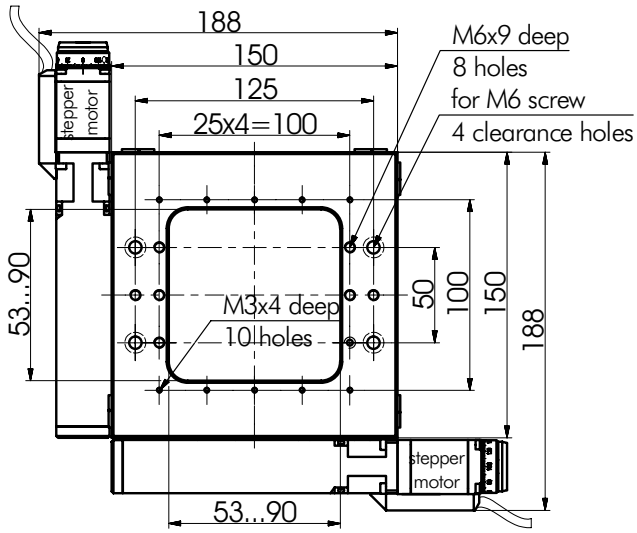
Stepper/DC Motor Controller with **USB Interface**

8SMC4-USB-B9-2
2 axis Controller in box



Assembly kit to fix two or more controller boxes together

5AK-B9-B9
Assembly kit



8MTF-75LS05

more info on
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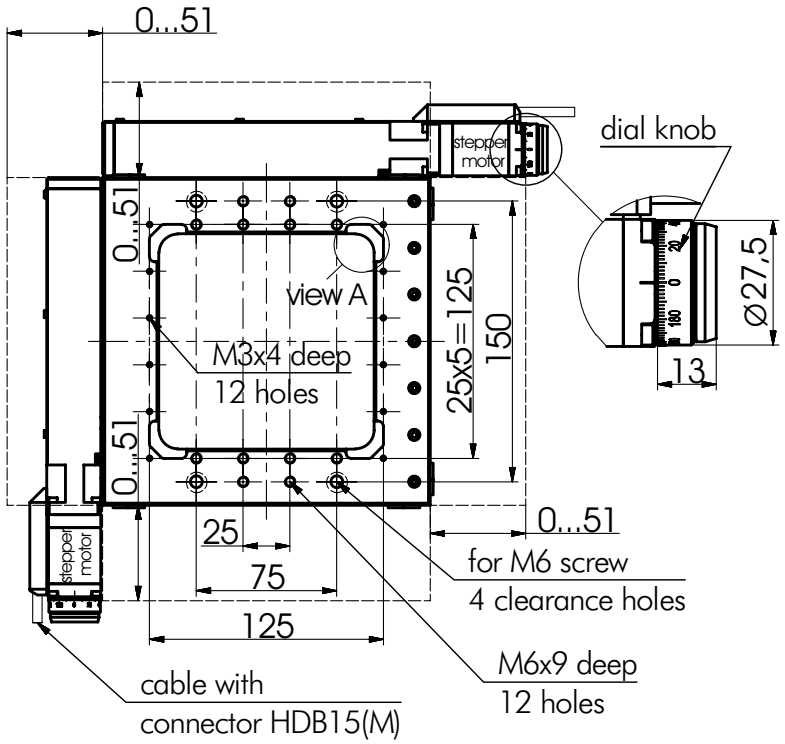
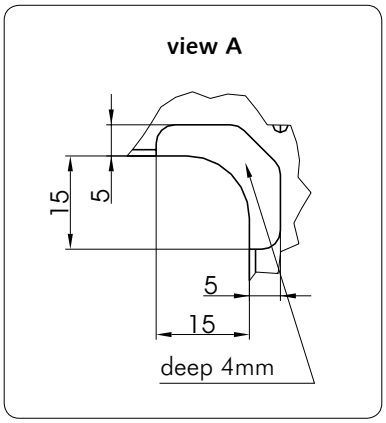
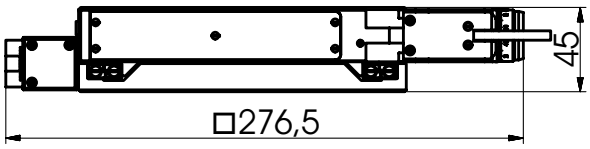
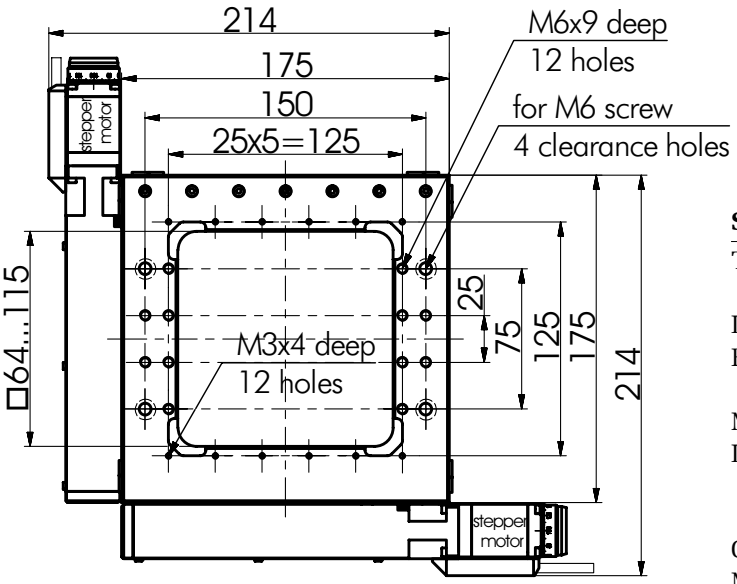




Joystick developed for manual control of one or two-axis all Stepper motor equipped motorized stages

8JXY-03
Joystick for 8SMC4-USB controller





8MTF-102LS05

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

SPECIFICATIONS

Travel range	75x75 mm (3”)
	102x102 mm (4”)
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 μm
in 1/8 step*	0.31 μm
Max. speed*	10 mm/s
Load capacity	
Horizontal	50 kg
Vertical	6 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28

8MTF-200-4247
Low Profile Motorized XY Scanning Stage
Travel range – 200×200 mm

ORDERING INFORMATION

8MTF-75LS05	Travel range 75x75 mm (3”)
8MTF-102LS05	Travel range 102x102 mm (4”)

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Phone: +370-5-2651474 Fax: +370-5-2651483

Long-Travel Motorized Linear Stages

8MT195 series

8MT195X-340-2.5

SPECIFICATIONS

Travel range	340..2840 mm
Ball screw pitch	2.5/4/5/10 mm
Resolution in full step*	12.5 μm
in 1/8 step*	1.57 μm
Max. speed*	40 mm/s
on request we fit alternative motors	
Load capacity	
Horizontal	40 kg
Vertical	10 kg
Motor connector	DB9(M)
Stepper motor	
8MT195X	5918
8MT195Z	5918-B

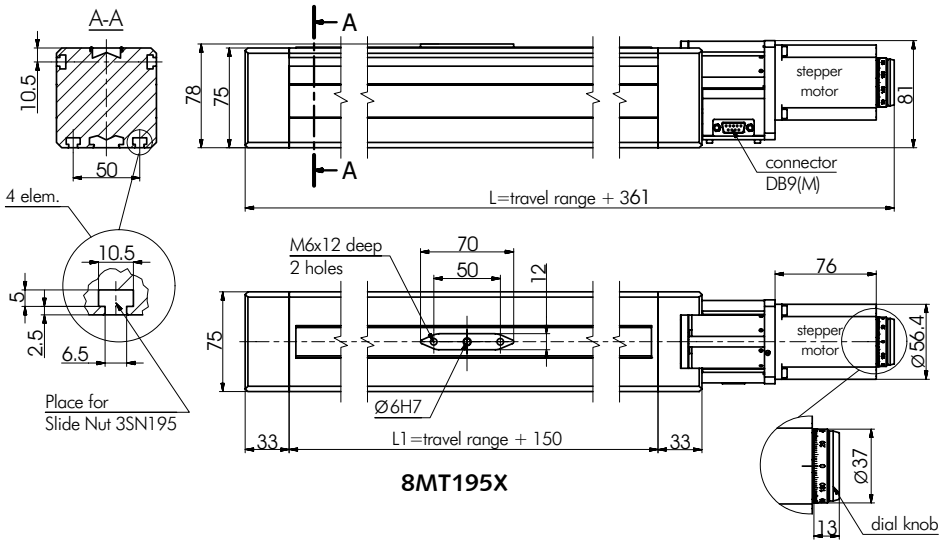
8MT195 series stages are designed to provide **high-speed** movement. Standard motors allow moving loads up to 40 kg. Load capacity can be increased using more powerful motors. This stage provides moderate resolution and accuracy. **8MT195** series stages are supplied equipped with **3P195** platform, **3BP195** bases plates (2 pc) and appropriate amount of **3SN195** inserts.

***Test condition:**
- Ball screw pitch - 2.5 mm
- Stepper motor: 2 phase bipolar wiring; phase resistance 2.4 Ω; 200 steps per revolution; step angle – 1.8°; current – 1.5 A;
- STANDA controllers;
- 36 V.

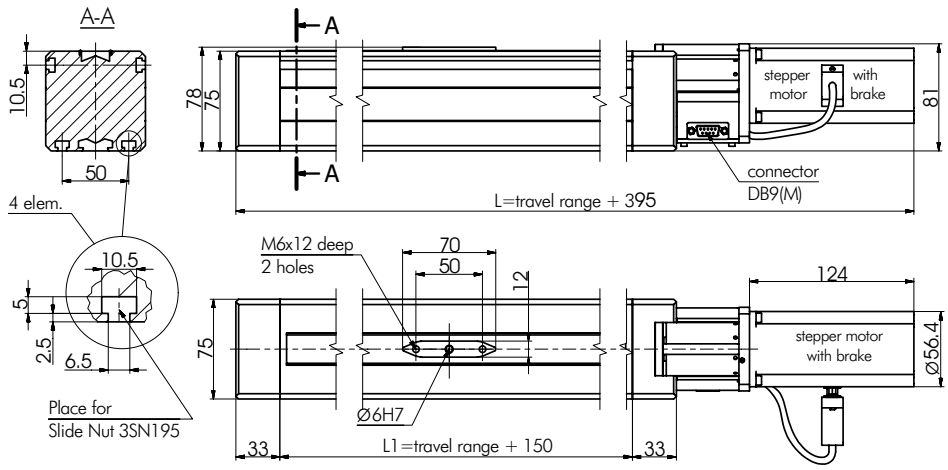
Resolution and **speed** of **8MT195** series stages can be varied choosing appropriate ball screw pitch. Several standard options are available and should be specified upon ordering.

For applications requiring travel over 500 mm we suggest using **8MT295X** series stages (**X**) paired with **8MT195X** series stages (**Y**) to make **XY** assemblies.

For applications requiring vertical **Z** axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of **Z** stages is **8MT195Z**, see ordering information on the **8-35** page.



8MT195X



8MT195Z

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Long-Travel Motorized Linear Stages

8MT295 series

8MT295X-340-5

SPECIFICATIONS

Travel range	340..2840 mm
Ball screw pitch	2.5/4/5/10 mm
Resolution in full step*	12.5 μm
in 1/8 step*	1.57 μm
Max. speed*	40 mm/s
on request we fit alternative motors	
Load capacity	
Horizontal	60 kg
Vertical	10 kg
Motor connector	DB9(M)
Stepper motor	
8MT295X	5918
8MT295Z	5918-B

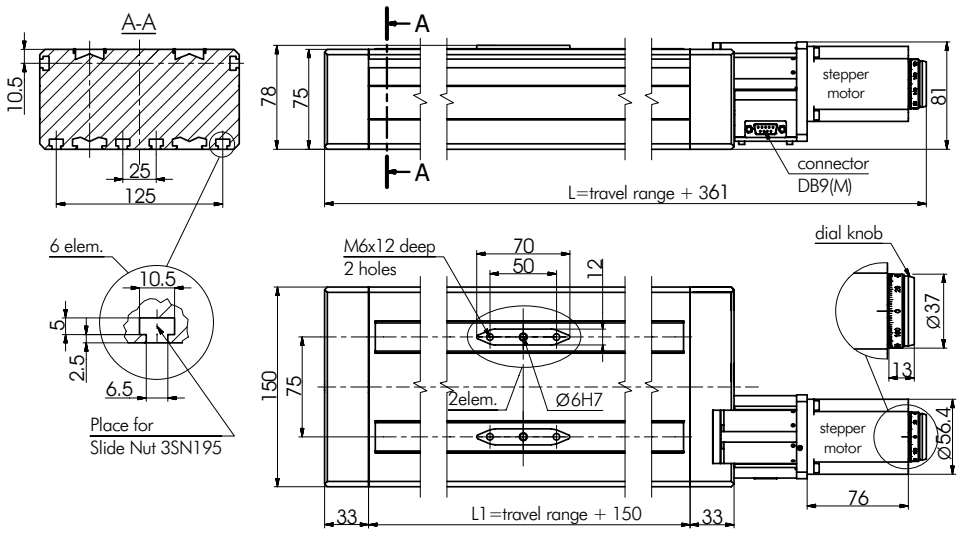
8MT295 series stages are designed to provide **high-speed** movement. Standard motors allow moving loads up to 60 kg. Load capacity can be increased using more powerful motors. This stage provides moderate resolution and accuracy. **8MT295** series stages are supplied equipped with **3P295** platform, **3BP295** bases plates (2 pc) and appropriate amount of **3SN195** inserts.

***Test condition:**

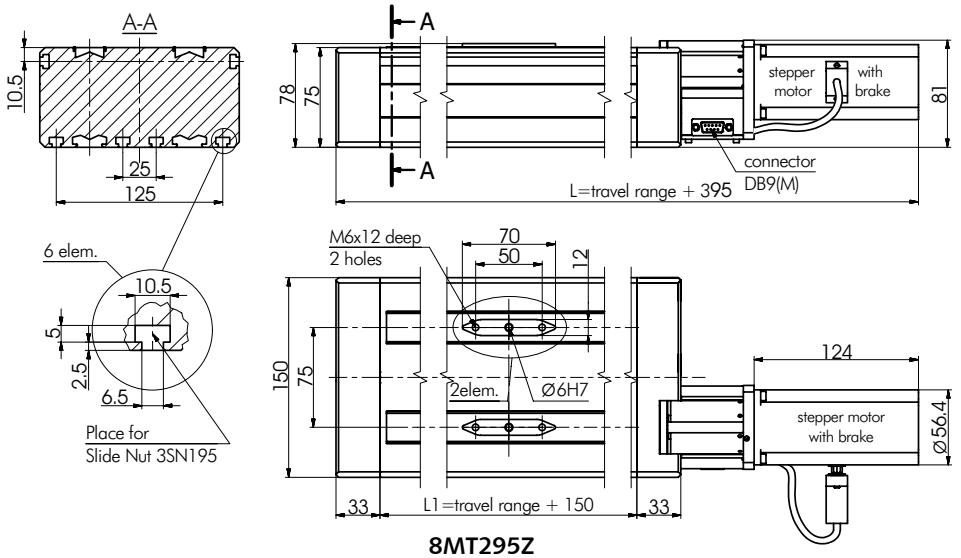
- Ball screw pitch - 2.5 mm
- Stepper motor: 2 phase bipolar wiring; phase resistance 2.4 Ω; 200 steps per revolution; step angle – 1.8°; current – 1.5 A;
- STANDA controllers;
- 36 V.

Resolution and **speed** of **8MT295** series stages can be varied choosing appropriate ball screw pitch. Several standard options are available and should be specified upon ordering.

For applications requiring vertical **Z** axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of **Z** stages is **8MT295Z**, see ordering information on the **8-35** page.



8MT295X



8MT295Z

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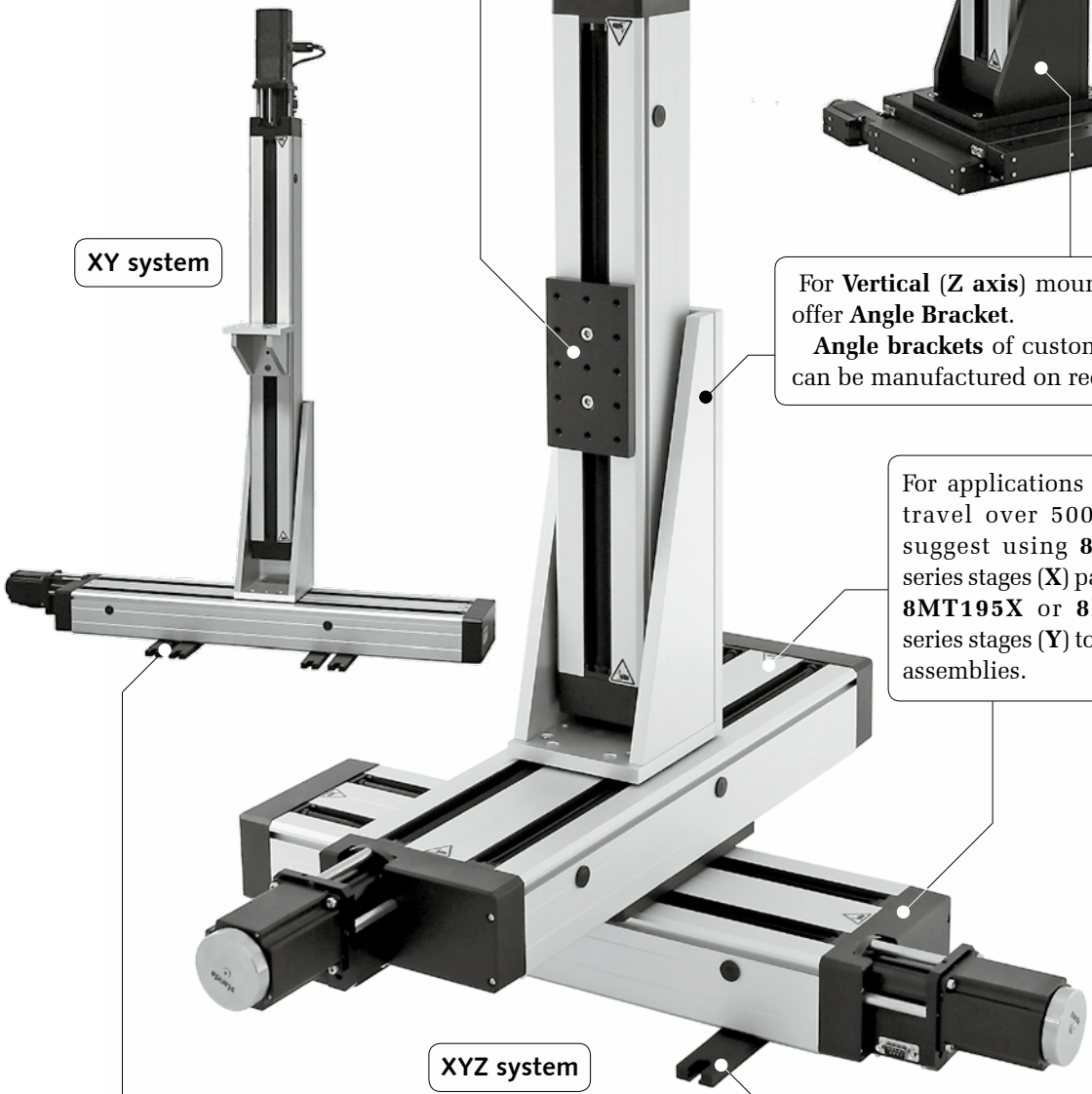
For applications requiring vertical **Z** axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of **Z** stages is **8MT195Z**.

8-0036 system

An **Additional Platforms 3P195** and **3P295** has an array of **M6** holes spaced by **25 mm**.



XY system

For **Vertical** (**Z axis**) mounting we offer **Angle Bracket**.

Angle brackets of custom design can be manufactured on request.

For applications requiring travel over 500 mm we suggest using **8MT295X** series stages (**X**) paired with **8MT195X** or **8MT295X** series stages (**Y**) to make **XY** assemblies.

XYZ system

Base Plates 3P195 and **3P295** are designed to fix translators **8MT195** and **8MT295** series to optical tables and other flat surfaces. **Base Plates** of custom design can be manufactured on request.

ORDERING INFORMATION

8MT**N**95**A**-**TTT**-**P**

Series of Motorized linear stage
8MT**1**95
8MT**2**95

Stage for Horizontal or Vertical movement
X – stage for horizontal movement in X or Y axes
Z – stage for vertical movement in Z axis

Ball screw pitch
2.5/4/5/10 mm

Travel range*
340..2840 mm

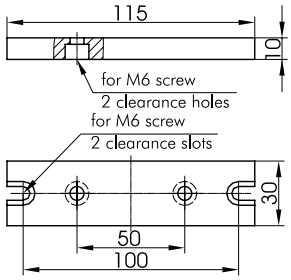
Examples of codes	travel range*	ball screw pitch
8MT195X-**340-2.5**	340 mm	2.5 mm
8MT195Z-**540-4**	540 mm	4 mm
8MT195X-**740-5**	740 mm	5 mm
8MT195Z-**840-10**	840 mm	10 mm
8MT295X-**340-2.5**	340 mm	2.5 mm
8MT295Z-**540-4**	540 mm	4 mm
8MT295X-**740-5**	740 mm	5 mm
8MT295Z-**840-10**	840 mm	10 mm

* - standart travel range with 100 mm-grid space available on request

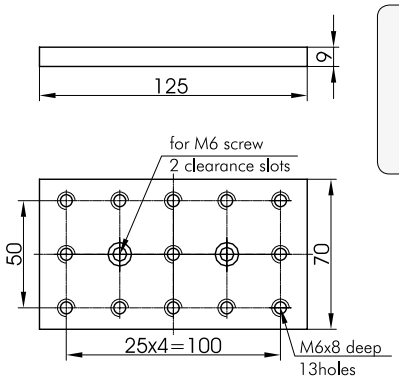
For applications requiring travel over 500 mm we suggest using **8MT295X** series stages (**X**) paired with **8MT195X** series stages (**Y**) to make **XY** assemblies.

For applications requiring vertical **Z** axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of **Z** stages is **8MT195Z**.

ACCESSORIES for 8MT195 series stages



3BP195
Base Plate



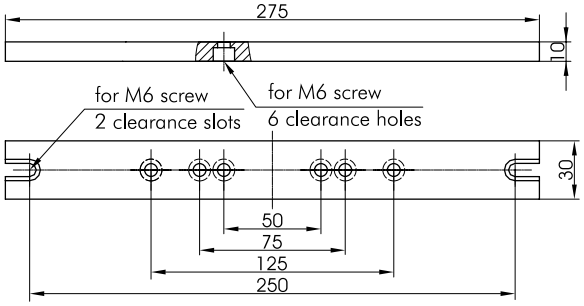
3P195
Platform

Ordering information for accessories**

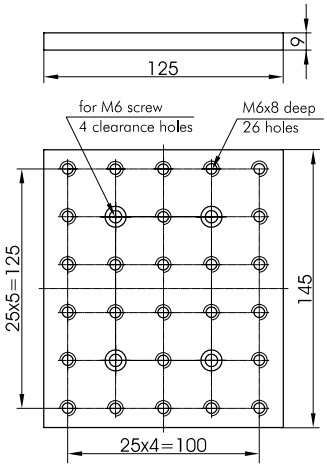
3BP195	Base Plate	** – included in standard package and to be ordered only as extra units
3P195	Platform	
3SN195	Slide Nut	

3SN195
Slide Nut

ACCESSORIES for 8MT295 series stages



3BP295
Base Plate



3BP295
Platform

Ordering information for accessories**

3BP295	Base Plate	** – included in standard package and to be ordered only as extra units
3P295	Platform	
3SN195	Slide Nut	

3SN195
Slide Nut

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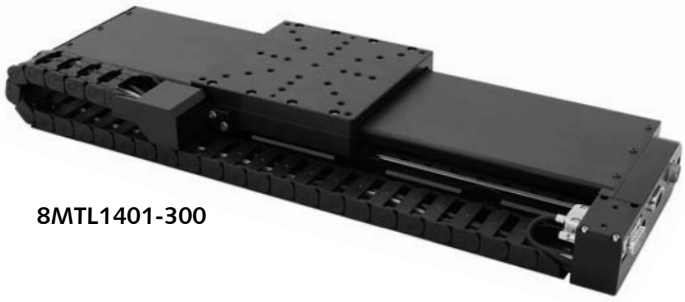
Direct Drive Linear Translation Stages

8MTL series

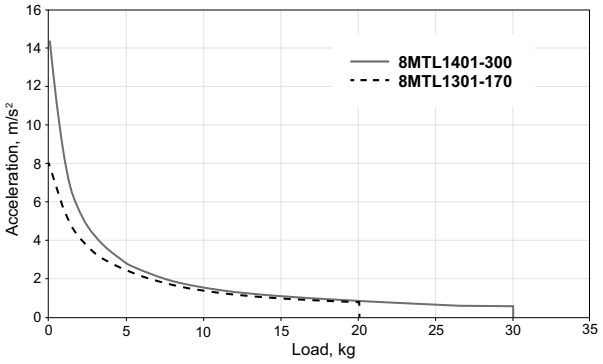
8MTL1301-170



8MTL1401-300

- Resolution: up to 50 nm and better
- Bidirectional repeatability: ± 0.5 μm
- Maximum velocity: 1200 mm/s
- High resolution non-contact optical incremental encoder
- Direct drive zero backlash system
- High accuracy linear guide and carriage system
- Long life performance guaranteed
- Easy integration with opto-mechanical systems
- Sophisticated and flexible control and drive system

Direct Drive Linear Translation Stage of 8MTL series are based on **3 phase ironless linear brushless servo motor technology**. Direct drive technology allow user to reach zero backlash motion with high accuracy, repeatability and low friction. Linear optical encoder as a feedback system guarantees direct control of position with sub-nanometer resolution of motion. Naturally aged aluminum alloy guaranties high temperature stability, softness of **8MTL** stages and excellent long period kinematics without drift of guide system. Translation stages of series **8MTL** can be prepared for **clean room** and **vacuum** (up to 10^{-3} torr) applications. Motorized translation stage can be easily connected to optical table directly using standard 3STS screws. **XY configuration** for scanning applications can be directly assembled with- out using any connecting plates. **Vertical Z** axis is available by request. **Motion control** of **8MTL** series translation stages is available with **Standa controller**.



Acceleration and Load dependence chart

8MTL140-300 XY

ORDERING INFORMATION

8MTL1301 series	8MTL1401 series	Comments
8MTL1301-170-LEn1	8MTL1401-300-LEn1	Analog signal. Resolution: 5 μm
8MTL1301-170-LEn1-005	8MTL1401-300-LEn1-005	x5 interpolationn. Resolution: 1 μm
8MTL1301-170-LEn1-010	8MTL1401-300-LEn1-010	x10 interpolation. Resolution: 0.5 μm
8MTL1301-170-LEn1-025	8MTL1401-300-LEn1-025	x25 interpolation. Resolution: 0.2 μm
8MTL1301-170-LEn1-050	8MTL1401-300-LEn1-050	x50 interpolation. Resolution: 0.1 μm
8MTL1301-170-LEn1-XXX	8MTL1401-300-LEn1-XXX	Customer requested interpolationn

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SPECIFICATIONS	8MTL1301-170	8MTL1401-300
Kinematics and Feedback information		
Travel range	170 mm	300 mm
Encoder type	Non-Contact Optical Encoder	
Encoder model	LEn1	
Encoder resolution [1]	On request (up to 50nm or better)	
Reference mark	On the center of travel	
Bidirectional repeatability	±0.5 μm	
Unidirectional repeatability	On Request	
Accuracy		
Non-calibrated [2]	On Request	
Calibrated	±1 μm	
Pitch [3]	±55 μrad	±82 μrad
Yaw [3]	±32 μrad	±24 μrad
Roll [3]	On Request	
Maximal speed (non load) [4]	1.2 m/s	
Maximal acceleration (non load) [4]	1.45 g	
Limit Switches	Hall sensors	
Switch polarity	Pushed is closed	
Load and Transmision Information		
Continues Force (peak)	113.5 N	
Load capacity (central)	20 kg	30 kg
Linear motor model	LM1	
Maximal Bus Voltage	>300 V DC	
Continues Current	2.2 A	
Peak Current	8.8 A	
Guiding system	Recirculating linear rails and carriages	
Material		
Base material	Aluminum Alloy	
Finish	Black anodizing	
Control and Communication		
Recommended controllers [5]	SPiiPlusEC	
Recommended Drivers [5]	UDMlc	
Recommended power supply	PS36-3.4-4	
Cable length	On Request	
Accessories Information		
Base plate	Not necesarry	
XY configuration	Direct	
Z configuration	Available	
Additional Details		
Moving platform dimensions	130 × 295 mm	140 × 140 mm
Measurement system	Metric	
Weight	4.1 kg	6.75 kg
Moving mass	2.1 kg	1.2 kg

1) Encoder resolution could be fitted depending on application from 5μm to 50nm by default. Better resolution could be requested separately. Resolution will directly inlfuelce repeatability of stage.

2) Every stage can be calibrated and mapped using laser interferometer in order to decrease mechanical error down to 1 μm. By default measurement certificate will be suplied.

3) By request angular deviation can be customized for better stage performance. By default measurement certificate will be suplied.

4) Velocity depends on voltage of power supply/amplifier; acceleration depends on cycle time and amplifier peak current. Please contact sales department for appropriate technical support.

5) Please contact sales department for appropriate technical support.

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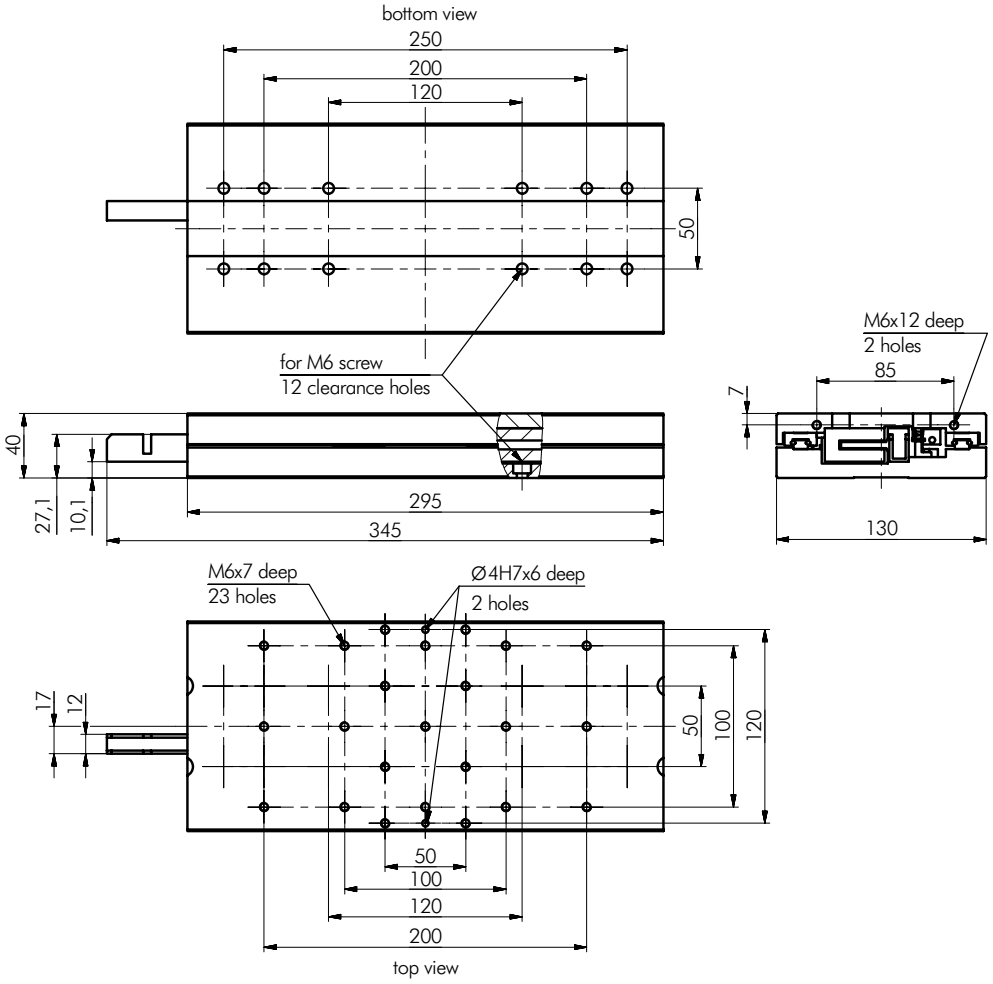
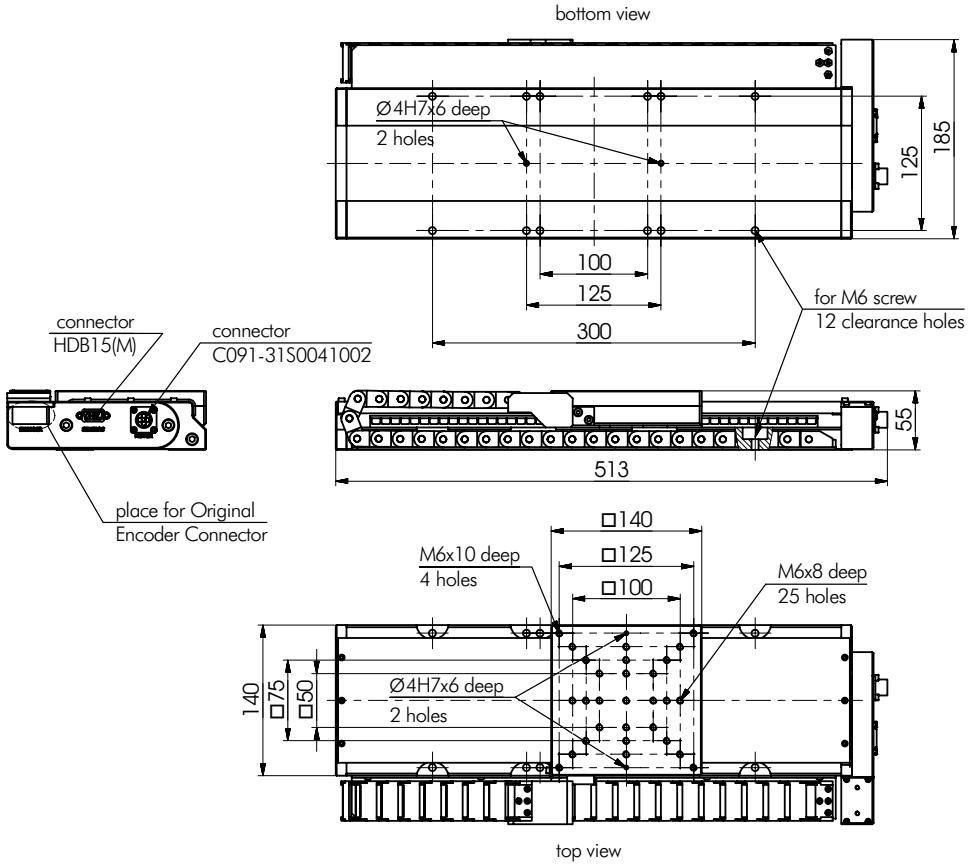


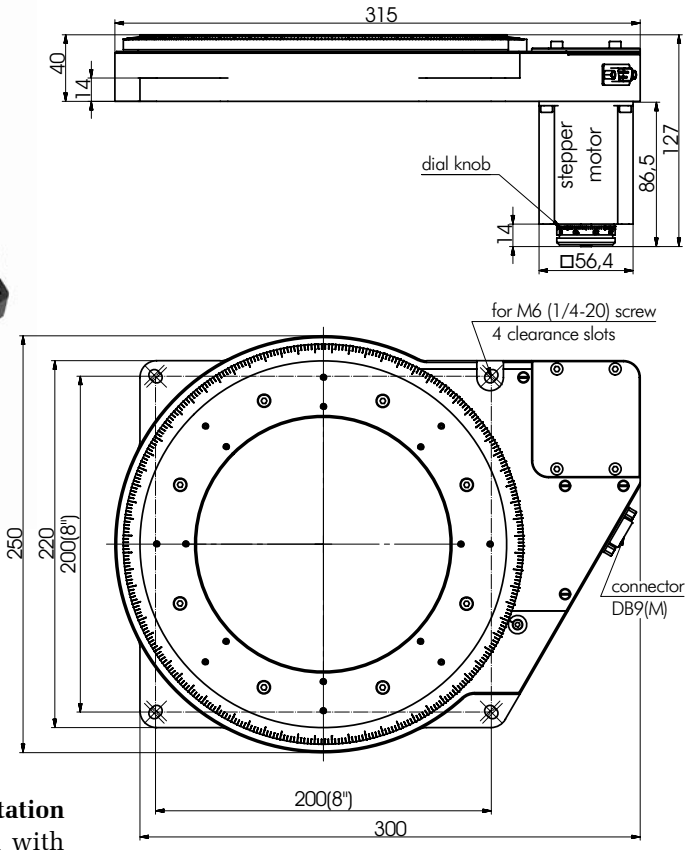
8MTL1301-170



8MTL1401-300

Large Motorized Rotation Stage

8MRB240-152-59



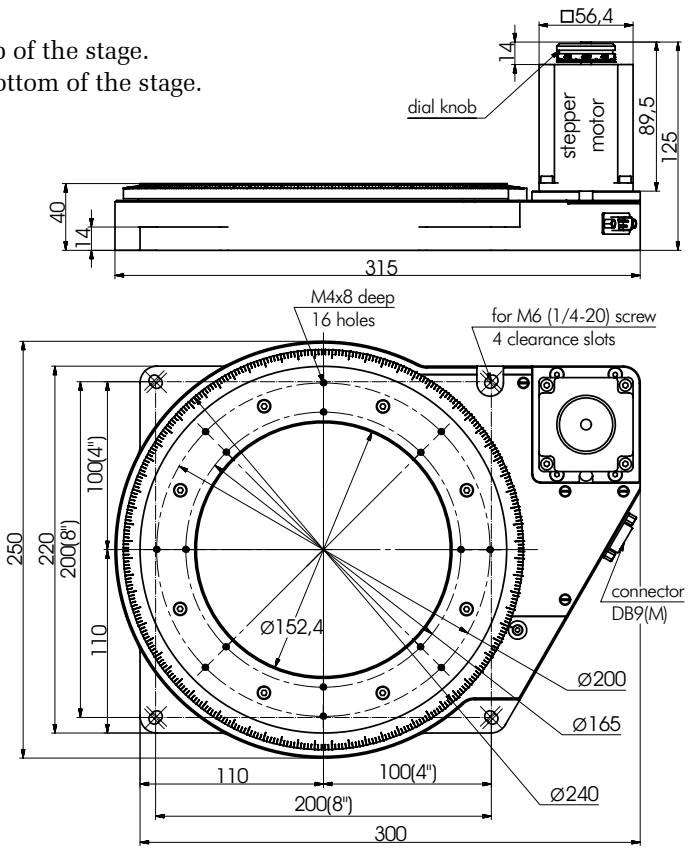
8MRB240-152-59D
(other dimensions as in **8MRB240-152-59** drawing)

- **Clear aperture 152.4 mm (6")**
- **Exceptionally high load capacity**
- **Compact design**
- **High speed**
- **Motor mounted on top or below by request**

8MRB240-152-59 is a **high load capacity rotation stage**, **capable** of **rotating** at up to **120 rpm** with **resolution** of **10.8'**. Objects can be mounted on the platform through M4 screw pattern, the stage itself is fixed to working surface through M6(1/4-20) holes.

Two modifications are available:

8MRB250-152-59 – motor is mounted on top of the stage.
8MRB250-152-59D – motor is fixed to the bottom of the stage.



8MRB240-152-59

SPECIFICATIONS

Belt drive	1:10
Clear aperture	152.4 mm (6")
Rotation range	360° continuous
Resolution	
in full step	10.8'
in 1/8 step	81"
Repeatability	
uni-directional	6'
bi- directional	15'
Accuracy	15’
Maximum speed	120 turn/min
Load capacity	
axial	500 kg
radial	200 kg
torque	175 Nm
Limit switch (home)	optoelectronic
Motor connector	DB9(M)
Stepper motor	5918
Recommended controllers	8SMC4-USBh
Weight	5.1 kg
Optocoupler home reference switch	1
Switch polarity	pushed is closed

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Large Motorized Rotation Stages

8MR190-90

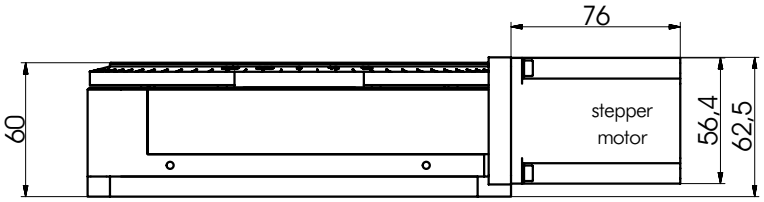
- **Hardened steel with aluminium body**
- **Large diameter ball bearings**
- **Worm Gear Ratio is 1:120**
- **Hall-effect reference limit switch**
- **Stepper motor or DC motor with encoder**
- **Motor can be optionaly equipped with reduction gear**
- **1.8m long cable included**
- **Vacuum compatible versions are available up to 10^{-6} Torr using step motor**
- **Very high load capacity**

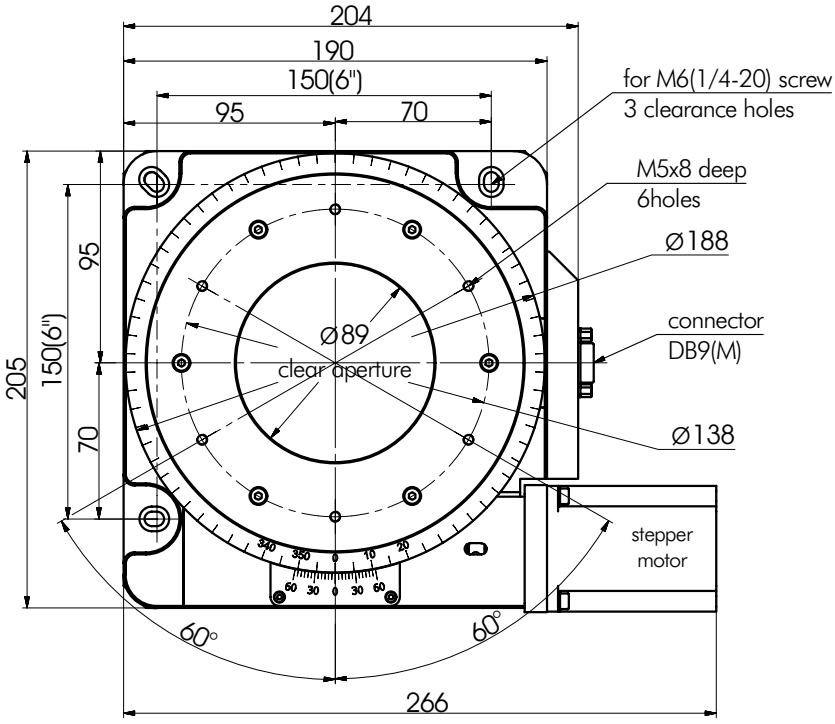
Large Motorized Rotation Stage **8MR190-90-59**

SPECIFICATIONS

Rotation range	360° continuous
Resolution	
in full step*	54 arcsec.
in 1/8 step*	6.75 arcsec.
Repeatability (bidirectional)	72 arcsec.
Backlash	40 arcsec. max.
Max.rotation speed*	10 turn/min
Wobble	40 μRa
Cable	1.6 m length
Motor connector	DB9(M)
Stepper motor	5918
Load capacity	
Horizontal	60 kg
Radial	25 kg
Weight	6.6 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.





8MR190-90-59

ORDERING INFORMATION

8MR190-90-59

Rotation Stage with stepper motor **5918** (2.1 A, 200 steps)

8MR190-90-4247

Rotation Stage with stepper motor **4247** (see next page) (1.2 A, 200 steps)

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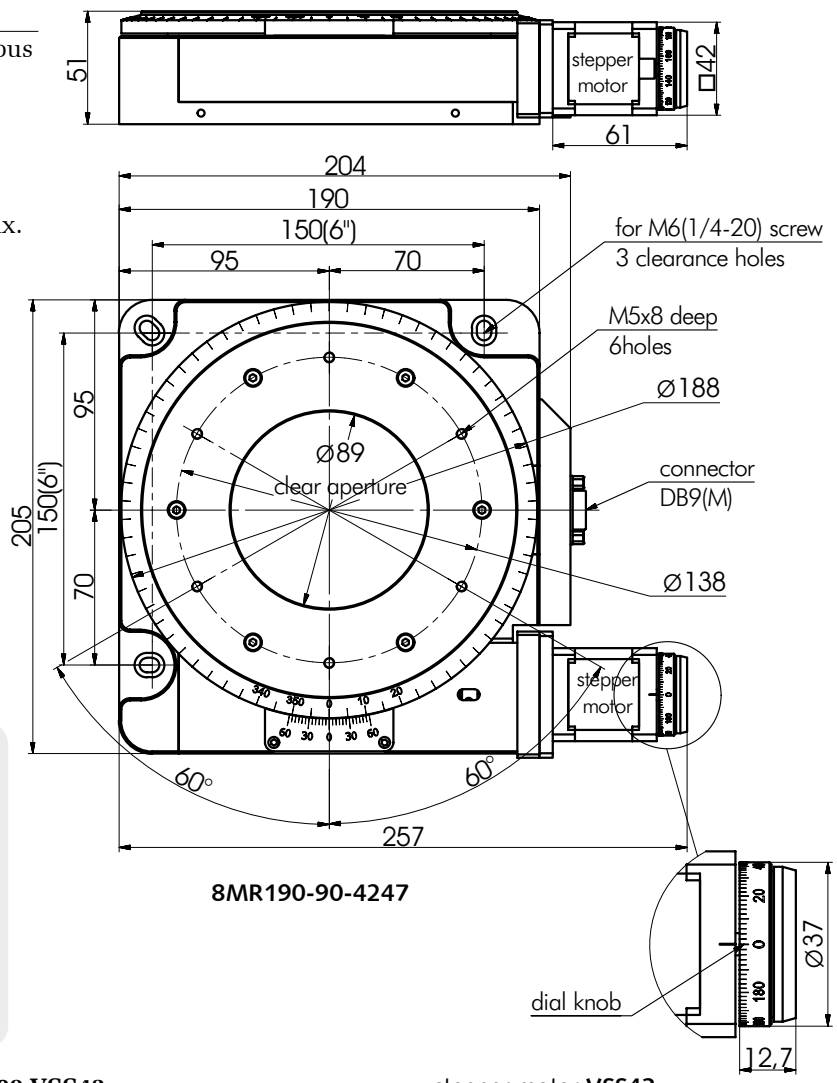
Large Motorized Rotation Stage 8MR190-90-4247

SPECIFICATIONS

Rotation range	360° continuous
Resolution	
in full step*	54 arcsec.
in 1/8 step*	6.75 arcsec.
Repeatability (bidirectional)	72 arcsec.
Backlash	40 arcsec. max.
Max.rotation speed*	6 turn/min
Wobble	40 μRa
Motor connector	DB9(M)
Stepper motor	4247
Load capacity	
Horizontal	60 kg
Radial	25 kg
Weight	5.7 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.



8MR190-90-4247

Vacuum 10^{-6} Torr Compatible

ORDERING INFORMATION

8MR190V-90-VSS43

Rotation Stage with stepper vacuum motor **VSS43**

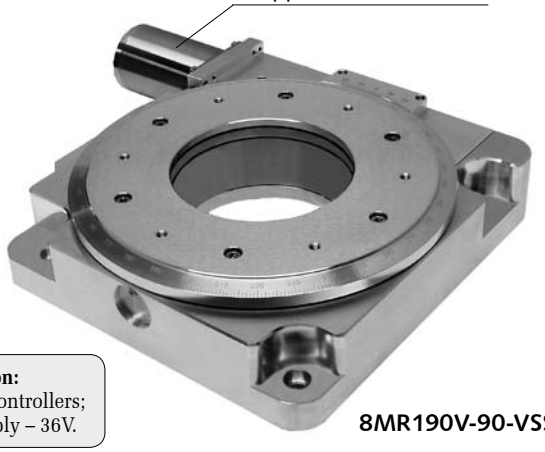
8MR190V-90-VSS42G6

Rotation Stage with stepper vacuum motor **VSS42** and reduction gear

SPECIFICATIONS for 8MR190V-90-VSS43

Rotation range	360° continuous
Resolution	
in full step*	54 arcsec.
in 1/8 step*	6.75 arcsec.
Repeatability (bidirectional)	72 arcsec.
Backlash	40 arcsec. max.
Max. rotation speed*	4 turn/min
Wobble	40 μRa
Fluoroplastic cable	2 m length
Motor connector	HDB15(M)
Stepper motor	VSS43
Load capacity	
Horizontal	40 kg
Radial	20 kg
Weight	5.7 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.



8MR190V-90-VSS43

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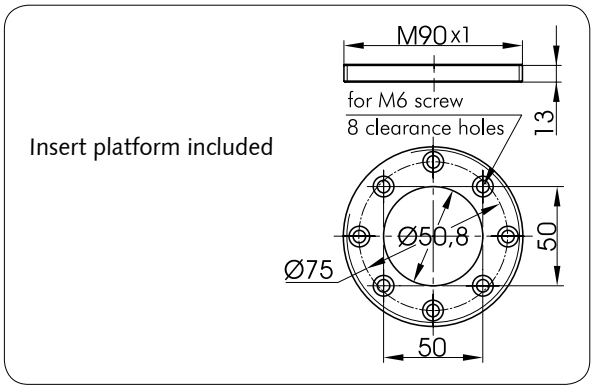
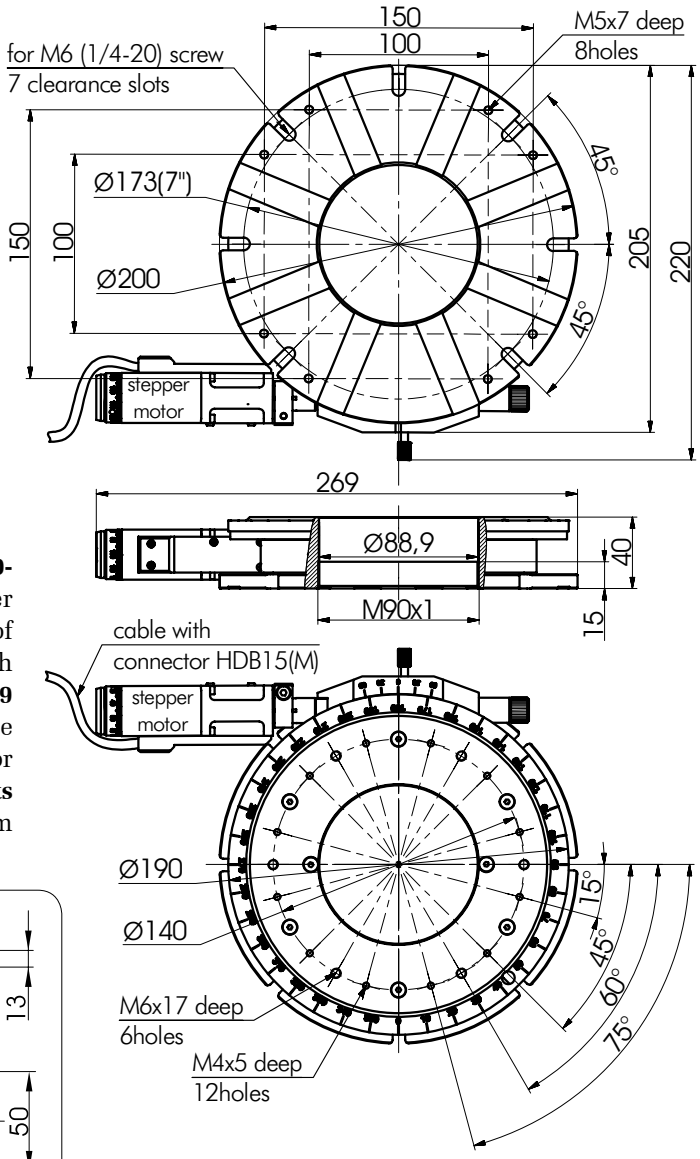
Motorized Rotary Stage

8MR170-190

- Ø190 mm platform
- Ø89 mm clear aperture
- 6° fine actuator driven adjustment range
- 360° manual rotation range

Motorized actuator drives rotary stage 8MR170-190 to finely rotate large optical and other components in a **range** of **6°** with **resolution** of ***3 arcsec***. The **stage** can be **rotated 360°** with **accuracy** of **1°** manually. The stage has **88.9 mm clear aperture**. Top platform of the stage has a pattern of M6 and M4 mounting holes for mounting various components. **Clearance slots** for **M6(1/4-20) screws** available on the bottom for fastening to optical table.





SPECIFICATIONS

Rotation range:	
fine	6°
manually	360°
Installed actuator	8CMA28-10
Resolution in full step	3 arcsec
Repeatability	4 arcsec
Wobble	1 arcmin
Backlash	0
Eccentricity	20 μm
Load capacity:	
horizontal	60 kg
Body material	Aluminium
Finish	Black anodized
Weight	3.2 kg
Recommended controllers	8SMC4-USBh
Optocoupler end limit switches	2
Switch polarity	pushed is open

Recommended Controllers

Stepper/DC Motor Controller
with **USB Interface**

8SMC4-USB-B8-1
1 axis Controller
in box

Joystick developed for manual control of one or two-axis all Stepper motor equipped motorized stages

8JXY-03
Joystick for
8SMC4-USB controller

more info on **www.standa.lt**

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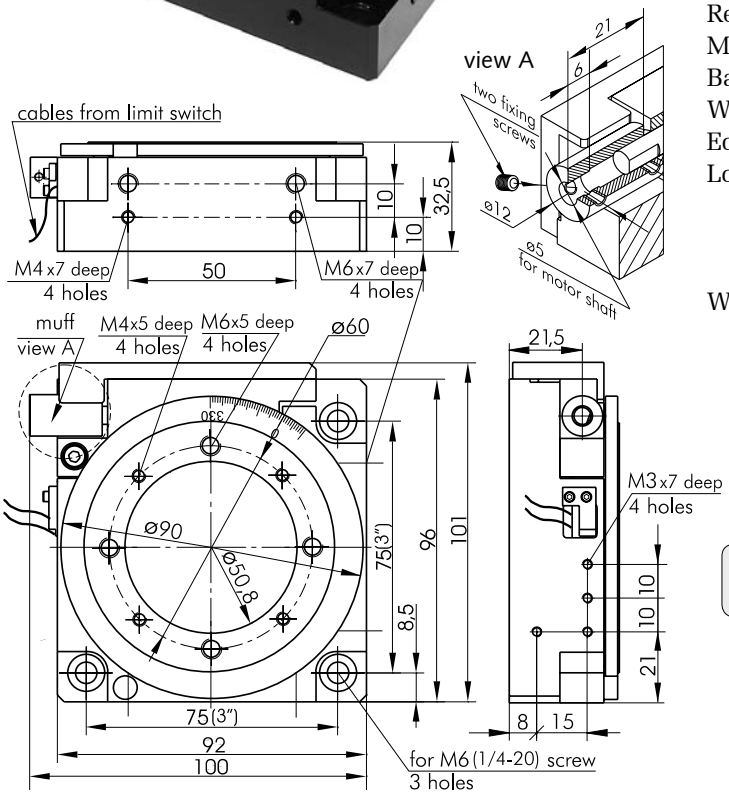
Motorized Rotation Stages

8MR190-2

8MR190-2-28

- **360 degrees rotation graduated in 1°**
- **50.8 mm (2 inch) aperture**
- **Resolution 4.5 arcsec in 1/8 step**
- **Zero backlash**
- **High stability**
- **Home/zero position limit switch**
- **Mounting modifications available on request**



SPECIFICATIONS

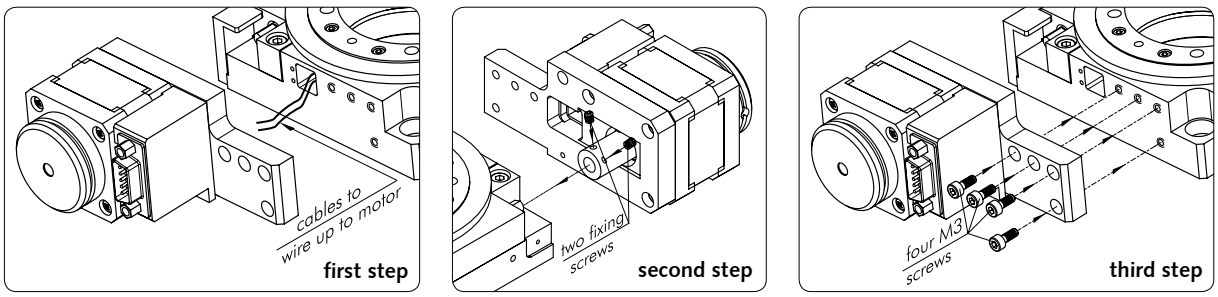
Rotation range	360°
Resolution in full step*	0.6 arcmin (0.01°)
Max.rotation speed*	8 turn/min
Backlash	0 μm
Wobble	0.5 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	10 kg
Radial	2 kg
Torque	1 Nm
Weight	
8MR190-2	0.65 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

We are able to equip our stage with any your provided motors

Available
INCH version
8MR190E-2

Three steps of connection motor to rotation stage



ORDERING INFORMATION

8MR190-2 – Rotation stage **8MR190-2** without motor

8MR190-2-4247 – Rotation stage **8MR190-2** with stepper motor **4247** (1.2A, 200 steps)

8MR190-2-4233 – Rotation stage **8MR190-2** with stepper motor **4233** (0.4A, 200 steps)

8MR190-2-28 – Rotation stage **8MR190-2** with stepper motor **28** (0.67A, 200 steps)

8MR190-2-ZSS43 – Rotation stage **8MR190-2** with stepper motor **ZSS43** (0.6A, 200 steps)

8MR190-2-SM – Rotation stage **8MR190-2** with **SM system** (more info on the next page)

8MR190-2

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Motorized Rotation Stages with SM SYSTEM

8MR190-2-SM • 8MR191-SM
8MR191-1-SM • 8MR191-30-SM

8MR190-2-SM

8MR191-SM

SPECIFICATIONS

Rotation range	360°
Encoder resolution	2000
Max. rotation speed	16 turn/min
Backlash	0 μm
Wobble	0.5 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	10 kg
Vertical	2 kg
Torque	1 Nm
Cable*	2 m
Motor	SM

*__Cable__ supplied with **8MR190-2-SM** and with **8MR191-SM** series consists of power cable and RS232 communication cable and includes connector to computer RS232 (DSUB9), connector to motor (DSUB 7W2) and power connector (SOCKET DC 2.1/5.5 mm for Cable).

The **SM system** is a complete, compact and user-friendly integrated control system that features a brushless DC servo motor, motion controller, encoder and amplifier.

It is a decentralized drive system. It is a fully integrated motor system that includes a Brushless D.C. Servo-Motor (BLDC), Motion Controller, Drive-Electronics, Position Feedback Encoder and Fully Programmable Points of I/O (Inputs/Outputs). All these components are placed inside one integral frame or housing.

Each decentralized drive system is fully programmable as a stand-alone system or as part of a network fieldbus - Profibus, DeviceNet or RS232, RS485.

The integration of motor, controller and drive reduces complexity in an application and significantly increases reliability. The command set and firmware enables the **SM system** to perform a wide range of motion controls, arithmetic and conditional logic functions. The unit is a highly capable, stand-alone, complete motion control system that is easy to implement and use.

The **SM system** has more features than most full-size controls:
- Brushless DC servo motor
- S-232 & RS-485
- Stand alone capability
- Torque to 2000+ oz. in. / 15 NM
- Network up to 100 Servida Motors
- 4kHz PID
- Speeds 0 - 10,000 RPM
- Expandable and programmable I/O expandable to 800 inputs and 800 outputs
- CE marked & UL registered
- On-the-fly parameter changes
- Position Mode
- Velocity Mode
- Torque Mode
- Infinite Ratio Gearing
- Electronic Gearing/ Following Mode
- Step & Direction Mode
- Limit switch inputs
- Closed loop on external encoder
- Single voltage input
- Standard NEMA mount
- 32k user EEPROM
- Software current limit
- Thermal protection
- Easy Windows Software
- Contouring mode from host PC

Available INCH version

8MR190E-2-SM, 8MR191E-SM, 8MR191E-1-SM, 8MR191E-30-SM

8MR190-2-SM and **8MR191-SM** series consists of DC servo motor, motion controller, encoder and amplifier.

Requires only POWER SUPPLY!!!

Power supply PS36-3.4-4
36 V; 3.34 A
167 x 65 x 37 mm*
640 g
Mini-DIN male 4-pin power connector
*Dimensions are subject to changes without advance notice.

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Motorized Rotation Stages

8MR191

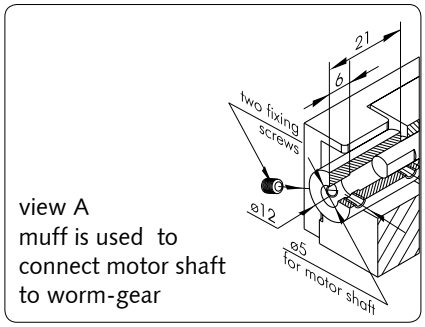
8MR191-28

- 360 degrees rotation graduated in 1°
- Three types of platform
  - platform without big central hole
  - M27×1 for 1" optics mounting (Ø23 mm clear aperture)
  - Ø30 mm aperture
- Resolution 4.5 arcsec in 1/8 step

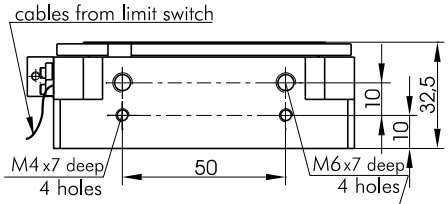
SPECIFICATIONS

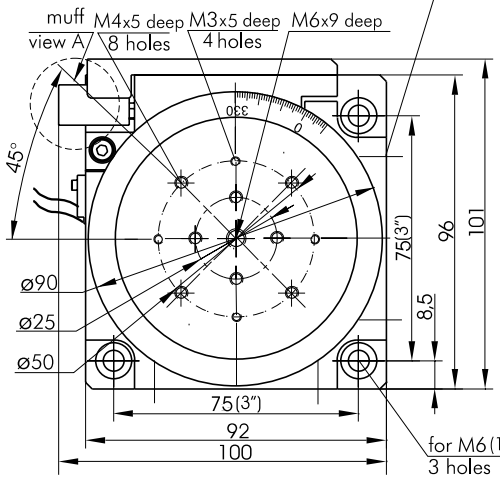
Rotation range	360°
Resolution in full step*	0.6 arcmin (0.01°)
Max.rotation speed*	8 turn/min
Backlash	0 μm
Wobble	0.5 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	10 kg
Radial	2 kg
Torque	1 Nm
Weight	
8MR191	0.65 kg
8MR191-1	0.65 kg
8MR191-30	0.65 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

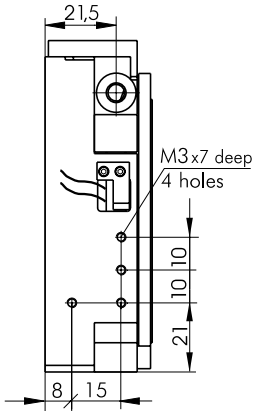


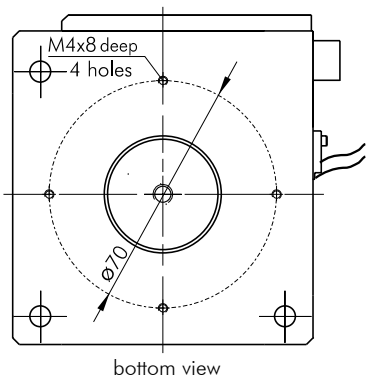
view A
muff is used to connect motor shaft to worm-gear



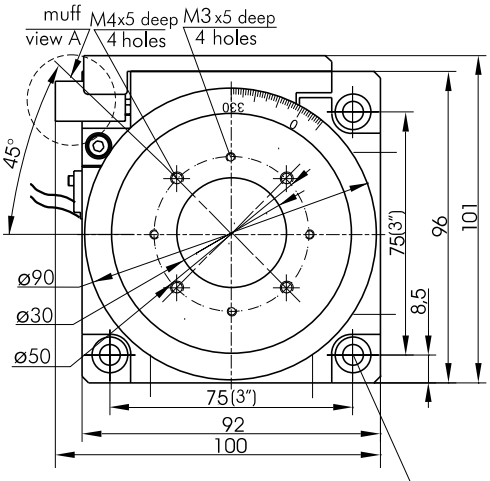


8MR191

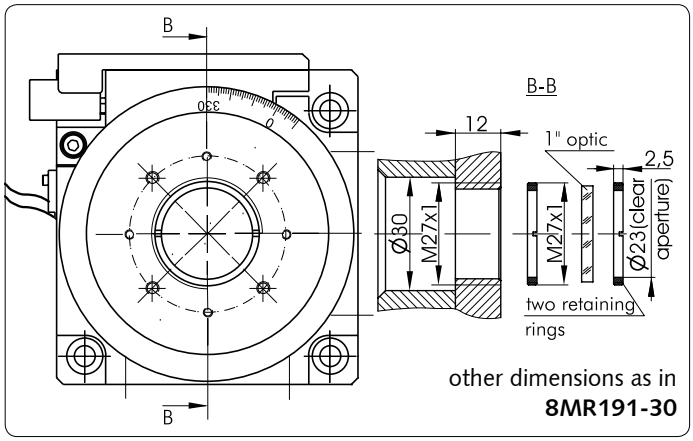




bottom view



8MR191-30



8MR191-1

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Available
INCH version
8MR191E
8MR191E-1
8MR191E-30

ORDERING INFORMATION

Examples of codes for motorized rotation stages **8MR191**:

8MR191 – Rotation stage **8MR191** without motor

8MR191-1-4247 – Rotation stage **8MR191-1** with stepper motor **4247** (1.2A, 200 steps)

8MR191-30-4233 – Rotation stage **8MR191-30** with stepper motor **4233** (0.4A, 200 steps)

8MR191-28 – Rotation stage **8MR191** with stepper motor **28** (0.67A, 200 steps)

8MR191-1-ZSS43 – Rotation stage **8MR191-1** with stepper motor **ZSS43** (0.6A, 200 steps)

8MR191-30-SM – Rotation stage **8MR191-30** with **SM system**

(more info on the **8-44** page)

We are able to equip our stages with motors of your choice

8MR190-2-SM

Rotation stage **8MR190-2** with **SM system**

8MR191-28

Rotation stage **8MR191** with stepper motor **28**

8MR191-30-4247

Rotation stage **8MR191-30** with stepper motor **4247**

8MR191-1-4233

Rotation stage **8MR191-1** with stepper motor **4233**

Recommended Controllers

more info on **www.standa.lt**

Stepper/DC Motor Controller
with
USB Interface

8SMC4-USB-B8-1
1 axis Controller in box

Joystick developed for **manual control** of **one** or **two-axis** all Stepper motor equipped motorized stages

8JXY-03
Joystick for
8SMC4-USB controller

Mini Motorized Rotation Stages

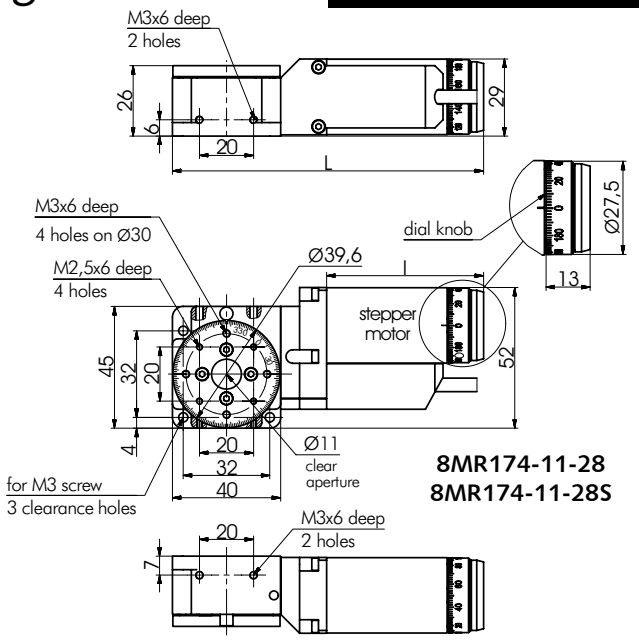
8MR174-11

8MR174-11-28S

SPECIFICATIONS

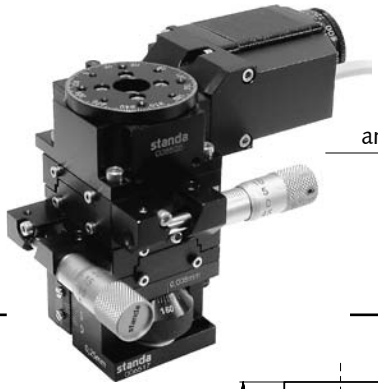
Rotation Range	360°
Resolution in full step*	0.9 arcmin (0.015°)
Uni-directional Repeatability	0.4 arcmin
Bi-directional Repeatability	1.6 arcmin
Max. rotation speed*	75°/s (36V) 30°/s (12V)
Wobble	1 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	4 kg
Radial	1.5 kg
Torque	
8MR174-11-28	0.5 Nm
8MR174-11-28S	0.35 Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Weight	
8MR174-11-28	0.4 kg
8MR174-11-28S	0.35 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.



8MR174-11-28
8MR174-11-28S

Model	L, mm	m, mm	motor
8MR174-11-28	115	58	28
8MR174-11-28S	102	45	28S

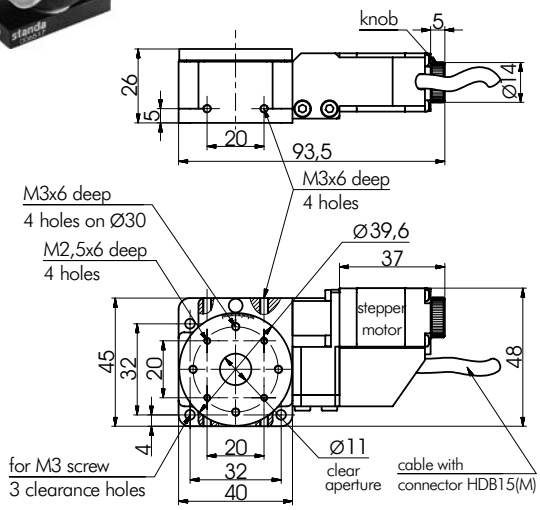


8MR174-11-28,
7T184-13 (2 pieces)
and **7VT174-5** stacked

Mini Motorized Rotation Stage

8MR174-11-20

Available
INCH version
8MR174E-11-20
8MR174E-11-28
8MR174E-11-28S



SPECIFICATIONS

Rotation Range	360°
Resolution in full step*	0.9 arcmin (0.015°)
Uni-directional Repeatability	0.4 arcmin
Bi-directional Repeatability	1.6 arcmin
Max. rotation speed*	75°/s (36V) 30°/s (12V)
Wobble	1 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	3 kg
Radial	1.5 kg
Torque	0.15 Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	20
Weight	0.3 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

3UBP-04

3UBP universal base plates for stacking the translation stages to STANDA optical tables or to another stages. Page 3-6

3UBP-02

3UBP-03

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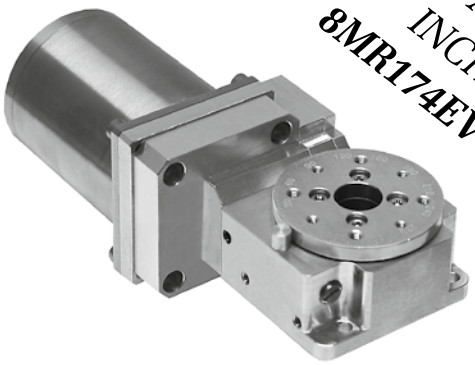
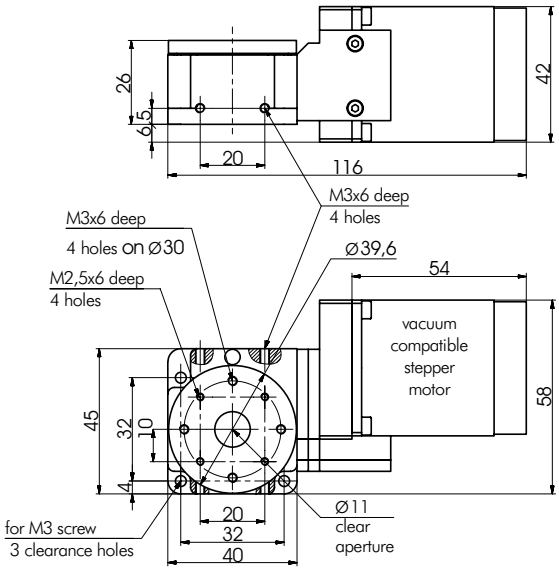
Phone: +370-5-2651474 Fax: +370-5-2651483

Mini Motorized Rotation Stage
with Vacuum compatible stepper motor

8MR174V-11-VSS42



Available INCH version 8MR174EV-11-VSS42

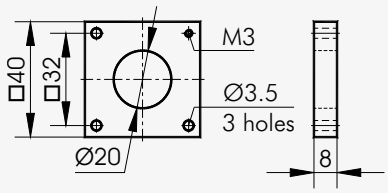


SPECIFICATIONS

Rotation Range	360°
Resolution in full step*	0.9 arcmin (0.015°)
Uni-directional Repeatability	0.4 arcmin
Bi-directional Repeatability	1.6 arcmin
Max. rotation speed*	50°/s (36V) 20°/s (12V)
Wobble	1 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	4 kg
Radial	1.5 kg
Torque	0.5 Nm
Fluoroplastic cable	integrated, 1.6 m lengths
Motor connector	HDB15(M)
Vacuum compatible stepper motor	VSS42
Weight	0.45 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

Compatible with 10^{-6} Torr vacuum



3BP174V-11

The motor of **8MR174V-11** protrudes from the bottom. This **3BP174V-11** base plate is needed to place the stage on a flat surface. Included in standard package.

ORDERING INFORMATION

8MR174-11-20	Motorized Rotation Stage with **stepper motor 20**
8MR174-11-28	Motorized Rotation Stage with **stepper motor 28**
8MR174-11-28S	Motorized Rotation Stage with **stepper motor 28S**
8MR174V-11	Motorized Rotation Stage with **Vacuum compatible stepper motor VSS42**

Recommended Controllers

more info on **www.standa.lt**

Stepper/DC Motor Controller
with
USB Interface

8SMC4-USB-B8-1
1 axis Controller in box

Assembly kit
to fix two or more
controller boxes
together

5AK-B9-B9
Assembly kit

e-mail: sales@standa.lt www.standa.lt
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Motorized Rotation Stages

8MR151

8MR151-1

8MR151-30

Available
INCH version
8MR151E

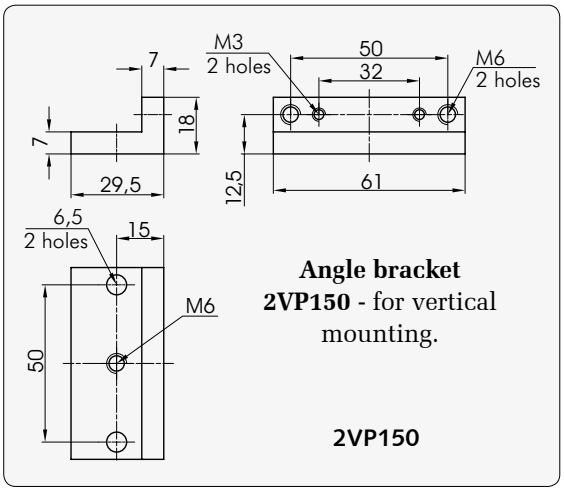
SPECIFICATIONS

Rotation Range	360°
Resolution in full step*	0.6 arcmin
in 1/8 step*	4.5 arcsec
Max. rotation speed*	50°/s
Wobble	0.6 arcmin
Eccentricity	10 μm
Load capacity	
Horizontal	6 kg
Radial	1.7 kg
Torque	0.5 Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	0.56 kg

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

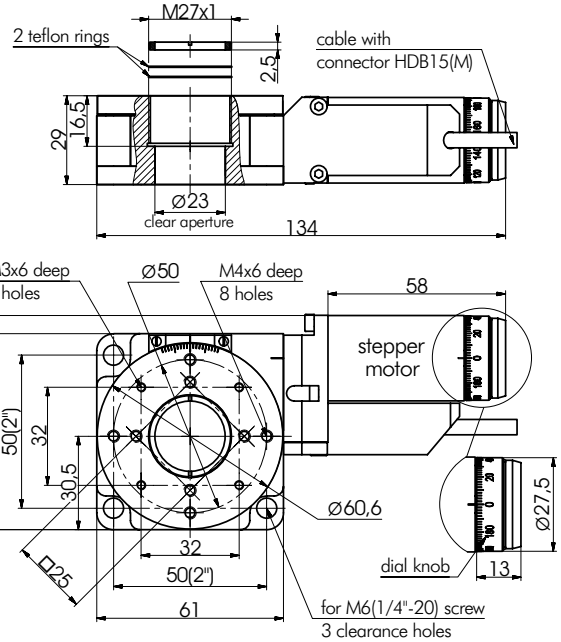
ORDERING INFORMATION

8MR151-1	M27×1 for 1" optics mounting (Ø23 mm clear aperture)
8MR151-30	Ø30 mm aperture
2VP150	vertical plate

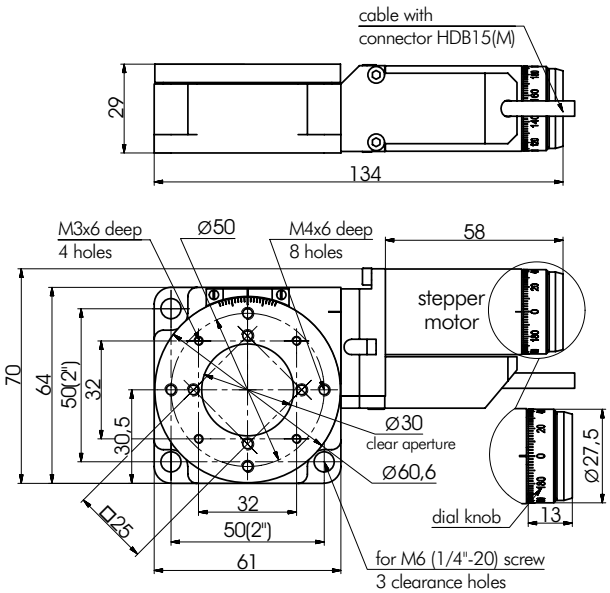


Angle bracket
2VP150 - for vertical mounting.

2VP150



8MR151-1



8MR151-30

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Phone: +370-5-2651474 Fax: +370-5-2651483

Universal Motorized Rotation Stages **8MRU**

Universal motorized rotation stage 8MRU is a **simple** and **durable low cost** solution for use as **optical element rotator**, **filter wheel** or **universal rotating platform**.

Centre opening has a threaded **M27x1** aperture for mounting **1" optical elements**. **Retaining ring** for fastening optics is **included**.

8MRU with various accessories can serve as several devices in one.

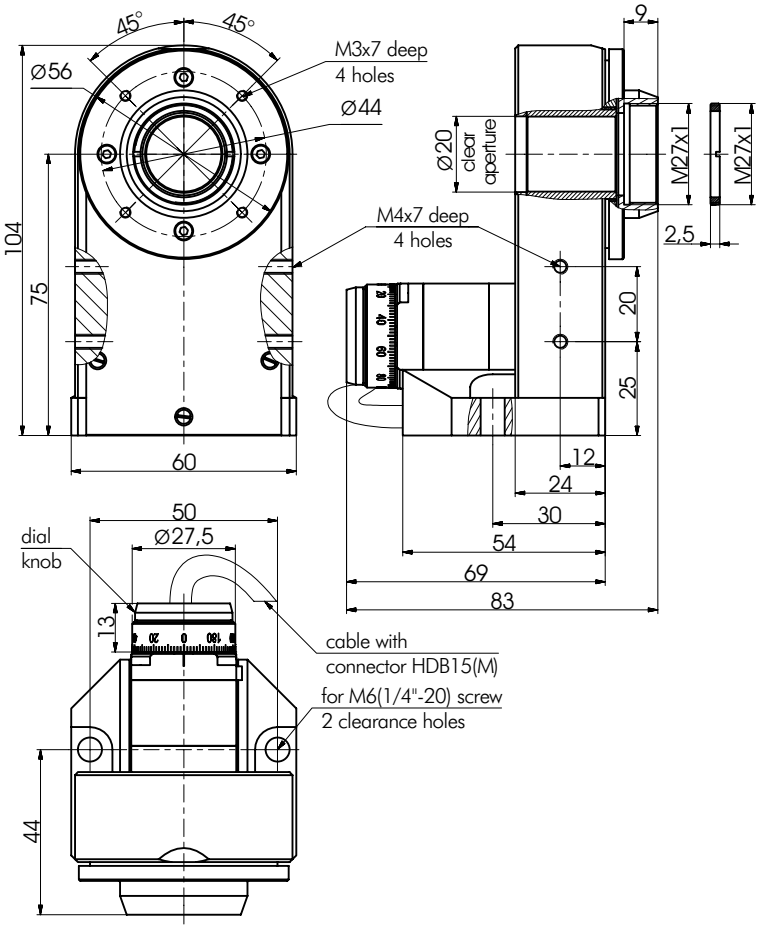
Universal Motorized Rotation Stage **8MRU-1**

SPECIFICATIONS

Rotation range	360°
Resolution in full step	0.6°
in 1/8 step	4.5 arcmin
Max. rotation speed*	3÷5 rps
Wobble	2 arcmin
Reduction gear	3:1
Limit switches	mechanical
Drive mechanism	belt
Load capacity	
Horizontal	5 kg
Radial	1.5 kg
Torque	$4.5x10^{-3}$ Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28S

Custom accessories are manufactured on request!

***Test condition:**
- STANDA controllers;
- Power supply – 36V.



8MRU-1 is a basic rotation stage that can rotate **1" optical elements.** Various accessories and custom parts can be mounted on provided **M3x7** mounting holes.

Variations of **8MRU-1** with accessories for various applications can be seen below.

Weight 0.55 kg

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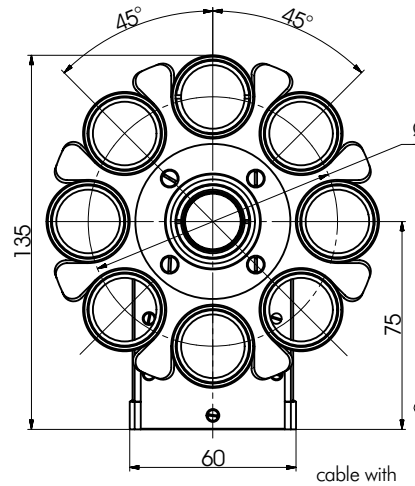
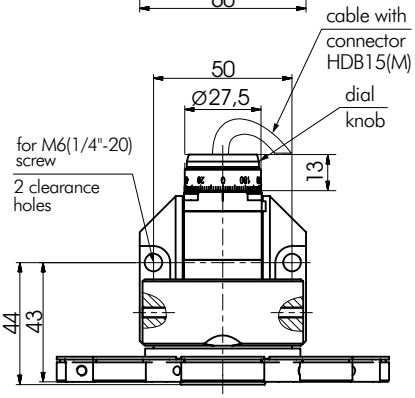
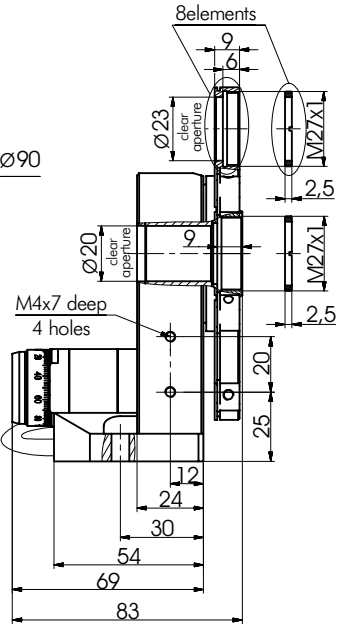
Universal Motorized Rotation Stage **8MRU-1WA**

A **filter wheel version** of universal rotation stage **8MRU**. Accepts up to **eight 1" filters**.



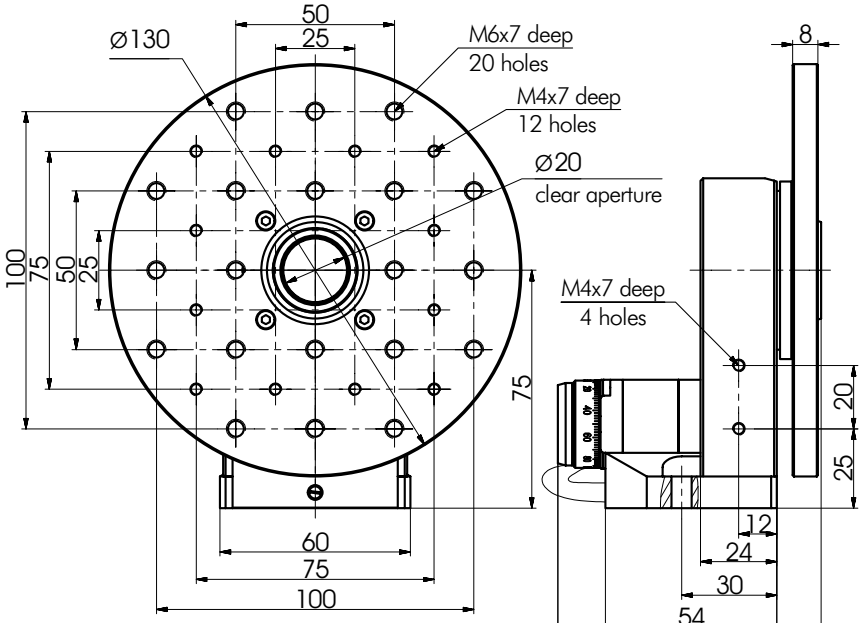


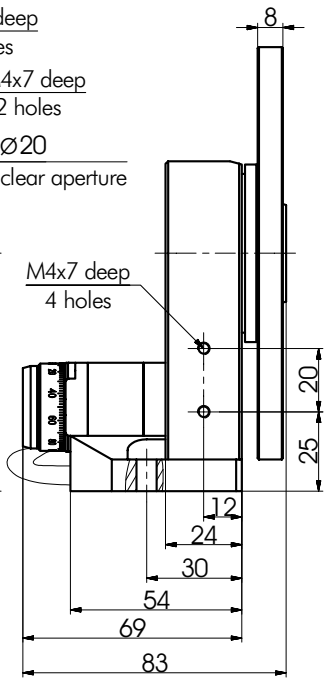


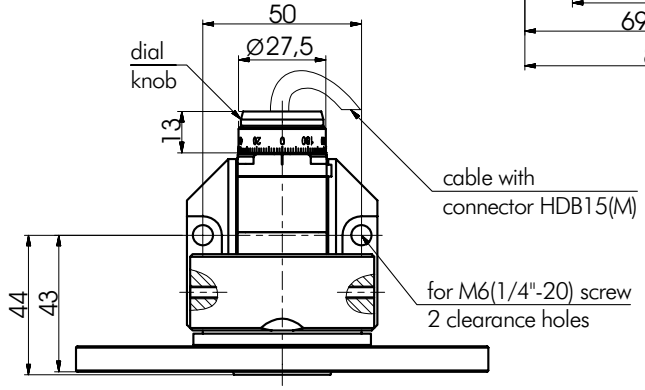
Software **XiLab** used with controller **8SMC4-USB** has integrated filter wheel control functionality.

Weight 0.65 kg

Universal Motorized Rotation Stage **8MRU-1TP**







A version of **8MRU** with a universal mounting platform with a **pattern** of **M6** and **M4 tapped holes**.

Weight 0.7 kg

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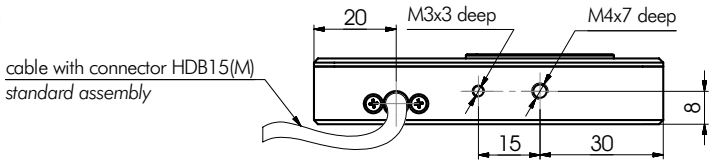
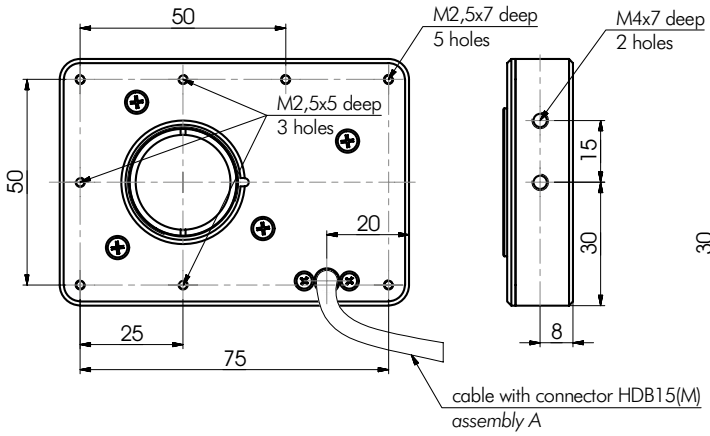
Motorized Polarizer Rotator

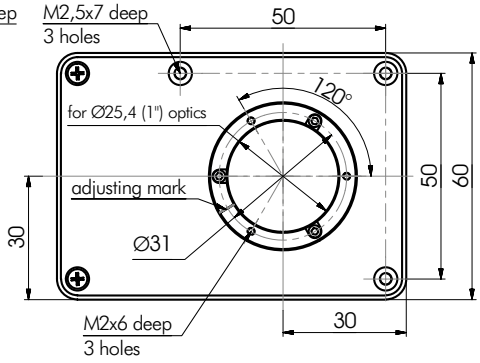
8MPR16-1

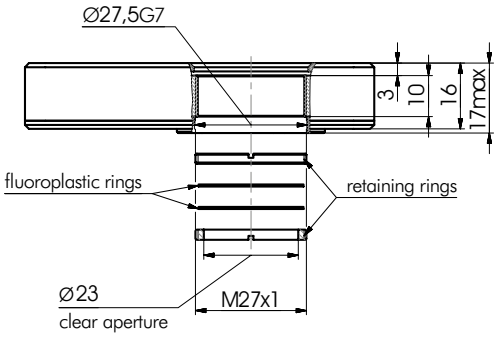
new

- **Ultra-thin compact design**
- **For 1'' (25.4 mm) optics by default**
- **Low optical axis height**
- **High stability and accuracy**
- **Cage system compatibility**
- **Adapters for other optics dimensions available**









SPECIFICATIONS

Rotation range	360°
Optics	Ø1" (25.4 mm)
Available adapters	Ø0.5" (12.7 mm)
for prisms	10 x 10 mm
	12 x 12 mm
	14 x 14 mm
	16 x 16 mm
Resolution in full step	0.75 arcmin
	(80 steps = 1°)
Resolution 1/256 (Theoretical)	0.17 arcsec
in 1/8 step	4.5 arcmin
Home position accuracy	<1 arcmin
Eccentricity	10 μm
Max. speed	4 turns/min
Limit switches	Hall Sensor (1 pcs.)
Switch polarity	Pushed is closed
Gear reduction rate	1:90
Load capacity	
Vertical	1 kg
Horizontal	0.4 kg
Recommended controllers	8SMC4-USB
Connector	HDB15(M)
Cable length	1.2 m
Base material	Aluminum
Finish	Black anodizing
Environment pressure	Atmosphere
	(10^{-3} torr on request)
Weight	0.25 kg

Recommended Controllers

Stepper/DC Motor Controller
with **USB Interface**

8SMC4-USB-B8-1
1 axis Controller in box

standa
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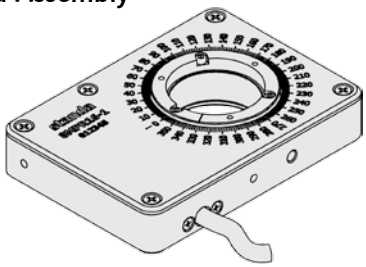
e-mail: sales@standa.lt www.standa.lt

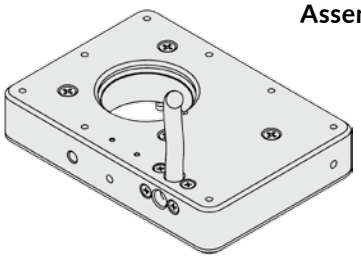
Motorized Polarizer Rotator could be supplied in two versions

Standard Assembly



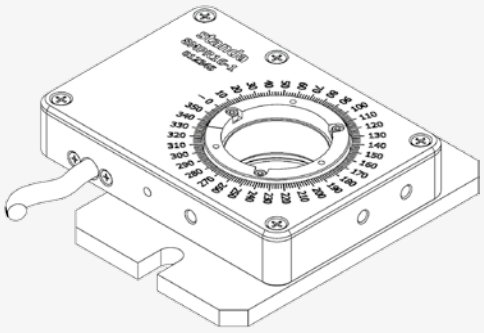
Cable goes perpendicular relative to optical axis.

Assembly A



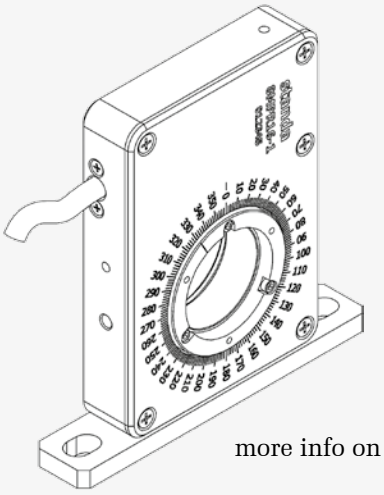
when cable goes coaxial to optical axis (should be mentioned in the inquiry).

8MPR16-1 Motorized Polarizer Mount provides smooth, high accuracy, high repeatability and stability continuous 360° rotation of the polarization optical components with diameters up to **1" (25.4 mm)** or **1/2" (12.7 mm)**, **Glan Taylor prisms** and **other objects**. Ultra-thin profile of the stage minimizes difficulties of polarizers integration in optical schemes and systems with small gaps between elements. **Motorized Polarizer Rotator** has a low optical axis height relative to the mounting base. Additional plates installation on the rotator for 30 mm and 60 mm cage systems are allowable. There are two fluoroplastic rings and two retaining rings for 1" (25.4 mm) optics fixing which are included in standard stage set.



Horizontal mounting Base Plate
3BP8MPR16-1
more info on **www.standa.lt**

Base Plate
3BP8MPR16

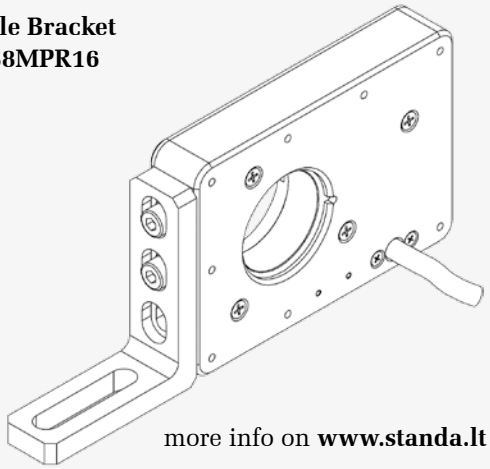


more info on **www.standa.lt**

There are **M4 mounting holes** at the sides of the motorized rotator for fixing it according to the requirements, available space and situation. It can be fixed on mounting posts or connected with adjustable plates and angle brackets. Stage can be used in horizontal position using base plate **3BP8MPR16-1**.

8MPR16-1 can be equipped with adapter for prism up to 16 x 16 mm, also with adapter for 0.5 inch optics or rotating platform with M3 holes.

Angle Bracket
2AB8MPR16



more info on **www.standa.lt**

Available adapters for ***Ø0.5" (12.7 mm) Optics*** *and for* ***Prisms*** *more info on* ***www.standa.lt***

e-mail: sales@standa.lt www.standa.lt
Phone: +370-5-2651474 Fax: +370-5-2651483

Motorized Screws

8MS00

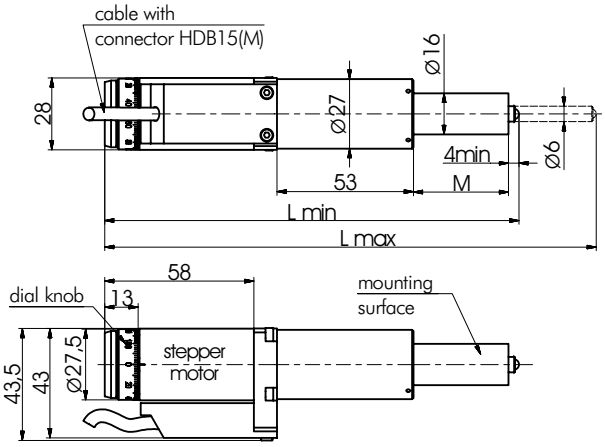
- **Manual drive with a dial knob**
- **Resolution 0.156 μm (1/8 step)**
- **Scale on the dial knob allows reading accuracy to a step**
- **Two limit switches**
- **Optional power supplies for higher voltages/speeds are available**

Motorized Screws

8MS00-10-28

8MS00-25-28

8MS00-10-28



SPECIFICATIONS

Travel range	
8MS00-10-28	10 mm
8MS00-25-28	25 mm
Lead screw pitch	0.25 mm
Resolution in full step	1.25 μm
Nominal force	80 N
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	
8MS00-10-28	0.45 kg
8MS00-25-28	0.5 kg

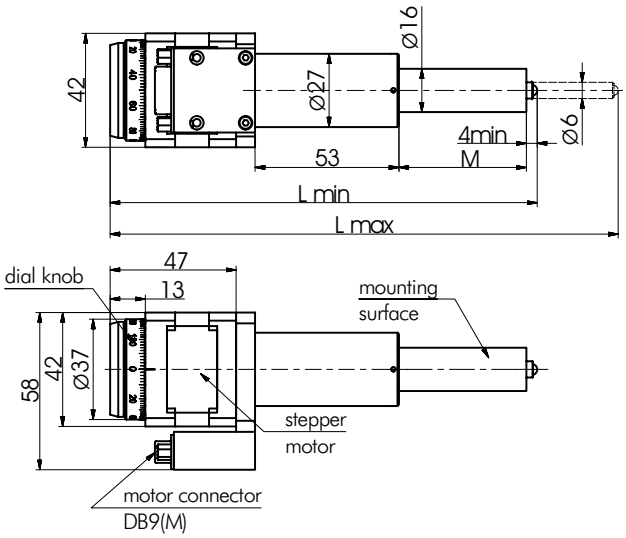
Model	**M**, mm	**L min**, mm	**L max**, mm
8MS00-10-28	37	159.5	169.5
8MS00-25-28	47	169.5	194.5

Motorized Screws

8MS00-10

8MS00-25

8MS00-10



SPECIFICATIONS

Travel range	
8MS00-10	10 mm
8MS00-25	25 mm
Lead screw pitch	0.25 mm
Resolution in full step	1.25 μm
Nominal force	60 N
Motor connector	DB9(M)
Stepper motor	4233
Weight	
8MS00-10	0.5 kg
8MS00-25	0.55 kg

Model	**M**, mm	**L min**, mm	**L max**, mm
8MS00-10	37	147.5	157.5
8MS00-25	47	157.5	182.5

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Motorized Screws

8MS00V-10
8MS00V-25

8MS00V-10

SPECIFICATIONS

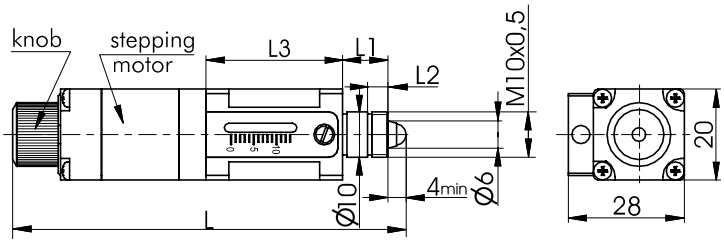
Travel range	
8MS00V-10	10 mm
8MS00V-25	25 mm
Lead screw pitch	0.25 mm
Resolution in full step	1.25 μm
Nominal force	30 N
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Stepper motor	VSS43
Weight	
8MS00V-10	0.55 kg
8MS00V-25	0.6 kg

Motorized Actuators

8CMA06

8CMA06-13/15

- **Compact**
- **Manual drive with a knob**
- **Limit switch: optoelectronic couple**
- **Step motor controllers are offered separately**
- **Optional power supplies for higher voltages/speeds are available**



Model	L, mm	L1, mm	L2, mm	L3, mm
8CMA06-13/15	92...105	15	7	30
8CMA06-25/15	101...126	15	7	40

SPECIFICATIONS

Travel range	
8CMA06-13/15	13 mm
8CMA06-25/15	25 mm
Resolution	1.25 μm
Lead screw pitch	0.25 mm
Nominal force	30 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
Stepper motor	20
Weight	
8CMA06-13/15	0.12 kg
8CMA06-25/15	0.15 kg

nut **3N10X05** (M10x0.5) by request (see page **8-57**)

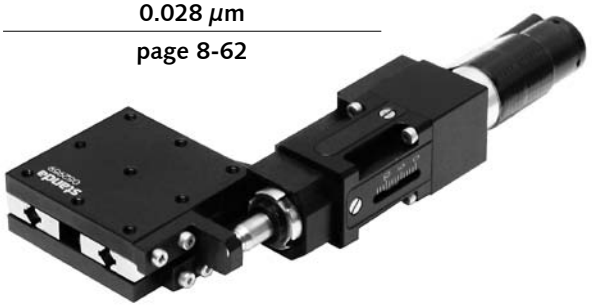
Available Travel Range of 13 mm and 25 mm Motorized Actuators with DC MOTOR (see on the next page)

Modified Manual Stages with Motorized Actuators are available

8MT184-13DC

Translation stage 7T184-13 with motorized actuator 8CMA06DC-13/15 with DC motor
Minimum Incremental Motion 0.028 μm

page 8-62



8MT184-13

Translation stage 7T184-13 with motorized actuator 8CMA06-13/15 with stepper motor
Resolution 1.25 μm

page 8-61

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Ultra-High Resolution Compact Motorized Actuator with DC motor

8CMA16DC

8CMA16DC-13/15

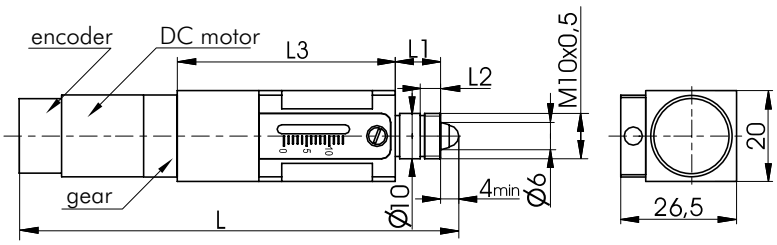
SPECIFICATIONS

Travel range	
8CMA16DC-13/15	13 mm
8CMA16DC-25/15	25 mm
Resolution	0.1μm
Minimal incremental motion	0.028 μm
Lead screw pitch	0.25 mm
Max.speed	0.15 mm/s
Nominal force	30 N
Cable	integrated, 1.2 m length
Motor connector	IDC-10F
DC motor	DCE1524
Weight	
8CMA16DC-13/15	0.12 kg
8CMA16DC-25/15	0.15 kg

Recommended controller for DC Motor

Stepper/DC Motor Controller with **USB Interface**

8SMC4-USB-B8-1
1 axis Controller in box



Model	L, mm	L1, mm	L2, mm	L3, mm
8CMA16DC-13/15	109.5...122.5	15	7	50
8CMA16DC-25/15	119.5...144.5	15	7	60

Ultra-High Resolution Compact Motorized Actuator with Vacuum compatible DC motor

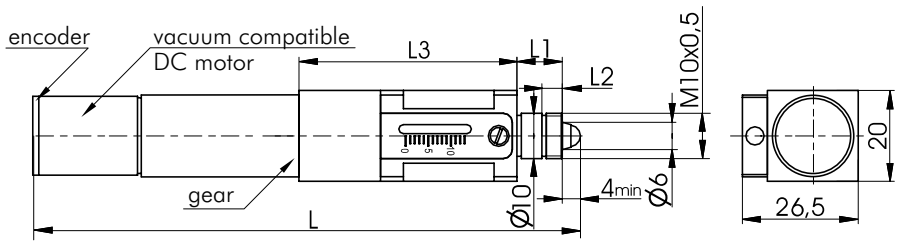
8CMA16DCV

8CMA16DC-25/15

SPECIFICATIONS

Travel range	
8CMA16DCV-13/15	13 mm
8CMA16DCV-25/15	25 mm
Resolution	0.1 μm
Minimal incremental motion	0.028 μm
Lead screw pitch	0.25 mm
Max.speed	0.15 mm/s
Nominal force	30 N
Cable	integrated, 2 m length
Motor connector	IDC-10F
Vacuum compatible DC motor	DCE1841
Weight	
8CMA16DCV-13/15	0.12 kg
8CMA16DCV-25/15	0.15 kg

Compatible with 10^{-6} Torr vacuum



Model	L, mm	L1, mm	L2, mm	L3, mm
8CMA16DCV-13/15	125...138	15	7	50
8CMA16DCV-25/15	135...160	15	7	60

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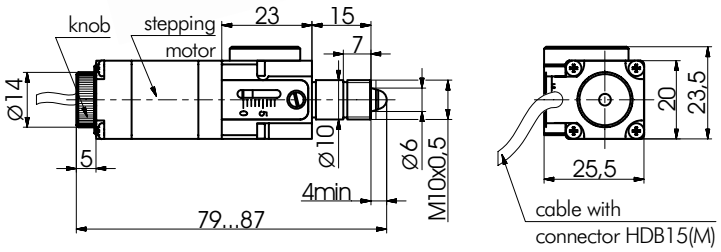
e-mail: sales@standa.lt www.standa.lt

Compact Motorized Actuator

8CMA20-8/15

8CMA20-8/15

- **Reduced size**
- **Manual drive with a knob**
- **Limit switch: optoelectronic couple**
- **Step motor controllers are offered separately**
- **Optional power supplies for higher voltages/speeds are available**



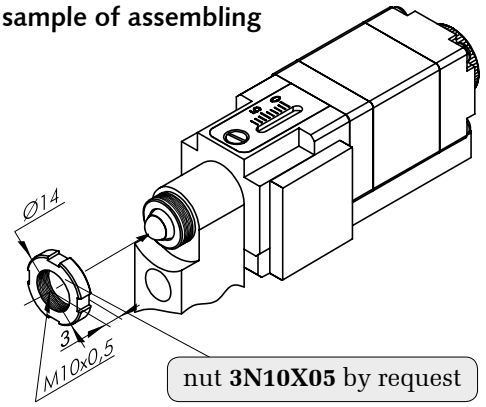
SPECIFICATIONS

Travel range	8 mm
Resolution	1.25 μm
Lead screw pitch	0.25 mm
Nominal force	30 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
Stepper motor	20
Weight	0.10 kg

8MBM24-1-2

modified kinematic mirror/beamsplitter mount **5MBM24-1-2** with motorized actuator **8CMA20-8/15** installed page 8-63

sample of assembling



nut **3N10X05** by request

8MGM25T-1
(gimbal mount **5GM25T-1** with motorized actuator **8CMA20-8/15**)
page 8-64

8MKVDOM-1
(vertical drive optical mount **5KVDOM-1** with motorized actuator **8CMA20-8/15**)
page 8-65

Available Motorized Actuator with 10^{-6} Torr VACUUM compatible DC MOTOR

8CMA20DCV-8/15

Available Motorized Actuator with DC MOTOR

8CMA20DC-8/15

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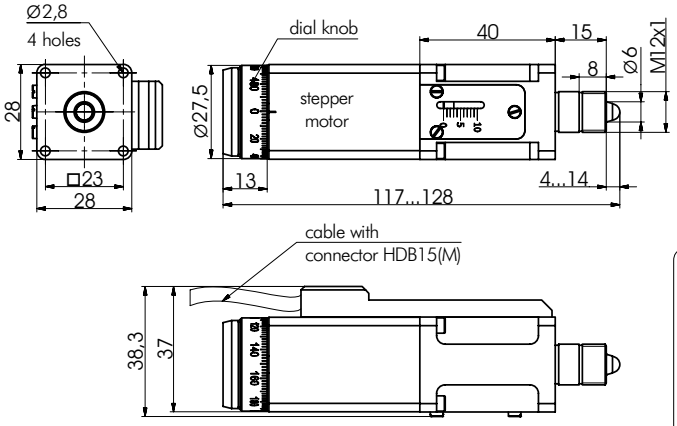
Phone: +370-5-2651474 Fax: +370-5-2651483

Motorized Actuator

8CMA28-10

- Compact
- Manual drive with a knob
- Two limit switches
- Step motor controllers are offered separately
- Optional power supplies for higher voltages/ speeds are available



SPECIFICATIONS

Travel range	10 mm
Resolution	1.25 μm
Lead screw pitch	0.25 mm
Nominal force	70 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	0.15 kg

Related Controllers

8SMC4-USB-B8-1
1 axis Controller in box

more info on
www.standa.lt

8MBM57-6
(mirror/beamsplitter mount **5BM57-6**
with motorized actuator
8CMA28-10)

Modified Manual Stages with Motorized Actuators are available

8MR128
(micro rotation stage **7R128**
with motorized actuator
8CMA06-13/10)

8MR170-190
(rotation stage **7R170-190**
with motorized actuator
8CMA28-10)

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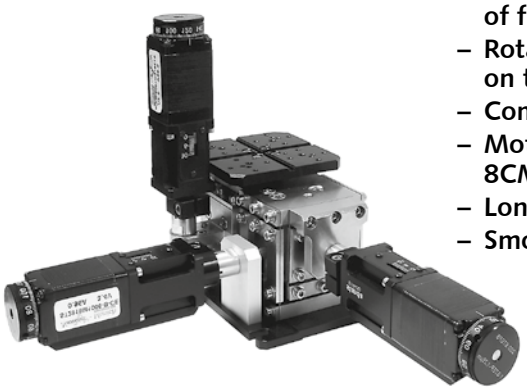
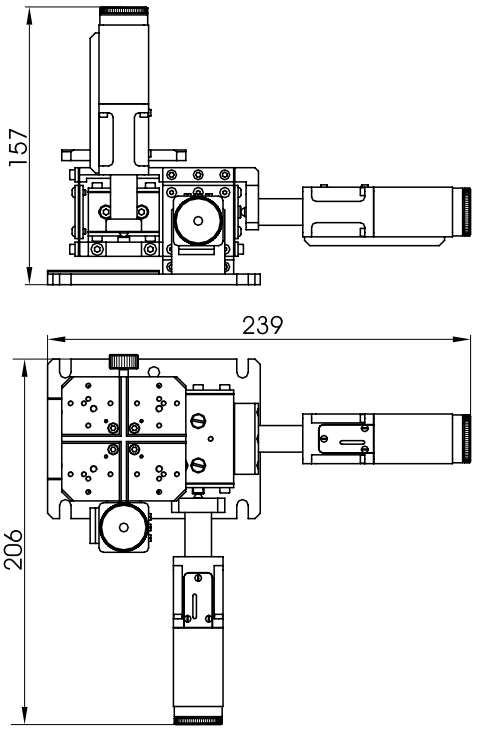
Motorized Fiber Coupling Stage

8MTF2



- **Fiber coupling stage of flexure design**
- **Rotating platform on the top**
- **Compact block design**
- **Motorized Actuator 8CMA28-10**
- **Long-term stability**
- **Smooth motion**



Other dimensions such as 7TF2 (page 7-28)

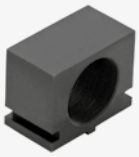
SPECIFICATIONS

Travel range in each XYZ direction	2 mm
Resolution	0.2 μm
Cross-Talk	20 μm/mm
Mechanical stability	flexure design with Stainless Steel Spring
Load capacity	1.5 kg
Type of actuator	8CMA28-10
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	1.6 kg

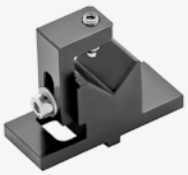
Accessories for Fiber Coupling Stage

page 7-29

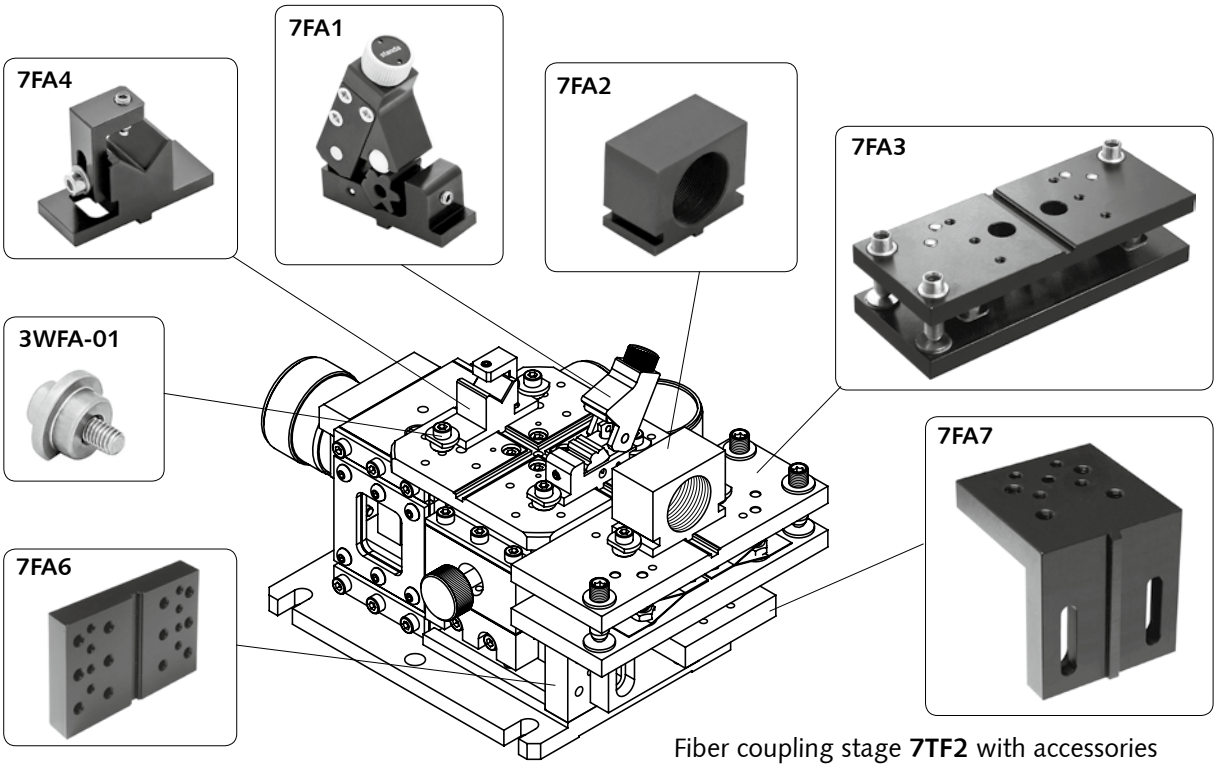
7FA1


7FA2

7FA3


7FA4

7FA5



Fiber coupling stage **7TF2** with accessories

e-mail: sales@standa.lt www.standa.lt
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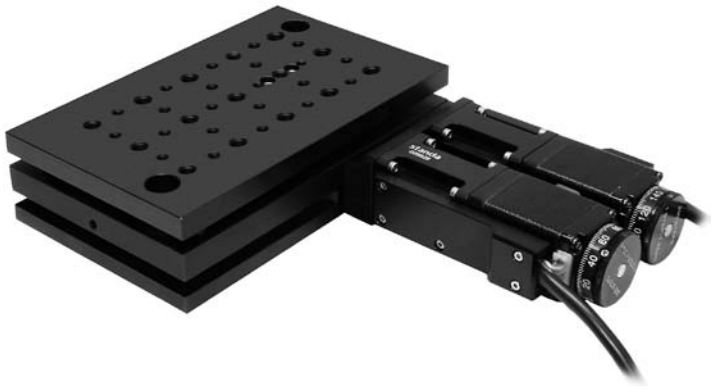
Motorized YZ Translation Stage

8MTP116



SPECIFICATIONS

Tilt y	±2°
Rotation z	±2,5°
Resolution	
in full step	1,25 μm
in 1/8 step	0,156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
Maximum load capacity	10 kg
Type of actuator	8CMA28-10
Cable	1.2 m length cable included
Motor connector	DB15(M)
Weight	1,3 kg

Manual Multi-Axis Tilt platform
6TP116

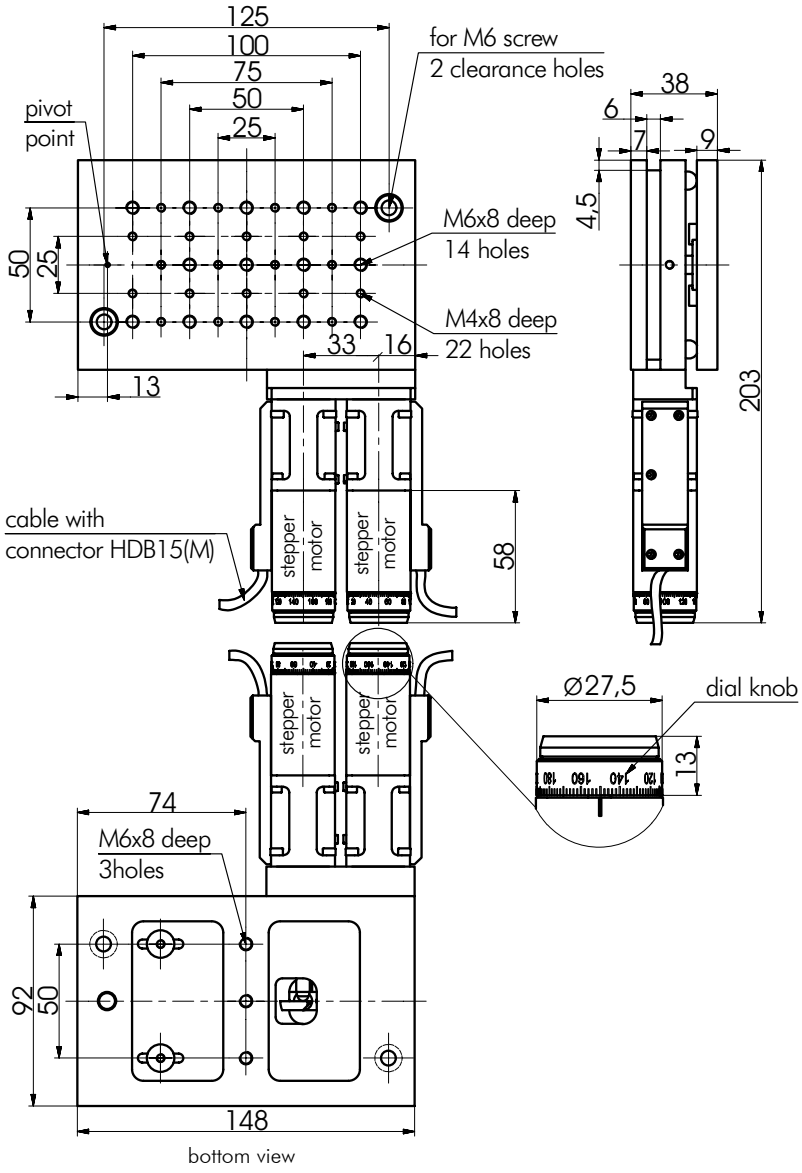
Motorized Actuator
8CMA28-10

Stepper/DC Motor Controller
with **USB Interface**

2 axis Controller in box
8SMC4-USB-B9-2

Assembly kit to fix two or more controller boxes together

Assembly kit
5AK-B9-B9



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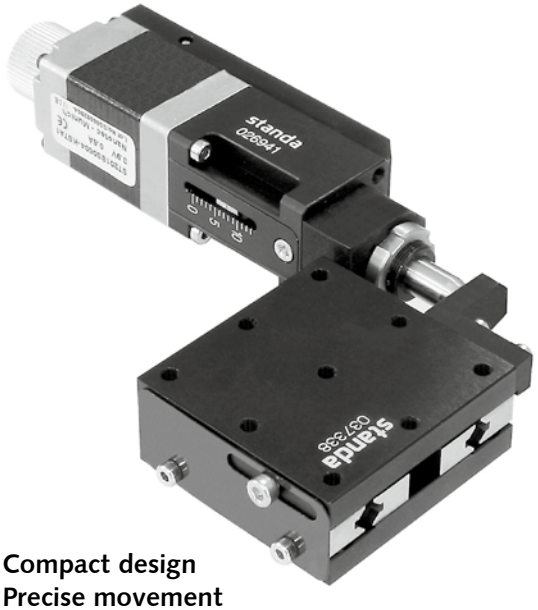
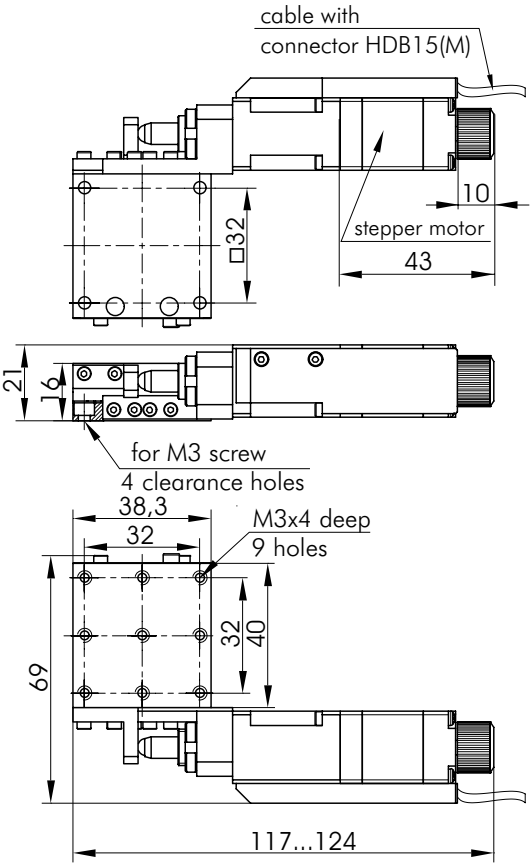
Motorized Translation Stage

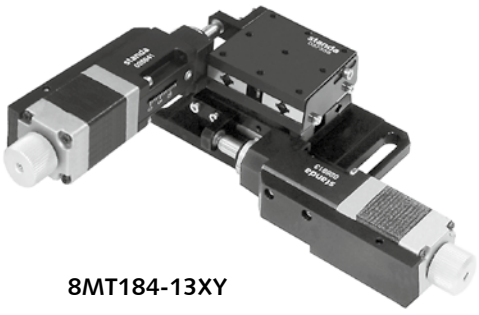
8MT184-13



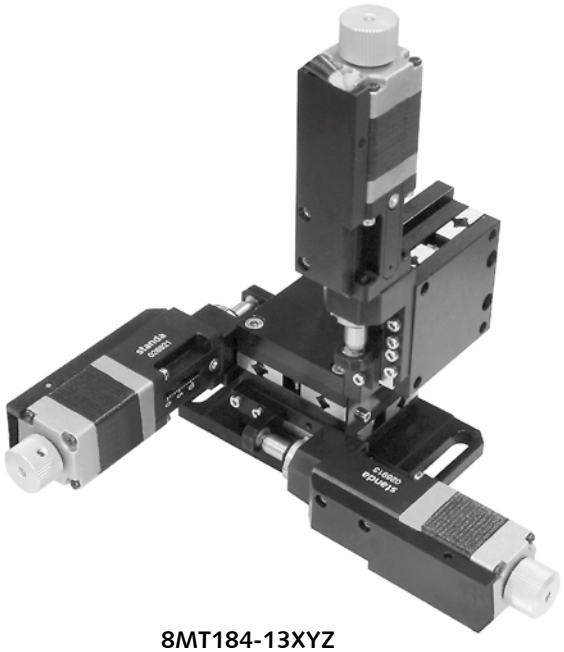


- **Compact design**
- **Precise movement**
- **13 mm travel range**
- **X-Y-Z direct stacking**
- **Stacks directly with stages of 174 series**
- **Motorized Actuator 8CMA06-13/15**
- **Lockable**
- **Black anodized aluminium**
- **Angle bracket 2AB174 for vertical mounting**

3UBP-04
Universal base plate for stacking the translation stages to STANDA optical tables or to another stages



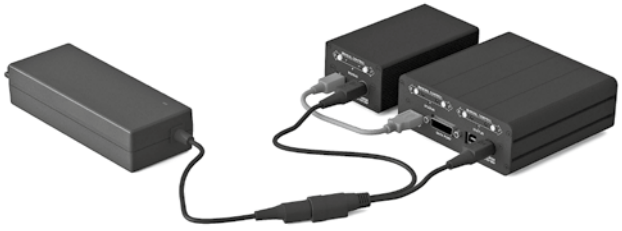
8MT184-13XY



8MT184-13XYZ

Recommended Controller

Three Axis Stepper/DC Motor Controller 8SMC4-USB-B8-B9
with **Power Supply**



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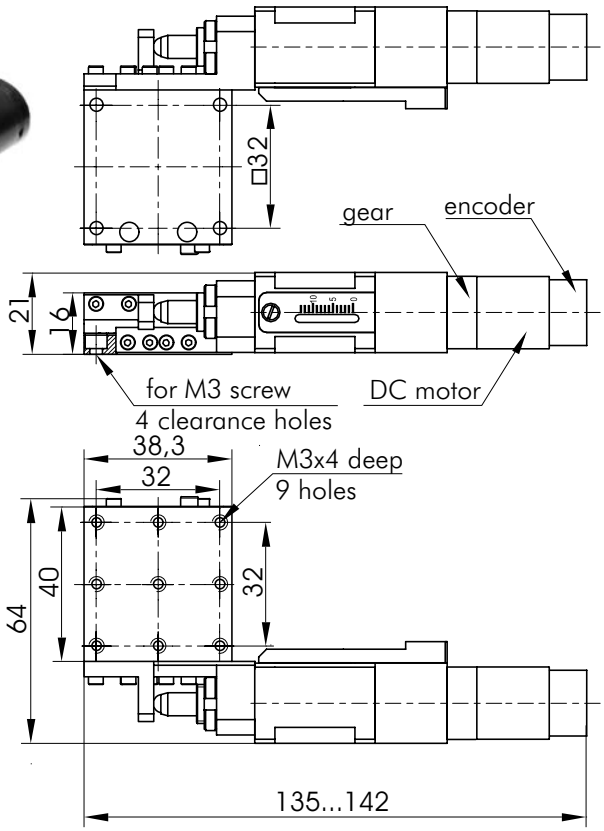
Motorized Translation Stage

8MT184-13DC



- **Compact design**
- **Precise movement**
- **13 mm travel range**
- **X-Y-Z direct stacking**
- **Stacks directly with stages of 174 series**
- **Motorized Actuator 8CMA16DC-13/15**
- **Lockable**
- **Black anodized aluminium**
- **Angle bracket 2AB174 for vertical mounting**

Available Motorized Translation Stage with VACUUM 10^{-6} Torr Compatible DC motor

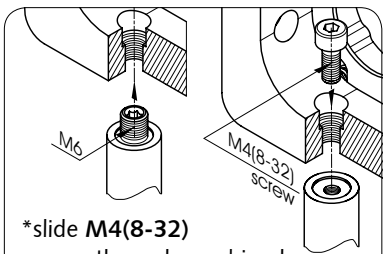
8MT184V-13DC

Motorized Optical Mount

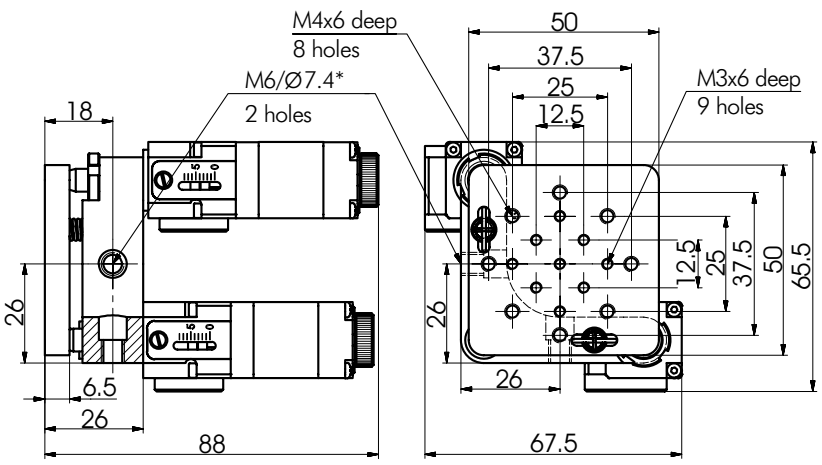
8MUP21-2

SPECIFICATIONS

Travel range	4 mm
Resolution	<1 arcsec
Tilt range	9°(about two axes)
Speed (Standa SMC1-USBh controller)	from 1 arcsec/sec to 1°/sec
Type of actuator	8CMA20-8/15
Optocoupler end limit switches	2 per actuator
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Recommended controllers	8SMC4-USBh



*slide **M4(8-32)** screws through combined **M6/Ø7.4** mounting/clearance holes to mount the unit immediately to **M4(8-32)** holes, or mount the unit directly on any **M6** tip



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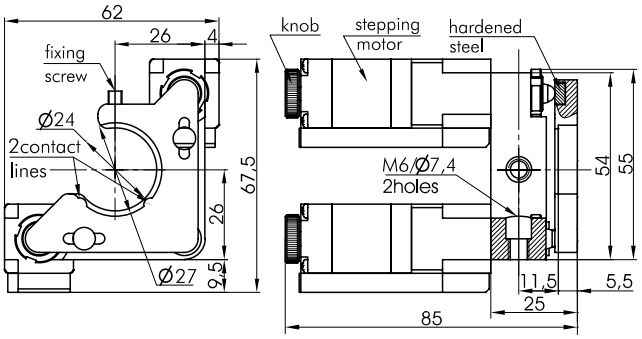
DC motor base Actuators are available on request

Motorized Kinematic Mirror/Beamsplitter Mounts **8MBM24**

8MBM24-1-2

- **1″ optics mounts**
- **Tilt range 9° (about two axes)**
- **Travel range 4 mm**
- **Mounting on either of 2 sides**
- **Two models – round and square aperture**
- **Kinematic**
- **Clear edge design**
- **A motorized actuator 8CMA20-8/15 pushes via seat of hardened stainless steel**
- **Black anodized aluminium**
- **2″, 3″ models available 8MBM24-2, 8MBM24-3**



Modified Optical Positioners with Motorized Actuator **8CMA20-8/15** are available

more info on **www.standa.lt**

Motorized Two Axis Translation Optical Mount **8MTOM2-1**

DC motor base Actuators are available on request

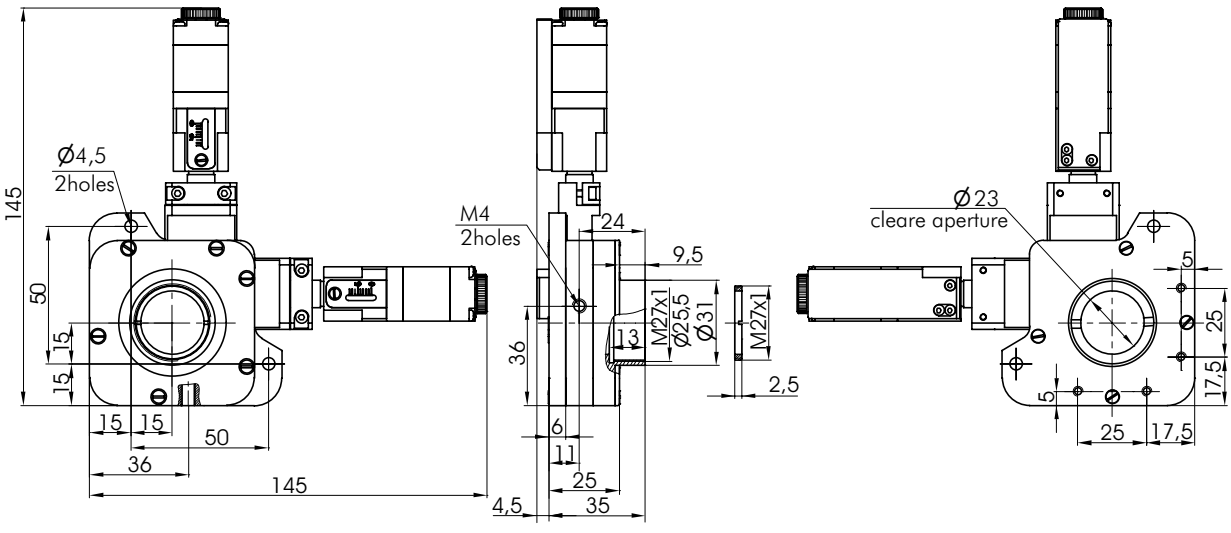
Designed to use with microscope

- **1″ optics mounts**
- **Limit switch: optoelectronic couple**
- **Black anodized aluminium**

The **8MTOM2-1** is made of **5TOM2-1** XY Translation Mount and **8CMA20-8/15** Compact Motorized Actuators.

SPECIFICATIONS

Resolution in full step	1.25 μm
in 1/8 step	0.156 μm
XY translation range	±2 mm
Lead screw pitch	0.25 mm
Weight	0.8 kg



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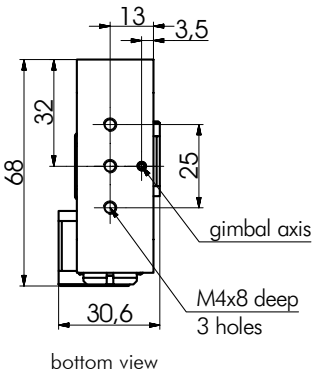
Motorized Gimbal Mount

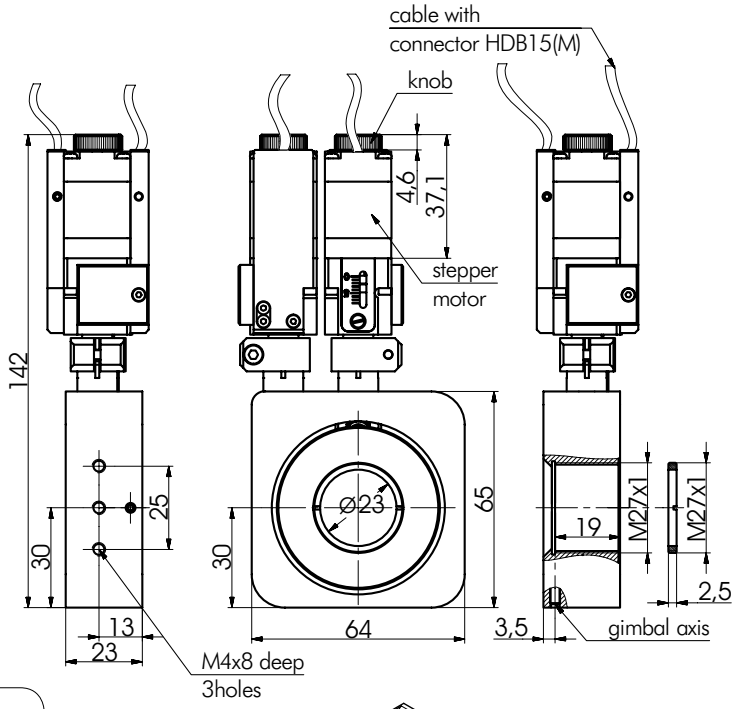
8MGM25T-1

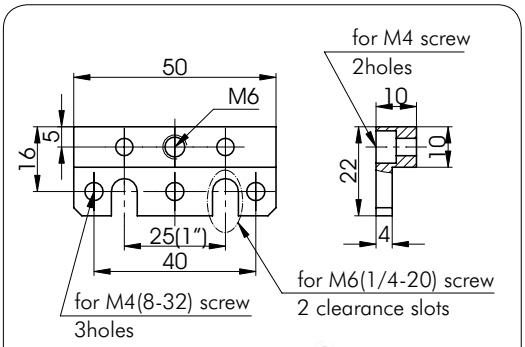
SPECIFICATIONS

Optics diameter	25,4 mm
Clear aperture	23 mm
Angular range	±2,5°
Type of actuator	8CMA20-8/15
Resolution*	
in full step	1,25 μm
in 1/8 step	0,156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
Maximum speed	4 mm/s
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	0.7 kg

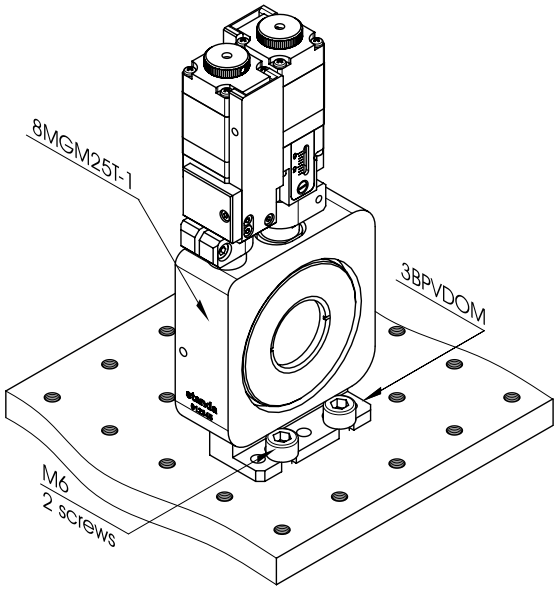
*Actuator`s movement dependance of horizontal position is not lineral.







3BPVDOM
Base Plate



DC motor base Actuators are available on request

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e-mail: sales@standa.lt www.standa.lt

Motorized Vertical Drive Optical Mounts 8MKVDOM

Motorized Vertical Drive Optical Mounts 8MKVDOM are designed to minimize mount-induced wavefront distortions. In conventional mounts, the mirror is tightened by a side screw. **Radial forces** acting on the mirror induces parasitic wavefront distortion, such as astigmatism. **8MKVDOM** mirror mounts use secure **3-points mirror suspension** in between frontal flat spring and the back plate. Uniformly distributed axial forces eliminate wavefront distortion.

- **1", 2" optics diameter**
- **Stainless steel**
- **Compact/robust design**
- **Annealed front panel**

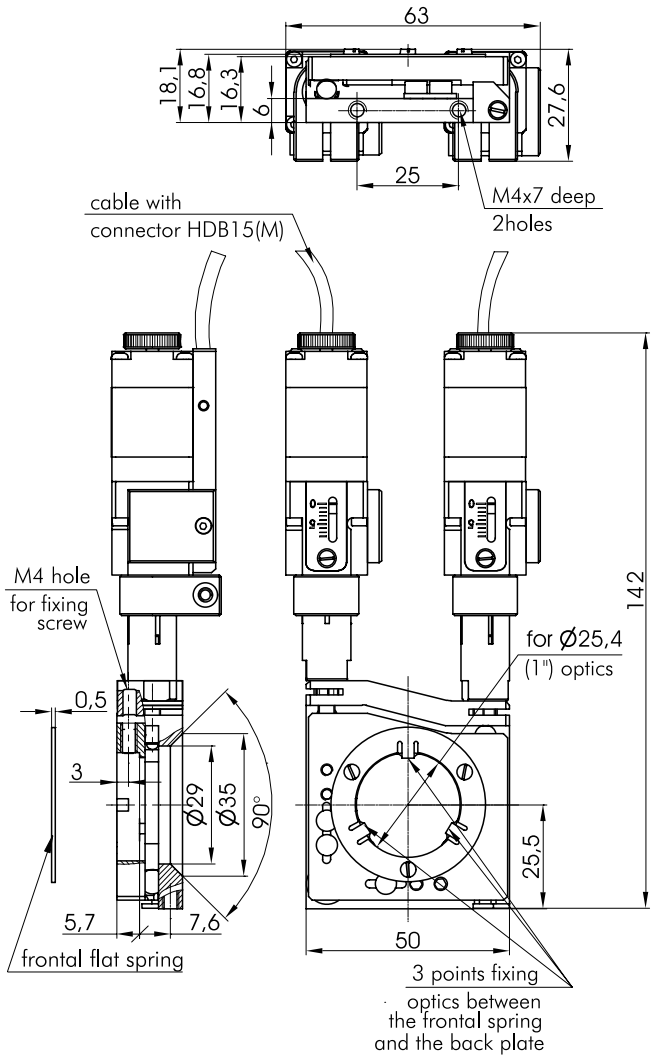
Due thermal processes on optic holding part, all metal inner tensions were removed and part makes none micro movements.

These mounts are ideal for industrial applications in different optical devices (laser cavities, optical sub-assemblies, limited space applications) because of their long-term stability.

Motorized Vertical Drive Optical Mount 8MKVDOM-1

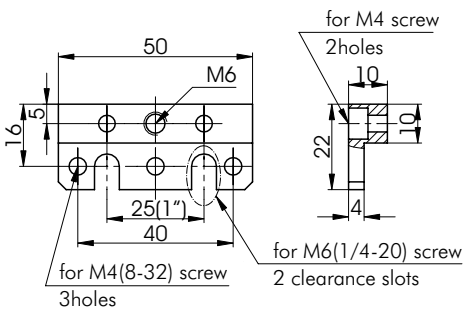
SPECIFICATIONS

Optics diameter	25.4 mm
Clear aperture	23 mm
Tilt/tip range	±2.5°
Sensitivity	
by horizontal	3.8 arcsec. in full step of actuator
by vertical	3.9 arcsec. in full step of actuator in the middle tilt of platform
Type of actuator	8CMA20-8/15
Travel range of actuator	6 mm
Resolution	
in full step	1.25 μm
in 1/8 step	0.156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	0.5 kg



Stepper/DC Motor Controller
with **USB Interface**

2 axis Controller in box
8SMC4-USB-B9-2



3BPVDOM Universal Base Plate is designed to attach Motorized Vertical Drive Mirror Mounts **8MKVDOMV** to STANDA optical tables or to another stages.

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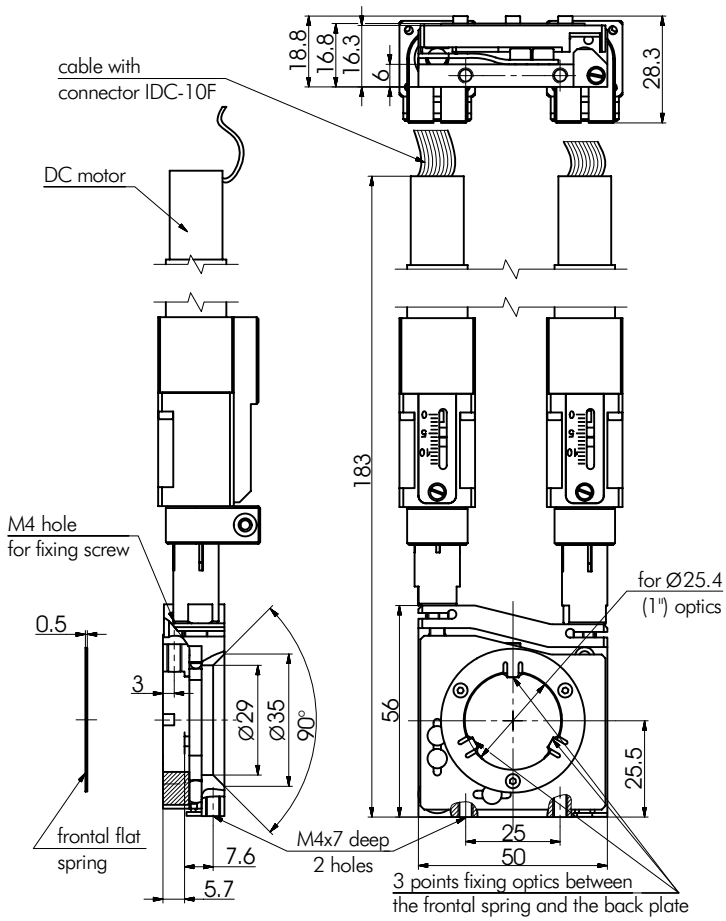
Phone: +370-5-2651474

Motorized Vertical Drive Optical Mount with DC motor

8MKVDOM-1-DC
8MKVDOMV-1

8MKVDOMV-1 available for Vacuum!



SPECIFICATIONS	8MKVDOM-1-DC	8MKVDOMV-1
Optics diameter, mm	25.4	
Clear aperture, mm	23	
Tilt/tip range, °	±2.5	
Angular Resolution:		
by horizontal, arcsec.	1.5	
by vertical, arcsec.	1.75 arcsec. in the middle tilt of platform	
Type of actuator	8CMA16DC-13/15	8CMA16DCV-13/15
Lead screw pitch, mm	0.25	
Cable	integrated, 1.2 m length	
Motor connector	HDB15(M)	
Type of motor	DC motor DCE1524	Vacuum compatible DC motor DCE1841
Recommended controller	8SMC4-USB	

ORDERING INFORMATION

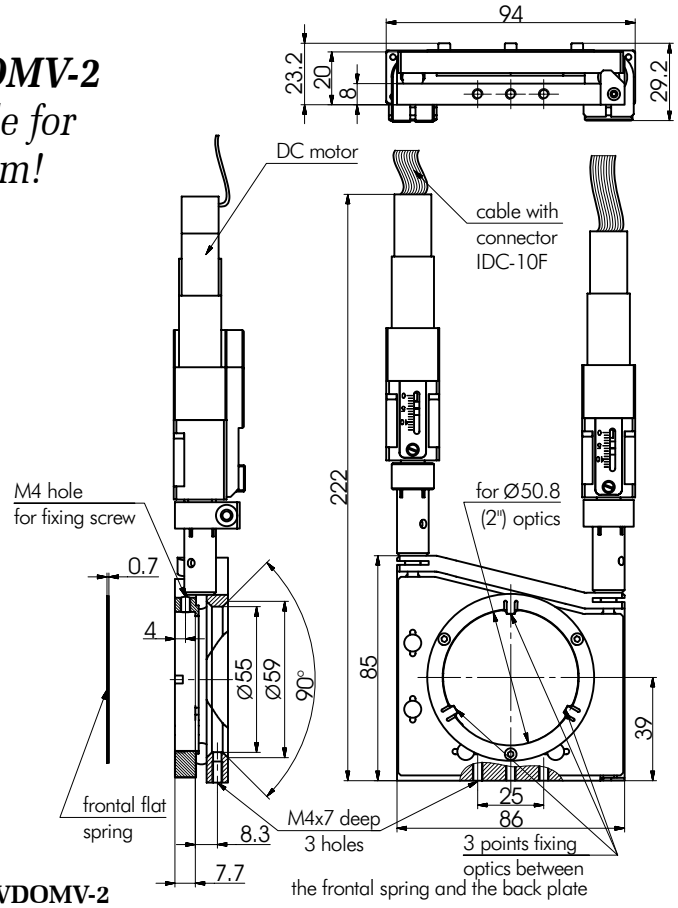
8MKVDOM-1	Mount with **stepper motor** for **Ø25.4 mm** (**1 inch**)
8MKVDOM-1-DC	Mount with **DC motor** for **Ø25.4 mm** (**1 inch**)
8MKVDOMV-1	**Vacuum Compatible** Mount with **DC motor** for **Ø25.4 mm** (**1 inch**)
8MKVDOM-2	Mount with **stepper motor** for **Ø50.8 mm** (**2 inch**) and **8 mm thickness** optics
8MKVDOM-2-DC	Mount with **DC motor** for **Ø50.8 mm** (**2 inch**) and **8 mm thickness** optics
8MKVDOMV-2	**Vacuum Compatible** Moun with **DC motor** for **Ø50.8 mm** (**2 inch**) and **8 mm thickness** optics
8MKVDOM-2-05	Mount with **stepper motor** for **Ø50.8 mm** (**2 inch**) and **12.7 mm thickness** optics
8MKVDOM-2-05-DC	Mount with **DC motor** for **Ø50.8 mm** (**2 inch**) and **12.7 mm thickness** optics
8MKVDOMV-2-05	**Vacuum Compatible** Moun with **DC motor** for **Ø50.8 mm** (**2 inch**) and **12.7 mm thickness** optics

Motorized Vertical Drive Optical Mount with DC motor

8MKVDOM-2-DC
8MKVDOMV-2

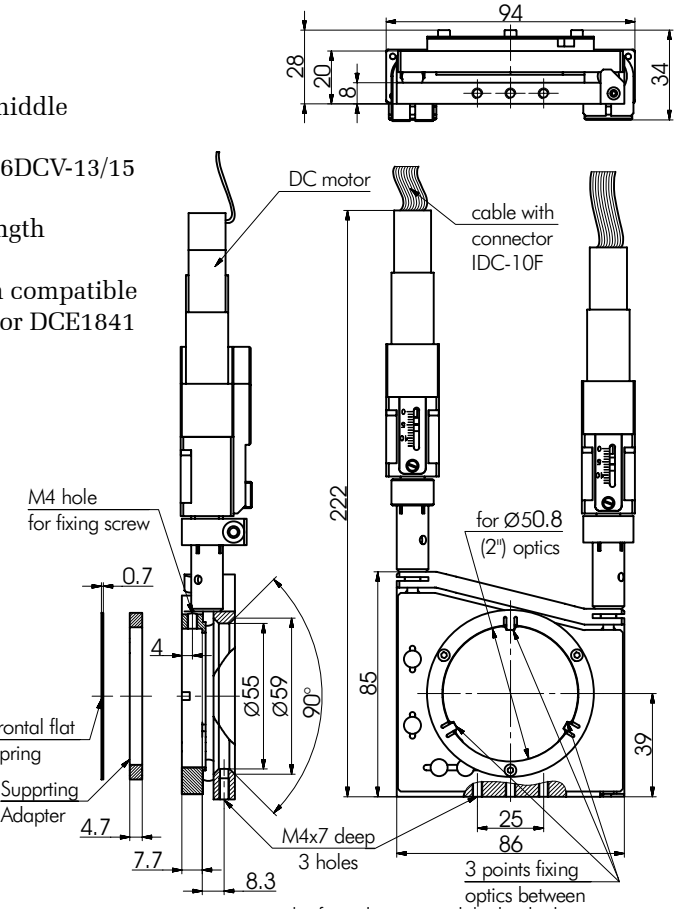
8MKVDOMV-2
available for Vacuum!

8MKVDOMV-2-05 – for 12.7 mm thickness optics we recommend Optical Mount with Supporting Adapter.



8MKVDOM-2-DC / 8MKVDOMV-2

SPECIFICATIONS	8MKVDOM-2-DC	8MKVDOMV-2
Optics diameter, mm	50.8	
Clear aperture, mm	48	
Tilt/tip range, °	±2.5	
Angular Resolution:		
by horizontal, arcsec.	1	
by vertical, arcsec.	1.25 arcsec. in the middle tilt of platform	
Type of actuator	8CMA16DC-13/15	8CMA16DCV-13/15
Lead screw pitch, mm	0.25	
Cable	integrated, 1.2 m length	
Motor connector	HDB15(M)	
Type of motor	DC motor DCE1524	Vacuum compatible DC motor DCE1841
Recommended controller	8SMC4-USB	



8MKVDOM-2-05-DC / 8MKVDOMV-2-05

Stepper/DC Motor Controller with **USB Interface**

2 axis Controller in box
8SMC4-USB-B9-2

Assembly kit to fix two or more controller boxes together

Assembly kit
5AK-B9-B9

e-mail: sales@standa.lt www.standa.lt
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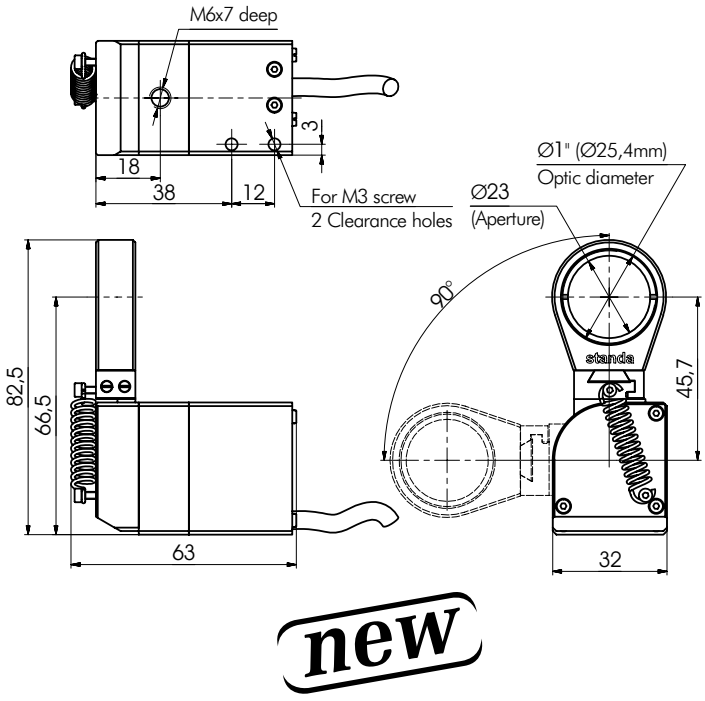
Motorized Flipper Mount

8MFM-1

- **Controlled with button, handset, external trigger or 8SMC4-USB controller**
- **Mechanical hard stops ensure repeatable positioning**
- **M6x7 threaded hole for post mounting**
- **Remote handset with SMA I/O connectors**
- **Single cable solution for space saving**
- **Ø2" optical mount on request**

Motorized Flipper Mount 8MFM-1 is designed for fast and precise Ø1" (25.4 mm) optical components flip in and flip out of beam path. Reaching 90° flip position takes less than 0.4 s. Mechanical hard stops ensure repeatable positioning. **Flipper mount 8MFM-1** performs with great repeatability, stability and long lifetime. Filters, mirrors or pinholes can be easily mounted into the holder and fastened using two fluoroplastic rings and retaining nut. Optics holders for fast switching between different optics can be ordered separately. Due its fast flip time the 8MFM-1 can be used as beam shutter.

Flipper Mount has two M3 clearance holes on the side and M6x7 deep threaded mounting hole at the bottom, which aligns with optical axis.



new

Easily changeable **4FOM-1** optics holder (one included with **8MFM-1)**

SPECIFICATIONS

Flip positions	0 and 90°
Flip time	<0.4 s
Optic diameter	∅25.4 mm (1")
Optics thickness, max	7 mm
Flip to flip repeatability	≤50 μrad
Maximum torque	0.33 Nm
Digital I/O Connector type	SMA (2 places)
Power input	9 V-12 V
Weight	160 g

ORDERING INFORMATION

8MFM-1	– Motorized Flipper Mount
PS12-0.7-C	– Power Supply (12 V; 0.7 A)
4FOM-1	– Optics holder (additional)

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• by PC using **8SMC4-USB controller** or customer's own device
• or by PC via external SMA connectors

• by the button on the top of the flipper

Motorized flipper mount can be controlled

• **remote handset** (included with **8MFM-1**)

Remote handset itself is equipped with SMA input and output connectors*.

*The I/O connectors use TTL signal levels (from 0 V to 5 V). Via input user can control holder position and via output determine position of it.

PS12-0.7-C – power supply 12 V; 0,7 A

This **flipper mount** requires **9 – 12 V power supply** unit to operate.

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Motorized Gimbal Optical Mount

8MLAOM

new

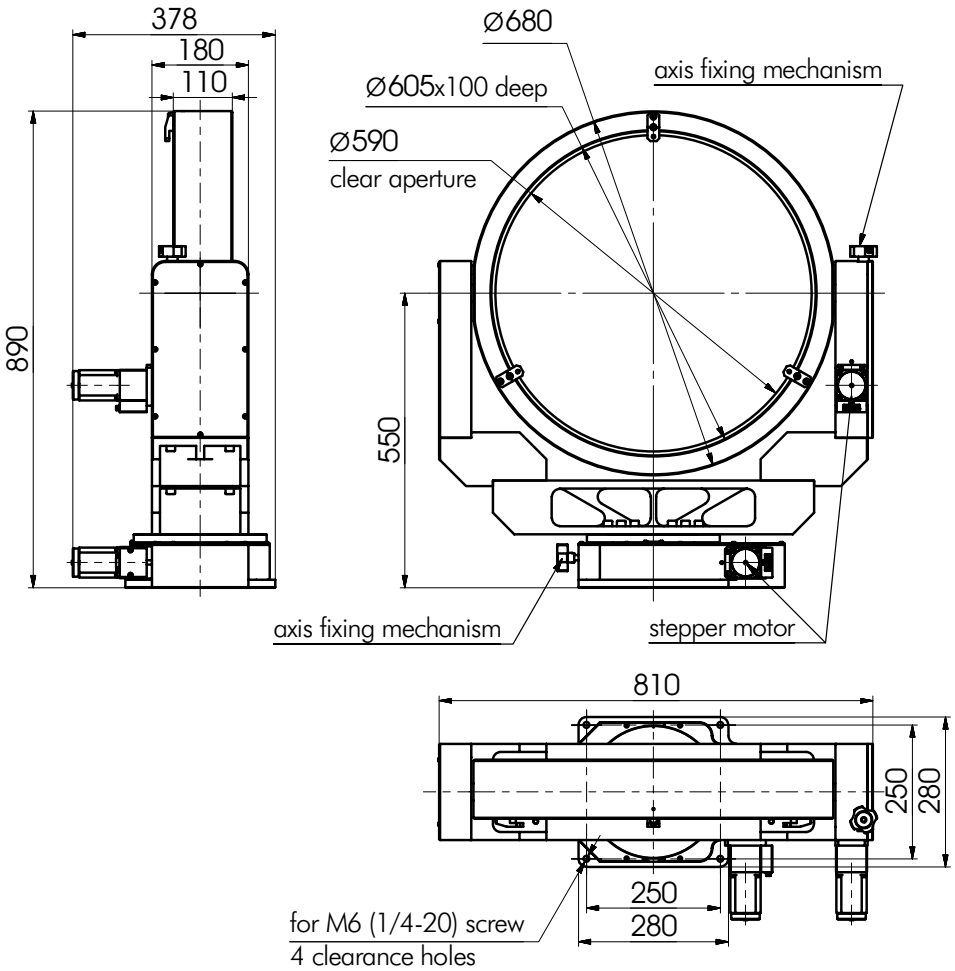
- **Rotation range in azimuth and elevation: 360°/360°**
- **Fine adjustment range: ±4°/±4°**
- **High positioning resolution: 3 arcsec**
- **Maximum acceptable thickness of optical element: 100 mm.**
- **Maximum acceptable weight of optical element: 150 kg.**
- **High thermal and vibration stability**
- **Near zero backlash**
- **Various range of apertures can be customized on request.**
- **Manual version of optical mount is available**
- **Vacuum Compatible Version is available**

8MLAOM Motorized Gimbal Optical Mount has been designed for positioning of large optical elements up to 600 mm. Commonly LAOM optical mounts is extremely efficient solution in such applications as: high power laser systems and astronomy.

LAOM series optical mounts have complete 360 degree rotation in azimuth and elevation axes if transmission of both coordinates is decoupled. Special spring preloaded internal mechanisms result near zero backlash motion, what allows user to avoid additional feedback system in order to reduce the uncertainty of the system. Fine adjustment in ±4° range provides high quality motion with resolution down to 3 arcsec (or better by request).

Age hardened aluminum alloy guarantees: softness of the assembly, high thermal stability and high vibration stability.

Control of LAOM series motorized optical mounts is available with **Standa controller 8SMC4-USB-B9-2**.



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SPECIFICATIONS

Kinematics and Feedback information	
Azimuth/Elevation (coarse)	360°/360°
Azimuth/Elevation (fine)	±4°/±4°
Resolution	
4000 steps/rev	0.3 arcsec
1000 steps/rev	1.2 arcsec
400 steps/rev	3 arcsec
Encoder type	On request
Encoder resolution	On request
Bidirectional repeatability	3 arcsec
Unidirectional repeatability	3 arcsec
Accuracy	On request
Backlash	0
Maximum speed	1 °/sec
Limit Switches	Hall sensors (2pcs on each axis)
Switch polarity	Pushed is closed
Load and Transmission information	
Load capacity	150 kg
Lead Screw Pitch	1 mm
Stepper Motor	5909
DC motor	On request
Gearbox	On request
Material and environment conditions	
Base material	Aluminum
Finish	Powder coating
Environment pressure	Atmosphere (10^{-3} torr / 10^{-6} on request)
Ambient temperature	On request
Control and Communication	
Recommended controllers	8SMC4-USB-B9-2
Recommended power supply	PS36-3.4-4 / PS24-2.5-4
Connector	HDB15(M)
Cable length	1.6 m
Additional Details	
Measurement system	Metric
Weight	79 kg
Aperture	Ø590 mm
Max optic diameter	Ø600 mm
Min optic diameter	Ø500 mm
Max optic thickness	100 mm

Recomended Controller for DC/Stepper Motors

8SMC4-USB-B9-2
2 axis Controller in box

8JXY-03
Joystick for 8SMC4-USB controller

More info on **www.standa.lt**

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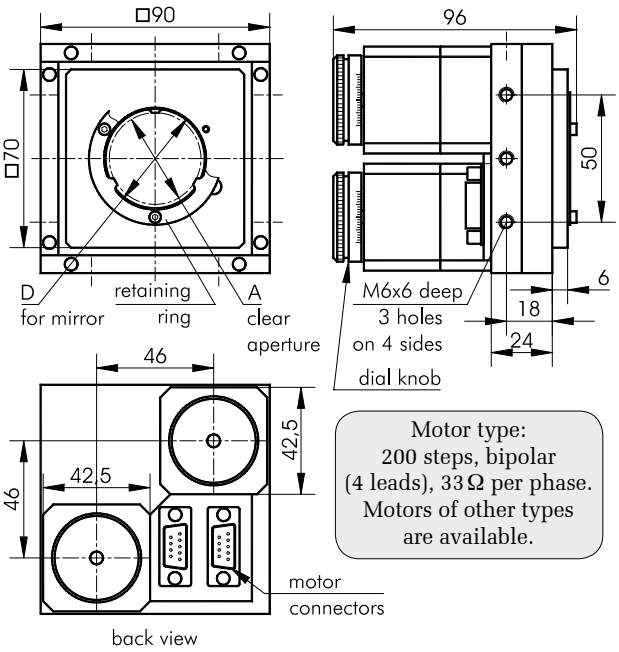
Motorized Mirror Mount

8MMA60

Motorized Mirror Mounts 8MMA60 are designed for precise angular alignment of optical elements. Platform is **tilted** about **two axes**. A **retaining ring** keeps optics in a non-through mounting opening of the platform.

The ring is fixed by 3 screws. It has **3 dents** with which it **clamps** optics against similar **3 rests** in the platform.

The **dents** are exactly opposite to the **rests** – this **minimizes deformation**.



Motor type:
200 steps, bipolar
(4 leads), 33 Ω per phase.
Motors of other types
are available.

SPECIFICATIONS

Tilt range	5° both axes
Visual reading	dial knobs graduated in 200 steps per revolution
Resolution	0.0016° (0°00'06") per step
Optics accepted	*(see the drawing)*
diameter (D), and **clear aperture** (A):	
8MMA60-1	∅25.4 mm (1"), A=21.4 mm
8MMA60-40	∅40 mm, A=36 mm
8MMA60-2	∅50.8 (2"), A=46.8 mm
custom sizes available	
Optics thickness	10 mm (retaining rings for custom thickness available)
Material	black anodized aluminium
Weight	1.08 kg

Motorized Vertical Translation Stage

8MVT188-20

- **Pantograph design**
- **16 ball bearings**
- **Stepping motor drive**
- **Precision lead screw**
- **95 mm vertical travel**
- **Height: min 89 mm max 184 mm**
- **Top and bottom plates parallel to 1 mm**
- **Load capacity 8 kg (depending on motor and controller)**
- **Supply voltage – 36 V**
- **Weight: 4.3 kg**

Motorized Vertical Translation Stage 8MVT188-20 boasts our unique design. Being very compact, it provides smooth and stable adjustment of height. It has a large travel range, and it supports large loads. While moving the platform stays parallel to the base.

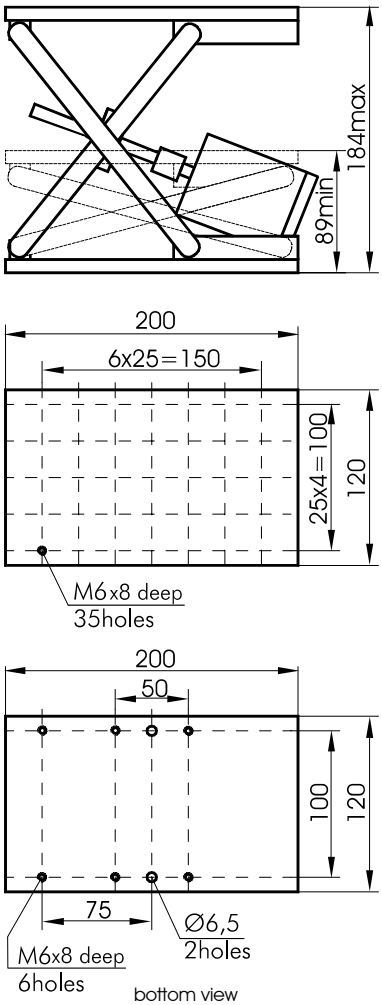
Examples of use: making up for height differences during the set up; automation of technological processes, like laser welding.

A stepper motor type – **5918,** 200 steps. Customer can specify any other types of motors to install. Load capacity and speed all greatly depend on the motor. We can test and select an appropriate motor for your requirements.

The lead screw acts at a varying angle, so the resolution of the stage varies with position.

The platform has an array of **M6** holes spaced by **25 mm**. The base has **six M6** and **two ∅6.5** holes.

Material: black anodized aluminum.



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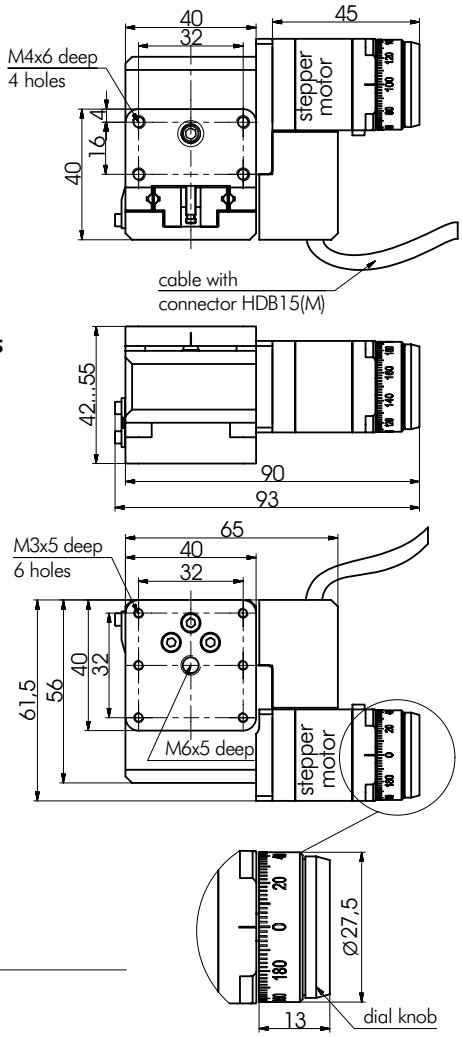
Motorized Vertical Translation Stage

8MVT40-13



- **Travel range 13 mm**
- **Stacks directly with stages of 174 and 184 series**

SPECIFICATIONS	**8MVT40-13-1**
Travel range, mm	13
Lead screw pitch, mm	1
Resolution in full step*, μm	0.083
Max speed*, mm/s	0.416
Load capacity, kg	6
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28S
Weight, kg	0.45

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

8MVT40-13 stacks directly with stages of **174** and **184** series

8MT184-13

7R174-11, 7T184-13 (2 pieces), and **7VT174** or **7VT40** stacked

8MR174-11-28S

Related Controller for DC/Stepper Motors

8SMC4-USB-B8-1
1 axis Controller in box

8SMC4-USB-B9-2
2 axis Controller in box

More info on **www.standa.lt**

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Motorized Z Stage

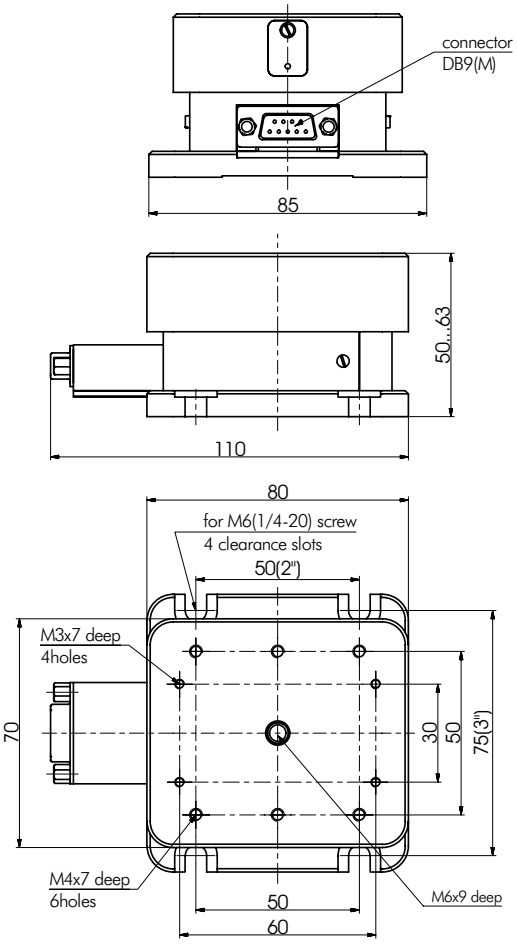
8MVT70-13-1

- **Travel range 13 mm**
- **8MR151 series rotation stages stacks directly on top of 8MVT70-13-1**

Compact Motorized Z Stage of original **Standa** design provides **13 mm** of reliable vertical motion. The stage idealy fits many Standa motorized linear stages.

SPECIFICATIONS

Travel range	13 mm
Resolution in full step	5 μm
Resolution in 1/8 step	0.625 μm
Lead screw pitch	1 mm
Maximum speed	20 mm/sec
Load capacity	4 kg
Unidirectional repeatability	1 μm
Bi-directional repeatability	2 μm
Motor	2 phase stepper actuator
Weight	0.75 kg
Limit switches	2 pc mechanical
Switch polarity	pushed is open
Recommended controllers	8SMC4-USBh



8MR151 series motorized rotation stages can be directly mounted on top of **8MVT70-13-1**.

8MR151-1

Recommended Controllers

more info on **www.standa.lt**

Joystick developed for manual control of one or two-axis all Stepper motor equipped motorized stages

8JXY-03
Joystick for 8SMC4-USB controller

Stepper/DC Motor Controller with **USB Interface**

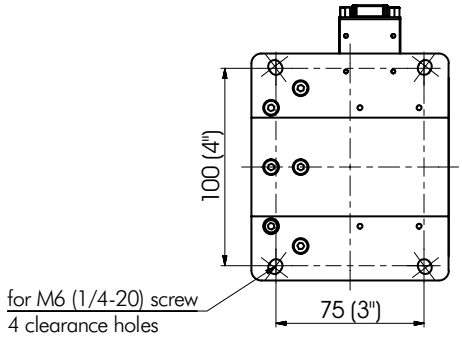
8SMC4-USB-B8-1
1 axis Controller in box

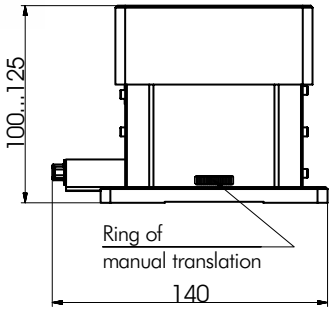
Phone: +370-5-2651474 Fax: +370-5-2651483 e-mail: sales@standa.lt www.standa.lt

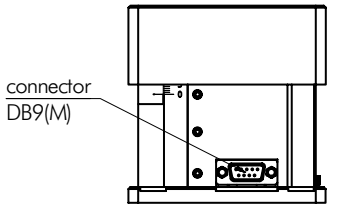
Motorized Vertical Stage

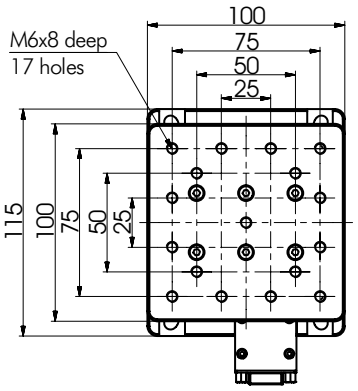
8MVT100-25-1

- **High precision**
- **High speed (up to 20 mm/sec)**
- **Loads up to 8 kg**
- **Compact design**
- **Direct drive actuator**
- **Perfectly stacks with 8MR190, 8MR191-2 rotators and 8MT167 translators**









SPECIFICATIONS

Travel range	25 + 1 mm
Resolution in full step	5 μm
Resolution in 1/8 step	0.625 μm
Lead screw pitch	1 mm
Maximum speed	20 mm/sec
Load capacity	8 kg
Unidirectional repeatability	1 μm
Bi-directional repeatability	2 μm
Motor	2 phase stepper actuator
Weight	2.2 kg
Optocoupler end limit switches	2
Switch polarity	pushed is open
Recommended controllers	8SMC4-USBh

Recommended Controllers

more info on **www.standa.lt**

Four Axis
Stepper/DC Motor Controller
with **Power Supply**

8SMC4-USB-B9-B9

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Vertical Positioning Stage

new

8MVT120

8MVT120-12-4247

8MVT120-25-4247

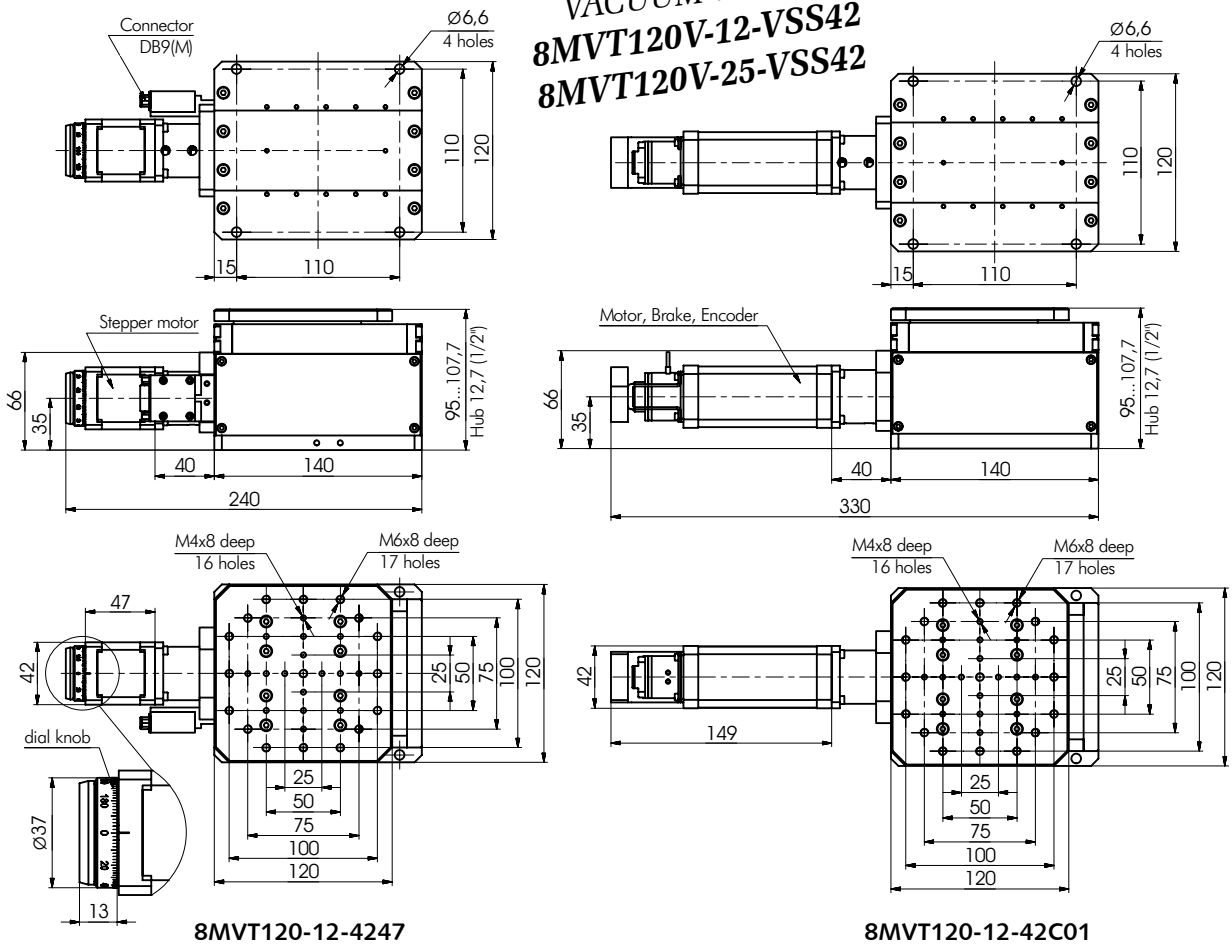
- **True vertical elevation of the platform**
- **Compact design**
- **Travel range – 12.7 mm and 25.4 mm**
- **Long life time ***
- **Vacuum version available**

* Screw coated with BlackIce TFE coating and equipped with plastic anti-backlash self-lubricating nut, which provide up time equal to 7 million cycles, is used in the "42C01" models.

Vertical positioning stage provides high-precision positioning and smooth travel for loads up to 10 kg. The wedge design, driven by precision rolled leadscrew, converts horizontal motion into vertical. Together with high quality linear bearing guide the system ensures rigid and smooth movement across all range of travel and long lifetime. Precision bearings provide platform stiffness and stability while the screw mechanism assures positioning accuracy. For protection of mechanics, optical limit switches are installed.

8MVT120-XX-42C01 model is designed for use in clean room class 100 conditions. This model also equipped with vacuum sleeve for dust removal from inside the stage, which accumulates during stage operation.

Available
VACUUM version
8MVT120V-12-VSS42
8MVT120V-25-VSS42



8MVT120-12-4247

8MVT120-12-42C01

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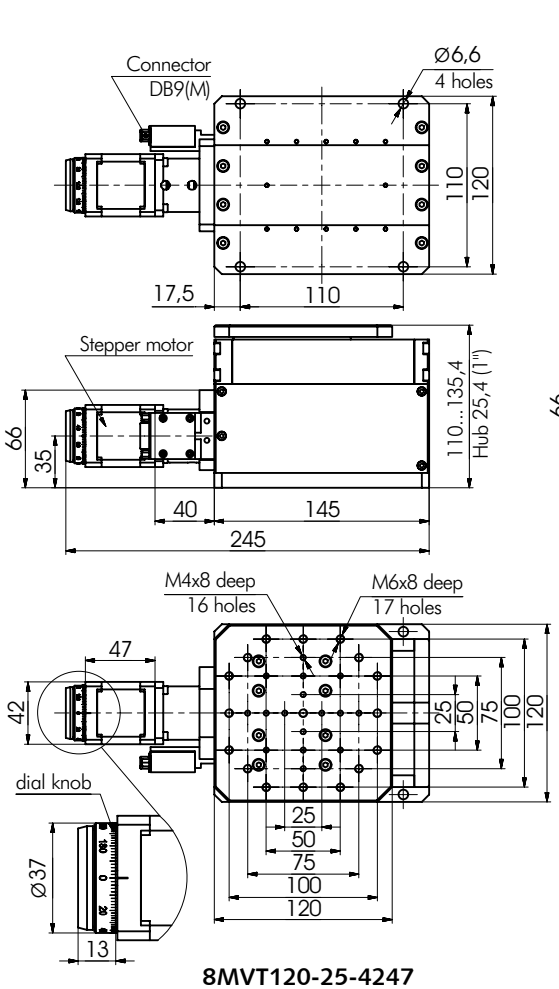
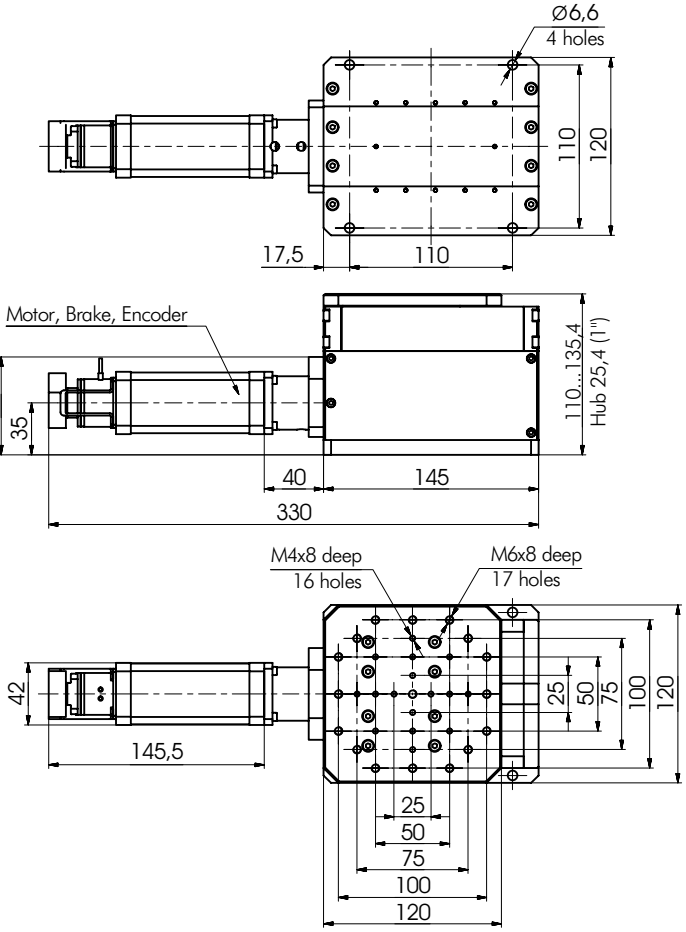
Phone: +370-5-2651474

SPECIFICATIONS	8MVT120-12-4247	8MVT120-12-42C01	8MVT120-25-4247	8MVT120-25-42C01
Travel range, mm	12.7	12.7	25.4	25.4
Resolution in full step, μm	2.5	–	5	–
in 1/256 step, μm	0.018 *	–	0.019 *	–
Encoder pulses per revolution	by request	4000	by request	4000
Travel per 1 pulse, μm	-	0.18	-	0.36
Lead screw pitch, mm	1	1.44 **	1	1.44 **
Wedge reduction rate	2:1	2:1	1:1	1:1
Unidirectional Repeatability, μm	1,5	1,5	1,5	1,5
Bi-direction repeatability, μm	3	3	3	3
Accuracy, μm	10	10	10	10
Lift parallelism (to the base), μm		35 (by request up to 10 μm)		35 (by request up to 15 μm)
Maximum speed, mm/s	10	12	20	25
Maximum load capacity, kg	10 (15 kg by request)	10	10 (20 kg by request)	10
Stepper motor	4247	–	4247	–
Brushless DC motor	-	DB42-100	–	DB42-100
Brake	by request	+	by request	+
Optocoupler end limit switches	2	3	2	3
Switch polarity		Pushed is open		
Motor connector	DB9(M)	by request	DB9(M)	by request
Material		Aluminium		
Finish		Black anodize hard cover		
Weight, kg	3,5	3,9	4,05	4,5
Recommended Controller		8SMC4-USB		

* With Standa 8SMC4-USB controller
** Screw coated with BlackIce TFE coating and equipped with plastic anti-backlash self-lubricating nut, which provide up time equal to 7 million cycles, is used in the "42C01" models.



8MVT120-25-4247



8MVT120-25-42C01

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Motorized Vertical Lift Stage

8MVT120-5

- **Compact**
- **Stiff and stable**
- **Two optical limit switches**
- **Clean room grease**

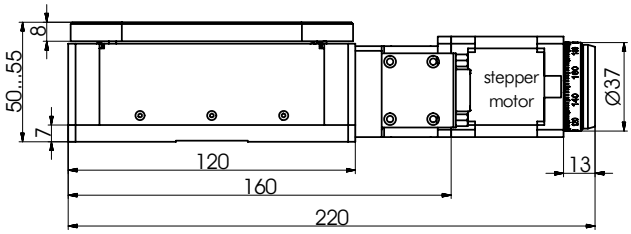
Standa Motorized Vertical Lift Stage offers precise vertical translation for elevating object **up to 8 kg.** An optional 1000-line rotary encoder is available for the stepper motor.

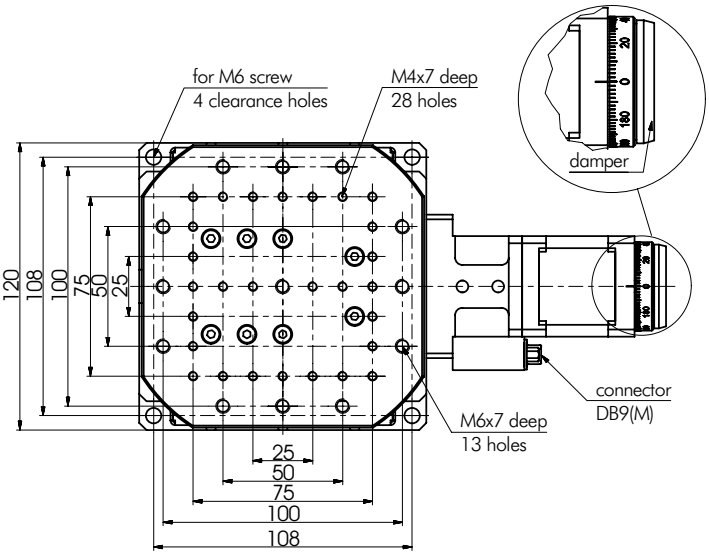
SPECIFICATIONS

Travel range	5 mm
Resolution in full step	0,625 μm
in 1/8 step	0.078 μm
Lead screw pitch	0,5 mm
Wedge reduction rate	4:1
Repeatability	3 μm
Accuracy	10 μm
Lift parallelism (to the base)	20 μm
Mounting surface flatness	10 μm
Position stability (max)	3 μm
Maximum speed	2.5 mm/s
Maximum load capacity	8 kg
Motor connector	DB9(M)
Stepper motor	4247
Recommended controllers	8SMC4-USB
Optocoupler end limit switches	2
Switch polarity	pushed is open

Base plate 3BP120 is designed for fastening **8MVT120** series Motorized Vertical Lift Stages on optical tables and other surfaces.

See page 3-7.





Recommended Controllers

more info on **www.standa.lt**

8SMC4-36
Universal motion controller/driver

Universal motion controller/driver 8SMC4-36 is designed especially to control up to 36 mechatronic systems based on standard **DC**, **Servo**, **Stepper technologies**. The housing of **8SMC4-36** has 7U height and can be mounted in standard 19 inch industrial cabinets. Up to six **8SMC4-36** systems can be installed in a standard 42U 19 inch cabinet. This allows to have 216 axes per cabinet which saves space and lets avoid cable clutter.

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Motorized Goniometers

8MG99 • 8MG00

8MG99-50

- **Rotates an object without obscuring the optical path**
- **Smooth operation with ball bearings**
- **1 or 2 axes of rotation (stackable)**
- **Superb stability**
- **Compact square body**

Goniometers rotate an object about an axis in space located **outside** the body of the unit (usually – above the platform),so the axis is not obscured by the unit itself.

Goniometers have small travel range and greater stability, compared to rotation stages.

Goniometers have to have different **heights of points of rotation**, so that, when you **stack** goniometers one on top of the other, they rotate an object about a common point in space.

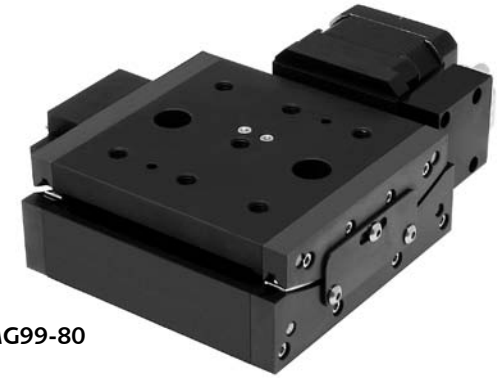
The mechanism rolls smoothly on ball bearings.

The **position** is read within one revolution on the **scale** engraved on the **dial knob** sitting on the axle of the motor. Position can be read to each step. Overall position accounting is up-to your computer.

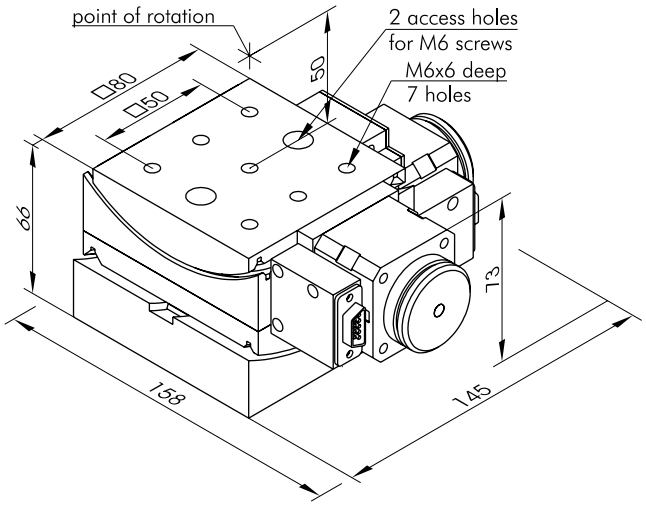
Goniometers have two **limit switches** to signal an "out of limits" error situation. The switches may also be used to **roughly** establish a zero reference.

The stage is driven by a **stepping motor**. A **dial knob** on its axle allows **manual drive**. As standard, we use stepping motors of these parameters: 200 steps, bipolar (4 leads), 33 Ω per phase. A customer can order motors of other types. We offer our Stepper Motor Controllers to control the motorized stages.

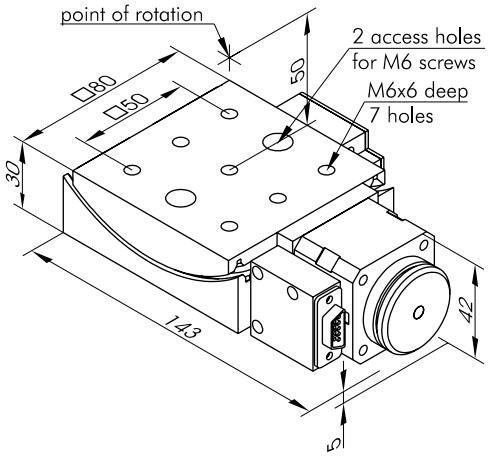
SPECIFICATIONS	8MG99	8MG00
Travel range	±2.5°	0.5°
Resolution		
8MGXX-50	16.12"	20.6"
8MGXX-80	10.96"	16.5"
Height of center of rotation		
8MGXX-50	50 mm	50 mm
8MGXX-80	80 mm	80 mm
Load capacity	2 kg	2 kg
Lifetime	–	20 million full steps
Weight	1.2 kg	1.2 kg



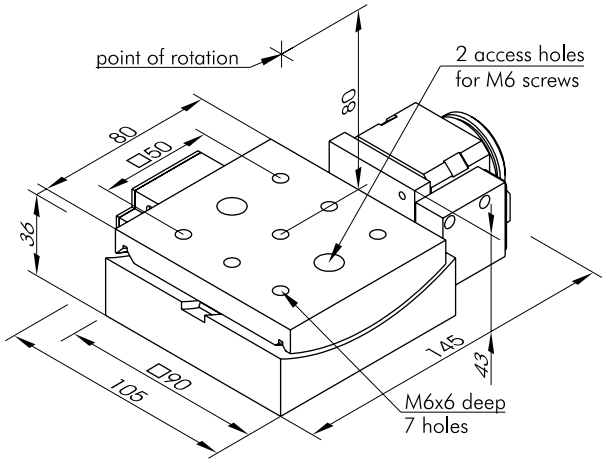
8MG99-80



8MG00; 8MG99 stacked



8MG00-50; 8MG99-50



8MG00-80; 8MG99-80

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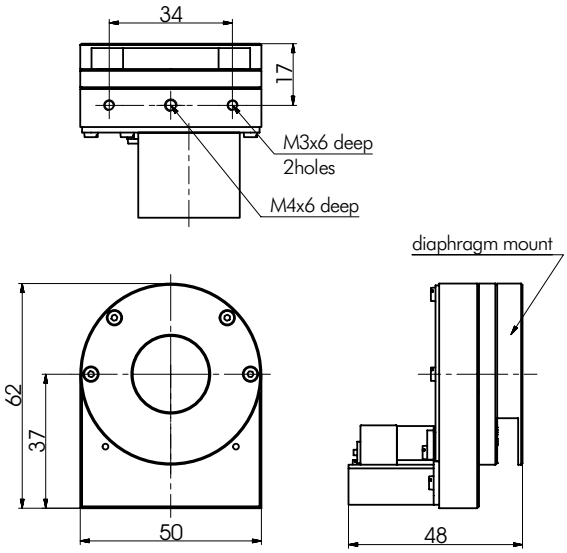
Motorized Iris Diaphragm

8MID10-40



8MID Motorized Iris Diaphragms are available with various aperture ranges, with max. apertures from 5 mm to 98 mm.

Irises with max. apertures from 5 mm to 27 mm are shown on this page. For irises with max. apertures from 30 mm to 50 mm see page **8-81**. Motorized iris with max. aperture of 98 mm is shown on page **8-82**.

Irises with max. apertures up to 27 mm close from min. to max. in 1.2 seconds with resolution depending on aperture size (see table below).

Zero aperture motorized iris diaphragms are available on request, max. aperture sizes from 12 mm to 40 mm.

SPECIFICATIONS

Closing speed (min to max)	1.2 seconds
Stepper motor/gear	50:1
Limit switch	2 mechanical
Switch polarity	pushed is closed
Recommended controllers	8SMC4-USB

Model	Diaphragm used	dmax. aperture, mm	dmin. aperture, mm	average number of steps 1 mm of aperture
8MID5-0.5-AR	10IBS10-5-0.5-AR	5	0.5	385
8MID5-0.5-N	10IBS10-5-0.5-N	5	0.5	385
8MID7-0.5-AR	10IBS12-7-0.5-AR	7	0.5	301
8MID7-0.5-N	10IBS12-7-0.5-N	7	0.5	301
8MID8-1-N	10IBS14.8-8-1-N	8	1	244
8MID8.2-0.8-N	10IBS14-8.2-0.8-N	8.2	0.8	240
8MID12-1-AR	10IBS19.8-12-1-AR	12	1	180
8MID12-1-H	10IBS19.8-12-1-H	12	1	180
8MID12-1-N	10IBS19.8-12-1-N	12	1	180
8MID14-1-AR	10IBS22-14-1-AR	14	1	161
8MID14-1-N	10IBS22-14-1-N	14	1	161
8MID15-1-H	10IBS24-15-1-H	15	1	141
8MID15-1-N	10IBS24-15-1-N	15	1	141
8MID18-1-AR	10IBS28-18-1-AR	18	1	118
8MID20-1.2-AR	10IBS30-20-1.2-AR	20	1.2	106
8MID20-1.2-H	10IBS30-20-1.2-H	20	1.2	106
8MID20-1.2-N	10IBS30-20-1.2-N	20	1.2	106
8MID22-1.5-N	10IBS33-22-1.5-N	22	1.5	102
8MID25-1.5-N	10IBS37-25-1.5-N	25	1.5	89
8MID27-1.5-AR	10IBS40-27-1.5-AR	27	1.5	79
8MID27-1.5-H	10IBS40-27-1.5-H	27	1.5	79
8MID27-1.5-N	10IBS40-27-1.5-N	27	1.5	79

Temperature limits:
AR - leaves with AR coating, for temperatures up to 180 °C
N - springsteel, black finished, for temperatures up to 250 °C
H - stainless steel, for temperatures up to 400 °C

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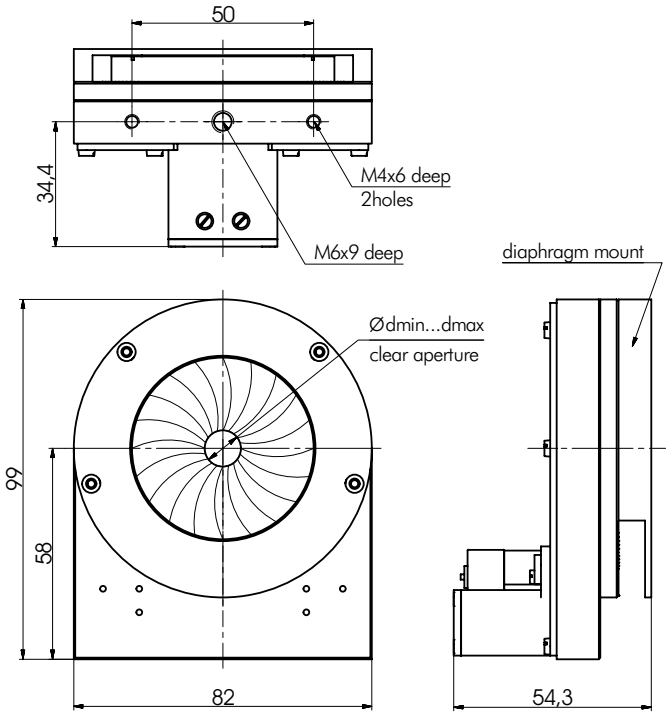
Motorized Iris Diaphragm

8MID40-70



8MID Motorized Iris Diaphragms are available with various aperture ranges, with max. apertures from 5 mm to 98 mm.

Irises with max. apertures from 5 mm to 27 mm are shown on **page 8-80**. For irises with max. apertures from 30 mm to 50 mm see this page. Motorized iris with max. aperture of 98 mm is shown on **page 8-82**.

Irises with max. apertures from 30 mm to 50 mm close from min. to max. in 2 seconds with resolution depending on aperture size (see table below).

Zero aperture motorized iris diaphragms are available on request, max. aperture sizes from 12 mm to 40 mm.

SPECIFICATIONS

Closing speed (min to max)	2 seconds
Stepper motor/gear	50:1
Limit switch	2 mechanical
Switch polarity	pushed is closed
Recommended controllers	8SMC4-USB

Temperature limits:
AR - leaves with AR coating, for temperatures up to 180 °C
N - springsteel, black finished, for temperatures up to 250 °C
H - stainless steel, for temperatures up to 400 °C

Model	Diaphragm used	dmax. aperture, mm	dmin. aperture, mm	average number of steps 1 mm of aperture
8MID30-1.5-H	10IBS43-30-1.5-H	30	1.5	125
8MID30-1.5-N	10IBS43-30-1.5-N	30	1.5	125
8MID34-2-AR	10IBS49-34-2-AR	34	2	111
8MID34-2-H	10IBS49-34-2-H	34	2	111
8MID36-2.5-N	10IBS50-36-2.5-N	36	2.5	106
8MID37-2.5-N	10IBS53-37-2.5-N	37	2.5	100
8MID40-2.5-N	10IBS60-40-2.5-N	40	2.5	90
8MID42-2.5-N	10IBS58-42-2.5-N	42	2.5	91
8MID45-2.5-H	10IBS64-45-2.5-H	45	2.5	84
8MID45-2.5-N	10IBS64-45-2.5-N	45	2.5	84
8MID50-2.5-N	10IBS70-50-2.5-N	50	2.5	75

Recommended Controllers

more info on **www.standa.lt**

Four Axis Stepper/DC Motor Controller with **Power Supply**

8SMC4-USB-B9-B9

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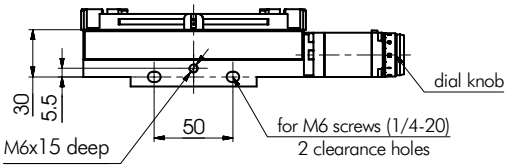
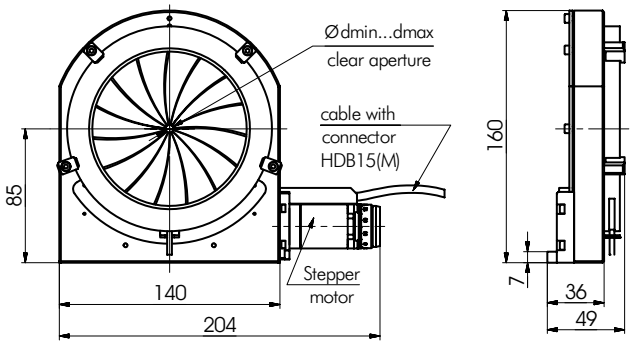
Motorized Iris Diaphragm

8MID70-130

- **Smooth and fast operation**
- **Continuously adjustable light attenuation**
- **Compact design**
- **Control via PC through USB or RS232**
- **Adjustable inserts**

8MID70-130 Motorized Iris Diaphragm Mount was developed due to interest in our previously presented motorized iris **8MID98-4**. Motorized Iris Diaphragm is designed for our small medium family, more information about fitted iris diaphragms can be found on 10-3 page. Unfortunately it is impossible to interchange iris diaphragms at home since every diaphramg has its own adapter ring and requires calibration.





SPECIFICATIONS

Closing speed (min to max)	3 sec
Stepper motor/gear	195:1
Limit switch	2, mechanical
Switch polarity	pushed is closed
Recommended controllers	8SMC4-USB

Temperature limits:
AR - leaves with AR coating, for temperatures up to 180 °C
N - springsteel, black finished, for temperatures up to 250 °C
H - stainless steel, for temperatures up to 400 °C

Model	Diaphragm used	dmax. aperture, mm	dmin. aperture, mm	average number of steps 1mm of aperture
8MID60-4-H	10IBS82-60-4-H	60	4	178
8MID60-4-N	10IBS82-60-4-N	60	4	178
8MID75-4-H	10IBS100-75-4-H	75	4	143
8MID75-4-N	10IBS100-75-4-N	75	4	143
8MID81-3-AR	10IBS110-81-3-AR	81	3	132
8MID90-3.5-AR	10IBS120-90-3.5-AR	90	3.5	122
8MID98-4-H	10IBS130-98-4-H	98	4	112
8MID98-4-N	10IBS130-98-4-N	98	4	112

Recommended Controllers

more info on **www.standa.lt**

2 axis Controller in box
8SMC4-USB-B9-2

Stepper/DC Motor Controller
with **USB Interface**

Assembly kit
5AK-B9-B9

Assembly kit to fix two or more controller boxes together

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Laser Beam Shutters

8MDS

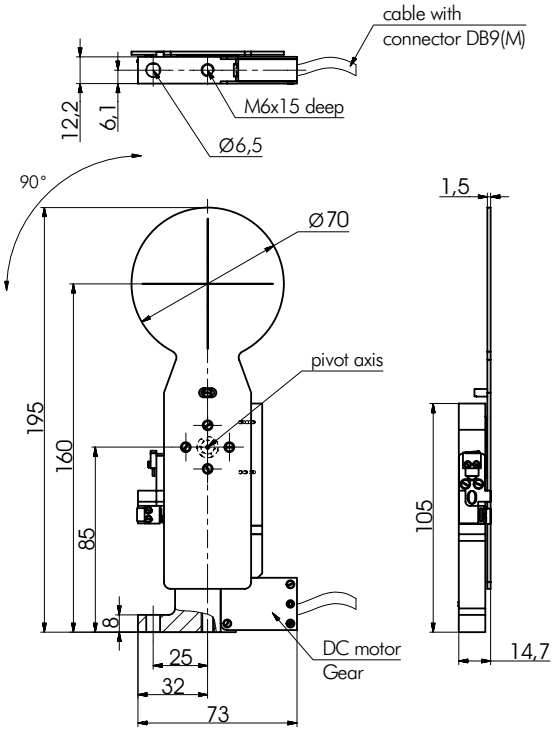
8MDS-70

- **Ultra thin (only 15 mm)**
- **25 - 100 mm Diameter Shutters Available**

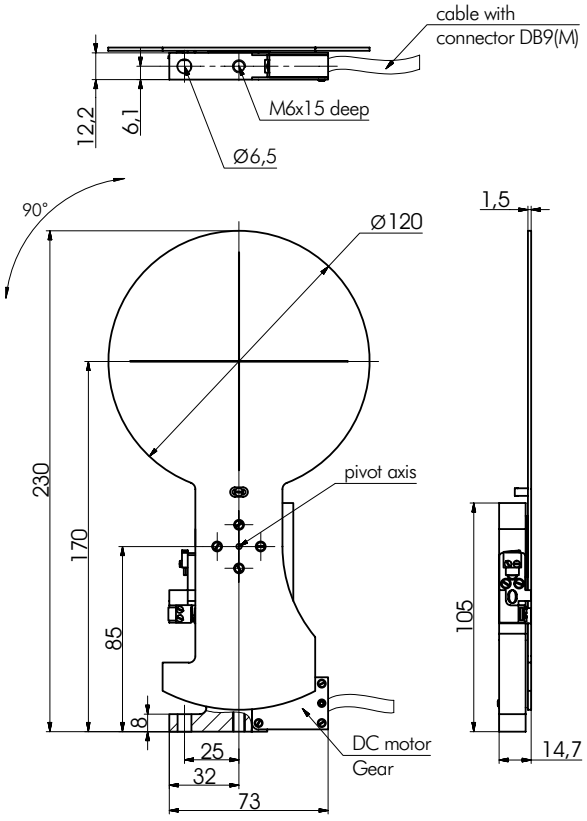
Laser Beam Shutters are designed in a very thin way thus enabling usage in extremely dense optical assemblies and narrow spaces. Our shutters are **equipped** with **DC motors**. Shutters are used to block laser beam and prevent equipment or eyes from taking damage due to unpredicted circumstances or laser malfunction. For instance, laboratory doors can be connected a series of shutters that will block the laser beam once doors are opened.

SPECIFICATIONS

Turning angle	90°
Turning time	1 sec
Cable	1.6 m length
Motor connector	DB9(M)
DC Motor size	Ø10 mm
Gear	4:1
Power	12V, 0.176 A
Limit switches	2 pc mechanical
Recommended controllers	8SMC4-USB



8MDS-70



8MDS-120

Recommended Controller

Stepper/DC Motor Controller
with **USB Interface**

more info on **www.standa.lt**

8SMC4-USB-B8-1
1 axis Controller in box

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Piezo Scanning Nano-Stages, Positioners and Controllers

8NTS-X
Compact Single Axis
Piezo Actuator

8NTS-XYZ-200
2(3)D Piezo Scanning Stage

8NTS-XYZ-200-A
Piezo Scanning Stage
with Central Hole

8NTS-XYZ-40-SPM
Plane-Parallel Nano Piezo
Scanning Stage

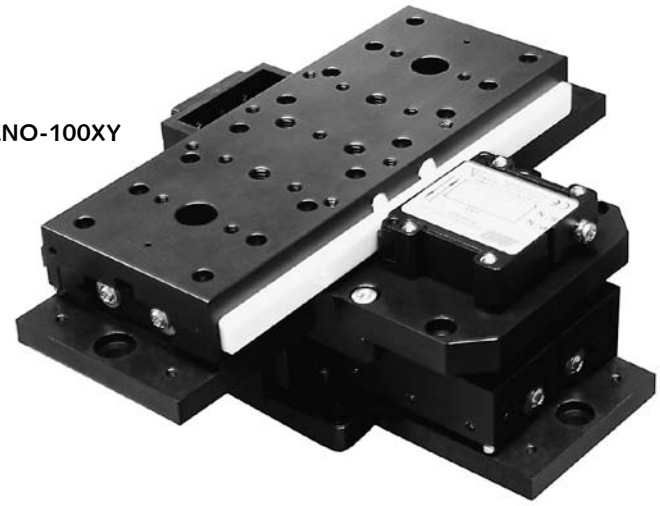
8NTS-Z
Z Axis Piezo Potioning Stage

8NSC
Nano Stage Controllers

Pages 8-85...8-88

Nano Positioners

8NANO-100



8NANO-100XY

SPECIFICATIONS

Travel range	100 mm
Low frictional force	
Straightness	5 μ
Backlash	0
Stiffness	100 N/μ
Resolution	50 nm
Speed	0.001-150 mm/s
Repeatability	0.1 μ
Precision	0.5 μ
Load capacity	3 kg
Weight	1.3 kg

Piezo Scanning Nano-Stages

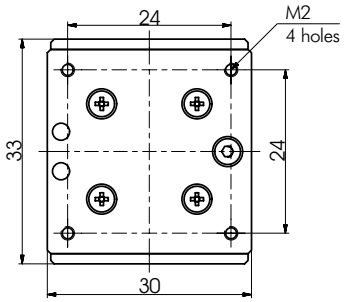
8NTS

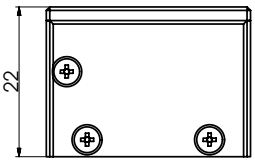
Piezo scanning stages are perfectly suitable for very accurate and low inertia automated systems. Because of compact design and low weight, designers can easily incorporate positioners to the projects without high weight and volume efficiency losses.

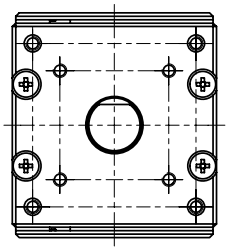
NTS series nano stages have wide spectrum of strokes (from 20 μm to 200 μm). Using open-loop control algorithm it is possible to reach 100 picometers resolution. Stability in closed-loop control algorithm guarantees double capacity sensor technic. On request we could prepare stages compatible to work in vacuum and high temperatures (since -40 up to 80 °C).

Compact Single Axis Piezo Actuator

8NTS-X







- **Double capacity sensor technology for feedback**
- **Travel range up to 120 μm**
- **Ultra high resolution 0.1 nm**
- **Low cost**
- **Compact design and low weight**
- **Suitable for universal applications**
- **High stiffness**
- **Compensated creep effect of piezoceramics**
- **Low frequency noise resistance**
- **Ideal capable for microscopic application**
- **Vacuum version available**

new

SPECIFICATIONS

Motion properties	
Active axis	X
Z range, μm	120
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10
Control Properties	
Electrical capacity, pF	20
Mechanical Properties	
Resonant frequency Z, kHz	3
Load capacity, g	100
Operating temperature range, °C	-40…80
Dimensions, mm	30×30×22
Material	Aluminum

2(3)D Piezo Scanning Stage

8NTS-XYZ-200

- **Double capacity sensor technology for feedback**
- **Travel range in horizontal directions up to 200 μm**
- **Travel range in vertical direction up to 20 μm**
- **Ultra high resolution 0.1 nm**
- **Low cost**
- **Compact design and low weight**
- **Suitable for universal applications**
- **High stiffness**
- **Compensated creep effect**
- **Low frequency noise resistance**
- **Ideal capable for microscopic application**
- **Vacuum version available**

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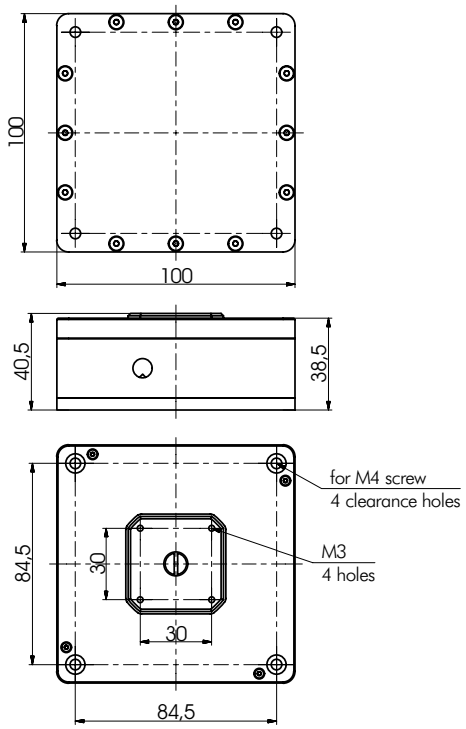


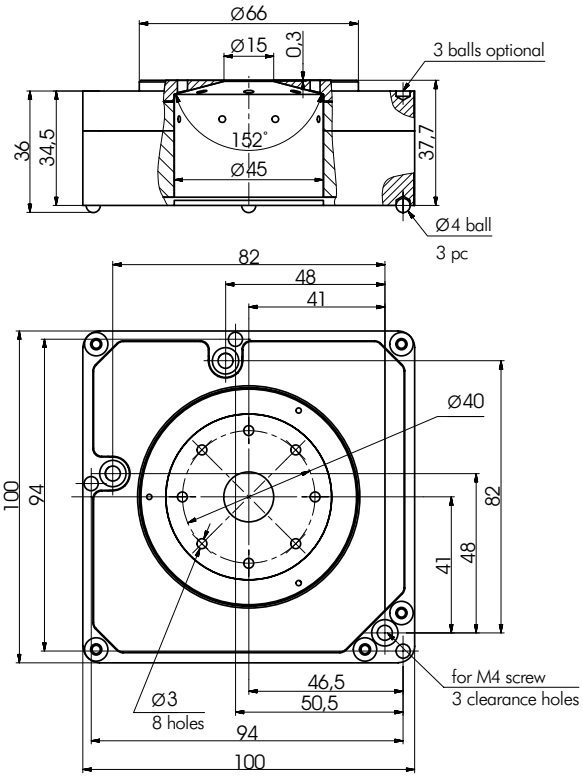
SPECIFICATIONS

Motion properties	
Active axis	XY(Z)
XY range, μm	200 × 200
Z range, μm	20
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10
Control Properties	
Electrical capacity XY axes, pF	30
Electrical capacity Z axis, pF	35
Mechanical Properties	
Resonant frequency Z, kHz	30
Resonant frequency XY, kHz	1
Load capacity, g	100
Operating temperature range, °C	-40…80
Dimensions, mm	100×100×33 mm
Material	Aluminum

Piezo Scanning Stage with Central Hole

8NTS-XYZ-200-A

- **Double capacity sensor technology for feedback**
- **Travel range in horizontal directions up to 200 μm**
- **Travel range in vertical direction up to 20 μm**
- **Ultra high resolution 0.1 nm**
- **Clear aperture diameter 45 mm**
- **Low cost**
- **Compact design and low weight**
- **Suitable for universal applications**
- **High stiffness**
- **Compensated creep effect**
- **Low frequency noise resistance**
- **Ideal capable for microscopic application**
- **Vacuum version available**



SPECIFICATIONS

Motion properties	
Active axis	XYZ
XY range, μm	200 × 200
Z range, μm	20
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10
Control Properties	
Electrical capacity XY axes, pF	10
Electrical capacity Z axis, pF	10
Mechanical Properties	
Clear aperture diameter, mm	45
Resonant frequency Z, kHz	3
Resonant frequency XY, kHz	1
Load capacity, g	100
Operating temperature range, °C	-40…80
Dimensions, mm	100×100×35 mm
Material	Aluminum

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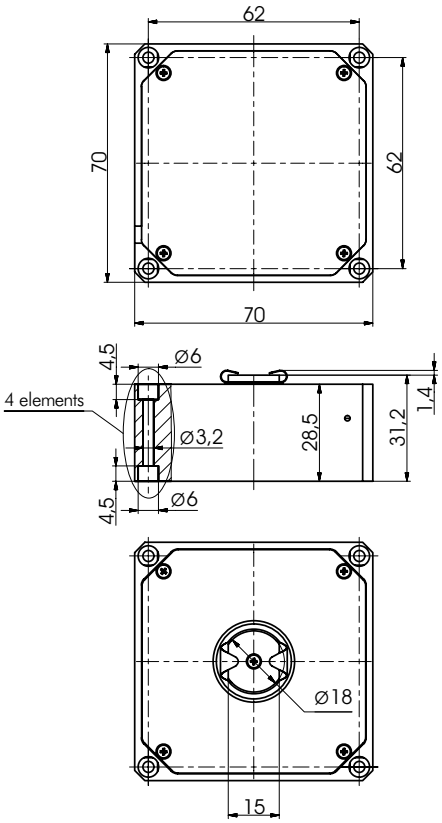
Plane-Parallel Nano Piezo Scanning Stage

8NTS-XYZ-40-SPM

- Double capacity sensor technology for feedback
- Travel range up to 40 μm
- Ultra high resolution 0.1 nm
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect of piezoceramics
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available



new

SPECIFICATIONS

XY travel range, μm	40 × 40
Z range, μm	5
Resonant frequency XY, kHz	5
Resonant frequency Z, kHz	50
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz (line/sec)	50
Base sample weight, g	50
Dimensions, mm	70×62×32.2
Material	Aluminium

Z Axis Piezo Positioning Stage

8NTS-Z

- Double capacity sensor technology for feedback
- Travel range in vertical direction up to : 100 μm
- Ultra high resolution: 0.1 nm
- Sample weight up to : 300 g
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available

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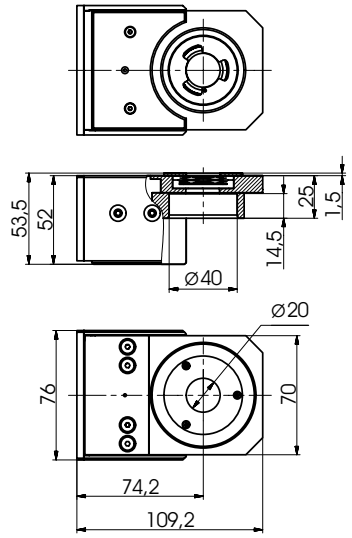


SPECIFICATIONS

Motion properties	
Active axis	Z
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10
Control Properties	
Electrical capacity Z axis, pF	15
Mechanical Properties	
Resonant frequency Z, kHz	0.5
Load capacity, g	300
Operating temperature range, °C	-40…80
Dimensions, mm	108×73×67.5
Material	Aluminum

Nano Stages Controllers

8NSC

8NSC-1000
3 axis controller

8NSC-3061
9 axis controller

Single Channel Controller Available!

8NSC controllers lineup

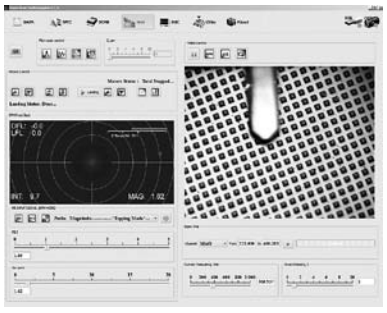
- **Closed Loop Feedback**
- **DAC**
- **USB / RS-232C communication**
- **Synchronization OUT**
- **High Voltage Amplifier -5/150 V**
- **NSpec Software**

Electronic controllers 8NSC is designed to control piezo positioners of 8NTS series.

8NSC-1000 is able to control 3 piezo stages.

8NSC-3061 can control 9 piezo stages and up to 4 stepper motor translation stages with micro step option, for instance, for rough adjustment of scanning head (stage).

8NSC-3061 SPM controller contains 2-channel lock-in amplifier to provide resonant SPM techniques, for example non-contact SPM mode. Lock in amplifier includes high stable voltage generator based on digital frequency synthesizer. High speed data processing is implemented using programmable logic (FPGA). This allows to perform high quality lock-in detection up to 1.5 MHz band.



Software:
Basic Nspec software, SDK for Windows, Linux, Mac OS, Android for Tablet PC.

SPECIFICATIONS

CPU	32 bit; RISC
PC interface	USB 2.0
Other interfaces	RS 232, RS 485, SYNC I/O
Voltage	-10 – 150 V
Noise	<5 ppm
Bit (digital-analog converters)	18 bit

8NSC-3061

Piezo control	
Number of channels max	9
Stepper motor control	
Number of channels	4
Power supply	24 V, 3 A
Support microstepping mode	up to 1/16 step
Lock-in amplifier	
Number of channels	2
Coefficient preamplifier	1 – 100
Voltage range	±10 V
Bit ADC	16 bit
Amplitude of the output voltage	10 mV – 10 V
Stability of the main oscillator	<5 ppm

8NSC-1000

Piezo control	
Number of channels max	3

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8MR174V-11-VSS42

Available for Vacuum!

more info on **www.standa.lt**

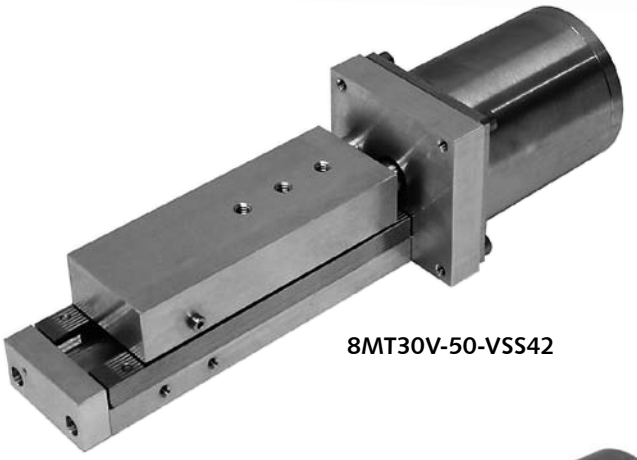
8CMA16DCV-25/15

8MR190V-2-VSS42

8MS00V-10-VSS42

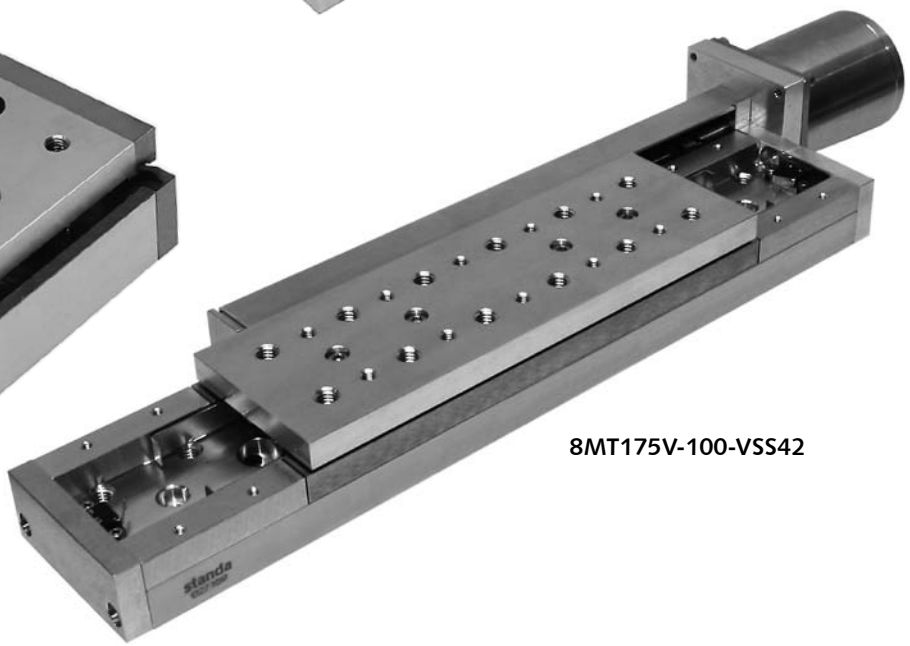
8MT173V-20-VSS42

8MR190V-VSS42



8MT30V-50-VSS42

8MG99V-80-VSS42



8MT175V-100-VSS42

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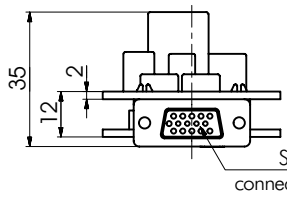
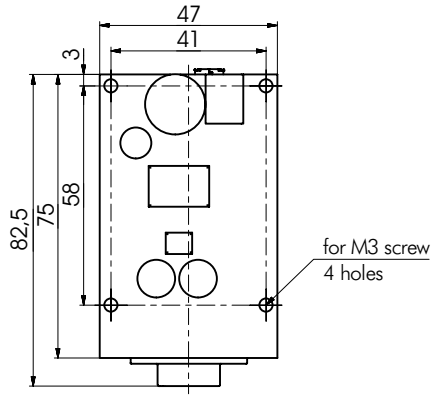
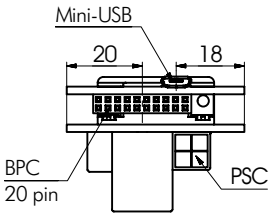
Stepper/DC Motor Controller

8SMC4-USB series

8SMC4-USB-B8-1
One Axis Controller







8SMC4-USB
Circuit Card Assembly

- **Compatible with Windows XP/Vista/7/8, Linux, Mac OS**
- **Saving settings files to flash/file**
- **Precise home positioning**
- **Synchronization I/O**
- **User Friendly XILab Interface**
- **Step Mode Up to 1/256**
- **Step Loss Compensation**
- **Rated current up to 3 A for stepper; 6 A for DC motor**
- **Voltage 5 V – 36 V**
- **Code Examples for Visual Basic, C, C#, C++, Matlab, Labview**
- **Ready to use Configuration files for Standa stages**
- **Status LEDs**
- **Max. speed – 35000 steps/s (stepper); 800000 encoder counts per second (DC)**
- **Encoder Input**
- **Compatibility with 8SMC1-USBhF**
- **Supports up to 32 axes in single USB port (more on request)**
- **Control 8SMC4-USB via Ethernet**
- **Manual control buttons**

Brief description

An overview of today's approaches for flexible motion control in lab experiments is given. With modern controller design even simple and inexpensive positioners can be utilized to achieve high speed and precision. It doesn't matter which motor technology you prefer: stepper, DC, or BLDC because one controller can drive them all. Multi-axis control, developing custom motion control software for any OS, automatic positioners recognition and using various peripherals are all easy now.

Supported types of motors

The controller is great at driving bipolar stepper motors with a rated winding current of up to 3 A (by request up to 6 A, 48 V) and DC motors with rated current up to 6 A. All you need to do is plug it in, no assembly required.
Multiple controllers can be connected to one computer either via USB ports or through a special hub that provide axis synchronization.

The controller's software is fully compatible with almost all operating systems, e.g., Windows, Mac OS X, Linux, etc. You can test the software with virtual controllers simulated by the software. The software provides javascript like scripting language to quickly automate your task or you can use a cross platform library with code examples on C, Visual Basic, Matlab, Labview, C# to build your own software.
Optionally the controller can be managed with the same instructions set, as from USB interface, by using many of popular serial interfaces like Bluetooth, Ethernet, RS422 or RS232 – requires converters from TTL logic signals RX and TX. These signals are located on the backplane connector of the controller circuit board. Communication speed, parity and stop bits are wide configurable. Default interface is USB, but on request Standa can produce controllers with required interface. Test the controller 8SMC4 instantly as it comes with the manual control buttons, they could be used for ease testing of your equipment or controller itself even without a PC.

Software

XILab features two user-friendly graphical interfaces, which are designed for positioners control, diagnostic and fine tuning of the motors driven by the controllers. The control process can be automated with the scripting option that can be used either directly or to speed up the process of customized control program development. XiLab supports multiaxial mode and multidimensional control scripts. It is possible to output motor and controller status in form of charts and save them to a file. XILab software has two types of interfaces: Single-axis control and Multi-axis control.
Single-axis and Multi-axis control interfaces contain motor and controller parameters: position, speed, voltage, current and temperature. Advanced joystick and units conversion block are only available in Multi-axis interface. You can choose any of these interfaces that fits your application the best.

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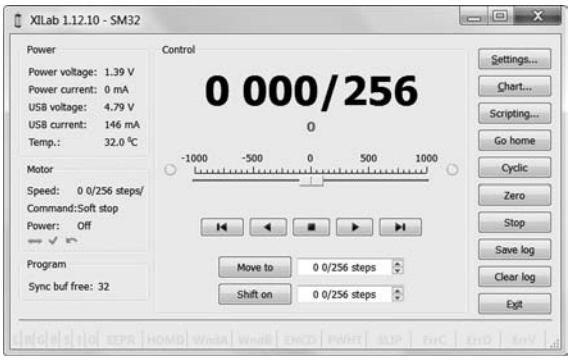
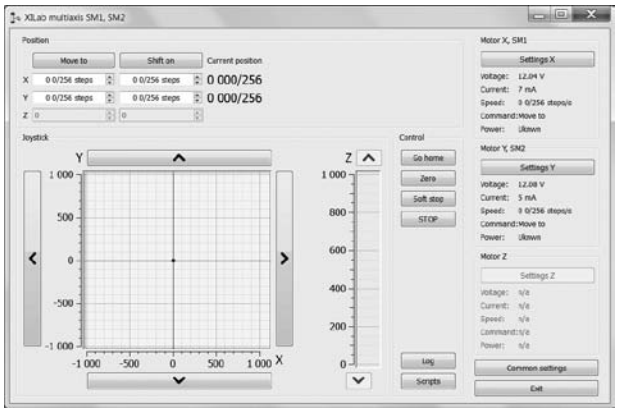


XILab Main window in single-axis control mode



XILab Main window in multi-axis control mode

One controller!

One interface for ANY type of motor!

SPECIFICATIONS

Number of axes	1 to 4 (32 axes in single USB port)
Motor parameters	
Motor type	stepper/dc/servo
Current	
Stepper	0.1 – 3 A
DC, servo	0.1 – 6 A
Voltage	5 – 36 V
Motor kinematics	
Step division (for stepper motor)	1 – 1/256
Maximum speed	
Stepper	35000 steps/s
DC, servo	800000 counts/s
Motor control	
Motion modes	move left/right, move to point, shift on delta, continuous speed, acceleration and deceleration ramps, backlash compensation mode, automatic home position calibration mode, linear interpolation, circular interpolation
Control loop	Open loop, closed loop
Compensation	
Backlash compensation	Included
Step loss compensation	Included
Positioner sensors reading	
Encoder (rotary)	Incremental quadrature encoder
Limit switches	optron, hall sensor, microswitch
Revolution sensor	supported
Communication interface	Ethernet, USB, RS232
I/O	
Synchronization	I/O included
Joystick	Analog input (0 – 3 V)
Output	+3V; +5V for power supplying
Motor connector	DB15F
Supplementary connector	DB25F
Position counter	40 bit
Positioner identification	One-wire interface (for Standa and positioners of othersupliers)
Protections	ESD protection, Current overload protection, Voltage overload protection, Short circuit protection, Motor hot plug/unplug protection
Operating temperature	Up to 70 ˚C
LED indication	Included
Programming	C++, C#, .NET, Delphi, Visual Basic, gcc, Xcode, Matlab, Java, LabVIEW

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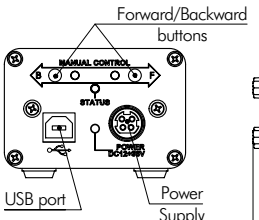
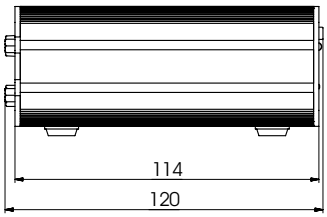
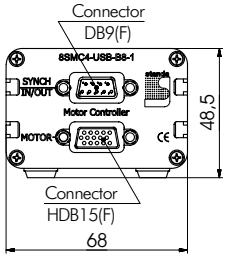
One Axis Controller

8SMC4-USB-B8-1



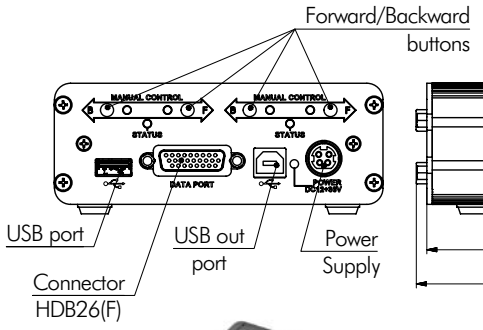


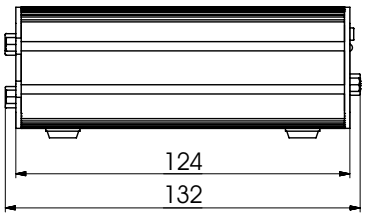


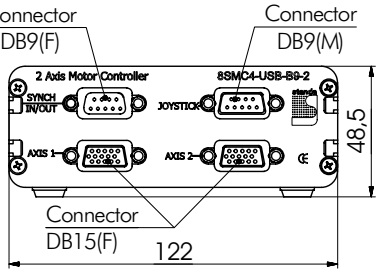
8SMC4-USB-B8-1
1 axis Controller in box

Two Axis Controller

8SMC4-USB-B9-2







8SMC4-USB-B9-2
2 axis Controller in box

5AK-B9-B9
Assembly kit

Assembly kit to fix two
or more controller boxes together

8SMC4-USB-B8-B9
Three Axis Controller

8SMC4-USB-B9-B9
Four Axis Controller

8JXY-03
Joystick

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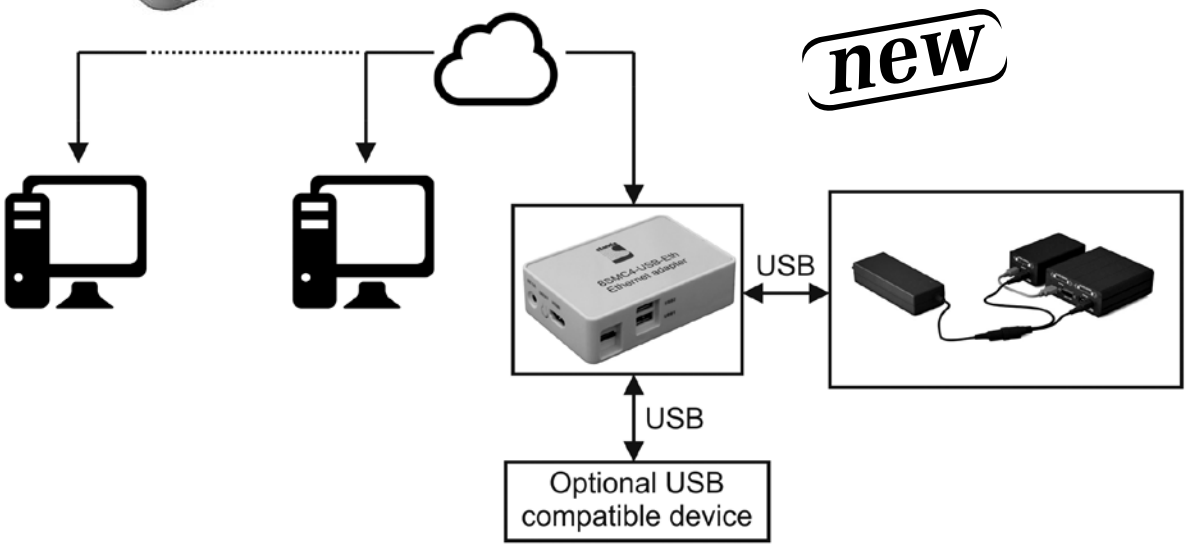
Ethernet Communication Block

8SMC4-USB-Eth

There is **8SMC4-USB-Eth** - a special **Ethernet – USB converter** for **8SMC4-USB control**. It is based on Cubieboard2 oneboard computer with OS Linux inside it and allows you to control **8SMC4-USB** devices remotely. The process of operation with all axes of the system via Ethernet is very similar to operation with a single motor controller via USB. A simplified scheme of the described system based on **8SMC4-USB-Eth** adapter is shown below:

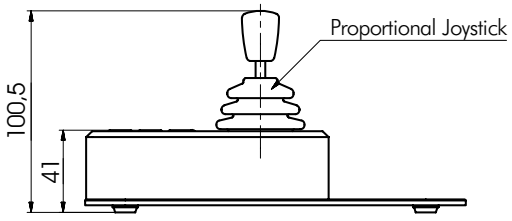


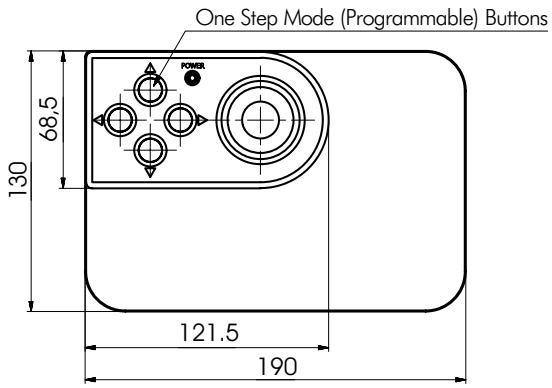
Joystick

8JXY-03

new

- **Easy plug in connection**
- **High precision**
- **Spring return to center position mechanism**
- **Hall Effect sensor type**
- **High Life cycles**
- **Operating temperature -25°C up to +70°C**
- **IP class is For Indoor usage**
- **Deflection X/Y max. ±18°**
- **Suitable for Standa controller 8SMC4-USB-B9-2**





Easy and ergonomic joystick 8JXY-03. Joystick developed for manual control of one or two-axis all Stepper motor equipped motorized stages, which provide smooth motion with proportional **joystick**, and one step mode (programmable) motion with **4 buttons** on top. Joystick suitable for Standa stepper motor controllers **8SMC4-USB-B9-2** and parameters like: **acceleration**, **deceleration** and **speed changing in time** – can be programmed for your application and task. Proportional joystick's knob made of nylon and very ergonomic, what in aggregate with wide joystick base provides usage stability and comfortability during work.

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Ordering information

8SMC4-USB	– 1-axis controller circuit card assembly
8SMC4-USB-B8-1	– 1 axis controller / budget
8SMC4-USB-B9-1	– 1 axis controller
8SMC4-USB-B8-1BR	– 1-axis controller for brake equipped motor / budget
8SMC4-USB-B9-1BR	– 1-axis controller for brake equipped motor
8SMC4-USB-B9-2	– 2-axis controller
8SMC4-USB-B9-2BR	– 2-axis controller (1-axis for brake equipped motor)
8SMC4-USB-B8-B9	– 3-axis controller
8SMC4-USB-B8-B9-BR	– 3-axis controller (1-axis for brake equipped motor)
8SMC4-USB-B9-B9	– 4-axis controller
8SMC4-USB-B9-B9-BR	– 4-axis controller (1-axis for brake equipped motor)
5AK-B9-B9	– Assembly kit to fix two or more controller boxes together
8A-KPPX-KPJX	– Power supply output cable split
8A-SMC4-1-RS232	– Cable for 1 axis RS232 interface
8A-SMC4-2-RS232	– Cable for 2 axis RS232 interface
8CA-SYNCH	– Synchronization cable
8CA15F-15MR12	– 15-pin cable to motor with rotary encoder 1.8 m
8CA15M-15F/BR/SYNCH	– 15-pin cable to motor with brake and synchronization
8CA9F-15MR 1.8 m	– 9-pin cable to motor
8HDB26M	– Connector HDB26(M) with backshell
8JXY-03	– 2-axis joystick for manual control
8SMC4-USB-Eth	– Ethernet Communication Block
Cable12-L1.8	– 12 core cable, lenght 1.8 m
Cable8-L1.8	– 8 core cable, lenght 1.8 m
USB/A-B 0.2 m	– USB cable between controllers 0.2 m
USB/A-USB/B 1.8m	– USB cable to PC 1.8 m
USB/mini-USB/A	– mini USB cable to PC

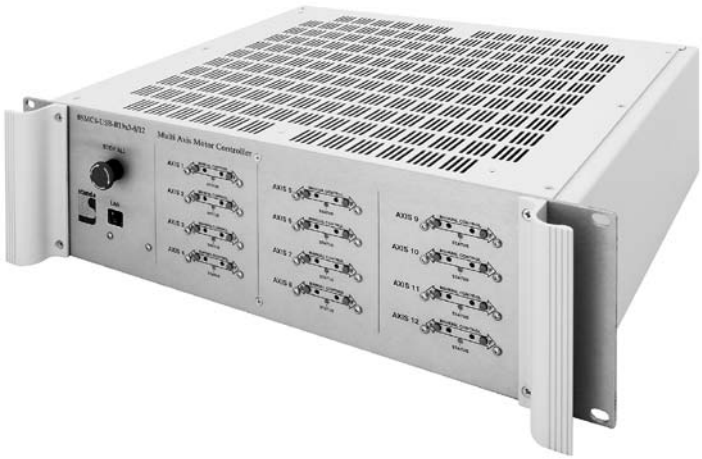
Assembly kit to fix 8 controller boxes together

8SMC4-36
Universal motion controller/driver

Universal motion controller/driver 8SMC4-36 is designed especially to control up to 36 mechatronic systems based on standard **DC**, **Servo**, **Stepper technologies**. The housing of **8SMC4-36** has 7U height and can be mounted in standard 19 inch industrial cabinets. Up to six **8SMC4-36** systems can be installed in a standard 42U 19 inch cabinet. This allows to have 216 axes per cabinet which saves space and lets avoid cable clutter.

Multi-Axis Motion Controller / Driver

8SMC4-ETHERNET / RS232-B19



new

- Compatible with stepper and DC motors
- For motors:
  - rated current up to 3 A for stepper; 6 A for DC motor
  - rated voltage 2–36 V DC
- Communication interfaces: Ethernet, RS232 (each axis directly)
- Simultaneous drive of: 8, 10, 12 axes per single box
- Micro-step mode 1/256
- Max. speed – 35000 steps/s (stepper);
- 800000 encoder counts per second (DC)
- Digital encoder input: open & closed loop control and position diagnostics
- Precise home positioning
- Step loss Compensation
- Backlash compensation
- TTL Synchronization I/O
- Tango, FESA compatible
- Compatible with Windows, Linux, Mac OS
- Code examples for Visual Basic, C, C#, C++, Matlab, Labview
- User Friendly XILab Interface
- Ready to use configuration files for Standa stages
- Saving files and workspace to flash/file
- Manual control buttons for each axis
- Status LEDs
- Programmable INTERLOCK emergency button
- Compatible with standard 19" cabinets
- 24/7 customer support service

A Versatile Automation System

Industrial motion controller/driver 8SMC4-ETHERNET/RS232-B19 is designed especially to control up to 12 mechatronic systems based on standard DC, Servo or Stepper technologies. Controller/driver housing can be mounted in standard 19 inch industrial cabinets. Several boxes can be connected in a single network via Ethernet port. System can be automatically set on peer-to-peer mode without any special infrastructure or master servers to operate. Also each axis can be controlled via separate RS232 port.

8SMC4-ETHERNET/RS232-B19 contains all necessary subsystems, including control, power units etc., which support the simultaneous work of all axes. Controller / driver can be connected to a number of PC-based workstations via Ethernet. All users have access to the range setting of the available axes and assignment of access privileges. From the programmer's point of view, working with all axes of the system is very similar to working with a simple 8SMC4-USB box. The number of the axes available for a user and processed by the system can reach 50000.

Front panel contains LED power and status indicators, manual control buttons, emergency stop button and Ethernet port. On the back panel there are motor connectors and separate RS232 ports for each axis, synchronization I/O connectors, a power connector and on/off button.The system is cooled through grille slots in upside and underside walls of the box.

Software

All software supplied with the controller is compatible with Windows, Linux and Mac OS X (32-bit and 64-bit versions) as well as with Tango and FESA. Controller/driver is delivered with a cross-platform library and examples which allow quick programming on C++, C#, .NET, Delphi, Visual Basic, gcc, Xcode, Matlab, Java, and LabVIEW. The software package also includes XILab user interface, which allows easy access to all motion functions and settings. A scripting language (an EcmaScript dialect) is integrated into XILab, which allows easy sequencing of actions including cycles and conditional breakpoints without the need for compilation and mastering a programming language.

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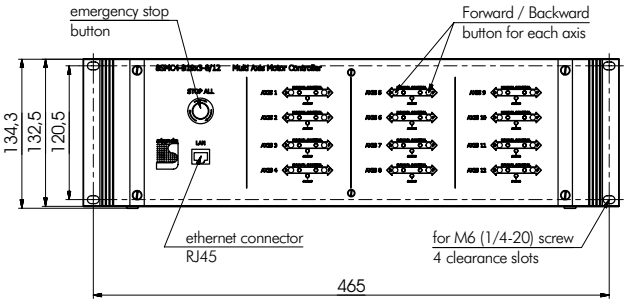
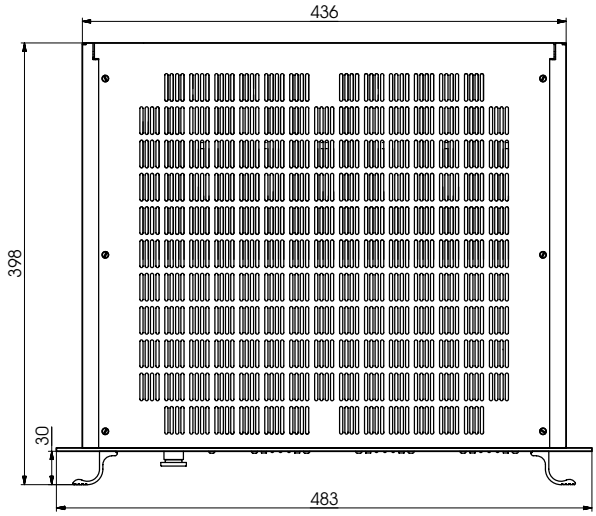
SPECIFICATIONS

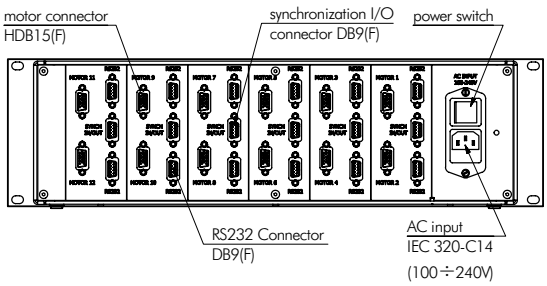
Number of axes	8, 10, 12
Motor parameters	
Motor type	stepper / dc / servo
Current	
Stepper motor	0.1–3 A
DC, servo	0.1–6 A
Voltage	2–36
Motor kinematics	
Step division (for stepper motor)	1–1/256
Maximum speed	
Stepper motor	35000 steps/s
DC, servo	800000 counts/s
Motion control	
Motion modes	move left/right, move to point, shift on delta, continuous speed, acceleration and deceleration ramps, backlash compensation mode, automatic home position calibration mode, linear interpolation, circular interpolation
Control loop	open loop, closed loop (PID regulation)
Compensation	
Backlash compensation	included
Step loss compensation	included
Positioner sensors reading	
Encoder (linear, rotary)	incremental quadrature encoder
Limit switches	optron, hall sensor, microswitch
Revolution sensor	supported
Communication interface	Ethernet, RS232
I/O	
Synchronization	I/O included
Output	+3 V; +5 V for power supplying
Motor connector	DB15F
Position counter	40 bit
Positioner identification	one-wire interface (for Standa positioners only)
Protections	ESD protection, Current overload protection, Voltage overload protection, Short circuit protection, Motor hot plug/unplug protection
LED indication	included
Programming	C++, C#, .NET, Delphi, Visual Basic, gcc, Xcode, Matlab, Java, LabVIEW
Power & physical parameters	
Power supply	100–240 V, 50–60 Hz, 10 A
Dimensions	483 × 398 × 143.3
Operating temperature	up to 70 °C

Front view





Rear view



Universal Motion Controller / Driver

8SMC4-36

Universal motion controller/driver 8SMC4-36 is designed especially to control up to 36 mechatronic systems based on standard **DC**, **Servo**, **Stepper technologies**. The housing of **8SMC4-36** has 7U height and can be mounted in standard 19 inch industrial cabinets. Up to six **8SMC4-36** systems can be installed in a standard 42U 19 inch cabinet. This allows to have 216 axes per cabinet which saves space and lets avoid cable clutter.

- **Compatible with Windows XP/Vista/7/8, Linux, Mac OS**
- **Saving files to flash/file**
- **Precise home positioning**
- **Synchronization I/O**
- **User Friendly XILab Interface**
- **Step Mode Up to 1/256**
- **Rated current up to 3 A for stepper; 6 A for DC motor**
- **Voltage 5 V – 36 V**
- **Code Examples for Visual Basic, C, C#, C++, Matlab, Labview**
- **Ready to use Configuration files for Standa stages**
- **Status LEDs**
- **Max. speed – 35000 steps/s (stepper); 800000 encoder counts per second (DC)**
- **Encoder Input**
- **Supports up to 36 motors and servo systems**
- **Active cooling system and heat management**
- **Compatible with: stepper, servo, dc motors**
- **Default 19 inch rack**
- **Ethernet interface**
- **Hot swapping technology**

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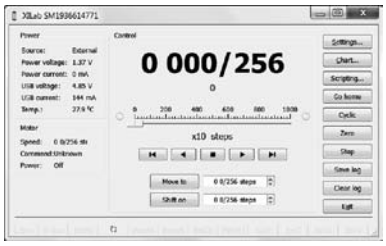
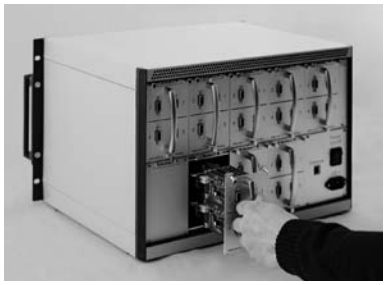
SPECIFICATIONS

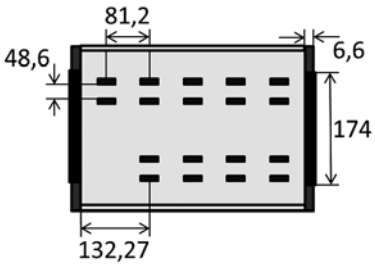
Number of axes	4 to 36
Motor parameters	
Motor type	Stepper / DC / Servo / BLDC
Current	
Stepper motor	0.25–3 A
DC, BLDC, servo	0,25–6 A
Voltage	12–36 V
Motor kinematics	
Step division (for stepper motor)	1–1/256
Maximum speed	
Stepper motor	35000 steps/s
DC, servo	800000 counts/s
Motion control	
Motion modes	Move left/right, move to point, shift on delta, continuous speed, acceleration and deceleration ramps, backlash compensation mode, automatic home position calibration mode, linear interpolation, circular interpolation
Control loop	Open loop, closed loop (PID regulation)
Backlash compensation	Included
Positioner sensors reading	
Encoder (linear, rotory)	Incremental quadrature encoder
Limit switches	Optron, hall sensor, microswitch
Revolution sensor	Supported
Communication Interface	Ethernet
I/O	
Synchronization	I/O included
Joystick	Analog inputs (0–3 V)
Output	+3 V; +5 V for power supplying
Motor connector	DB15F
Supplementary connector	DB25F
Position counter	40 bit
Positioner identification	One-wire interface *(for Standa positioners only)*
Protections	ESD protection, Current overload protection, Voltage overload protection, Short circuit protection, Motor hot plug/unplug protection
LED indication	Included
Programming	C++, C#, .NET, Delphi, Visual Basic, gcc, Xcode, Matlab, Java, LabVIEW
Power parameters	
Power supply	220 V, 10 A, 50 Hz
Power consumption	Up to 1.5 kW
Power dissipation	Up to 500 W
Physical parameters	
Operating temperature	Up to 70 °C
Dimensions	488 × 375 × 312 mm



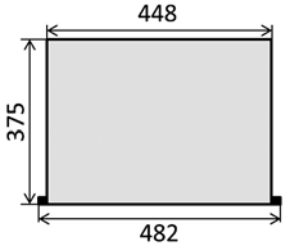
User will enjoy a universal XiLab interface with an opportunity to control all the axes systems.
Front panel consist all LED-indication and connectors for plugging the remote control and indication (joysticks, buttons, limit switches indicators, synchronization I/O). The back panel is divided into 9 blocks. Each of them contains four axes.

Controller module





Front view of multi-axis system.
View from external connectors side



Top view of multi-axis system

Power Supplies for Standa Controllers

Power supply PS12-1.5-4
12 V; 1.5 A
98.5 × 55 × 31.5 mm*
200 g
KPPX-4P power connector

Power supply PS12-1.5-C
12 V; 1.5 A
98.5 × 55 × 31.5 mm*
200 g
connector “2.1/5.5”

Power supply PS12-2.5-4
12 V; 2.5 A
98.5 × 55 × 31.5 mm*
250 g
KPPX-4P power connector

Power supply PS12-2.5-C
12 V; 2.5 A
98.5 × 55 × 31.5 mm*
250 g
connector “2.1/5.5”

Power supply PS24-2.5-4
24 V; 2.5 A
125 × 50 × 31.5 mm*
310 g
KPPX-4P power connector

Power supply PS24-2.5-C
24 V; 2.5 A
125 × 50 × 31.5 mm*
310 g
connector “2.1/5.5”

Power supply PS36-3.4-4
36 V; 3.34 A
167 × 65 × 37 mm*
640 g
KPPX-4P power connector

*Dimensions are subject to changes without advance notice.
Standa stepper motors and DC motor controllers require properly matched power supplies for operation.

Current requirements for stepper motor controller power supplies:

During operation, current consumption will vary depending upon how the controller is being used. Before shipment, our controllers are calibrated to the rated current of the motors they are to be used with. If you do not specify a motor, the controllers will be calibrated to a factory default value. Due to Pulse Width Modulation (PWM) our controllers usually consume less current than the rated current of motors. However, to avoid problems during worst case scenarios, we recommend selecting a power supply with a max current not less than the rated current of motors that will be connected to the controller. In case of multi-axis controllers you will need to sum the currents of all controllers connected to the power supply.

Requirements for stepper motor controllers power supply voltage:

Our stepper motor controllers are a “chopper drive” type. This means that in the initial phase of the motor step our controller will apply significantly higher voltage to motor winding than will occur in other drive types. This method allows stepper motors to be driven with higher torque at higher speeds. It should also be noted that stepper motor parasitic resonant effect behavior (“bad” frequencies position, for example) depends on supply voltage. Minimal allowable DC voltage of our stepper motor controllers is 12V and maximum is 36V, both of which we keep in stock.

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Micrometer Screws

9S75M-AL

9S75M-AL

- **Designed for micro-positioning applications**
- **Stainless steel screw with hardened steel ball tip**
- **Brass threaded collar**
- **Very smooth motion allows positioning with sensitivity of 1 μm**
- **Scale 10 μm division**
- **Nominal travel 5, 10, 15, 20, 25, 30, 50 mm**

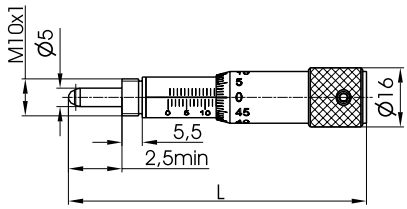
Micrometer screws 9S75M-AL, 9S75ML-AL have **M6x0.5** internal driving screw thread. External mounting thread - **M10x1**. External **M10x0.5** mounting thread is available on request.

Vernier scale is engraved on a revolving cylindrical collar of the micrometer screw. The collar can be rotated to make the scale visible if micrometer screw is mounted with the scale out of sight.

9S75M-AL, 9S75ML-AL are used in Standa translation stages and mirror mounts and can be used in mounts and stages of other manufacturers.

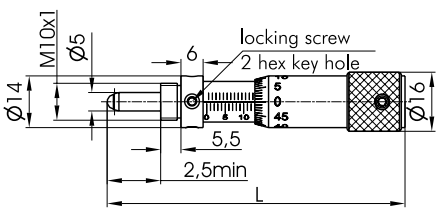
SPECIFICATIONS	9S75M-AL	9S75ML-AL
Micrometer screw thread	M6x0.5	M6x0.5
Sensitivity	1 μm	1 μm
Scale division	10 μm	10 μm
Axial load capacity	80 N	80 N
Mounting thread	M10x1	M10x1
Locking	No	Yes

Standart Micrometer Screw — 9S75M-AL



9S75M-AL

Locking Micrometer Screw — 9S75ML-AL



9S75ML-AL

7T173-20T
with 9S75M-20-AL installed

7T175-50
with 9S75M-50-AL installed

7T68-25XYZ
with 9S75M-25-AL installed

Model	Nominal travel, mm	Maximum travel, mm	L, mm	Weight, kg
9S75M-5-AL, 9S75ML-5-AL	5	7	40	0.03
9S75M-10-AL, 9S75ML-10-AL	10	13	54	0.04
9S75M-15-AL, 9S75ML-15-AL	15	17	60	0.04
9S75M-20-AL, 9S75ML-20-AL	20	22	70	0.05
9S75M-25-AL, 9S75ML-25-AL	25	27	81	0.06
9S75M-30-AL, 9S75ML-30-AL	30	32	92	0.08
9S75M-50-AL, 9S75ML-50-AL	50	52	136	0.10

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Micrometer Screws

9S55-AL

9S55-5-AL

9S55M-5-AL

- **Designed for micro-positioning applications**
- **Stainless steel screw with hardened steel ball tip**
- **Brass threaded collar**
- **Very smooth motion allows positioning with sensitivity of 1 μm**
- **Scale 10 μm division**
- **Nominal travel 5, 10 mm**

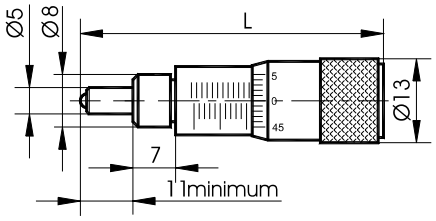
There are two types of the **Thin Micrometers** – **9S55-AL** and **9S55M-AL**. They differ in their mounting method:

9S55-AL has a Ø**8x7** mm mounting barrel.

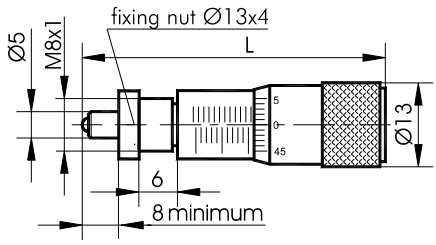
9S55M-AL can be mounted by tightening a fixing nut included on a **M8x1** thread.

SPECIFICATIONS

Micrometer screw thread	M6x0.5
Sensitivity	1 μm
Scale division	10 μm
Axial load capacity	80 N
Way of mounting	
9S55-AL	Mounting barrel
9S55M-AL	mounting sleeve with fixing nut



9S55-AL



9S55M-AL

Model	Nominal travel, mm	L, mm	Weight, kg
9S55-5-AL	5	46	0.02
9S55M-5-AL	5	46	0.02
9S55-10-AL	10	58,5	0.03
9S55M-10-AL	10	58,5	0.03

7T164-10T
with 9S55-10-AL installed

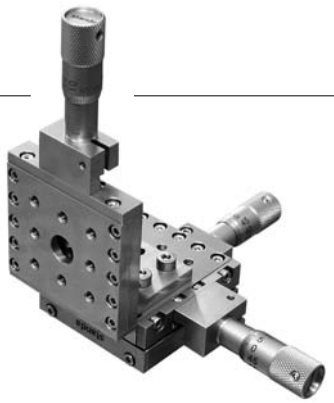
7T264-10
with 9S55-10-AL installed

7T184-13XYZ
with 9S55-10-AL installed

Vacuum 10^{-6} Torr Compatible

9S55-5

9S55M-5



7T164V-10XYZ
with 9S55-10 installed

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Mini Micrometers

9S35

9S35-5-BL

9S35M-5

- **Designed for micro-positioning applications**
- **Stainless steel screw with hardened steel ball tip**
- **Brass threaded collar**
- **Very smooth motion allows positioning with sensitivity of 1 μm**
- **Scale 10 μm division**
- **Maximum travel 6.35 mm (1/4")**

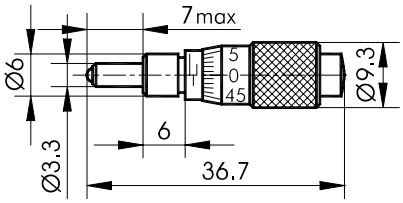
There are two types of the **Mini Micrometers – 9S35** and **9S35M**. They differ in their mounting method:

9S35 has a ∅**6×6** mm mounting barrel.

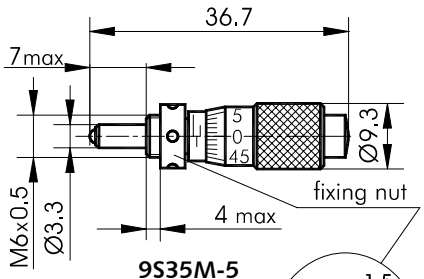
9S35M series micrometer is designed to be mounted using the **M6×0.5** thread. Final position of the micrometer can be set by fastening the included fixing nut.

SPECIFICATIONS

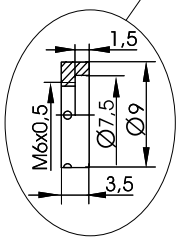
Micrometer screw thread	M4×0.5
Sensitivity	1 μm
Travel range	5 mm
Scale division	10 μm
Axial load capacity	60 N
Weight	0.01 kg



9S35-5



9S35M-5



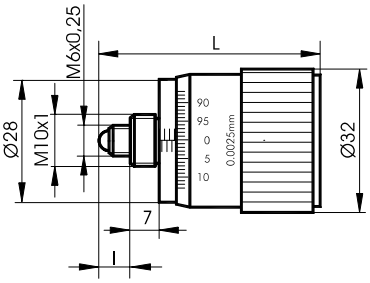
Model	Extra thread and fixing nut	Finish	Body material
9S35-5	-	-	stainless steel
9S35M-5	included	-	stainless steel
9S35-5-BL	-	black	aluminium
9S35M-5-BL	included	black	aluminium

7T67-6-9S35M-5
7T67-6 with 9S35M-5 installed

7R128-9S35-5BL
7R128 with 9S35-5BL installed

High-Resolution Micrometers

9SM127M



- **Stainless steel screw with hardened steel ball tip**
- **Brass threaded collar**
- **Mounts on M10 holes**
- **Scale 2.5 μm division**
- **Nominal travel 5, 10 mm**

High-Resolution Micrometers 9SM127M provide increased reading accuracy by combining a large knob and a stainless steel screw with fine pitch of **0.25 mm**.

External mounting thread - **M10x1**.

External **M10x0.5** mounting thread is **available on request**.

SPECIFICATIONS

Micrometer screw thread	M6x0.25
Sensitivity	0.5 μm
Scale division	2.5 μm
Axial load capacity	50 N

Model	Nominal travel, mm	L, mm	l, mm	Weight, kg
9SM127M-5	5	40	2...7	0.05
9SM127M-10	10	45	2...12	0.08

7TF2
with 9SM127M-5 installed

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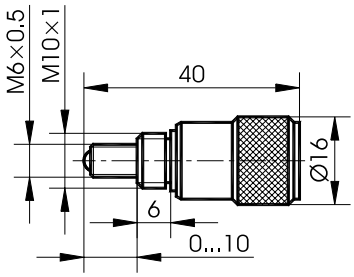
Fine Closed Screw

9S65M



Fine Closed Screw 9S65M provides high **1 μm** sensitivity and smooth movement. Its travel range is **10 mm.** The screw is used in many STANDA mounts. The handle covers the thread over the complete travel range.

Special micrometer screw design for use in optical mounts for angular adjustment.

External mounting thread - **M10x**1.

External **M10x0.5** mounting thread is **available on request**.

SPECIFICATIONS

Adjustment screw thread	M6x0.5
Sensitivity	1 μm
Axial load capacity	80 N
Nominal travel	10 mm
Weight	0.02 kg

5OM60-3
with 9S65M installed

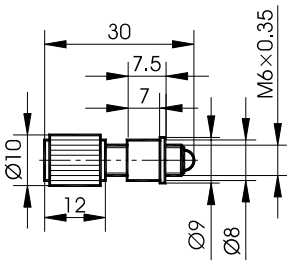
5OM37-40
with 9S65M installed

Compact Fine Screws

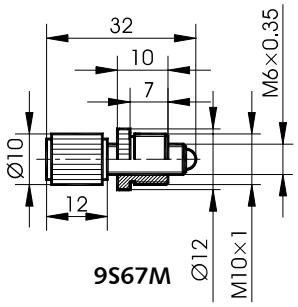
9S67

9S67

9S67M



9S67



9S67M

Compact Fine Screws 9S67 provide high resolution. A **unique design** allows **smooth adjustment** and **high repeatability** thanks to **matched stainless steel screw/brass nut pairs**. Using **screw/nut** matching technology, **backlash** is in high precision **M6x0.35** thread almost **eliminated**. The combination of metals provides a superior match for both movement and long lifetime.

9S67 has a mounting diameter of ∅**8 mm**. The **9S67M** has a mounting thread **M10x1,** or **M10x0.5** as option.

A compact knob is made from black anodized aluminium.

SPECIFICATIONS

Adjustment screw thread	M6x0.35
Sensitivity	1.3 μm
Axial load capacity	70 N
Nominal travel	8 mm

Model	**Weight,** kg
9S67	0.015
9S67M	0.015

5OM111
with 9S67 installed

5OM60-3-9S67M
with 9S67M installed

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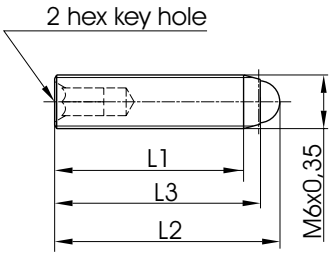
Industrial Adjustment Screws

9SH67



When you need to make accurate adjustment in your equipment, order **9SH67** industrial adjustment screws along with **9MT6-0.35 taps** (see **page 9-12**) to make matched screw and nut pairs and enjoy the ultimate performance.

9SH67 industrial adjustment screws do not include nuts. Nuts with perfect thread and minimal backlash for the screws can be made with our **9MT6-0.35 taps** (see **page 9-12**) which use the widely appreciated **Standa** adjustment screw technology.

SPECIFICATIONS

Adjustment screw thread	M6x0.35
Sensitivity	1 μm
Axial load capacity	70 N

Model	**L1,** mm	**L2,** mm	**L3,** mm	**Weight,** kg
9SH67-10	8	12	9.8	0.002
9SH67-18	16	20	17.8	0.004
9SH67-23	21	25	22.8	0.006
9SH67.01-7.3	5.5	9.5	7.3	0.001
9SH67-XX		custom size		

9MT6-0.35
Industrial Custom Taps

Page 9-12

Low Cost Adjustment Screws

9S7C • 9S7

9S7-8

9S7C-18

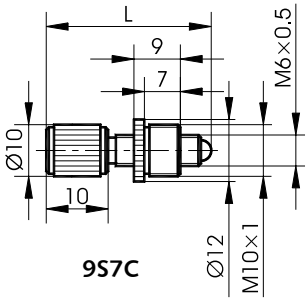
Low Cost Adjustment Screws 9S7 and 9S7C are popular for their low cost and miniature size, in applications where rough resolution about **5 μm** is enough.

9S7C consists of **M6x0.5** screw and **nut** with **M10x1 mounting** thread (**M10x0.5** as option).

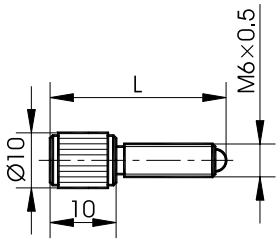
9S7C and **9S7** series screws suite well for optical mount and can be chosen as an option in mounts **5OM37, 5OM60, 6LH** and others.

SPECIFICATIONS

Adjustment screw thread	M6x0.5
Sensitivity	1.5 μm
Axial load capacity	80 N



9S7C



9S7

Model	**Nominal travel,** mm	**L,** mm	**Weight,** kg
9S7-8	8	29	0.015
9S7C-8	8	29	0.02
9S7-18	18	39	0.025
9S7C-18	18	39	0.03

5OM37-40-9S7C
5OM37-40 with
9S7C-8 installed

6LH
with 9S7-18 installed

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Ultra-Fine Adjustment Screws

9S127

- **Stainless steel screw with pitch of 0.25 mm**
- **Precision brass collars of 3 types**
- **Tolerances better than tightest industry standards**

Ultra-Fine Adjustment Screws 9S127 are compact and provide extremely high resolution. Special design provides smooth and repeatable action by mating a high precision **0.25 pitch stainless steel** screw with a high precision brass collar. The screws have either a hardened steel ball on the tip or a blunt ground tip.

The mounting surface of collars is either plain cylindrical or with a thread. The collars are ideally suitable for all mechanical stages and elements from STANDA or other companies.

The handy dimensions of the knobs are optimally chosen to feel rotation as little as **0.5°-1°**. This enables to achieve **0.5 μm** positioning sensitivity. The knobs are made of hard aluminium and come in various colours: black, white, red, green, yellow, blue, etc. By default the knobs are in black or white colour, **5 mm** high (dimension "K").

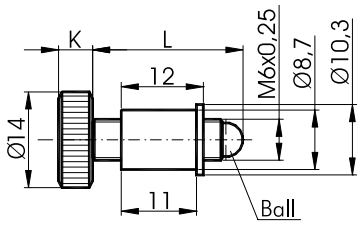
Weight **0.01 to 0.02 kg**

5MBM21-1
with 9S127-10 installed

6TS62-9S127M
6TS62 with
9S127M-10 installed

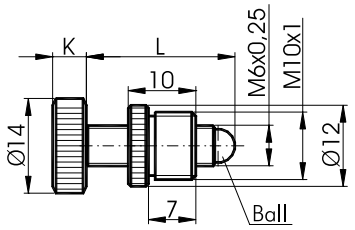
SPECIFICATIONS

Adjustment screw thread	M6x0.25
Sensitivity	0.5 μm
Axial load capacity	50 N
Weight	0.01 to 0.02 kg



9S127

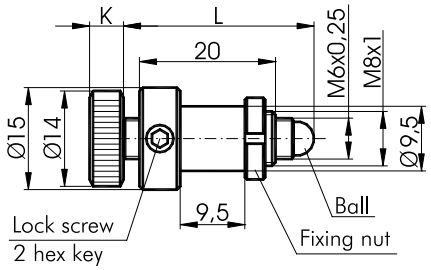
Model	Travel, mm	L, mm	Tip
9S127-7	7	22	ball tip
9S127-10	10	25	ball tip
9S127-25	25	40	ball tip



9S127M

Model	Travel, mm	L, mm	Tip
9S127M-7	7	20	ball tip
9S127M-10	10	23	ball tip
9S127M-25	25	38	ball tip

The **9S127M** has a mounting thread **M10x1**, but you may specify an alternative pitch of **M10x0.5.**



9S127N

Model	Travel, mm	L, mm	Tip
9S127N-5	5	28	ball tip
9S127N-10	10	33	ball tip
9S127N-25	25	48	ball tip

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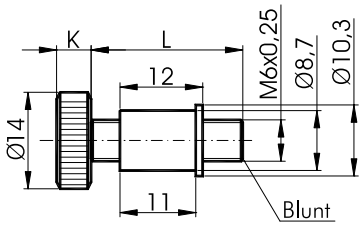
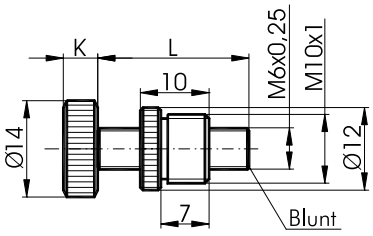


9S127B

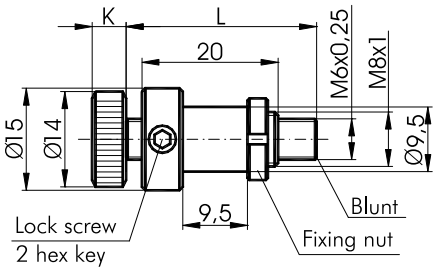
Model	Travel, mm	L, mm	Tip
9S127B-7	7	19	blunt tip
9S127B-10	10	22	blunt tip
9S127B-25	25	37	blunt tip



9S127BM

Model	Travel, mm	L, mm	Tip
9S127BM-7	7	19	blunt tip
9S127BM-10	10	22	blunt tip
9S127BM-25	25	37	blunt tip

The **9S127BM** has a mounting thread **M10x1**, but you may specify an alternative pitch of **M10x0.5.**



9S127BN

Model	Travel, mm	L, mm	Tip
9S127BN-5	5	25	blunt tip
9S127BN-10	10	30	blunt tip
9S127BN-25	25	45	blunt tip

ORDERING INFORMATION

Knobs come in **5 mm (standard), 10 mm or 15 mm length**. When ordering, please append the standard screw code with the desired value for the length of the knob.

For example:

9S127-7	nominal travel **7 mm**, ball tip, standard **5 mm** lenght **knob**.
9S127BM-7-K10	nominal travel **7 mm**, blunt tip, **10 mm** lenght **knob**.
9S127BN-25-K15	nominal travel **25 mm**, blunt tip, **15 mm** lenght **knob**.

For screws with **hex hole** for **Allen key** (instead of the knob) see item **9SH127** (**page 9-8**).

Differential actuators !!!

Find out more at www.STANDA.LT

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Ultra-Fine Hex Adjustment Screws 9SH127

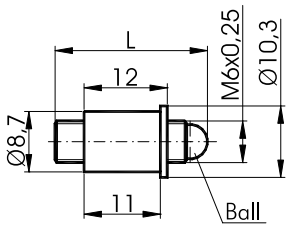
- **Stainless steel screw with pitch of 0.25 mm**
- **Precision brass collars of 3 types**
- **Tolerances better than tightest industry standards**

Ultra-Fine Hex Adjustment Screws 9SH127 are extremely compact and precise. A screw is of a **0.25 pitch stainless steel** screw and a brass collar. One end of the screw has a hexagonal hole for adjustments using a spanner or a **Removable Knob 9RK127** (optional). Another end of the screw is either fitted with the hardened steel ball, or made blunt. Brass collars, for plain cylindrical and threaded mounting, can be of 3 types.

5F21-2-SH
5F21-2 with
9SH127-10 installed

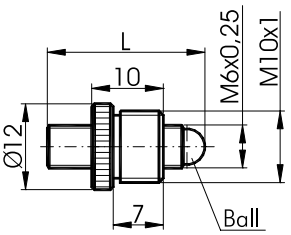
SPECIFICATIONS

Adjustment screw thread	M6x0.25
Sensitivity	0.5 μm
Axial load capacity	50 N
Hex key	3
Weight	0.01 to 0.02 kg



9SH127

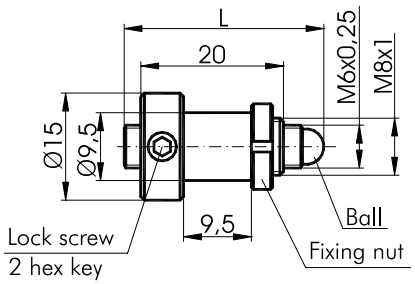
Model	Travel, mm	L, mm	Tip
9SH127-7	7	22	ball tip
9SH127-10	10	25	ball tip
9SH127-25	25	40	ball tip



9SH127M

Model	Travel, mm	L, mm	Tip
9SH127M-7	7	20	ball tip
9SH127M-10	10	23	ball tip
9SH127M-25	25	38	ball tip

The **9S127M** has a mounting thread **M10x1**, but you may specify an alternative pitch of **M10x0.5.**



9SH127N

Model	Travel, mm	L, mm	Tip
9SH127N-5	5	28	ball tip
9SH127N-10	10	33	ball tip
9SH127N-25	25	48	ball tip

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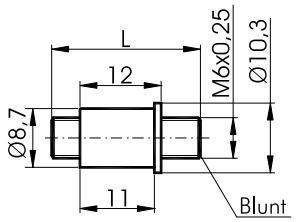
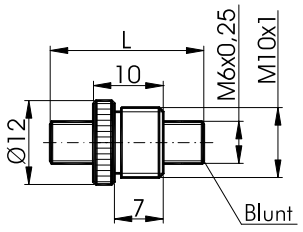


9SH127B

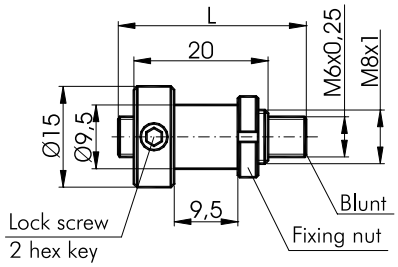
Model	Travel, mm	L, mm	Tip
9SH127B-7	7	19	blunt tip
9SH127B-10	10	22	blunt tip
9SH127B-25	25	37	blunt tip



9SH127BM

Model	Travel, mm	L, mm	Tip
9SH127BM-7	7	19	blunt tip
9SH127BM-10	10	22	blunt tip
9SH127BM-25	25	37	blunt tip

The **9S127BM** has a mounting thread **M10x1**, but you may specify an alternative pitch of **M10x0.5.**



9SH127BN

Model	Travel, mm	L, mm	Tip
9SH127BN-5	5	25	blunt tip
9SH127BN-10	10	30	blunt tip
9SH127BN-25	25	45	blunt tip

ORDERING INFORMATION

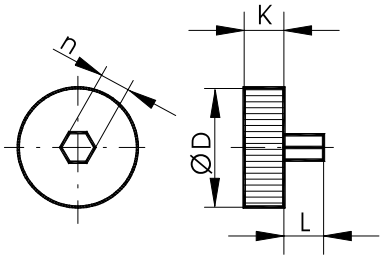
For example:

9SH127-7	nominal travel **7 mm**, ball tip.
9SH127BM-7	nominal travel **7 mm**, blunt tip.
9SH127BN-25	nominal travel **25 mm**, blunt tip.

Removable Knob

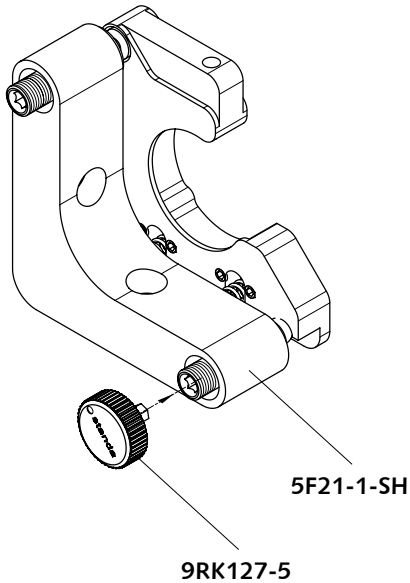
9RK

9RK127-5



A hard anodized aluminium knob with optimal dimensions can be easily removed after the screw is adjusted. This will help you prevent inadvertent touching and will save space. Standard knobs come in 5mm thickness and are of white colour (dimension K).

Model	D, mm	K, mm	L, mm	n
9RK127-5	∅14	5	5	hex 3
9RK127-10	∅14	10	5	hex 3
9RK137-5	∅8	5	3.5	hex 1.5
9RK137-10	∅8	10	3.5	hex 1.5
9RK147-5	∅8	5	3.5	hex 2
9RK147-10	∅8	10	3.5	hex 2



5F21-1-SH

9RK127-5

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Fine Hex Adjustment Screws

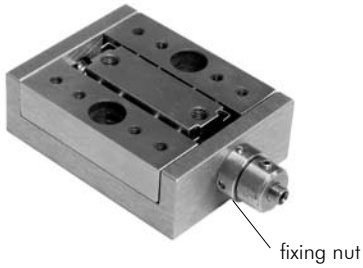
9SH137 • 9SH147

- Small (M3 or M4) adjustment screws
- Screw of stainless steel
- Brass nut with outer M6 mounting thread
- Hex key drive
- Screw thread pitch 0.25 mm
- Travel 5 mm
- Lockable models available
- Other travel by request

Fixing nuts **3N6X05** (for 9SH137 series) and **3N8X1** (for 9SH147 series) are available for screws with threaded. It will allow to fix the screw at any depth in walls too thin for the 6mm collar thread. It will fix the screw so that it is in desired position.

When you order our units with these screws, we will make sure to include the fixing nut, in case the unit's wall is thin. In other cases you may order the nut separately.

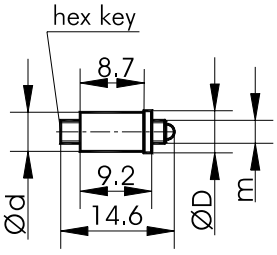
7T67-6-9SH137ML
7T67-6- with
9SH137ML installed



7T67-6-9SH137MN
7T67-6- with
9SH137MN installed

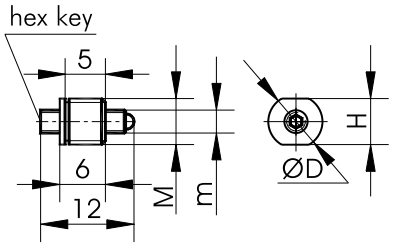
SPECIFICATIONS

Adjustment Screw Thread	
9SH137	M3x0.25
9SH147	M4x0.25
Sensitivity	0.5 μm
Load Capacity	40 N
Weight	0.01 kg



9SH137, 9SH147

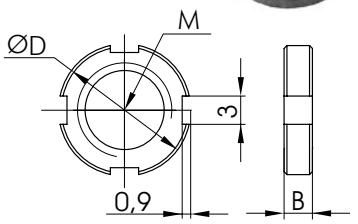
Model	d mm	D, mm	m, mm	hex key
9SH137	5.1	5.5	M3x0.25	1.5
9SH147	6	7	M4x0.25	2



9SH137M, 9SH147M

Model	D, mm	m, mm	M, mm	H	hex key
9SH137M	7	M3x0.25	M6x0,5	6	1.5
9SH147M	9	M4x0.25	M8x1	8	2

fixing nuts



Model	D, mm	M	B, mm
3N6X05	10	M6x0,5	2.5
3N8X1	12	M8x1	3.5
3N10X05	14	M10x0,5	3
3N12X1	16	M12x1	3.5

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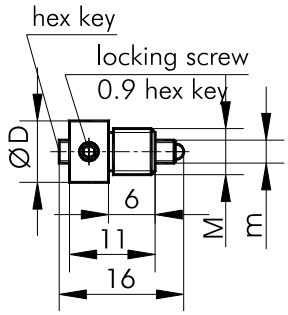
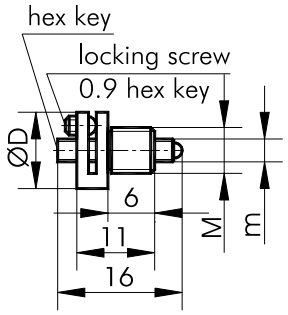


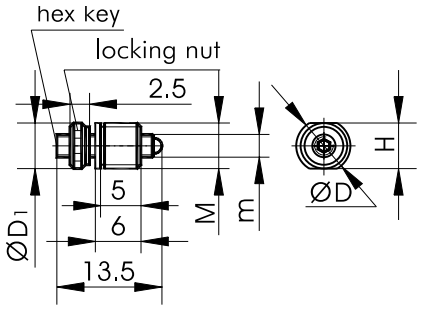
9SH137MN, 9SH147MN

Model	D, mm	m, mm	M, mm	hex key
9SH137MN	8	M3x0.25	M6x0,5	1.5
9SH147MN	10	M4x0.25	M8x1	2



9SH137ML, 9SH147ML

Model	D, mm	m, mm	M, mm	hex key
9SH137ML	9	M3x0.25	M6x0,5	1.5
9SH147ML	11	M4x0.25	M8x1	2



9SH137MF, 9SH147MF

Model	D, mm	D_1, mm	m, mm	M, mm	H	hex key
9SH137MF	7	6	M3x0.25	M6x0,5	6	1.5
9SH147MF	9	8	M4x0.25	M8x1	8	2

note!

All micrometer and fine screws are produced using a matched screw/nut pair technology developed by Standa.

This technology uses thread polishing (without using cutter) to create very high quality threads which have minimal clearances that provide the highest degree of smoothness during adjustment.

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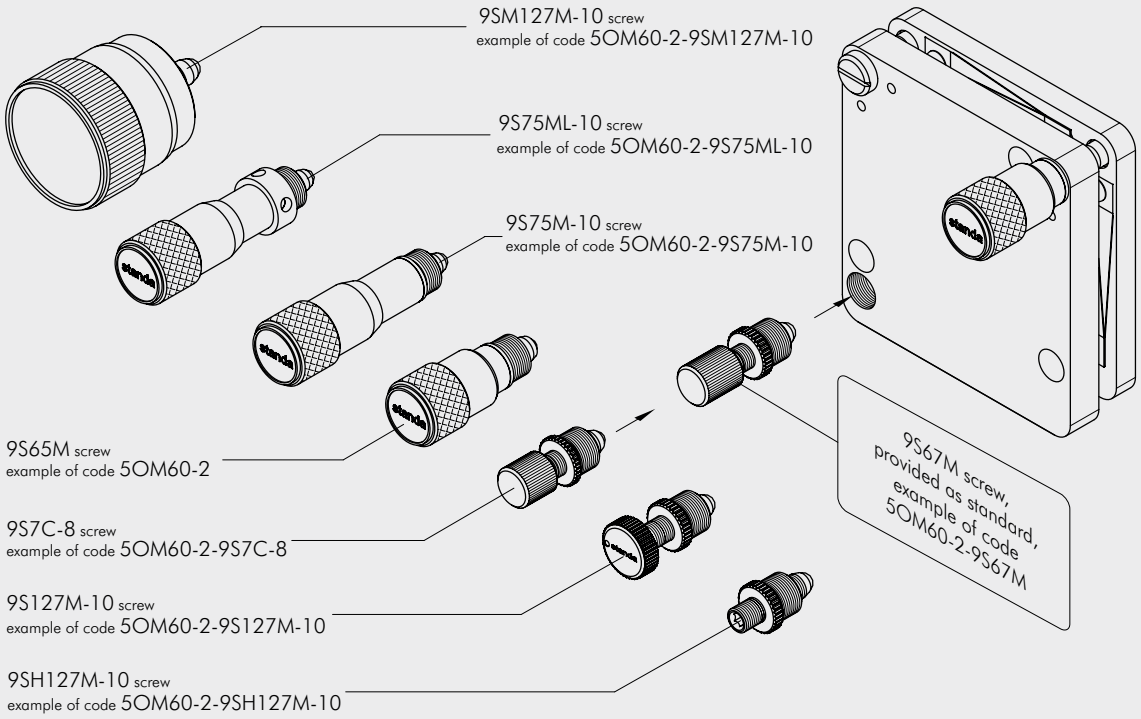
APPLICATION SUGGESTION



Industrial Custom Taps — 9MT

9MT6-0.35

9MT6-0.35 taps are **used for making custom holes** in **hardened aluminum**. **The taps** should be ordered together with **9SH67** series industrial adjustment screws.

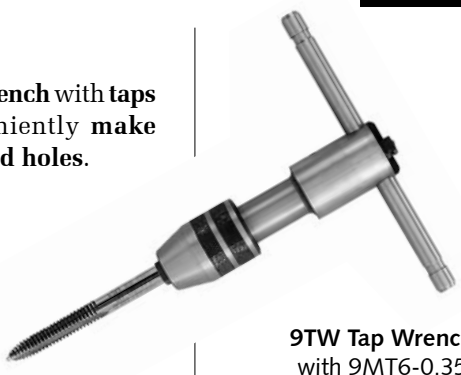
SPECIFICATIONS

Thread	M6×0.35
Tap drill size	5.62 mm

9SH67
Industrial Adjustment Screws

Tap Wrench — 9TW

Use **9TW tap wrench** with **taps 9MT** to conveniently **make custom threaded holes**.



9TW Tap Wrench
with 9MT6-0.35
Industrial Custom Tap installed

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Precision Spatial Filter

10SF130

10SF130
with Precision Pinholes 10PP and
with Microscope Objectives 10MO

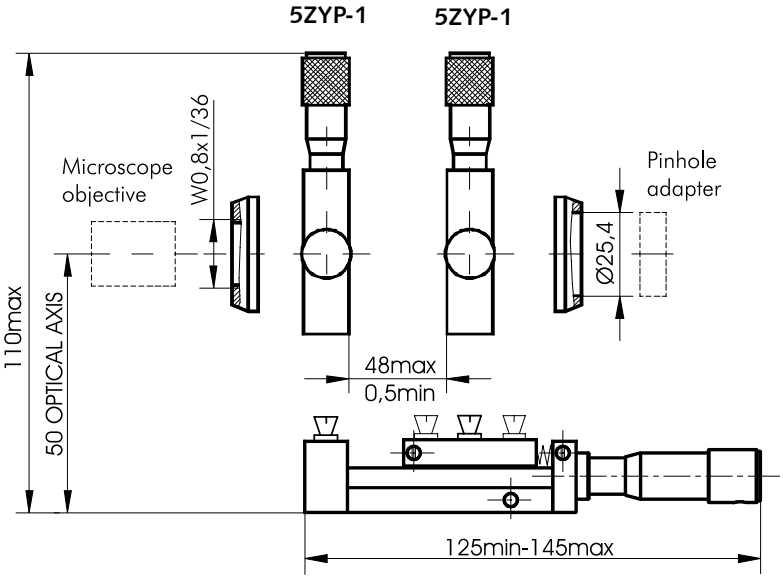
- **3-axis adjustment with micrometers**
- **Accommodates virtually any microscope objective**
- **Unobscured view of a pinhole facilitates alignment**
- **Easy pinhole removal and replacement**

Microscope objective and Precision Pinholes can be supplied as option.

Precision Spatial Filter 10SF130 filters the beam from any low power, visible to near infrared laser. The result – the output beam is delivered with a smooth, near ideal intensity profile. The Spatial Filter consists of two YZ Positioners 5ZYP and Translation Stage 7T173-20SF (modification of 7T173-20). YZ Positioners for Lens, Pinholes and Objectives 5ZYP provides adjustments of the pinhole and objective in two axis. The precision X axis motion is provided by Translation Stage 7T173-20SF.

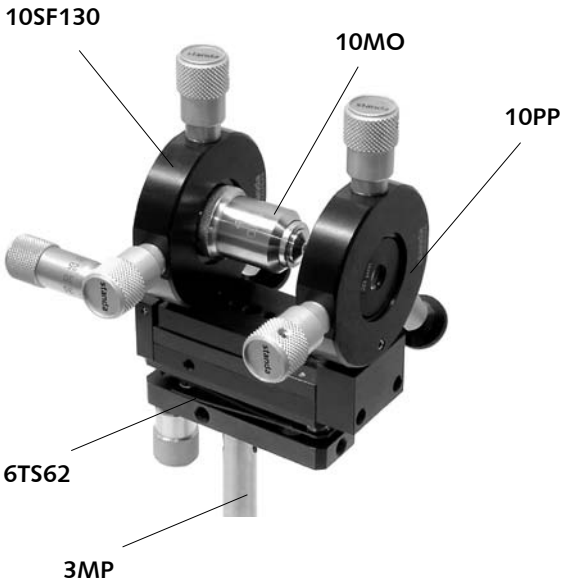
The pinhole and the objective should be selected and ordered separately. STANDA offers a selection of interchangeable microscope objective lenses and precision pinholes, allowing you to build the best spatial filter for your laser.

Weight **0.87 kg**



7T173-20SF

See articles:
"Precision Pinholes 10PP" and
"Microscope Objectives 10MO"



Single-Axis Tilt Stage 6TS62 greatly facilitates pitch adjustment relative to the optical axis.

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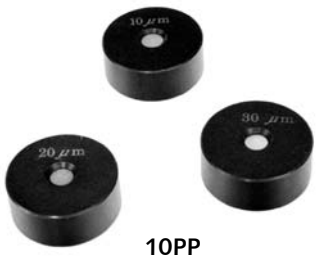
Precision Pinholes

10PP



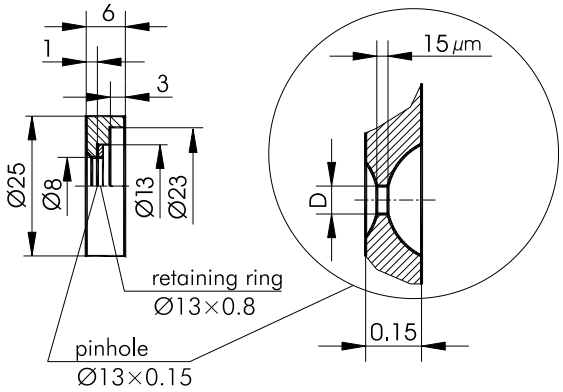
10PP

10SF130
with Precision Pinholes 10PP and
with Microscope Objectives 10MO

- **For diffraction experiments, alignment purposes, projection applications**
- **Chemically etched apertures**
- **Apertures formed in vacuum**
- **4 μm thick pinhole in a kovar foil**
- **Ultra-thin substrate minimizes laser power loss**
- **Chemically inert**

Precision Pinhole 10PP is a round aperture precisely formed and controlled in a kovar foil. To facilitate handling, a pinhole foil is mounted in a ∅**25 mm** black metal donut.

The Precision Pinholes 10PP can be used in our Precision Spatial Filters **10SF130** and YZ Positioner for Lens, Pinholes and Objectives **5ZYP-1**.



Model	D, μm	Model	D, μm
10PP-10	10±0.5	10PP-50	50±0.5
10PP-20	20±0.5	10PP-75	75±0.5
10PP-30	30±0.5	10PP-100	100±0.5
10PP-40	40±0.5		

We also offer pinholes with diameter D in the range of 45-100 μm every 5 μm.

Pinholes of custom diameters up-to 200 μm are available on request.

Microscope Objectives

10MO

Objective Mount 5OBM119 has W0.8-36 aperture and is used for precise adjustments of standard microscope objective lenses and allows low-cost positioning of a focus point.

Model	10MO-4	10MO-10	10MO-20	10MO-40	10MO-100
Magnification	4x	10x	20x	40x	100x
Numerical Aperture	0.10	0.25	0.40	0.65	1.25
Focal length, mm	40	16	8	4	1,6
Working distance, mm	23.40	13.13	1.70	0.41	0.10
Design type	Air immersion				Oil immersion
Mechanical Tube length, mm	160				
Optical Scheme	Plan Achromat		Achromat		
Mounting Thread	0.8"-36 RMS				
Wavelength Range	Visible Spectrum				

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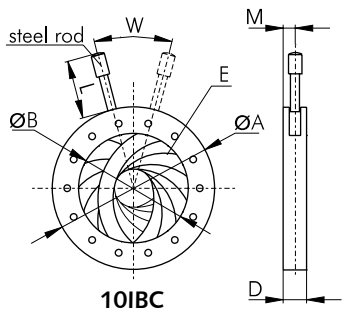
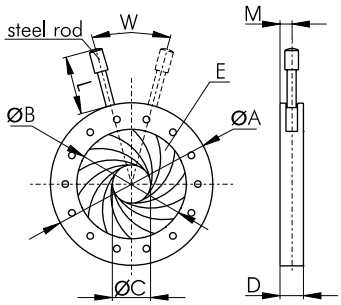
Unmounted Iris Diaphragms

10IBS
10IBC
10IBV

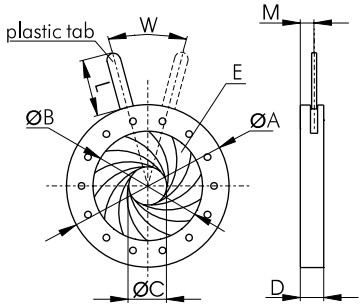
- **IBV – Iris diaphragm screwed**
- **IBS – Iris diaphragm with retainer**
- **IBC – Zero aperture iris diaphragm**



10IBC



10IBS



10IBV

Zero Aperture Iris Diaphragms 10IBC contain two layers of leaves with a gap between them.

Model	A	B	C	D	E	F/R	L	M	W	AR/N/H
10IBS10-5-0.5-AR/N	10	5	0.5	4	8	-	4	2.4	78	AR/N
10IBS12-7-0.5-AR/N	12	7	0.5	4	8	-	6	2.4	88	AR/N
10IBS14-8.2-0.8-N	14	8.2	0.8	4	8	-	6	2.4	80	N
10IBS14.8-8-1-N	14.8	8	1	4.5	9	-	6	2.5	77	N
10IBS19.8-12-1-AR/N/H	19.8	12	1	5	11	-	10	2.7	89	AR/N/H
10IBS22-14-1-AR/N	22	14	1	5	10	-	10	2.7	94	AR/N
10IBS24-15-1-N/H	24	15	1	5	12	-	13	2.7	89	N/H
10IBS28-18-1-AR	28	18	1	5	12	-	13	2.7	90	AR
10IBS30-20-1.2-AR/N/H	30	20	1.2	5.5	12	-	13	2.9	90	AR/N/H
10IBS33-22-1.5-N	33	22	1.5	5.5	14	-	13	2.9	94	N
10IBS37-25-1.5-N	37	25	1.5	5.5	15	-	13	3	94	N
10IBS40-27-1.5-AR/N/H	40	27	1.5	5.5	12	-	13	3	91	AR/N/H
10IBS43-30-1.5-N/H	43	30	1.5	5.5	14	-	13	3	93	N/H
10IBS49-34-2-AR/H	49	34	2	6.5	14	-	13	3.4	93	AR/H
10IBS50-36-2.5-N	50	36	2.5	6	16	-	13	3.2	93	N
10IBS53-37-2.5-N	53	37	2.5	6	16	-	13	3.2	90	N
10IBS58-42-2.5-N	58	42	2.5	6.5	18	-	13	3.3	94	N
10IBS60-40-2.5-N	60	40	2.5	6.5	12	-	13	3.3	88	N
10IBS64-45-2.5-N/H	64	45	2.5	7	14	-	13	3.9	93	N/H
10IBS70-50-2.5-N	70	50	2.5	7	18	-	15	3.8	93	N
10IBS82-60-4-N/H	82	60	4	8	17	-	13	4.5	92	N/H
10IBS100-75-4-N/H	100	75	4	9	20	-	15	4.5	94	N/H
10IBS110-81-3-AR	110	81	3	10	16	-	15	5	95	AR
10IBS120-90-3.5-AR	120	90	3.5	12	20	-	15	6.5	97	AR
10IBS130-98-4-N/H	130	98	4	12	20	-	20	6.5	97	N/H
10IBS150-113-6-N/H	150	113	6	13	20	-	20	7.3	95	N/H
10IBS165-120-6-N/H	165	120	6	15	18	-	20	7.9	95	N/H
10IBV15-8-1-N	15	8	1	5.3	9	-	5	2.3	75	N
10IBV15-8-1-N-1	15	8	1	5.3	9	1.5	5	2.3	76	N
10IBV15.5-8.5-1-N	15.5	8.5	1	5.3	9	-	8	2.3	85	N
10IBV22-14-1-N	22	14	1	6	10	-	12	2.8	91	N
10IBV22-14-1-N-1	22	14	1	6	10	3	15	2.8	91	N
10IBV31-18-1.5-N	31	18	1.5	6.5	11	-	10	3.4	85	N
10IBV31-18-1.5-N-1	31	18	1.5	6.5	11	3	14	3.4	85	N
10IBV40-27-1.5-N	40	27	1.5	6.2	12	-	11	3.4	89	N
10IBV40-27-1.5-N-1	40	27	1.5	6.2	12	3	14	3.4	89	N
10IBV48.5-30-1.2-N	48.5	30	1.2	7	10	-	10	3.7	87	N
10IBV48.5-30-1.2-N-1	48.5	30	1.2	7	10	3	12	3.7	87	N
10IBV60-40-2.5-N	60	40	2.5	7.8	12	-	13	4.5	88	N
10IBV60-40-2.5-N-1	60	40	2.5	7.8	12	3	14	4.5	88	N
10IBV70-50-2.5-N	70	50	2.5	7	18	-	13	3.9	93	N
10IBV82-60-4-N	82	60	4	10	17	-	11	5.4	92	N
10IBV82-60-4-N-1	82	60	4	10	17	3	14	5.4	92	N

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10IBS

10IBC

10IBV

Model	A	B	C	D	E	F/R	L	M	W	AR/N/H
10IBC25-12-N	25	12	-	5	12	R	12	2.5	96	N
10IBC25-12-H	25	12	-	5	12	R	12	2.5	96	H
10IBC29-15-N	29	15	-	5	12	R	12	2.5	97	N
10IBC29-15-H	29	15	-	5	12	R	12	2.5	97	H
10IBC39-22-N	39	22	-	5	14	R	11	2.5	99	N
10IBC39-22-H	39	22	-	5	14	R	11	2.5	99	H
10IBC48-30-N	48	30	-	5	14	F	11	2.5	100	N
10IBC48-30-H	48	30	-	5	14	F	11	2.5	100	H
10IBC48-30-HT	48	30	-	5	14	F	11	2.5	100	HT
10IBC69-40-N	69	40	-	6.5	14	F	16	3.3	96	N
10IBC69-40-H	69	40	-	6.5	14	F	16	3.3	96	H
10IBC69-40-HT	69	40	-	6.5	14	F	16	3.3	96	HT
10IBC94-60-N	94	60	-	9	16	F	25	4.5	98	N
10IBC94-60-H	94	60	-	9	16	F	25	4.5	98	H
10IBC94-60-HT	94	60	-	9	16	F	25	4.5	98	HT
10IBC117-75-N	117	75	-	9.5	18	F	53	4.8	97	N
10IBC117-75-H	117	75	-	9.5	18	F	53	4.8	97	H
10IBC117-75-HT	117	75	-	9.5	18	F	53	4.8	97	HT
10IBC125-85-N	125	85	-	9.5	18	F	50	4.8	98	N
10IBC125-85-H	125	85	-	9.5	18	F	50	4.8	98	H
10IBC125-85-HT	125	85	-	9.5	18	F	50	4.8	98	HT
10IBC135-98-N	135	98	-	8.5	20	F	50	4.3	102	N
10IBC135-98-H	135	98	-	8.5	20	F	50	4.3	102	H
10IBC135-98-HT	135	98	-	8.5	20	F	50	4.3	102	HT
10IBC160-113-N	160	113	-	13	20	R	18	6.5	101	N
10IBC160-113-H	160	113	-	13	20	R	18	6.5	101	H
10IBC160-113-HT	160	113	-	13	20	R	18	6.5	101	HT

All dimensions in mm

Iris diaphragm provides a continuously variable field stop for controlling the focal length of an optical system or for adjusting the diameter of a beam. All **iris diaphragms** offer exceptionally smooth operation over the lever travel, from maximum to minimum aperture. Zero Aperture iris diaphragms provide total light extinction.

E – Number of leaves
F – Tab
R – Pin
AR – Leaves with AR coating, for temperatures up to **180 ºC**
N – Springsteel, black finished, for temperatures up to **250 ºC**
H – Stainless steel, for temperatures up to **400 ºC**
HT – High temperature alloy for up to **1000 ºC**
1 – 10IBC, 10IBS steel rod

10IBS

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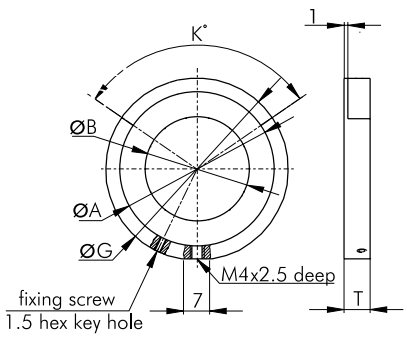
Iris Diaphragms Mounts

10IB

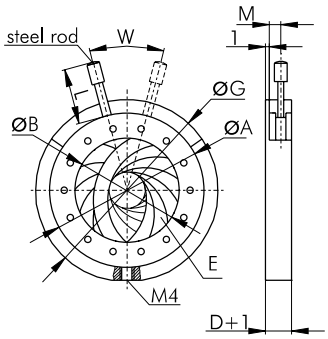


Model	G	A	B	T	K
10IB-14	22	14	10	6	140
10IB-14.8	23	14.8	10	6	130
10IB-15	23	15	10	6.3	123
10IB-15.5	23	15.5	10.5	6.3	125
10IB-22	29.5	22	16	7	130
10IB-24	31	24	17	6	123
10IB-25	32.5	25	14	6	127
10IB-29	36.5	29	17	6	125
10IB-31	38	31	20	7.5	110
10IB-37	44	37	27	6.5	116
10IB-39	46	39	24	6	120
10IB-48.5	55.5	48.5	32	8	104
10IB-49	56	49	36	7.5	110
10IB-50	57	50	38	7	110

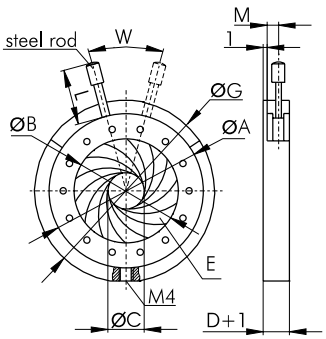
Mounted Iris Diaphragms

10IB-M

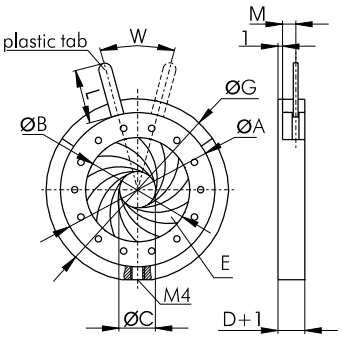
10IBC-M-15



10IBC-M



10IBS-M



10IBV-M

Mounted Diaphragms	Diaphragms	G	A	B	C	D	E	F/R	L	M	W	AR/N/H
10IBC-M-12-N	10IBC25-12-N	32.5	25	12	-	5	12	R	12	2.5	96	N
10IBC-M-12-H	10IBC25-12-H	32.5	25	12	-	5	12	R	12	2.5	96	H
10IBC-M-15-N	10IBC29-15-N	36.5	29	15	-	5	12	R	12	2.5	97	N
10IBC-M-15-H	10IBC29-15-H	36.5	29	15	-	5	12	R	12	2.5	97	H
10IBC-M-22-N	10IBC39-22-N	46	39	22	-	5	14	R	11	2.5	99	N
10IBC-M-22-H	10IBC39-22-H	46	39	22	-	5	14	R	11	2.5	99	H
10IBS-M-8.2-N	10IBS14-8.2-0.8-N	22	14	8.2	0.8	4	8	-	6	2.4	80	N
10IBS-M-8-N	10IBS14.8-8-1-N	23	14.8	8	1	4.5	9	-	6	2.5	77	N
10IBS-M-14-AR	10IBS22-14-1-AR	29.5	22	14	1	5	10	-	10	2.7	94	AR
10IBS-M-14-N	10IBS22-14-1-N	29.5	22	14	1	5	10	-	10	2.7	94	N
10IBS-M-15-N	10IBS24-15-1-N	31	24	15	1	5	12	-	13	2.7	89	N
10IBS-M-15-H	10IBS24-15-1-H	31	24	15	1	5	12	-	13	2.7	89	H
10IBS-M-25-N	10IBS37-25-1.5-N	44	37	25	1.5	5.5	15	-	13	3	94	N
10IBS-M-34-AR	10IBS49-34-2-AR	56	49	34	2	6.5	14	-	13	3.4	93	AR
10IBS-M-34-H	10IBS49-34-2-H	56	49	34	2	6.5	14	-	13	3.4	93	H
10IBS-M-36-N	10IBS50-36-2.5-N	57	50	36	2.5	6	16	-	13	3.2	93	N
10IBS-M-50-N	10IBS70-50-2.5-N	77	70	50	2.5	7	18	-	15	3.8	93	N
10IBV-M-8-N	10IBV15-8-1-N	23	15	8	1	5.3	9	-	5	2.3	75	N
10IBV-M-8-N-1	10IBV15-8-1-N-1	23	15	8	1	5.3	9	1.5	5	2.3	76	N
10IBV-M-8.5-N	10IBV15.5-8.5-1-N	23	15.5	8.5	1	5.3	9	-	8	2.3	85	N
10IBV-M-14-N	10IBV22-14-1-N	29.5	22	14	1	6	10	-	12	2.8	91	N
10IBV-M-14-N-1	10IBV22-14-1-N-1	29.5	22	14	1	6	10	3	15	2.8	91	N
10IBV-M-18-N	10IBV31-18-1.5-N	38	31	18	1.5	6.5	11	-	10	3.4	85	N
10IBV-M-18-N-1	10IBV31-18-1.5-N-1	38	31	18	1.5	6.5	11	3	14	3.4	85	N
10IBV-M-30-N	10IBV48.5-30-1.2-N	55.5	48.5	30	1.2	7	10	-	10	3.7	87	N
10IBV-M-30-N-1	10IBV48.5-30-1.2-N-1	55.5	48.5	30	1.2	7	10	3	12	3.7	87	N
10IBV-M-50-N	10IBV70-50-2.5-N	77	70	50	2.5	7	18	-	13	3.9	93	N

All dimensions in mm

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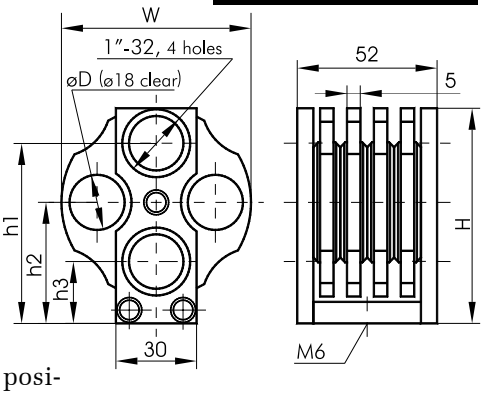
Variable Wheel Attenuators

10WA168

10WA168-20

- 4 wheels
- 3 filter per wheel (12 filters in total)
- Filter diameter - Ø20/Ø25.4 mm
- Maximum deviation 0.09 mm
- Clear aperture Ø18/Ø20 mm
- C-mount threads on both ends
- Connecting adapters available



Variable Wheel Attenuator 10WA168-20 is basic model with **4** filter-set wheels. Each wheel contains **4** filter slots each for **Ø20 mm** with clear aperture of **Ø18 mm.** Each filter slot is inclined by **4°** to avoid retroreflections.

Each wheel has **4** fixed positions. You can use any of these **4** filter positions as an optical axis. The **back** and **front** panels do not obscure.

Both panels have **1"-32** threaded holes (**C-Mounts**).

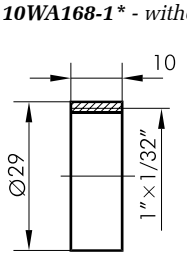
Additionaly you may order standard connecting adapters **10AR168, 10A168** and **10R168**. Custom adapters are available on request.

Mounting **M6** hole is provided in the bottom plate.

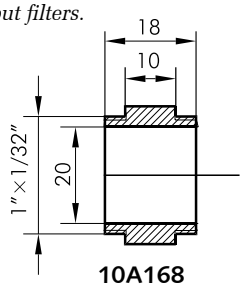
10WA168-1 model is designed to accept 1" (25,4mm) filters with maximum thickness of 4mm. This model comes WITHOUT filters.

Model	H, mm	W, mm	h_1, mm	h_2, mm	h_3, mm	D, mm	Weight, kg
10WA168-20	84	70	67	45	23	Ø20	0.35
10WA168-1*	95	80	75	50	25	Ø25.4	0.40

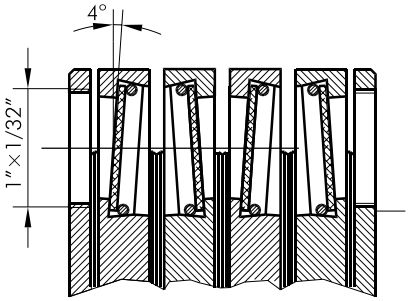
10WA168-1* - *without filters.*



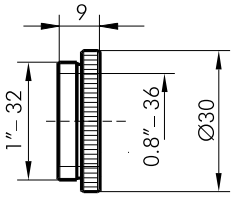
10R168



10A168



Adapters for Variable Wheel Attenuators:

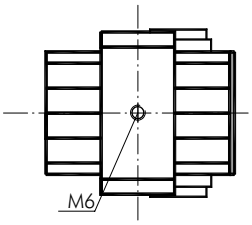


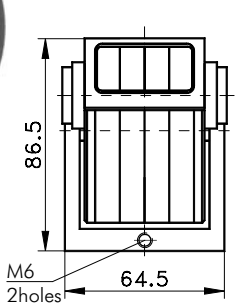
10AR168

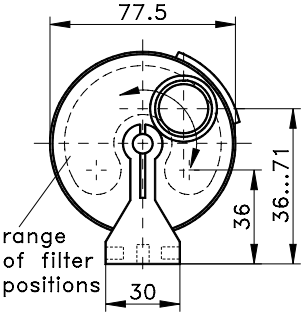
Closed Variable Wheel Attenuator

10CWA168

- Stray light fully eliminated
- Variable height of the optical axis
- Three mounting holes
- C-mount threads





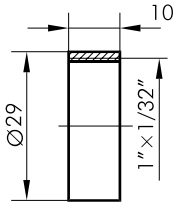


Close Variable Wheel Attenuator 10CWA168 is used when it is necessary to fully eliminate the side background lighting when using photodetectors with high sensitivity (e.g. CCD, photomultiplier, etc.). You may order standard connecting adapters **10A168** and **10R168** separately. Custom adapters are available too.

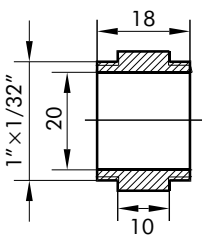
Loosen the central axis and rotate the whole body of the filter to set the desired position of an **optical axis** at a height between **36-71** mm.

The base of the attenuator has **M6** holes on **3 sides** for mounting versatility. See photo below.

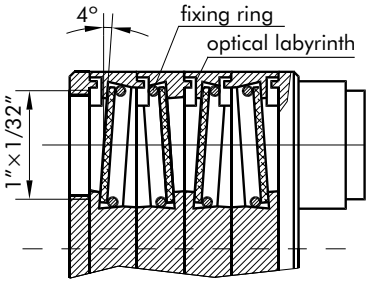
Weight: **0.55 kg**



10R168



10A168



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Some applications of optical filters

- **In systems for laser beam diagnostics with CCD-cameras**
- **Measurement of laser power, pulse energy and pulse duration**
- **Spectroscopy**
- **We can offer a set of bandpass filters for mercury lamp, laser lines, and for other your needs**

A choice of filters is available for our standard 4-wheel attenuators, allowing 256 relative positions of wheels, rendering 99 different transmission values, of which you can find a very close match to the desired value. Discrete filters permit to establish accurate optical density.

Also we can offer designs with 1, 2, 3 and more wheels.

Variable wheel attenuators come with a **standard**, most popular, **set of filters** listed in **table 1**. The standard filters are made of neutral grey glass with spectral characteristics according to **figure 3**.

Alternatively, attenuators (wheels and optics) could be manufactured to individual orders. Or we could supply variable wheel attenuators without filters, which you can fit by yourself.

Transmission		Filter #1	Filter #2	Filter #3	Filter #4
Wheel #1	T	1.00	0.90	0.80	0.50
	dB	0.00	0.46	0.97	3.00
Wheel #2	T	1.00	0.30	0.10	0.03
	dB	0.00	5.20	10.00	15.20
Wheel #3	T	1.00	0.01	0.003	0.001
	dB	0.00	20.00	25.00	30.00
Wheel #4	T	1.00	0.0003	0.0001	0.00003
	dB	0.00	35.00	40.00	45.00

Please use the following equation for easy **T(%)** to **OD** conversion $\mathbf{OD=\log^{10}T}$

Table 1. List of a standard filter-set

Charts for the standard filter-set: possible filter positions versus resulting transmission/density.

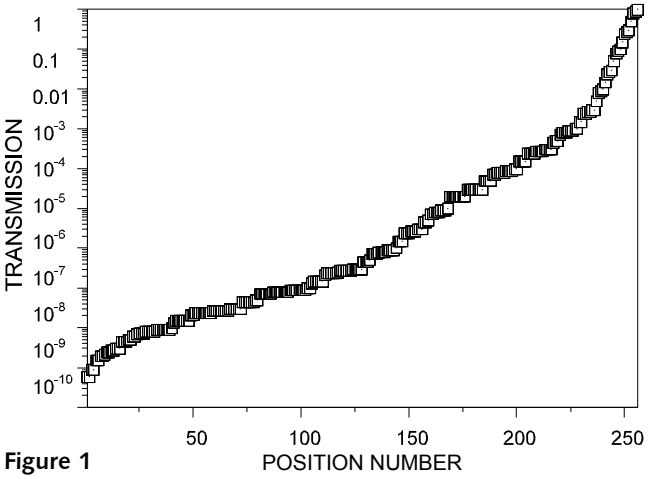

Figure 1

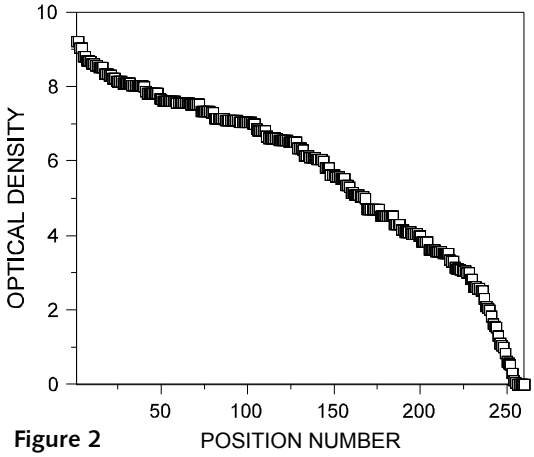

Figure 2

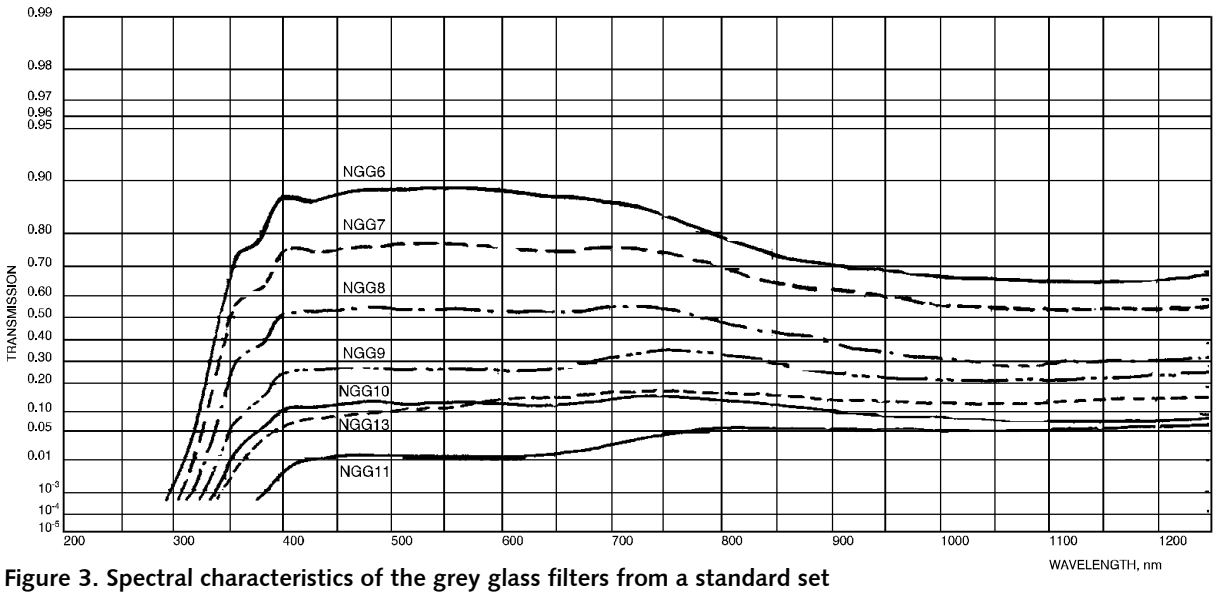

Figure 3. Spectral characteristics of the grey glass filters from a standard set

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In most cases the detectors (CCDs, photodiodes, photomultipliers, etc.), which are used for diagnostics of laser radiations, are too delicate for the direct measurement of high powers, such as from ion lasers or pulsed solid-state lasers. An attenuator may be required to reduce laser power density at the surface of detector. Optical attenuators must be used when the laser output-power or power density exceeds the working (linear) range or the damage threshold of the detector. (Draft International Standard ISO/TC172/SC 9/WG1)

For example, the damage threshold for a typical commercially available CCD is about 100 mW/cm^2, for the ultra high speed photodetectors series AR-S (Antel Optronic Inc.) it is about 200 mW/cm^2. On the other hand, laser power must be adjusted to the optimum point, which is typically just below the saturation level of the detector. For example, a typical commercially available CCD saturates at only 0.05 mW/cm^2 at 632.8 nm and at 5.5mW/cm^2 at 1.06 mm (see R. Rypma "Dimming the Light ...", in Photonics Spectra N.10, 1995, p.145).

For preliminary attenuation of very high power lasers the simplest approach is to use just the first surface reflection of an uncoated laser-grade substrate.

It is useful to have an intensity adjustment range of at least 1000:1 or more in this final stage. Even when working with a single-wavelength laser, operated at one power level, this range may be encountered when making measurements at different points in the optical train.

After major reduction in intensity by reflection off an uncoated substrate is achieved, some of the low-power neutral density filters of the high optical quality can bring the beam power to the exact level necessary for optimum measurement by detection system.

Set of wheel edge filters for **10WA168EF**

Set of wheel edge filters is used when it is necessary to reject the shorter or the longer wavelengths.

Also, a combination of short and long wavelength filters allows to construct band pass filters with variable bandwidth (for fluorescence analysis, etc.)

As standard 10WA168EF of 4 wheels comes with 6 long-wave pass filters and 6 short-wave pass filters. One hole in each wheel is left open.

Long-wave pass filters are made of absorbing color glass.

Shortwave pass filters are interference filters.

Wheel number	Type of edge filters	Filter number	Cut-on/off wavelength, nm
1	Short wave pass	1	550
		2	650
		3	750
2	Short wave pass	1	500
		2	600
		3	700
3	Long wave pass	1	450
		2	550
		3	650
4	Long wave pass	1	500
		2	600
		3	700

Table 2

10WA168-20-2

According to your request we may design an attenuator with any number of wheels.

Two Wheels

10CWA168 with a CCD camera

Close Variable Wheel Attenuator **10CWA168** is ideally suited for use with CCD cameras. Adapters **10R168** and **10A168** are used for connection.

Examples of codes for ordering of **10WA168** series **with any number of wheels**:

10WA168-20-2 – 2 wheels for ∅**20** mm filters. This model comes with 3 filters per wheel (6 filters in total).

10WA168-1-2 – 2 wheels for ∅**1"** filters with maximum thickness of 4mm. This model comes WITHOUT filters.

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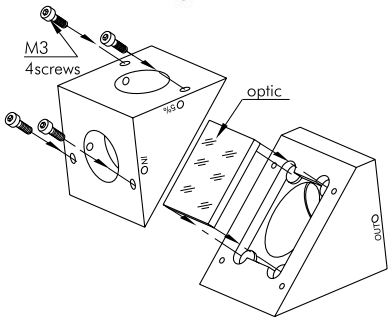
Beam Splitter Cube

10BC68-1

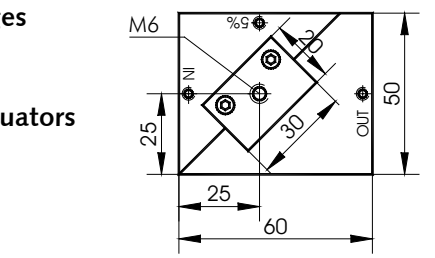


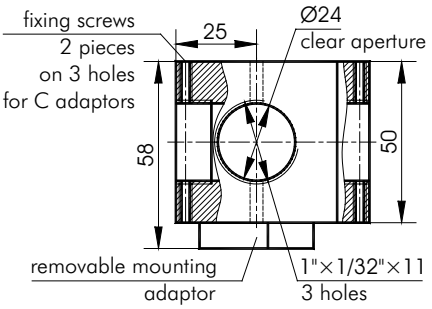
- **Free of multiple interference fringes**
- **Virtually undistorted attenuation**
- **No back reflection**
- **Couples directly to Variable Attenuators**

Beam Splitter Cube 10BC68-1 provides fixed attenuation and beam sampling for performing diagnos- tics on high power laser sources. **10BC68-1-UV** is available for high power **UV laser** sources.

Beam splitter uses the front surface of an uncoated BK7 glass (or UVFS glass in case of **10BC68-1-UV**) plate installed at 45 degree to achieve a reflection of small portion of the main laser beam for further analysis. It is approximately 5% reflection of non polarized beam or **0.6%** to **10.7%** reflection depending on polarization state (and wavelength) of the polarized beam.

The surface is polished to **10-5 scratch-dig** and **1/10 wave finish**, wedged at **30 arcmin** to avoid interference fringes, and can take power densities higher than **2-5 GW/cm²**





10BC68-1

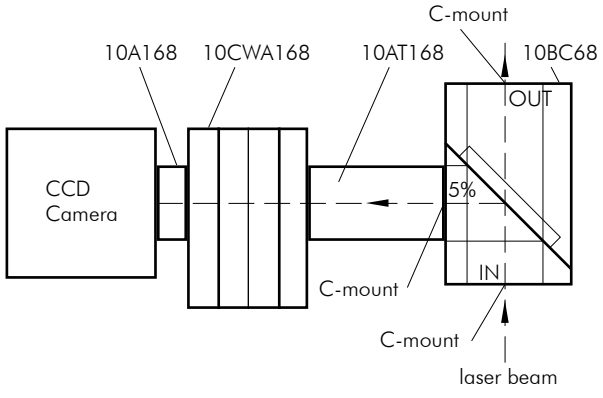
(for 10 ns pulsed laser). Similar to **10CWA168** attenuator, it has **C-Mount** ports and can be connected to **10CWA168** and to your camera through a **10AT168** adapter (connecting tube). Beam splitter cube has an M6 mounting hole to mount it on posts.

SPECIFICATIONS

Attenuation (reflection)	0,6% to 10,7% (polarization and wavelenght dependent)
Spectral range	
10BC68-1	350-2200 nm
10BC68-1-UV	190-2200 nm
Clear Aperture	19 mm
Damage Threshold	50 J/cm² (for 10 ns pulses)

10AT168 **10A168** **10RE168**
Connecting adapters available separately

10BC68-1 mounted width adapters **10AT168** and **10RE168**



10BC68-1 mounted to **10CWA168** through an adapter tube **10AT168**

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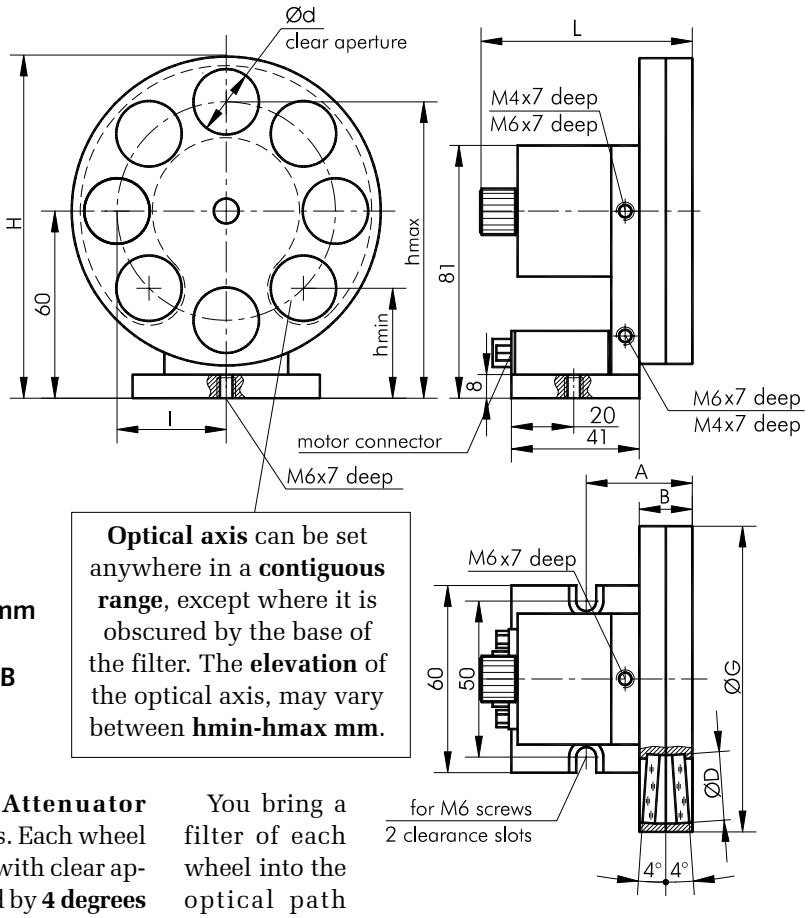
Motorized Variable Two Wheels Attenuators 10MWA168

10MWA168-20



- **Filter diameter – Ø20/Ø25.4 mm**
- **Clear aperture Ø18/Ø23 mm**
- **Non parallel filters (inclined by 4°)**
- **Maximum thickness of filters – 4 mm**
- **Custom design available**
- **Control program using 8SMC4-USB controller Xilab interface**

Optical axis can be set anywhere in a **contiguous range**, except where it is obscured by the base of the filter. The **elevation** of the optical axis, may vary between **hmin-hmax mm**.

Motorized Variable Two Wheel Attenuator 10MWA168 consists of two filter wheels. Each wheel contains eight filter mounts of Ø**D mm** with clear aperture of Ø**d mm**. Each mount is inclined by **4 degrees** to prevent mutual reflections between filters.

We supply the attenuator **10MWA168-20** with a standard, most popular, set of filters. See the table below. Alternatively, optics could be manufactured to individual orders. Or we could supply the attenuator without filters, which you can fit by yourself.

10MWA168-1 model comes WITHOUT filters.

You bring a filter of each wheel into the optical path easily by hand or using automation. The two wheels are driven by a single step motor. A computer can operate it via a controller and **Computer Software** come separately.

For fastening, the attenuator has clearance slots for **M6** and **M4** screws. There are also two **M6** holes, and one **M4** hole (opposite to one of the **M6** holes).

Material: black anodized aluminium.

Model	D, mm	d, mm	H, mm	G, mm	A, mm	B, mm	L, mm	hmin, mm	hmax, mm	l, mm
10MWA168-20	Ø20	Ø18	110	Ø100	35	16.5	73.5	34	97	37
10MWA168-1*	Ø25.4	Ø23	115	Ø110	39	20.5	78	32	99.5	39.5

10MWA168-1* - *without filters.*

Transmittance of filters from a standard set:

WHEEL N1	WHEEL N2
1	1
0	0
0.9	0.8
0.5	0.3
0.1	0.03
0.01	0.003
0.001	0.0003
0.0001	0.00003

The attenuator stepping motor:

SPECIFICATIONS	
Rated Current	0.4 A
Resistance	33 Ω
Inductance	52 mH
Holding torque	0.12 N·m
Step angle	1.8 °
Step angle accuracy	5 minutes
Required electrical power	5.6 W
Weight	
10MWA168-20	0.61 kg
10MWA168-1	0.65 kg

Motors of other types are available.

Software for control Motorized Attenuators Page 10-12.

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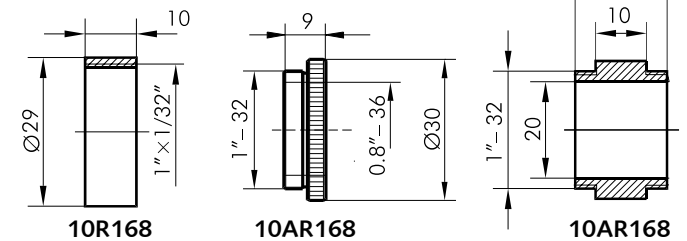
Motorized Closed Variable Two Wheels Attenuators

10MCWA168

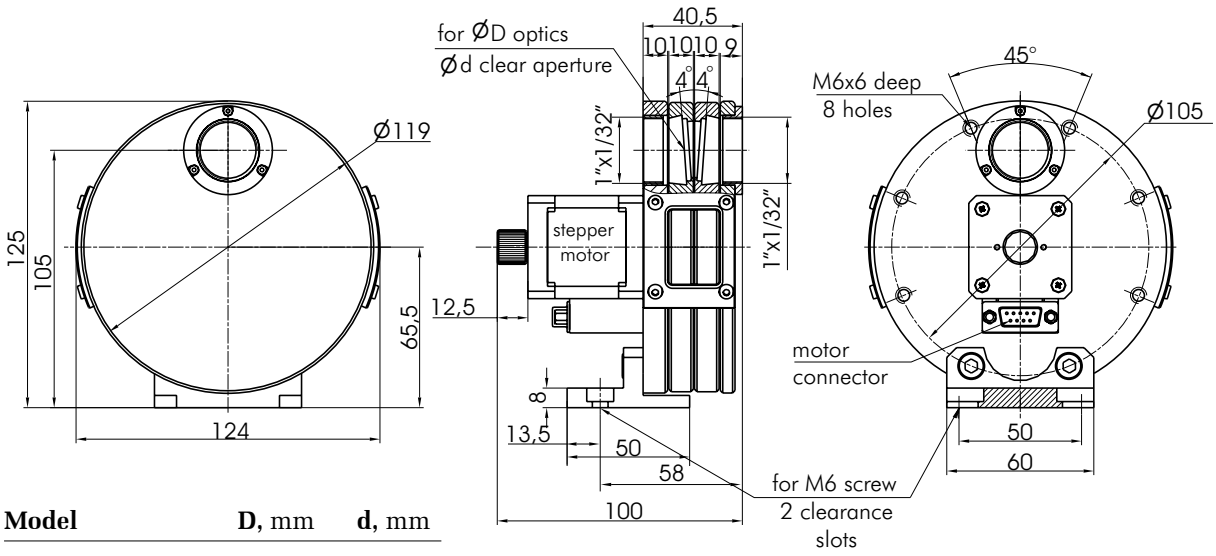
- **Filter diameter - Ø20/Ø25.4 mm**
- **Clear aperture Ø18/Ø23 mm**
- **Non parallel filters (inclined by 4°)**
- **Maximum thickness of filters – 4 mm**
- **C-mount threads on both ends**
- **Control program using 8SMC4-USB controller Xilab interface**

10MCWA168-1

Adapters for Attenuators



10R168 **10AR168** **10AR168**



Model	D, mm	d, mm
10MCWA168-20	Ø20	Ø18
10MCWA168-1*	Ø25.4	Ø23

10MCWA168-1* - *without filters.*

Motorized Closed Variable Two Wheel Attenuator 10MCWA168 consists of two filter wheels. Each wheel contains eight filter mounts of Ø**D mm** with clear aperture of Ø**d mm**. Each mount is inclined by **4 degrees** to prevent mutual reflections between filters.

We supply the attenuator **10MCWA168-20** with a standard, most popular, set of filters. See the table below. Alternatively, optics could be manufactured to individual orders. Or we could supply the attenuator without filters, which you can fit by yourself.

10MCWA168-1 model comes WITHOUT filters.

You bring a filter of each wheel into the optical path easily by hand or using automation. The two wheels are driven by a single step motor. A computer can operate it via a controller and **Computer Software** come separately.

For fastening, the attenuator has clearance slots for **M6** and **M4** screws. There are also two **M6** holes, and one **M4** hole (opposite to one of the **M6** holes).

Material: black anodized aluminium.

Transmittance of filters from a standard set:

WHEEL N1	WHEEL N2
1	1
0	0
0.9	0.8
0.5	0.3
0.1	0.03
0.01	0.003
0.001	0.0003
0.0001	0.00003

The attenuator stepping motor:

SPECIFICATIONS	
Rated Current	0.4 A
Resistance	33 Ω
Inductance	52 mH
Holding torque	0.12 N·m
Step angle	1.8 °
Step angle accuracy	5 minutes
Required electrical power	5.6 W
Weight	
10MCWA168-20	0.7 kg
10MCWA168-1	0.75 kg

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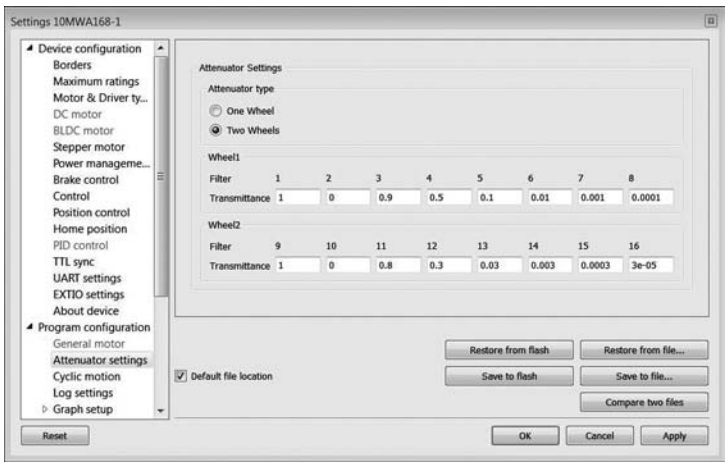
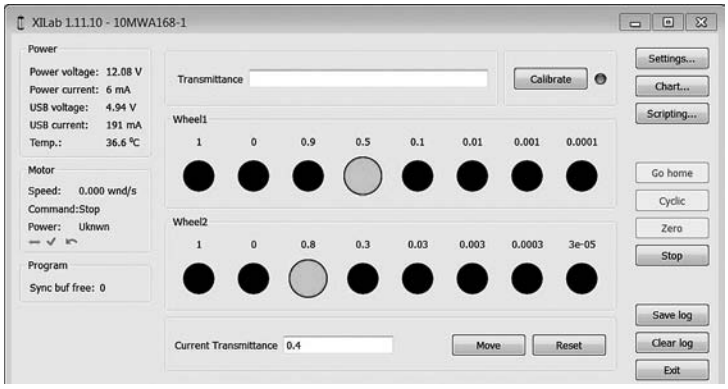
Phone: +370-5-2651474

Computer Software





- **Control of single stepper motor with two wheels and up to 8 filters in every wheel**
- **Operation in transmittance mode**
- **Program chooses the best combination of filters for required transmittance**
- **Transmittance values of each filter can be entered manually**

Software Xilab Software XiLab used with controller **8SMC4-USB** has integrated filter wheel control functionality designed to control STANDA motorized filter attenuators. Motorized filter attenuators can be used in all kinds of optical circuitry where variable transmittance has to be achieved. Program allows you to easily change transmittance in attenuators **10MWA168**, **10MCWA168** and **8MRU-1-WA**. Just enter transmittance value, and the program will select the most suitable filters. Or you can select the filters directly. The simple interface allows you to use the program right away. All of our software works only with our controllers. Controller software can be downloaded for the majority of operating systems, e.g., Windows, Mac OS X, Linux etc.

REQUIREMENTS

Display
STANDA's Stepper Motor Controllers
24 V / 36 V power supply

Free software downloads available on www.standa.LT

Stepper motor controlers for

Motorized Variable Two Wheels Attenuators

Motorized Variable Two Wheels Attenuator
10MWA168

Motorized Closed Variable Two Wheels Attenuator
10MCWA168

Stepper, BLDC and DC Motor Controllers with **USB Interface**

8SMC4-USB-B8-1
1 axis Controller

8SMC4-USB-B9-2
2 axis Controller in box

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Phone: +370-5-2651474

Motorized Closed One Wheel Attenuator for Microscope

10MWA18-1

- **8 filters**
- **Filter diameter 1"(Ø25.4 mm)**
- **Clear aperture Ø23 mm**
- **Connecting adapters available**

SPECIFICATIONS

Rated current	0.67 A
Resistance	5.6 Om
Inductance	4 mH
Step angle	1.8°
Step angle accuracy	5'

More info on www.STANDA.LT

Universal Motorized Rotation Stages

8MRU-1WA

8MRU-1WA - a **filter wheel version** of universal rotation stage **8MRU**. Accepts up to **eight 1" filters**.

SPECIFICATIONS

Rotation range	360°
Resolution in full step	0.6°
in 1/8 step	4.5 arcmin
Max. rotation speed*	3÷5 rps
Wobble	2 arcmin
Reduction gear	3:1
Limit switches	mechanical
Drive mechanism	belt
Load capacity	
Horizontal	5 kg
Radial	1.5 kg
Torque	4.5×10^{-3} Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28S

***Test condition:**
- STANDA controllers;
- Power supply – 36V.

8MRU-1TP

See catalogue page 8-47

8MRU-1TP - a version of **8MRU** with a universal mounting platform with a **pattern** of **M6** and **M4 tapped holes**.

Variable Attenuator/Beamsplitter

10APF3

10APF3-1

- **Combine Half Waveplate with a Polarizing Beamsplitter**
- **Both optics are adjustable**
- **Optics should be ordered separately**

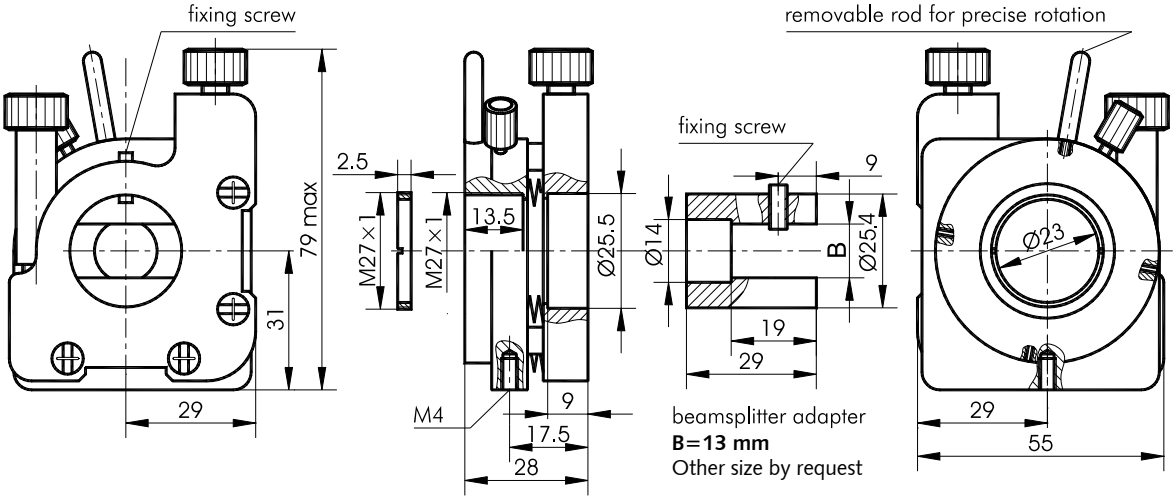
10APF units allow to mount a **half waveplate** and a **polarizing beamsplitter**. The result is a combined **Variable Attenuator/Beamsplitter**.

To attenuate the beam, you can rotate the **waveplate** the whole **360°**.

10APF3 is a modified **5APH79T** mount. When mounted on the **M4** hole in the platform, **pivot** is applied to the **base instead** of the **platform**. A beamsplitter is mounted via an adapter to the **base**. Hence the beamsplitter can be **pivoted** within **±2.5° in one coordinate**. You can freely **rotate** the **adapter** in the base and clutch it with a **fixing screw**.

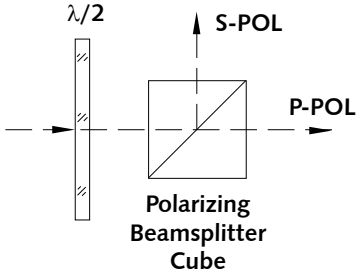
SPECIFICATIONS

Half waveplate	
rotation range	360°
Scale gradation	2°
Beamsplitter cube	
Pivot	±2.5°
Sensitivity	3 arcsec
Rotation	360°



10APF3-1

Half Waveplate



see catalogue section 14

ORDERING INFORMATION

10APF3-1	Variable Attenuator/Beamsplitter **without optics**
10APF3-1CVAB	Variable Attenuator/Beamsplitter **with optics** (see next page)
WPZO.2-1	Half Waveplate
PBC-10	Polarizing Beamsplitter Cube

10APF3-1CVAF
Variable Attenuator for Femtosecond laser pulses
(look next catalogue page)

e-mail: sales@standa.lt www.standa.lt
Phone: +370-5-2651474 Fax: +370-5-2651483

Continuously Variable Attenuator/Beamsplitter

10APF3-1CVAB

- **Divides laser beam into two beams of manually adjustable intensity ratio**
- **Convenient 90 deg angle between reflected and transmitted beams**
- **Negligible beam deviation**
- **Large dynamic range**

Continuously Variable Attenuator / Beam-splitter for down to **100 fs laser pulses**. This Variable Attenuator / Beamsplitter consists of 2 high-performance polarizing optics components placed in precision opto-mechanical Holder **5APH79T-1**. 10APF3 incorporates a high-performance Polarizing Cube Beam-splitter which reflects s-polarized light 90 while transmitting p-polarized light.

A rotating quartz Phase λ/2 Waveplate is placed in the incident polarized laser beam. The intensity ratio of those two beams may be continuously varied without alteration of other beam parameters by rotating the wave-plate. The intensity of either exit beam, and their intensity ratio, can be controlled over a wide dynamic range. Pure p-polarization could be selected for maximum transmission, or pure s-polarization for maximum attenua-tion of the transmitted beam.

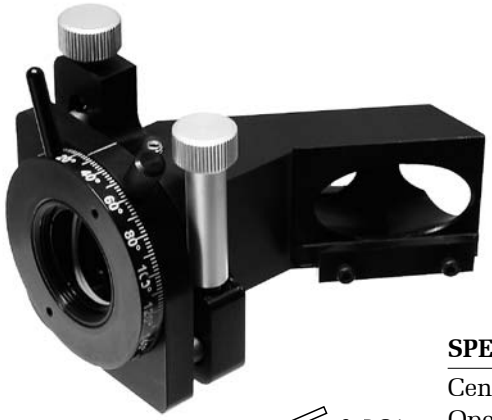
SPECIFICATIONS

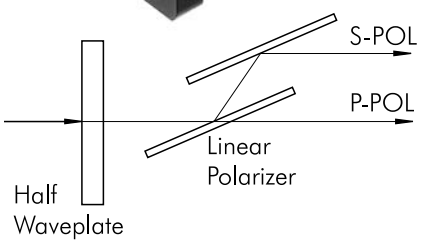
Beam deviation	40×10^{-6} rad, average over range
Damage threshold	200 mJ/cm^2 pulsed at 1064 nm, typical
Antireflection coating	R < 0.25% all entrance and exit surfaces
Time dispersion	t >100 fs for laser pulses
Extinctoin ratio	T_s/T_p < 1:1000

Standard Models	**Central wavelenght,** nm	**Clear aperture,** mm
10APF3-1CVAB-1064-10	1064	10
10APF3-1CVAB-1064-15	1064	15
10APF3-1CVAB-1064-20	1064	20
10APF3-1CVAB-780-10	780	10
10APF3-1CVAB-780-15	780	15
10APF3-1CVAB-780-20	780	20
10APF3-1CVAB-800-10	800	10
10APF3-1CVAB-800-15	800	15
10APF3-1CVAB-800-20	800	20

Variable Attenuator for Femtosecond laser pulses

10APF3-1CVAF





- **Divides laser beam into two parallel beams of manually adjustable intensity ratio**
- **Large dynamic range**
- **Negligible beam deviation**
- **High Optical damage threshold**

SPECIFICATIONS

Central wavelengths	266, 355, 532, 780, 800, 1064 nm or other
Operational wavelength range	+/- 10 nm
Beam deviation	40×10^{-6} rad, average over range
Aperture diameter	15 mm
Damage threshold	5 J/cm^2 pulsed at 1064 nm, typical
Antireflection Coating	R <0.25% all entrance and exit surfaces
Time dispersion	t<4fs for Ti:Sapphire laser pulses
Polarization Contrast	>500:1

Standard Models	**Central wavelenght,** nm
10APF3-1CVAF-266	266
10APF3-1CVAF-355	355
10APF3-1CVAF-532	532

Standard Models	**Central wavelenght,** nm
10APF3-1CVAF-780	780
10APF3-1CVAF-800	800
10APF3-1CVAF-1064	1064

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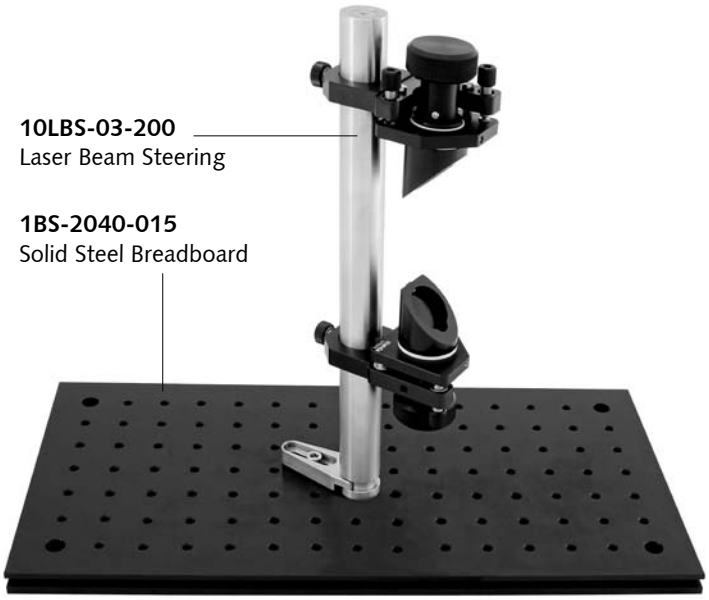
Laser Beam Steering

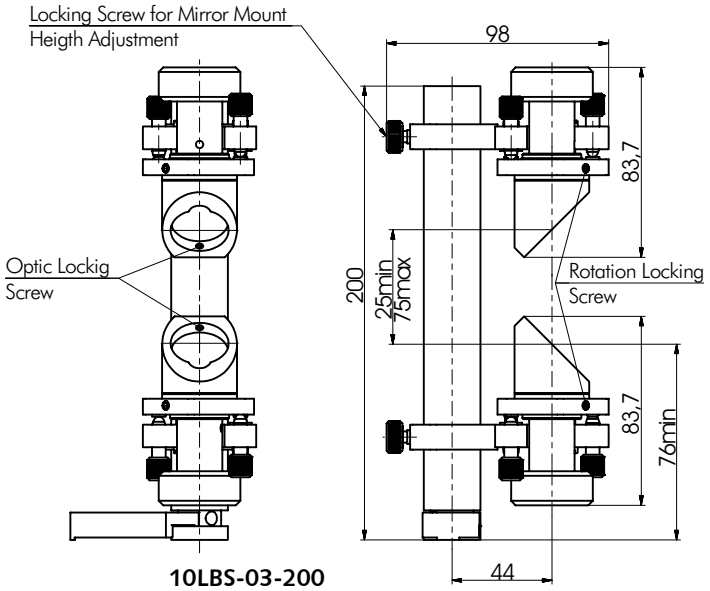
10LBS



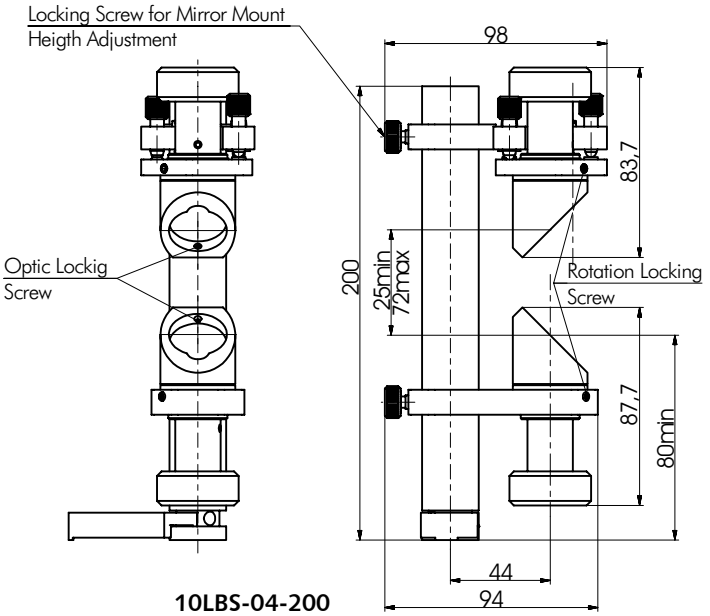
- **Precise azimuth control**
- **Precise angles control**
- **1" optics mounts**
- **Stable and adjustable**

SPECIFICATIONS

Optics diameter	Ø1" (Ø25.4 mm)
Minimum Optic Thickness	4.5 mm
Angular Adjustment Range	±4.5 °
Rotation	360 °
Height adjustment	



10LBS-03-200



10LBS-04-200

These research and industrial grade periscope assemblies are useful tools for changing beam path direction and elevation. **Laser Beam Steering** uses the **kinematic mount 5BM131E-1-2** to create the most stable and flexible system available. While **10LBS-03-200** allows same functionality on top and bottom optics holders, the **10LBS-04-200** comes with adjustable top while bottom is rigid and offers rotation only. Optics rest against two contact lines formed at the interface and are firmly held by a plastic securing screw. Adapter easily accommodates any **1" optics**.

Combination of **laser shelf 1LS52** and **laser port equipped tabletop** ready for laser beam routing.

Model	**Height,** mm
10LBS-03-200	200
10LBS-04-300	400

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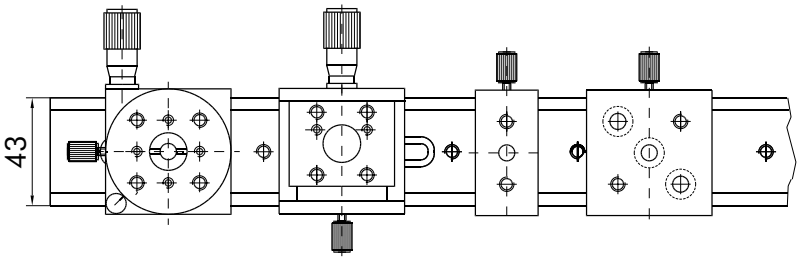
Steel Optical Rail System

10ORS6

2OR6

- **Standard and high precision models**
- **Low profile optical bench**
- **Translate rod or base mounted components along a bench or rail**
- **Rails may be mounted anywhere on optical benches/tables**

2RC6-50
2RC6-50H



2RC6-25

2SRC6-50

7T8-01

7T8-02

7R7

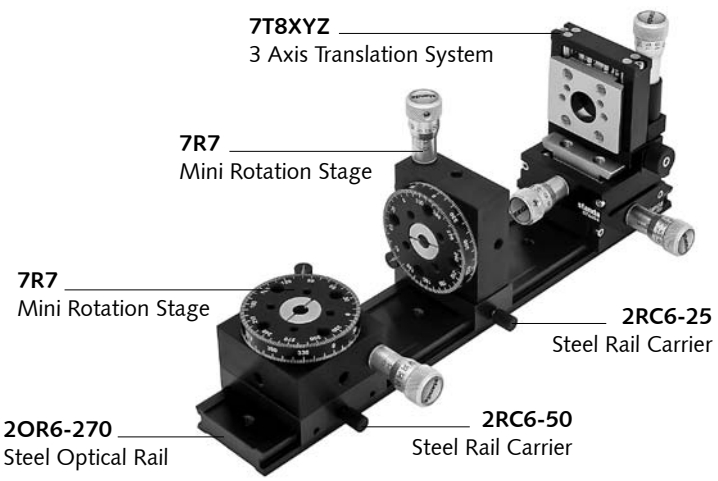
A Steel Optical Rail System 10ORS6 consists of inter-compatible mechanical elements. The optical rail is the main consolidating element. All elements have adapters, corresponding to rails for mounting between each other. All connections are very simple, quick and reliable. This also provides coarse positioning possibility. The system consists of these elements:

- different lengths black finished steel Optical Rails 2OR6;
- two different widths black finished steel Rail Carriers 2RC6;
-black finished steel Sliding Rail Carrier 2SRC6-50;
- black finished steel Mini Rail System Ball Slide Positioners 7T8-01 and 7T8-02
- black anodized aluminium Mini Rotation Stage 7R7.

It is possible to combine various numbers of elements. All elements are inter-compatible and can be used separately with any STANDA mechanical elements, because they are provided with M6 tapped holes pattern.

Optical Rails can be mounted onto STANDA optical tables either directly, or using any other base elements.

STANDA's Rail System's flexibility is shown in the photos below. Besides the accurate 5mm motion regulation, knots have the possibility of rough positioning by ±15 mm.



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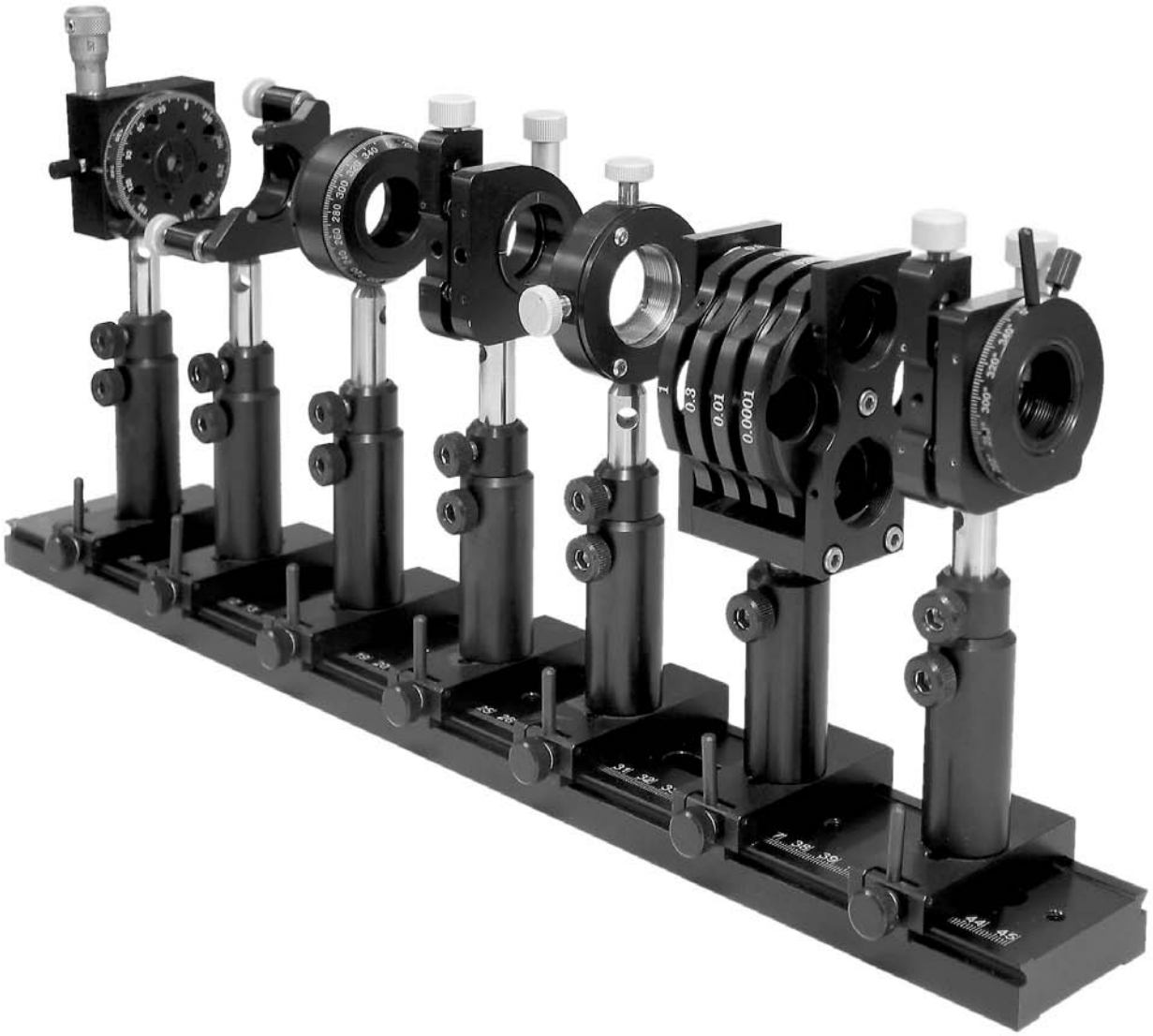
e-mail: sales@standa.lt www.standa.lt

Optical Rail System
2OR02



Optical Rail System 2OR02
adaptable for any component

– Stable
– Scale engraved
– Gentle clutching
– Easy lifting

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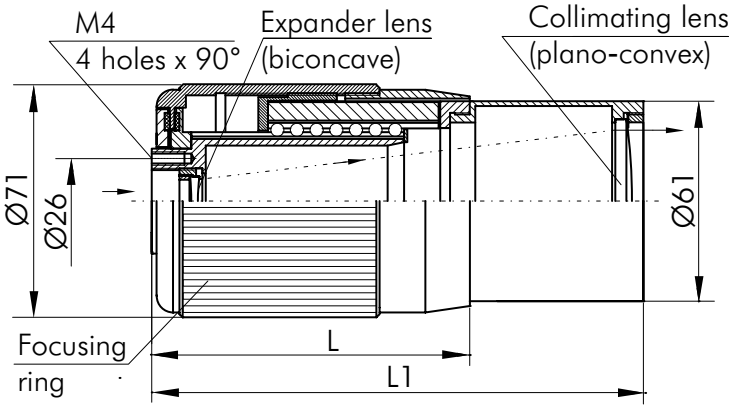
Beam Expanders/Collimators

10BE01

10BE01-5X

- **High energy laser beam expansion**
- **Wave length 532 nm**
- **Input aperture >12 mm**
- **Exit aperture > 45 mm**
- **Expansion ratio 2.5 X or 5 X**
- **Focusing range: 2 m to infinity**
- **Lenses antireflection coated**
- **Housing Material: Black anodized aluminium**
- **XY-positioning ± 5 mm**
- **Tilt angular range: ± 4.5 degrees**



10BE01

Our beam expanders have two lenses and are focusable to minimal distance 2 m. In such type expander aberrations can be totally compensated only in one point. Depending on customer needs and application we can customize expander lenses to compensate aberrations in region of 2 m focus point or for infinity. Our beam expanders could be customized for any wavelength from the range of 450-2000 nm. Please give us details of your application and ask for price!

Model	**L**, mm	**L1**, mm
10BE01-2.5X	97	150...170
10BE01-5X	97	187.5...207.5

Custom assembly produced on customer's request, where you have possibility of ZY translation and two-axis tilt consisting of:

10BE01-5X(ZYΘ):
10BE01-5X – beam expander,
2AB7T173-10-7T173-10 – angle bracket,
2CP10BE01-2.5X-5OM61-2 – adapter plate,
2CP7T173-10-5OM61-2 – adapter plate,
3BP4-02 – base plate,
3PH-50 – post holder,
3MP-50 – mounting post,
5OM61-2 – optics mount,
two **7T173-10** - translation stages.

10BE01-5X(ZYΘ)

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Beam Expanders

10BE02

- **Convenient to use and robust design**
- **Computer optimized single wavelength design**
- **Anti-reflection coated Fused Silica optics**
- **Magnification from 2x up to 17x**
- **Low wave-front distortion (diffraction limited design)**

Standa Galilean type fixed magnification **Beam Expanders** are ideal solution to expand or reduce your laser beam diameter. Our beam expanders are a good choice for both scientific and industrial applications. Simple non-adjustable beam expanders containing two or three lenses are often used because of their low cost, simplicity and small size

Our **beam expanders** are compatible with STANDA standard mounts like **5TLM-1TH**, **5TOM**, **5KOM** or **5(M)BM** series. Please see **www.standa.lt** for more details.

Typical applications include:

- Micro drilling
- LIDAR systems
- Beam condensing
- Colimation of laser harmonics
- Cutting of solar cells
- Laser structuring of foils
- Interferometers
- Colimation of high power laser beams

SPECIFICATIONS	10BE02-A series	10BE02-LA-5 series	10BE02-B series	10BE02-D series
Expansion ratio	3x; 5x; 12x	5x	2x-16x	2x-17x
Optics Material	BK7, UVFS, CaF2 (optional), ZnSe (optional)			
Wavelength, nm	355, 515, 532, 780, 800, 1030, 1064			
Input CA, mm	4-12	12	4-10	5-12
Output CA, mm	34-40	60	15-18	25
Housing Diameter, mm	48-52	76	25.4	32
Housing Length, mm	100-120	200	60-100	75-86
Wavefront Disortion	λ/4 p-v at 633nm over Clear Aperture			
Damage Threshold	>8 J/cm² for 10 ns pulses @ 1064 nm			
Transmission, %	97			
Input mounting Thread	M27x1	additional 4A-1-M27 adapter with M27x1 thread available	M27x1	M27x1
Housing Material	Black Anodized Aluminium	Aluminium	Aluminium	Aluminium

Model	Expansion
10BE02-A-3	3x
10BE02-A-5	5x
10BE02-LA-5	5x
10BE02-A-12	12x
10BE02-B-2	2x
10BE02-B-3	3x

Model	Expansion
10BE02-B-4	4x
10BE02-B-5	5x
10BE02-B-6	6x
10BE02-B-7	7x
10BE02-B-8	8x
10BE02-B-10	10x
10BE02-B-12	12x

Model	Expansion
10BE02-B-14	14x
10BE02-B-16	16x
10BE02-D-2	2x
10BE02-D-3	3x
10BE02-D-4	4x
10BE02-D-5	5x

Model	Expansion
10BE02-D-6	6x
10BE02-D-8	8x
10BE02-D-10	10x
10BE02-D-12	12x
10BE02-D-14	14x
10BE02-D-15	15x
10BE02-D-17	17x

Variable laser beam expander mounted in ***5KOM5F-1*** *5-axis strengthen optical mount*

Variable laser beam expander mounted in ***5KOM4F-1*** *4-axis strengthen optical mount*

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Beam Expanders

10BE03

- **Continuously Variable Zoom and Focus**
- **AR Coated Fused Silica Optics**
- **Diffraction Limited Design**
- **Applicability to High-Power Optical Systems (no internal focus)**
- **Robust and Reliable Design. Ready for Industrial Applications**

Standa diffraction limited Galilean type **Beam Expanders** offer variable magnification of 2x-12x (other ranges available, see table below) with adjus-table focus to correct laser beam divergence. All adjustments can be made quickly and easily by hand using our unique zoom and focus scale engraved directly onto the beam expander. No special tables or fine adjustment curves are required. Frequent set-up changes without compromising optical and mechanical performance are common to **10BE03** series.

Who doesn't need frequent set-up changes we may offer a **simplified version** of **10BE03**. Optical performance is the same as for **10BE03**, but zoom and focusing mechanisms are designed for using with beams with nearly constant parameters (beam diameter and far-field divergence).

Mounting our beam expanders has become easier than ever. You can chose a variety of mounts from our **5TLM-1TH**, **5TOM**, **5KOM** or **5(M)BM** series.

Please see **www.standa.lt** for more details.

Our **beam expanders** are widely used acrossed the world in many different industrial and research applications to name few:

- Micro drilling
- LIDAR systems
- Beam condensing
- Colimation of laser harmonics
- Cutting of solar cells
- Laser structuring of foils
- Interferometers
- Colimation of high power laser beams

Our currently settled "customer-inspired" modifications include:

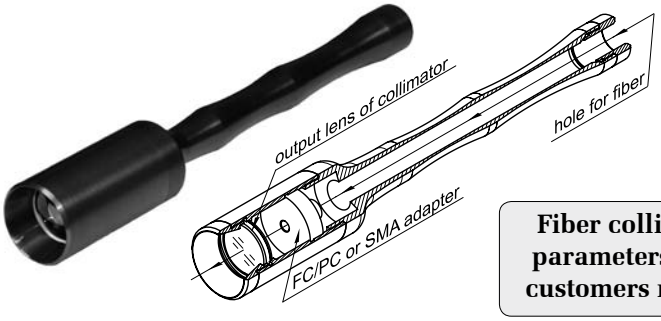
- Dual wavelength Beam expanders:
  1064 nm/532 nm
  1030 nm/515 nm
  800 nm/400 nm
  other wavelengths available as well.
- Input side with Fiber Connector installed (FC/PC or SMA905)
- Reflective type Beam Expanders.
- Output apertures up to 6".
- Beam expanders with 1x-8x-expansion ratio

SPECIFICATIONS	**10BE03-1-8**	**10BE03-1.5-4**	**10BE03-1.5-5 10BE03-2-12**	**10BE03-2-8**	**10BE03S-2-8**	**10BE03-5-8**
Expansion ratio (variable)	1-8x	1.5-4x	1.5-5x	2-8x 2-12x	2-8x	5-8x
Optics Material	BK7, UVFS, CaF_2 (optional), ZnSe (optional)					
Wavelength, nm	355, 515, 532, 780, 800, 1030, 1064					
Input CA, mm	8		7	11	5	12
Output CA, mm	40		30	36	25	16
Housing Diameter, mm	60	28	45	50	45	28
Housing Length, mm	150	110-120	130	130-150	110	110-120
Wavefront Disortion	λ/4 p-v at 633nm over Clear Aperture					
Damage Threshold	>8 J/cm² for 10 ns pulses @ 1064 nm					
Transmission, %	97					
Input mounting Thread	M27x1					
Housing Material	Black Anodized Aluminium					

* Expansion ratio range could differ for some wavelengths.

Custom Fiber Collimators

12HP02



Fiber collimator parameters upon customers request

- **Compact Design**
- **Excellent beam quality**
- **Low wavefront distortion**
- **FC/PC or SMA connection**

APPLICATIONS

Medical, industrial and research
Integrated devices
OEM equipment

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Laser Power/Energy Monitor

11MAESTRO

- **Reads all Detector Types: Thermopile, photo and pyroelectric detectors**
- **Large 5.6" Touch Screen Color LCD Display**
- **Unique Ergonomic Design**
- **Intuitive User Interface with Single or Dual Graph Display, Instant access to the main function, Function Search tool features**
- **USB Key Access Store data directly on a USB key**
- **Real-Time Statistical Functions**
- **USB Key, Analog Output, RS-232, PC-USB, Ethernet Outputs**

REAL TIME DISPLAY
This display shows the measured value in real time, with a corresponding bar graph below. The large size of the digits and high contrast of the graphics allows to see the measurement from a good distance. This mode is also always present in dual screen mode, in the upper portion of the screen.
• Very Large Digits
• Bargraph

SCOPE DISPLAY
With it's line filling from the right of the screen, this display mode is a good approximation of an actual oscilloscope reading. Settings include time (x-axis) and range (y-axis). Basic statistics (min, max and average) can also be displayed directly on the screen.
• Fully customizable x and y axis
• Fast update rate

NEEDLE DISPLAY
Exactly like an analog needle, only faster! This mode is particularly useful when tuning a laser. You can also choose to display the latest min and max values on the screen, with corresding numerical values displayed in the uppper left corner.
• Ultra-fast readings (great for tuning)
• min and max hold

AVERAGING DISPLAY
This very unique mode is perfect to show the trend of a laser over time. Set the number of points per batch and let the Maestro identify the minimum and maximum values of every batch. A yellow curve then follows the average of each batch, displayed as bars on the screen. The wider the difference between the white and blue portions of a bar (corresponding to the min and max values), the more unstable your laser is.
• Calculates the min, max and average values of batches of measurements
• Perfect to check laser stability over time

Compatible with all **11UP**, **11XLP12** laser power detectors, **11PH** photo detectors and **11QE** laser energy detectors.

MODEL	11MAESTRO

Power meter specifications

Power Range	
Thermopile	1 μW to 30 kW
Photo Detector	4 pW to 3 W
Monitor Accuracy	0.25 % ± 5 μV best scale
Statistics	Current Value, Max, Min, Average, Standard Deviation, RMS & PTP Stability, Time

Energy meter specifications

Energy Range	30 fJ to 30 kJ
Monitor Accuracy	±1 % best scale
Software Trigger Level resolution, default 2 %	0.1 to 99.9 %, 0.1 %
Repetition Rate	2 000 Hz / 10 000 Hz in sampling
Real Time Data Transfer (To USB key)	2 000 Hz
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Pulse #, Rep. Rate and Avg Power

Detector Compatibility

Thermopile	Average Power & Single Shot Energy
Photo Detector	Average Power
Pyroelectric	Pulse Energy

General specifications

Digital Display Size	112.9 x 84.7 mm LCD - 640 x 480 pixels
Data Display	Real Time, Scope, Statistics, Digital Tuning Needle and Averaging
Analog Output	0-1 Volt, Full Scale, ±0.5 %
Serial Commands Via	USB (standard), Ethernet or RS-232 (on special request)
Internet Upgrades Via	USB key
Data Storage Via	USB key
Dimensions	210W x 122H x 45D mm
Weight (With Batteries)	0.67 kg
Battery Type	4 x Rechargeable 1.2 V Ni-MH AA
Battery Life	6.5 hours
External Power Supply	100/240 VAC 50-60 Hz to 9 VDC 1.66 A

Online datasheets are available. Please, visit us at www.standa.lt

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Single Channel, Power Monitor with Tuning Needle

11TUNER

CE

11TUNER

- **Ultra-Fast Needle**
- **Less than 1 second response time, faster than any analog needle**
- **Reads Power Detectors**
- **Large LCD Display**
  - **77 x 58 mm**
  - **17.5 mm digits in the numerical display**
- **Backlight (with AC adaptor)**

3 Display Functions for the Needle

Tail

Bargraph

High/Low

New **11TUNER** Power Monitor presents both a large LCD display and an ultrafast needle, up to 10X faster than anything else on the market. It comes with more features than the competition, like min and max holds for both displays, comet tail needle and bargraph function. As always, the new **11TUNER** comes in STANDA's ergonomic design, with a large LCD display and easy to use direct access keys.

MODEL	11TUNER
Power Meter Specification	
Power range	10 pW to 10 kW
Digital resolution	
11PH Series	10 pW
11XLP Series	1 μW
11UP Series	1 mW
Monitor accuracy	±1 % full scale
Statistics	Min, Max
Detector Compatibility	
Thermopiles	Average Power (W, dBm)
Photo Detectors (11PH Series)	Average Power (W, dBm)
General Specifications	
Digital display	77x58 mm LCD
Needle display	Ultrafast Tunning Needle
Needle accuracy	0.9 %
Refresh rate	4 Hz
Analog output	0-1 Volt, full scale,±1 %
Dimensions (WxHxD, mm, without stand)	210x122x44
Weight, kg (with batteries)	0.47
Battery pack	4 Alkaline AA Batteries
Battery life (estimated)	300 hours with Detector
External power supply	100/240 VAC, 50-60 Hz to 9 VDC, 1.66 A

Compatible with all **11UP**, **11XLP12** laser power detectors and **11PH** photo detectors.

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Online datasheets are available. Please, visit us at www.standa.lt

Laser Power Meter

11UNO

11UNO

- **Simple to use**
- **Ergonomically designed**
- **24 bit A/D converter for high resolution measurement**
- **Unbeatable price!**

New **11UNO** portable laser power meter brings unprecedented performance in a compact hand-held instrument. The one-finger navigation of the **11UNO** laser power meter makes it our most simple to use monitor, and it has just the functions you need to take a fast and precise laser power measurement.

MODEL	**11UNO**
Power Meter Specification	
Power range	5 pW to 10 kW
Thermopile	Autoscale
Photo Detector	Autoscale
Monitor Accuracy	±1%
Statistics	none
Detector Compatibility	
Thermopiles	Average Power (W, dBm)
Photo Detectors	Average Power (W, dBm)
General Specifications	
Digital Display Size	76 x 57 mm LCD
Digit Height	32 mm
Digit Type	High Contrast Fields
Data Display	Real Time
Dimensions (Without Stand)	210W x 122H x 44D mm
Weight (With Batteries)	0.47 kg
Battery Type	4 x AA Alkaline
Battery Life (Estimated)	670 hours with detector
External Power Supply (Optional)	100/240 VAC 50-60 Hz to 9 VDC 1.66 A

Compatible with all **11UP**, **11XLP12** laser power detectors and **11PH** photo detectors.

11XLP12 extreme low power detector is best suitable for low power im both the μW and mW regimes with very low thermal drift. Featuring broadband flat spectral response, minimal thermal drift and a noise equivalent power as low as 1 μW the **11XLP12** is ideally suited for measuring any pulsed or CW low power laser.

11PH series silicon detectors provide a generous aperture for laser beams up to **10 mm** in diameter. The threaded aperture allows you to install filters, attenuators, fiber optic adapters or other optics that suit your specific needs. All of the detectors have a NIST traceable calibration and *Personal wavelenght correction*™.

11UP19K-H5 mid-power, compact family is designed for applications such as low power OEM, industrial machining, medical applications, concentrated beams high repetition rate pulses, etc.

11UP19K-W5 high average power density family is designed for applications such as concentrated beams, high repetition rate pulses, photolithography, long pulse energy applications, low power OEM and medical applications, etc.

Online datasheets are available. Please, visit us at www.standa.lt

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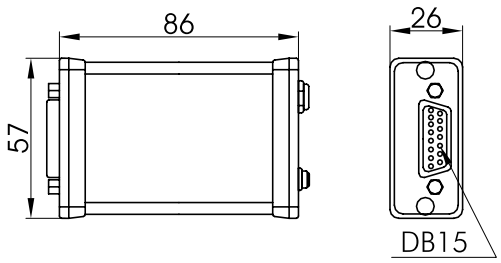
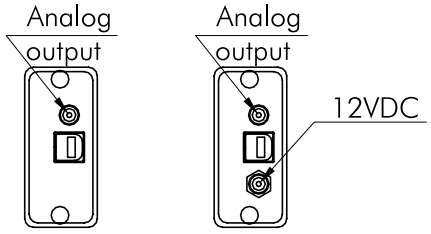
PC Based Power Monitor

11P-LINK

11P-LINK-USB

- **Single Channel, USB or RS232**
- **PC-Based Microsoft Windows™**
- **Ergonomically designed**
- **Full Statistical Functions**
- **Easy Data Acquisition Capabilities**
- **PC Serial Commands**
- **Power/Photo Detectors**
- **Energy Mode**





11P-LINK-USB 11P-LINK-RS232

SPECIFICATIONS

Power meter specification

Power Range	
Thermopile	3 μW to 30 kW
Photo Detector	1 pW to 3 W
Monitor Accuracy	±0.5 % full scale
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Time, Repetition Rate

Detector compatibility

Thermopile	Average Power & Single Shot Energy
Photo Detector	Average Power (mW, dBm)

General specification

Digital Display	Computer Screen
Data Display	Real Time, Histogram, Statistics, Digital Tuning Needle
Analog Output	0 - 2 V, Adjustable, Full Scale, ±1 %
Serial Commands and Data Transfer Via	USB (standard) or RS-232 (option)
Real Time Data Transfer Rate	10 Hz
Dimensions	57W x 26H x 91D mm
Weight	0.12 kg
External Power Supply (RS-232 version only)	100/240 VAC 50-60 Hz to 12 VDC 200 mA

MODEL	11P-LINK-USB	11P-LINK-RS232
Communication between host PC and 11P-LINK	USB	RS232
External Power Supply	Not required	100-240 VAC, 50-60 Hz to 12 VDC, 800 mA-1A

11P-LINK compact interface box is the choice for users who want to do all the control as well as the analysis from their computer. With its impressive features for statistics calculation and display options, the **11P-LINK** is also an answer to scientific or **OEM** users who need a low-cost computer based power monitor.

Because of very compact size and advanced features the **11P-LINK** is the perfect choice for integration in machines. You can control it with our **PC-LINK** software or with **PC** serial commands. You can even connect many **11P-LINK** units to a single computer, which makes it a device of choice for the simultaneous monitoring of many detectors.

The **11P-LINK** will recognize the power meter as soon as it is plugged in. Only menus that function for that head will appear. Moreover, the **11P-LINK** will auto-calibrate using the data stored in the intelligent connector to ensure the most accurate measurement possible.

Software for control **11UP19K** series power meters via **11P-LINK** included

Compatible with all **11UP**, **11XLP** laser power detectors and **11PH** photo detectors.

11UP19K-H5 mid-power, compact family is designed for applications such as low power OEM, industrial machining, medical applications, concentrated beams high repetition rate pulses, etc.

11UP19K-W5 high average power density family is designed for applications such as concentrated beams, high repetition rate pulses, photolithography, long pulse energy applications, low power OEM and medical applications, etc.

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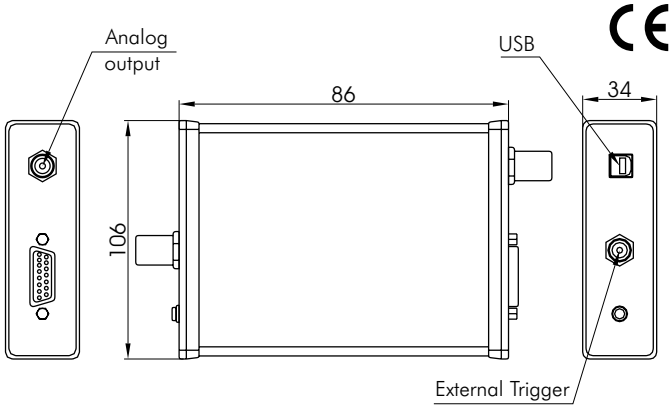
Universal Laser Power & Energy Meter

11M-LINK

11M-LINK



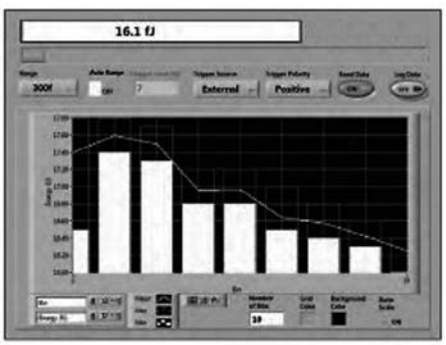
MODEL	11M-LINK
Power meter specification	
Power Range	4 pW to 30 kW
Resolution (Digital)	Current Scale/3000
Monitor Accuracy	±0.5 % ± 2 digits
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Time
Energy meter specification	
Energy Range	30 fJ to 30 kJ
Resolution (Digital)	Current Scale/3000
Monitor Accuracy	1 % ± 2 digits (<1 kHz)
Software Trigger Level	0.1 to 99.9 %, 0.1 % resolution, default 2 %
Repetition Rate	1000 Hz (Maximum repetition rate may vary with PC and detector speeds)
Real Time Data Transfer	1000 Hz with time stamp, no missing point
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Pulse #, Repetition Rate, Average Power
Detector compatibility	
Thermopile	Average Power & Single Shot Energy
Pyroelectric	Pulse Energy & Average Powe
Photo Detector	Average Power & Pulse Energy
General specification	
Digital Display	Computer Screen
Data Display	Statistics and Digital Tuning Needle
Serial Commands and Data Transfer	USB
Real Time Data Transfer Rate	1000 Hz with time stamp, no missing point (for pyroelectrics only)
Analog Output	0-2 Volts, Full Scale, ± 0.5%
Rising or Falling Edge External Trigger	4.5 to 10 V @ 20 mA, optically isolated
Dimensions	106W x 34H x 147D mm
Weight	0.424 kg
External Power Supply (Ethernet version only)	100/240 VAC 50-60 Hz to 9 VDC 1.66 A

Universal Laser Power & Energy Meter 11M-LINK.

This new PC-Based monitor is compatible with ALL types of detectors - including thermopiles, pyroelectrics and photo detectors - for both power and energy measurements. The device is available as a single channel unit that directly interfaces with a computer using a USB2.0 connection. The LabView software is included and comes with all the necessary features. The **11M-LINK** also presents a unique digital technique of suppressing the noise, thereby extending the measurement range all the way down to the fJ level.

Measure at the fJ Level.

Take advantage of our proprietary pulse averaging, noise reduction techniques available with **11M-LINK**. In the example shown at the right, we have captured a data set while running in the "AVERAGING" mode. The bars represent minimum (white) and maximum (blue) energy values. The strip chart is based on the average energy value. You get to select the number of "BINS" represented here. "Pulse Averaging" is available in the Statistics screen.



Compatible with all **11UP**, **11XLP12** laser power detectors, **11PH** photo detectors and **11QE** laser energy detectors.

Online datasheets are available. Please, visit us at www.standa.lt

e-mail: sales@standa.lt www.standa.lt
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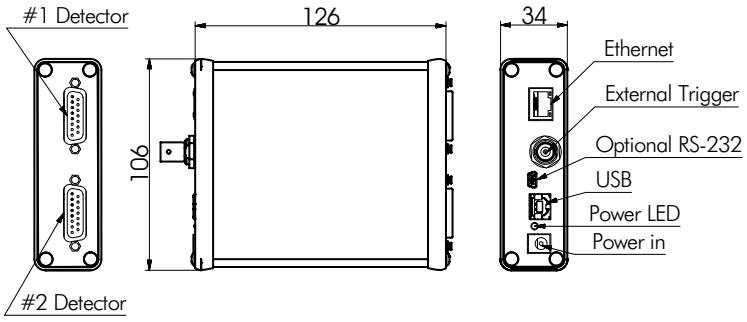
Dual & Single Channel, PC-Based Power and Energy Monitor

11S-LINK

CE

11S-LINK

- **Reads both power and energy**
  Thermopiles and pyroelectrics
- **Available with 1 or 2 channels**
  11S-LINK-1 and S-LINK-2 models now available
- **PC-based**
  Connects to your PC with included software
- **Serial commands**
  Serial commands are available on all versions to let you take full control
- **Fastest data transfer rate**
  Get all the points transferred directly into your PC at 10 kHz/Channel
- **USB or Ethernet**
  Choose your favourite communications port. The USB version is port-powered
- **External trigger**
  Every model comes standard with a 2.4 V to 24 V external trigger



SPECIFICATIONS

Monitor	11S-LINK-1	11S-LINK-2
Detector Types	Thermopiles, Pyroelectrics	
Channels / Display	1-Channel / PC-Based	2-Channels / PC-Based
POWER METER SPECIFICATIONS		
Power Range	1 μW to 10 kW	
Monitor Accuracy	±0.75 % for 25 % to full scale	
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Time	
ENERGY METER SPECIFICATIONS		
Energy Range	30 fJ to 20 kJ	
Resolution (Digital)	Normal Mode: Current scale/4096	
Monitor Accuracy		
<500 Hz (MB), <1200 Hz (MT)	1 %	
500 to 1 200 Hz (MB)	2 %	
1 200 to 6 000 Hz (MT)	3 %	
6 000 to 10 000 Hz (MT)	6 %	
Real Time Data Transfer	10 kHz in normal mode, no missing point	10 kHz/Channel in normal mode, no missing point
Statistics	Current Value, Max, Min, Average, Std Dev., RMS & PTP Stability, Pulse #, Repetition Rate, Average Power	
DETECTOR COMPATIBILITY		
Thermopile	Average Power & Single Shot Energy	
Pyroelectric	Pulse Energy	
GENERAL SPECIFICATIONS		
Number of Channels	1	2
Digital Display	Computer Screen	
Data Display	Real Time, Ratio, Line Plot, Histogram, Statistics and 3D Histogram	
Serial Commands and Data Transfer Via	USB (standard) or Ethernet (option) [1]	
Real Time Data Transfer Rate	10 kHz/Channel in normal mode, no missing point (for pyroelectrics only) [2]	
Rising Edge External Trigger	3-24 V @ 13 mA, optically isolated	
Dimensions	106(W) × 34(H) × 147(D) mm	
Weight	0.424 kg	
Ext. Power Supply (Ethernet version only)	100/240 V AC 50-60 Hz to 9 V DC 1.66 A	

[1] *The Ethernet version also includes the USB output.*
[2] *Actual rate may depend on the computer.*

Specifications are subject to change without notice.

Compatible with all **11UP**, **11XLP12** laser power detectors, **11PH** photo detectors and **11QE** laser energy detectors.

www.standa.lt
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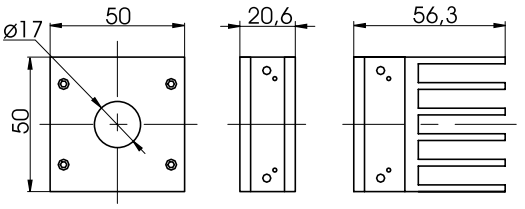
Fax: +370-5-2651483
Phone: +370-5-2651474
standa

Power Detector (High Average Power Density) 11UP19K-W5

11UP19K-15S-W5

- **Durable**
- **Full NIST-Traceability**
- **Highest damage threshold: 100 kW/cm²**
- **Personal Wavelength Correction™**
- **Smart interface**
- **New disk technology with the best absorber**
- **Energy mode**
- **Effective aperture diameter 17 mm (area 2.27 m²)**



11UP19K-15S-W5 11UP19K-30H-W5

Typical Lasers
- YAG (various)
- Solid - state
- Ti: sapphire
- Ruby (long pulse)
- Argon ion (CW)

SPECIFICATIONS

Measurement capability	
Spectral range	0.19-10 μm
Noise equivalent power	1 mW
Rise time (nominal)	1.4 sec
Sensitivity (typ into 100 kΩ load)	0.65 mV/W
Calibration Uncertainty	±2.5 %
Repeatability	±0.5 %
Energy Mode	
Sensitivity	0.33 mV/J
Maximum measurable energy	200 J
Noise equivalent energy	0.02 J
Minimum repetition period	5 sec
Maximum pulse width	133 ms
Accuracy with energy calibration option	±5 %

MODEL	11UP19K-15S-W5	11UP19K-30H-W5	11UP19K-50L-W5
Maximum measurable power, W	15	30	50
Max average power (continuous), W	15	30	50
Max average power (1 minute), W	30	60	85
Maximum average power density, kW/cm²	100	100	100
Weight (head only), kg	0.16	0.21	0.48

Pulsed Laser Damage Thresholds	Max Energy Density, J/cm²	Peak Power Density, kW/cm²
1.064 μm, 360 μs, 5 Hz	100	667
1.064 μm, 7 ns, 10 Hz	1.1	157
532 nm, 7ns, 10 Hz	1.1	157
266 nm, 7 ns, 10 Hz	0.7	27

11UP19K-W5 surface absorber stands up to average power densities of **100 kW/cm²**. That is the best in the world for average power density. **11UP-W5** come ready to mount on a rod, a bracket and the square case even lets you set them right on the optical table.

This **11UP19K** series detector is the best choice for any high average power density application.

With **Energy Mode** option every member of **11UP19K-H5** family can be equipped to measure single shot pulse energies as well as average power. From **450 mJ** up to **6 J Q-switched** or **600 J long** pulse.

11UP19K-W5 family is compatible with: **11UNO**, **11MAESTRO**, **11TUNER**, **11P-LINK**, **11M-LINK**, **11S-LINK**.

Compatible with **11MAESTRO** Laser Power / Energy Meter

Compatible with **11UNO** power meter

Compatible with **11TUNER** single channel, power monitor with tuning needle

PC based power meter monitoring solutions

11P-LINK

11M-LINK

PC based monitors **11P-LINK** and **11M-LINK** with appropriate software are available for **11UP19K** series. It is possible to connect many power detectors via **11P-LINKs** or **11M-LINKs** to a single PC which is good for simultanelous monitoring of many detectors.

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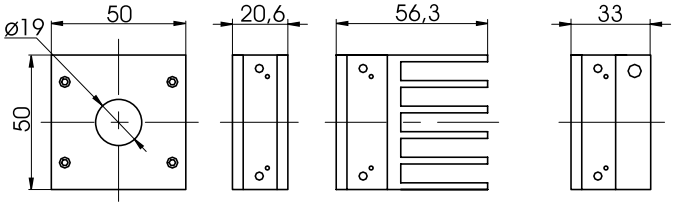
Power Detector (Mid Power - Compact) 11UP19K-H5

11UP19K-15S-W5

- **Fast**
- **Small size**
- **Flat spectral response**
- **Full NIST - traceability**
- **High damage threshold: 36 kW/cm² to 45 kW/cm²**
- **Personal Wavelength Correction™**
- **Low profile**
- **Air and water cooled**
- **Energy mode**
- **Effective aperture diameter 19 mm (area 2.84 cm²)**



11UP19K-15S-H5 11UP19K-30H-H5 11UP19K-150W-H5

The **11UP19K** series detectors can take a lot of laser power in a small body. They come ready to mount on a rod, a bracket and the square case even lets you set them right on the table.

The **11UP19K-15S-H5**, just **21 mm thin**, is ideal for laser maintenance and service applications. From a **few mW** to **15 W** it is the smallest, toughest and fastest detector in its class. The absorber handles **36 kW/cm²** of average power density. You can even run it up to **23 watts** for short periods.

With **Energy Mode** option every member of **11UP19K-H5** family can be equipped to measure single shot pulse energies as well as average power. From **20 mJ** up to **5 J Q-switched** or **25 J long** pulse.

11UP19K-H5 family is compatible with: **11UNO**, **11MAESTRO**, **11TUNER**, **11P-LINK**, **11M-LINK**, **11S-LINK**.

SPECIFICATIONS

Measurement capability	
Spectral range	0.19-20 μm
Noise equivalent power	1 mW
Rise time (nominal)	0.6 sec
Sensitivity (typ into 100 kΩ load)	0.65 mV/W
Calibration Uncertainty	±2.5 %
Repeatability	±0.5 %
Energy Mode	
Sensitivity	0.65 mV/J
Maximum measurable energy	15 J
Noise equivalent energy	0.02 J
Minimum repetition period	4 sec
Maximum pulse width	88 ms
Accuracy with energy calibration option	±5 %

MODEL	11UP19K-15S-H5	11UP19K-30H-H5	11UP19K-150W-H5
Maximum measurable power, W	15	30	150
Max average power (continuous), W	15	30	150
Max average power (1 minute), W	30	60	190
Maximum average power density, kW/cm²	36	36	36
Weight (head only), kg	0.16	0.21	0.24

Pulsed Laser Damage Damage Thresholds	Max Energy Density, J/cm²	Peak Power Density, kW/cm²
1.064 μm, 360 μs, 5 Hz	5	14
1.064 μm, 7 ns, 10 Hz	1	143
532 nm, 7ns, 10 Hz	0.6	86
266 nm, 7 ns, 10 Hz	0.3	43

Typical Lasers

- CO_2
- Ti: sapphire
- Diode (pulse or CW)
- YAG (diode pumped, CW or high rep. rate)
- Ruby (long pulse)
- DPSSL
- Excimer
- Argon ion

Accessories for mounting **11UP19K** series detectors

see catalogue section 3

3MP, 3PC, 3PH

3CMB

3UBP

3APC

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Laser Power Detector

11UP19K-VR

- **Modular Concept**
  Increase the power capability of your detector with 2 different cooling modules
- **Hight Peak Power Volume Absorber**
  - Perfect for high density beams
  - Average power density of 700 W/cm^2 prevents degradation caused by repetitive pulses
- **Compact Design**
  Only 21 mm thick (15S model)
- **Energy Mode**
  Measure single shot energy up to 40 J
- **Smart Interface**
  Containing all the calibration data

SPECIFICATIONS

Model	11UP19K-15S-VR	11UP19K-30H-VR
Max Average Power (Continuous / 1 Minute)	15 W / 20 W	30 W / 35 W
Effective Aperture	18 mm Ø	
Cooling Method	Convection	Heatsink
MEASUREMENT CAPABILITY		
Spectral Range [1) 2)]	0.3 – 2.5 μm	
Noise Equivalent Power [3)]	2 mW	
Rise Time (nominal) [4)]	2.5 sec	
Sensitivity (typ into 100 k Ω load) [5)]	0.34 mV/W	
Calibration Uncertainty [6)]	±2.5 %	
Repeatability	±0.5 %	
Energy Mode		
Sensitivity	0.1 mV/J	
Maximum Measurable Energy [7)]	40 J	
Noise Equivalent Energy [3)]	0.02 J	
Minimum Repetition Period	4.5 sec	
Maximum Pulse Width	90 ms	
Accuracy with energy calibration option	±5 %	
DAMAGE THRESHOLDS		
Maximum Average Power Density [8)]	700 W/cm^2	
Pulsed Laser Damage Thresholds	Max Energy Density	Peak Power Density
1064 nm, 360 μs, 10 Hz	40 J/cm^2	111 kW/cm^2
1064 nm, 7 ns, 10 Hz	6 J/cm^2	860 MW/cm^2
532 nm, 7 ns, 10 Hz	4 J/cm^2	570 MW/cm^2
266 nm, 7 ns, 10 Hz	1 J/cm^2	143 MW/cm^2
PHYSICAL CHARACTERISTICS		
Effective Aperture	18 mm Ø	
Absorber (Volume Absorber)	VR	
Dimensions	50H x 50W x 20.6D mm	50H x 50W x 56.3D mm
Weight (head only)	0.16 kg	0.21 kg

1) For the calibrated spectral range, see the user manual.
2) Adjustment multipliers for wavelengths under 300 nm are not traceable.
3) Nominal value, actual value depends on electrical noise in the measurement system.
4) With STANDA 11MAESTRO, 11UNO, 11P-LINK, 11TUNER and 11S-LINK monitors.
5) Maximum output voltage = sensitivity x maximum power.
6) Including linearity with power.
7) For 360 μs pulses. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns).
8) At 1064 nm, 10 W CW.

Specifications are subject to change without notice.

11UP19K-VR family is compatible with:
11UNO, **11MAESTRO**, **11TUNER**, **11P-LINK**, **11M-LINK**, **11S-LINK**.

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Laser Power Detector

11UP55-H

- **Modular Concept**
  Increase the power capability of your detector with 5 different cooling modules
- **High Performance**
  - Fast Rise Time (2 sec)
  - High Damage Threshold (45 kW/cm²)
- **Compact Design**
  Only 32 mm thick (40S model)
- **Energy Mode**
  Measure single shot energy up to 200 J
- **Smart Interface**
  Containing all the calibration data

SPECIFICATIONS

Model	11UP55N-40S-H9	11UP55N-100H-H9	11UP55N-300F-H12	11UP55M-500W-H12
Max Average Power (Continuous / 1 Minute)	40 W / 80 W	100 W / 200 W	300 W / 300 W	500 W / 500 W [7]
Effective Aperture	55 mm Ø			
Cooling Method	Convection	Heatsink	Fan-Cooled	Water-Cooled
MEASUREMENT CAPABILITY				
Spectral Range [1]	0.19 – 20 μm			
Noise Equivalent Power [2]	5 mW		15 mW	
Rise Time (nominal) [3]	2 sec			
Sensitivity (typ into 100 kΩ load) [4]	0.12 mV/W		0.06 mV/W	
Calibration Uncertainty [5]	±2.5 %			
Repeatability	±0.5 %			
Energy Mode				
Sensitivity	0.028 mV/J		0.015 mV/J	
Maximum Measurable Energy [6]	200 J			
Noise Equivalent Energy [2]	0.25 J			
Minimum Repetition Period	11.1 sec		12 sec	
Maximum Pulse Width	433 ms		430 ms	
Accuracy with energy calibration option	±5 %			
DAMAGE THRESHOLDS				
Maximum Average Power Density				
1064 nm, 10 W, CW	45 kW/cm2			
10.6 μm, 10 W, CW	14 kW/cm2			
Pulsed Laser Damage Thresholds	Max Energy Density		Peak Power Density	
1064 nm, 360 μs, 5 Hz	9 J/cm²		25 kW/cm²	
1064 nm, 7 ns, 10 Hz	1 J/cm²		143 MW/cm²	
532 nm, 7 ns, 10 Hz	0.6 J/cm²		86 MW/cm²	
248 nm, 7 ns, 10 Hz	0.3 J/cm²		43 MW/cm²	
PHYSICAL CHARACTERISTICS				
Effective Aperture	55 mm Ø			
Absorber (High Damage Threshold)	H9		H12	
Dimensions (H × W × D)	89×89×32 mm	89×89×106 mm	89×89×116 mm	89×89×40 mm
Weight (head only)	0.62 g	0.93 g	1.41 g	0.81 g

[1] For the calibrated spectral range, see the user manual.
[2] Nominal value, actual value depends on electrical noise in the measurement system.
[3] With STANDA 11MAESTRO, 11UNO, 11P-LINK, 11TUNER and 11S-LINK monitors.
[4] Maximum output voltage = sensitivity x maximum power.
[5] Including linearity with power.
[6] For 360 μs pulses. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns).
[7] Minimum cooling flow 1.5 liters/min, water temperature ≤ 22°C, 1/8 NPT compression fittings for 1/4 inch semi-rigid tube. Contact STANDA for clean deionized water cooling module option.

Specifications are subject to change without notice.

11UP55N-H family is compatible with:
11UNO, **11MAESTRO**, **11TUNER**, **11P-LINK**, **11M-LINK**, **11S-LINK**.

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High Power Detector

11SUPER-HP

Custom Sizes and Shapes,
25 kW or more upon request

– **The Highest Power Handling**
Custom models handle up to 25 000 W of continuous power. Higher powers are available upon request

– **Stable Reading**
Less sensitive to variations in water cooling temperature than any other high power water-cooled meter on the market

– **Infinite Customization Capabilities**
- Choose YOUR size
- Choose YOUR maximum power
- We will customize one just for you!

– **Compact and Light Weight**
Lighter and more compact than any other high power detector on the market, thanks to our unique design

– **Direct USB Connection to a PC**
Each head comes with both a DB-15 connector (for use with a Standa monitor) and a USB2.0 output for direct connection to a PC. Other connectors available upon request

SPECIFICATIONS

Models	**11HP280/100A-10KW-HD**	**11HP210A-25KW-HD**
Max. Average Power (Continuous / 5 minute)	10 000 W / 10 000 W	25 000 W / 25 000 W
Effective Aperture	280 x 100 mm	210 x 210 mm
Cooling Method	Water-Cooled	
MEASUREMENT CAPABILITY		
Spectral Range	0.19 – 20 μm	
Noise Equivalent Power [1]	±10 W	
Minimum Average Power [2]	300 W	
Rise Time (nominal)	20 sec	25 sec
Sensitivity (typ into 100 kΩ load)	0.2 mV/W	0.08 mV/W
Calibration Uncertainty @ 1064 nm	±5 %	
@ 810 nm	±6 %	
Repeatability	±2 %	
Linearity with Power	±2 %	
Linearity vs Beam Diameter [3]	±2 %	
DAMAGE THRESHOLDS		
Maximum Average Power Density [4] 10 kW	2.5 kW/cm^2	
25 kW	–	0.25 kW/cm^2
PHYSICAL CHARACTERISTICS		
Effective Aperture	280 x 100 mm	210 x 210 mm
Absorber (High Damage Threshold)	HD	
Required Cooling Flow	(6 - 10) LPM < ±1 LPM/min [5]	(12 - 15) LPM < ±1 LPM/min [5]
Temperature of Cooling Water	(15 - 25) °C < ±1 °C/min [5]	(15 - 25) °C < ±1 °C/min [5]
Output Connectors	DB-15 cable & USB port	
PCB Electrical Supply	Through USB or Standa monitors	
Maximum Output Signal	2 V	
Dimensions (HxWxD)	152x305x75 mm	229x229x80 mm
Weight (head only)	11 kg	16 kg

[1] Nominal value, actual value depends on electrical noise in the measurement system.
[2] For lower powers, call your Standa representative.
[3] For a centered beam with size from 20% to 80% of the total aperture.
[4] At 1064 nm, 1.07-1.08 μm and 10.6 μm.
[5] Average period > 1 min.

Compatible with monitors:
11MAESTRO, **11UNO**, **11TUNER**, **11P-Link**, **11M-Link**, **11S-LINK**.

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Extreme Low Power Laser Detector

11XLP12

Fiber optics adapters available upon request

11XLP12-3S-H2 Extreme Low Power Laser Detector best suitable for low power im both the μW and mW regimes with very low thermal drift. Featuring broadband flat spectral response, minimal thermal drift and a noise equivalent power as low as 0.5 μW the 11XLP12 is ideally suited for measuring any pulsed or CW low power laser.

- **Low Power Thermopile**
  Noise level of a photo detector with the large bandwidth and high power capacity of a thermal device
- **Minimal Thermal Drift**
  Only 6 μW/°C (with the IR filter)
- **High Sensitivity**
  200 mV/W (without the IR filter)
- **Special Model For Ultrashort Pulses**
  VP (Volume Absorber) version is perfect for low power lasers with ultrashort pulses (ps and fs)
- **IR Filter (XLPF12 model)**
  Removes unwanted IR interference
- **Isolation Tube**
  Eliminates power fluctuations created by air turbulence
- **Smart Interface**
  Containing all the calibration data

11XLP12 family is compatible with: **11UNO**, **11MAESTRO**, **11TUNER**, **11P-LINK**, **11M-LINK**, **11S-LINK**.

SPECIFICATIONS

Model	11XLP12-3S-H2		11XLPF12-3S-H2		11XLP12-3S-VP	
Max Average Power (Continuous / 1 Minute)	3 W / 3 W Broadband Absorber		3 W / 3 W Broadband Absorber, with IR Filter		3 W / 3 W Volume Absorber	
Effective Aperture	12 mm Ø					
Cooling Method	Convection					
MEASUREMENT CAPABILITY						
Spectral Range	0.19 – 20 μm [1]		0.28 – 2.1 μm [2]		0.25 – 20 μm [1]	
Noise Equivalent Power [3]	0.5 μW					
Thermal Drift [4]	12 μW/°C		6 μW/°C		12 μW/°C	
Rise Time (nominal) [5]	2.5 sec		2.5 sec		3 sec	
Sensitivity (typ into 100 k&Omh; load) [6]	200 mV/W		180 mV/W		220 mV/W	
Calibration Uncertainty [7]	±2.5 %					
Repeatability	±0.5 %					
ENERGY MODE						
Sensitivity	25 mV/J		22.5 mV/J		–	
Maximum Measurable Energy [8]	5 J				–	
Noise Equivalent Energy [3]	12 μJ				–	
Minimum Repetition Period	16 sec				–	
Maximum Pulse Width	300 ms				–	
Accuracy with energy calibration option	±5 %				–	
DAMAGE THRESHOLDS						
Maximum Average Power Density [9]	1 kW/cm^2		1 kW/cm^2		30 W/cm^2 @ 1064 nm 8 W/cm^2 @ 532 nm 4 W/cm^2 @ 355 nm	
Pulsed Laser Damage Thresholds	Max Energy Dens.	Peak Power Dens.	Max Energy Dens.	Peak Power Dens.	Max Energy Dens.	Peak Power Dens.
1064 nm, 360 μs, 5 Hz	5 J/cm^2	14 kW/cm^2	5 J/cm^2	14 kW/cm^2	–	–
1064 nm, 7 ns, 10 Hz	1 J/cm^2	143 MW/cm^2	1 J/cm^2	143 MW/cm^2	4 J/cm^2	571 MW/cm^2
532 nm, 7 ns, 10 Hz	0.6 J/cm^2	86 MW/cm^2	0.6 J/cm^2	86 MW/cm^2	3 J/cm^2	429 MW/cm^2
355 nm, 7 ns, 10 Hz	0.3 J/cm^2	43 MW/cm^2	0.3 J/cm^2	43 MW/cm^2	1 J/cm^2	143 MW/cm^2
PHYSICAL CHARACTERISTICS						
Effective Aperture	12 mm Ø					
Absorber (High Damage Threshold)	H2		H2		VP (Volume Absorber)	
Dimensions	73H x 73W x 20D mm (72D mm with tube)		73H x 73W x 28D mm (80D mm with tube)		73H x 73W x 20D mm (72D mm with tube)	
Weight (head only)	0.31 kg		0.32 kg		0.32 kg	

1) For the calibrated spectral range, see the user manual.
2) This spectral range refers to the calibration traceability. For details, please contact us at: sales@standa.lt
3) Nominal value, actual value depends on electrical noise in the measurement system.
4) With STANDA 11MAESTRO.
5) With STANDA 11MAESTRO, 11UNO, 11P-LINK, 11TUNER and 11S-LINK monitors.
6) Maximum output voltage = sensitivity x maximum power.
7) Including linearity with power.
8) For 360 µs pulses. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns).
9) At 1064 nm, 1 W CW.

Specifications are subject to change without notice.

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Laser Energy Detectors

11QE-B

– **Very Low Noise Level**
Noise levels of a photo detector,
but with the high energies of a pyroelectric:
50 nJ with the MT coating, 100 nJ with the BL coating

– **2 Coatings Available**
BL: Black coating, sensitivity of 900 V/J, readings up to 400 Hz
MT: Metallic coating, sensitivity of 2400 V/J, readings up to 1000 Hz

– **Smart Interface**
Containing all the calibration data

11QE-B laser energy detectors can measure energy up to 3.6 J, max repetition frequency – 1000 Hz. Very low noise levels – just 50 nJ with the MT coating and 100 nJ with the BL coating. Effective aperture – 7.8 × 7.8 mm. These detectors are very compact and convenient to use. They are suitable for many OEM, manufacturing and laboratory applications.

SPECIFICATIONS

Detector	11QE8SP-B-BL	11QE8SP-B-MT
Max Measurable Energy	3.6 mJ	1.3 mJ
Max Repetition Frequency	400 HZ	1 000 Hz
Effective Aperture	7.8 × 7.8 mm	
MEASUREMENT CAPABILITY		
Spectral Range [1]	0.19 – 20 μm	
Max Measurable Energy		
With 11M-LINK	3.6 mJ	1.3 mJ
With 11S-LINK	2.9 mJ	1.1 mJ
With 11MAESTRO	2.5 mJ	0.93 mJ
Noise Equivalent Energy		
With 11M-LINK (with noise suppression) [2]	100 nJ (N/A)	50 nJ (3 nJ)
With 11S-LINK	100 nJ	50 nJ
With 11MAESTRO	150 nJ	80 nJ
Sensitivity	900 V/J	2400 V/J
Max Repetition Frequency	400 Hz	1000 Hz
Max Pulse Width	10 μs	
Rise Time (0-100%)	30 μs	
Calibration Uncertainty	± 4.0%	
Repeatability	<0.5 %	
DAMAGE THRESHOLDS		
Maximum Average Power	0.5 W	
Maximum Average Power Density (1064 nm, 7 ns, 10 Hz)	1 W/cm^2	
Maximum Energy Density (1064 nm, 7 ns, 10 Hz)	50 mJ/cm^2	
PHYSICAL CHARACTERISTICS		
Effective Aperture	7.8 × 7.8 mm	
Sensor	Pyroelectric	
Absorber	BL	MT
Connector	DB-15	
Dimensions	38.1 O × 27.4D mm	
Weight	91 g	

1) For the calibrated spectral range, see the user manual.
2) Obtain a lower noise level using the Noise Suppression function in the PC 11M-LINK application. Setting the sampling size at 128 will get the lowest noise level possible.

Specifications are subject to change without notice.

11QE-B family is compatible with: **11MAESTRO**, **11M-LINK**, **11S-LINK**.

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Laser Energy Detectors

11QE12

- **Modular Concept**
  Increase the power capability of your detector with 2 different cooling modules
- **Low Noise Level**
  0.7 μJ for the MT coating
- **QED Attenuator Available**
  Measure up to 5X higher energies. Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
- **Available With Metallic Absorber**
  High Repetition Rate (6000 Hz)
- **Test Target Included**
  With the MB models
- **Smart Interface**
  Containing all the calibration data

11QE12 laser energy detectors can measure energy up to 3.9 J (with attenuator), max repetition frequency – 6000 Hz. Low noise level – just 0.7 μJ. Effective aperture – 12 mm square. These detectors are compact and convenient to use. They are suitable for many OEM, manufacturing and laboratory applications.

11QE12 family is compatible with: **11MAESTRO**, **11M-LINK**, **11S-LINK**.

SPECIFICATIONS

Detector	11QE12LP-S-MB		11QE12LP-H-MB		11QE12SP-S-MT		11QE12SP-H-MT	
Max Measurable Energy (with Attenuator)	3.9 J				1.6 J			
Max Repetition Frequency	300 Hz				6000 Hz			
Effective Aperture	12 × 12 mm							
MEASUREMENT CAPABILITY								
Spectral Range [1) 3)]	0.19 – 20 μm				0.19 – 20 μm [4)]			
Maximum Measurable Energy [5)]	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, 10 Hz [6)]	0.85 J	3.9 J	0.85 J	3.9 J	0.70 J	1.60 J	0.70 J	1.60 J
266 nm, 7 ns, 10 Hz	0.70 J	0.81 J	0.70 J	0.81 J	0.10 J	0.25 J	0.10 J	0.25 J
Noise Equivalent Energy [7)]	0.7 μJ				0.8 μJ			
Sensitivity [8) 9)]	60 V/J				100 V/J			
Maximum Pulse Width (typical)	400 μs [2)]				10 μs			
Rise Time (typical 0-100 %)	550 μs				20 μs			
Calibration Uncertainty [10)]	±3 %							
Repeatability	<0.5 %							
DAMAGE THRESHOLDS								
Maximum Average Power	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
All Wavelengths	3 W	7.5 W	5 W	12.5 W	3 W	7.5 W	5 W	12.5 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, single shot	0.6 J/cm^2	16 J/cm^2	0.6 J/cm^2	16 J/cm^2	0.50 J/cm^2	4 J/cm^2	0.50 J/cm^2	4 J/cm^2
1064 nm, 7 ns, 10 Hz	0.6 J/cm^2	8 J/cm^2	0.6 J/cm^2	8 J/cm^2	0.50 J/cm^2	2 J/cm^2	0.50 J/cm^2	2 J/cm^2
532 nm, 7 ns, 10 Hz	0.6 J/cm^2	6 J/cm^2	0.6 J/cm^2	6 J/cm^2	0.07 J/cm^2	0.35 J/cm^2	0.07 J/cm^2	0.35 J/cm^2
266 nm, 7 ns, 10 Hz	0.5 J/cm^2	1 J/cm^2	0.5 J/cm^2	1 J/cm^2	0.07 J/cm^2	0.30 J/cm^2	0.07 J/cm^2	0.30 J/cm^2
Maximum Average Power Density	10 W/cm^2	600 W/cm^2	10 W/cm^2 [11)]	600 W/cm^2	10 W/cm^2	600 W/cm^2	10 W/cm^2 [11)]	600 W/cm^2
PHYSICAL CHARACTERISTICS								
Effective Aperture (with Attenuator)	12 × 12 mm (9 × 9 mm)							
Absorber	Multi-Band				Metallic			
Dimensions (H×W×D)	36×36×14 mm		36×36×33 mm		36×36×14 mm		36×36×33 mm	
Weight	87 g		117 g		87 g		117 g	

1) For the calibrated spectral range, see the user manual.
2) Also available on special order: The Extra Long Pulse Series 11QE12ELP-MB for pulse widths up to 2 msec, custom-tuned for rep. rate, sensitivity, and pulse width.
3) 0.308 – 2.1 μm with QED Attenuator.
4) Detectors with the MT coating can be used within the range 0.19 to 20 μm, however the absorption in the IR wavelengths decreases significantly. This, in turn, reduces the sensitivity and increases the noise level.
5) Not exceeding Maximum Average Power.
6) Increasing pulse width increases the maximum measurable energy.
7) Nominal value, actual value depends on electrical noise in the measurement system.
8) Load: 1 MΩ; and ≤ 30 pF.
9) Maximum output voltage = sensitivity x maximum energy.
10) Excludes non-linearities.
11) At 3 W. Maximum Average Power Density is 10 W/cm^2 @ 5 W for -H versions.

Specifications are subject to change without notice.

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Laser Energy Detectors

11QE25

- **Modular Concept**
  Increase the power capability of your detector with 2 different cooling modules
- **Low Noise Level**
  2 μJ for the MT coating
- **QED Attenuator Available**
  Measure up to 5X higher energies. Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
- **Available With Metallic Absorber**
  High Repetition Rate (6000 Hz)
- **Test Target Included**
  With the MB models
- **Smart Interface**
  Containing all the calibration data

11QE25 laser energy detectors can measure energy up to 23 J (with attenuator), max repetition frequency – 6000 Hz. Low noise level – just 2 μJ. Effective aperture – 25 mm square. These detectors are compact and convenient to use. They are suitable for many OEM, manufacturing and laboratory applications.

11QE25 family is compatible with: **11MAESTRO**, **11M-LINK**, **11S-LINK**.

SPECIFICATIONS

Detector	11QE25LP-S-MB		11QE25LP-H-MB		11QE25SP-S-MT		11QE25SP-H-MT	
Max Measurable Energy (with Attenuator)	23 J				10 J			
Max Repetition Frequency	300 Hz				6000 Hz			
Effective Aperture	25 × 25 mm							
MEASUREMENT CAPABILITY								
Spectral Range [1) 3)]	0.19 – 20 μm				0.19 – 20 μm [4)]			
Maximum Measurable Energy [5)]	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, 10 Hz [6)]	3.8 J	23 J	3.8 J	23 J	3.0 J	10 J	3.0 J	10 J
266 nm, 7 ns, 10 Hz	3.1 J	4.8 J	3.1 J	4.8 J	0.44 J	1.45 J	0.44 J	1.45 J
Noise Equivalent Energy [7)]	4 μJ				2 μJ			
Sensitivity [8) 9)]	10 V/J				20 V/J			
Maximum Pulse Width (typical)	400 μs [2)]				10 μs			
Rise Time (typical 0-100 %)	550 μs				20 μs			
Calibration Uncertainty [10)]	±3 %							
Repeatability	<0.5 %							
DAMAGE THRESHOLDS								
Maximum Average Power	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
All Wavelengths	5 W	15 W	10 W	30 W	5 W	15 W	10 W	10 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, single shot	0.6 J/cm^2	16 J/cm^2	0.6 J/cm^2	16 J/cm^2	0.50 J/cm^2	4 J/cm^2	0.50 J/cm^2	4 J/cm^2
1064 nm, 7 ns, 10 Hz	0.6 J/cm^2	8 J/cm^2	0.6 J/cm^2	8 J/cm^2	0.50 J/cm^2	2 J/cm^2	0.50 J/cm^2	2 J/cm^2
532 nm, 7 ns, 10 Hz	0.6 J/cm^2	6 J/cm^2	0.6 J/cm^2	6 J/cm^2	0.07 J/cm^2	0.35 J/cm^2	0.07 J/cm^2	0.35 J/cm^2
266 nm, 7 ns, 10 Hz	0.5 J/cm^2	1 J/cm^2	0.5 J/cm^2	1 J/cm^2	0.07 J/cm^2	0.30 J/cm^2	0.07 J/cm^2	0.30 J/cm^2
Maximum Average Power Density	10 W/cm^2	600 W/cm^2	10 W/cm^2 [11)]	600 W/cm^2	10 W/cm^2	600 W/cm^2	10 W/cm^2 [11)]	600 W/cm^2
PHYSICAL CHARACTERISTICS								
Effective Aperture (with Attenuator)	25 × 25 mm (22 × 22 mm)							
Absorber	Multi-Band				Metallic			
Dimensions (H×W×D)	50×50×14 mm		50×50×52.5 mm		50×50×14 mm		50×50×52.5 mm	
Weight	120 g		187 g		120 g		187 g	

1) For the calibrated spectral range, see the user manual.
2) Also available on special order: The Extra Long Pulse Series 11QE25ELP-MB for pulse widths up to 4 msec, custom-tuned for rep. rate, sensitivity, and pulse width.
3) 0.308 – 2.1 μm with QED Attenuator.
4) Detectors with the MT coating can be used within the range 0.19 to 20 μm, however the absorption in the IR wavelengths decreases significantly. This, in turn, reduces the sensitivity and increases the noise level. Nevertheless, each detector is individually scanned and the wavelength correction factor (PWC) is NIST traceable in the range of 248 nm to 2.5 μm.
5) Not exceeding Maximum Average Power.
6) Increasing pulse width increases the maximum measurable energy.
7) Nominal value, actual value depends on electrical noise in the measurement system.
8) Load: 1 MΩ; and ≤ 30 pF.
9) Maximum output voltage = sensitivity × maximum energy.
10) Excludes non-linearities.
11) At 5 W. Maximum Average Power Density is 10 W/cm^2 @ 10 W for -H versions.

Specifications are subject to change without notice.

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Laser Energy Detectors

11QE50

- **Modular Concept**
  Increase the power capability of your detector with 2 different cooling modules
- **Low Noise Level**
  10 μJ for the MT coating
- **QED Attenuator Available**
  Measure up to 5X higher energies. Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
- **Available With Metallic Absorber**
  High Repetition Rate (4000 Hz)
- **Test Target Included**
  With the MB models
- **Smart Interface**
  Containing all the calibration data

11QE50 laser energy detectors can measure energy up to 85 J (with attenuator), max repetition frequency – 4000 Hz. Low noise level – just 10 μJ. Effective aperture – 50 mm square. These detectors are convenient to use and can measure relatively wide beams. They are suitable for many OEM, manufacturing and laboratory applications.

11QE50 family is compatible with: **11MAESTRO**, **11M-LINK**, **11S-LINK**.

SPECIFICATIONS

Detector	11QE50LP-S-MB		11QE50LP-H-MB		11QE50SP-S-MT		11QE50SP-H-MT	
Max Measurable Energy (with Attenuator)	85 J				44 J			
Max Repetition Frequency	200 Hz				4000 Hz			
Effective Aperture	50 × 50 mm							
MEASUREMENT CAPABILITY								
Spectral Range [1) 3)]	0.19 – 20 μm				0.19 – 20 μm [4)]			
Maximum Measurable Energy [5)]	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, 10 Hz [6)]	15 J	85 J	15 J	85 J	13 J	44 J	13 J	44 J
266 nm, 7 ns, 10 Hz	12.5 J	22 J	12.5 J	22 J	1.8 J	6.5 J	1.8 J	6.5 J
Noise Equivalent Energy [7)]	10 μJ							
Sensitivity [8) 9)]	3 V/J				4 V/J			
Maximum Pulse Width (typical)	675 μs [2)]				10 μs			
Rise Time (typical 0-100 %)	900 μs				20 μs			
Calibration Uncertainty [10)]	±3 %							
Repeatability	<0.5 %							
DAMAGE THRESHOLDS								
Maximum Average Power	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
All Wavelengths	10 W	25 W	20 W	45 W	10 W	25 W	20 W	45 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 7 ns, single shot	0.6 J/cm^2	16 J/cm^2	0.6 J/cm^2	16 J/cm^2	0.50 J/cm^2	4 J/cm^2	0.50 J/cm^2	4 J/cm^2
1064 nm, 7 ns, 10 Hz	0.6 J/cm^2	8 J/cm^2	0.6 J/cm^2	8 J/cm^2	0.50 J/cm^2	2 J/cm^2	0.50 J/cm^2	2 J/cm^2
532 nm, 7 ns, 10 Hz	0.6 J/cm^2	6 J/cm^2	0.6 J/cm^2	6 J/cm^2	0.07 J/cm^2	0.35 J/cm^2	0.07 J/cm^2	0.35 J/cm^2
266 nm, 7 ns, 10 Hz	0.5 J/cm^2	1 J/cm^2	0.5 J/cm^2	1 J/cm^2	0.07 J/cm^2	0.30 J/cm^2	0.07 J/cm^2	0.30 J/cm^2
Maximum Average Power Density	10 W/cm^2	600 W/cm^2	10 W/cm^2 [11)]	600 W/cm^2	10 W/cm^2	600 W/cm^2	10 W/cm^2 [11)]	600 W/cm^2
PHYSICAL CHARACTERISTICS								
Effective Aperture (with Attenuator)	50 × 50 mm (47 × 47 mm)							
Absorber	Multi-Band				Metallic			
Dimensions (H×W×D)	75×75×15 mm		75×75×44 mm		75×75×15 mm		75×75×44 mm	
Weight	209 g		338 g		209 g		338 g	

1) For the calibrated spectral range, see the user manual.
2) Also available on special order: The Extra Long Pulse Series 11QE50ELP-MB for pulse widths up to 4 msec, custom-tuned for rep. rate, sensitivity, and pulse width.
3) 0.308 – 2.1 μm with QED Attenuator.
4) Detectors with the MT coating can be used within the range 0.19 to 20 μm, however the absorption in the IR wavelengths decreases significantly. This, in turn, reduces the sensitivity and increases the noise level. Nevertheless, each detector is individually scanned and the wavelength correction factor (PWC) is NIST traceable in the range of 248 nm to 2.5 μm.
5) Not exceeding Maximum Average Power.
6) Increasing pulse width increases the maximum measurable energy.
7) Nominal value, actual value depends on electrical noise in the measurement system.
8) Load: 1 MΩ; and ≤ 30 pF.
9) Maximum output voltage = sensitivity × maximum energy.
10) Excludes non-linearities.
11) At 10 W. Maximum Average Power Density is 5 W/cm^2 @ 20 W for -H versions.

Specifications are subject to change without notice.

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Laser Energy Detectors

11QE65

- **Modular Concept**
  Increase the power capability of your detector with 2 different cooling modules
- **Low Noise Level**
  10 μJ for the MT coating
- **QED Attenuator Available**
  Measure up to 5X higher energies. Available with optional calibration, all wavelengths between 532 & 1064 nm, or single wavelength
- **Large Aperture**
  Effective aperture of 65×65 mm
- **Test Target Included**
  With the MB models
- **Smart Interface**
  Containing all the calibration data

11QE65 laser energy detectors can measure energy up to 200 J (with attenuator). Low noise level – just 10 μJ. Large effective aperture – 65 mm square. These detectors are convenient to use and can measure relatively wide beams. They are suitable for many OEM, manufacturing and laboratory applications.

11QE65 family is compatible with: **11MAESTRO**, **11M-LINK**, **11S-LINK**.

SPECIFICATIONS

Detector	11QE65LP-S-MB		11QE65LP-H-MB		11QE65ELP-S-MB		11QE65ELP-H-MB	
Max Measurable Energy (with Attenuator)	200 J							
Max Repetition Frequency	100 Hz				20 Hz			
Effective Aperture	65 × 65 mm							
MEASUREMENT CAPABILITY								
Spectral Range [1) 2)]	0.19 – 20 μm							
Maximum Measurable Energy [3) 4)]	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 150 ns pulse, single shot [5)]	50 J	200 J	50 J	200 J	50 J	200 J	50 J	200 J
1064 nm, 7 ns, 10 Hz	25 J	125 J	25 J	125 J	25 J	125 J	25 J	125 J
266 nm, 7 ns, 10 Hz	20 J	35 J	20 J	35 J	20 J	35 J	20 J	35 J
Noise Equivalent Energy [6)]	10 μJ				20 μJ			
Sensitivity [7) 8)]	4 V/J				1.5 V/J			
Maximum Pulse Width (typical)	0.7 ms				5 ms			
Rise Time (typical 0-100 %)	1 ms				6 ms			
Calibration Uncertainty [9)]	±3 %							
Repeatability	<3 %							
DAMAGE THRESHOLDS								
Maximum Average Power	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
All Wavelengths	12 W	30 W	40 W	90 W	12 W	30 W	40 W	90 W
Maximum Energy Density	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator	Alone	Attenuator
1064 nm, 150 μs, 10 Hz	1.2 J/cm^2	14 J/cm^2	1.2 J/cm^2	14 J/cm^2	1.2 J/cm^2	14 J/cm^2	1.2 J/cm^2	14 J/cm^2
1064 nm, 7 ns, single shot	0.6 J/cm^2	16 J/cm^2	0.6 J/cm^2	16 J/cm^2	0.6 J/cm^2	16 J/cm^2	0.6 J/cm^2	16 J/cm^2
1064 nm, 7 ns, 10 Hz	0.6 J/cm^2	8 J/cm^2	0.6 J/cm^2	8 J/cm^2	0.6 J/cm^2	8 J/cm^2	0.6 J/cm^2	8 J/cm^2
532 nm, 7 ns, 10 Hz	0.6 J/cm^2	6 J/cm^2	0.6 J/cm^2	6 J/cm^2	0.6 J/cm^2	6 J/cm^2	0.6 J/cm^2	6 J/cm^2
266 nm, 7 ns, 10 Hz	0.5 J/cm^2	1 J/cm^2	0.5 J/cm^2	1 J/cm^2	0.5 J/cm^2	1 J/cm^2	0.5 J/cm^2	1 J/cm^2
Maximum Average Power Density	10 W/cm^2	600 W/cm^2	10 W/cm^2 [10)]	600 W/cm^2	10 W/cm^2	600 W/cm^2	10 W/cm^2 [10)]	600 W/cm^2
PHYSICAL CHARACTERISTICS								
Effective Aperture (with Attenuator)	65 × 65 mm (62 × 62 mm)							
Absorber	Multi-Band							
Dimensions (H×W×D)	90×90×20 mm		90×90×94 mm		90×90×20 mm		90×90×94 mm	
Weight	440 g		900 g		440 g		900 g	

1) For the calibrated spectral range, see the user manual.
2) 0.308 - 2.1 μm with QED Attenuator.
3) Not exceeding Maximum Average Power.
4) Maximum measurable energy depends on the monitor.
5) Increasing pulse width increases the maximum measurable energy.
6) Nominal value, actual value depends on electrical noise in the measurement system.
7) Load: 1 MΩ and ≤ 30 pF.
8) Maximum output voltage = sensitivity × maximum energy.
9) Excludes non-linearities.
10) At 12 W. Maximum Average Power Density is 5 W/cm² @ 40 W.

Specifications are subject to change without notice.

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Photo Detector (low power) 11PH

- Large Apertures
- 10 mm Ø for the Silicon sensors
- 3 Versions
  - Silicon: 350 - 1080 nm, up to 750 mW
  - Silicon-UV: 210 - 1080 nm, up to 25 mW
  - Germanium: 800 - 1650 nm, up to 500 mW
- Choice of Attenuators
  - OD1: 10 % Transmission
  - OD2: 1 % Transmission
  - OD3: 50 % Transmission (for 11PH100-SIUV only)
- Precise Calibration
- Wavelength selection in 1 nm steps
- Smart Interface
- Containing all the calibration data

11PH series silicon detectors provide a generous aperture for laser beams up to **10 mm** in diameter. The threaded aperture allows you to install filters, attenuators, fiber optic adapters or other optics that suit your specific needs. All of the detectors have a NIST traceable calibration and *Personal wavelenght correction™*.

This is the choice for typical low power CW lasers from 210 to 1650 nm (in different models).

Make measurements down to 600 pW and up to 0.75 W with an **11PH100-Si-HA-OD2** attenuator.

To extend the performance of the photo detectors to higher measurable powers you can select one of our attenuators. The transmission of the **11PH100-Si-HA-OD1** is 10% and the transmission of the **11PH100-Si-HA-OD2** is 1%.

SPECIFICATIONS

Models	11PH100-Si-HA	11PH100-SiUV	11PH20-Ge
Max. Average Power (Alone / with OD2)	36 mW / 750 mW	4 mW / 30 mW	30 mW / 500 mW
Effective Aperture	10 mm Ø	10 mm Ø	5 mm Ø
Absorber	Si	Si-UV	Ge
MEASUREMENT CAPABILITY			
Spectral Range	350 – 1080 nm	210 – 1080 nm	800 – 1650 nm
With OD1	400 – 1100 nm	400 – 1080 nm	900 – 1650 nm
With OD2	630 – 1100 nm	630 – 1080 nm	950 – 1650 nm
Maximum Measurable Power [1]	36 mW @ 1064 nm	4 mW @ 532 nm	30 mW @ 1064 nm
With OD1	300 mW @ 1064 nm	25 mW @ 532 nm	300 mW @ 1064 nm
With OD2	750 mW @ 1064 nm	30 mW @ 850 nm	500 mW @ 1064 nm
Minimum Power [2]	0.6 nW @ 980 nm	0.6 nW @ 850 nm	2 nW @ 1550 nm
Noise Equivalent Power [3]	10 pW @ 980 nm	10 pW @ 850 nm	60 pW @ 1550 nm
Rise Time (nominal)	0.2 sec		
Peak Sensitivity	0.58 A/W @ 980 nm	6.5 A/W @ 980 nm	0.98 A/W @ 1550 nm
Calibration Uncertainty	±6.5 % 320 - 399 nm ±2.5 % 400 - 899 nm ±3.5 % 900 - 999 nm ±5 % 1000 - 1049 nm ±7 % 1050 - 1100 nm –	±8 % 200 - 219 nm ±6.5 % 220 - 399 nm ±2.5 % 400 - 899 nm ±3.5 % 900 - 999 nm ±5 % 1000 - 1049 nm ±7 % 1050 - 1080 nm	±3.5 % 800 - 1650 nm – – – – –
Accuracy (with OD filters)	±5 % 400 - 1049 nm ±7 % 1050 - 1100 nm	±5 % 400 - 1049 nm ±7 % 1050 - 1080 nm	±5 %
DAMAGE THRESHOLDS			
Maximum Average Power Density	100 W/cm²		
Saturation Level	30 mW/cm² @ 1064 nm	65 mW/cm² @ 532 nm	320 mW/cm² @ 1064 nm
PHYSICAL CHARACTERISTICS			
Dimensions	38.1Ø x 27.4D mm		
Weight (head only)	130 g		

1) Maximum value depends on the monitor.
2) Warm-up until the reading without laser power is stable for several minutes before offset nulling (zeroing the display). Null the offset after each new power up. Half an hour warm-up is recommended for measuring low powers. Temperature ±0.5 degrees.
3) Nominal value. Depends on environmental electromagnetic interference.

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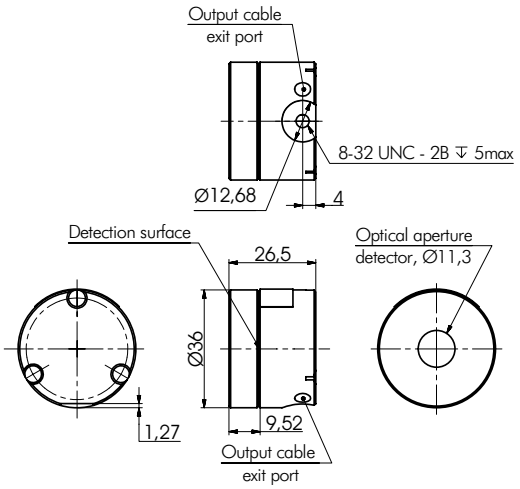


11PH Series Detector
With **OD1/OD2** Attenuator

AVAILABLE MODELS

11PH100-Si-HA (10 mm – Silicon)
11PH100-SiUV (10 mm – UV-Silicon)
11PH20-Ge (5 mm – Germanium)

OD1 / OD2 ATTENUATORS

OD1/OD2 Attenuators sold in option. When bought together, the detector is calibrated with and without the attenuator.

Compatible with monitors: **11MAESTRO**, **11UNO**, **11TUNER**, **11P-Link**, **11M-Link**.

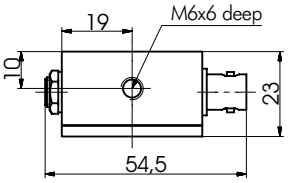
High Speed Free-Space Photodetector

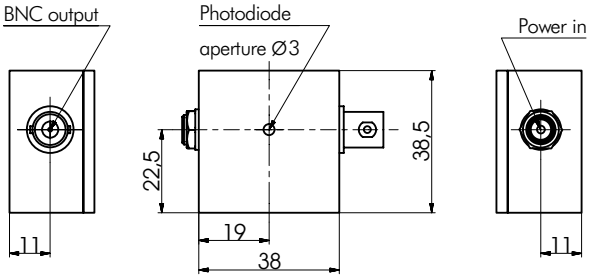
11HSP-FS

CE

The **11HSP-FS** is a family of high speed optical signal detectors. These photodetectors are well suited for measuring optical pulses with durations of a few ns or longer and also for pulse shape monitoring. The **11HSP-FS1** can also be used for intensity noise measurements of **CW** lasers in the range of **10 Hz - 300 MHz**, while the **11HSP-FS2** has a large sensitive area. Photodetectors can be integrated into a scheme for generating triggering pulses. Recommended external bias voltage is **30-50V**.

Custom optical fiber cables available separately. Please contact us for more details.





SPECIFICATIONS	11HSP-FS1	11HSP-FS2
Wavelength range, nm	400-1100	400-1100
Rise time, ns	<1	<10
Pulse width (FWHM), ns	1	10
NEP, (W/√Hz)	$2.9x10^{-14}$	$4x10^{-14}$
Capacitance V_R=50V, pF	2.2	20
Material	Si	Si
Dark current, nA	1	10
Sensitive area, mm²	1	7.5

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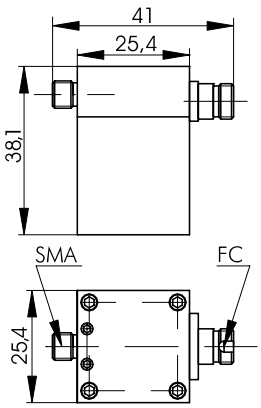
High-speed Photodetectors

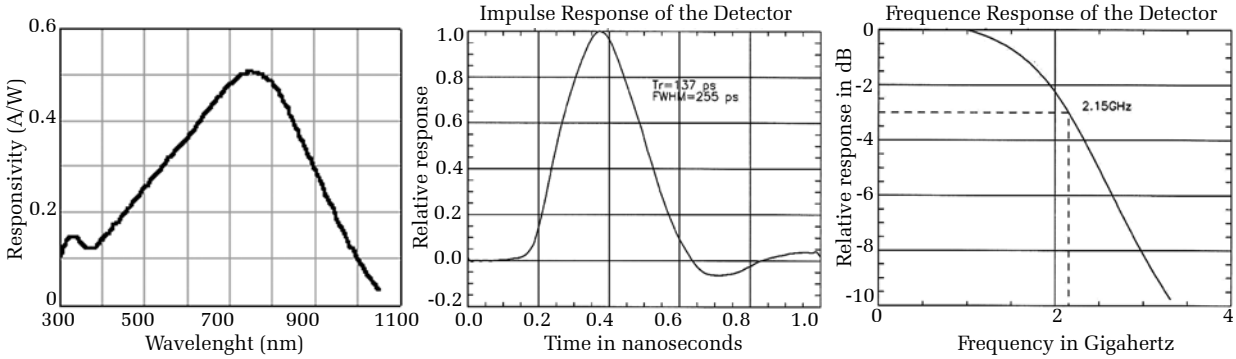
11HSP



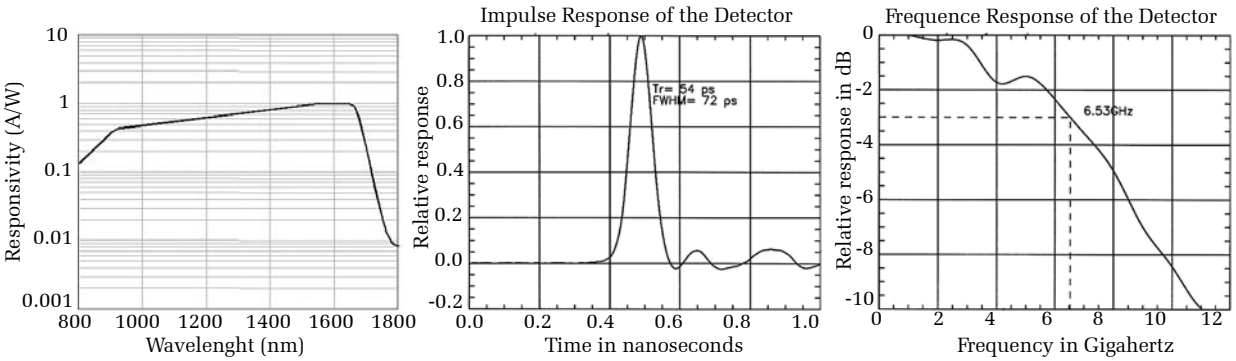
Model	11HSP-V2	11HSP-IR6
Wavelenght range	320-1100 nm	900-1650 nm
Photodetectors materials	Si	InGaAs
Photodetectors diameter	0.4 mm	0.08 mm
Bandwidth	>2 GHz	~6 GHz
Rise and fall time	<150 ps	<70 ps
Afterpulse ringing (% of maximum)	<20	<20
Fiber input receptacle	FC	
Output impedance	50 Ohms	
Maximum safe output	2 V	
Battery power supply	20 V	
Battery shelf life	~5 years	

- **Only gigahertz-bandwidth qualified components are used in those high-speed photodetectors**
- **An impedance matched microstrip line is used to couple the diode's output to the output connector**
- **A microwave quality SMA electro-magnetic wave launcher is used to couple the signal to the scope**
- **Each detector is tested using a 20-Ghz sampling scope and passed only if the peak-to-peak distortion due to ringing is <4%**

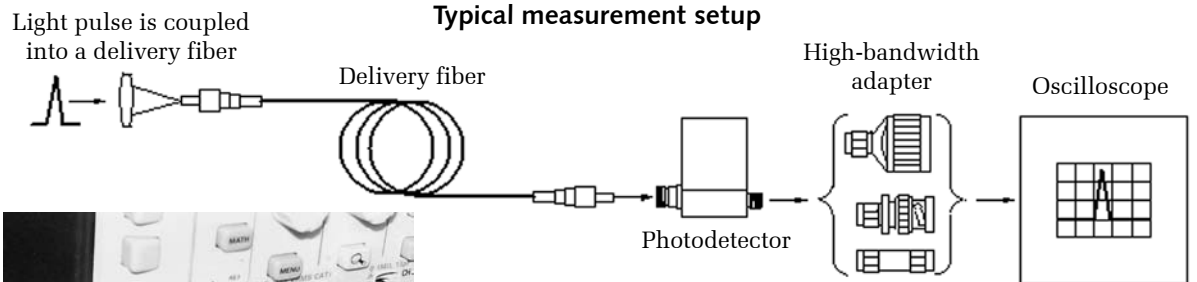
Visible 11HSP-V2 photodetector spectral and impulse response



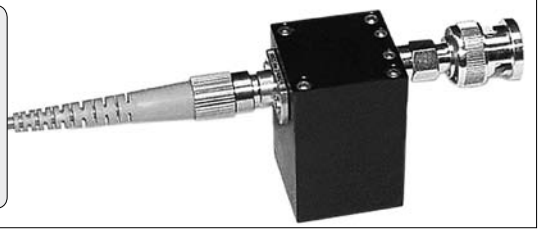
Near-IR 11HSP-IR6 photodetector spectral and impulse response



Typical measurement setup



Delivery fiber and adapters are not included and should be ordered separately.



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THz Detector (Integrated Analog Module) 11THZ-I-BNC

Front view Back view

- **Measure Sources from 0.85 to 30 THz**
  Broadband, room temperature operation, easier to use and less expensive than a Golay cell
- **Wide Dynamic Range from nW to mW**
  With state of the art pyroelectric sensors, measure down to 100 nW
- **Integrated Analog Module**
  Plug the head directly to your oscilloscope
- **Battery or AC Powered**
  Includes 9V Battery and AC Power Eliminator
- **Calibrated Devices**
  All THz detectors are calibrated in the 0.25 to 15 μm (20 THz) region.

SPECIFICATIONS

Models	11THZ2I-BL-BNC	11THZ5I-MT-BNC
Max Average Power	70 μW	1440 μW
Effective Aperture	2x2 mm	5 mm Ø
Integrated Module	Analog (BNC)	Analog (BNC)
MEASUREMENT CAPABILITY		
Spectral Range		
Frequency	0.1 - 30 THz	0.1 - 30 THz
Wavelength	350 - 10 μm	350 - 10 μm
Max Measurable Power	70 μW	140 μW
Noise Equivalent Power	0.4 nW [4.0 x 10-10 W/(Hz)½]	0.4 nW [4.0 x 10-10 W/(Hz)½]
Rise Time (0-100%)	≤ 0.2 s	≤ 0.2 s
Sensitivity (Typical)	140 kV/W	700 kV/W
Calibration Uncertainty	Contact Us	Contact Us
DAMAGE THRESHOLD		
Maximum Average Power Density (1064 nm)	50 mW/cm^2	50 mW/cm^2
PHYSICAL CHARACTERISTICS		
Effective Aperture	2x2 mm	5 mm Ø
Sensor	Pyroelectric	Pyroelectric
Absorber	BL	MT
Analog Output	0-10 V	0-10 V
Dimensions	81.3Ø X 99.3D mm	81.3Ø X 99.3D mm
Weight	500 g	500 g

Specifications are subject to change without notice.
Stand is not included.

* For details, contact your Standa representative.

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CMOS Beam Profiling Camera

11BEAMAGE-3

- **USB 3.0 for the Fastest Transfer Rates**
  Up to 10X faster than regular USB 2.0 connections (also USB 2.0 compatible)
- **High Resolution**
  2.2 MPixels resolution gives accurate profile measurements on very small beams
- **Large Area Sensor**
  The 11.3 × 6.0 mm sensor allows to measure very large beams
- **Available with IR coating**
  Beamage-3.0-IR has a special Phosphor coating for IR wavelengths (1495 – 1595 nm)
- **ISO Compliant**
  D4σ Definition of Diameter, Centroid, Ellipticity and Orientation are ISO 11146:2004 and 11146:2005 compliant
- **Intuitive Software Interface**
  Easy to navigate interface, with many display and control features:
  - 2D, 3D and XY Displays
  - Background Subtraction Function
  - Unique "Animate" Function
  - Gaussian Fit
  - Semi-Log Graph
- **External Trigger**
  To synchronize the camera with a pulsed laser
- **Low-Cost**
- **Sensor Technology CMOS**

SPECIFICATIONS

Model	11BEAMAGE-3	11BEAMAGE-3-IR
Sensor Technology	CMOS	
Effective Aperture	11.3 × 6.0 mm	
MEASUREMENT CAPABILITY		
Wavelength Range	350 – 1150 nm	1495 – 1595 nm
Pixel Count	2.2 MPixels	
H × V	2048 × 1088	
Pixel Dimension	5.5 × 5.5 μm	
Minimum Measurable Beam	55 μm	70 μm [2]
Shutter Type	Global	
Frame Rate	9 fps @ 2.2 MPixels (Full Frame); 12 fps @ 1.1 MPixels (2048 × 544) 16 fps @ 0.016 MPixels (128 × 128)	
RMS Noise	1000:1 (60 dB)	
ADC Level (User Setable)	12 bit (default) / 10 bit (option)	
M^2 Measurement	In Real-Time, no moving parts, with the 11Beamage-M2 Module	
DAMAGE THRESHOLDS [1]		
Maximum Average Power	1 W	
Saturation Level (1064 nm)	CW: 10 W/cm^2; Pulsed: 300 μJ/cm^2	
SOFTWARE		
Displays	2D, 3D, XY and Beam Tracking	
Display Features	2D: Print Screen, Reset View, Show/Hide Beam Diameter 3D: Print Screen, Reset View, Top View XY: Save Data, Zoom, Gaussian Fit, Semi-Log, Show/Hide Cursor, Show/Hide FWHM, Show/Hide 1/e^2 Beam Tracking: Save Data, Print Screen, Reset View, Zoom	
Beam Diameter Definitions	D4σ (ISO compliant); 1/e^2 along crosshairs (13.5%) FWHM along crosshairs (50%); 86% effective diameter (D86)	
Buffer Controls	Open File, Save Current Data, Save All Data, Previous/Next Image, Clear Buffer, Animate	
Printing and Reports	Full Report in Print Ready Format (2D, 3D, XY, Measures, Parameters) Print Screen in BMP format (2D and 3D)	
PHYSICAL CHARACTERISTICS		
Sensor Size	11.3 × 6.0 mm	
Sensor Area	0.67 cm^2	
Dimensions (not including filter)	61H × 81.1W × 19.7D mm	
Weight (head only)	139 g	

1) With ND4 filter
2) With despeckle filter

Specifications are subject to change without notice.

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11Beamage-3 is the very first **USB 3.0** camera dedicated to Laser Beam Profiling. This new CMOS-based camera comes with a completely redesigned software that features both a highly intuitive user interface and powerful data analysis tools.

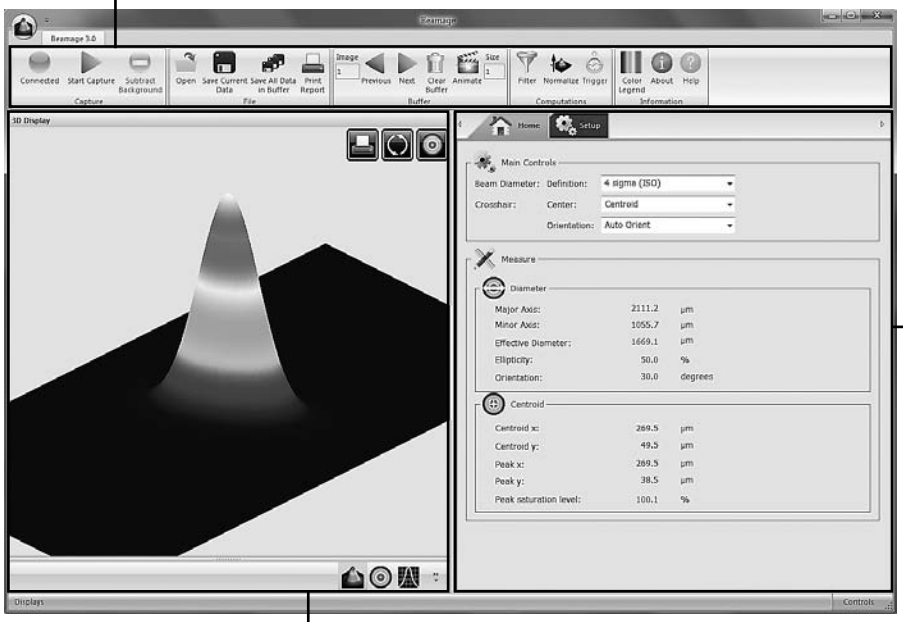
The USB 3.0 Advantage
The USB 3.0 interface of the new 11Beamage-3 camera features a data transfer rate up to 10X faster than any USB 2.0 system. This incredible speed allows for much faster data transfer rates, up to 10 fps at 1 MPixels. USB 3.0 also features an improved communication architecture that reduces both data transmission latency and power consumption.

Perfect for Both Small and Large Beams
Thanks to its unique combination **of high pixel density** (2.2 MPixels) and large sensor size (11.3 x 6.0 mm), the 11Beamage-3 has the double advantage of accurately characterising both very small beams of only a few tens of microns to larger beams of several mm in width, thus effectively covering most of the applications in one device.

Simple but Effective
The completely redesigned software takes full advantage of today's best development tools. The simple interface is **highly intuitive** and yet comprises **many useful functions**, like Background Subtraction, Animation Tool, Signal Normalization, Filtering and Averaging Functions, External Triggering, Active Area Definition, Gaussian Fit and more. Furthermore, the calculations done by the software are **ISO 11146:2004**, **11146:2005** and **13694-2000** compliant and give the user the most accurate beam characterization available, all this in a lightweight environment that doesn't take days to fully master.

Intuitive Software Interface

Main Controls
The top portion of the software is in a ribbon format and includes all the main controls. These are grouped by family, including capture controls, file controls, buffer controls and data computations such as a very useful spatial filter and a normalizing function.



Home and Setup Tabs
The right-hand side of the software contains the Home and Setup tabs. The Home tab allows the user to select the type of measurements performed (like 4-sigma and FWHM). It also shows the resulting measures of the beam. The Setup tab contains all the measurement parameters, like Exposure Time, Image Orientation, Averaging, Active Area definition (ROI) and more.

Displays
The left-hand side of the software is the display panel. 3 displays are available: 3D, 2D and XY (cross-sectional graphs along the crosshairs). The various displays are chosen using the corresponding icons at the bottom of the panel. Convenient Print Screen controls are located the 2D and 3D displays and allow the user to save an image of the current view in BMP format.

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Electronic Autocollimator

new

11D-ALI-COL

- **Automatic angle deviation display**
- **Relative measurements**
- **Multiple results display**
- **Low light – low reflection capability**
- **Reticulate targets (single or multiple)**
- **Data logging with detailed statistics**
- **Software controlled electronics shutter & gain**
- **Data exporting to another computer via RS232 or TCP/IP**
- **Video with playback, snapshot files**

Electronic Autocollimator is a precision USB 2.0 device combining the functionality of autocollimator and alignment telescope – the ideal instrument for optical measurements of minute optical surfaces deviations. It provides a 3-in-1 instrument: electronic autocollimator, focusing telescope and infinite conjugate collimator. The system is capable to measure minute angular displacements of various optical setups.

The system offers portable, compact and accurate beam alignment solution. Our precision electronic autocollimator has built in adjustment features, such as leveling bubble, adjustment pan tilt knobs, enhancing the unprecedented alignment procedure, also with a built-in alignment laser.

MEASUREMENTS

- Mirror angle
- Straightness of linear stages
- Characterization of rotation angle
- Wedge, prism and polygon angles
- Reflecting surface parallelism
- Surface flatness
- Alignment of optical setups
- Machine alignment
- Thermal stability
- Vibration analysis

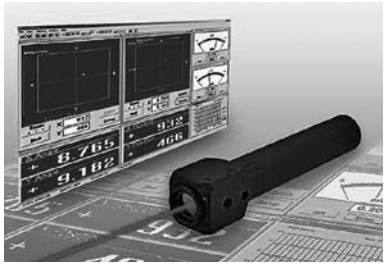
SPECIFICATIONS

Field of view	
Autocollimator	42' (H) (2520 sec of arc)
Telescope	84' (H) (5040 sec of arc)
Resolution	0.1 sec
Accuracy	2.5 sec
CCD Camera	1/2" (1/3" Optional)
Light Source	LED
Interface	USB 2.0
Clear aperture	36 mm
Built in focusing feature	
Focusing range	30 cm to infinity
Bore sight retention	±5 sec
Objective aperture	36 mm
Built in pan tilt adjustment	
Built in coarse aiming telescope	
Weight	2.5 kg including cable

Optical Beam Alignment Meter

new

11D-ALI-MET



- **Simultaneous measurements of beam position, angular displacements, power**
- **ActiveX package for integration in user application program**
- **Two different PSDs (Position Sensing Detector) heads available**
- **Multiple device operation available**
- **Data streaming via RS232, direct data logging to Excel files**

The system offers real time measurements of beam position and angular displacements as well as power display, with resolution down to 0. 1 μm. Works with CW beams, and offers portable, fast and accurate beam alignment solution. ActiveX software for integration in customer's application program is available.

More specifications on www.standa.lt

SPECIFICATIONS

The head of Alignment Meter is composed of two PSD's, beam splitter and lens assembly.

PSD size	9 mm x 9 mm (Standard)	4 mm x 4 mm (Optional)
Type	Dual-axis Si resin, no glass cover	
Usable beam size range	50 μm to Ø8mm	50 μm to Ø3mm
Update rate	Max 150Hz at 500Hz digital filter	
Spectral range	350-1100nm	
Position measurement range	8 mm dia. max	3 mm dia. max
Power range	10 μW - 10 mW with filters Power accuracy* ±5%	
Lens type	Plano convex achromat., AR coated	
Beam splitter	50:50 AR coated, non-polarized	
Temperature range	0°C - 35°C	
Optional accessories	ND filters, Hood	

* To maintain full calibration accuracy, attenuating optical filter (ND) may be necessary for operation with beams greater than 1 mW per PSD @ 633nm.

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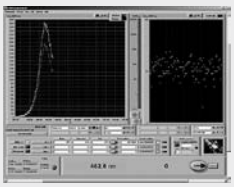
Fluorescence Lifetime Spectrometer

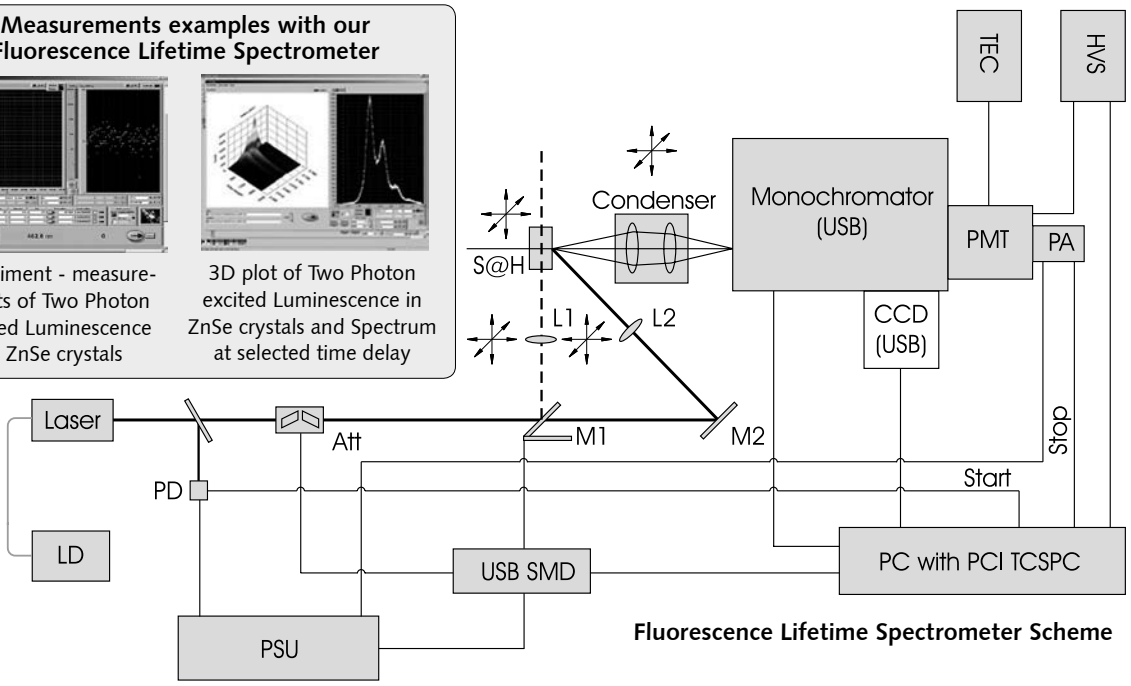
S-FL

Measurements examples with our Fluorescence Lifetime Spectrometer



Experiment - measurements of Two Photon excited Luminescence in ZnSe crystals

3D plot of Two Photon excited Luminescence in ZnSe crystals and Spectrum at selected time delay



Fluorescence Lifetime Spectrometer Scheme

Laser	STA-01SH
LD	laser driver
BS	beam splitter
PD	start pulse p-i-n photodiode
PSU	universal multichanal power supply (PA PMT, USB SMD, PD)
Att	attenuator
USB SMD	two-axis stepper motor controller 8SMC-USBh-B2-2
M1	motorized flip-mirror - 8MR174-11+ 5MBM22SP-1
M2	mirror @ 5MBM23-05
L1, L2	ocusing lenses @ XYZ translate stage
S@H	sample holder @ XYZ translate stage
Condenser	achromatic condenser of detected emission
FN	Notch filter (531 nm)
Monochromator	
PMT	single photon detector
PA	preamplifier of PMT
TEC	Thermo Electrical cooler of PMT
HVS	High Voltage for PMT
PC with PCI TCSP	acquisition system on the base of PC CCD(USB)

SPECIFICATIONS

Detection Spectral Region (nm) (300–1750 nm using PMT with InGaAs photocathode)	200–1050
Spectral resolution (nm)	0.05
Available Excitation Wavelength (nm)	1062, 531, 354, 265.5
Life Time Measurements Domain (sec)	$64 \cdot 10^{-9}$ – 64
Sweeping frequency (Hz)	10–107
Temporal Resolution	
Without deconvolution (ns)	1
With deconvolution (ns)	0.25
Detected Signal Dynamic range (bit)	36
Signal to noise rate at 10 sec acquisition time	>100

APPLICATIONS

Biotechnology and Biomedicine science
Semiconductor science and technology
Laser materials and advanced optics materials investigation
Environment protection

POSSIBLE DEVELOPMENT

FRET technique
3D lifetime micro mapping
Lifetime plate rider (assembly line multi samples lifetime analyzing)

SOFTWARE

Time resolved spectra of fluorescence (or plasma emission)
Spatial resolved fluorescence lifetime measurements (Lifetime Mapping)
3D plotting of data and time/wavelength axes crossection displaying
Emission decay kinetics deconvolution

The technique of Time Correlated Single Photon Counting (TCSPC) has been developed and introduced more then 25 years ago. The technique is now widely accepted to be the most sensitive fluorescence detection technique with the inherent temporal resolution required for fluorescence decays.

The advent of sub-nanosecond and picosecond pulsed Diode Pumped Solid State Lasers (DPSSL) with appropriate wavelengths, the availability of suitable detectors of sufficiently fast response time, and modern timing electronics that incorporate the complex acquisition technique into one PCI computer board makes it possible to design a very compact Fluorescence Lifetime Measurement Systems for the use in biological environments, medicine, chemical technology semiconductor's nanotechnology, advanced optics materials technology, etc.

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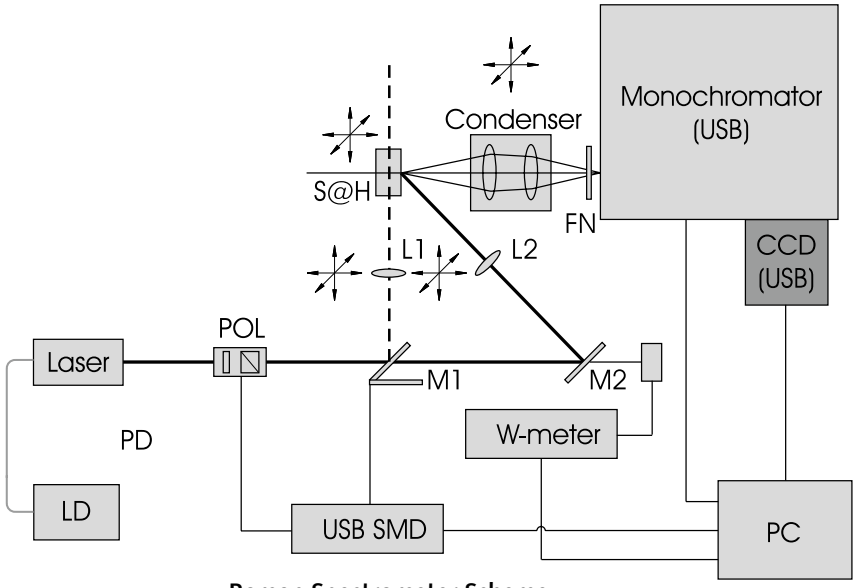
Raman Spectrometer

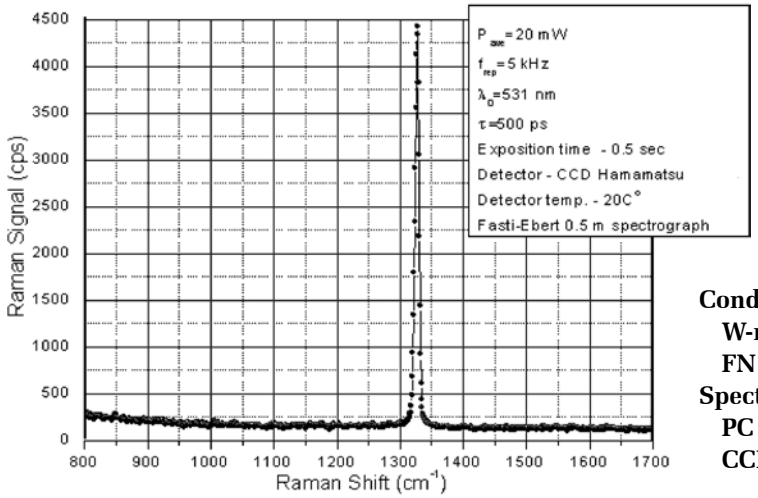
S-RS



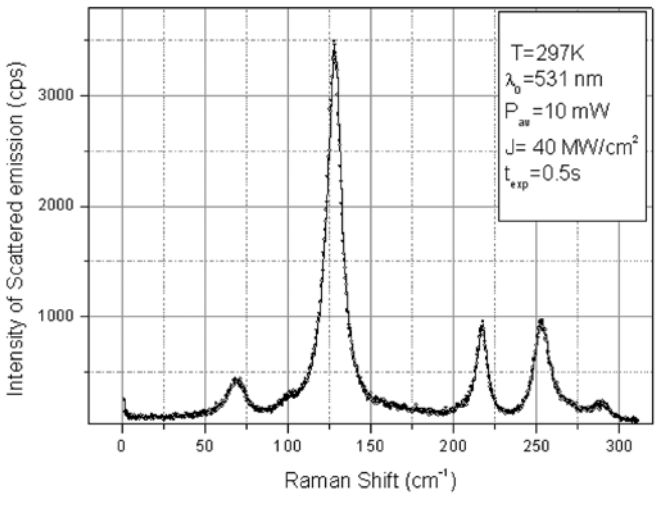
Raman Spectrometer Scheme

Main features of this system are an adaptation a super stable single mode 500-picosecond pulsed Diode Pumped Solid State Lasers (DPSSL) with more than 8 kW peak power as a probe beam. Combining with high sensitive CCD camera it gives possibility to detect Raman spectra of different media at broad dynamic range of scattered light intensities from extremely week up to saturated signals. This Raman Spectrometer, equipped by confocal microscope could be used for Micro Raman 3D imaging.

Measurement example with our
Compact Raman Spectrometer



Raman Spectra of Diamond indused by sub-nanosecond DPSS microchip laser



Raman Scattering Spectrum of TeO_2 Crystals

Laser	STA-01SH
LD	laser driver
POL	polarization rotator
USB SMD	two-axis stepper motor controller 8SMC-USBh-B2-2
M1	motorized flip-mirror - **8MR174-11+ 5MBM22SP-1**
M2	mirror @ 5MBM23-05
L1, L2	focusing lenses @ XYZ translate stage
S@H	sample holder @ XYZ translate stage
Condenser	
W-meter	Ophir USB power meter
FN	Notch filter (531 nm)
Spectrograph	
PC	computer
CCD(USB)	Hamamatsu C7045 with S7035-1007 Sensor and USB-2 controller

SPECIFICATIONS

Detection Spectral Region (nm)	280-110
Concurrently registered maximal spectral band width	2600 cm^{-1}
Resolution (for 200 cm^{-1} spectral band width)	0.5 cm^{-1}
Probe emission wavelength (nm)	531
Signal to noise rate at 10 sec acquisition time	>100

High peak power emitted from sub-nanosecond DPSS Nd:LSB Laser gives excellent possibility to detect Raman spectra of different media very easy.

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Passively Q-switched Sub-nanosecond Micro Lasers

STA-01

STA-01 series Diode Pumped Nd:YAG microlasers deliver high peak powers (up to 300 kW) with sub-nanosecond pulse lengths. Different resonator configurations allow STA-01 series lasers to reach high repetition rates of up to 100 kHz or pulse energies as high as 200 μJ. The family of highly reliable passively Q-swithched solid-state lasers are suitable for various applications because of their compactness and excellent beam quality.

The laser consists of laser controller and laser head. The laser can be operated in external or internal trigger mode.

APPLICATIONS

- Pump source for harmonic generators, optical parametric oscillators and amplifiers (using periodically poled KTP or $LiNbO_3$ crystals)
- Low-coherence "white light" interferometry
- Test and measurement systems
- Optical coherence tomography
- Two-photon microscopy
- Fluorescence microscopy
- Laser seeding
- Spectroscopy
- 3D mapping

SPECIFICATIONS

Models *	STA-01-1	STA-01-2	STA-01-3	STA-01-4	STA-01-5	STA-01-6	STA-01-7	STA-01-8**	STA-01-9
Wavelength, nm	**1064**								
Average Output Power (max), mW	140	100	120	125	65	20	100	200	40
Pulse Energy, μJ	2	2	3	5	6.5	20	100	200	0.4
Pulse Width (FWHM), ns	0.5	0.6	0.8	0.6	0.7	< 0.2	0.6	0.6	0.4
Repetition Rate (max), kHz	70	50	40	25	10	1	1	1	100
Beam Profile	$M^2 \leq 1.1$								
Pulse Spectral Structure	Single longitudinal mode								
Polarization Ratio	> 100 : 1								
Beam Waist Diameter Inside the Laser Head 1/e², μm	25–400								
Pulse Spectrum FWHM, pm	< 5 (near transform limited)								
Pulse to Pulse Energy Stability RMS	< 0.4								
Power Stability Over Six Hours	< ±1.5%								
External Power Supply Voltage, V AC	100–240								
Operating Temperature, °C	15–40 (non confencing)								
Interfaces	USB, External Trigger (TTL rising edge) 1 Hz–max repetition rate								
Laser Head Dimensions:									
Diameter, mm	25								
Length, mm	44.5								
Warranty	12 months or 5000 hours whichever occurs first								
Laser Head Cooling	Radiator: 12LGL2-25 included								
Laser Controller Cooling	Included								

* *Each Standa STA-01 laser is equipped with proper heatsink by default. STA-01-8 optionally.*

** *Laser Head may have different package. Contact STANDA for more detailed information.*

Specifications are subject to changes without advance notice.

Ask Standa for any SLM microlaser from 100 ps to 3 ns.

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Second and Third Harmonic Generators

STA-01SH
STA-01TH

Without compromising their compactness and beam quality the STA-01 series lasers can be equipped with second and third harmonic generation crystals for nonlinear frequency conversion. STANDA can offer green and UV lasers with 532 and 355 nm wavelengths accordingly.

SPECIFICATIONS

Models *	**STA-01SH-1**	**STA-01SH-2**	**STA-01SH-3**	**STA-01SH-4**	**STA-01SH-5****	**STA-01TH-1****	**STA-01TH-2****	**STA-01TH-3****
Wavelength, nm	**532**					**355**		
Average Output Power (max), mW	40	25	50	20	100	25	35	50
Pulse Energy, μJ	4	5	50	0.2	100	2.5	3.5	50
Pulse Width (FWHM), ns	0.5	< 0.7	0.5	0.5	0.5	0.4	0.5	0.8
Repetition Rate (max), kHz	10	5	1	100	1	10	10	1
Beam Profile	$M^2 \leq 1.2$							
Pulse Spectral Structure	Single longitudinal mode							
Polarization Ratio	> 100 : 1							
Beam Waist Diameter Inside the Laser Head $1/e^2$, μm	25–400							
Warranty	12 months or 5000 hours whichever occurs first							
Laser Head Cooling	Radiator: 12LGL2-25 included							
Laser Controller Cooling	included							

* *Each Standa STA-01 laser is equipped with proper heatsink by default.*

** *Laser Head may have different package. Contact STANDA for more detailed information.*

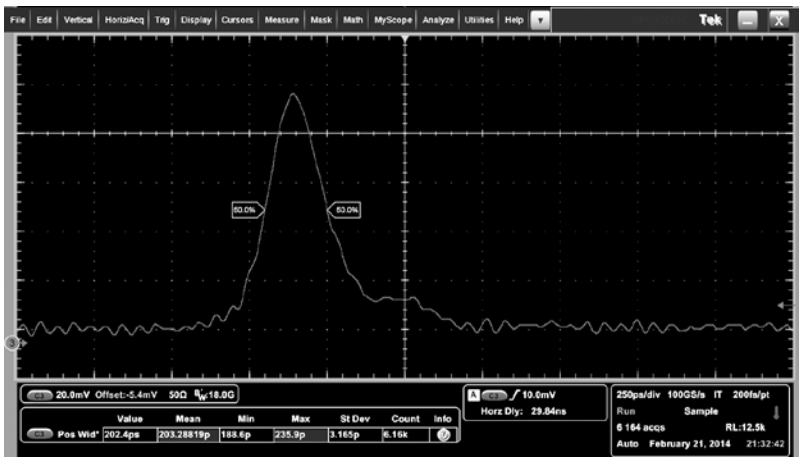
Specifications are subject to changes without advance notice.

Almost every Standa laser can be converted to SHG and THG, please contact Standa for more information.

Non-standard Lasers

STA-01-X

STANDA Laser engineers always seek new challenges. Inquiries for lasers not in the standard catalogue list are always interesting for STANDA team. Thanks to customer inquiries, over 15 years STANDA has produced multiple laser systems designed to meet most challenging demands.



STA-01-6 model with pulse duration ~200 ps

Sub-nanosecond Miniature Master Oscillator Power Amplifier

STA-01-MOPA

A number of applications like high precision ranging and imaging, LIDAR, micro-materials processing, UV spectroscopy in chemistry and biochemistry will benefit from energetic (300–600 μJ) high beam quality sub-nanosecond (~200 ps) laser pulses. To address the needs of these applications the new MOPA microlasers from STANDA utilize Master Oscillator Power Amplifier platform that combines company's renowned STA-01 microlaser oscillators together with a highly efficient amplifying stage. Due to the MOPA configuration the unique spatial and temporal characteristics of the microlasers are preserved while their output power is raised to the multiwatt level. All Master Oscillators as well as Power Amplifiers are produced at Standa facilities.

APPLICATIONS

- Marking
- Biomedical
- LIDAR and Laser Ranging
- Micro dissection
- Material processing
- TiSa, OPO pumping
- Spectroscopy (LIBS, LIPS and PIV)
- Nonlinear Optics (Harmonics and Supercontinuum Generation)
- SiC, Diamond other hard materials drilling
- Sensing and Monitoring
- Semiconductor Inspection
- MALDI-TOF
- Laser Induced Fluorescence (LIF)
- Micromachining
- Photoacoustic spectroscopy

SPECIFICATIONS

Models	STA-01-MOPA-10-2700-900	STA-01-MOPA-50-2500-500	STA-01-MOPA-50-5000-500	STA-01-MOPA-1-150-200	STA-01-MOPA-1-400-200	STA-01-MOPA-1-400-350	STA-01-MOPA-1-600-350
Wavelength, nm	**1064**						
Average Output Power (max), mW	> 2700	> 2500	> 5000	> 150	> 400	> 400	> 600
Pulse Energy, μJ	> 270	> 50	> 100	> 150	> 400	> 400	> 600
Pulse Width (FWHM), ps	800–900	500		200		350	
Repetition Rate (max), kHz	10	50		1		1	
Peak Power, MW	up to 2						
Pulse Spectral Structure	SLM						
Spatial Mode	TEM_{00}						
Beam propagation Factor	$M^2 < 1.3$						
Polarization Ratio (linear)	> 100:1						
Power Stability RMS	< 1 %						
Beam Divergence (1/e², full angle), mrad	< 10						
Operating Voltage, V (AC)	100–230						
Power Consumption, W	200–300						
Operating Temperature, ºC	20–35						
Interfaces	USB, External Trigger (TTL rising edge)						
Dimensions of Laser Head, mm	79(W) × 37.5(H) × 96(L)						
Dimensions of Controller, mm	471(W) × 157(H) × 458(L)						
Warranty	12 months						
Thermal Resistance, K/W	≤ 0.05						
Laser Head Cooling	Laser Head Cooling system is mandatory. According to the laser model up to 50 W heat dissipation is necessary maintaining the laser head temperature below 35 ºC. STANDA recommends 12WSC1 Cooling System.						
Laser Controller Cooling	Air cooled	Air cooled	Requires 12WSC1*	Air cooled	Air cooled	Air cooled	Air cooled

** Requires 12WSC1 Cooling System (new MOPA-2E controllers air cooled).*

Specifications are subject to changes without advance notice.

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Second and Third Harmonic Generators

STA-01-MOPA-SH
STA-01-MOPA-TH

Without compromising their compactness and beam quality the STA-01-MOPA series lasers can be equipped with second and third harmonic generation crystals for nonlinear frequency conversion. STANDA can offer green and UV lasers with 532 and 355 nm wavelengths accordingly.

SPECIFICATIONS

Models	**STA-01-MOPA-SH-10-1500-800**	**STA-01-MOPA-SH-50-1200-400**	**STA-01-MOPA-SH-50-2500-400**	**STA-01-MOPA-SH-1-80-200**	**STA-01-MOPA-SH-1-200-200**	**STA-01-MOPA-SH-1-200-300**	**STA-01-MOPA-SH-1-300-300**
Wavelength, nm	**532**						
Average Output Power (max), mW	> 1500	> 1200	> 2500	> 80	> 200	> 200	> 300
Pulse Energy, μJ	> 150	> 24	> 50	> 80	> 200	> 200	> 300
Pulse Width (FWHM), ps	700–800	400		200		350	
Repetition Rate (max), kHz	10	50		1		1	
Peak Power, MW	up to 1						
Pulse Spectral Structure	SLM						
Spatial Mode	TEM_{00}						
Beam propagation Factor	$M^2 < 1.3$						
Polarization Ratio (linear)	> 100:1						
Power Stability RMS	< 1 %						
Beam Divergence ($1/e^2$, full angle), mrad	< 6						
Operating Voltage, V (AC)	100–230						
Power Consumption, W	200–300						
Operating Temperature, ºC	20–35						
Interfaces	USB, External Trigger (TTL rising edge)						
Dimensions of Laser Head, mm	79(W) × 37.5(H) × 116(L)						
Dimensions of Controller, mm	471(W) × 157(H) × 458(L)						
Warranty	12 months						
Thermal Resistance, K/W	≤ 0.05						
Laser Head Cooling	Laser Head Cooling system is mandatory. According to the laser model up to 50 W heat dissipation is necessary maintaining the laser head temperature below 35 ºC. STANDA recommends 12WSC1 Cooling System.						
Laser Controller Cooling	Air cooled	Air cooled	Requires 12WSC1*	Air cooled	Air cooled	Air cooled	Air cooled

** Requires 12WSC1 Cooling System (new MOPA-2E controllers air cooled).*

Specifications are subject to changes without advance notice.

Actively Q-switched is available, please visit www.standa.Lt for more information.

Ask Standa for your MOPA parameters.

MODEL NAME EXPLANATION

STA-01-MOPA-**SH**-**XX**-**YY**-**ZZ**

Harmonic
SH - second harmonic (**532** nm)
TH - third harmonic (**355** nm)

Pulse repetition rate
10 – Repetition Rate (max) 10 kHz
50 – Repetition Rate (max) 50 kHz

Pulse Width
200 - Pulse width 200 ps
400 - Pulse width 400 ps

Average Power
1500 - Average Power 1500 mW
2500 - Average Power 2500 mW

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SPECIFICATIONS

Models	STA-01-MOPA-TH-10-700-700	STA-01-MOPA-TH-50-700-400	STA-01-MOPA-TH-50-1200-400	STA-01-MOPA-TH-1-40-200	STA-01-MOPA-TH-1-100-200	STA-01-MOPA-TH-1-100-300	STA-01-MOPA-TH-1-200-300
Wavelength, nm	**355**						
Average Output Power (max), mW	> 700	> 700	> 1200	> 40	> 100	> 100	> 200
Pulse Energy, μJ	> 70	> 14	> 24	> 40	> 100	> 100	> 200
Pulse Width (FWHM), ps	600–700	400		200		300	
Repetition Rate (max), kHz	10	50		1		1	
Peak Power, MW	up to 0.7						
Pulse Spectral Structure	SLM						
Spatial Mode	TEM_{00}						
Beam propagation Factor	$M^2 < 1.3$						
Polarization Ratio (linear)	> 100:1						
Power Stability RMS	< 1 %						
Beam Divergence (1/e^2, full angle), mrad	< 1						
Operating Voltage, V (AC)	100–230						
Power Consumption, W	200–300						
Operating Temperature, °C	20–35						
Interfaces	USB, External Trigger (TTL rising edge)						
Dimensions of Laser Head, mm	79(W) × 37.5(H) × 141(L)						
Dimensions of Controller, mm	471(W) × 157(H) × 458(L)						
Warranty	12 months						
Thermal Resistance, K/W	≤ 0.05						
Laser Head Cooling	Laser Head Cooling system is mandatory. According to the laser model up to 50 W heat dissipation is necessary maintaining the laser head temperature below 35 °C. STANDA recommends 12WSC1 Cooling System.						
Laser Controller Cooling	Air cooled	Air cooled	Requires 12WSC1*	Air cooled	Air cooled	Air cooled	Air cooled

** Requires 12WSC1 Cooling System (new MOPA-2E controllers air cooled).*

Specifications are subject to changes without advance notice.

Water Cooling System — 12WCS1

Equip laser head with proper cooling equipment. STANDA has specially designed a cooling unit that serves as compact and reliable heat dissipation system.

SPECIFICATIONS

Rated Voltage	DC 12 V ± 10%
Q-max	800 L/hour ± 10%
H-max	4 m ± 10%
Size	75 × 54 × 66 mm
Life Expectancy	50000 hours at 25°C
Noise	24.5 dB
Power Supply Voltage	12 V
Power	3 W
Working Liquid	Distilled water
Thermal Resistance Coefficient of the System	0.05 °/W

Non-standard Lasers — STA-01-X

Due to the MOPA configuration different modifications of output parameters are possible. Contact STANDA directly or find your local STANDA representative if you have laser specification other than given in the table of standard units.

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Self Seeded Sub-ns Actively Q-switched Micro Lasers

STANDA-Q

- **Active Q-switch**
- **Very low timing jitter, PtP < 350 ps**
- **Sub-nanosecond pulses, pulse width < 900 ps**
- **TEM_{00} and SLM, spectral linewidth < 5 pm**
- **Single shot to 10 kHz**
- **Pulse energy ≥ 70 uJ @ 10 kHz ≥ 150 uJ @ 1 kHz**
- **Internal and External Triggering**
- **USB Interface**
- **Monitor Photodiode**
- **Compact, small footprint**

STANDA-Q is actively Q-switched DPSSL series delivering near transform-limited sub-nanosecond pulses at repetition rates from single shot up to 10 kHz with extremely low timing jitter (<350 ps, PtP) and single pulse energy as high as 140 μJ. STANDA-Q produce diffraction limited TEM_{00} beam with M^2<1.2, allowing excellent beam focusability.

SPECIFICATIONS

Model	STANDA-Q1	STANDA-Q10
Wavelength, nm	**1064**	
Pulse Energy, μJ	140	70
Pulse Width (FWHM), ns	0.8	0.9–3
Repetition Rate, Hz	1–1000	1–10000
Timing Jitter (PtP), ps	≤ 350	
Pulse to Pulse Energy Stability (RMS), %	< 3 over 5 hours	
Beam Profile	TEM_{00}	
M^2	< 1.2	
Beam Divergence (1/e^2, full angle), mrad	< 12	
Beam Waist Diameter (1/e^2), μm	200 ± 20	
Pulse Spectral Structure	SLM	
Spectral Linewidth (FWHM), pm	< 3.7	
Polarization Ratio	> 100 : 1, horizontal	
Warm Up Time, min	< 20	
Interfaces	USB, External Trigger (TTL, rising edge)	
Operating Voltage, V AC	110–230	
Dimensions of Laser Head, mm	79 (W) × 39 (H) × 110 (L)	
Dimensions of Controller, mm	223 (W) × 94 (H) × 197 (L)	
Weight of Laser Head, g	750	
Weight of Controller, g	2750	
Laser Head Cooling		
Heat Sink Thermal Resistance, K/W	≤ 0.5	
Laser Controller Cooling	Included	

Specifications are subject to changes without advance notice.

STANDA further refines STANDA-Q platform. Company plans to raise the pulse repetition rates up to 100 kHz in multi longitudinal mode of operation.

STANDA kindly welcomes all interested customers to join development process. For more information please visit www.standa.lt

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Second and Third Harmonic Generators

STANDA-Q-SH
STANDA-Q-TH

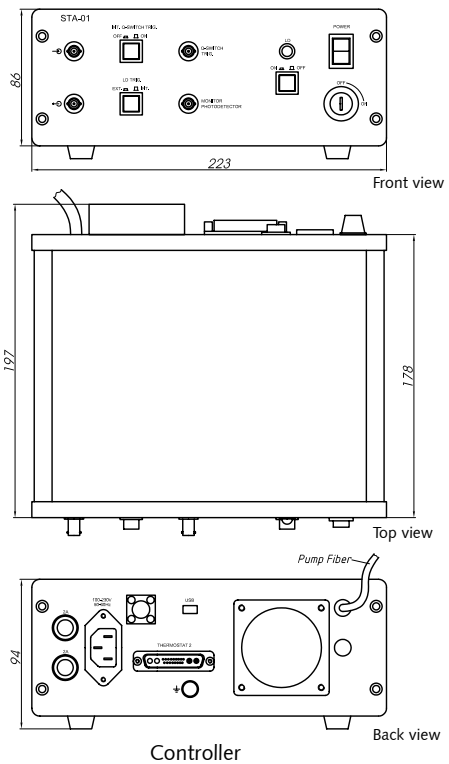
Without compromising compactness and beam quality STANDA-Q series lasers can be equipped with second and third harmonic generation crystals for nonlinear frequency conversion. STANDA can offer green and UV actively Q-switched lasers with 532 and 355 nm wavelengths accordingly.

SPECIFICATIONS

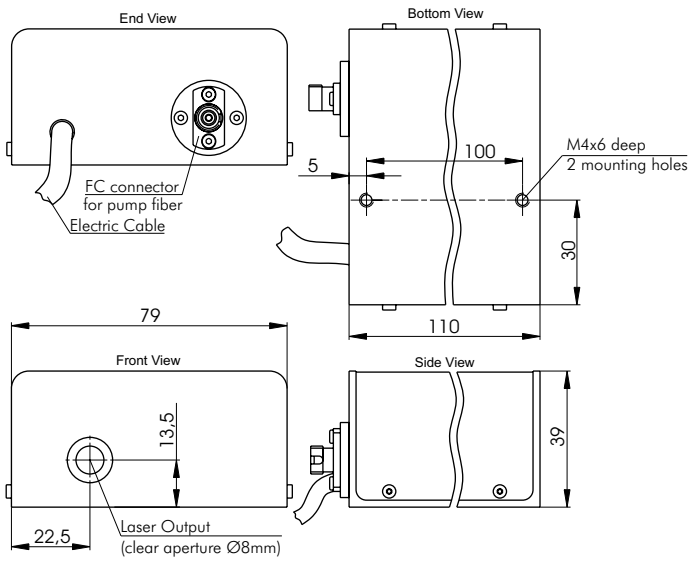
Model	STANDA-Q1-SH	STANDA-Q10-SH	STANDA-Q1-TH	STANDA-Q10-TH
Wavelength, nm	**532**		**355**	
Pulse Energy, μJ	70	35	35	18
Pulse Width (FWHM), ns	< 0.8	0.9–3	< 0.8	0.9–3
Repetition Rate, Hz	1–1000	1–10000	1–1000	1–10000
Timing Jitter (PtP), ps	≤ 350			
Pulse to Pulse Energy Stability (RMS), %	< 3 over 5 hours			
Beam Profile	TEM_{00}			
M^2	< 1.3			
Beam Divergence (1/e², full angle), mrad	< 5			
Beam Waist Diameter (1/e²), μm	200 ± 20			
Pulse Spectral Structure	SLM			
Spectral Linewidth (FWHM), pm	< 3.7			
Polarization Ratio	> 100 : 1, horizontal			
Warm Up Time, min	< 20			
Interfaces	USB, External Trigger (TTL, rising edge)			
Operating Voltage, V AC	110–230			
Laser Head Cooling				
Heat Sink Thermal Resistance, K/W	≤ 0.5			
Laser Controller Cooling	Included			

Specifications are subject to changes without advance notice.

Controller for STANDA-Q Lasers



Controller



Laser head

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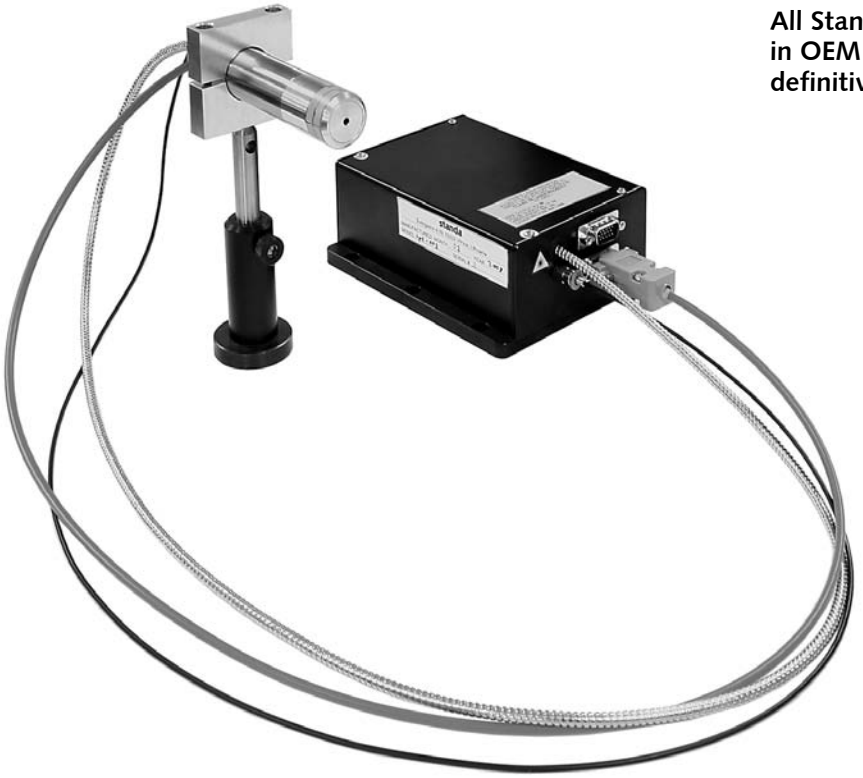
Diode Pumped Solid-State Micro Laser STA-01 OEM Series

STA-01-OEM



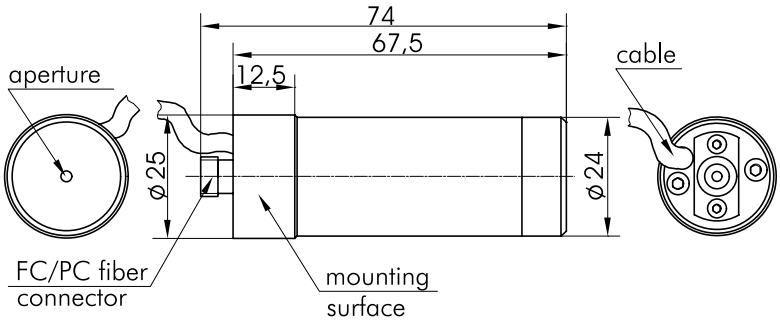
All Standa lasers can be manufactured in OEM modification preserving the definitive features of STA-01 family :

- **Cost effective 1064 nm output wavelength**
- **High output energy and peak power**
- **High repetition rates**
- **High beam quality ($M^2 < 1.2$)**
- **Subnanosecond pulses**
- **High reliability and stability**
- **Single Longitudinal Mode**
- **Maintenance free**
- **Small footprint**

The STA-01-OEM laser family is orientated towards interests of integrators and developers. The constant demand from customers for more compact and cost efficient lasers lead Standa to produce this family of lasers that would serve as compact and reliable substitute for bench top STA-01 family of lasers.

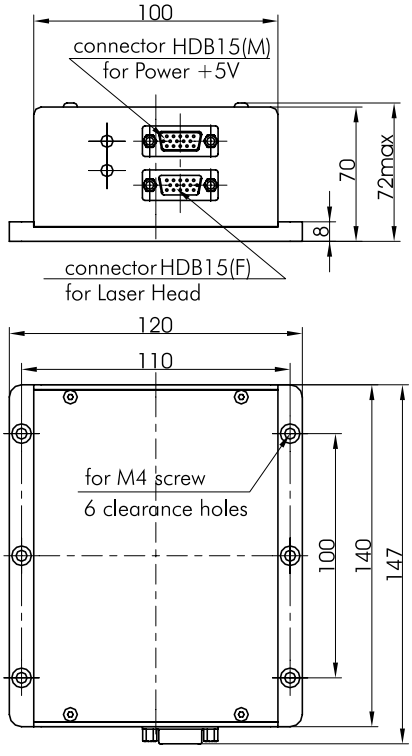
The **OEM controller** has been modified to be more compact which allows easy and simple integration of the laser. External triggering and providing of synchro pulses are standard features and are included by default. USB interface allows full computer control. Laser controller requires external power supply providing 5V.

Contact Standa to find out more.



laser head

Image above displays **STA-01-9-OEM** model that was made for laser projection applications.



power supply

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Visualizer

10VIZ-35

- **High laser radiation sensitivity**
- **Resistant to mechanical wear**
- **Conveniently universal**
- **Low cost**

Standa laser beam **visualizers** provide luminescent conversion of the **invisible IR** and **UV** light to the red, the dependence of the luminescent emission intensity on the visualized light intensity is nonlinear.

Visualizers do not require electrical power.

SPECIFICATIONS	**10VIZ-35-IR**	**10VIZ-35-UVIR**	**10VIZ-35-UVIR-IR**
Spectral range, nm	880-1070	190-1090 + 1470-1600	190-1090 + 1470-1600/880-1070
Emitted light colour	Green	Red	Red/Green
Threshold sensitivity, W/cm^2	0.02	0.01	0.01/0.02
Working aperture, mm	35	35	35

Ordering information

10VIZ-35-IR - converts pulsed and CW lasers near IR radiation to visible green light. The visualizer is made of special ceramic with anti-stokes luminophores.

10VIZ-35-UVIR - visualizer IR and UV coherent and incoherent radiation from various light sources, lasers and others. Made of rare-earth materials, it is an eco-friendly ceramic tablet.

10VIZ-35-UVIR-IR - visualizer combines UVIR and IR in one for user convenience. One side visualizes UV-IRV radiation by emitting red color and the other side visualizes IR radiation by emitting green color.

Universal Magnetic Drive Micropump with Inner Reservoir

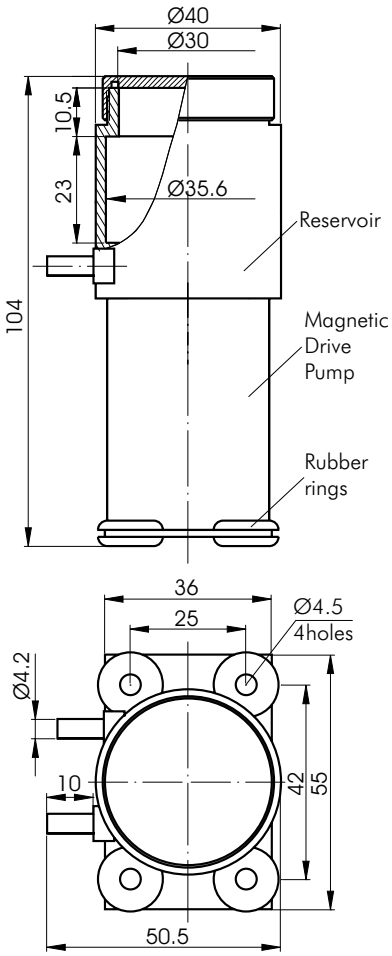
10MPIR1

- **Magnetic Drive Pump**
- **Variable Speed Drive**
- **Inner Reservoir**
- **Chemical inertness**
- **Wetted parts: teflon, nylon, polyamide**
- **Hermetical**

Universal Magnetic Drive Micropump with Inner Reservoir 10MPIR - 1 is used in **dye-lasers** and **picosecond lasers** to pump the **mode-locking dyes**. Also it is used for cooling of the **thermostat's micro-head**. The size of the reservoir could be changed according the customer's request.

SPECIFICATIONS

Input electricity	
Voltage, U	3-12 V
Current, I	1 A
Sleeve	
inner diameter	∅ 4 mm
Column height	
of fluid (water)	1 meter (12 V)
Weight	0.18 kg



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Air-cooled Beam Dump

10BD01

SPECIFICATIONS

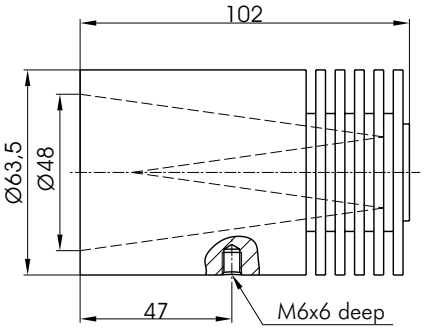
Wavelength range	0.1-30 μm
Max. Handling power	50 W
Max. Energy	2.5 J (20 Hz)
Acceptance aperture	48 mm (1.89")
Laser type	pulsed, CW

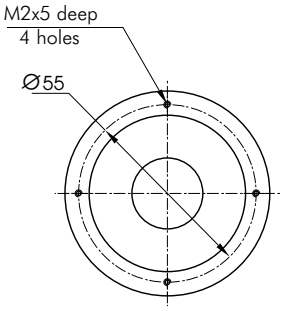
Beam Dump 10BD01 is designed to block a **CW** or a pulsed laser beam.

It can be used on beams of upto **50 Watts** in the wavelength range from **0.1 to 30 μm**.

The design is such, that, even if the non-reflective coating is damaged by high intensity pulses, there's **no backward reflection**.

Weight **0.57 kg**



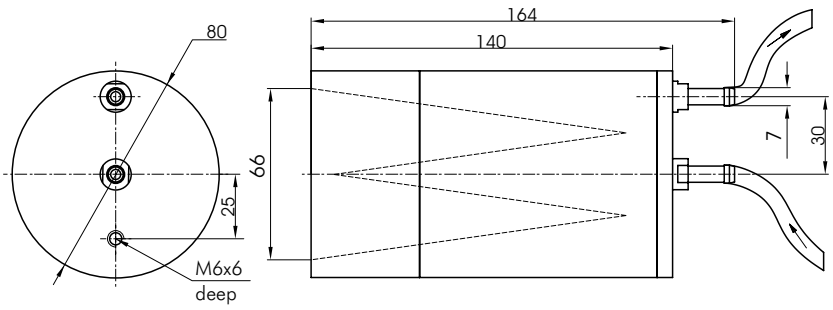


Water-cooled Beam Dump

10BDWC01-2

SPECIFICATIONS

Wavelength range	0.1-30 μm
Max. Handling power	1 kW
Max. Energy	50 J (20 Hz)
Acceptance aperture	48 mm (1.89")
Laser type	pulsed, CW



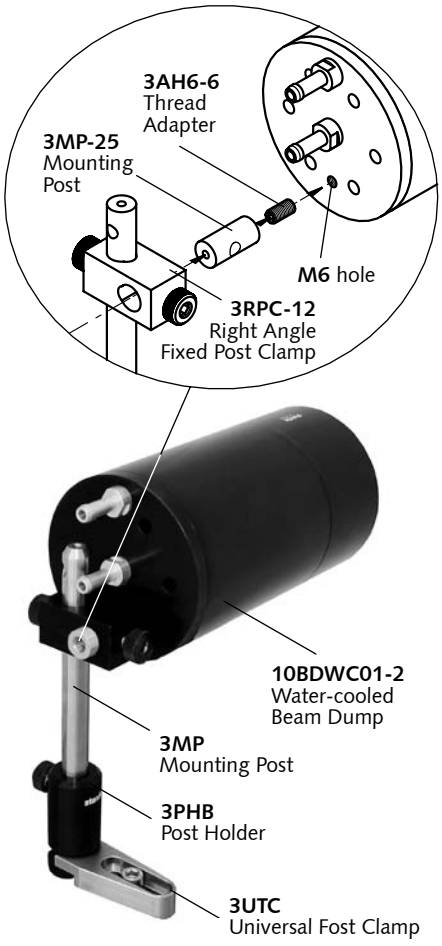
Beam Dump 10BDWC01 blocks a **CW** or a pulsed laser beam. It is mainly intended for beams **2 inch** wide.

Water absorbs much energy. So, the dump is best suited for beams of up to **1 kWatts**. The wavelength range is from **0.1 to 30 μm**.

Even if the non-reflective coating is damaged by high intensity pulses, the beam is not **reflected back** into your optical scheme.

The dump mounts on an **M6** hole on its back.

Weight **1.2 kg**



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Protective Glasses

Spectacles and Goggle type

Standard models in this table are **Spectacles** type.

The same models are also available as **Goggle** type glasses. Goggle type models are specified by appending letter **"G"** to the model name, e.g. CTL-2133G, CTL-2148G.

Working with lasers is entirely safe as long as you apply adequate protection to your eyesight. Otherwise, laser beam impact can induce severe, and often irreversible damage to retina or cornea. Eye injuries caused by incidental and reflected laser beams are increasing due to the growing use of lasers in industrial, scientific, and medical applications.

Take advantage of our professional anti-laser spectacles and goggles. They are comfortable, absolutely safe (if selected properly), and they provide excellent visibility.

Our glasses give sufficient eye protection thanks to special glass filters that attenuate the laser radiation from 100 times to over 10 billion times. The glasses effectively absorb laser radiation, while allowing maximum of harmless light to pass through.

The filters are colour glass plano lenses. They offer maximum protection, while luminous transmittance is high. Hence visibility is good. Filter media absorbs energy without creating hazardous reflections. These are not surface-coated absorbers, so they cannot be fragmented by scratching them off.

We make efforts to meet our customer individual needs and offer both narrow band and broad spectrum glasses.

The narrow band eye-wear is for those who require protection against specific wavelengths.

The broad spectrum filters are for protection against lasers that emit light at two or more wavelengths. All multi-band eye-wear protects against the specific wavelength indicated, and against any other laser radiation in the ranges covered by the filter according to the diagrams.

Frames are perfectly ergonomic. The temples of spectacles have fine adjustment of length for a match to any face. Goggles can be worn over prescription glasses. Both types have air vents to prevent fogging. Light cannot enter the vents.

Our clients have already recognized advantages of our production based on high quality, reasonable prices and continuous innovation.

You've got only one pair of eyes

Selecting appropriate laser eye protection

The choice of the most suitable safety spectacles and goggles must be done in compliance with standard **EN 166**, **EN 207** and **EN 208**. The use of unsuitable eye-wear is one of the most frequent causes of eye injury. So, please consider the following as a guide.

For a correct judgement of optical hazards, it is important to know some fundamental parameters defined in the standards of eye-protection against laser radiation.

Laser wavelength

Determine all wavelengths used in your application, to protect against with one pair of glasses (consider tunable systems or multiple lasers).

Laser mode

Check your laser output, if it is continuous, pulsed or repetitively pulsed. In case of pulse mode, additionally determine time duration to find out I, R or M type of laser.

Output parameters

For continuous wave lasers check the maximum output power and beam diameter to calculate the power density (W/m^2).

For pulsed lasers determine the maximum energy, the beam diameter, and the frequency (if applicable) to calculate the energy density (J/m^2) or power density (for M type).

See tables and models on the next page

Stability to radiation

This is the minimum power (or energy) density value that the protection filter of set class must comply with. Find the stability to laser radiation (the adequate for full protection or alignment) entry in the tables – the closest greater value to your calculation. The entry identifies the spectral transmittance, and the optical density (scale number).

Spectral transmittance and optical density

Spectral transmittance is the ratio between the power (or energy) transmitted by the filter and the incident power. The transmittance values, which vary from 10^{-1} to 10^{-10} (i.e. optical density from 1 to 10), correspond to ten levels of eye protection: L1 to L10.

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European standard EN 207 – classification and specifications of filters and eye protection against laser radiation

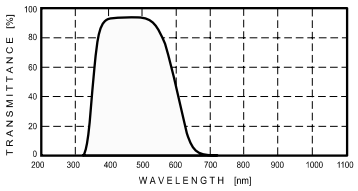
Optical density Scale number	Spectral transmittance	Conditions of stability to laser radiation								
		180nm ≤ λ ≤ 315nm			315nm ≤ λ ≤ 1400nm			1400nm ≤ λ ≤ 10^6nm		
		D W/m²	I,R J/m²	M W/m²	D W/m²	I,R J/m²	M W/m²	D W/m²	I,R J/m²	M W/m²
L1	10^{-1}	10^{-2}	3×10^{2}	3×10^{11}	10^{2}	5×10^{-2}	5×10^{7}	10^{4}	10^{3}	10^{12}
L2	10^{-2}	10^{-2}	3×10^{3}	3×10^{12}	10^{3}	5×10^{-1}	5×10^{8}	10^{5}	10^{4}	10^{13}
L3	10^{-3}	1	3×10^{4}	3×10^{13}	10^{4}	5	5×10^{9}	10^{6}	10^{5}	10^{14}
L4	10^{-4}	10	3×10^{5}	3×10^{14}	10^{5}	50	5×10^{10}	10^{7}	10^{6}	10^{15}
L5	10^{-5}	10^{2}	3×10^{6}	3×10^{15}	10^{6}	5×10^{2}	5×10^{11}	10^{8}	10^{7}	10^{16}
L6	10^{-6}	10^{3}	3×10^{7}	3×10^{16}	10^{7}	5×10^{3}	5×10^{12}	10^{9}	10^{8}	10^{17}
L7	10^{-7}	10^{4}	3×10^{8}	3×10^{17}	10^{8}	5×10^{4}	5×10^{13}	10^{10}	10^{9}	10^{18}
L8	10^{-8}	10^{5}	3×10^{9}	3×10^{18}	10^{9}	3×10^{5}	5×10^{14}	10^{11}	10^{10}	10^{19}
L9	10^{-9}	10^{6}	3×10^{10}	3×10^{19}	10^{10}	5×10^{6}	5×10^{15}	10^{12}	10^{11}	10^{20}
L10	10^{-10}	10^{7}	3×10^{11}	3×10^{20}	10^{11}	5×10^{7}	5×10^{16}	10^{13}	10^{12}	10^{21}

D – continuous wave lasers
I – pulsed lasers (10^{-4}s<t<10^{-1}s)
R – giant pulsed lasers (Q – switching; 10^{-9}s<t<10^{-7}s)
M – giant pulsed lasers (Mode – locking; t<10^{-9}s)

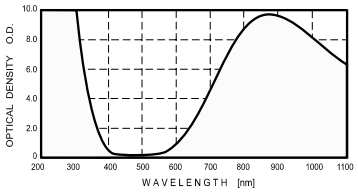
European standard EN 208 – classification of eye protection filter for laser alignment – 400nm≤λ≤700nm

Optical density scale number	Spectral transmittance	Conditions of stability to laser radiation	
		Power density (W/m²)	Energy density (J/m²)
R1	10^{-1}	10^{4}	2
R2	10^{-2}	10^{5}	20
R3	10^{-3}	10^{6}	200
R4	10^{-4}	10^{7}	2000
R5	10^{-5}	10^{8}	20000

Model CTL-2102 CE



Colour of filters: light blue

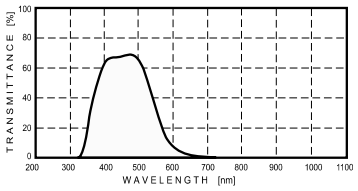


Application:
Diode lasers
Ruby laser
Ti: Saphire lasers
Nd: YAG laser

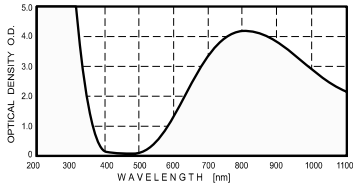
Luminous transmittance (380÷780 nm): T_c=58%

Wavelength [nm]	670	694	780	830	904	960	1064
Optical density	3	>4	8	>9	>9	>8	>6

Model CTL-2109 CE



Colour of filters: blue

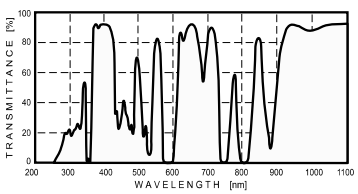


Application:
Diode lasers
Ruby laser
He-Ne laser
Ti: Saphire lasers

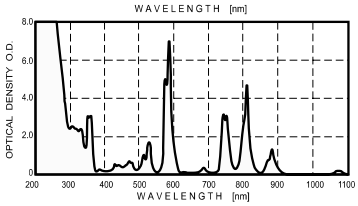
Luminous transmittance (380÷780 nm): T_c=38%

Wavelength [nm]	633	670	694	780	830	904	960
Optical density	>2	3	>3	>4	>4	>3	>3

Model CTL-2135



Colour of filters: light green-violet



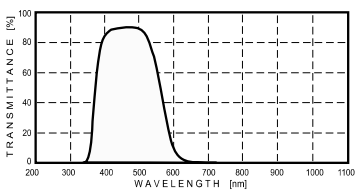
Application:
Copper-vapour laser
Dye lasers

Luminous transmittance (380÷780 nm): T_c=53%

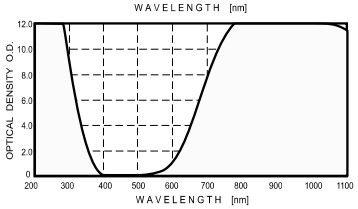
Wavelength [nm]	577	585	805	810
Optical density	>5	7	>4	>4

Wavelength [nm]	458	515	633	670
Transmittance [%]	40	19	90	86

Model CTL-2137 CE



Colour of filters: blue



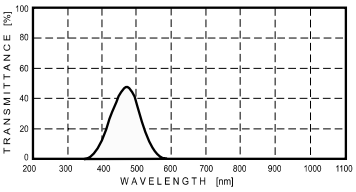
Application:
Diode lasers
Ruby laser
Ti: Saphire lasers
Nd: YAG lasers

Luminous transmittance (380÷780 nm): T_c=53%

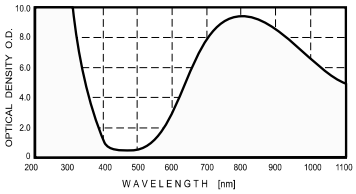
Wavelength [nm]	670	694	780	830	904	1064	1320
Optical density	>6	>8	>12	>12	>12	>12	>5

If our range does not include what you require, we can make special filters on request.

Model CTL-2114



Colour of filters: dark blue

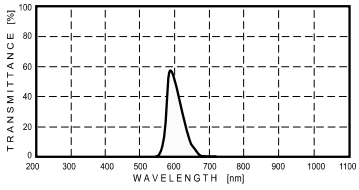


Application:
He-Ne laser
Diode lasers
Gold-vapour laser
Krypton-ion laser

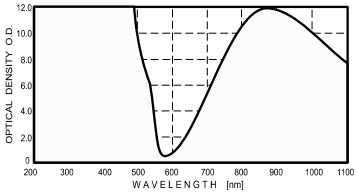
Luminous transmittance (380÷780 nm): T_c=22%

Wavelength [nm]	628	633	635	647	670
Optical density	5	>5	>5	>5	>7

Model CTL-2139G



Colour of filters: dark green

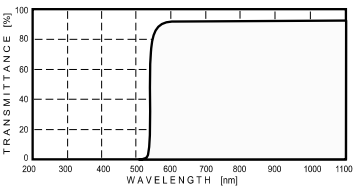


Application:
Nd:YAG and its harmonics
Excimer lasers
Nitrogen lasers
He-Cd lasers
Argon-ion lasers

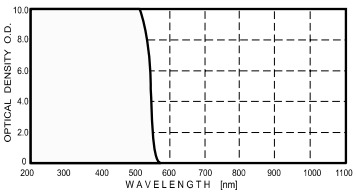
Luminous transmittance (380÷780 nm): T_c=32%

Wavelength [nm]	<190	488	515	532	670	694	904	1064
Optical density	>12	>12	>7	>6	>4	>5	>11	>8

Model CTL-2148 CE



Colour of filters: orange

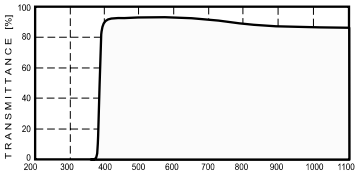


Application:
Excimer lasers
Nitrogen lasers
He-Cd lasers
Nd:YAG with high frequency
Argon-ion lasers

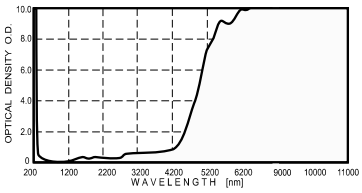
Luminous transmittance (380÷780 nm): T_c=60%

Wavelength [nm]	<190	266	325	488	515	532
Optical density	>12	>12	>12	>12	>7	>6

Model CTL-2133 CE



Colour of filters: colourless

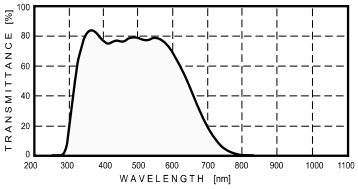


Application:
CO_2 lasers

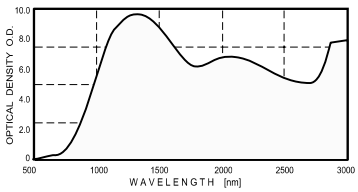
Luminous transmittance (380÷780 nm): T_c=90%

Wavelength [nm]	10600
Optical density	>15

Model CTL-2142 CE



Colour of filters: light green



Application:
Semiconductor lasers
Nd: YAG lasers
CTH: YAG lasers
Er: YAG lasers

Luminous transmittance (380÷780 nm): T_c=68%

Wavelength [nm]	904	1064	1300	1320	1440	2100	2940
Optical density	>5	>7	>8	>8	>8	>6	>8

e-mail: sales@standa.lt www.standa.lt
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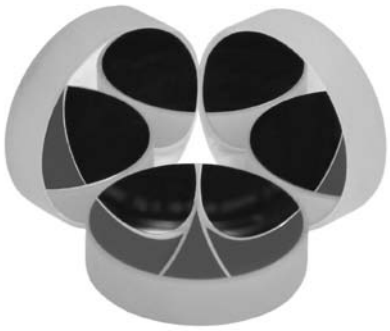
Protected Aluminum/Gold/Silver Mirrors

14AM • 14GM • 14SM



- **Aluminum, gold and silver coated mirrors**
- **Effective for applications requiring high reflectance over a very broad spectral range**
- **Protective coating extends mirror life**
- **Different sizes**
- **Any angle of incidence and polarization**

Standa offers round protected **aluminum (14AM)**, **gold (14GM)** and **silver (14SM)** coated **mirrors** of different sizes. Rectangular shape mirrors are also available upon request. **Aluminum** coated **mirrors** are low cost solution for applications requiring high reflectance **in VIS-IR range**, **gold** coated **mirrors** are most effective for applications requiring high reflectance in **near IR** and **IR range**, **silver** coated **mirrors – in VIS range**. A protective layer of dielectric material protects aluminum, gold or silver coating of the mirror and extends mirror life.

We do not recommend to use metallic mirrors in polarization sensitive applications, as metallic coatings modify the polarization state of incident beam.

Standa provides various optical mounts and positioners, for instance popular **5BM131**, **5MBM24** or it's motorized version – **8MBM24** for offered mirrors.

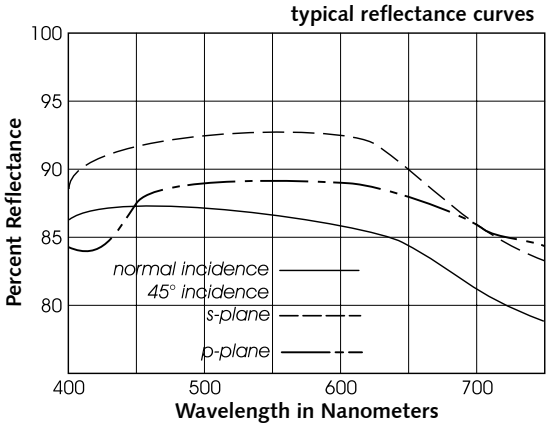
Examples of resulting codes for ordering:

14AM-05

Mirror type / Mirror dimensions

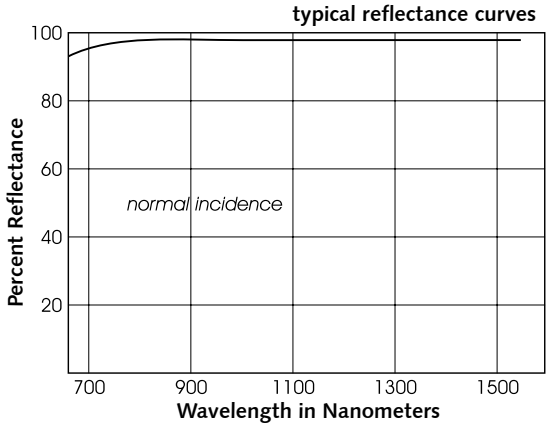
Mirror Type	Mirror Dimensions
AM - aluminum mirror	05 - Ø12.7 mm
GM - gold mirror	1 - Ø25.4 mm
SM - silver mirror	2 - Ø50.8 mm
	3 - Ø76.2 mm
	4 - 101.6 mm

typical reflectance curves



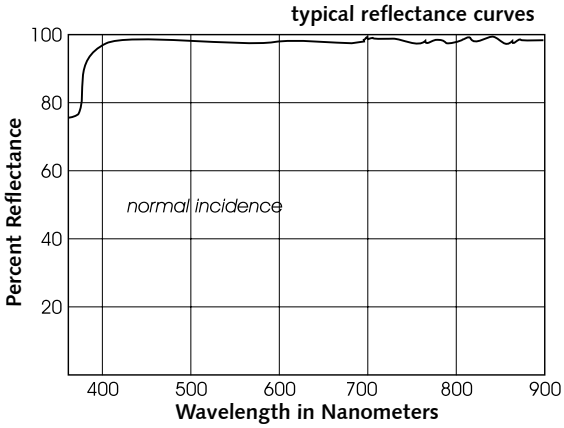
14AM

typical reflectance curves



14GM

typical reflectance curves



14SM

SPECIFICATIONS	14AM	14GM	14SM
Material		BK7	
S1 surface flatness		L/10@633 nm	
S1 surface quality		20/10 scr&dig	
S2 surface quality		commercial polish	
Diameter tolerance		mirror size dependent	
Thickness tolerance		mirror size dependent	
R_{avg} >	86%	98%	93%
Wavelength range	0.2-10 μm	0.6-10 μm	0.4-10 μm
Damage threshold (estimated)	10 mJ/cm^2 @ 1064 nm, 10 ns	0.3 J/cm^2 @ 1064 nm, 10 ns	0.5 J/cm^2 @ 1064 nm, 10 ns

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Fresnel Rhomb Retarders (Achromatic) 10FR

10FR with a protective cap

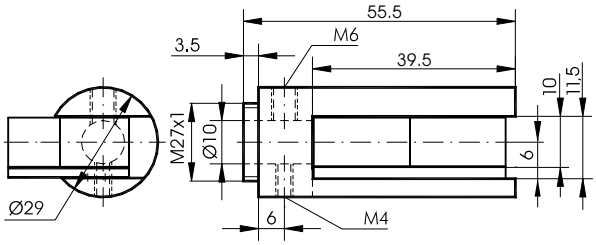
SPECIFICATIONS

Material	BK7 or UVFS
Beam deviation	≤ 10arcsec
Coating	AR coating
Available wavelength ranges:	
UV	260 – 400 nm;
VIS	400 – 700 nm;
NIR1	700 – 1300 nm;
NIR2	1300 – 1600 nm;

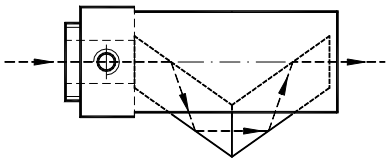
Standa manufactures **Fresnel Rhombs** and mounts for them. **10FR** is a combination of a rhomb with a mount (see drawings). Fresnel Rhombs are made of BK7 crown glass or UV grade fused silica. A **Single Fresnel Rhomb** produces a phase shift of 90° (l/4) due to total internal reflections at two surfaces. A **Double Fresnel Rhomb** produces a phase shift of 180° (l/2) between the components of light polarised perpendicular and parallel to the plane of incidence. It consists of two optically contacted (or air spaced) single Fresnel l/4 Rhombs. The retardation varies only slightly over a relatively wide range of wavelengths. Fresnel Rhombs mounts are cylindrical in shape. The end faces of a Fresnel retarder are adjusted orthogonally to the axis of rotation. The clear aperture of the mount is 10 mm.

There are several ways to mount the 10FR Fresnel rhomb retarder:

- on any adjustable unit (e.g. a stage) by the M6 and M4 tapped holes
- to our Polarizer Holder as 5PH50, 5PH51 or other compatible unit using the M27x1 thread

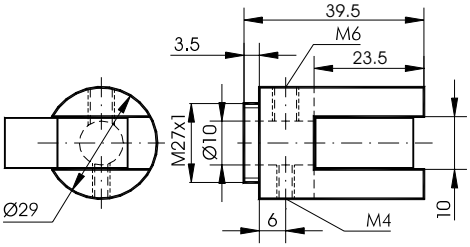


Achromatic λ/2 Fresnel Rhomb Retarder **10FR2**

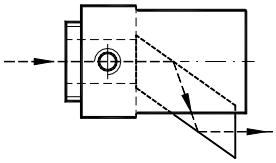


ORDERING INFORMATION

Models	**Retardation**	**Wavelenght range,** nm
10FR1-UV-M27	single (λ/4)	260-400
10FR2-UV-M27	double (λ/2)	260-400
10FR1-VIS-M27	single (λ/4)	400-700
10FR2-VIS-M27	double (λ/2)	400-700
10FR1-NIR1-M27	single (λ/4)	700-1300
10FR2-NIR1-M27	double (λ/2)	700-1300
10FR1-NIR2-M27	single (λ/4)	1300-1600
10FR2-NIR2-M27	double (λ/2)	1300-1600



Achromatic λ/4 Fresnel Rhomb Retarder **10FR1**



Glan Taylor Prism 10GL • 10GP • 10GLS

Optical Quality Natural Calcite
Clear Aperture: 40 mm.

SPECIFICATIONS

Clear aperture, mm	10×10, 12×12, 14×14, 16×16, 19×19
Material	optical quality natural calcite grade "First", "Extra", "Unique"
Wavelength	
UV	220-2300 nm
VIS	350-2300 nm
IR	550-2300 nm
Beam deviation	< 1 arcmin
Full angle field	8° (asymmetrical)
Surface flatness (input and exit faces)	λ/10
Surface quality (input and exit faces)	20/10 scr./dig
Max. power handling	100 MW/cm² ("first"); 200 MW/cm² ("extra"); 500 MW/cm² ("unique")
Housing	black anodized aluminum
Coating	uncoated

e-mail: sales@standa.lt www.standa.lt
Phone: +370-5-2651474 Fax: +370-5-2651483

Zero Order Waveplates

14WPZO

A wave plate works by shifting the phase of the incident light wave between two perpendicular polarization components. A quarter-wave plate creates a quarter wavelength phase shift and can change linearly polarized light to circular polarized and vice versa. Whereas a half-wave plate creates a half wavelength phase shift and rotates the polarization direction of linear polarized light.

Standa offers variety of mounted zero order air-spaced waveplates of different clear aperture size and designed for different wavelengths. Waveplates of other types and dimensions are also available upon request.

SPECIFICATIONS

Material	Quartz
Dimension tolerance	+0.0, -0.2 mm
Surface quality	20-10 s/d
Clear aperture	15, 20mm
Mounting diameter	25+0/0.5 mm
Wavefront distortion	<λ/8 @ 632.8 nm
Retardation tolerance	λ/500
Parallelism	<1 arcsec
AR coating	R<0.2% at stated wavelength
Damage threshold	5 J/cm² 10 ns pulsed @ 1064 nm

Examples of resulting codes for ordering:

14WPZO.4-800-15

Waveplate type / Clear aperture / Wavelength

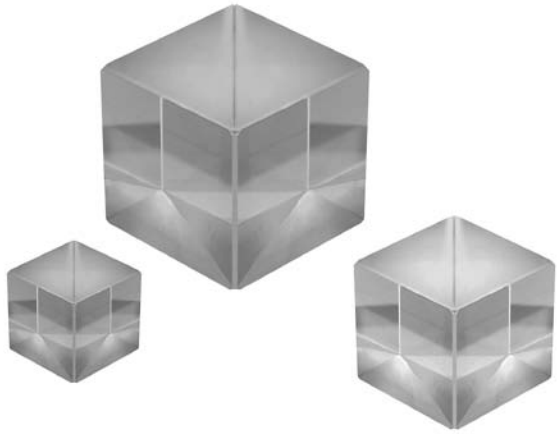
Waveplate
2 - half waveplate
4 - quarter waveplate

Available Standard Wavelength
266, 355, 488, 532, 633, 780, 800, 1064 nm

Clear Aperture
15 mm
20 mm

Polarizing beamsplitter cubes

14PBC



Polarizing beamsplitter cube splits randomly polarized incident beam of light into two orthogonal, linearly polarized components. S-polarized light is reflected at a 90° angle while P-polarized light is transmitted. Each beamsplitter consists of a pair of precision high tolerance right angle prisms cemented together with a dielectric coating on the hypotenuse of one of prisms.

Standa offers variety of polarizing beamsplitter cubes of different dimensions and designed for different wavelengths. Polarizing beamsplitter cubes with broadband coatings and of different dimensions are available upon request.

SPECIFICATIONS

Material	BK7, FS
Surface quality	60-40 s/d
Flatness	λ/4@632.8 nm per 25mm
Extinction ratio	>100:1
Beam deviation	<3 arc minutes
Dimension tolerance	±0.2 mm
Principal transmittance	T_p>95% and T_s<1%
Principal reflectance	R_s>99% and R_p<5%
AR coating	R<0.25% at stated wavelength, both faces
Available wavelengths	266, 355, 488, 532, 633, 780, 800, 1064 nm

Examples of resulting codes for ordering:

14PBC-800-15

Wavelength / Cube side dimensions

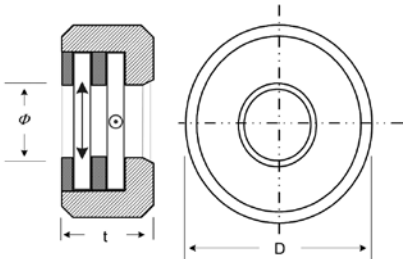
Available Standard Wavelength
266, 355, 488, 532, 633, 780, 800, 1064 nm

Available Standard Dimensions
10x10x10 mm
12.7x12.7x12.7 mm
15x15x15 mm
20x20x20 mm

www.standa.lt
e-mail: sales@standa.lt
Fax: +370-5-2651483
Phone: +370-5-2651474

Achromatic Waveplates

14WPA



- **Operates over Broad Bandwidth wavelength range**
- **We specialize in Air-spaced Achromatic Waveplates**
- **All waveplates are BBAR coated and mounted by default**
- **Custom design waveplates are available in small and mass production quantities**

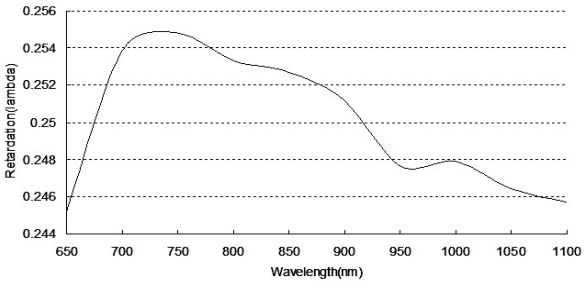
Achromatic waveplate is a pair of crystal quartz and magnesium fluoride plates.

Because of difference in dispersion in these uniaxial positive crystals it is possible to calculate thickness of each plate so that birefringent phase shift in assembly changes very slowly over certain wavelength range. This is a way to obtain achromatic zero order waveplates. Such Achromatic Waveplates are necessary for various devices and may replace a number of ordinary quartz waveplates operating at single wavelength only. We can offer series of achromatic waveplates with phase shifts shown in graphs below.

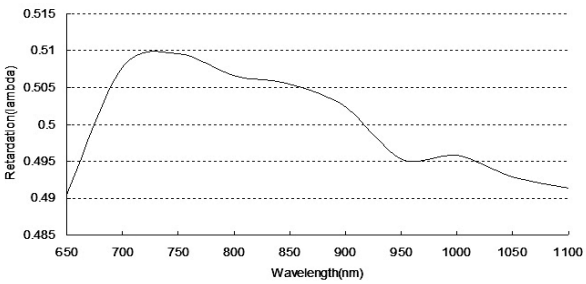
SPECIFICATIONS

Material	Quartz + MgF_2
Dimension Tolerance	+0.0, -0.2 mm
Surface quality	40-20 s/d
Clear Aperture	8, 12, 18 mm
Mounting diameter:	25+0/0.5 mm
Wavefront distortion	λ/4 @ 632.8 nm
Retardation Tolerance	λ/100
Parallelism error	<30 arcsec
AR coatings	Broadband AR coating
Damage threshold	5 J/cm² 10 ns pulsed @ 1064 nm

Typical retardation curves for 650-1100 nm achromatic waveplates



Retardation for **14WPA.4-650-1100-12**



Retardation for **14WPA.2-650-1100-12**

Examples of resulting codes for ordering:

14WPA.2-450-650-8

Waveplate type | Bandwidth | Clear aperture

Waveplate Type
2 - half waveplate
4 - quarter waveplate

Available Standard Bandwidth
450-650; 550-750; 650-1100; 900-2100 nm

Clear Aperture
8, 12, 18 mm

Related Products and Accessories

5PH50
Polarizer Holders

5PH51
Polarizer Holder

5APH59T-1
Adjustable Polarizer Mounts

For detailed information about **Optical Components** look at
www.standaphotonics.com

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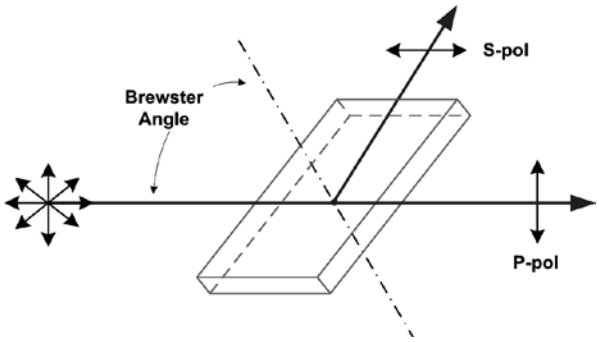
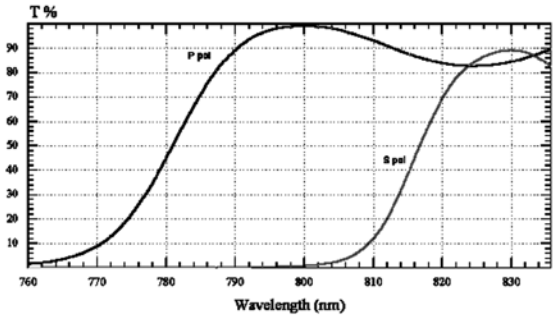
Brewster Type Thin Film Polarizers

14PBT



- **Efficiently separates the s- and p- polarization components**
- **Optimised for popular laser wavelengths**
- **Standard Brewster Thin Film Polarizers available from stock**



Brewster Thin Film polarizers are used for high energy applications.

They have high damage threshold reaching 10 J/cm² @ 1064 nm 8 ns. Brewster polarizers are used as an alternative to Glan-Taylor laser polarizing prisms or cube polarizing beamsplitters. Typically, BK7 or UVFS dielectric coated Brewster Type Thin film polarizers separate the s- and p-polarization components of high energy laser beams and are intended for intra and extra cavity usage. Typical polarization ratio T_p/T_s is 200:1 and it is achieved at 56 ° AOI (Brewster angle). For optimal transmission Brewster Type Thin Film Polarizer should be mounted in an appropriate holder for angular adjustment.

SPECIFICATIONS

Material	BK7, UVFS
Diameter tolerance	+0.0, -0.12 mm
Thickness tolerance	±0.2 mm
Clear aperture	>90%
Surface quality	20-10 scratch & dig
Surface flatness	λ/10 @ 632.8 nm
Parallelism	<30 arcsec
Extinction ratio Tp/Ts	>200:1
Typical Transmission	T_p>95%
Typical Reflection	R_s>99.5%
Laser damage threshold	5 J/cm² 10 ns pulses @ 1064 nm typical

Examples of resulting codes for ordering:

14PBT-266-1

Wavelength / Size

Available Standard Wavelength
266, 343, 355, 400, 515, 532, 780, 800, 940, 9808, 1030, 1064, 1550 nm

Available Standard Sizes
1 - Ø25.4 x 3 mm
2 - Ø50.8 x 8 mm
3 - 20x40x3 mm

Compactible with
Standa Polarizer mounts and holders

Beamsplitter / Mirror Mounts **5BM131** and **5BM141**

4PH132
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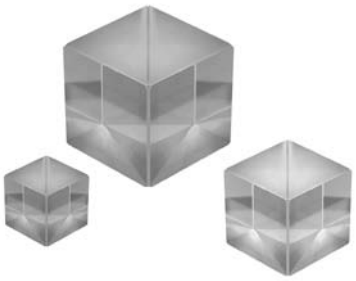

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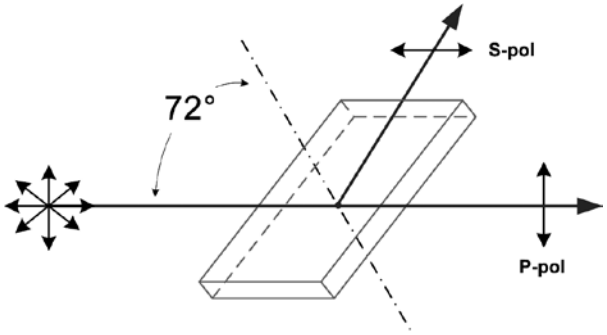
Broadband (Ultrafast) Thin Film Polarizers 14PUF

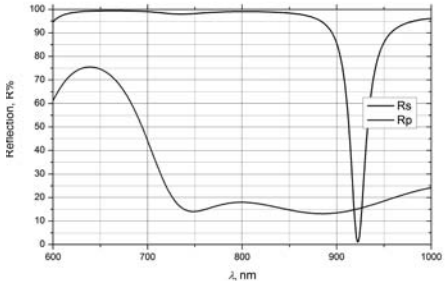


- **Ideal for Femtosecond laser applications due to the low GVD**
- **Works over Broad wavelength range**
- **Separates the s- and p- polarization components**
- **Standard Brewster Thin Film Polarizers available from stock**

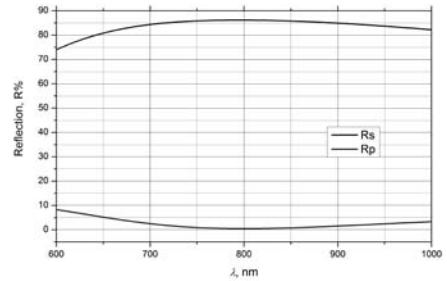
Broadband (Ultrafast) Thin film polarizers are used for femtosecond lasers.

PLEASE NOTE: The optimal working angle is AOI=72° (±2°).

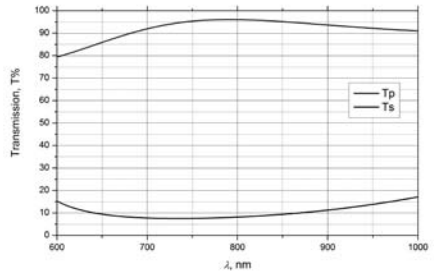
We are offering 4 types of Broadband (Ultrafast) Thin film polarizers. Polarizers work by transmitting p polarization and reflecting s polarization.



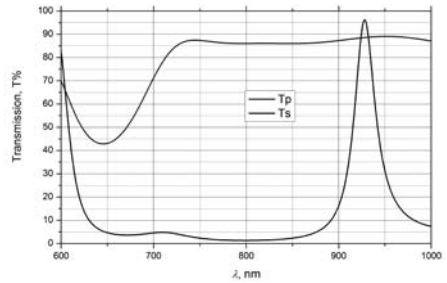
Optimization R1 @ 800 nm



Optimization R2 @ 800 nm



Optimization T1 @ 800 nm



Optimization T2 @ 800 nm

TRANSMISSION POLARIZERS - have polarizing coatings on both sides of polarizer. They can be optimized for highest transmission of p polarization T_p>94% or best contrast of polarizations T_p:T_s>20:1.

REFLECTION POLARIZERS - have polarizing coating on the input face while the output face is AR coated for both s and p polarizations. They can be optimized for highest reflection of s polarization R_s > 98% or best contrast of polarizations R_s:R_p>60:1. Moreover AR coated side of polarizer can have wedge to minimize ghosting. Standard thin film polarizers are designed for optimum performance in the 750 - 850 nm or 980 - 1090 nm. Design of custom wavelength range is also available.

SPECIFICATIONS

Substrate Material	UVFS
Diameter tolerance	+0.0, -0.12 mm
Thickness tolerance	±0.2 mm
Clear aperture	>90%
Surface quality	20-10 scratch & dig
Surface flatness	λ/6 @ 632.8 nm
Angle of incidence	72°
Parallelism	<30 arcsec
Laser damage threshold	5 J/cm² 10 ns pulses @ 1064 nm typical

	Extinction ratio T_p/T_s	Transmision, %
T1	>9:1	T_p >94% T_s<10%
T2	>20:1	T_p >85% T_s<4%
	Extinction ratio R_s/R_p	Reflection, %
R1	>5:1	R_s>98% R_p<20%
R2	>60:1	R_s>85% R_p<1%

Examples of resulting codes for ordering:

14PUF-1030-1-R1

Central wavelength range | Size | Optimization type

Available Standard Wavelengths
750-850 nm (centered @ 800 nm)
980-1090 nm (centered @ 1030 nm)

Available Standard Sizes
1 - Ø25.4 x 3 mm
2 - 20x60x2 mm
3 - 50x160x3 mm

Optimization Type
T1 - Transmission and T_p optimized
T2 - Transmission and contrast optimized
R1 - Reflection and R_s optimized
R2 - Reflection and contrast optimized

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Brief Ordering Information

Prices

All prices are EXW (Incoterms 2010) Vilnius, Lithuania and do not include any taxes. Quantity discounts as well as research application discount are available on request.

Payment

30 days net by bank wire transfer. Money Orders, Bank and Company Checks are accepted – in this case please add 1% to lump sum of invoice to cover cashing charges. Credit cards – VISA, MASTERCARD are accepted.

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All items shown in this catalogue are supplied with Certificate of Origin Form EUR 1. AII items are import duty free when importing to EC and EFTA countries.

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All products of **Standa** are guarantied to be free from defects in material and workmanship for a period of one year after delivery. **Standa** does not assume liability from installation, labour or consequential damages. Visit **www.standa.LT** for details.

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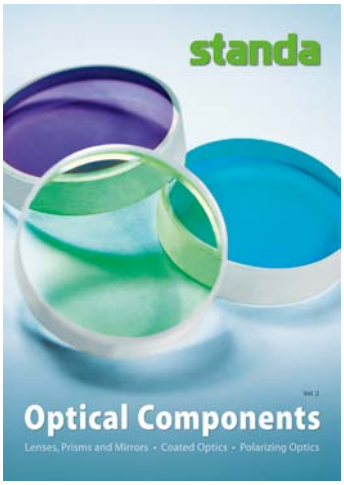

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