

Non-contact, high-accuracy measurement system Laser Scan Micrometer LSM-6902H



Best-in-Class Repeatability of $\pm 0.045\mu\text{m}$



The laser beam shown is simulated for the purpose of illustration.

Sensor Systems



Non-contact, high-accuracy measurement system

Laser Scan Micrometer LSM-6902H



Features

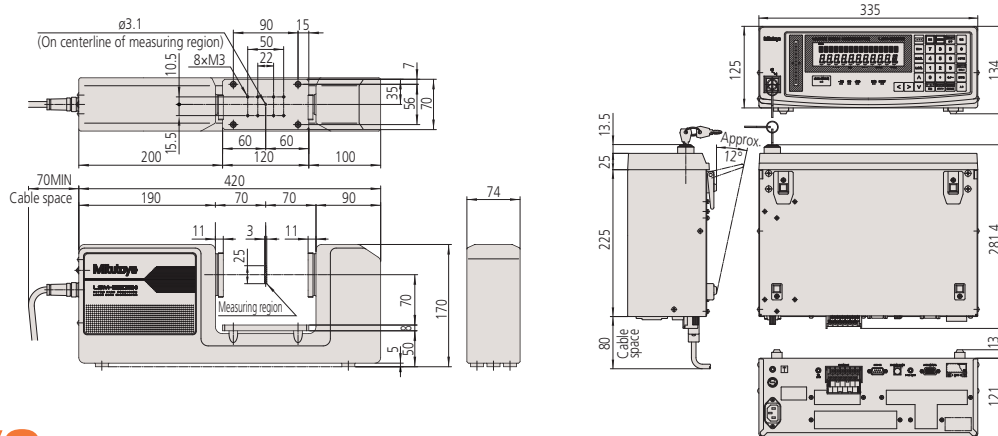
- The best repeatability available in the 25mm/1" class.
- The ultra-precise scanning motor enables the highest measurement accuracy.
- Thanks to excellent linearity, an accuracy of $\pm 0.5\mu\text{m}$ over the entire measuring range and a higher accuracy of $\pm(0.3+0.1\Delta D)\mu\text{m}$ over a narrow range are guaranteed.
- An excellent option for measuring pin gages or plug gages.

Specifications

Set Order No.	544-499A(mm/inch)		
Applicable standards	IEC · FDA		
Measuring unit	Display unit		
Measuring range	0.1 to 25mm (0.004 - 1.0 in)	Display	16-digit plus 11-digit fluorescent display, and guide message LED
Resolution	0.01 to 10 μm (selectable) (0.000001 - 0.0005 in)	Segment	1 to 7 (1 to 3, transparent) or 1 to 255 edges
Repeatability*1	Whole range	Averaging times	Arithmetic average: 1 to 2048 scans. Moving average: 32 to 2048 scans.
	Narrow range	Judgment	Selection from "target value + tolerance", "lower tolerance + upper tolerance", or "7 classes multilimit tolerance zone".
Accuracy*2 (20°C)	Whole range	Measurement mode	Standby, Single measurement, Continuous measurement
	Narrow range	Statistical analysis	Maximum, Minimum, Max-Min, Average, Dispersion, (S.D)
Movement error*3	$\pm 0.5\mu\text{m}$ (± 0.000020 in)	External dimensions	335(W)×134(H)×250(D)mm
Measuring region*4	$\pm 1.5\text{mm} \times 25\text{mm}$ ($\pm 0.06 \times 1.0$ in)	Power supply	100 to 240VAC $\pm 10\%$ 35W 50/60Hz
Scanning rate	1600 scans/s	Standard output	RS-232C, Analog I/O
Laser wavelength	650nm (visible)	Optional output	Digimatic code output unit (2-ch), 2nd I/O analog I/F, BCD I/F
Laser scanning speed	112m/s	Operating environment	0 to 40°C, RH 35 to 85% (non-condensing)
Operating environment	Temperature	Others	Nominal setting, sample setting, suppression of unnecessary digits, transparent object measurement, automatic measurement in edge mode, output timer, abnormal data elimination, SHL change, group judgment, simultaneous measurement, statistical processing, mastering, buzzer function, automatic workpiece detection (dimension/position), zero-set/offset Note: In the case of dual measuring-unit connection, extra-fine line measurement and some of the communication commands are not available.
	Humidity		

*1: At the 2 σ level in the case where $\phi 25\text{mm}$ and $\phi 10\text{mm}$ diameters are measured using a measurement time of 1.28 seconds (2048 scans on average) *2: The value at the center of the measuring range
*3: The additional error (in outside diameter) caused by workpiece movement within the measuring envelope during the measuring cycle *4: Length along optical axis x Scanning length (Measuring range)
*5: ΔD is the difference in outside diameter between the master gage and workpiece.

Dimensions



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