LSM-500S Measuring Unit
SERIES 544 — 5 µm to 2 mm Measuring Unit

- Capable of measuring down to 5 µm outside diameter.
- Provides ultra-high accuracy of ±0.3 µm over the entire measuring range (5 µm to 2 mm).

With signal cable (5 m)
02AGN770A

SPECIFICATIONS

Order No.		544-531	544-532
Model		LSM-500S	
Applicable laser standards		JIS	IEC, FDA
User's Manual		Japanese version	English version
Measuring range		0.005 to 2 mm*1	
Resolution		0.01 to 10 µm (selectable)	
Repeatability*2		±0.03 µm	
Linearity*3 (20 °C)		±0.3 µm	
Positional error*4		±0.4 µm	
Measuring region*5		1×2 mm (0.005 to 2 mm)	
Scanning rate		3200 scans/s	
Laser wavelength		650 nm (Visible)	
Laser scanning speed		76 m/s	
Operating environment	Temperature	0 to 40 °C	
	Humidity	RH 35 to 85% (non-condensing)	
Protection Level		IP64*6	

*1 The measuring range for a transparent object is 0.05 mm to 2 mm. Please consult your local Mitutoyo office for objects smaller than 0.05 mm.
The measuring range is 0.1 mm to 2 mm in the 1 to 255 edge measurement mode or when activating automatic workpiece detection.
*2 Determined at the level of ±2σ (σ: standard deviation) when measuring ø2 mm at the interval of 0.32 sec. (average 1024 times).
*3 Applies at the center of the measuring range when measuring outside diameters.
*4 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*5 The area defined by [optical axis depth]×[scanning width].
*6 The protection level provided for the interior. If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction.
Note 1: If using the optional dual connection unit for **LSM-6200**, the measuring range will be 0.05 mm to 2 mm.
Note 2: When using the extra-fine line measurement function (FINE), guide messages for setting the following will not be displayed: dual-measurement, segment designation, automatic workpiece detection, and group judgment.

LSM-501S Measuring Unit
SERIES 544 — 50 µm to 10 mm Measuring Unit

- Provides ultra-high accuracy of ±0.5 µm over the entire measuring range (0.05 to 10 mm).
- The industry's first narrow-range accuracy performance in this measuring range of ±(0.3+0.1ΔD) µm is available for high-accuracy measurement.

With signal cable (5 m)
02AGN770A

SPECIFICATIONS

Order No.		544-533	544-534
Model		LSM-501S	
Applicable laser standards		JIS	IEC, FDA
User's Manual		Japanese version	English version
Measuring range		0.05 to 10 mm	
Resolution		0.01 to 10 µm (selectable)	
Repeatability*1		±0.04 µm	
Linearity*2 (20 °C)	Whole range	±0.5 µm	
	Narrow range	±(0.3+0.1ΔD) µm*3	
Positional error*4		±0.5 µm	
Measuring region*5		2×10 mm (0.05 to 0.1 mm) 4×10 mm (0.1 to 10 mm)	
Scanning rate		3200 scans/s	
Laser wavelength		650 nm (Visible)	
Laser scanning speed		113 m/s	
Operating environment	Temperature	0 to 40 °C	
	Humidity	RH 35 to 85% (non-condensing)	
Protection Level		IP64*6	

*1 Determined at the level of ±2σ (σ: standard deviation) when measuring ø10 mm at the interval of 0.32 sec. (average 1024 times).
*2 Applies at the center of the measuring range when measuring outside diameters.
*3 ΔD=Difference in diameter between the master gage and workpiece. (Unit: mm)
*4 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*5 The area defined by [optical axis depth]×[scanning width].
*6 The protection level provided for the interior. If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction.

Optional Accessories

• Multifunctional display unit, **LSM-6200**:

Order No.	Display type	Remarks
544-071	Japanese mm/E	Japanese user's manual
544-071*	English mm/E	English user's manual
544-072*	English mm/in	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE."

• Panel-mount type display unit, **LSM-5200**:

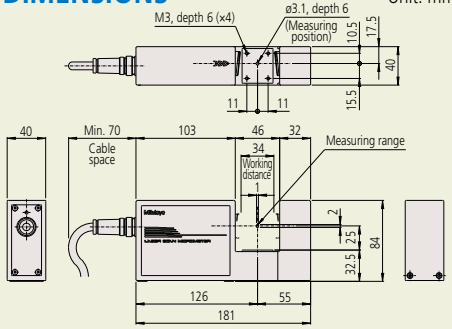
Order No.	Remarks
544-046	Japanese user's manual
544-047	English user's manual

• Standard calibration gage set (ø0.1, ø2.0) : **02AGD110**
• Guide pulley : **02AGD200**
• Air blower : **02AGD220**
• Extension signal cable (max. 15 m)

Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m

DIMENSIONS

Unit: mm



Optional Accessories

• Multifunctional display unit, **LSM-6200**:

Order No.	Display type	Remarks
544-071	Japanese mm/E	Japanese user's manual
544-071*	English mm/E	English user's manual
544-072*	English mm/in	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE."

• Panel-mount type display unit, **LSM-5200**:

Order No.	Remarks
544-046	Japanese user's manual
544-047	English user's manual

• Standard calibration gage set (ø0.1, ø10.0): **02AGD120**
• Wire guiding pulley : **02AGD210**
• Adjustable workstage : **02AGD400**
• Air blower : **02AGD230**
• Workstage : **02AGD270**
• Extension signal cable (max. 15 m)

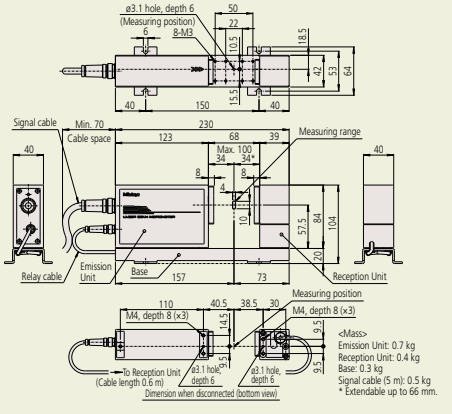
Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m

• Extension relay cable

Order No.	Cable length
02AGC150A	1 m

DIMENSIONS

Unit: mm



Optional Accessories

• Multifunctional display unit, **LSM-6200**:

Order No.	Display type	Remarks
544-071	Japanese mm/E	Japanese user's manual
544-071*	English mm/E	English user's manual
544-072*	English mm/in	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE."

• Panel-mount type display unit, **LSM-5200**:

Order No.	Remarks
544-046	Japanese user's manual
544-047	English user's manual

• Standard calibration gage set (ø1.0, ø30.0) : **02AGD130**
• Adjustable workstage : **02AGD490**
• Air blower : **02AGD240**
• Workstage : **02AGD270**
• Extension signal cable (max. 25 m)

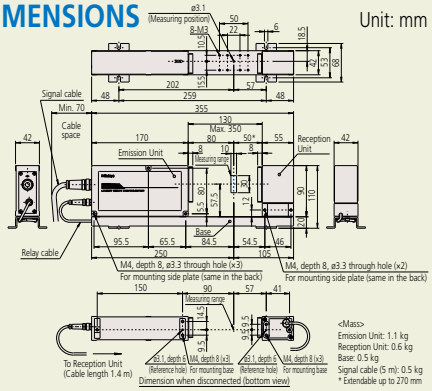
Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m
02AGN780D	20 m

• Extension relay cable (max. 5 m)

02AGC150A	1 m
02AGC150B	3 m
02AGC150C	5 m

DIMENSIONS

Unit: mm



LSM-503S Measuring Unit
SERIES 544 — 0.3 mm to 30 mm Measuring Unit

• Ensures ±1.0 µm accuracy over the entire measuring range (0.3 to 30 mm).
• The industry's first narrow-range accuracy performance in this measuring range of ±(0.6+0.1ΔD) µm is available for high-accuracy measurement.

With signal cable (5 m)
02AGN770A

SPECIFICATIONS

Order No.		**544-535**	**544-536**
Model		**LSM-503S**	
Applicable laser standards		JIS	IEC, FDA
User's Manual		Japanese version	English version
Measuring range		0.3 to 30 mm	
Resolution		0.02 to 100 µm (selectable)	
Repeatability*1		±0.11 µm	
Linearity*2 (20 °C)	Whole range	±1.0 µm	
	Narrow range	±(0.6+0.1ΔD) µm*3	
Positional error*4		±1.5 µm	
Measuring region*5		10×30 mm (0.3 to 30 mm)	
Scanning rate		3200 scans/s	
Laser wavelength		650 nm (Visible)	
Laser scanning speed		226 m/s	
Operating environment	Temperature	0 to 40 °C	
	Humidity	RH 35 to 85% (non-condensing)	
Protection Level		IP64*6	

*1 Determined at the level of ±2σ (σ: standard deviation) when measuring ø30 mm at the interval of 0.32 sec. (average 1024 times).
*2 Applies at the center of the measuring range when measuring outside diameters.
*3 ΔD=Difference in diameter between the master gage and workpiece (Unit: mm)
*4 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*5 The area defined by [optical axis depth]×[scanning width].
*6 The protection level provided for the interior. If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction.

Optional Accessories

• Multifunctional display unit, **LSM-6200**:

Order No.	Display type	Remarks
544-071	Japanese mm/E	Japanese user's manual
544-071*	English mm/E	English user's manual
544-072*	English mm/in	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE."

• Panel-mount type display unit, **LSM-5200**:

Order No.	Remarks
544-046	Japanese user's manual
544-047	English user's manual

• Standard calibration gage set (ø0.1, ø60.0) : **02AGD140**
• Adjustable workstage : **02AGD520**
• Air blower : **02AGD250**
• Extension signal cable (max. 25 m)

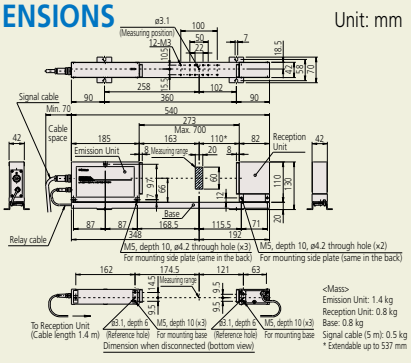
Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m
02AGN780D	20 m

• Extension relay cable (max. 5 m)

02AGC150A	1 m
02AGC150B	3 m
02AGC150C	5 m

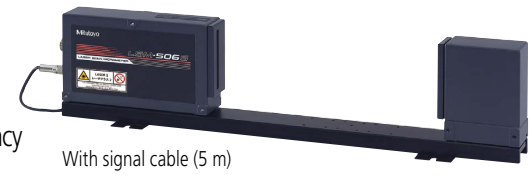
DIMENSIONS

Unit: mm



LSM-506S Measuring Unit
SERIES 544 — 1 mm to 60 mm Measuring Unit

• Ensures ±3 µm accuracy over the entire measuring range (1 to 60 mm).
• The industry's first narrow-range accuracy performance in this measuring range of ±(1.5+0.5ΔD) µm is available for high-accuracy measurement.



With signal cable (5 m)
02AGN770A

SPECIFICATIONS

Order No.		**544-537**	**544-538**
Model		**LSM-506S**	
Applicable laser standards		JIS	IEC, FDA
User's Manual		Japanese version	English version
Measuring range		1 to 60 mm	
Resolution		0.05 to 100 µm (selectable)	
Repeatability*1		±0.36 µm	
Linearity*2 (20 °C)	Whole range	±3 µm	
	Narrow range	±(1.5+0.5ΔD) µm*3	
Positional error*4		±4 µm	
Measuring region*5		20×60 mm (1 to 60 mm)	
Scanning rate		3200 scans/s	
Laser wavelength		650 nm (Visible)	
Laser scanning speed		452 m/s	
Operating environment	Temperature	0 to 40 °C	
	Humidity	RH 35 to 85% (non-condensing)	
Protection Level		IP64*6	

*1 Determined at the level of ±2σ (σ: standard deviation) when measuring ø60 mm at the interval of 0.32 sec. (average 1024 times).
*2 Applies at the center of the measuring range when measuring outside diameters.
*3 ΔD=Difference in diameter between the master gage and workpiece (Unit: mm)
*4 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*5 The area defined by [optical axis depth]×[scanning width].
*6 The protection level provided for the interior. If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction.

Mitutoyo

LSM-512S Measuring Unit
SERIES 544 — 1 mm to 120 mm Measuring Unit

- Ensures ±6 µm accuracy over the entire measuring range (1 to 120 mm).
- The industry's first narrow-range accuracy performance in this measuring range of ±(4.0+0.5ΔD) µm is available for high-accuracy measurement.

With signal cable (5 m)
02AGN770A

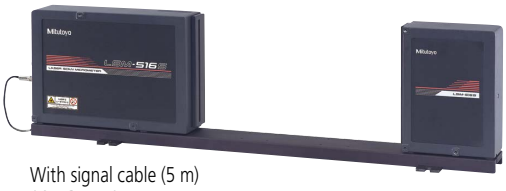
SPECIFICATIONS

Order No.		544-539	544-540
Model		LSM-512S	
Applicable laser standards		JIS	IEC, FDA
User's Manual		Japanese version	English version
Measuring range		1 to 120 mm	
Resolution		0.1 to 100 µm (selectable)	
Repeatability*1		±0.85 µm	
Linearity*2 (20 °C)	Whole range	±6 µm	
	Narrow range	±(4.0+0.5ΔD) µm*3	
Positional error*4		±8 µm	
Measuring region*5		30×120 mm (1 to 120 mm)	
Scanning rate		3200 scans/s	
Laser wavelength		650 nm (Visible)	
Laser scanning speed		904 m/s	
Operating environment	Temperature	0 to 40 °C	
	Humidity	RH 35 to 85% (non-condensing)	
Protection Level		IP64*6	

*1 Determined at the level of ±2σ (σ: standard deviation) when measuring ø120 mm at the interval of 0.32 sec. (average 1024 times).
*2 Applies at the center of the measuring range when measuring outside diameters.
*3 ΔD=Difference in diameter between the master gage and workpiece (Unit: mm)
*4 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*5 The area defined by (optical axis depth)×(scanning width).
*6 The protection level provided for the interior. If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction.

LSM-516S Measuring Unit
SERIES 544 — 1 mm to 160 mm Measuring Unit

- Ensures ±7 µm accuracy over the entire measuring range (1 to 160 mm).
- The industry's first narrow-range accuracy performance in this measuring range of ±(4.0+2.0ΔD) µm is available for high-accuracy measurement.



With signal cable (5 m)
02AGN770A

SPECIFICATIONS

Order No.		544-541	544-542
Model		LSM-516S	
Applicable laser standards		JIS	IEC, FDA
User's Manual		Japanese version	English version
Measuring range		1 to 160 mm	
Resolution		0.1 to 100 µm (selectable)	
Repeatability*1		±1.4 µm	
Linearity*2 (20 °C)	Whole range	±7 µm	
	Narrow range	±(4.0+2.0ΔD) µm*3	
Positional error*4		±8 µm	
Measuring region*5		40×160 mm (1 to 160 mm)	
Scanning rate		3200 scans/s	
Laser wavelength		650 nm (Visible)	
Laser scanning speed		1206 m/s	
Operating environment	Temperature	0 to 40 °C	
	Humidity	RH 35 to 85% (non-condensing)	
Protection Level		IP64*6	

*1 Determined at the level of ±2σ (σ: standard deviation) when measuring ø160 mm at the interval of 0.32 sec. (average 1024 times).
*2 Applies at the center of the measuring range when measuring outside diameters.
*3 ΔD=Difference in diameter between the master gage and workpiece (Unit: mm)
*4 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*5 The area defined by (optical axis depth)×(scanning width).
*6 The protection level provided for the interior. If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction.

Optional Accessories

• Multifunctional display unit, **LSM-6200**:

Order No.	Display type	Remarks
544-071	Japanese mm/E	Japanese user's manual
544-071*	English mm/E	English user's manual
544-072*	English mm/in	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE."

• Panel-mount type display unit, **LSM-5200**:

Order No.	Remarks
544-046	Japanese user's manual
544-047	English user's manual

• Standard calibration gage set (ø20.0, ø120.0): **02AGD150**
• Air blower : **02AGD260**
• Extension signal cable (max. 25 m)

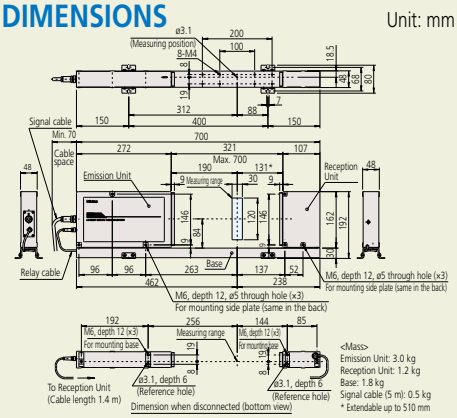
Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m
02AGN780D	20 m

• Extension relay cable (max. 5 m)

02AGC150A	1 m
02AGC150B	3 m
02AGC150C	5 m

DIMENSIONS

Unit: mm



Optional Accessories

• Multifunctional display unit, **LSM-6200**:

Order No.	Display type	Remarks
544-071	Japanese mm/E	Japanese user's manual
544-071*	English mm/E	English user's manual
544-072*	English mm/in	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE."

• Panel-mount type display unit, **LSM-5200**:

Order No.	Remarks
544-046	Japanese user's manual
544-047	English user's manual

• Standard calibration gage set (ø20.0, ø160.0): **02AGM300**
• Extension signal cable (max. 25 m)

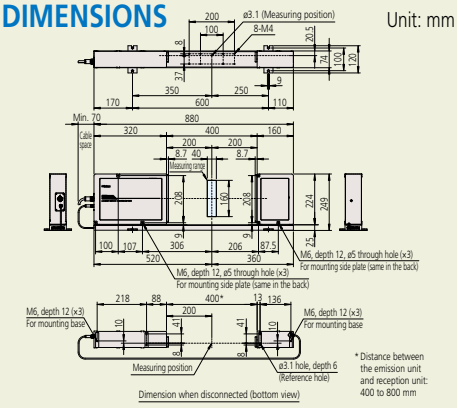
Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m
02AGN780D	20 m

• Extension relay cable (max. 5 m)

02AGC150A	1 m
02AGC150B	3 m
02AGC150C	5 m

DIMENSIONS

Unit: mm



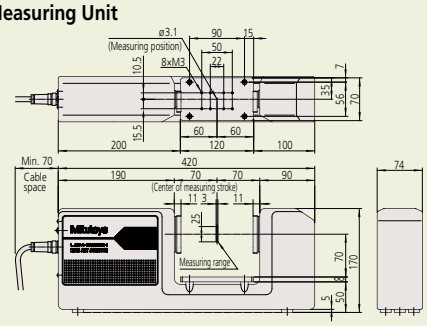
Optional Accessories

- Standard calibration gage set (ø1.0, ø25.0) : **02AGD180**
- Workstage : **02AGD270**
- Adjustable workstage : **02AGD280**

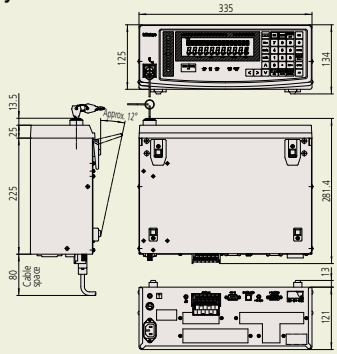
External Dimensions

Unit: mm

Measuring Unit



Display unit

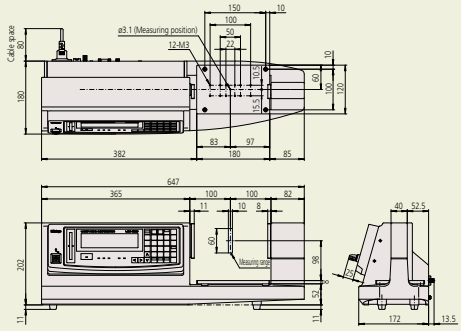


Optional Accessories

- Standard calibration gage set (ø1.0, ø60.0): **02AGD170**
- Adjustable workstage
  Horizontal stroke 200 mm : **02AGD370**
  Horizontal stroke 300 mm : **02AGD680**

DIMENSIONS

Unit: mm



LSM-6902H Measuring Unit and 6900 Display
SERIES 544 — 0.1 mm to 25 mm High Accuracy

- Demonstrates the best repeatability available in the 25 mm class.
- The ultra-precise scanning motor enables the highest measurement accuracy to be realized.
- Thanks to excellent linearity, an accuracy of ±0.5 µm over the entire measuring range and a higher accuracy of ±(0.3+0.1ΔD) µm over a narrow range are guaranteed.
- The optimal solution for measuring the outside diameter of pin gages or plug gages.

LSM-6902H

SPECIFICATIONS

Set Order No.		544-497-1	544-498-1*6	544-499-1*6
Model		LSM-6902H		
Measuring unit				
Type		mm	mm	inch/mm
Applicable standards		JIS	IEC, FDA	
Measuring range		0.1 to 25 mm (0.004 to 1.0 in)		
Resolution		0.01 to 10 µm (selectable) (0.000001 to 0.0005 in)		
Repeatability*1	Whole range	±0.045 µm (±0.0000018 in) (ø25 mm)		
	Narrow range	±0.03 µm (±0.0000012 in) (ø10 mm)		
Linearity*2 (20 °C)	Whole range	±0.5 µm (±0.000020 in)		
	Narrow range	±(0.3+0.1ΔD) µm ±(0.000012+0.01ΔD) inch*5		
Positional error*3		±0.5 µm (±0.000020 in)		
Measuring region*4		±1.5 mm×25 mm (±0.006×1.0 in)		
Scanning rate		3200 scans/s		
Laser wavelength		650 nm (Visible)		
Laser scanning speed		226 m/s		
Operating environment	Temperature	0 to 40 °C		
	Humidity	RH 35 to 85% (non-condensing)		

*1 ±2σ values (σ being the standard deviation) for when ø25 mm and ø10 mm samples are measured for 1.28 seconds (2048 scans on average, 2 samples).
*2 The value at the center of the measuring range.
*3 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*4 The region defined by [optical axis depth]×[scanning width].
*5 ΔD=Difference in diameter between the master gage and workpiece (Unit: mm).
*6 To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE.

Display unit

Display	16-digit plus 11-digit fluorescent display, and guide message LED
Segment	1 to 7 (1 to 3, transparent) or 1 to 255 edges
Averaging times	Arithmetic average: 2 to 2048 scans. Moving average: 32 to 2048 scans.
Judgment	Selection from "target value + tolerance", "lower tolerance + upper tolerance", or "7 classes multilimit tolerance zone".
Measurement mode	Standby, Single measurement, Continuous measurement
External dimensions	335 (W) ×134 (H) ×250 (D) mm
Power supply	100 to 240 VAC ±10% 30 W 50/60 Hz
Standard I/F	RS-232C, Analog I/O
Optional I/F	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

LSM-9506 Integrated Display/Measuring Unit
SERIES 544 — 0.5 mm to 60 mm High Accuracy

- High accuracy of ±2.5 µm, integrated display unit with many functions equivalent to the multi-function display unit. (Some functions may be unavailable.)

SPECIFICATIONS

Order No.		544-115*5	544-116*6
Model		LSM-9506	
Type		mm	inch/mm
Measuring range		0.5 to 60 mm	0.02 to 2.36 in/0.5 to 60 mm
Resolution		0.05 to 100 µm (selectable)	0.000002 to 0.005 in/0.00005 to 0.1 mm
Repeatability*1		±0.6 µm (±0.00003 in)	
Linearity*2 (20 °C)		±2.5 µm (±0.0001 in)	
Positional error*3	Optical axis direction	±2.5 µm (±0.0001 in)	
	Scanning direction	± (2.0+L/10) µm L: Displacement between workpiece center and optical axis center	
Measuring region*3		±5×60 mm (±0.2×2.36 in)	
Scanning rate		1600 scans/s	
Laser wavelength		650 nm (Visible)*4	
Laser scanning speed		226 m/s (8900 in/s)	
Display unit		16-digit dot matrix (upper column) +7 segment 11-digit (lower column), guidance LEDs	
Standard interface		RS-232C, Digimatic code output unit (1-ch)	
Optional interface		No	
Power supply		AC100 V to 240 V±10%, 25 W, 50/60 Hz	
Operating environment		0 to 40 °C, RH 35 to 85% (non-condensing)	

*1 Determined at the level of ±2σ (σ: standard deviation) when measuring ø60 mm in the interval of 0.32 sec. (average 512 times).
*2 Applies at the center of the measuring range when measuring outside diameters.
*3 An error in outside diameter measurement due to variation in workpiece position either in the optical axis direction or in the scanning direction.
*4 FDA Class II (**544-116-1A**)/IEC Class 2 (All models except **544-116-1A**) semiconductor laser for scanning (Maximum power: 1.0 mW)
*5 To denote your AC power cable add the following suffixes to the order No.: D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE.
*6 To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, K for KC and No suffix are required for PSE.

LSM-5200 Display Unit
SERIES 544 — Panel-mount Type

- A compact controller which could be used for multi-unit system configurations.
- A panel-mount type display unit designed for the **LSM-S** Series.
- Analog I/O and RS-232C is standard.

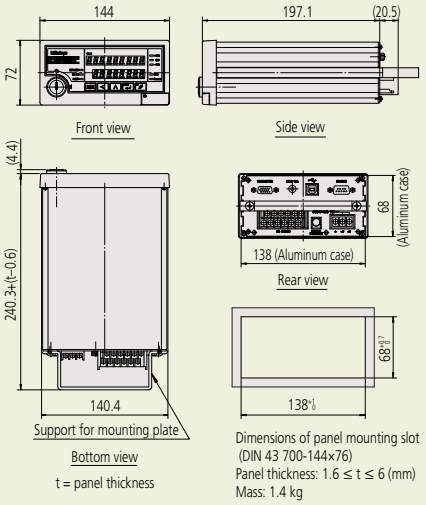
SPECIFICATIONS

Order No.	**544-047**
Model	**LSM-5200**
Display	9-digit (upper) and 8-digit (lower) 7-segment
Segment	1 to 7 (1 to 3, transparent) or 1 to 255 edges*1
Averaging method	Arithmetic average: from 4 to 2048; Moving average: from 32 to 2048 (Arithmetic average is from 16 to 2048 when using **LSM-500S**.)
Judgment	Selecting from "target value±tolerance value" or "lower limit/upper limit".
Measurement mode	Standby, Single measurement, Continuous measurement
Statistical analysis	Calculation result is output via USB or RS-232C.
External dimensions	144 (W) ×72 (H) ×197.1 (D) mm
Power supply	24 V DC±10%, 1.3 A or more
Standard I/F	USB2.0, RS-232C, I/O analog
Operating temperature (humidity) ranges	0 to 40 °C, RH 35 to 85% (non-condensing)
Storage temperature (humidity) ranges	–20 to 70 °C, RH 35 to 85% (non-condensing)
Other functions	Measurement of odd fluted parts, simultaneous measurement, nominal setting, sample setting, selection of unnecessary digits, transparent object measurement*2 Automatic workpiece detection (dimension/position detected)*1, abnormal data elimination, mastering, statistical processing (when using USB, RS-232C), output timer, automatic measurement in edge mode, presetting Note that every function is limited in its combination possibilities. See the user manual for details.
Mass	1.4 kg

*1 The measuring range will be 0.1 mm to 2 mm in the 1 to 255 edge measurement mode or when activating the automatic workpiece detection with **544-531**, **544-532**. Each function has its combination limit.
*2 The measuring range is 50 µm to 2 mm when using **544-531**, **544-532**. For smaller ranges, contact your local Mitutoyo sales office.
Note 1: Cannot be connected to **544-495**, **544-496**.
Note 2: Previous models such as **544-451** cannot be connected.
Note 3: For USB communication with a PC, a dedicated device driver is required. For details, contact your local Mitutoyo sales office.

DIMENSIONS

Unit: mm



LSM-6200 Display Unit
SERIES 544 — Multi-function Type

- 2-axis display unit enables 2 items be displayed simultaneously.
- Statistical operation is supported.
- Capable of statistical analysis such as: average, maximum value, minimum value, range (max. to min.).
- Segment measurement (7 points) or edge measurement (1 to 255 edges) can be selected.
- A function to eliminate abnormal values is standard.
- 100 tolerance values, preset values, or settings can be stored.

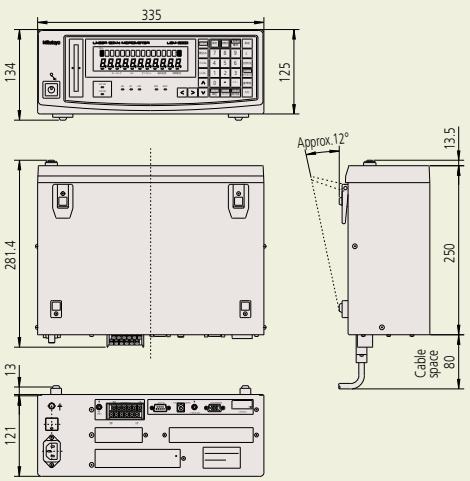
SPECIFICATIONS

Order No.	**544-071**	**544-072**
Model	**LSM-6200**	
Type	mm	inch/mm
Display	16-digit dot matrix (upper) and 11-digit 7-segment (lower)	
Segment	1 to 7 (1 to 3, transparent) or 1 to 255 edges*1	
Averaging times	Arithmetic average: per 2 to 2048/Moving average: per 32 to 2048 (Arithmetic average is per 16 to 2048 when using **544-531**, **544-532**)	
Judgment	Selection from "target value+tolerance", "lower tolerance + upper tolerance", or "7 classes multi-limit tolerance zone".	
Measurement mode	Standby, Single measurement, Continuous measurement	
Statistical analysis	Maximum, Minimum, Average, Dispersion, σ (S.D)	
Size	335 (W) ×134 (H) ×250 (D) mm	
Power supply	100 to 240 V AC ±10%, 45 W, 50/60 Hz	
Standard I/F	RS-232C, Analog I/O	
Optional I/F	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)	
Other functions	Nominal setting, sample setting, selection of unnecessary digits, transparent object measurement*2, measurement of odd fluted parts, 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)*1, zero-set/offset, dual measurement (optional)	

*1 The measuring range will be 0.1 mm to 2 mm in the 1 to 255 edge measurement mode or when activating automatic workpiece detection with **544-531**, **544-532**. Each function has its combination limit.
*2 The measuring range is 50 µm to 2 mm when using **544-531**, **544-532**. For smaller ranges, contact your local Mitutoyo sales office.
Note 1: To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, F for SAA, K for KC, C and No suffix are required for PSE.
Note 2: Cannot be connected to **544-495**, **544-496**.
Note 3: Previous models such as **544-451** cannot be connected.

DIMENSIONS

Unit: mm



Optional Accessories
SERIES 544 — Laser Scan Micrometer (Measuring Unit)

Standard calibration gage set

- Standard gage set suitable for calibration of Laser Scan Micrometers.
- Nominal gage diameters (1 to 160 mm) are as given in Specifications.

SPECIFICATIONS

For calibrating models		LSM-6902H	LSM-500S	LSM-501S	LSM-503S	LSM-506S	LSM-512S	LSM-516S	LSM-9506
Set No.		02AGD180	02AGD110	02AGD120	02AGD130	02AGD140	02AGD150	02AGM300	02AGD170
Configuration (Order No.)	Stand	02AGD181	02AGD111	02AGD121	02AGD131	02AGD141	02AGD151	02AGM320	02AGD171
	Gages	ø1: 02AGD920 ø25: 02AGD963	ø0.1: 958200 ø2 : 958202	ø0.1: 958200 ø10: 229317	ø1: 02AGD920 ø30: 02AGD961	ø1: 02AGD920 ø60: 02AGD962	ø20: 229730 ø120: 234072	ø20: 229730 ø160: 02AGM303	ø1: 02AGD920 ø60: 02AGD962
	Carrying case	02AGD190	958203	958203	02AGD980	02AGD980	02AGD990	02AGM310	02AGD970

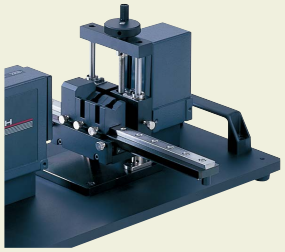
Workstage

- Easy set-up and height adjustment enables high-precision measurement.

SPECIFICATIONS

Model	LSM-501S LSM-503S LSM-6902H
Order No.	02AGD270

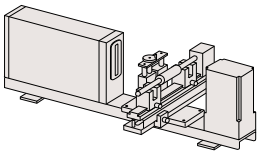
Adjustable workstage



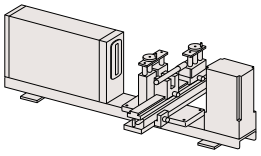
- Vertical/horizontal slide mechanism enables easy measurement of various workpiece diameters.
- Suitable for quality control of high-precision shafts, rollers, pin gages and similar.

Measurement Examples

- Roller of copying machine



- Pin gage or plug gage



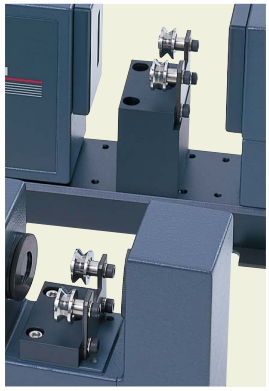
Basic configuration

Basic set	Order No.	Model	Standard Accessories	Measuring range (mm)	Horizontal stroke (mm)	Vertical stroke (mm)
1) Main unit 2) V-block 3) Stop	02AGD280	LSM-6902H	V-block (**02AGD420**), 2 pcs. Stopper (**02AGD430**), 1 pc.	0.1 - 25	130	47
	02AGD400	LSM-501S		0.05 - 10	130	32
	02AGD490	LSM-503S		0.3 - 30	200	35
	02AGD520	LSM-506S*	V-block A (**02AGD550**), 2 pcs.	1 - 60	300	45
	02AGD370	LSM-9506*	V-block B (**02AGD560**), 1 pc.	0.5 - 60	200	45
	02AGD680		V-block C (**02AGD570**), 1 pc.	0.5 - 60	300	45

* The stop is not included in the basic set for these models.
Note: Optional part for the adjustable workstage, such as center support, adjustable V-block (up/down) etc., are available.

Guide pulley

- Used for supporting measurement of outside diameter of fine wirelike materials such as magnetic wire or fiber.



SPECIFICATIONS

Model	LSM-500S	LSM-501S
Order No.	02AGD200	02AGD210

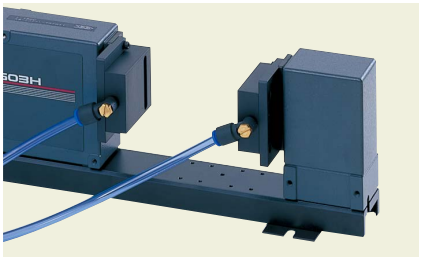
Note 1: Each measurement range is as follows:
LSM-500S: ø5 µm to ø1.6 mm
LSM-501S: ø50 µm to ø2 mm

Note 2: For calibration, the calibration gage set for **LSM-500S** (**02AGD110**) is required.

Optional Accessories
SERIES 544 — Laser Scan Micrometer (Measuring Unit)

Air shield

- Air blows from the air outlet installed on the laser section to clear dust adhering to the laser window.



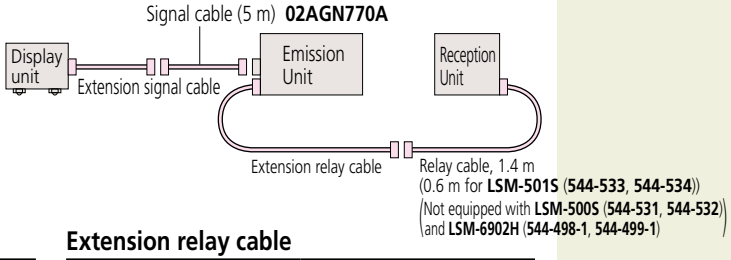
SPECIFICATIONS

Air supply unit	Air shield	Applicable models
957608	**02AGD220**	**LSM-500S (544-531, 544-532)**
	02AGD230	**LSM-501S (544-533, 544-534)**
	02AGD240	**LSM-503S (544-535, 544-536)**
	02AGD250	**LSM-506S (544-537, 544-538)**
	02AGD260	**LSM-512S (544-539, 544-540)**

Note: Air shield is supplied with 5 m air tube (Outside Diameter: 6 mm).

Extension signal cable / Extension relay cable

- Extension signal cables are necessary when the measuring unit and display unit are separated in operation; Extension relay cables are necessary when the optical section is separated in operation.



SPECIFICATIONS

Extension signal cable

Order No.	Cable length
02AGN780A	5 m
02AGN780B	10 m
02AGN780C	15 m
02AGN780D	20 m

Extension relay cable

Order No.	Cable length
02AGC150A	1 m
02AGC150B	3 m
02AGC150C	5 m

Note 1: For **544-531**, **544-532**, **544-533**, **544-534**, the overall length of the signal cable and the extension signal cable is 20 m at a maximum.
Note 2: For **544-535**, **544-536**, **544-537**, **544-538**, **544-539**, **544-540**, **544-541**, **544-542** the overall length of the signal cable and the extension signal cable is 30 m at a maximum.
Note 3: The length of the relay extension cable is 5 m at a maximum.
Note 4: The maximum extension length of the signal cable and relay cable is 32 m in total.
Note 5: Cannot be used with **544-498-1** and **544-499-1**.

Optional Accessories
SERIES 544 — Laser Scan Micrometer (Display Unit)

Foot switch

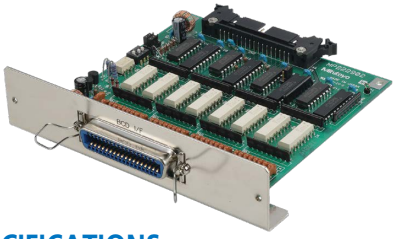
- For **LSM-6200** (**544-071**, **544-072**), **LSM-6902H** (**544-498-1**, **544-499-1**) and **LSM-9506** (**544-115**, **544-116**).

937179T

Optional Accessories
Interface for LSM6200, 6902H

BCD Interface

- Outputs measurement data in BCD output (7-digit) or HEX output.
- Data logic can be switched.
- Isolated I/O circuitry
- Available for **LSM-6200** (**544-071**, **544-072**) and **LSM-6902H** (**544-498-1**, **544-499-1**).

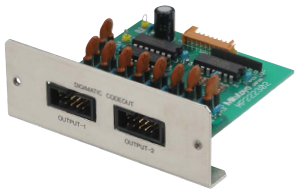


SPECIFICATIONS

Order No.	**02AGC910**
Standard Accessories	Connector (DDK) **57-30360** (**214188**)

Optional Accessories
SERIES 544 — Laser Scan Micrometer (Display Unit)

Digimatic code output unit



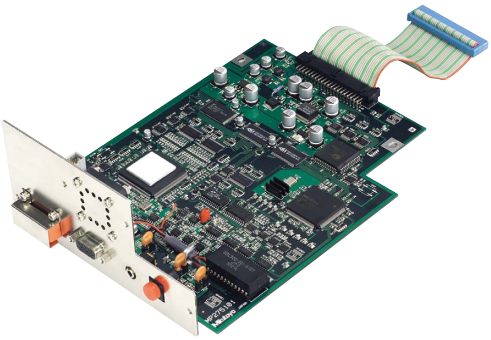
- 2-channel Digimatic code output
- In simultaneous measurement, measurement data are output as follows:
  Program No. 0 to No. 4 in OUTPUT-1
  Program No. 5 to No. 9 in OUTPUT-2
  (10 programs operated)
- 10 pin MIL type connector.
- Output cable is not supplied.
  Connecting cable (optional) 1 m (**936937**)
- Available for **LSM-6200** (**544-071**, **544-072**) and **LSM-6902H** (**544-498-1**, **544-499-1**).

Note 1: Output is 6 digits of measurement data.
Note 2: Displaying 6th and 7th digit after the decimal point is not supported.

SPECIFICATIONS

Order No.	**02AGC840**

Dual connection unit



- Enables second unit connection to **LSM-6200** (**544-071**, **544-072**). (both units must be the same model)

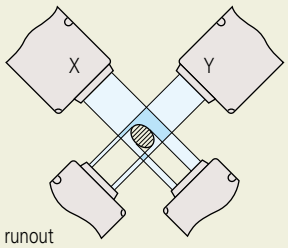
Note: Cannot be used for **LSM-6902H** (**544-498-1**, **544-499-1**).

- Depending on the layout of the two measuring units, large-diameter measurement, XY measurement, and parallel measurement are possible.
- Both of the measuring units and display units can be simultaneously operated.

SPECIFICATIONS

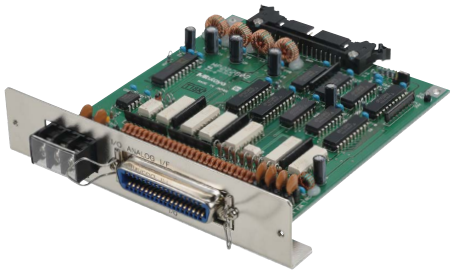
Order No.	**02AGP150**

XY Measurement



(X–Y): runout
(X+Y)/2: average
Note: XY requires 10 mm-interval.

2nd I/O analog I/F

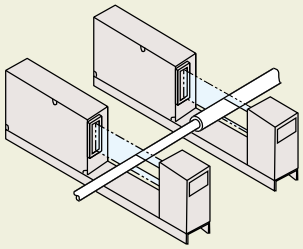


- I/O, analog output.
- Simultaneous measurement is supported by two pairs of GO/NG judgment outputs.
- Available for **LSM-6200** (**544-071**, **544-072**) and **LSM-6902H** (**544-498-1**, **544-499-1**).

SPECIFICATIONS

Order No.	**02AGC880**
Standard Accessories	Connector (DDK) **57-30360** (**214188**)

Parallel Measurement



Cable for BCD and 2nd I/O simultaneous mount

- Both BCD (**02AGC910**) and 2nd I/O analog I/F (**02AGC880**) can be mounted on **LSM-6200** (**544-071**, **544-072**) and **LSM-6902H** (**544-498-1**, **544-499-1**) using this cable.

Note: If using this cable, the dual connection unit (**02AGP150**) cannot be used.

SPECIFICATIONS

Order No.	**02AGE060**

DIMENSIONS

Unit: mm