Laser Scan Micrometer Selection Guide

MEASURING UNITS

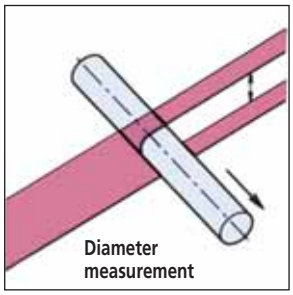
Appearance	Model	Laser Classification	Measuring range	Resolution (Selectable)
	**LSM-902***	**Visible** (650nm), IEC Class 2/ FDA Class II	0.1 - 25mm (.004" - 1.0")	0.01µm - 10µm (.000001" - .0005")
	**LSM-500S**	**Visible** (650nm), IEC Class 2/ FDA Class II	0.005 - 2mm (.0002" - .08")	0.01µm - 10µm (.000001" - .0005")
	**LSM-501S**	**Visible** (650nm), IEC Class 2/	0.05 - 10mm (.002" - .4") FDA Class II	0.01µm - 10µm (.000001" - .0005")
	**LSM-503S**	**Visible** (650nm), IEC Class 2/ FDA Class II	0.3 - 30mm (.012" - 1.18")	0.02µm - 100µm (.000001" - .005")
	**LSM-506S**	**Visible** (650nm), IEC Class 2/ FDA Class II	1 - 60mm (.04" - 2.36")	0.05µm - 100µm (.000002" - .005")
	**LSM-512S**	**Visible** (650nm), IEC Class 2/ FDA Class II	1 - 120mm (.04" - 4.72")	0.1µm - 100µm (.000005" - .005")
	**LSM-516S**	**Visible** (650nm), IEC Class 2/ FDA Class II	1 - 160mm (.04" - 6.30")	0.1µm - 100µm (.000005" - .005")
 With display unit	**LSM-9506** Measuring unit - display unit one-piece structure for bench-top use only	**Visible** (650nm), IEC Class 2/ FDA Class II	0.5 - 60mm (.02" - 2.36")	0.05µm - 100µm (.000002" - .005")

DISPLAY UNITS

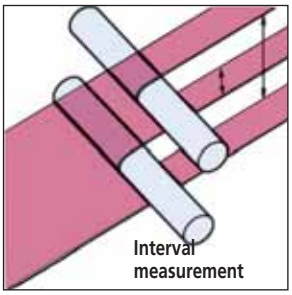
Appearance	Model	Type	Application	Interface units equipped
	**LSM-6200** **LSM-6900***	Multi-function type	Bench-top use	• RS-232C • I/O • Analog output
	**LSM-5100****	Compact type (Low cost)	Assembly/ bench-top use (DIN size)	• RS-232C • I/O • Analog output

*LSM-902 and LSM-6900 are factory-set package.
**When connecting with the LSM-500S series, the scanning speed becomes 1600 scans/sec.

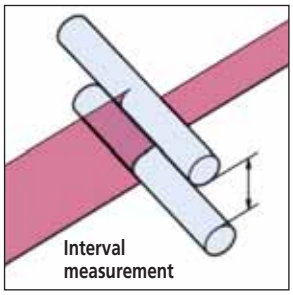
Laser Scan Micrometer



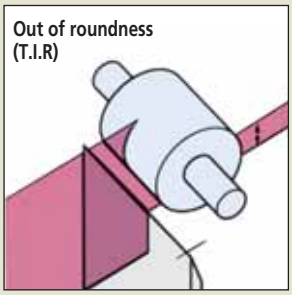
Enamel wire (Coated wire)
Cable
Spring wire
Tungsten wire
Pressure hose



Pins located in parallel

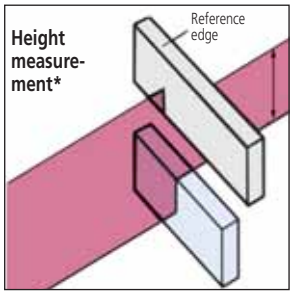


Gap of rollers

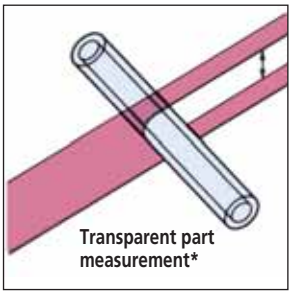


Rubber roller
Roller bearing
Motor shaft

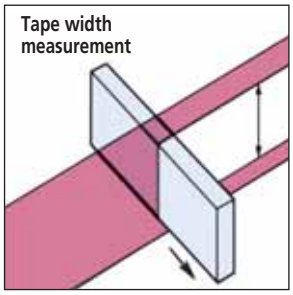
Reference edge



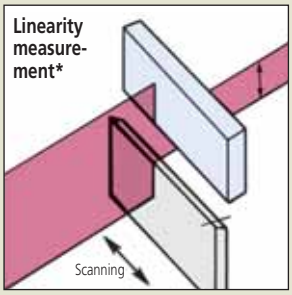
*Using offset function



Optical fiber
Glass tube
*Only segment Nos.
1 and 2 can be used.



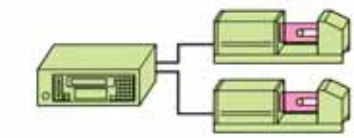
Tape
Belt
Bracket cable



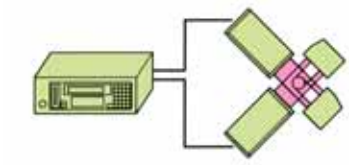
Blade
*Using offset function

Reference edge

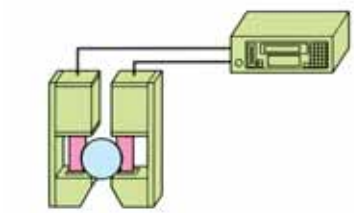
Dual-Unit Measurement:
By using an optional dual-type add on unit (02AGP150), one display unit can process the measurement data from two measuring units. e.g.) Two measurements with a single display unit



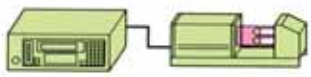
e.g.) XY measurement with a display unit [X–Y or (X + Y)/2]



e.g.) Two laser units used to measure large diameter workpieces



Dual-Program Measurement:
Two measurement programs with different conditions are set, and can be performed at the same time.
e.g.) Measurement of two dimensions



PROG. 0 (segment No. 2 is ON.) and PROG. 5 (segment No. 4 is ON.)

This LSM conforms to the US CDRH regulations in 21 CFR 1040.

Laser Scan Micrometer LSM-9506

SERIES 544 — Bench Top Type Non-contact Measuring System

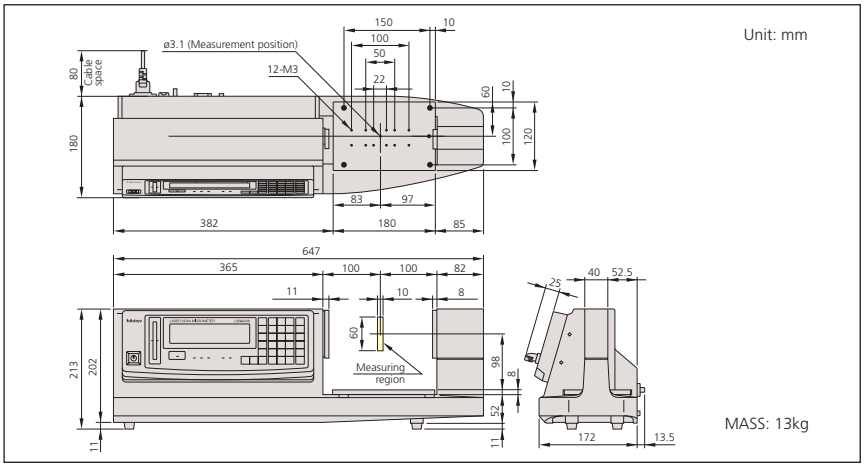
LSM-9506

SPECIFICATIONS

Model	LSM-9506	
Order No.	**544-116-1A**	
Measuring range	.02 - 2.36" (0.5 - 60mm)	
Measuring area	.02 x 2.36" (5 x 60mm) (*1)	
Scanning Rate	1600/sec	
Resolution	.000002 to .005" (0.00005 to 0.1mm) [Selectable]	
Repeatability	± .00003" (±0.6μm) (±2 σ measuring rate: 0.32s)	
Accuracy	Linearity (*2) ± .0001" (±2.5μm) The optical axis direction ± .0001" (±2.5μm) The scanning direction ±(.00008+L/10000)" [L:inch] (*3) ±(2.0+L/10)μm [L:mm] (*3)	
Laser type	Visible semiconductor laser Wavelengths: 670nm Scanning speed: 8900"/s (226m/s)	
Display Measuring function	Fluorescent display 16-digit+11-digit, guidance LEDs Segment designation: 1 to 7 (1 to 3 for Transparent) 10 Program storage (PROG. 0 to PROG. 9) 255 Edge Designations can be detected Multi Limit GO/±NG Tolerance Judgment (up to 7 intervals) Dual-Axis LED Display	Offset Setting and Mastering Reference Value Setting Automatic Workpiece Detection Dual-Gage Calibration Inch/mm Conversion Abnormal Data Elimination Dual Program Measurement Statistical Processing Workpiece Position display Foot-switch Connector
Data output standard	RS-232C, I/O Analog Interface, SPC	
Power Supply Power Cord Power Switch Operating Environment	AC100V - 240V ±10% 50/60Hz 40VA 930966 Key switch use 32~104°F(0~40°C), 35 - 85% RH (without condensation)	

(*1): The area given by [measuring range on the optical axis] x [Measuring range in the scanning direction].
(*2): Specified at the center of the measurement region.
(*3): L=Deviation between the center of workpiece and the optical axis. (See fig. 1)

DIMENSIONS AND MASS



Optional Accessories

02AGD170: Calibration gage set for LSM-9506
02AGD600B: Thermal printer (w/120V AC adapter)

Laser Scan Micrometer LSM-902 / 6900

SERIES 544 — Ultra-high Accuracy Non-contact Measuring System

LSM-6900 display unit

544-496A

LSM-902
measuring unit

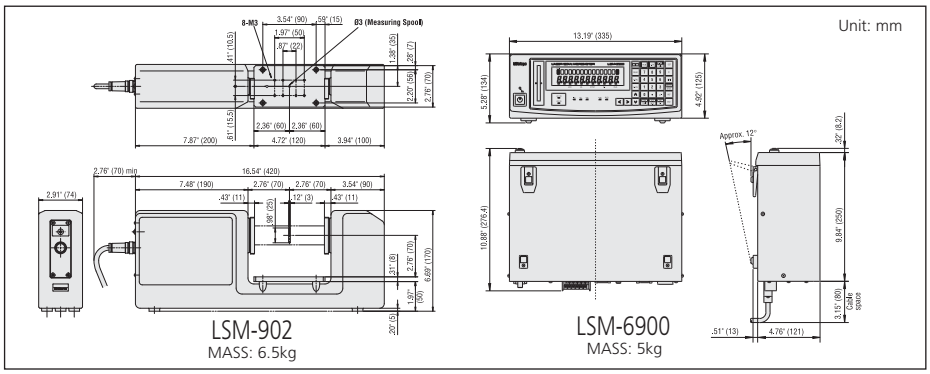
SPECIFICATIONS

LSM-902		
Measuring range		.004 - 1.0" (0.1 - 25mm)
Resolution		.000001 to .0005" (0.00001 to 0.01mm) [Selectable]
Repeatability*1		± .000002" (±0.05µm)*2
Linearity*1	Whole range	± .00002" (±0.5µm)*3
	Small range	± (.000012 + .0001 ΔD)" [ΔD:inch]*3 *4 ±(0.3 + 0.1 ΔD)µm [ΔD:mm]*3 *4
Positional error*1 *5		± .000020" (±0.5µm)
Measuring region		± .6 x 1.0" (±1.5 x 25mm)*6
Number of scans		800/sec
Laser wavelength		650nm [Visible LD], 1.5mW (peak)
Laser scanning speed		2240"/sec (56m/sec)
LSM-6900		
Display		Fluorescent display 16-digit + 11 digit, Guidance LEDs
Measuring function*7	Segment designation	1 to 7 (1 to 3 for Transparent material)
	Edge designation	1 to 255
	Averaging method	Simple averaging 1 to 2048 Moving averaging: 32 to 2048
		Tolerance judgement (GO,±NG); Multi-limit judgement (7 classes); Off-set/Zero-set; Abnormal data elimination; Automatic workpiece detection; Reference value setting; Data output condition; Laser power deterioration; Sample measurement; Statistical processing; Dual-program measurement; Automatic measurement using edge mode; Workpiece position display; Transparent object measuring; Key-lock function; mm/inch changeover; Dual-gage calibration; Selection of resolution; Judgement in ready state; Display of a comma to mark the thousandths position; Mastering; None-display unnecessary digits; Group judgement
Scanning signal monitor connector		Provided as standard (with the plug)
Remote interlock connector		Provided as standard (with the plug)
Powerswitch		Key switch used
Built-in interface		RS-232C; Foot switch connector; I/O analog interface
Optional interface	DCU slot	Digimatic code output unit (2-ch)
	Expansion slot (1-slot)	2nd I/O analog I/F; BCD I/F; GP-IB I/F;
Power supply		AC 100V - 240V±10%, 50/60Hz, 40VA

*1 Accuracy inspection environment/Temperature 20°C±1°C, Humidity: 50%±10%.
*2 The repeatability is determined by the value for ±2σ- at the measurement interval of 1.28 sec.
*3 Specified at the center of the measurement region.
*4 ΔD: Diameter difference to master gage.
*5 An error due to workpiece shift either in the optical axis direction or in the scanning direction.
*6 The area given by [measuring range on the optical axis] x [measuring range in the scanning direction.]
*7 The combination of functions is limited, details are described in the user's manual.

DIMENSIONS AND MASS

Unit: mm



Optional Accessories

02AGD180: Calibration gage set for LSM-902/6900
02AGD270: Workstage
02AGD280: Adjustable workstage
02AGD600B: Thermal printer (w/120VAC adapter)

Laser Scan Micrometer LSM-500S

SERIES 544 — High Accuracy Non-contact Measuring System

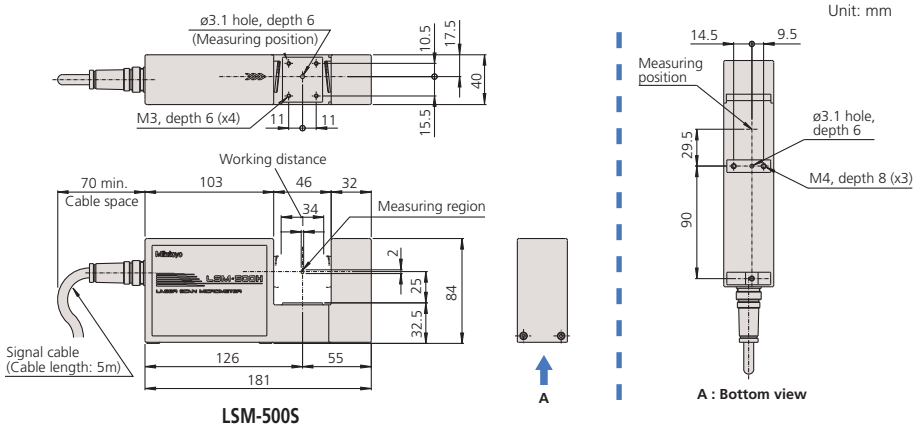
544-532

SPECIFICATIONS

Model		LSM-500S
Order No.		**544-532**
Applicable display unit		LSM-6200
Laser Scanning Range	inch(mm)	Up to .49" (12.5mm) (Detecting regions are limited to about .4" (10mm) approx.)
Measuring range	inch(mm)	.0002 to .08" (0.005 to 2mm) .004 to .08" (0.1 to 2mm) [*1]
Resolution	inch(mm)	.000001 to .0005" (0.00001 to 0.01mm) [Selectable]
Repeatability [*2]	inch(µm)	±.0000012" (±0.03µm) [*3]
Linearity [*2]	inch(µm)	±.000012" (±0.3µm) [*4]
Positional error [*2][*5]	inch(µm)	±.000016" (±0.4µm)
Measuring region	inch(mm)	.04 x .08" (1 x 2mm) [Optical axis direction x Scanning direction]
Number of scans for averaging	scan	16 to 2048 [*6]
Laser classification		Class 2 (Max. Output: 1.3mW with a scanning laser, semiconductor laser: wavelength 650nm)
Number of laser scans	/sec	3200
Laser scanning rate	inch/sec (m/sec)	2992"/sec (76m/sec)
Protection level		IP64
Operation environment	Temperature	0°C to 40°C
	Humidity	35%RH to 85%RH [without condensation]
	Altitude	2000m or less
Storage environment	Temperature	-15°C to 55°C
	Humidity	35%RH to 85%RH [without condensation]

[*1]: Measuring range available when set to "No extra-fine wire measurement" or "Edge specification" in the basic setup mode.
[*2]: Environment for accuracy validation: 20°C ± 1°C temperature; 50% ± 10% humidity.
[*3]: The value of ±2 σ with a 2mm-diameter gage has been measured for two minutes with a measurement interval of 0.32 seconds, where σ is the standard deviation.
[*4]: The value of measurements in the center of the measurement region.
[*5]: Error due to the positional shift of the workpiece in the optical axis direction or scanning direction
[*6]: Averaging scans between 1 and 8 times can be made if "No extra-fine wire measurement" is specified in the basic setup mode. The measuring range, however, is limited to 0.1mm to 2mm in this case.

DIMENSIONS AND MASS



LSM-500S

MASS: 1.5kg

Optional Accessories for LSM-500S

02AGD110: Calibration gage set (ø0.1mm, ø2.0mm)
02AGD200: Wire guiding pulley
02AGD220: Air blow cover
957608: Air cleaner for air blow cover
02AGN780A: Extension signal cable 5m
02AGN780B: Extension signal cable 10m
02AGN780C: Extension signal cable 15m

Laser Scan Micrometer LSM-501S

SERIES 544 — High Accuracy Non-contact Measuring System

544-534

IP64

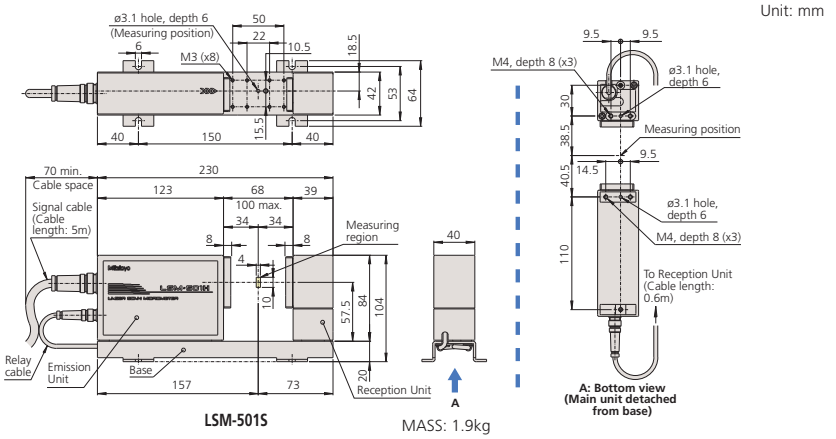
SPECIFICATIONS

Model			LSM-501S
Order No.			544-534
Applicable display unit			LSM-6200
Laser Scanning Range		inch(mm)	Up to .74" (19mm)
Measuring range		inch(mm)	.002 to .4" (0.05 to 10mm)
Resolution		inch(mm)	.000001 to .0005" (0.00001 to 0.01mm) [Selectable]
Repeatability [*1]		inch(µm)	±.0000016" (±0.04µm) [*2]
Linearity [*1]	Whole range	inch(µm)	±.00002" (±0.5µm) [*3]
	Narrow measuring range	µm	±(0.3 + 0.1 ΔD) [*3][*4]
		inch	±(.000012" + .000004" ΔD)
Positional error [*1][*5]		inch(µm)	±.00002" (±0.5µm)
Measuring region		inch(mm)	.08 × .4" (2 × 10mm) (Measuring region: .002 to .004" (0.05 to 0.1mm)) .16 × .4" (4 × 10mm) (Measuring region: .004 to .4" (0.1 to 10mm)) [Optical axis direction × Scanning direction]
Number of scans for averaging		scan	1 to 2048
Laser classification			Class 2 (Max. Output: 1.3mW with a scanning laser, semiconductor laser: wavelength 650nm)
Number of laser scans		/sec	3200
Laser scanning rate		inch/sec (m/sec)	4449"/sec (113m/sec)
Protection level			IP64
Distance between the laser emission unit and reception unit		inch(mm)	Standard 2.68" (68mm) Max. 3.93" (100mm) [*6]
Operation environment		Temperature	0°C to 40°C
		Humidity	35%RH to 85%RH [without condensation]
		Altitude	2000m or less
Storage environment		Temperature	-15°C to 55°C
		Humidity	35%RH to 85%RH [without condensation]

[*1] Environment for accuracy validation: 20°C ± 1°C temperature; 50% ± 10% humidity.
[*2] A value of ±2 with a 10mm-diameter gage has been measured for two minutes with a measurement interval of 0.32 seconds, where σ is the standard deviation.
[*3] The value of measurements in the center of the measurement region.
[*4] ΔD is the difference in diameter of the workpiece and the master gage.
[*5] Error due to the positional shift of workpiece in optical axis direction or scanning direction.
[*6] The distance between the laser emission unit and reception unit other than the standard, may affect the accuracy .

DIMENSIONS AND MASS

Unit: mm



Optional Accessories for LSM-501S

02AGD120: Calibration gage set (ø0.1mm, ø10mm)
02AGD210: Wire guiding pulley
02AGD400: Adjustable workstage
02AGD440: Center support*
02AGD450: Adjustable V-block*
02AGD230: Air blow cover
957608: Air cleaner for air blow cover
02AGC150A: Extension relay cable 1m
02AGN780A: Extension signal cable 5m
02AGN780B: Extension signal cable 10m
02AGN780C: Extension signal cable 15m
*Use with an adjustable workstage.

Laser Scan Micrometer LSM-503S

SERIES 544 — High Accuracy Non-contact Measuring System

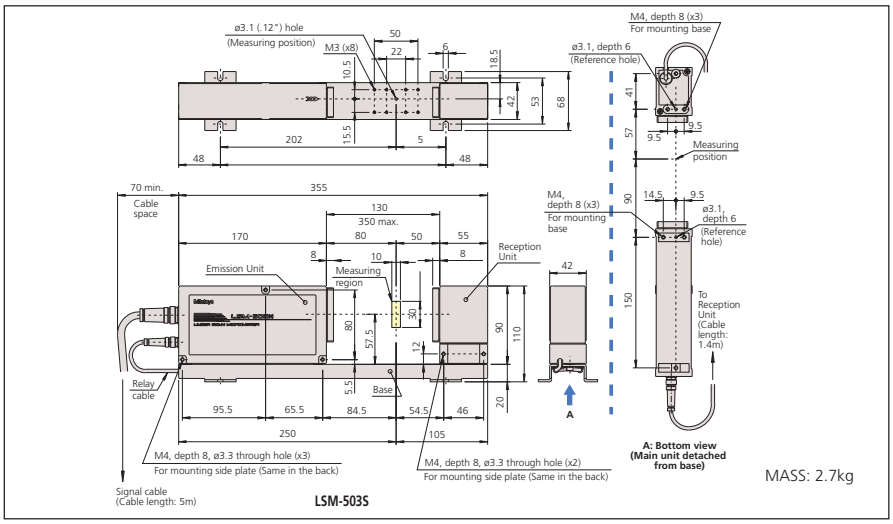
IP64

SPECIFICATIONS

Model			LSM-503S
Order No.			544-536
Applicable display unit			LSM-6200
Laser Scanning Range		inch(mm)	Up to 1.3" (34mm)
Measuring range		inch(mm)	.012 to 1.18" (0.3 to 30mm)
Resolution		inch(mm)	.000001 to .005" (0.00002 to 0.1mm) [Selectable]
Repeatability [*1]		inch(µm)	±.0000044" (±0.11µm) [*2]
Linearity [*1]	Whole range	inch(µm)	±.00004" (±1.0µm) [*3]
	Narrow measuring range	µm	±(0.6 + 0.1 ΔD) [*3][*4]
		inch	±(.000024" + .000004" ΔD)
Positional error [*1][*5]		inch(µm)	±.00006"(±1.5µm)
Measuring region		inch(mm)	.08 × .4" (2 × 10mm) (Measuring region: .002 to .004" (0.05 to 0.1mm)) .16 × .4" (4 × 10mm) (Measuring region: .004 to .4" (0.1 to 10mm)) [Optical axis direction × Scanning direction]
Number of scans for averaging		scan	1 to 2048
Laser classification			Class 2 (Max. Output: 1.3mW with a scanning laser, semiconductor laser: wavelength 650nm)
Number of laser scans		/sec	3200
Laser scanning rate		inch (m/sec)	4449"/sec (113m/sec)
Protection level			IP64
Distance between the laser emission unit and reception unit		inch(mm)	Standard 5.12" (130mm) Max. 13" (350mm) [*6]
Operation environment		Temperature	0°C to 40°C
		Humidity	35%RH to 85%RH [without condensation]
		Altitude	2000m or less
Storage environment		Temperature	-15°C to 55°C
		Humidity	35%RH to 85%RH [without condensation]

[*1] Environment for accuracy validation: 20°C ± 1°C temperature; 50% ± 10% humidity.
[*2] A value of ±2 with a 10mm-diameter gage has been measured for two minutes with a measurement interval of 0.32 seconds, where σ is the standard deviation.
[*3] The value of measurements in the center of the measurement region.
[*4] ΔD is the difference in diameter of the workpiece and the master gage.
[*5] Error due to the positional shift of workpiece in optical axis direction or scanning direction.
[*6] The distance between the laser emission unit and reception unit other than the standard, may affect the accuracy .

DIMENSIONS AND MASS



Optional Accessories for LSM-503S

002AGD130: Calibration gage set (ø1mm, ø30mm)
02AGD490: Adjustable workstage
02AGD440: Center support*
02AGD450: Adjustable V-block*
02AGD240: Air blow cover
957608: Air cleaner for air blow cover
02AGC150A: Extension relay cable 1m
02AGC150B: Extension relay cable 3m
02AGC150C: Extension relay cable 5m
02AGN780A: Extension signal cable 5m
02AGN780B: Extension signal cable 10m
02AGN780C: Extension signal cable 15m
02AGN780D: Extension signal cable 20m
*Use with an adjustable workstage.

Laser Scan Micrometer LSM-506S

SERIES 544 — High Accuracy Non-contact Measuring System

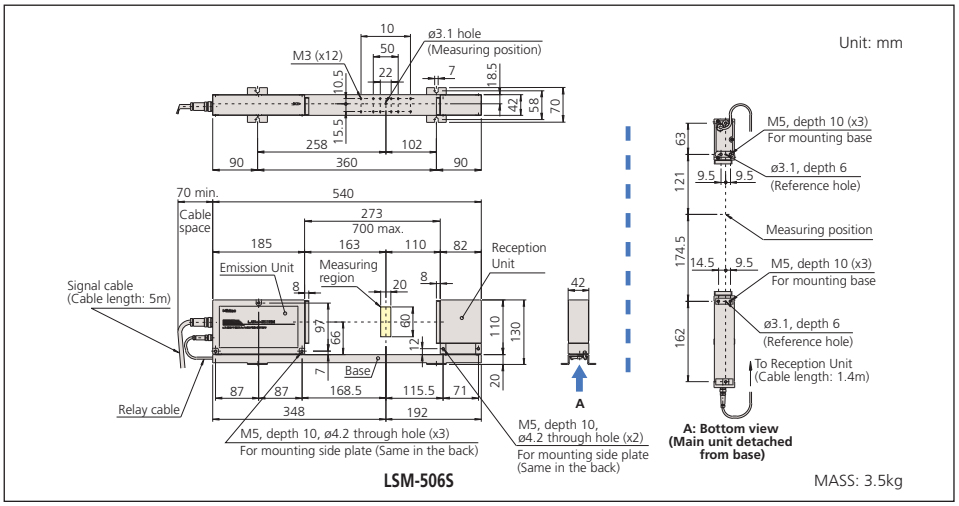
IP64

SPECIFICATIONS

Model			LSM-506S
Order No.			**544-538**
Applicable display unit			LSM-6200
Laser Scanning Range		inch(mm)	Up to 2.6" (66mm)
Measuring range		inch(mm)	.04 to 2.36" (1 to 60mm)
Resolution		inch(mm)	.000002 to .005" (0.00005 to 0.1mm) [Selectable]
Repeatability [*1]		inch(µm)	±.000014" (±0.36µm) [*2]
Linearity [*1]	Whole range	inch(µm)	±.00012" (±3.0µm) [*3]
	Narrow measuring range	µm	±(1.5 + 0.5 ΔD) [*3][*4]
		inch	±(.00012" + .00002" ΔD) [*3][*4]
Positional error [*1][*5]		inch(µm)	±.00016" (±4.0µm)
Measuring region		inch(mm)	.8 x 2.36" (20 x 60) [Optical axis direction x Scanning direction]
Number of scans for averaging		scan	1 to 2048
Laser classification			Class 2 (Max. Output: 1.3mW with a scanning laser, semiconductor laser: wavelength 650nm)
Number of laser scans		/sec	3200
Laser scanning rate		inch/sec (m/sec)	17795"/sec (452m/sec)
Protection level			IP64
Distance between the laser emission unit and reception unit		inch(mm)	Standard 10.75" (273mm) Max. 27" (700mm) [*6]
Operation environment		Temperature	0°C to 40°C
		Humidity	35%RH to 85%RH [without condensation]
		Altitude	2000m or less
Storage environment		Temperature	-15°C to 55°C
		Humidity	35%RH to 85%RH [without condensation]

[*1] Environment for accuracy validation: 20°C ± 1°C temperature; 50% ± 10% humidity.
[*2] A value of ±2σ with a 60mm-diameter gage has been measured for two minutes with a measurement interval of 0.32 seconds, where σ is the standard deviation.
[*3] The value of measurements in the center of the measurement region.
[*4] ΔD is the difference in diameter of the workpiece and the master gage.
[*5] Error due to the positional shift of workpiece in optical axis direction or scanning direction.
[*6] The distance between the laser emission unit and reception unit other than the standard, may affect the accuracy .

DIMENSIONS AND MASS



Optional Accessories for LSM-506S

02AGD140: Calibration gage set (ø1mm, ø60mm)
02AGD520: Adjustable workstage
02AGD580: Center support*
02AGD590: Adjustable V-block*
02AGD250: Air blow cover
957608: Air cleaner for air blow cover
02AGC150A: Extension relay cable 1m
02AGC150B: Extension relay cable 3m
02AGC150C: Extension relay cable 5m
02AGN780A: Extension signal cable 5m
02AGN780B: Extension signal cable 10m
02AGN780C: Extension signal cable 15m
02AGN780D: Extension signal cable 20m
*Use with an adjustable workstage.

Laser Scan Micrometer LSM-512S

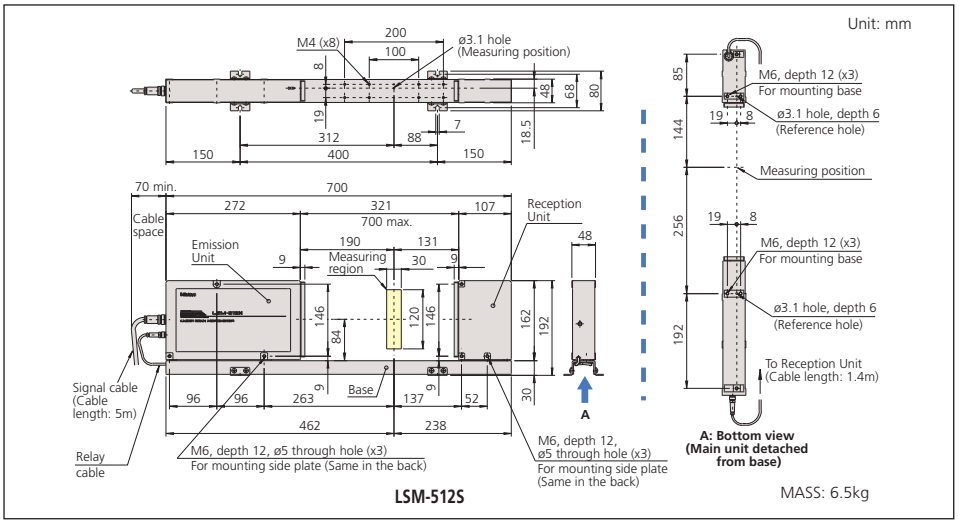
SERIES 544 — High Accuracy Non-contact Measuring System

SPECIFICATIONS

Model			LSM-512S
Order No.			544-540
Applicable display unit			LSM-6200
Laser Scanning Range		inch(mm)	Up to 5.0" (126mm)
Measuring range		inch(mm)	.04 to 4.72" (1 to 120mm)
Resolution		inch(mm)	.000005 to .005" (0.0001 to 0.1mm) [Selectable]
Repeatability [*1]		inch(μm)	±.000033" (±0.85μm) [*2]
Linearity [*1]	Whole range	inch(μm)	±.00024" (±6.0μm) [*3]
	Narrow measuring range	μm	±(4.0 + 0.5 ΔD) [*3][*4]
		inch	±(.00016" + .00002" ΔD) [*3][*4]
Positional error [*1][*5]		inch(μm)	±.0003" (±8.0μm)
Measuring region		inch(mm)	1.2 x 4.72" (30 x 120) [Optical axis direction × Scanning direction]
Number of scans for averaging		scan	1 to 2048
Laser classification			Class 2 (Max. Output: 1.3mW with a scanning laser, semiconductor laser: wavelength 650nm)
Number of laser scans		/sec	3200
Laser scanning rate		inch/sec (m/sec)	35590"/sec (904m/sec)
Protection level			IP64
Distance between the laser emission unit and reception unit		inch(mm)	Standard 12.64" (321mm) Max. 27" (700mm) [*6]
Operation environment		Temperature	0°C to 40°C
		Humidity	35%RH to 85%RH [without condensation]
		Altitude	2000m or less
Storage environment		Temperature	-15°C to 55°C
		Humidity	35%RH to 85%RH [without condensation]

[*1] Environment for accuracy validation: 20°C ± 1°C temperature; 50% ± 10% humidity.
[*2] A value of ±2σ with a 120mm-diameter gage has been measured for two minutes with a measurement interval of 0.32 seconds, where σ is the standard deviation.
[*3] The value of measurements in the center of the measurement region.
[*4] ΔD is the difference in diameter of the workpiece and the master gage.
[*5] Error due to the positional shift of workpiece in optical axis direction or scanning direction.
[*6] The distance between the laser emission unit and reception unit other than the standard, may affect the accuracy .

DIMENSIONS AND MASS



LSM-512S

MASS: 6.5kg

Optional Accessories for LSM-512S

02AGD150: Calibration gage set (ø20mm, ø120mm)
02AGD260: Air blow cover
957608: Air cleaner for air blow cover
02AGC150A: Extension relay cable 1m
02AGC150B: Extension relay cable 3m
02AGC150C: Extension relay cable 5m
02AGN780A: Extension signal cable 5m
02AGN780B: Extension signal cable 10m
02AGN780C: Extension signal cable 15m
02AGN780D: Extension signal cable 20m

Laser Scan Micrometer LSM-516S

SERIES 544 — High Accuracy Non-contact Measuring System

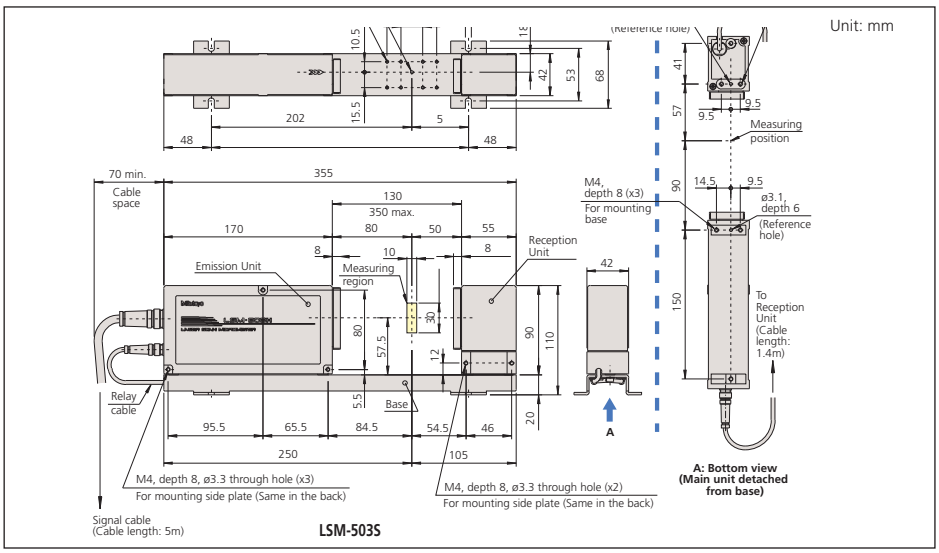
IP64

SPECIFICATIONS

Model			LSM-516S
Order No.			544-542
Applicable display unit			LSM-6200
Laser Scanning Range		inch(mm)	Up to 6.7" (170mm)
Measuring range		inch(mm)	.04 to 6.3" (1 to 160mm)
Resolution		inch(mm)	.000005 to .005" (0.0001 to 0.1mm) [Selectable]
Repeatability [*1]		inch(µm)	±.000055" (±1.4µm) [*2]
Linearity [*1]	Whole range	inch(µm)	±.00028" (±7.0µm) [*3]
	Narrow measuring range	µm	±(4.0 + 2.0 ΔD) [*3][*4]
		inch	±(.00016" + .000079" ΔD) [*3][*4]
Positional error [*1][*5]		inch(µm)	±.0003" (±8.0µm)
Measuring region		inch(mm)	1.57 x 6.3" (40 x 160) [Optical axis direction × Scanning direction]
Number of scans for averaging		scan	1 to 2048
Laser classification			Class 2 (Max. Output: 1.3mW with a scanning laser, semiconductor laser: wavelength 650nm)
Number of laser scans		/sec	3200
Laser scanning rate		inch/sec (m/sec)	47480"/sec (1206m/sec)
Protection level			IP64
Distance between the laser emission unit and reception unit		inch(mm)	Standard 15.74" (400mm) Max. 32.72" (800mm) [*6]
Operation environment		Temperature	0°C to 40°C
		Humidity	35%RH to 85%RH [without condensation]
		Altitude	2000m or less
Storage environment		Temperature	-15°C to 55°C
		Humidity	35%RH to 85%RH [without condensation]

[*1] Environment for accuracy validation: 20°C ± 1°C temperature; 50% ± 10% humidity.
[*2] A value of ±2σ with a 160mm-diameter gage has been measured for two minutes with a measurement interval of 0.32 seconds, where σ is the standard deviation.
[*3] The value of measurements in the center of the measurement region.
[*4] ΔD is the difference in diameter of the workpiece and the master gage.
[*5] Error due to the positional shift of workpiece in optical axis direction or scanning direction.
[*6] The distance between the laser emission unit and reception unit other than the standard, may affect the accuracy .

DIMENSIONS AND MASS



Optional Accessories for LSM-516S

002AGM300: Calibration gage set (ø20mm, ø160mm)
02AGC150A: Extension relay cable 1m
02AGC150B: Extension relay cable 3m
02AGC150C: Extension relay cable 5m
02AGN780A: Extension signal cable 5m
02AGN780B: Extension signal cable 10m
02AGN780C: Extension signal cable 15m
02AGN780D: Extension signal cable 20m

LSM-5200 Display Unit

SERIES 544 — Compact Display Unit for Real-time Multi-channel Measurement

Technical Data

Main display: 9-digit LED
Interface units equipped: RS-232C, Analog I/O, Foot switch
Power supply: +24V DC±10%, 1A

Function of Display Unit

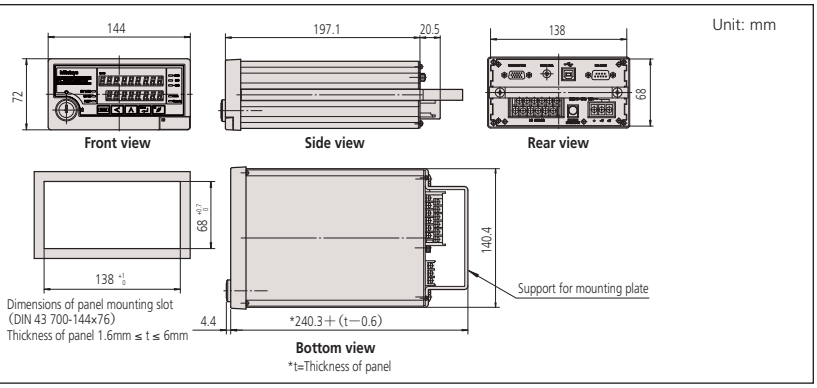
Zero-setting, presetting, GO/±NG judgment, Offset value setting, Sample measurement, Statistical calculation, Data output, Workpiece position display, mm/inch switching, Dual-gage calibration, Transparent object measurement, Automatic measurement, Abnormal data eliminating

FEATURES

- Panel-mount type (with dimensions conforming to DIN standards) allows easy system integration.
- Capable of calculating mean, maximum, minimum, and range (maximum - minimum).
- Either the segment measurement (7 segments max.) or edge measurement (1 to 255 edges) can be selected.
- The RS-232C interface and the I/O and analog interface are provided as standard.
- The arithmetical average or moving average can be selected.
- GO/±NG judgment function.

544-047

DIMENSIONS



LSM-6200 Display Unit

SERIES 544 — Standard Display Unit for Laser Scan Micrometer

Technical Data

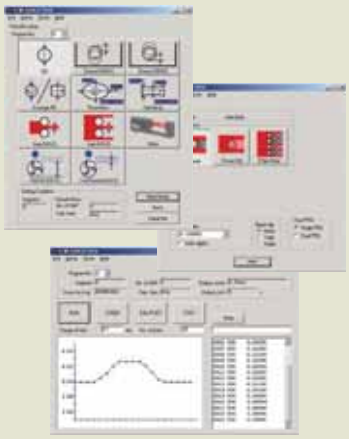
Main display: 16-digit fluorescent tube
Interface units equipped: RS-232C, Analog I/O, Foot switch
Power supply: 100 - 240V AC±10%, 40VA, 50/60Hz

Function of Display Unit

Zero-setting, Presetting, GO/±NG judgment, Multi-limit judgment, Offset value setting, Sample measurement, Statistical calculation, Group judgment, Data output, Workpiece position display, mm/inch switching, Dual-gage calibration, Transparent object measurement, Dual-unit measurement (optional), Automatic measurement, Abnormal data eliminating

QUICKTOOL

QUICKTOOL is a free software program that makes programming the LSM-6200 quick and easy. Please contact your Mitutoyo office for more information.



FEATURES

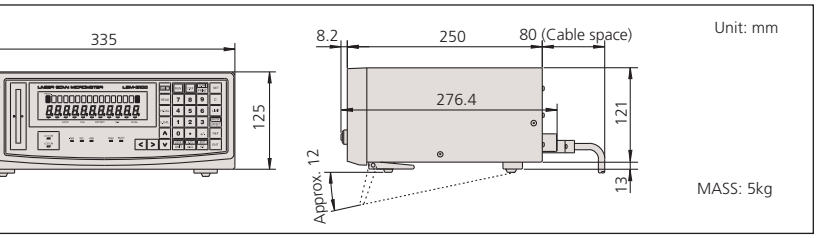
- With a dual-display design setup values can be continuously monitored. Also, two measurement value items can be displayed on the sub-display with the simultaneous measurement function.
- Either the segment measurement (7 segments max.) or edge measurement (1 to 255 edges) can be selected.
- The RS-232C interface and the I/O and analog interface are provided as standard.
- A statistical calculation function and abnormal data eliminating function are provided.

544-072A (Inch/Metric)

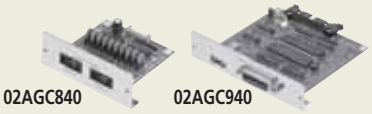
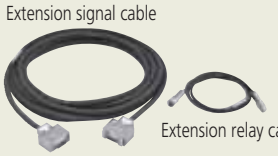
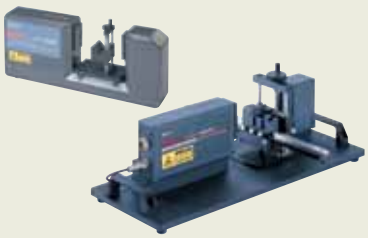
SPECIFICATIONS

Model	LSM-6200
Order No.	**544-072A**

DIMENSIONS AND MASS



Optional Accessories for LSM

Appearance	Order No.	Description	Application
	**02AGD110** **02AGD120** **02AGD180** **02AGD130** **02AGD140** **02AGD150** **02AGM300** **02AGD170**	Calibration gage set Calibration gage set Calibration gage set Calibration gage set Calibration gage set Calibration gage set Calibration gage set Calibration gage set	LSM-500S LSM-501S LSM-902 LSM-503S LSM-506S LSM-512S LSM-516S LSM-9506
	**02AGP150**	Dual-type add-on unit	LSM-6200
 **02AGC840** **02AGC940**	**02AGC840** **02AGC880** **02AGC910** **02AGC940**	Digimatic (SPC) codeout unit 2nd I/O & analog interface unit BCD interface unit GP-IB interface unit	LSM-6200/6900 LSM-6200/6900 LSM-6200/6900 LSM-6200/6900
Extension signal cable  Extension relay cable	**02AGN780A** **02AGN780B** **02AGN780C** **02AGN780D**	Extension signal cable (5m) Extension signal cable (10m) Extension signal cable (15m) Extension signal cable (20m)	Any model of LSM* Any model of LSM* Any model of LSM* Any model of LSM*
	02AGC150A **02AGC150B** **02AGC150C**	Extension relay cable (1m) Extension relay cable (3m) Extension relay cable (5m)	Any model of LSM** Any model of LSM** Any model of LSM**
	**936937**	SPC cable (1m)	LSM-6200/6900/9506
	**937179T**	Footswitch	LSM-6200/6900/9506
	**02AGD270** **02AGD400** **02AGD280** **02AGD490** **02AGD520** **02AGD370** **02AGD680** **02AGD440** **02AGD580** **02AGD450** **02AGD590**	Work stage Adjustable workstage Adjustable workstage Adjustable workstage Adjustable workstage Adjustable workstage Adjustable workstage Center support Center support Adjustable V-block Adjustable V-block	LSM-501S/503S/902 LSM-501S LSM-902 LSM-503S LSM-506S LSM-9506 LSM-9506 LSM-501S/503S/902 LSM-506S/9506 LSM-501S/503S/902 LSM-506S/9506
	**02AGD200** **02AGD210**	Wire guiding pulley Wire guiding pulley	LSM-500S LSM-501S
	**02AGD220** **02AGD230** **02AGD240** **02AGD250** **02AGD260** **957608**	Air blow cover Air blow cover Air blow cover Air blow cover Air blow cover Air cleaner	LSM-500S LSM-501S LSM-503S LSM-506S LSM-512S Any model of LSM
	**02AGD600B**	Thermal printer (120V AC)	Any model of LSM

* Except for LSM-902
** Except LSM-500S/902

Laser Scan Micrometer

Application Example

•Drill / End mill (Odd-number teeth) outer-diameter standard function at LSM-6200 Display Unit