

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

www.feanor.com



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
- net weight
- safety class

60x60x245 mm
 1500 g
 Class 2 Laser product
 according to PN-91/T-06700

System work conditions

- temperature range
- humidity range

10 – 35 °C
 10 – 90 %

Power supply

- voltage

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

PC interface

- type
- data rate

RS 232C, USB (on demand)
 9600 bps (RS 232)

Environment compensation

Wavelength compensation

- manual
- automatic

Environment parameters entered from keyboard
 Through environmental measurement station.

Parameters of the environment compensation

- air temperature
- pressure
- humidity
- time constants
- net weight

Range 0 – 40 °C, accuracy 0,1 °C
 Range 940 – 1060 hPa, accuracy 1 hPa
 Range 10 – 90 %, accuracy 5 %
 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



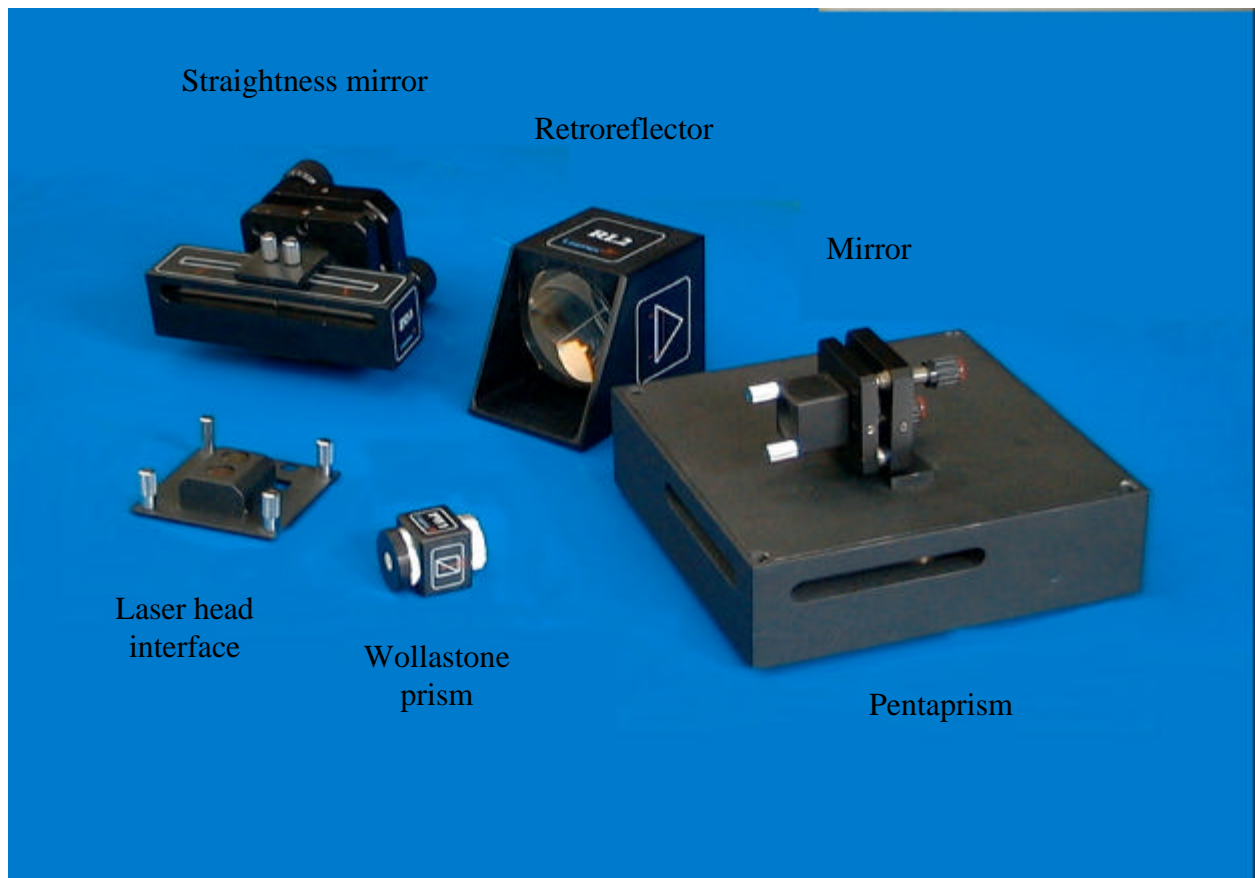
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SPECIFICATIONS

| Measurement | Range | Resolution | Accuracy |
|---|---|--|------------------------------|
| Distance | 0 – 30 m | 0,01 μm (0,001 μm)* | 1,5 $\mu\text{m}/\text{m}$ |
| 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 Wollastone 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

