
Calibration Laser Interferometer



SP 5000 C5 2D

Design and Operation

The calibration interferometer SP 5000 C5 2D measures guide deviations in five degrees of freedom in one measuring process.

The compact, wireless measuring reflector works without additional power supply. Thus, measurements in cramped spaces are facilitated.

Since the measurement of position, pitch and yaw angles, as well as the horizontal and vertical straightness can be done in one pass a significant time saving in measurements is given.

The system is easy and quickly aligned, whereby the user is supported by additional sensors.

The absolute, micrometer-accurate straightness measurement makes the SP 5000 C5 2D particularly suitable for aligning machine components.

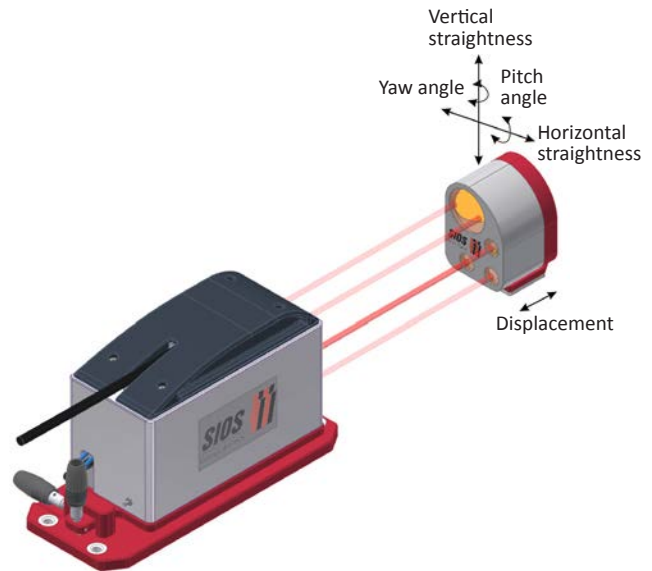
In combination with the InfasAXIS software package, linear axes can be measured in a time-saving manner and comprehensive calibration protocols can be easily created. Further software options for measured value acquisition and data analysis are available.

Applications

- Calibration of high-precision axes in measuring and machine tools as well as coordinate measuring instruments
- Ultraprecise alignment of machine components
- Laser interferometric measurement at guides
- Simultaneous length and angle measurement

Major Performance Features

- Simultaneous position, pitch and yaw and straightness measurement with highest accuracy
- Fiber-coupled sensor head facilitates system alignment and avoids thermal influence on the measuring objects.
- Quick and precise system setup ensured by integrated alignment aid
- 90°-beam deflection with an adjustable deflection mirror



Technical Data		Model SP 5000 C5 2D
Length measurement: Measuring range		6 m
Resolution		< 20 pm
Angle measurement: Measuring ranges for pitch + yaw angles		± 5°
Resolution		< 0.0008"
Straightness measurement: Measuring range, lateral		± 2 mm
Resolution		0.1 µm
Axial range (freely selectable)		5 m
Beam separation (horizontal and vertical)		25.4 mm
Maximum velocity of the measuring reflector		500 mm/s
Wavelength of the HeNe laser		632.8 nm
Frequency stability of the HeNe laser		2 · 10 ⁻⁸
HeNe laser warm-up time		< 20 min
Operating temperature range		15...30°C
Dimensions (LxWxH)		
Sensor head with adjustable mount		[245 x 100 x 134] mm
Reflector unit / Straightness mirror		[60 x 56 x 80] mm
Electronic supply and evaluation unit		[450 x 400 x 150] mm
Mass		
Sensor head with adjustable mount		3 kg
Reflector unit / Straightness mirror		440 g
Electronic supply and evaluation unit		9.5 kg
Cable length between sensor head and electronics unit (separable)		6 m, optional bis 10 m
Line voltage / frequency		100...240 VAC / 47...60 Hz
Laser safety class according to EN 60825-1:2014 / ANSI Z136.1		2M / II

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