

PSH 4/1

1-axis mirror tilting platform

Concept:

The PSH 4/1 is a product addition in our series of piezo electrically driven mirror-tilting platforms. The PSH 4/1 was developed with an unloaded resonant frequency of more than 6.5 kHz, as an ultra fast scanning system for the highest of frequencies. This system is uniquely designed with outside dimension of 12 mm diameter and only 20 mm height. The PSH 4/1 can be easily integrated into any of your existing systems. These special features make the PSH 4/1 very suitable for applications in the fields of beam steering, laser stabilizing, optics, and telecommunication.

Specials:

This miniature sized system is based on special high power piezo actuators. They provide a \pm tilting with a total travel range of up to 4 mrad. Due to the internal pre-load the system displays a very short settling time and the resonant frequency is greater than 6.5 kHz (unloaded). With its special flexure hinge design (FEA calculated) the system is free of friction and mechanical play. The PSH 4/1 is available in a cryogenic and vacuum version as well.

Interfaces:

The unique advantage of the PSH 4/1 is the small outer dimension. The system is integrated into a robust housing to avoid damaging.

Also on the bottom plate two thread holes exist for mounting the PSH (M2x3 threading). The distance between both threaded holes is 8 mm. Optical components (e.g. mirrors) can be mounted on the top plate directly.



image: PSH 4/1

Product highlights:

- smallest piezo scanner available
- tilting range 4 mrad
- 1-axis \pm tilting platform
- 6.5 kHz resonant frequency
- sub- μ rad resolution
- small size

Applications:

- laser alignment
- laser beam stabilization
- scanning systems
- laser beam metrology
- medical engineering

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Technical specification:

mirror tilting platform	unit	PSH 4/1
part no.		K-120-00
axes	-	1
tilting range ($\pm 10\%$)*	mrاد ($^{\circ}$)	± 2
electrical capacitance ($\pm 20\%$ **)	μF	0.2
resolution ***	μrad	0.008
mirror****	-	without
resonant frequency (unloaded)	Hz	6.500
voltage range	V	-20 ... 130
connector*****	-	ODU 3pin
operating temperature	$^{\circ}\text{C}$	-20 ... +80 (-4 $^{\circ}\text{F}$... +176 $^{\circ}\text{F}$)
material	-	Aluminum/Stainless Steel
dimensions (diameter x length)	mm	$\varnothing 12 \times 20$
weight	g	20

* typical value measured with piezo controller 30DV50

** typical value for small electrical field strength

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

**** as an option a 1/20 Wave Flat Fused Silica 0.5" Dia. Enhanced Aluminum can ordered separately

***** additional connector configurations

Product name	Description	Specials	Part. No Suffix.
PSH 4/1 Digital	Version for digital controller series d-Drive and 30DV50	Connector Sub-D 15	K-120-00D

Recommended Controller Unit

The series PSH 4/1 can easily controlled with the digital controller series **d-Drive** (part no.: E-751-000) or the analog controller series **ENV40 nanoX** (part no.: E-248-000). For industrial use the series **30V300nanoX** (part no.: E-468-011) with a robust metals casing is recommended.

Rights reserved to change specifications as progress occurs without notice!



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