

MI series

Measurement Microphone and Preamplifier/Peripherals

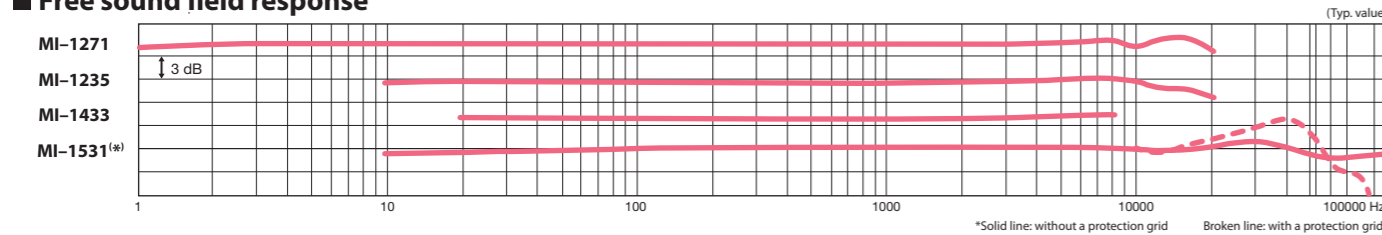
A variety of lineup for the acoustic measurement



Measurement Microphone

Model name	MI-1271	MI-1235	MI-1433	MI-1531
Appearance				
Feature	<ul style="list-style-type: none"> • 1/2-inch back electret type • High sensitivity • Supports low frequency • Supports measurement under severe temperature environment 	<ul style="list-style-type: none"> • 1/2-inch back electret type • Supports audible region • Cost-effective type 	<ul style="list-style-type: none"> • 1/2-inch back electret type • Cost-effective type 	<ul style="list-style-type: none"> • 1/4-inch back electret type • Wide band measurement (up to 100 kHz) • Space-saving design
Polarization voltage	0 V			
Sensitivity	-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	1 Hz to 20 kHz	10 Hz to 20 kHz	20 Hz to 8 kHz	10 Hz to 100 kHz (without protection grid) 10 Hz to 20 kHz (with protection grid)
Maximum sound pressure	135 dB (when using the MI-3170)	135 dB (when using the MI-3111)		157 dB (when using the MI-3140)
Self-noise level (A-weighting)	14 dB (Typ. value, when using MI-3170)	19 dB (Typ. value, when using MI-3111)		30 dB (Typ. value, when using MI-3140)
Operating temperature range	-30 to 80°C	-10 to 50°C		-30 to 60°C
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	-40 to 70°C	-20 to 70°C		-30 to 80°C
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

Free sound field response



Preamplifier

Model name	MI-3170	MI-3111	MI-3140
Appearance			
Feature	<ul style="list-style-type: none"> • Low frequency • Measurement under severe temperature environment • Measurement of very small sound 	<ul style="list-style-type: none"> • Cost-effective type • Multi-channel measurement 	<ul style="list-style-type: none"> • 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°C	-10 to 50°C	-30 to 60°C
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°C	-20 to 60°C	-30 to 80°C
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) 18 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	φ6.35 × 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)			

MI series

TEDS Microphone

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



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.

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/%

Operating temperature range	-30 to 80°C
Operating humidity range	0 to 90%RH (with no condensation)
Storage temperature range	-40 to 70°C
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 26 V (rated 24 V)
Output connector	CO2 type (BNC)
TEDS version	IEEE1451.4.2004 (Template: Microphone with built-in Preamplifier Ver.1.0)
Outer dimensions, weight	φ13.2 × 91.9 mm, approx. 41 g

*Reference environmental condition: 23°C, 50% RH, 101.3 kPa

*Cable length conforming to CE marking: up to 30m

*For the TEDS compatibility of the measuring instruments and amplifiers to be connected, contact the store where you purchased.

Sound Calibrator

It is used for unit calibration of measurement microphones and confirmation of indicated value for sound level meter. Since sound pressure is affected by temperature and air pressure, it is important to use a sound calibrator before and after measurement in order to perform correct measurements.

Some standards stipulate that microphones must be calibrated with sound calibrators. In addition, in JIS C 1509 and IEC 61672-1, when using a class 1 sound level meter, using a class 1 sound calibrator is required.

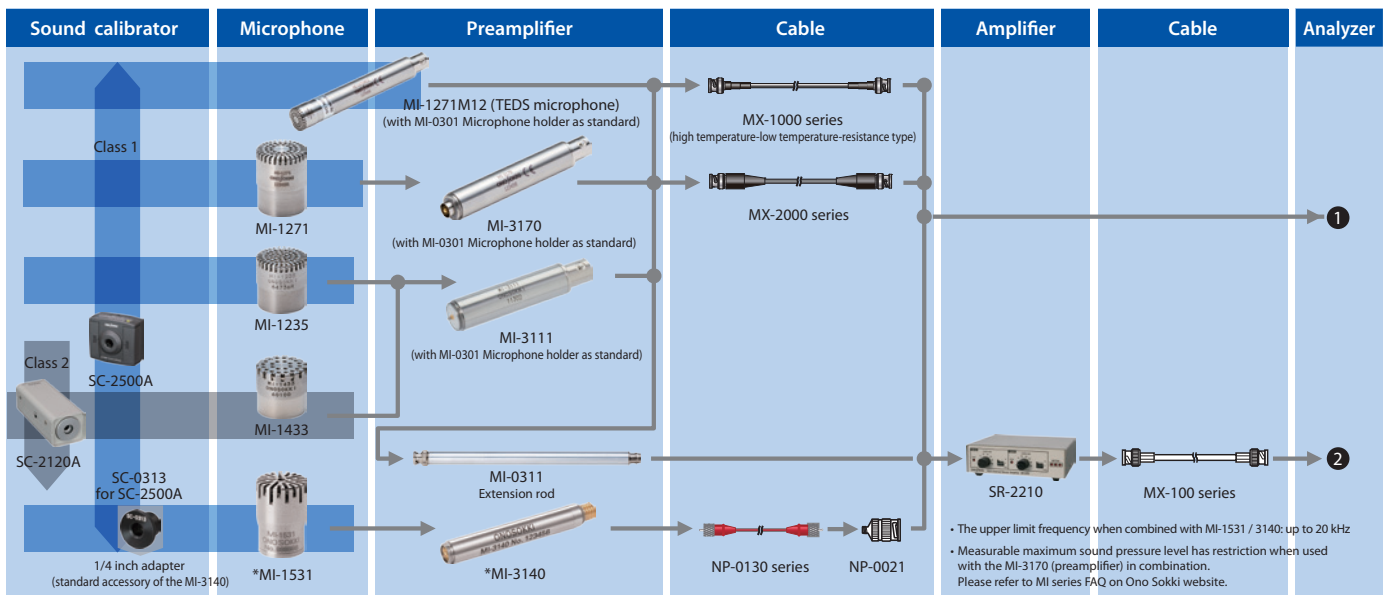
Model name	SC-2500A	SC-2120A
Appearance		
Applicable standard	IEC 60942: 2017 Class 1 ANSI S1.40 2006 (R2011) Class 1 JIS C 1515: 2020 Class 1	IEC 60942: 2003 Class 2 JIS C 1515: 2004 Class 2
Method	Speaker	
Applicable microphone	1/2-inch microphone: MI-1235 / 1271 / 1281*1 / 1433 1/4-inch microphone: MI-1531*2 High performance Sound Level Meter: LA-7200 / 7500 / 7700 Sound level meter: LA-1411 / 1441A / 4441A	1/2-inch microphone MI-1431 / 1432 / 1433
Sound pressure level	Nominal sound pressure level: 114 dB Deviation of sound pressure level: ±0.25 dB or less*3	Nominal sound pressure level: 94 dB Deviation of sound pressure level: ±0.5 dB or less*3
Total distortion	0.5% or less*3	0.5% or less
Frequency	Nominal frequency: 1000 Hz Frequency deviation ±0.5% or less*3	Nominal frequency: 1000 Hz Frequency deviation ±1% or less*3
Operating environment	Air temperature: -10 to 50°C (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°C or higher.)	
Power requirement	Size AA battery (LR6 or HR6) × 2	9 V flat battery (6F22 or 6LR61) × 1
Battery life	10 hours or more continuous operation (when using LR6)	20 hours or more continuous operation (when using 6F22)
Outer dimensions (not including protruded section)	84 (W) × 53 (H) × 76 (D) mm	52 (W) × 45 (H) × 130 (D) mm
Weight	Approx. 220 g (including battery cells)	Approx. 300 g (not including battery cells)
Accessory	Instruction manual × 1 Size AA battery (LR6) × 2 Protection cover for coupler × 1	Instruction manual × 1 9 V flat battery (6F22) × 1

*1: This product is discontinued. *2: SC-0313 adapter attached to MI-3140 1/4-inch preamplifier is required.

*3: Under reference environment (reference environment condition: air temperature 23°C, static pressure 101.325 kPa, relative humidity 50%)

Measurement Microphone

System Configuration



Analyzer

- ① CCLD (BNC connector)
- ② Voltage input (BNC connector)



DS-5000 series



DS-3000 series
Data Station



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



CF-4700A
FFT Comparator



DR-7100
Data Recorder

*For specifications up to 100 kHz, 100 kHz unit of CF-9200 / 9400, DS-5000 series and DS-3000 series are recommended. CF-7200, DS-2000 series 100 kHz 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 (±20%) / applied voltage: approx. 18 V
Operating frequency range	1 Hz 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) × 40 (H) × 125 (D) mm (not including protruded section)
Weight	approx. 500 g (including battery cells)

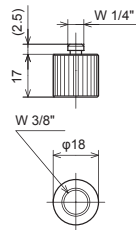
*Note: The measurement range of the microphone may be limited depending on the combination of microphone/preamplifier and SR-2210.

Windscreen φ70 mm



Use with MI-3170 / 3111 / 3310
(MI-3140 not supported)

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



Microphone holder MI-0301



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

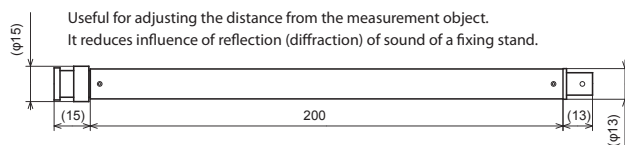
Tripod (Made by SLIK Corporation)



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



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

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