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PSH 20/2 & PSH 35/2

2-Axis Mirror Tilting Platform

NEW!

- *Tilting axes in perpendicular orientation*
- *Designed for different mirrors to be used without limitation*
- *Up to 36 mrad closed-loop tilting range with 1 µrad resolution*
- *Developed for European Space Agency for SQATTS project*

The PSH 20/2 and PSH 35/2 are part of a new series of tip-tilt systems designed to deliver high dynamics with resonant frequencies of up to 2 kHz and a wide tilt range of up to 44 mrad in open loop. The same housing allows customers to choose between the PSH 20/2, optimized for rapid tilt applications with lower capacitance and reduced energy consumption, and the PSH 35/2, which offers a longer stroke and a broader temperature range—ideal for achieving the highest precision in challenging environments.

These actuators provide tilt to the top plate on 2 rectangular axes. The construction is temperature compensated so that changes of the surrounding temperature do not affect the tilting angle. These tilting positioning stages are designed for plus-minus tilting. The mirror mounts are preloaded, thus they are well suited for dynamic applications.

The design of the tilting system allows different mirrors to be used and exchanged without limitations regarding their formfactor.

Recommended Controller:

NV 200/D NET

E-730-820

Applications

- Beam steering
- Laser scanning
- Laser beam stabilization
- Optical filters/switches
- Scanning microscopy (SPM)
- Image processing and stabilization

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PSH 20/2 & PSH 35/2

Technical Data

		Unit	PSH 20/2		PSH 20/2 SG		PSH 35/2		PSH 35/2 SG	
Part #		-	K-115-00D		K-115-01D		K-135-00D		K-135-01D	
Axes		-	Θx	Θy	Θx	Θy	Θx	Θy	Θx	Θy
Tilting range	open-loop	mrad	±12				±22			
	closed-loop	mrad	-		±10		-		±18	
Hysteresis		%	15				20			
Resolution*	open-loop	µrad	0.5				0.5			
	closed-loop	µrad	-		1		-		1	
Typ. repeatability (closed-loop)	Θx	µrad/%	-		1.3 / 0.007		-		3.5 / 0.018	
	Θy		-		1.5 / 0.008		-		1.6 / 0.008	
Max. nonlinearity	Θx	µrad/%	-		163 / 0.82		-		29.8 / 0.15	
	Θy		-		157 / 0.79		-		47 / 0.38	
Voltage range**		V	-20 … 130				-20 … 180			
Electrical capacitance		µF	2 x 2.7				2 x 3.4			
Stiffness		nm/rad	10.2				9.5			
Resonant frequency @ load	0***	Hz	2000				1800			
	70 g mm2		1400				1300			
	1400 g mm2		400				350			
Lateral runout closed-loop (crosstalk)	x	mrad	-		0.06		-		0.07	
	y		-		0.03		-		0.05	
Orthogonality deviation	open-loop	°	0.1		0.1		1		1	
	closed-loop		-		0.8		-		0.9	
Dimensions (D x H)		mm	ø 50 x 55				ø 50 x 55			
Temperature range		°C	-20..80				-40..160			
Material		-	aluminium							
Mass		g	230		240		240		250	

*) Typical value measured with 0.7 mV Controller
**) Depending on amplifier configuration
***) Fitted/calculated values

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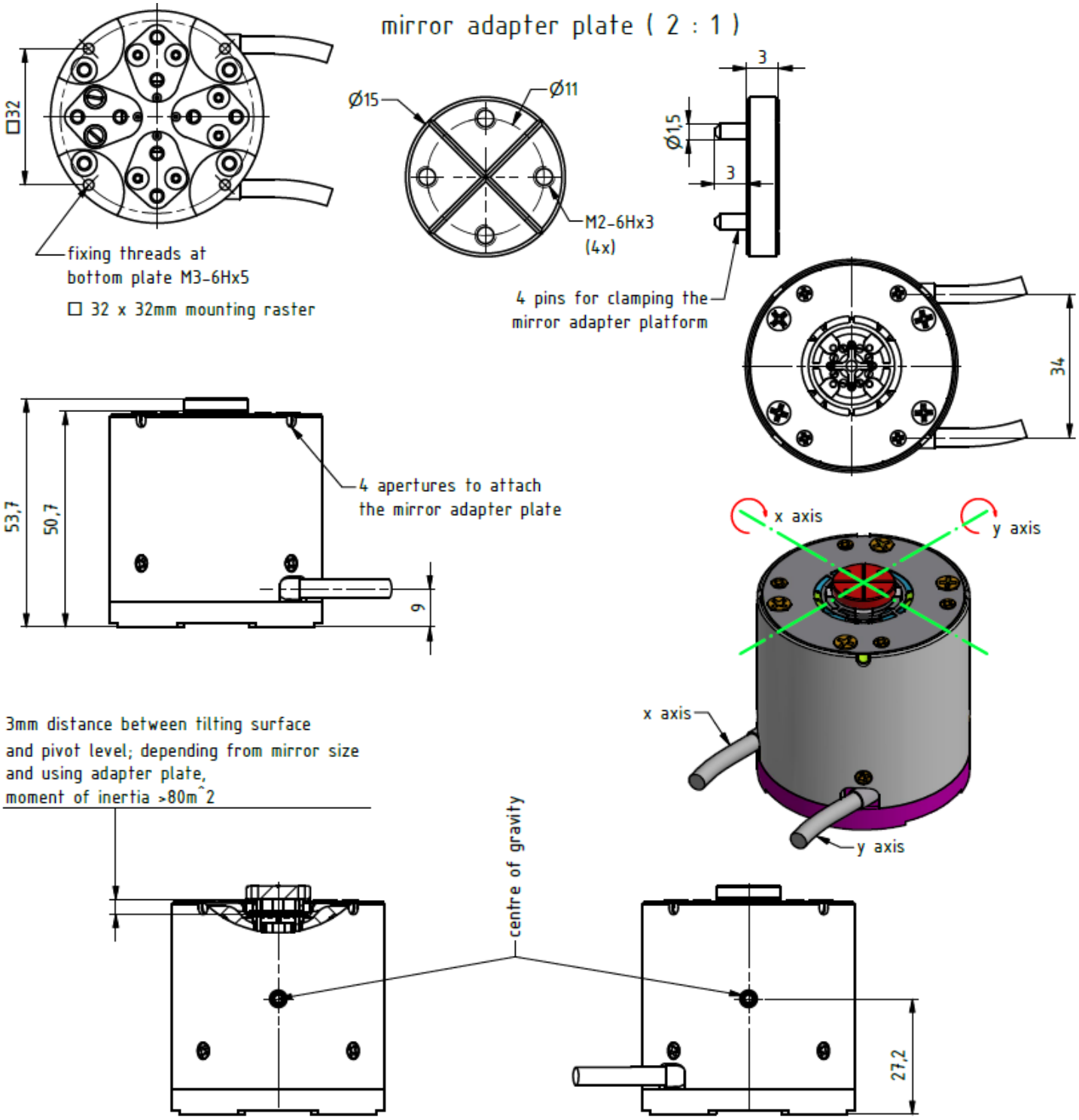
Part Drawing



Dimensions given in mm.

Rights reserved to change specifications as progress occurs without notice.

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