

---

---

# Calibration Laser Interferometer



**SP 5000 C3/C5**

## Design and Operation

The SP 5000 C5 calibration laser interferometer measures guide deviations in five degrees of freedom synchronously and continuously. Highest measurement accuracy and traceability to standards is achieved by using the interferometric measurement principle for all measurands (position, angle, straightness).

The simultaneous measurement of five parameters in a single setup reduces the measuring time significantly. Switching between horizontal and vertical straightness can comfortably be done by swiveling optics.

Special sensors guide the user during alignment and drastically reduce setup time.

The direct assignment of the measured quantities to each other provides extensive information about the trajectory of the reflector during measurement. Thanks to the very compact and lightweight measuring reflector, the use of the system is very comfortable even in cramped conditions. In addition, the reflector is wireless and requires no power supply.

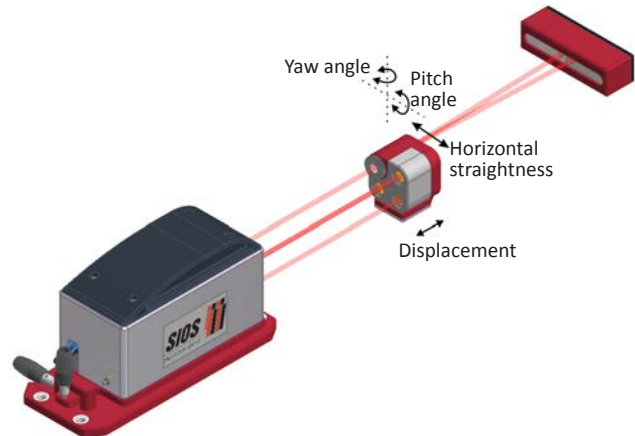
Precise calibration protocols can be created in combination with the software package InfasAXIS. InfasMTCAL enables the use of the system for highly efficient performance improvement of machine tools.

## Applications

- Ultraprecise displacement, angle and straightness measurement
- Calibration of high-precision axes in machine tools as well as coordinate measuring instruments
- Laser interferometric measurement at guides

## Major Performance Features

- Simultaneous, position, pitch, yaw and straightness measurement with highest accuracy
- Easy handling
- Integrated alignment aid
- Fiber-coupled sensor head facilitates system alignment and avoids thermal influence on the measuring objects.
- 90°-beam deflection with an adjustable deflection mirror
- Dynamic measurement for machine analysis
- Various triggering options



Technical Data		Model SP 5000 C3	Model SP 5000 C5
Length measurement:	Measuring range	6 m	6 m
	Resolution	< 20 pm	< 20 pm
Angle measurement:	Measuring ranges for pitch + yaw angles	± 5°	± 5°
	Resolution	< 0.0008"	< 0.0008"
Straightness measurement:	Measuring range, lateral	-	± 4 mm
	Resolution	-	10 nm
	Axial range (freely selectable)	-	6.5 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 <sup>-8</sup>	
Operating temperature range		15...30°C	
Schnittstellen	Standard Optional	USB Digitales 32-bit Parallelinterface Digitale Inkrementalsignale (TTL-Pegel) Analoge Inkrementalsignale (1V <sub>SS</sub> )	
Dimensions (LxWxH)	Sensor head with adjustable mount Reflector unit / Straightness mirror Electronic supply and evaluation unit	[245x121x121] mm [50x50x50] mm / - [450x400x150] mm	[245x121x121] mm [50x50x50]/[234x43x49] mm [450x400x150] mm
Mass	Sensor head with adjustable mount Reflector unit / Straightness mirror Electronic supply and evaluation unit	3 kg 230 g / - 9.5 kg	3 kg 250 g / 1 kg 11.5 kg
Cable length between sensor head and electronics unit (separable)		6 m, optional up to 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	

## SIOS Meßtechnik GmbH

Am Vogelherd 46

98693 Ilmenau, GERMANY

Phone: +49-3677-64470 Email: [contact@sios.de](mailto:contact@sios.de)

Fax: +49-3677-64478 URL: <http://www.sios.de>

Warning:

