

# PSH 20/2 & PSH 35/2

## 2-Axis Mirror Tilting Platform

**NEW!**



*Tilting axes in perpendicular orientation*



*Designed for mirrors with a maximum diameter of 32 mm*



*Up to 36 mrad closed-loop tilting range with 1  $\mu$ rad resolution*



*Up to 1.4 kHz resonant frequency with 0.7" mirror*

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 PSH 20/2 and PSH 35/2 are designed for mirrors with a maximum diameter of 32 mm.



### 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

# 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-130-00D	K-130-01D
Axes		-	$\Theta_x$ $\Theta_y$	$\Theta_x$ $\Theta_y$	$\Theta_x$ $\Theta_y$	$\Theta_x$ $\Theta_y$
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)	$\Theta_x$	μrad/%	-	1.3 / 0.007	-	3.5 / 0.018
	$\Theta_y$		-	1.5 / 0.008	-	1.6 / 0.008
Max. nonlinearity	$\Theta_x$	μrad/%	-	163 / 0.82	-	29.8 / 0.15
	$\Theta_y$		-	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***		2000		1800	
	70 g mm <sup>2</sup>	Hz	1400		1300	
	1400 g mm <sup>2</sup>		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

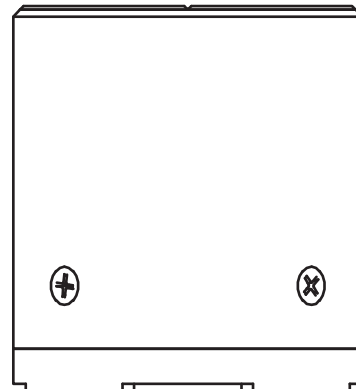
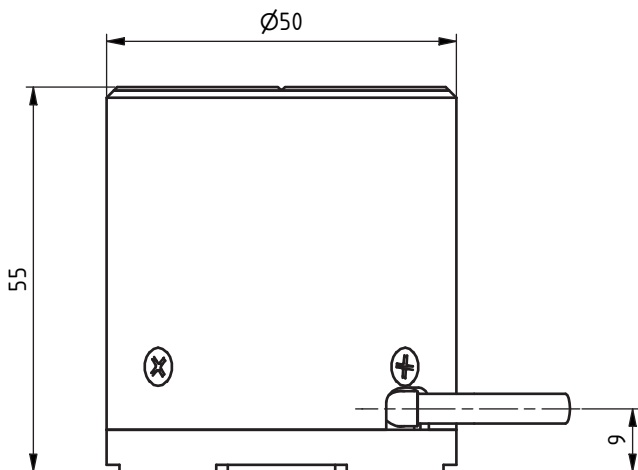
\*) Typical value measured with 0.7 mV Controller

\*\*) Depending on amplifier configuration

\*\*\*) Fitted/calculated values

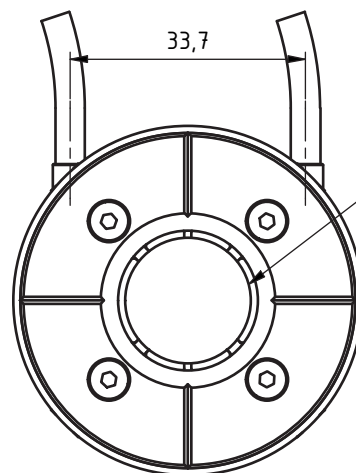
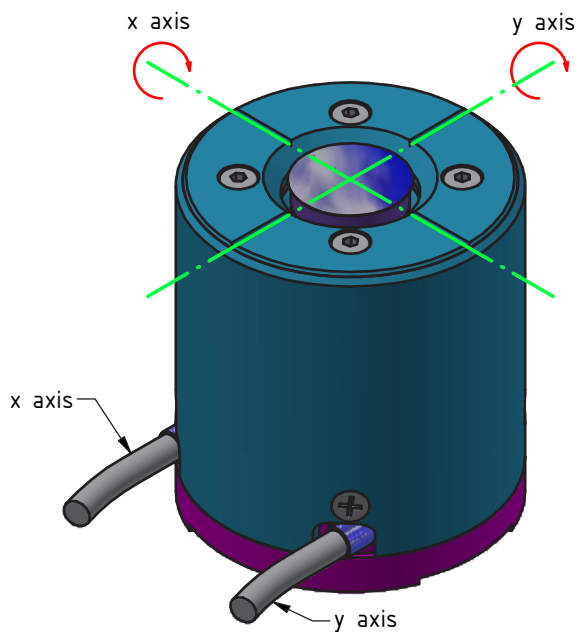
# PSH 20/2 & PSH 35/2

## Part Drawing



top view

fixing threads at  
bottom plate M3-6H x 5  
□ 32 x 32 mounting raster



tilting plate  
with Ø18x4 mirror

Dimensions given in mm.

Rights reserved to change specifications as progress occurs without notice.

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