

Sound Level Meter

LA-1441/1441A/4441A Integrating Sound Level Meter



LA-1411 (Class 2)



LA-1441A (Class 2)



LA-4441A (Class 1)

Overview

LA-1441/1441A/4441A sound level meter are applicable to IEC 61672-1:2013, JIS C 1509-1:2017. Adopted curved surface body with less reflection of sound. Cost effective sound level meter with the following features.

Features

- All models have the functions indispensable for on-site measurement.
 - The time averaging sound level (Leq) measurement function which is necessary for noise measurement.
 - Abundant simultaneous measurement items.
 - 100 dB wide linearity range unnecessary for level range switching.
 - Easy menu format enables simple operation.
 - Measurement condition resume function enables to start measurement with the same condition as the previous measurement.
 - BNC connector and CCCL type preamplifier are adopted. Easy to extend the cable.
 - Equipped with USB and RS-232C interfaces. (LA-1441A/4441A)
- LA-1411**
 Class 2 sound level meter for product testing and measuring the sound level generated from machines etc.
LA-1441A
 Class 2 sound level meter for measuring the working environment and environmental noise. Auto measurement function by timer and trigger. Level trend can be recorded at the interval from 1 ms.
LA-4441A
 Class 1 sound level meter for sound analysis and product testing. Time weighing (10 ms, impulse) corresponding to the last sound fluctuation. Level trend can be recorded at the interval from 1 ms.

Specifications

	LA-1411	LA-1441A	LA-4441A
Applicable standard	IEC 61672-1: 2013 Class 2 JIS C 1509-1: 2017 Class 2 JIS C 1516: 2014 Class 2	IEC 61672-1: 2013 Class 1 JIS C 1509-1: 2017 Class 1 JIS C 1516: 2014 Class 1	IEC 61672-1: 2013 Class 1 JIS C 1509-1: 2017 Class 1 JIS C 1516: 2014 Class 1
Microphone	1/2-inch backelectret-type condenser microphone MI-1433 Nominal sensitivity level:-29 dB	1/2-inch backelectret-type condenser microphone MI-1235 Nominal sensitivity level:-29 dB	1/2-inch backelectret-type condenser microphone MI-1235 Nominal sensitivity level:-29 dB
Microphone Preamplifier		MI-3111	
Linearity range		100 dB (Wide range), 80 dB (Normal range)	
Total linearity range	A: 26 to 135 dB (IEC, JIS) C: 31 to 135 dB (IEC, JIS) Z: 36 to 135 dB (IEC, JIS)		A: 27 to 135 dB (IEC, JIS) C: 30 to 135 dB (IEC, JIS) Z: 35 to 135 dB (IEC, JIS)
Frequency range	10 Hz to 8 kHz (IEC, JIS)		10 Hz to 20 kHz (IEC, JIS)
Self noise (typical)	A, C, Z A: 20 dB, C: 25 dB, Z: 30 dB or less		A: 19 dB, C: 22 dB, Z: 27 dB or less
Level range	20 to 90 dB, 30 to 90 dB, 40 to 100 dB, 50 to 110 dB, 60 to 120 dB, 70 to 130 dB (Normal range)/ 40 to 120 dB (Wide range)		
Time weighting		FAST, SLOW	FAST, SLOW, Impulse, 10 ms
Measurement items	$L_{p, Leq}, L_{eq}, L_{min}, L_{max}, L_{peak}, L_{x}, L_{y}, L_{z}, L_{p, Lmax}, L_{p, Lmax}, L_{p, Lmax}$		
Sampling interval	31.25 μ s (other than L _x), 100 ms(L _x)		20.83 μ s (other than L _x), 100 ms(L _x)
Measurement time		Manual, arbitrary setup (199 h 59 m 59 s max.)	Arbitrary setup (199 h 59 m 59 s max.)
Total measurement time			
Start mode	Manual		Manual, timer (time setting, in increment of 1 minute), trigger (can be started after a lapse of specified time [0 to 10 seconds, in increment of 1 second] after trigger detection (trigger delay function))

	LA-1411	LA-1441A	LA-4441A
Internal calibration signal (REFOUT)	1 kHz sine wave (For upper limit level range: -6 dB (normal range), -16 dB (wide range))		LA-4441A
Recommended sound calibrator	SC-2500, SC-3120, SC-3120A	SC-2500, SC-3120	SC-2500, SC-3120
Display	Semitransparent LCD with LED backlight (124 x 64-dot). Measurement value display by numeric and bar indicators List display and trend graph display for various kinds of calculated values Display of date, time, measurement time, and conditions of various kinds of instruments Display by numeric: 1 s, bar indicator: 0.1 s, trend graph: 0.2 s		
Display update time	Total calculated values: 100 addresses		
Memory function	Manual memory Auto memory L _p Record		
Measurement condition memory function	Condition memories (9 kinds)		
Resume function	You can select the setting at power on from the followings; the last setting, the setting at the factory shipment, the setting that is memorized to the specified condition memory.		
Analog output	Select one from three: AC output with selected frequency weighting, AC output with Z-weighting, DC output with selected frequency weighting and time weighting		
Rated AC output	0.707 Vrms/F.S (normal range), 2.236 Vrms/F.S (wide range) Load resistance: 10 k Ω or more (with upper-limitation value of bar indicator) * Frequency weighting can be selected: interlocking setting or fixed to Z-weighting		
Rated DC output	2.5 V/F.S. (with upper-limitation value of bar indicator), Amount of voltage fluctuation per: 10 dB: 0.25V Load resistance: 10 k Ω or more		
External control input	Operation: toggle operation of start/place in pause Specifications of hardware: negative pulse input (voltage level: Low: 0.0 to 0.5 V, Hi: 3.0 to 5.0 V) Pulse width: 100 ms or more, Absolute maximum rated input voltage: 5 V		
Comparator function (Option: LA-0141)	Set comparison value: 40.0 to 130.0 dB (in increment of 0.1 dB) Comparison item: -Lmax or Lpeak -0 ms, 100 ms, 1 s, 5 s HOLD time: 100 ms, 1 s, 5 s, manual Output logic: -negative or positive logic Output format: -open collector -withstand voltage: +3 to +24 VDC, current: 50 mA or less		
Clock function	Current calendar (year/month/day/hour/minute) with leap year adjustment		
RS-232C	Control of main unit and data output Baud rate: 9,600/115,200 bps		
USB	Control of main unit and data output Baud rate: 460,800 bps USB 2.0 FULL SPEED (connecting virtual COM port)		
Microphone cable extension *	305 m max.		105 m max.
Printer function	Content: Measurement value, measurement start/stop time, actual measurement time, frequency weighting, time weighting Mode: Normal (alphanumeric) or screen image, Applicable printer: DPU-I414		
Power requirement	Type AA battery x 2 pcs. or PB-7090 AC adapter (sold separately)		
Battery life	Approx. 8 hours (like alkaline battery in use)		
Operating temperature/humidity range	-10 to 50 $^{\circ}$ C / 25 to 90% RH (with no condensations)		
Storage temperature/humidity range	-20 to 60 $^{\circ}$ C / 10 to 90% RH (with no condensations)		
Outer dimensions	Approx. 78(W) x 263(H) x 47(D) mm		
Weight	Approx. 360 g (including batteries)		

* The described value is extendable length when the exclusive cable is used.