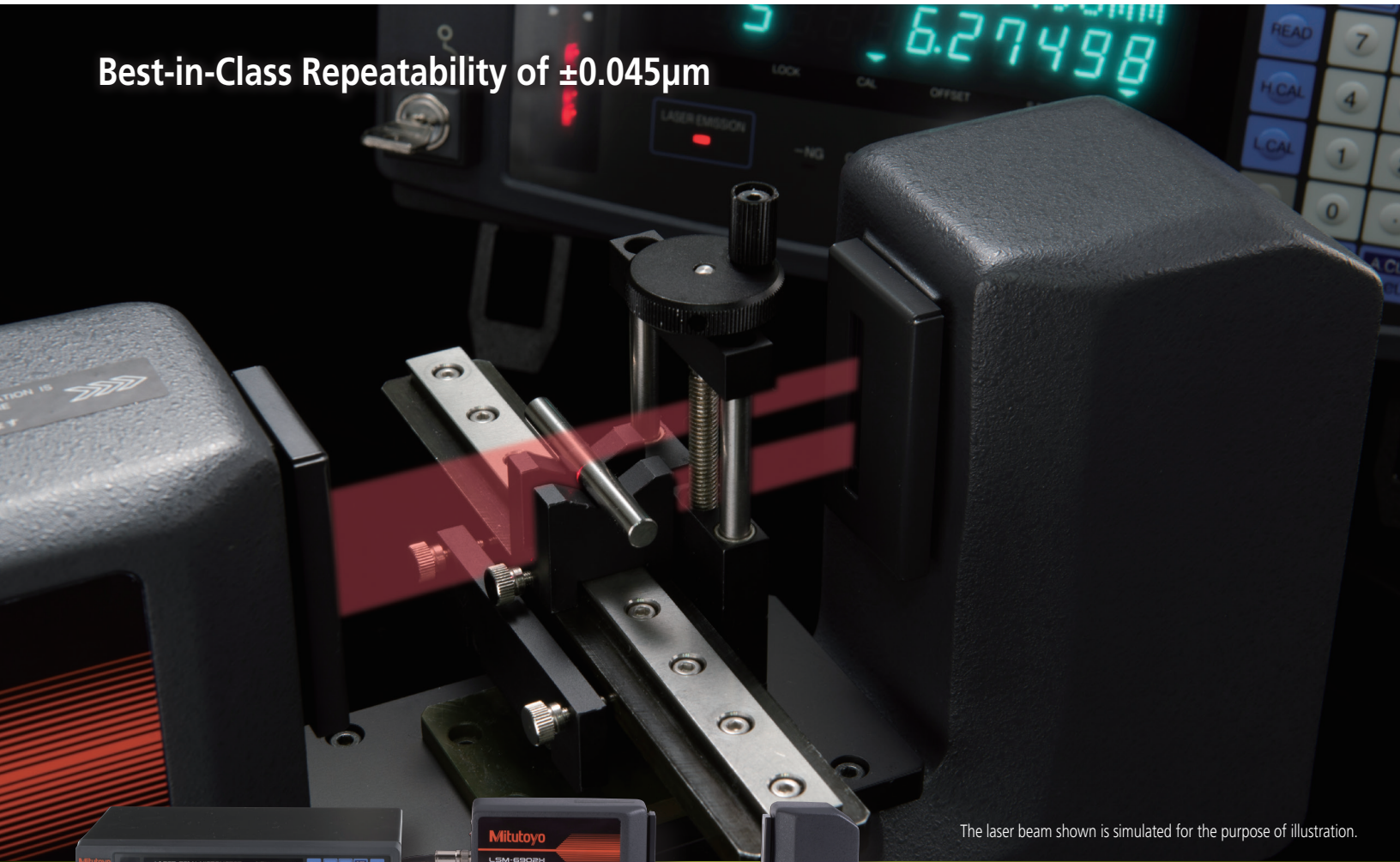


# Non-contact, high-accuracy measurement system Laser Scan Micrometer LSM-6902H



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.

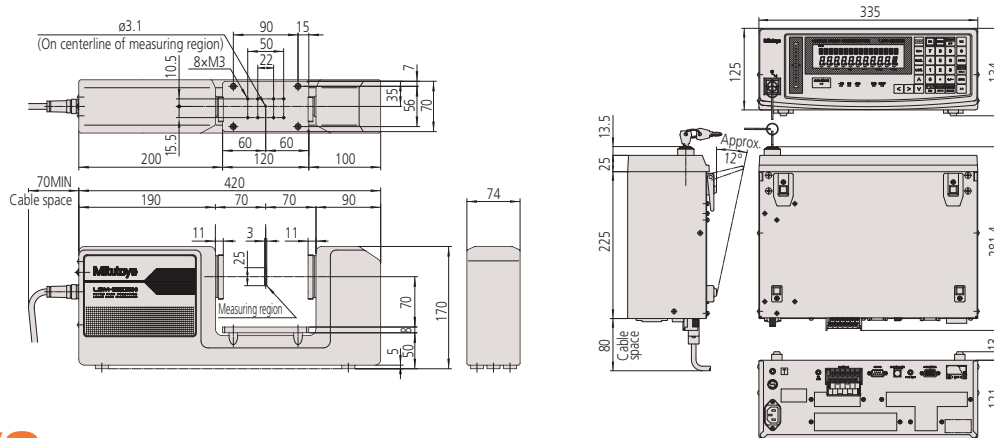
### Specifications

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
Resolution		0.01 to 10 $\mu\text{m}$ (selectable) (0.000001 - 0.0005 in)	Segment
Repeatability*1	Whole range	$\pm 0.045\mu\text{m}$ ( $\pm 0.0000018$ in) ( $\varnothing 25\text{mm}$ )	Averaging times
	Narrow range	$\pm 0.03\mu\text{m}$ ( $\pm 0.0000012$ in) ( $\varnothing 10\text{mm}$ )	Arithmetic average: 1 to 2048 scans. Moving average: 32 to 2048 scans.
Accuracy*2 (20°C)	Whole range	$\pm 0.5\mu\text{m}$ ( $\pm 0.000020$ in)	Judgment
	Narrow range	$\pm(0.3+0.1\Delta D)$ [D:mm] $\mu\text{m}$ $\pm(0.00012+0.0001\Delta D)$ [D:inch]*5	Selection from "target value + tolerance", "lower tolerance + upper tolerance", or "7 classes multimit tolerance zone".
Movement error*3		$\pm 0.5\mu\text{m}$ ( $\pm 0.000020$ " )	Measurement mode
Measuring region*4		$\pm 1.5\text{mm} \times 25\text{mm}$ ( $\pm 0.006 \times 1.0$ in)	Standby, Single measurement, Continuous measurement
Scanning rate		1600 scans/s	Statistical analysis
Laser wavelength		650nm (visible)	Maximum, Minimum, Max-Min, Average, Dispersion, (S.D)
Laser scanning speed		112m/s	External dimensions
Operating environment	Temperature	0 to 40°C	335(W) $\times$ 134(H) $\times$ 250(D)mm
	Humidity	RH 35 to 85% (non-condensing)	Power supply
			100 to 240VAC $\pm 10\%$ 35W 50/60Hz
			Standard output
			RS-232C, Analog I/O
			Optional output
			Digimatic code output unit (2-ch), 2nd I/O analog I/F, BCD I/F
			Operating environment
			0 to 40°C, RH 35 to 85% (non-condensing)
			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.



\*1: At the 2 $\sigma$  level in the case where  $\varnothing 25\text{mm}$  and  $\varnothing 10\text{mm}$  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:  $\Delta D$  is the difference in outside diameter between the master gage and workpiece.

### Dimensions



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