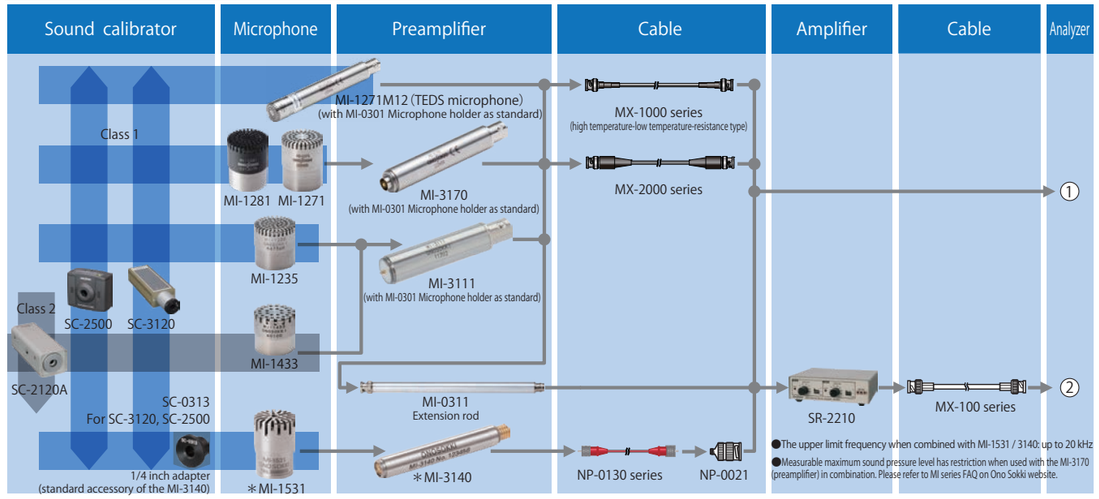
Measurement Microphone

System Configuration



●The upper limit frequency when combined with MI-1531 / 3140: up to 20 kHz

●Measurable maximum sound pressure level has restriction when used with the MI-3170 (preamplifier) in combination. Please refer to MI series FAQ on Ono Sokki website.

＊：Analyzer
①：CCLD (BNC connector)
②：Voltage input (BNC connector)

DS-3000 series
Data Station

CF-9200 / 9400
Portable 2ch / 4ch FFT Analyzer

CF-4700
FFT Comparator

DR-7100
Data Recorder

*For specifications up to 100 kHz, 100 kHz unit of CF-9200 / 9400 and DS-3000 series are recommended. CF-7200, DS-2000 series 100kHz unit (discontinued product) also can support.

Peripheral Products

■2ch Sensor Amplifier SR-2210

■Feature
●2ch input
●Can be connected to CCLD type microphone preamplifier or accelerometer

■Specification

Constant current voltage	Current: 2.4 mA/ applied voltage: approx. 18 V
Operating frequency range	1Hz to 20 kHz (±0.5 dB) (when output load impedance 100 kΩ or more)
Gain	-10, 0, 10, 20, 30, 40, 50, 60 dB
Frequency weighting	A/C/FLAT(Z) (Conforming standard: IEC 61672-1, JIS C 1509-1)
Output cut-off frequency	approx. 0.2 Hz (load impedance 100 kΩ or more) approx. 0.4 Hz (load impedance 50 kΩ or more)
Input/output connector	BNC (CO2)
Power requirement	4 pieces of size AA battery cell or exclusive AC adapter
Battery life	20 hours or more when used 4 pieces of size AA alkaline battery cell (LR6)
Outer dimensions	140 (W) x 40(H) x 125 (D) mm (not including protruded section)
Weight	approx.500 g (including battery cells)

*Note: The measurement range of the microphone may be limited depending on the combination of Microphone/Preamplifier and SR-2210.

■Windscreen φ70 mm

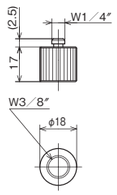
●Use with MI-3170 / 3111 / 3310

(MI-3140 not supported)

■Microphone holder MI-0301

●Standard accessory of the MI-3111 / 3170 MI-1271M12

■Conversion screw (1/ 4" → 3 / 8") MI-0302

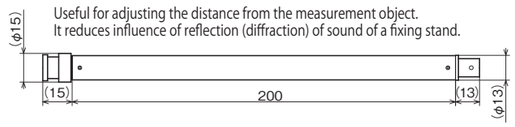


■Tripod LA-0203D (Made by SLIK Corporation)

Used for fixing a microphone preamplifier, adjusting height.
Free camera platform type, with a case.
Shortened : 417 mm
Lowest position : 170 mm
Highest position : 1543 mm
Weight : 980 g

■Extension rod (for MI-3111/3170) MI-0311

Useful for adjusting the distance from the measurement object.
It reduces influence of reflection (diffraction) of sound of a fixing stand.



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*Outer appearance and specifications are subject to change without prior notice.

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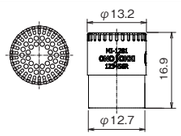
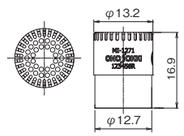
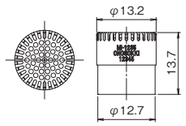
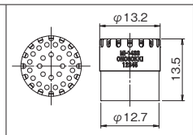
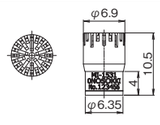
Measurement Microphone and Preamplifier/Peripherals

MI *series*

NEW

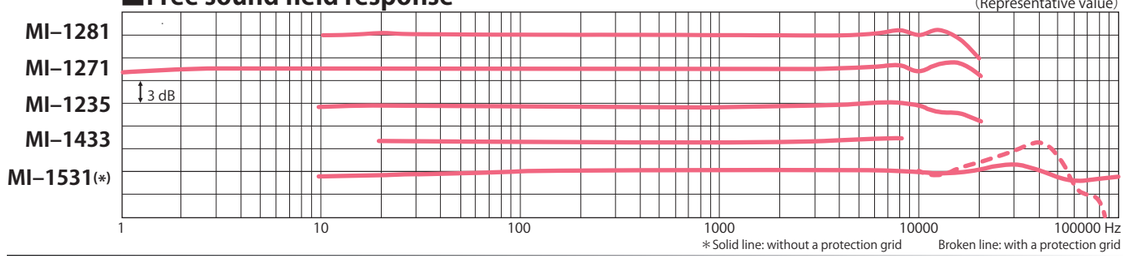
ONO SOKKI

Measurement Microphone Specification

型式	NEW MI-1281	MI-1271	MI-1235	MI-1433	MI-1531
Appearance					
Feature	・1/2-inch back electret type ・High sensitivity	・1/2-inch back electret type ・High sensitivity ・Supports low frequency ・Supports measurement under severe temperature environment	・1/2-inch back electret type ・Supports audible region ・Cost-effective type	・1/2-inch back electret type ・Cost-effective type	・1/4-inch back electret type ・Wide band measurement (up to 100 kHz) ・Space-saving design
Polarization voltage	0V				
Sensitivity	-20±1.5 dB re. 1 V/Pa 100 mV/Pa (1 kHz)	-26±1.5 dB re. 1 V/Pa 50 mV/Pa (1 kHz)	-29±3 dB re. 1 V/Pa 36 mV/Pa (1 kHz)		-48±3 dB re. 1 V/Pa 4 mV/Pa (250 Hz)
Frequency range	10 Hz to 20 kHz	1 Hz to 20 kHz	10 Hz to 20 kHz	20 Hz to 8 kHz	10 Hz～100 kHz (without protection grid) 10 Hz～ 20 kHz (with protection grid)
Maximum sound pressure	128 dB (when using the MI-3170)	135dB (when using the MI-3170)	135 dB (when using the MI-3111)		157 dB (when using the MI-3140)
Self-noise level (A-weighting)	8 dB (representative value, when using MI-3170)	14 dB (representative value, when using MI-3170)	19 dB (representative value, when using MI-3111)		30 dB (representative value, when using MI-3140)
Operating temperature range	-10 to 50 ℃	-30 to 80 ℃	-10 to 50 ℃		-30 to 60 ℃
Operating humidity range	0 to 90 %RH (with no condensation)		20 to 90 %RH (with no condensation)		0 to 90 %RH (with no condensation)
Storage temperature range	-20 to 60 ℃	-40 to 70 ℃	-20 to 60 ℃		-30 to 80 ℃
Storage humidity range	0 to 90 %RH (with no condensation)		10 to 90 %RH (with no condensation)		0 to 90 %RH (with no condensation)
Outer dimensions / weight	φ13.2×16.9 mm / approx. 6 g		φ13.2×13.7 mm / approx. 6 g	φ13.2×13.5 mm / approx. 6 g	φ6.9×10.5 mm / approx. 1.5 g
Applicable preamplifier	MI-3170		MI-3111		MI-3140
Outer appearance (Unit: mm)					

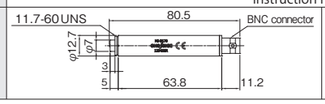
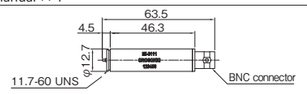
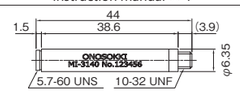
■Free sound field response

(Representative value)



＊Solid line: without a protection grid　　Broken line: with a protection grid

Preamplifier Specification

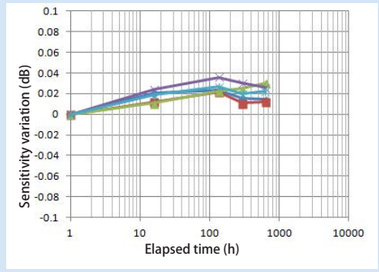
Model name	MI-3170	MI-3111	MI-3140
Appearance			
Feature	・Low frequency ・Measurement under severe temperature environment ・Measurement of very small sound	・Cost-effective type ・Multi-channel measurement	・Space-saving design ・Wide frequency range
Size	1/2-inch		1/4-inch
Attenuation (typical)	0.15 dB	1.0 dB	0.25 dB
Frequency range	10 Hz to 40 kHz (+0.1 dB, -0.2 dB, 1 kHz as reference) 1 Hz to 40 kHz (+0.1 dB, -1.5 dB, 10 Hz as reference)	10 Hz to 20 kHz (±1.0 dB, 1 kHz as reference) 20 Hz to 20 kHz (±0.6 dB, 1 kHz as reference)	10 Hz to 100 kHz (±0.5 dB as reference)
Self-noise (effective value voltage, A-weighting)	3.3 μV or less	5.0 μV or less	2.5 μV or less (20 Hz to 20 kHz)
Max. Output voltage	±8 V (peak)　Sound pressure conversion 135 dB (when using the MI-1271)	±5.6 V (peak)　Sound pressure conversion 135 dB (when using the MI-1235 / 1433)	±8 V (peak)　Sound pressure conversion 157 dB (when using the MI-1531)
Operating temperature range	-30 to 80 ℃	-10 to 50 ℃	-30 to 60 ℃
Operating humidity range	0 to 90 % (with no condensation)	30 to 90 % (with no condensation)	0 to 90 % (with no condensation)
Storage temperature range	-40 to 70 ℃	-20 to 60 ℃	-30 to 80 ℃
Storage humidity range	0 to 90 % (with no condensation)	10 to 90 % (with no condensation)	0 to 95 % (with no condensation)
Power supply	CCLD　2 to 4.5 mA (rated 4 mA) 18 VDC to 26 VDC (rated 24 V)	CCLD　0.5 to 5 mA (rated 4 mA) 15 VDC to 25 VDC (rated 24 V)	CCLD　2 to 20 mA (rated 4 mA) 15 VDC to 25 VDC (rated 24 V)
Applicable connector	CO2(BNC)		10-32 UNF
Outer dimensions	φ12.7 × 80.5 mm	φ12.7 × 63.5 mm	φ 6.35 × 44 mm
Cable	MX-1000 series (recommended), MX-2000 series	MX-2000 series (recommended)	NP-0130 series (recommended)
Weight	Approx. 35 g (not including microphone)	Approx. 25 g (not including microphone)	Approx. 5.5 g (not including microphone)
Accessory	Protection cap for input connector × 1 MI-0301 (microphone holder for mounting tripod) × 1 Instruction manual × 1		Protection cap for input connector × 1 SC-0313 conversion adapter (1/2 to 1/4 inch) × 1 Instruction manual × 1
Outer appearance (Unit: mm)			

TEDS Measurement Microphone

MI-1271M12
(MI-1271+MI-3170 Microphone with built-in amplifier)

A microphone with a built-in amplifier. This microphone can be directly connected to a device equipped with a CCLD (constant current drive) power supply using a BNC cable. When connected to a TEDS-compatible device, information such as sensitivity is automatically read, eliminating the need for complicated calibration work. Reliable measurement and time reduction are achieved.

Temperature test data　e.g.) 80 ℃, 23 % RH



Diameter, response type, polarization voltage	1/2 inch, free sound field, 0 V
Sensitivity	-26.0 ±1.5 dB re.1 V/Pa (50 mV/Pa)
Frequency range	1 Hz to 20 kHz (±2 dB)
Capacitance	12 pF (re.)
Maximum sound pressure level (250 Hz, 3% distortion)	135 dB or more
Cartridge thermal noise (A-weighting)	14.0 dB (re.)
Pressure coefficient (250 Hz)	-0.013 dB/kPa
Temperature coefficient (250 Hz)	+0.005 dB/K
Humidity coefficient (250 Hz)	-0.0004 dB/%
Estimated long-term stability	0.03 dB/year or less (in reference environmental condition) 0.30 dB/year or less (at 80 ℃, 23 % RH)
Operating temperature range	-30 to 80 ℃
Operating humidity range	0 to 90 % RH (with no condensation)
Storage temperature range	-40 to 70 ℃
Storage humidity range	0 to 90 % RH (with no condensation)
Power requirement	Constant Current Line Drive
Drive current	2 to 4.5 mA (rated 4 mA)
Drive supply voltage	DC18 to 26V (rated 24V)
Output connector	C02 type (BNC)
TEDS version	IEEE1451.4.2004 (Template: Microphone with built-in Preamplifier Ver.1.0)
Outer dimensions, weight	φ13.2 x 91.9 mm, approx. 41 g
Accessory	Calibration chart, instruction manual, microphone holder (MI-0301)

*Reference environmental condition：23 ℃, 50 % RH,101.3 kPa
*Cable length conforming to CE marking: up to 30 m
*For the TEDS compatibility of the measuring instruments and amplifiers to be connected, contact the store where you purchased.

Sound Calibrator Specification

Model name	SC-3120	SC-2500	SC-2120A
Appearance			
Applicable standard	IEC 60942:2003 Class 1/C JIS C 1515:2004 Class 1/C	IEC 60942:2017 Class 1 ANSI S1 40 2006 (R2011) Class 1 JIS C 1515:2020 Class 1 *1	IEC 60942:2003 Class 2 JIS C 1515:2004 Class 2
Method	Piston-phone	Dynamic speaker	
Applicable microphone	1/2-inch microphone : MI-1211/1233/1234/1235/1271/1281, MI-1431/1432/1433 1/4-inch microphone : MI-1531* *SC-0313 adapter attached to MI-3140 1/4-inch preamplifier is required.		1/2-inch microphone MI-1431 / 1432 / 1433
Sound pressure level	Nominal sound pressure level：114 dB Deviation of sound pressure level: ±0.4 dB or less*2	Nominal sound pressure level：114 dB Deviation of sound pressure level: ±0.25 dB or less*2	Nominal sound pressure level：94 dB Deviation of sound pressure level: ±0.5 dB or less*2
Total distortion	2.5 % or less	0.5 % or less	
Frequency	Nominal frequency：250 Hz Frequency deviation ±0.4 % or less*2	Nominal frequency：1000 Hz Frequency deviation ±0.5 % or less*2	Nominal frequency：1000 Hz Frequency deviation ±1 % or less*2
Operating environment	Air temperature：-10 to 50 ℃ (with no condensation) Static pressure ：65 to 108 kPa Relative humidity：25 to 90 %　(Excluding a combination of air temperature and humidity that exceeds dew-point temperature of 39 ℃ or higher.)		
Power requirement	Size AA battery (R6P or LR6) × 3	Size AA battery (LR6 or HR6) × 2	9V flat battery (6F22 or 6LR61) × 1
Battery life	2.5 hours or more continuous operation (when using R6P)	4 hours or more continuous operation (when using LR6)	20 hours or more continuous operation (when using 6F22)
Outer dimensions (not including protruded section)	60 (W) × 38 (H) × 200 (D) mm	84 (W) × 53 (H) × 76 (D) mm	52 (W) × 45 (H) × 130 (D) mm
Weight	Approx. 600 g (not including battery cells)	Approx. 200 g (not including battery cells)	Approx. 300 g (not including battery cells)
Accessory	Instruction manual × 1　Barometer × 1 Size AA battery (R6P) × 3　Storage case × 1 SC-0312 (1/2-inch adapter) × 1	Instruction manual × 1 Size AA battery (LR6) × 2	Instruction manual × 1 9V flat battery (6F22) × 1

*1 : The main body display of sound calibrator: JIS C 1515: 2020 Class 1 from May 2020 onwards, (previous display JIS C 1515: 2004 Class 1).
*2 : Under reference environment (reference environment condition: air temperature 23℃, static pressure 101.325 kPa, relative humidity 50%)