

PICOSCALE Vibrometer XYZ Positioning stage PV-XYZ-V1.0

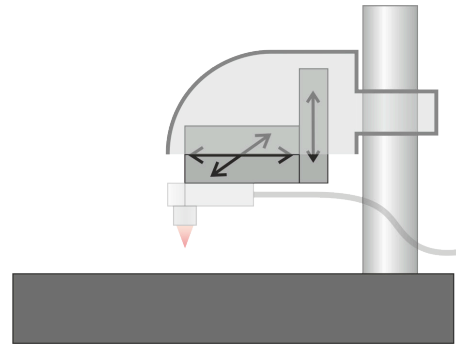


Figure 1. Schematic drawing of the 3D positioning system mounted on the default base with post. The 3 positioners are arranged such that the sensor head (mounted on the lowest positioner) can be moved with 3 degrees of freedom.

The XYZ positioning stage is intended for use with the **PICOSCALE Vibrometer**. The system is used to position and to scan the laser beam of the interferometer over the sample. The positioning system is mounted on a 25 mm diameter post so that its height is easily adjusted to accommodate samples of different dimensions. It is even possible to remove the positioning system from its mounting post in order to install it in a custom setup or to combine it with another instrument.

1. SPECIFICATIONS

The positioning system is built around three SmarAct closed-loop positioners enclosed in a compact protective housing. Figure 1 shows a simplified drawing of the XYZ positioning system. The specifications are given in Table 1. In its standard configuration, the positioning system is mounted on a 25 mm diameter post which is secured on a granite base (Table 2). If the 20 mm range of the Z-positioner is not sufficient, the height of the whole positioning system can be adjusted by moving it along the post (this requires a 2.5 mm hex key). It is also possible to remove the YXZ positioning system from the standard post in order to mount it on a customized system.

Note, that when an XYZ positioning system is connected to stage controller for the first time, the position sensors need to be calibrated and referenced. Detailed instructions are provided in the control software manual.

Table 1. Specifications of the XYZ positioning stage.

Property	Value
Positioner type ¹	3 x CLS-3232 linear stage
Scan range [mm]	20
Position resolution [nm]	1
Position repeatability [nm]	±50
Noise level ² [dB(A)]	<73
Dimensions W x L x H [cm]	5.5 x 11 x 7.5
Weight [kg]	0.5

¹ See CLS-3232 specification sheet, available at SmarAct GmbH, for further information.

² Measured at 50 cm distance.

Table 2. Specifications of base with mounting post.

Property	Value
Material base	Granite
Dimensions base [cm]	15 x 20 x 4
Material post	Inox
Dimensions post \varnothing x H [cm]	2.5 x 15.5
Weight [kg]	4.8

2. ORDER CODES

The order codes of the PICOSCALE *Vibrometer* 3D positioning system and the base with mounting post are given in Table 3. The sensor head is not part of the assembly and needs to be ordered separately.

Table 3. Order codes for the PICOSCALE *Vibrometer* 3D positioning system.

Order code	Description
PV-XYZ-V1.0	PICOSCALE <i>Vibrometer</i> 3D positioning system, 20 mm range
PV-BS-01	Base with post
PV-ACC-CAP-01	Fabric dust cover for 3D positioning system

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