

Triple beam differential interferometer

SP 5000 DI/TR

System parameter	SP 5000 DI/TR
Measuring range	0 m bis ≥ 5 m (10 m upon request)
Resolution	20 pm*
Angular measuring ranges	
with reflector	$\pm 12.5^\circ$ **
with plane mirror (recommended distance ≤ 2 m)	$\pm 430 \mu\text{rad}$
Angular resolution	0.01 μrad ***
Measuring uncertainty under stable conditions:	
Length measurement	0.15 $\mu\text{m/m}$
Pitch and yaw angle measurement	$\pm 0.04 \% \pm 0.04 \mu\text{rad}$
Beam distance reflector (horizontal and vertical, 2 x 3)	12 mm
Beam distance measurement to reference beam	54.2 mm
Temperature sensitivity	$< 20 \text{ nm/K}$
Wavelength laser	632.8 nm
Frequency stability of the HeNe laser (after warm-up time)	$2 \cdot 10^{-8}$
Warm-up time of the HeNe laser	10 ... 20 min
Operating temperature range	15 ... 30°C
Max. displacement speed of measuring reflector	3 m/s
Geometric Data	
Dimensions (L x W x H):	
Sensor head	[141 x 88 x 150] mm
Reflectors	[45 x 45 x 20] mm
Electronic evaluation and supply unit EU	[450 x 400 x 150] mm
Mass:	
Sensor head	approx. 3.5 kg
Reflectors	80 g each
Electronic evaluation and supply unit EU	approx. 8 kg
Electrical Data	
Interfaces standard	RS232C, USB
other interfaces on request (/R)	
Cable length between sensor head and electronics unit	3 m, optionally up to 10 m
Power supply	100 ... 240 VAC / 47 ... 63 Hz
Laser safety class according to EN 60825-1:2014 and ANSI Z136.1 (CDRH)	2M II

*in frequency domain

**rotary point dependent

***least significant bit (LBS)

10/2025 · Subject to change.

SIOS Meßtechnik GmbH

98693 Ilmenau/Germany · Am Vogelherd 46 · Fon: +49 (0) 3677 64 47-0 · contact@sios.de · www.sios-precision.com