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PSH 4

2-Axis Mirror Tilting Platform

- ***fast triple-actuator tip/tilting platform***
- ***tilting range ± 4 / 3.2 mrad (ol/cl)***
- ***sub-µrad resolution***
- ***2.7 kHz resonant frequency***

The PSH 4 mirror tilting system series consists of two active piezoelectric actuators. The actuators provide tilt to the top plate on up to 2 axes. By using all actuators in unison the top plate has a piston movement up to 8 µm. The other two axes are perpendicular to each other.
The stage construction is temperature compensated
so that changes in environmental temperature do not affect tilting angle. The tilting mirror mounts are pre-loaded, thus they are well suited for dynamic applications. A core benefit of this stage is a high resonant frequency – which can provide sub-msec response time.
A closed-loop version with integrated positioning control is available for high positioning linearity and repeatability. Non-magnetic material and other customer size requirements are available upon request. The PSH 4 mirror positioning system series is designed for mirrors and optical components up to 50 mm in diameter.

Variants:

- with strain gauge (SG)

Recommended Controller:

NV200/D Net

Applications

- Laser Tuning
- Laser Beam Stabilization
- Fiber Bragg Grating Technology
- Beam alignment
- Fine adjustment of mirrors, other optical components

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Technical Data

	Unit	PSH 4	PSH 4 SG
part no. top plate Typ „A“ 25x25mm 1“	-	K-204-30	K-204-31
part no. top plate Typ „B“ 38x38mm 1½“	-	K-204-40	K-204-41
Sensor	-	-	strain gauge
Axes	-	X Z	X Z
Tilting range open loop (±10%)*	mrad	4	4
Tilting range closed loop (±0,2%)	mrad	-	3.2
Typ. resolution open loop***	µrad	0.008	0.008
Typ. resolution closed loop***	µrad	-	0.08
Resonant frequency (unloaded)	Hz	2700	
Typ. scan frequency incl.mirror 5g	Hz	210	
Typ. repeatability*	µrad	-	3.2
Typ. non-linearity*	µrad	-	0.5
Stiffness in z	N/µm	25	
Capacitance per axis (±20%)**	µF	3.6	
Volatge	V	-20 … 130	
Material	-	Stainless Steel/ Aluminum	Stainless Steel/ Aluminum
Dimensions (LxWxH)	mm	25x25x51	25x25x59
Mass	g	350 (12.3 oz)	

* typical value measured with NV 40/3 controller (closed loop: NV 40/3 CLE)

** typical value for small electrical field strength

*** the resolution is only limited by the noise of the power amplifier and metrology.

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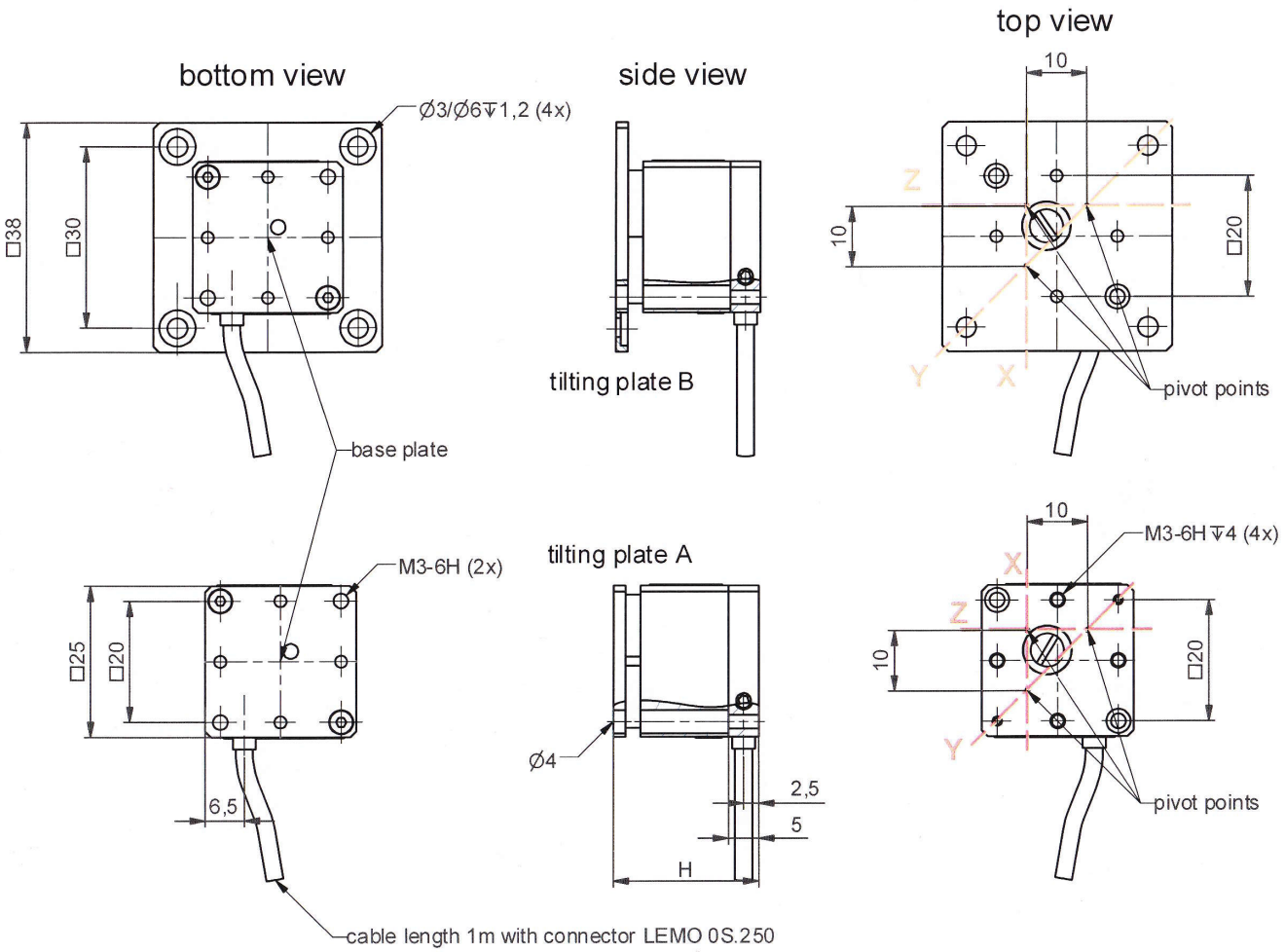
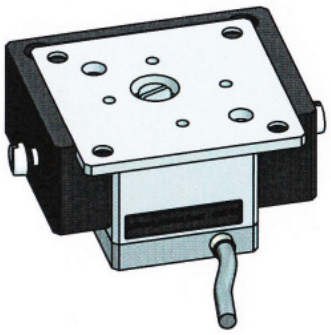
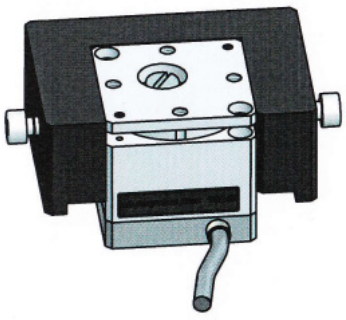
Part Drawing



view with optional mounting clamp



part.no. K-190-00



Dimensions given in mm.

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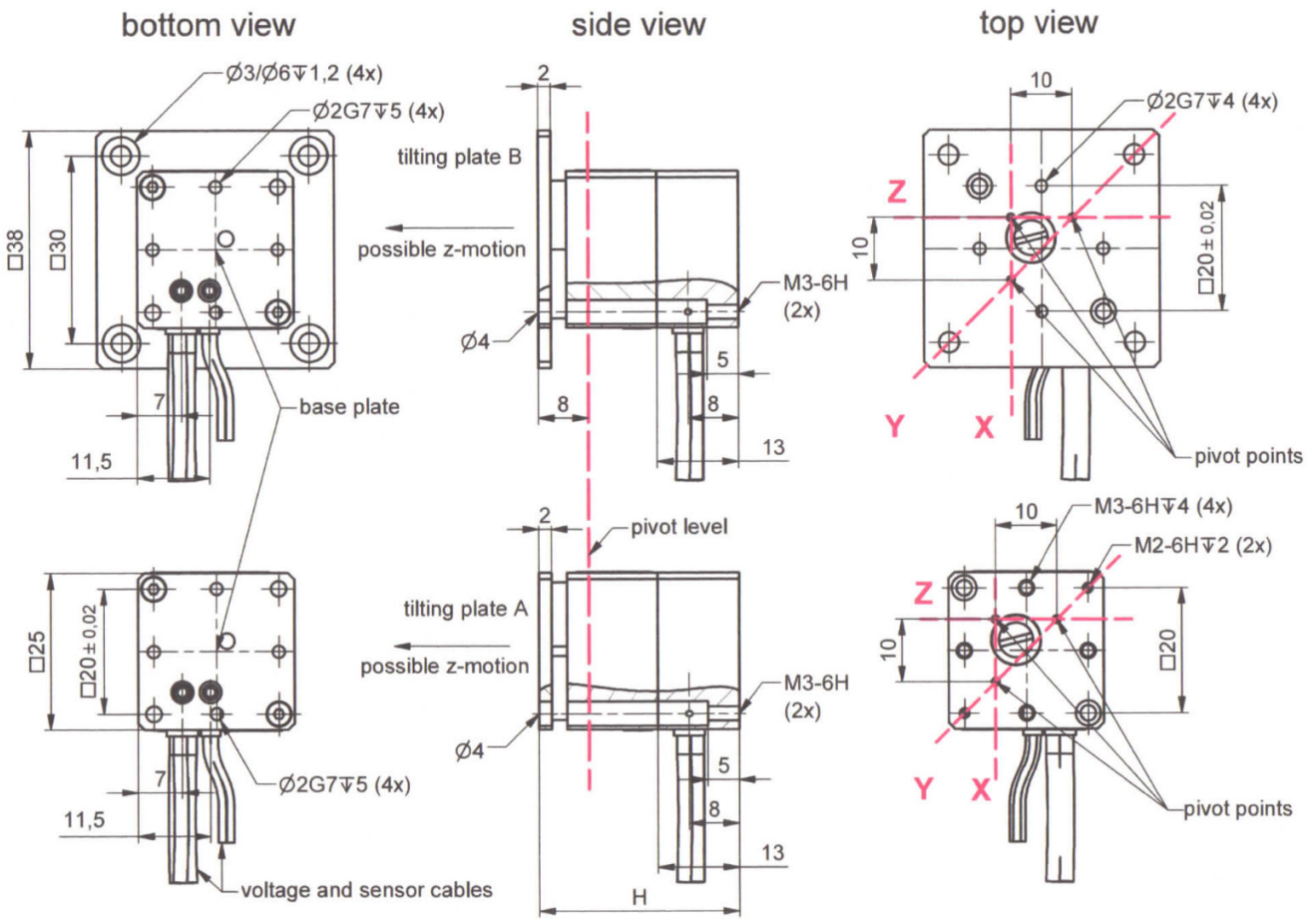
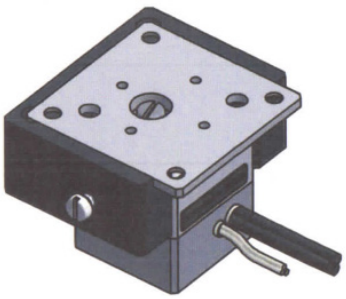
PSH 4 SG

Part Drawing



view with optional mounting clamp



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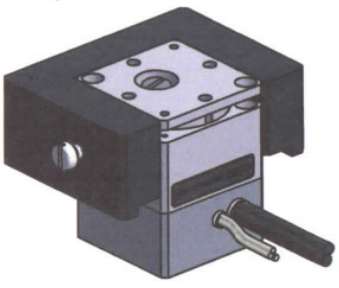

Dimensions given in mm.

We reserve the right to make changes to technical data and designs in the interest of technical progress.

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