

PSH 35

1-axis mirror tilting platform

Concept:

The PSH 35 mirror tilting systems were developed for the dynamic motion of small mirrors. A new construction principle makes it possible to reach a tilting angle of 35mrad. The element is driven with a maximum voltage of 130 V.

Based on the technical design, the system can reach an outstanding performance for position resolution. With the piezosystem jena amplifier a typical resolution of 0.07 μ rad can be reached. The PSH 35 can easily be integrated into more complex stages because of its compact size.

Specials:

As an option the PSH 35 tilting platform can be equipped with an integrated positioning sensor. The feedback signal can be used for position information or short term stability measurement applications.

The PSH 35 tilting mirror systems are available in vacuum compatible version too.

Interfaces:

The elements are normally delivered without a mirror. A mirror can be attached by gluing. The weight of the mirror should be in the range of few grams to keep the dynamic performance of the PSH system in a reasonable range.

Please note that the used Glue for mounting of the mirror can't enter the flexure hinges inside. This could lead to a damage of the actuating system. The PSH casing is provided with four trough holes to combine the tilting system easily with other devices.



image: PSH 35

Product highlights:

- tilt angle 35 mrad (2°)
- high dynamics due to high resonant frequency
- sub- μ rad resolution
- compact design

Applications:

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

PSH 35

Technical data

mirror tilting platform	unit	PSH 35	PSH 35 SG
part no.		K-232-00	K-232-01
axes	-	1	1
motion open(±10%)/closed loop	mrad (°)	35 (2°)	35/26 (2°/1.5°)
capacitance (±20%)**	µF	3.8	3.8
resolution (open/closed loop)***	µrad	0.07/-	0.07/0.7
feedback sensor	-	-	strain gauge
typ. repeatability	µrad	-	3
typ. non-linearity	%	-	0.3
resonant frequency (unloaded)	Hz	1200	1200
voltage range	V	-20... +130	20 ... +130
connector (for additional connector configuration please see table below)****	-	LEMO 0S.302	LEMO 0S.302/LEMO 0S.304
operating temperature	°C	-20 ... +80	-20 ... +80
material	-	aluminum/stainless steel	aluminum/stainless steel
dimensions (w x h x d)	mm	60 x 27 x 14	60 x 27 x 20
weight	g	50	65

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

** typical value for small electrical field strength

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

**** additional connector configurations

Product name	Description	Specials	Part. No Suffix.
PSH 35 Digital	Version for digital controller series d-Drive and 30DV50	Connector Sub-D 15	K-232-00D
PSH 35 SG Extern	Version with sensor pre-amplifier for the use with „CLE“ amplifier units and with the additional functionalities: Interchangeability, ASI	Connector Sensor: ODU 4pin	K-232-01E

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