

Laser measurement system LP Compact
The most compact interferometer on the market.

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Laser Measurement System - Display

0,000004

Environmental		Measurement	Parameters	
Humidity	77 %	<input type="button" value="Distance"/> <input type="button" value="Axis X"/>	Start position	0.000048
Pressure	1022.1 hPa		Sign:	<input type="button" value="+"/>
Air Temp.	24.13 °C		Material:	Steel
Average temp.	25.33 °C	<input type="button" value="Resolution 10 nm"/>	<input type="button" value="Environmental"/> <input checked="" type="checkbox"/>	
T1	T2	T3	<input type="button" value="Main Menu"/>	
25.42 °C	25.25 °C	25.33 °C		
<input type="button" value="Record"/>		<input type="button" value="Reset Position"/>		

Features

- small size and low weight
- easy transportable
- simple operation, easy beam alignment
- high resolution
- high precision
- low price

Applications

- positioning of CNC and CMM
- machine geometry inspection
- flatness measurement (also reference)
- angular positioning
- ball screw drives inspection
- maintenance of machine tools

TECHNICAL DATA

Laser head

- laser type Zeeman HeNe laser with frequency stabilization
- preheating time approx. 20 min
- wavelength (vacuum) 632,991354 nm
- wavelength accuracy $\pm 0,02$ ppm
- short time stability $\pm 0,002$ ppm (1 hour)
- output power 400 μ W
- beam diameter 8 mm
- distance between out- and ingoing beam 12,7 mm
- laser head dimensions 60x60x245 mm
- net weight 1500 g
- safety class Class 2 Laser product according to PN-91/T-06700

System work conditions

- temperature range 10 – 35 °C
- humidity range 10 – 90 %

Power supply

- voltage 230 VAC, 50 Hz
35 W (during preheating)
10 W (working)

PC interface

- type RS 232C, USB
- data rate 9600 bps (RS 232)

Environment compensation

Wavelength compensation

- manual Environment parameters entered from keyboard
- automatic Through environmental measurement station.

Parameters of the environment compensation

- air temperature Range 0 – 40 °C, accuracy 0,1 °C
- pressure Range 940 – 1060 hPa, accuracy 1 hPa
- humidity Range 10 – 90 %, accuracy 5 %

- time constants
- net weight

Temperature 3s, pressure 2s, humidity 5s
100 g

Material temperature compensation

- manual
- automatic
- time constant
- net weight

Temperature of material entered from keyboard
3 temperature sensors, calibrated Pt-1000 class 1/3 B, in oil resistant case.
6 s
50 g

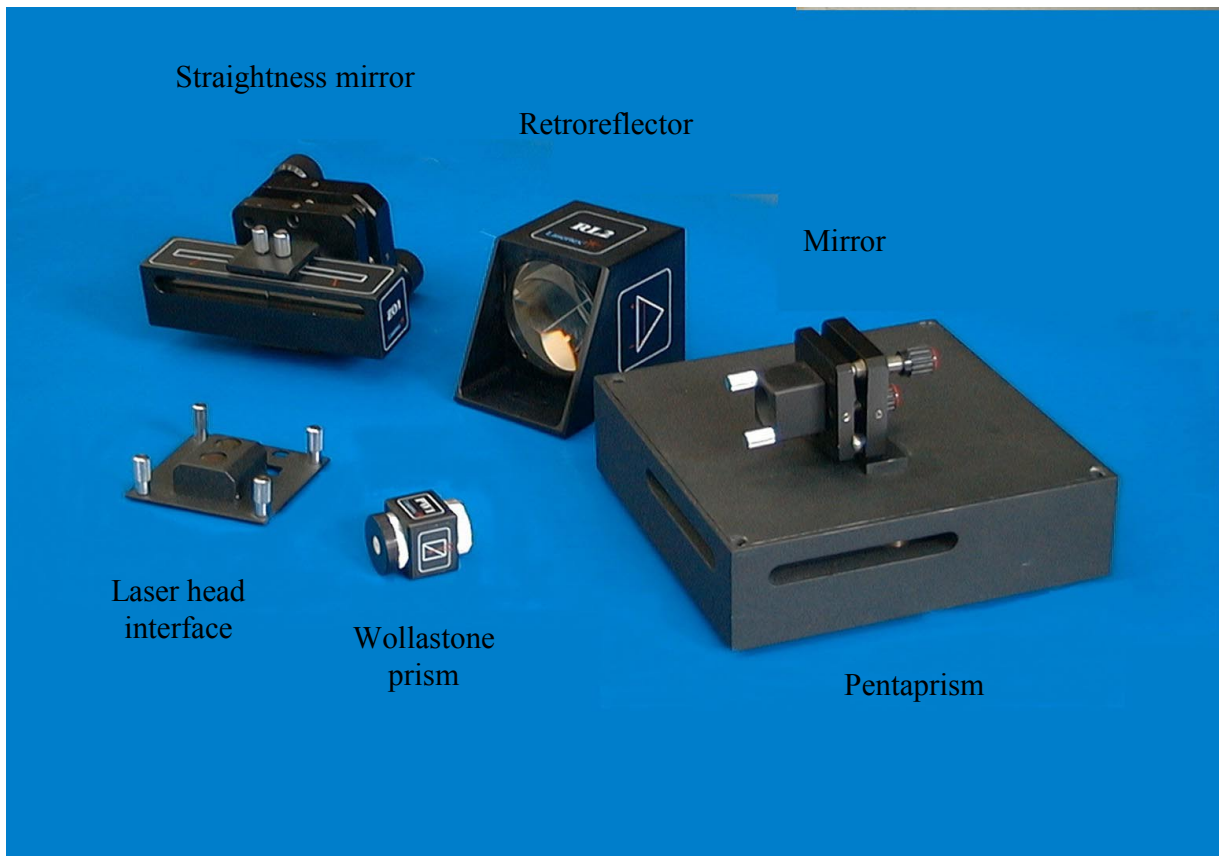
Laser measurement system LP 30 Compact

SPECIFICATIONS

Measurement	Range	Resolution	Accuracy
Distance	0 – 30 m	0,01 μm (0,001 μm)*	0,41 $\mu\text{m}/\text{m}$
Velocity	0 – 0,3 m/s (0,1 m/s)*	0.25 $\mu\text{m}/\text{s}$	0,1 %
Angular	0 – 3600 arcsec	0,04 arcsec	$\pm 0,2$ %
Straightness measurement (with angular optics)	0 – 12 m	0,02 μm (for 100 mm base)	± 1 %
Flatness**	0 – 12 m (± 3 mm flatness measurement range)	0,02 μm (for 100 mm base)	$\pm 0,5$ %
Straightness measurement (with Wollstone prism)	0 – 3 m	0.01 μm	± 1 %
Squareness	± 1000 arcsec	0,03 arcsec	± 1 % $\pm (1,5$ arcsec)
Rotary measurements	$\pm 5^\circ$	0,04 arcsec	$\pm 0,2$ %

- * max. travel speed for 0.001 μm resolution is 0,1 m/s
- ** 0 –15 m range on request, moody method and grid method

Set up for straightness and squareness measurement



Specifications

Straightness measurement	Axial range	Resolution	Straightness measurement range	Accuracy
short range	0.1 – 3 m	0.01 μm	± 2 mm	1%
long range*	0.5 – 15 m	0.05 μm	± 0.2 mm	2%

*On request

Squareness measurements	Angle range	Resolution	Accuracy
short range	± 1000 arcsec	0,03 arcsec	$\pm 1\% + (1,5$ arcsec)
long range*	± 1000 arcsec	0,03 arcsec	$\pm 2\% \pm (1.5$ arcsec)

On request: straightness kit with retroreflector non-overlapping output and return laser beam.

For further information visit www.feanor.com

