Sound Level Meter

Class 2 / Class 1

LA-1411/1441A/4441A

Achieved the ease of use and high-performance measurement



LA-1411
(Class 2)

LA-1441A
(Class 2)

LA-4441A
(Class 1)

ONO SOKKI

Sound Level Meter

Class1 **LA-4441A** Class2 **LA-1411/1441A**

LA-1411 / 1441A / 4441A provides full support for on-site measurement with versatile functions.

LA-1411 / 1441A / 4441A series Class1/Class2 Sound Level Meters conform to the requirements by the latest standard of IEC / JIS. And also they are designed to focus on field measurement in pursuing of easy operation and cost-effectiveness. All models can measure 14 items simultaneously including Leq, which is popularly used in sound measurement, and have a wide linearity range of 100 dB.
Setting can be made with easy-to-follow menu. Depending on applications including work environment measurement, machine and product noise analyses, you can choose suitable model which meets your needs.



Analog output connector

Analog signal output can be selected from AC (conjunction with selected frequency weighting), AC-Z (fixed to Z-weighting), or DC (conjunction with selected frequency weighting and time weighting).

COMP / CTRL connector (LA-1441A / 4441A)

Output the comparison result of sound level using comparator function (option). External input of control signal to start or pause measurement.

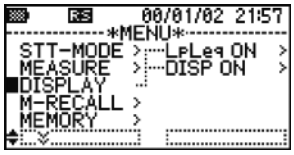
USB / RS-232C connectors (LA-1441A / 4441A)

USB and RS-232C interfaces for communication with external devices are equipped. Communication with a PC enables to control and read the data.

*AC adapter (PB-7090) : Sold separately

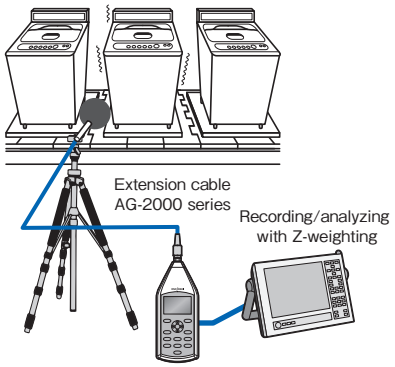
Easy-to-follow setting menu without referring to the manual

Each model has simply classified hierarchical structure.
Easy-to-follow setting menu leads to complete each setting by selecting menu items with just [+] and [ENTER] keys.



Microphone can be used away from main unit by BNC cable

Exclusive coaxial cable is used as an extension cable between microphone and a main unit. Coaxial cable makes extension of measurement cable easier with small code reel. Even you need to measure with 100 m extension cable, you can perform without annoyance than heavy multicore cable.



Displaying sound pressure level with A-weighting, AC output with Z-weighting

Not only the measurement of level in the field, but also recording data (time waveform) is required in order to analyze noise and sound in details. LA-1411 / 1441A / 4441A enable to output signal with flat Z-weighting from analog output connector during displaying and measuring sound level with A-weighting in main unit.
With this unit, it is possible to output a signal with a weighting different from the weighting of the sound level displayed on the main unit screen. That is, they can output signal with flat z-weighting from analog output connector during displaying the measured sound level with A-weighting in a screen on the main unit.

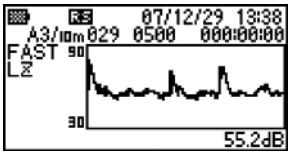
Measuring with A-weighting

Measuring the noise at L_{Aeq} by sound level meter and recording with flat Z-weighting by FFT Analyzer.

Auto memory function and L_p recording function (LA-1441A / 4441A)

The LA-1441A / 4441A have Auto memory function which automatically store the data to the specified measurement time. Also the sound level with time weighting (Lp) is stored at 1 ms interval (Lp recording function) . This function enables to check the fluctuation of sound level in short time.

*Storing interval can be selected from 1ms, 2ms, 5ms or 10ms. Maximum of 200 seconds can be stored at 1ms interval.



Displays level on vertical axis, time on horizontal axis.

All models with Equivalent Continuous Sound Pressure Level (Leq) measurement function

All models of LA-1411 / 1441A / 4441A can measure 14 measurement items including Equivalent Continuous Sound Pressure Level (Leq), which is widely used as an indicator at present sound measurement.

Multiple simultaneous measurements

LA-1411 / 1441A / 4441A can calculate all of 14 measurement items simultaneously. No need by selecting measurement item to calculate before measurement, no error by miss-setting. Only one pressing of START button is required to start measurement. All results of measurement items can be checked with several pressings of DISP (abbreviation of DISPLAY) button after measurement.

*14 measurement items: L_p, L_{eq}, L_E, L_{max}, L_{min}, L_{peak}, L_{high}, L_5, L_{10}, L_{50}, L_{90}, L_{95}, L_{low}, L_{ave}. The all items can be calculated simultaneously and saved as needed.

Wide linearity of 100dB without adjusting level range

Re-measurement is not necessary for over / under-range. LA-1411 / 1441A / 4441A feature a wide linearity range of 100 dB and can measure the sound pressure level from 30 to 130 dB at one range*. It works effectively in the measurement of unpredictable or large fluctuation in sound level.

*Sound pressure level from 30 to 130dB can be measured at the range of 40 to 120dB.

Resume function to activate with same settings as last time

Same as existing LA series, measurement conditions just before being powered OFF are automatically saved. Measurement can be started again quickly with previous measurement conditions (Resume function). The LA series can have 9 condition memories and able to store the measurement condition as required by each situation. Presetting the measurement conditions not only makes it smooth to restart measurement but also prevents from setting error in the field.

Easy data transfer and remote controll (LA-1441A / 4441A). (required software: user preparation)

Communications via RS-232C and USB enable to transfer the measurement result to a PC and remote controll of LA-1441A / 4441A main unit with software (user preparation).



Peripherals

AC adapter
CE sold separately

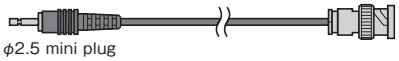
PB-7090

Input voltage : 100 to 240VAC, 50 / 60Hz
Output voltage : 5.9VDC
Output connector : EIAJ RC-5320A Voltage category2
Rated output current : 3.5A
Length : 3.5 m

* Please specify the AC cord depending on the area used.
* Made by Adapter Technology Co.,Ltd

Signal output cable (2 m)
sold separately

AX-501

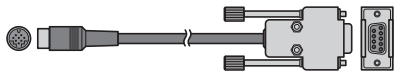


φ2.5 mini plug

Cable for AC / DC signal output, comparator output, and external control signal input.

RS-232C cable (2 m)
sold separately

AX-5022



PC side (D-SUB 9-pin)

All-weather Windscreen
sold separately

LA-0207A+LA-0208A



In measurement where the microphone is exposed to the wind, the windscreen must be used for protection.
This screen reduces noise caused by the wind in performing sound level measurement outdoors, and prevents the microphone from being damaged by rain or snow.

Screen diameter: ø200mm

* AG-2000 series extension cable and tripod are necessary for attachment.

Windscreen
Standard accessory

φ70mm LA-0201
●Hand strap ●Size AA battery x 2
●Instruction manual (CD)
●Carrying case (exclusive)
*Strage space for AC adapter, sound calibrator, and analog output cable (sold separately) are provided.

Tripod
sold separately

LA-0203D



Sound Level Meter Tripod
(Airy L100 made by SLIK corporation)

Shortened	417 mm
Lowest position	170 mm
Highest position	1543 mm
Maximum load to be applied	980 g

Extension cable
sold separately

AG-2000 series (coaxial type)



AG-2010	10 m
AG-2030	30 m
AG-2050	50 m with code reel
AG-2100	100 m with code reel

* MI-0301 Microphone holder is a standard accessory of each extension cable.
* Conjunction cable (5m) is attached to an extension cable with code reel for connection to a main unit of a sound level meter.
* Microphone can be used away from main unit of sound level meter by connecting several extension cables.
* Cable length for CE marking compatible: less than 30 m

Sound Calibrator
sold separately

SC-3120 / 2500 / 2120A

Model name	SC-3120	SC-2500	SC-2120A
Appearance			
Applying standard	IEC 60942 :2003 Class 1/C	IEC 60942 :2017 Class 1	IEC 60942 :2003 Class 2
	JIS C 1515 :2004 Class 1/C	JIS C 1515 :2004 Class 1	JIS C 1515 :2004 Class 2
Applicable sound level meter	LA-1411 LA-1441A LA-4441A	LA-1411 LA-1441A LA-4441A	LA-1411 LA-1441A
Nominal sound pressure level	114 dB	114 dB	94 dB
Nominal frequency	250 Hz	1 000 Hz	1 000 Hz

*Sound calibration for IEC61672 (JIS C 1509) Class1 Sound Level Meter LA-4441A: Class 1 or 1/C calibrator

Printer
sold separately

Thermal Printer
with RS-232C connector
DPU-414



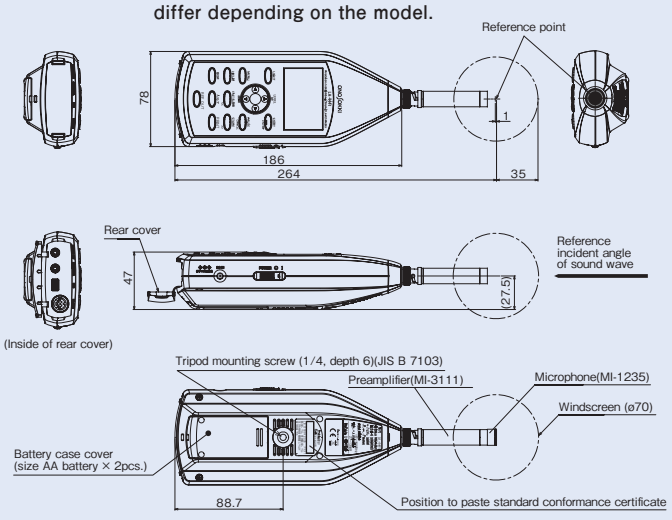
Manual, auto, memory printings, and also hard copy of the display screen of LA-1441A / 4441A are available.

Connection cable (AX-5042:2 m) : standard accessory.
AC adapter : PW-C0725-W2-U (AC100 to 240V) (sold separately)
* Please consult us for worldwide type.
Recording paper : TP-0411 (28m/roll, 10 rolls/box, sold separately)

Outer Dimensions

Unit: mm

LA-4441A * The dimensions of the microphone may differ depending on the model.



Sound Level Meter Function Table

●:Provided as a standard ○:Provided as an option

		Linearity range 100dB	
		Manual memory	Continuous measurement [Auto memory/Block memory]
Class 2 (20 Hz to 8 kHz)		—	—
Long distance extension [BNC type]		LA-1411	LA-1441A
Class 1 (16 Hz to 16 kHz)		—	—
Long distance extension [BNC type]wide band		—	LA-4441A
General purpose (L_p,L_{max},L_{eq})		●	●
Fluctuation noise (L_{eq}, L_N, L_E)		●	●
Working environment (L_{eq} for 10 minutes)		●	●
Factory noise		●	●
Mechanical noise		●	●
Time weighting of 10 ms		—	●(LA-4441A only)
External control function	RS-232C connection	—	●
	USB(virtual COM port connection)	—	●
Trigger function (Starting of measurement･data storage)		—	●
Trend display of sound data		●(Realtime data only)	●(Realtime data+storage data)
Data storage into an internal memory		●(Manual memory 100 data)	●(Manual memory 100 data+ Block memory max. 200,000 data)
Level judgment [comparator output]		—	○
External control		—	●
Storage cycle of sound data		—	Calculation value 1 s / instantaneous value 1 ms or more

Basic Specification

		LA-1411	LA-1441A	LA-4441A
Applying standards		IEC 61672-1 :2013 Class 2		IEC 61672-1 :2013 Class 1
		JIS C 1509-1 :2017 Class 2 JIS C 1516 :2014 Class 2		JIS C 1509-1 :2017 Class 1 JIS C 1516 :2014 Class 1
Microphone		1/2-inch back electret-type condenser type MI-1433 Nominal sensitivity level: −29dB		1/2-inch back electret-type condenser type MI-1235 Nominal sensitivity level: −29dB
Preamplifier		MI-3111		
Linearity range		100 dB(wide range), 80 dB(normal range)		
Frequency range		10Hz to 8kHz (JIS, IEC)		10Hz to 20kHz (JIS, IEC)
All the linearity range		A : 26 to 135dB (JIS, IEC) C : 31 to 135dB (JIS, IEC) Z : 36 to 135dB (JIS, IEC)		A : 27 to 135dB (JIS, IEC) C : 30 to 135dB (JIS, IEC) Z : 35 to 135dB (JIS, IEC)
Frequency weighting		A, C, Z		
Intrinsic noise		A: 20dB, C: 25dB, Z: 30dB		A: 19dB, C: 22dB, Z: 27dB
Level range		20 to 90dB, 30 to 90dB, 40 to 100dB, 50 to 110dB, 60 to 120dB, 70 to 130dB (Normal range) / 40 to 120dB (Wide range)		
Time weighting		Fast, Slow		Fast, Slow, Impulse, 10ms
Measurement items		L_p, L_{eq}, L_E, L_N (L_5, L_{10}, L_{50}, L_{90}, L_{95}, L_{high}, L_{low}, L_{ave}), L_{max}, L_{min}, L_{peak}		
Sampling interval		31.25μs (other than L_N), 100ms (L_N)		20.83μs (other than L_N), 100ms (L_N)
Measurement time		Manual, arbitrary setup (199h59m59s max.)		
Total measurement time		—	Arbitrary setup (199h59m59s max.)	
Start mode		Manual	Manual, Timer (time setting: in increment of 1 second) 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)	
Internal reference signal		1 kHz sine wave (For upper limit level range : −6 dB(normal range), −16 dB(wide range))		
Calibration function		Function that can perform inspection and adjustment with a recommended sound calibrator.		
Recommended sound calibrator		SC-2500, SC-3120, SC-2120A		SC-2500 / SC-3120
Display device		Semitransparent LCD with LED backlight (124 x 64-dot), measurement value display by numeric and bar indicator. List display and trend graph display for various kinds of calculated values, displays of day, time, measurement time and conditions of various kinds of instruments.		
Displayed update time		Numeric: 1s, bar indicator : 0.1s, trend graph: 0.2s		
Memory function	Manual memory	Total calculated values: 100 data		
	Auto memory	—	Total calculated values: 100 data x 200 blocks, L_{eq}: 1000 data x 200 blocks	
	Lp record	—	Sound pressure level with time weighting (L_p) is automatically recorded at the specified interval. (1000 data x 200 blocks) Recording interval: Select one from 1ms, 2ms, 5ms, and 10ms.	
Measurement condition memory function		Condition memory: 9 kinds		
	Resume	Settings activated at power ON can be selected from three; Settings used at previous power OFF, factory settings, any condition memory number which is set from menu		
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	0.707Vrms / F.S. (normal range), 2.236Vrms / F.S. (wide range)		
	Rated DC output	2.5V / F.S., 0.25V / 10 dB		
	Electrical specification	Output impedance: 50Ω, load resistance: 10kΩ or more, applicable cable: AX-501 (sold separately)		
External control input		—	Operation: Toggle operation of start / place in pause. Hardware specification: Negative logic pulse input (Voltage level: Low 0.0 to 0.5V, Hi 3.0 to 5.0V) Pulse width: 100ms or more Absolute maximum rated input voltage: 5.0V	
Comparator function (LA-0141:option)		—	Comparison level: Set to 40.0 to 130.0dB (in increment of 0.1dB) Comparison measurement item: L_{max} or L_{peak} Delay time: 0ms,100ms,1s, 5s Hold time: 100ms, 1s, 5s, manual Output logic: Negative or positive logic Output signal specification: Open collector (Applied voltage: +3 to +24VDC, current: 50mA or less)	
Clock function		Current calendar year / month / day / hour and minute can be displayed and set, with leap year adjustment		
RS-232C		—	Control of main unit and data output, output to an exclusive printer (DPU-414:sold separately) Baud rate: 9,600 / 115,200 bps	
USB		—	Control of main unit and data output, transfer speed 460800 bps (note) RS-232C cannot be used together. USB2.0 FULL SPEED (connect to virtual COM port)	
Microphone extension*1		305m max.		105m max.
Print function		—	Menu: Measurement value, start / stop time of measurement, actual measurement time, frequency weighting, time weighting Mode: Normal (alpha-numeral) or image data displyed on LCD Applicable printer: DPU-414 (sold separately)	
Power supply		Size AA battery x 2pcs. or AC adapter (PB-7090, sold separately, power consumption: approx. 4VA at 100VAC)		
Battery life		Approx. 8 hours (LR-6 alkaline batteries in used)		
Operating temperature / humidity range		−10 to 50°C / 25 to 90%RH (with no condensation)		
Storage temperature / humidity range		−20 to 60°C / 10 to 90%RH (with no condensation)		
Outer dimensions		Approx. 78(W) x 263(H) x 47(D)mm		
Weight		Approx. 360g (including batteries)		
Accessories		Windscreen (ø70mm) x 1, carrying case x 1, hand strap x 1, size AA battery cell x 2pcs., Instruction manual (CD), simple operation guide		

*1. The cable length given here is the length when each of the exclusive cable sold by Ono Sokki is used.

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∗Outer appearance and specifications are subject to change without prior notice.
URL: https://www.onosokki.co.jp/English/english.htm

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