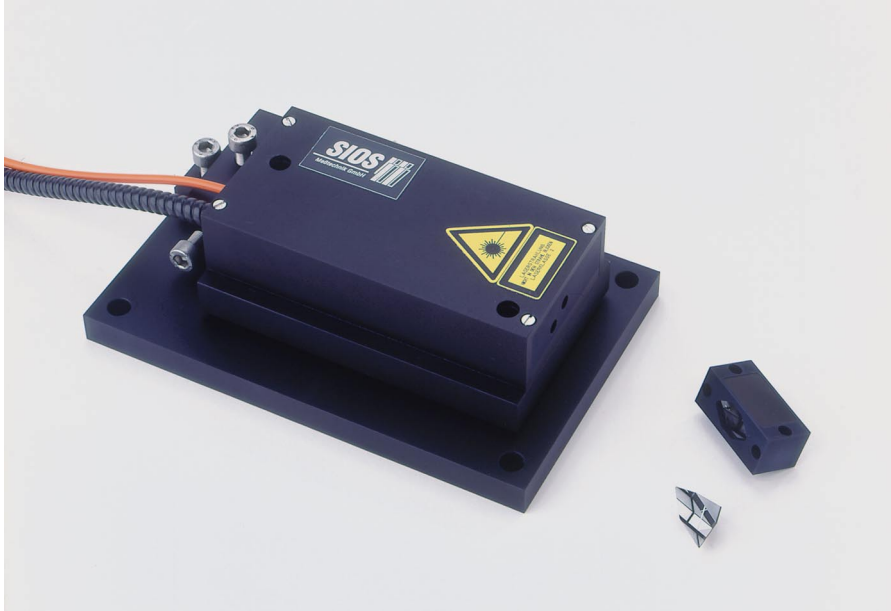


MI-series Miniature Retroreflector interferometers



The MI series systems are miniature interferometers equipped with triple-faceted retroreflectors for precision length measurement and are designed for incorporation into customer-supplied equipment, and are readily adapted to a wide variety of experimental set-ups and tasks. The miniaturised sensor head and triple-faceted retroreflector allows their employment as permanently installed metrology systems.

The fibre optic coupled sensor head provides major benefits in many types of applications and makes overall metrological systems more versatile.

The miniature interferometer converts the motion of the triple-faceted retroreflector along the beam axis into optical-interference signals that are transmitted to the optoelectronic signal processing/power supply unit for processing and output as length.

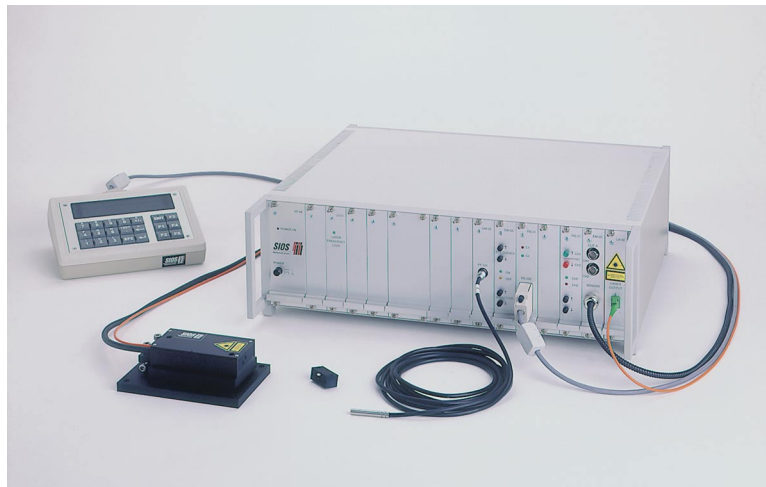
The HeNe laser (which is frequency stabilised on models with large dynamic ranges) is stabilised against environmental changes and forms the basis for the high metric precision. The systems themselves are free from linearity errors.

Instrument operation and display of the measurement results may be via either a separate keypad/display unit or a PC running an optional software package.

Applications:

- Precision laser-interferometric length-measurement instruments for incorporation into single/multi-axis translation stages, microscope stages, machine tools or positioning systems.
- Positioning single/multi-axis machine beds.
- Calibrating machine tools or co-ordinate measurement machines.
- Angular measurements.
- Handling precision length-measurement tasks in research and development work.

Technical Data for the MI series systems



	Model MI 60	Model MI 150	Model MI 5000
Measuring range	60 mm	150 mm	5000 mm
Metric resolution	0.1 nm	0.1 nm	0.1 nm
Nominal laser wavelength	632.8 nm	632.8 nm	632.8 nm
Laser frequency stability (after warm up)	3×10^{-7}	3×10^{-7}	2×10^{-8}
Laser warm up period	1 min	1 min	10 – 20 min
Operating temperature range	15 – 30 °C	15 – 30 °C	15 – 30 °C
Maximum retroreflector translation rate	600 mm/s	600 mm/s	600 mm/s
Dimensions (H x W x D) (mm):			
- Sensor head	22 x 50 x 100	22 x 50 x 100	22 x 50 x 100
- Retroreflector	13 x 30 x 15	13 x 30 x 15	13 x 30 x 15
- Signal processing/PSU	150 x 450 x 400	150 x 450 x 400	150 x 450 x 400
- Keypad/display	48 x 190 x 138	48 x 190 x 138	48 x 190 x 138
Weights (g):			
- Sensor head	200	200	200
- Retroreflector	12	12	12
- Signal processing/PSU	9500	9500	9500
- Keypad/display	630	630	630
Interface:			
- Serial	RS 232C	RS 232C	RS 232C
- Parallel (option)	IEEE 488	IEEE 488	IEEE 488
PC plug-in circuit board	ISA	ISA	ISA
Sensor head to processor fibre length	3 – 25 m	3 – 25 m	3 – 25 m
Supply-line voltage	100 – 240 VAC	100 – 240 VAC	100 – 240 VAC
Supply-line frequency	47 – 60 Hz	47 – 60 Hz	47 – 60 Hz

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