

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/inch	

* 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."

- Easy-to-operate 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**

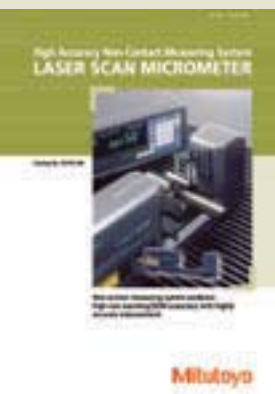
- Air blower

: **02AGD220**

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

Laser safety

Mitutoyo Laser Scan Micrometers use a low-power visible laser for measurement. The laser is a CLASS 2 EN/IEC60825-1 (2007) device. Warning and explanation labels, as shown right, are attached to the Laser Scan Micrometers as is appropriate.



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.

SERIES 544 Laser Scan Micrometer (Measuring Unit) LSM-500S

- Capable of measuring down to 5µm outside diameter*1.
- Provides ultra-high accuracy of ±0.3µm over the entire measuring range (5µm to 2mm).
- Ultra-high speed measurement of 3200 scan/sec. Suitable for high speed lines or in applications subject to vibration.



SPECIFICATIONS

Order No.	544-531	544-532
Applicable laser standards	JIS	IEC, FDA
User's Manual	Japanese version	English version
Measuring range	0.005 to 2mm*1	
Resolution	0.01 to 10µm (selectable)	
Repeatability*2	±0.03µm	
Accuracy (20°C)*3	±0.3µm	
Positional error*4	±0.4µm	
Measuring range*5	1x2mm (0.005 to 2mm)	
Scanning rate	3200 scans/s	
Laser wavelength	650nm (Visible)	
Laser scanning speed	76m/s	
Operating environment	Temperature	0 to 40°C
	Humidity	RH 35 to 85% (no condensation)
Protection Level	IP64*6	

*1: The measuring range for the transparent object will be 0.05mm to 2mm. Please consult your local Mitutoyo office for objects smaller than 0.05mm.

The measuring range will be 0.1mm to 2mm in the 1 to 255 edge measurement mode or when activating the automatic workpiece detection.

If using the optional dual connection unit for LSM-6200, the measuring range will be 0.05mm to 2mm.

*2: Determined by the value of ±2σ (σ: standard deviation) when measuring ø2mm at the interval of 0.32 sec. (average 1024 times).

*3: Center of the measuring range for cylindrical workpieces outside diameter.

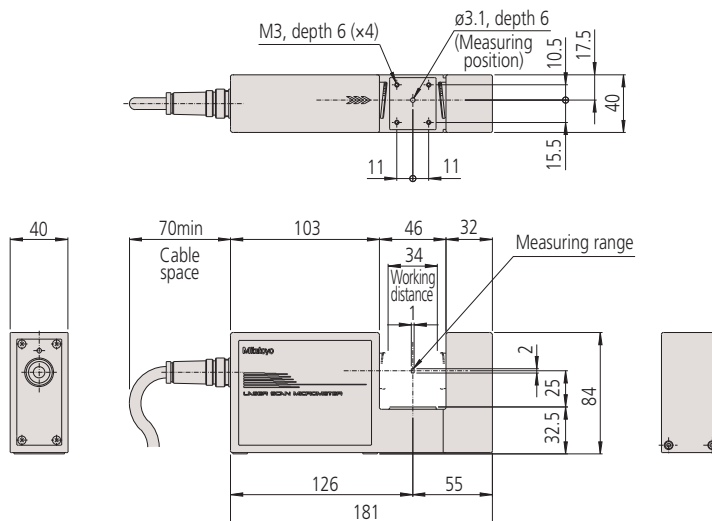
*4: An error of the outside diameter due to variation in workpiece position either in the optical axis direction or in the scanning direction.

*5: The area given by [optical axis direction]x[scanning direction].

*6: If the workpiece or glass of the measuring unit window is soiled by water or dust, the unit may malfunction. Note: When using 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.

DIMENSIONS

Unit: mm



Laser Scan Micrometer

Non-contact, high-speed, high-precision measurement

SERIES 544 Laser Scan Micrometer (Measuring Unit) LSM-501S

- Provides ultra-high accuracy of $\pm 0.5\mu\text{m}$ over the entire measuring range (0.05 to 10mm).
- Narrow range accuracy of $\pm(0.3+0.1\Delta D)\mu\text{m}$ for high precision measurement.
- Ultra-high speed measurement of 3200 scan/sec. Suitable for high speed lines or in applications subject to vibration.

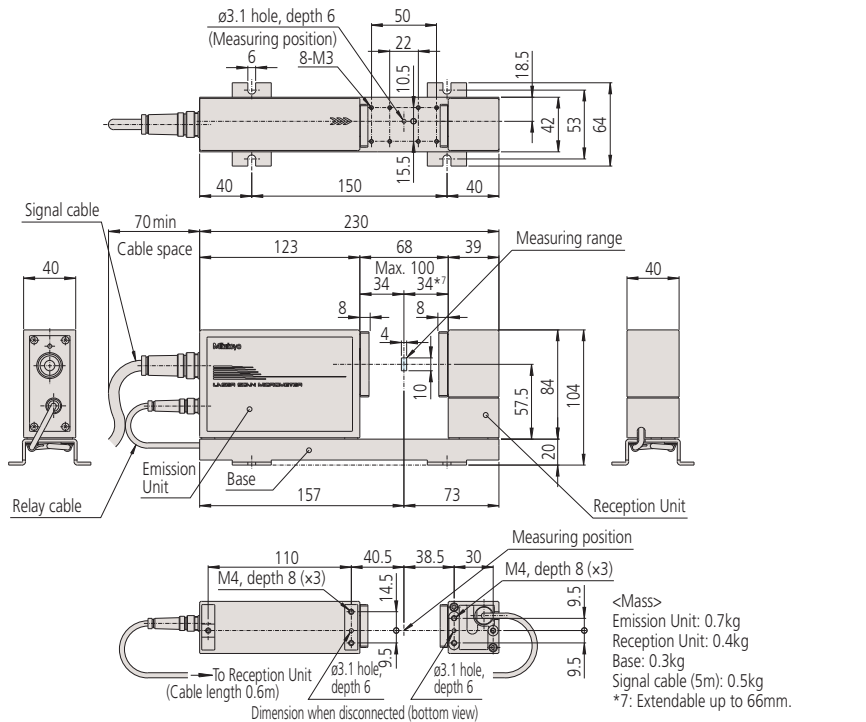


SPECIFICATIONS

Order No.	544-533	544-534
Applicable laser standards	JIS	IEC, FDA
User's Manual	Japanese version	English version
Measuring range	0.05 to 10mm	
Resolution	0.01 to 10 μm (selectable)	
Repeatability*1	$\pm 0.04\mu\text{m}$	
Accuracy*2 (20°C)	Whole range	$\pm 0.5\mu\text{m}$
	Small range	$\pm(0.3+0.1\Delta D)\mu\text{m}^{*3}$
Positional error*4	$\pm 0.5\mu\text{m}$	
Measuring range*5	2x10mm ($\phi 0.05$ to $\phi 0.1\text{mm}$) 4x10mm ($\phi 0.1$ to $\phi 10\text{mm}$)	
Scanning rate	3200 scans/s	
Laser wavelength	650nm (Visible)	
Laser scanning speed	113m/s	
Operating environment	Temperature	0 to 40°C
	Humidity	RH 35 to 85% (no condensation)
Protection Level	IP64*6	

- *1: Determined by the value of $\pm 2\sigma$ (σ : standard deviation) when measuring $\phi 10\text{mm}$ at the interval of 0.32 sec. (average 1024 times).
 *2: Center of the measuring range for cylindrical workpieces outside diameter.
 *3: ΔD =Difference in diameter between the master gage and workpiece (Unit: mm)
 *4: An error of the outside diameter due to variation in workpiece position either in the optical axis direction or in the scanning direction.
 *5: The area given by [optical axis direction]x[scanning direction].
 *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.

DIMENSIONS



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/inch	

* 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."

- Easy-to-operate display unit, **LSM-5200**:

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

- Standard calibration gage set ($\phi 0.1, \phi 10.0$)

- : **02AGD120**
- Wire guiding pulley : **02AGD210**
- Adjustable workstage : **02AGD400**
- Air blower : **02AGD230**
- Workstage : **02AGD270**
- Extension signal cable

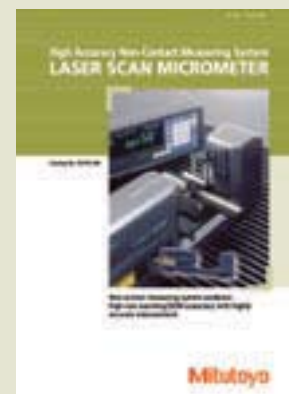
Order No.	Cable length
02AGN780A	5m
02AGN780B	10m
02AGN780C	15m

- Extension relay cable

Order No.	Cable length
02AGC150A	1m

Laser safety

Mitutoyo Laser Scan Micrometers use a low-power visible laser for measurement. The laser is a CLASS 2 EN/IEC60825-1 (2007) device. Warning and explanation labels, as shown right, are attached to the Laser Scan Micrometers as is appropriate.



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.

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/inch	

* 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."

- Easy-to-operate 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, ø30.0)

	: 02AGD130
Adjustable workstage	: 02AGD490
Air blower	: 02AGD240
Workstage	: 02AGD270

- Extension signal cable

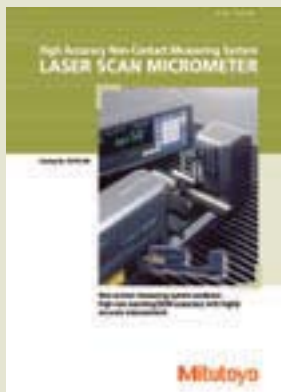
Order No.	Cable length
02AGN780A	5m
02AGN780B	10m
02AGN780C	15m
02AGN780D	20m

- Extension relay cable

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

Laser safety

Mitutoyo Laser Scan Micrometers use a low-power visible laser for measurement. The laser is a CLASS 2 EN/IEC60825-1 (2007) device. Warning and explanation labels, as shown right, are attached to the Laser Scan Micrometers as is appropriate.



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.

SERIES 544 Laser Scan Micrometer (Measuring Unit) LSM-503S

- Ensures $\pm 1.0\mu\text{m}$ accuracy over the entire measuring range (0.3 to 30mm).
- Narrow range accuracy of $\pm(0.6+0.1\Delta D)\mu\text{m}$ for high precision measurement.
- Ultra-high speed measurement of 3200 scan/sec.
- Suitable for high speed lines or in applications subject to vibration.



SPECIFICATIONS

Order No.	544-535	544-536
Applicable laser standards	JIS	IEC, FDA
User's Manual	Japanese version	English version
Measuring range	0.3 to 30mm	
Resolution	0.02 to 100 μm (selectable)	
Repeatability* ¹	$\pm 0.11\mu\text{m}$	
Accuracy* ² (20°C)	Whole range	$\pm 1.0\mu\text{m}$
	Small range	$\pm(0.6+0.1\Delta D)\mu\text{m}$ * ³
Positional error* ⁴	$\pm 1.5\mu\text{m}$	
Measuring range* ⁵	10x30mm (0.3 to 30mm)	
Scanning rate	3200 scans/s	
Laser wavelength	650nm (Visible)	
Laser scanning speed	226m/s	
Operating environment	Temperature	0 to 40°C
	Humidity	RH 35 to 85% (no condensation)
Protection Level	IP64* ⁶	

*1: Determined by the value of $\pm 2\sigma$ (σ : standard deviation) when measuring ø30mm at the interval of 0.32 sec. (average 1024 times).

*2: Center of the measuring range for cylindrical workpieces outside diameter.

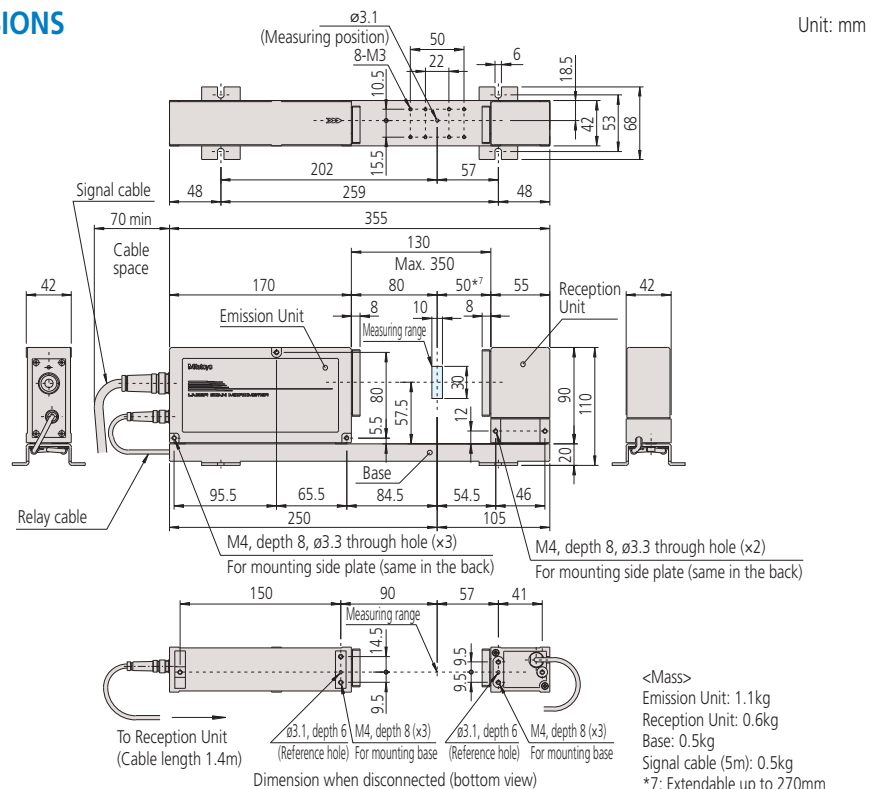
*3: ΔD =Difference in diameter between the master gage and workpiece (Unit: mm)

*4: An error of the outside diameter due to variation in workpiece position either in the optical axis direction or in the scanning direction.

*5: The area given by [optical axis direction]x[scanning direction].

*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.

DIMENSIONS



Laser Scan Micrometer

Non-contact, high-speed, high-precision measurement

SERIES 544 Laser Scan Micrometer (Measuring Unit) LSM-506S

- Ensures $\pm 3\mu\text{m}$ accuracy over the entire measuring range (1 to 60mm).
- Narrow range accuracy of $\pm(1.5+0.5\Delta D)\mu\text{m}$ in for high precision measurement.
- Ultra-high speed measurement of 3200 scan/sec. Suitable for high speed lines or in applications subject to vibration.

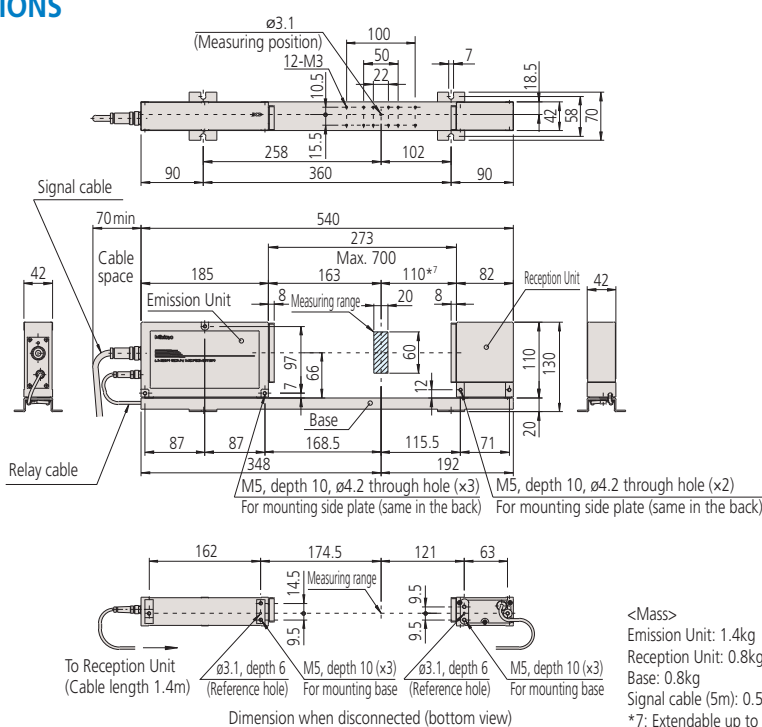


SPECIFICATIONS

Order No.	544-537	544-538
Applicable laser standards	JIS	IEC, FDA
User's Manual	Japanese version	English version
Measuring range	1 to 60mm	
Resolution	0.05 to 100 μm (selectable)	
Repeatability*1	$\pm 0.36\mu\text{m}$	
Accuracy*2 (20°C)	Whole range	$\pm 3\mu\text{m}$
	Small range	$\pm(1.5+0.5\Delta D)\mu\text{m}$ *3
Positional error*4	$\pm 4\mu\text{m}$	
Measuring range*5	20x60mm (1 to 60mm)	
Scanning rate	3200 scans/s	
Laser wavelength	650nm (Visible)	
Laser scanning speed	452m/s	
Operating environment	Temperature	0 to 40°C
	Humidity	RH 35 to 85% (no condensation)
Protection Level	IP64*6	

- *1: Determined by the value of $\pm 2\sigma$ (σ : standard deviation) when measuring $\phi 60\text{mm}$ at the interval of 0.32 sec. (average 1024 times).
 *2: Center of the measuring range for cylindrical workpieces outside diameter.
 *3: ΔD =Difference in diameter between the master gage and workpiece (Unit: mm)
 *4: An error of the outside diameter due to variation in workpiece position either in the optical axis direction or in the scanning direction.
 *5: The area given by [optical axis direction]x[scanning direction].
 *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.

DIMENSIONS



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/inch	

* 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."

- Easy-to-operate display unit, **LSM-5200**:

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

- Standard calibration gage set ($\phi 1.0, \phi 60.0$)

- Adjustable workstage : **02AGD140**
- Air blower : **02AGD520**
- Extension signal cable : **02AGD250**

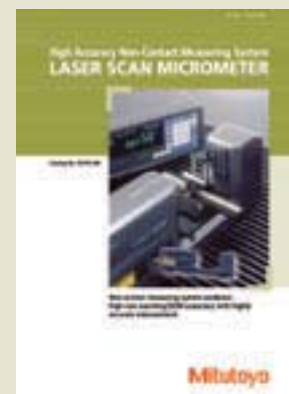
Order No.	Cable length
02AGN780A	5m
02AGN780B	10m
02AGN780C	15m
02AGN780D	20m

- Extension relay cable

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

Laser safety

Mitutoyo Laser Scan Micrometers use a low-power visible laser for measurement. The laser is a CLASS 2 EN/IEC60825-1 (2007) device. Warning and explanation labels, as shown right, are attached to the Laser Scan Micrometers as is appropriate.



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.

Laser Scan Micrometer

Non-contact, high-speed, high-precision measurement

SERIES 544 Laser Scan Micrometer (Measuring Unit) LSM-516S

- Ensures $\pm 7\mu\text{m}$ accuracy over the entire measuring range (1 to 160mm).
- Narrow range accuracy of $\pm(4.0+2.0\Delta D)\mu\text{m}$ for high precision measurement.
- Ultra-high speed measurement of 3200 scan/sec. Suitable for high speed lines or in applications subject to vibration.

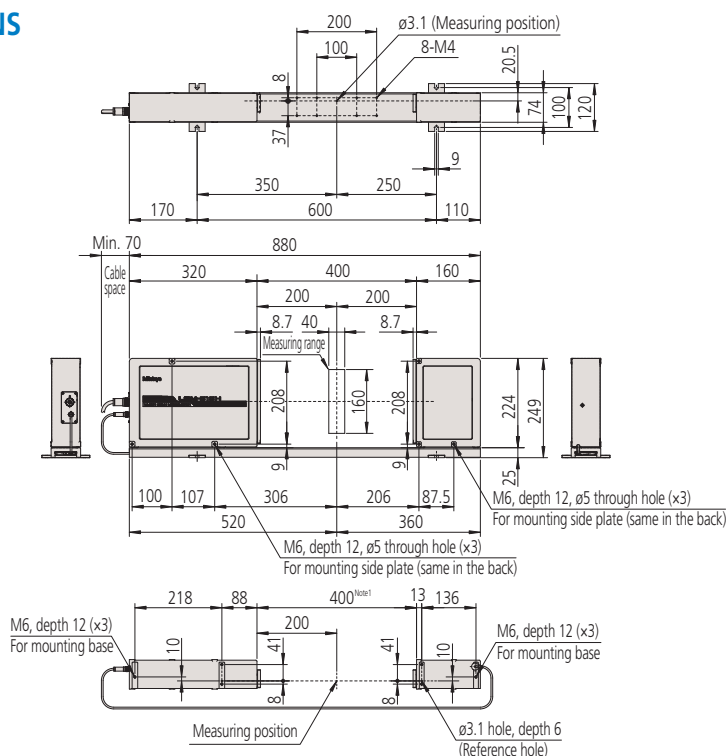


SPECIFICATIONS

Order No.	544-541	544-542
Applicable laser standards	JIS	IEC, FDA
User's Manual	Japanese version	English version
Measuring range	1 to 160mm	
Resolution	0.1 to 100 μm (selectable)	
Repeatability*1	$\pm 1.4\mu\text{m}$	
Accuracy*2 (20°C)	Whole range	$\pm 7\mu\text{m}$
	Small range	$\pm(4.0+2.0\Delta D)\mu\text{m}$ *3
Positional error*4	$\pm 8\mu\text{m}$	
Measuring range*5	40x160mm (1 to 160mm)	
Scanning rate	3200 scans/s	
Laser wavelength	650nm (Visible)	
Laser scanning speed	1206m/s	
Operating environment	Temperature	0 to 40°C
	Humidity	RH 35 to 85% (no condensation)
Protection Level	IP64*6	

- *1: Determined by the value of $\pm 2\sigma$ (σ : standard deviation) when measuring $\phi 160\text{mm}$ at the interval of 0.32 sec. (average 1024 times).
 *2: Center of the measuring range for cylindrical workpieces outside diameter.
 *3: ΔD =Difference in diameter between the master gage and workpiece (Unit: mm)
 *4: An error of the outside diameter due to variation in cylinder position either in the optical axis direction or in the scanning direction.
 *5: The area given by [optical axis direction]x[scanning direction].
 *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.

DIMENSIONS



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/inch	

* 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."

- Easy-to-operate display unit, **LSM-5200**:

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

- Standard calibration gage set ($\phi 20, \phi 160$)

: **02AGM300**

- Extension signal cable

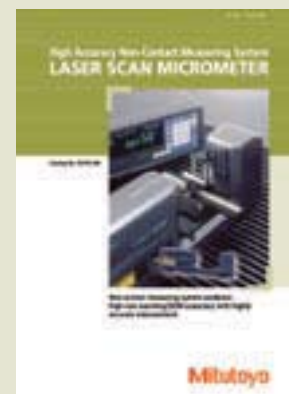
Order No.	Cable length
02AGN780A	5m
02AGN780B	10m
02AGN780C	15m
02AGN780D	20m

- Extension relay cable

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

Laser safety

Mitutoyo Laser Scan Micrometers use a low-power visible laser for measurement. The laser is a CLASS 2 EN/IEC 60825-1 (2007) device. Warning and explanation labels, as shown right, are attached to the Laser Scan Micrometers as is appropriate.



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.

Laser Scan Micrometer

Non-contact, high-speed, high-precision measurement

SERIES 544 Laser Scan Micrometer (Multifunctional Display Unit) LSM-6200

- 2-axis display unit enables s2 items be displayed simultaneously.
- Capable of statistical analysis such as: average, maximum value, minimum value, range (max. - min.).
- Segment measurement (7 points) or edge measurement (1 to 255 edge) 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*
Type	mm	inch/mm
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* 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) \times 134 (H) \times 250 (D)mm	
Power supply	100 - 240 V AC \pm 10%, 40VA, 50/60Hz	
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% (no condensation)	
Others	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 0.1mm to 2mm 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.

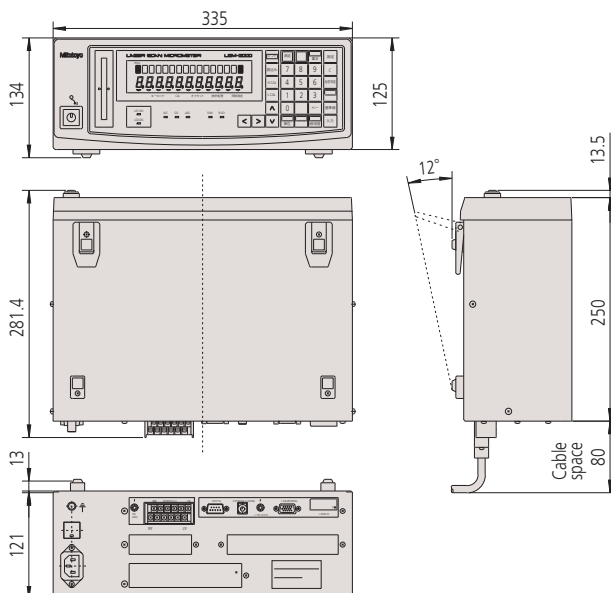
*2: The measuring range is 50 μ m to 2mm when using **544-531, 544-532**. For smaller range, contact your local Mitutoyo sales office.

* 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.

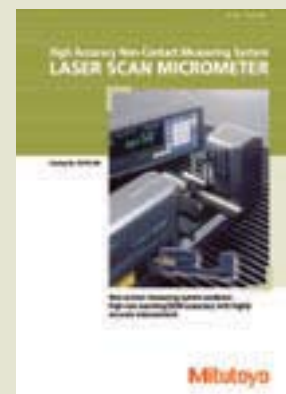
** Cannot be connected to **544-495, 544-496**.

** Previous models such as **544-451** cannot be connected.

DIMENSIONS



Unit: mm



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.

SERIES 544 Laser Scan Micrometer (Panel-mount Type Display Unit) LSM-5200

- A compact controller which could be used for multi-unit system configurations.
- Capable of simple connection to a PC via USB.



- A Panel-mount type display unit designed for the LSM-S series.
- Analog I/O and RS-232C is standard.
- Measurement of odd fluted parts, and simultaneous measurement / 2-program function are equipped.

SPECIFICATIONS

Order No.	544-047
Display	9 digits plus 8 digits LED, guide message LED
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*3	24V DC±10%, 1.3A or more
Standard I/F	USB2.0, RS-232C, I/O analog
Operating environment	0 to 40°C, RH 35 to 85% (no condensation)
Preservation environments	-20 to 70°C, RH 35 to 85% (no condensation)
Others	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 0.1mm to 2mm 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 50μm to 2mm when using **544-531, 544-532**. For smaller ranges, contact your local Mitutoyo sales office.

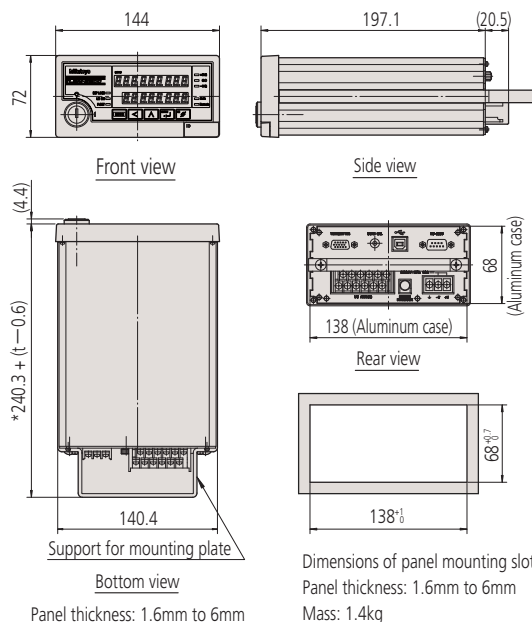
*3: DC24V external power supply (commercial item) is required separately.

Note 1: Cannot be connected to **544-495, 544-496**.

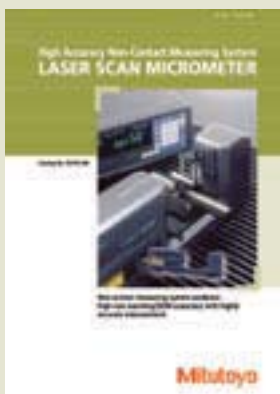
Note 2: Previous models such as **544-451** cannot be connected.

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



Refer to the Laser Scan Micrometer (Catalog No. E13004) for more details.