Sound Level Meter

LA-7000 series

Listen, measure, and identify the sound.

ONOSOKKI
Easy to operate

4.3 Inch color LCD
Clear and easy to see a display of overlapping. When the instantaneous value exceeds, the bar graph turns red and the letter of OVERT is left as a measured history.

Starts recording with one-touch operation
Calculation and recording are started just by tapping [button (for auto memory)] with a finger.

Listening function
You can measure while listening to the sound. It enables you to realize and experience the sound, not only as simple numerical values but also as a real feeling. Moreover, you can listen to only the intended sound more clearly through filtering by bandpass filter. By aiming the microphone (sound level meter) toward the direction where the sound is heard loudly, the sound probing is easily performed. (Refer to the Function page.)

Easy to hold

Compact
Achieves 35% of size-reduction in volume of conventional model. Easy-to-hold design.

Short lanyard for portable use
The short lanyard provided as an accessory prevents the sound level meter from slipping down.

Easy to use

Intuitive operation by a touch panel
It provides intuitive operation in easily understandable manner by even a beginner touching the sound level meter for the first time. You can select and change items on the display including calculation, range, measurement time by tapping the panel.

Language selection
Language used on the display (menu, error message etc.) is selectable (English/Japanese).

USB power supply allows long time measurement
Approx. 12 hours of continuous operation by alkaline battery cells depends on the selected model. Longer continuous operation is allowed by USB bus power. USB gets preferable over battery cells when both USB and battery cells are used together. The battery power supply is automatically selected by removing USB connection.

Windscreen correction function
When measuring with windscreen, the influence of the attachment can be corrected by this function.
* Applicable to IEC 61672-1 with a state a windscreen attached.
* The use without a windscreen correction is available.

Capturing function
Captures the displayed screen by pressing Power key and Home key simultaneously.

Home key leads you to return to the first page
Pressing Home key returns the display to the home screen. Helpful to go back to the home screen quickly from the deep hierarchy that you are operating.

External power supply ON/OFF function
When the LA-7000 series is used being incorporated in equipment, the ON/OFF power operation can be interlocked to an external power supply.
* The battery cells should be removed.

High sensitivity type
Recommended for small sound measurement such as in an anechoic room.
LA-9300: IEC 61672-1:2013 Class 1
10 Hz to 20 kHz

High function type
Recommended for environmental noise measurement where high function is required.
LA-7200: IEC 61672-1:2013 Class 2
20 Hz to 8 kHz
Sound level meter advancing with additional function

1/1 Octave band function which is effective for noise countermeasure is provided as standard. High cost-effectiveness, high performance, and can continue to advance sound level meter by adding further optional functions.

**Standard function**

- **DUAL mode, QUAD mode**
  - Two (DUAL) or four (QUAD) of calculation values in the combination of various frequency weightings and tone weightings can be displayed simultaneously. Useful when displaying several kinds of frequency weightings.
- **Listening function (Phone output)**
  - Measuring while listening to the sound
  - Effective for the measurement in an anechoic room or distant place
  - Effective for monitoring of environmental noise etc. at distant place
  - *Extension cable, headphone: sold separately*

**Standard function | 1/1 Octave Band Analysis Function**

- **Applicable standard**: EIC 61260-1; 2014 Class1/JIS C 1513-1; 2002 Class1, JIS C 1514-1; 2002 Class1
- **Analysis band**: 16 Hz to 16 kHz (11 bands), Allpass 1, 2
- **Measurement Item**: Filter Mode (Bandpass, Allpass) - 1/1, 1/3, 1/6, 1/12, 1/24, 1/48 (l, l, list)
- **RTA Mode**: L, L, L (Main)
- **Memory mode**: Manual, Auto, Logging, Record (LA-0704 is required.)

**Optional function | Sound Recording Function LA-0704**

- **Memory mode**: Record
- **Sampling frequency**: 64 kHz
- **Recording time**: approx. 8 hours at 4 GB max. (16-bit)
  - (Depending on Bit) approx. 5.5 hours at 4 GB max. (24-bit)
- **File format**: wav, (acoustic data)
- **Easier to record!**
  - *Slew-rate processing of only analog recording in RTA of FFT mode is enabled.
  - *Please record the data at 2 GB when it will be read by the OS-2000 series.
  - The OS-2000 series can read up to 2 GB of data.
  - Recording time: approx. half of that when recording with 4 GB.

**Optional function | FFT Analysis Function LA-0703**

- **This function can perform analysis with finer line resolution (narrow band analysis). Effective for frequency analysis of single-shot sound using trigger function.**
  - **Frequency range**: 1 k, 2.5 k, 5 k, 12.5 k, 25 kHz
  - **Number of lines**: 400 (1024), 800 (2048), 1600 (4096)
  - **(number of sampling points)**
- **Trigget Off/ON times (1.5, 16)**
- **Level**: 40.0 to 130 dB
- **Position**: 464 points fixed
- **Average mode**: SUM, MAXHold, EXP (exponential)
- **Measurement range**: Normal range
  - (valid range: not supported)
- **Applicable memory**: Manual, Auto, Logging, Record
- **Screen expand display**: Expand x1, x2, x4

**Optional function | Level Judgment Function LA-0705**

- **Judging item**: Lp instantaneous value
  - In Main (Calculated values: not supported)
- **Setting range**: 30.0 dB to 130.0 dB
- **DELAY setting**: OFF, 10 ms, 100 ms, 1 s, 2 s, 3 s, 5 s, 10 s
- **HOLD setting**: 100 ms, 200 ms, 500 ms, 1 s, 5 s, 10 s, 30 s, Manual
- **Output mode**: OFF, ON (Mode/Low), ON (Mode/Setting)

**Optional function | 1/3 Real-time Octave Analysis Function LA-0702**

- **Analysis band**: 12.5 Hz to 20 kHz (3 bands), Allpass 1, 2
- **Applicable standard**: Measurement item, Measurement range, Memory mode: same as 1/1 octave mode

**Optional function | 1/3 Real-time Octave Analysis Function LA-0702**

- **More detailed sound probing than 1/1 octave analysis**

**Optional function | Loudness Calculation Function LA-0708**

- **Effective for sound evaluation that does not give numerical difference in the result of A-weighting.**
- **- Loudness Calculation function for stationary loudness (conforms to DIN45631)**
- **- Calculation list (dB以上的 sound field, f0 sound field)**
- **Loudness value**
  - **Loudness level**
  - **Simultaneous measurement**
  - **On/off**: (Manual, Trigger, Setting) (Manual, Trigger, Setting)
  - **Level**: 30.0 dB to 130.0 dB
  - **Delay**
  - **HOLD**
  - **Output mode**: OFF, ON (Mode/Low), ON (Mode/Setting)

**Sound Quality Evaluation (Stationary Loudness)**

- **Screen Capture Function**
  - Captures the displayed screen by pressing Power key and Home key simultaneously.
- **Key Lock Function**
  - Press and hold the Home key.

**Useful Function**

- **Sound Analyzer & Source Identification**

**Sound Recording**

- **Sound Recording Function LA-0704**
  - **Sound Listening**
  - **Sound FFT Analyzer**
  - **Sound Level Judgment**
  - **Sound Quality Evaluation (Stationary Loudness)**
### Accessories & Related products

- **Windscreen**
  - 70 mm
- **All-weather windscreen**
  - LA-0207A
  - Screen: 240 mm
  - Extension cable: tripod
  - 500 mm
- **Microphone extension cable**
  - AG-3400 series
  - 5 m
  - 10 m
  - 20 m
  - 30 m
- **Carrying case**
  - Alkaline battery cells x 4
  - Sound calibrator
  - Instruction manual (CD, setup guide (base focal))
- **Instruction manual (booklet/CD separately)**
- **Tripod**
  - LA-0201D
  - Airy 100
  - Made by Slik corporation
  - Reduction length: 417 mm
  - Lowest position: 170 mm
  - Highest position: 3,300 mm
  - Weight: 980 g
- **USB cable**
  - (Recommended product)
  - U2-2CAMF/2U2BK (1.2 m)
  - with ferrite core, 2A output supported (made by ELEC.COM.CO.)
- **SD card**
  - Up to 32 GB
  - Standard accessory
- **Headphones**
  - (Recommended product)
  - M3X-2504
  - Made by Sony Corporation
  - ATH-LS10, ATH-M30x
- **AC adapter (with 100 V AC cable)**
  - PB-7090
  - Worldwide type cable:
  - Install your nearest distributor or the SONY sales office nearest.
  - Analog signal cable 2 m
  - AX-501

### Specification

#### LA-7090 (Class1)
- **Input**
  - IEC 60942 Class1, JIS C1515 Class 1
  - Sound pressure level: 114 dB, Frequency 1000 Hz

#### LA-7290 (Class2)
- **Input**
  - IEC 60942 Class1, JIS C1515 Class 1
  - Sound pressure level: 114 dB, Frequency 1000 Hz

#### Microphone Mic 1071
- **Frequency characteristic**: 20 to 20,000 Hz
- **Sensitivity**
  - 11.5 mV/100 dB

#### Measurement time
- **Continuous measurement time (max) Time**: 8 hours, 30 minutes
- **Total time**: 8 hours, 30 minutes

#### Display function
- **Display**: 4.8-in LCD with backlight (black painted)
- **Screen**: 300 × 200 pixels

#### Operation mode
- **Standard**: Single/Dual, Quad, Single frame (1/24, 1/30)

#### Memory function
- **Memory function**: MANUAL, EV (custom), AE (custom), AE/SC (custom)

#### Calibration
- **Calibration**: Manual, Tracking, CCIR 601, ITU-R 709

#### AC input
- **Input voltage**: 100-240 V AC, 50/60 Hz
- **Input current**: 0.3 A max.

#### Optional accessories
- **AC adapter (PB-7090)**
  - Ethernet cable (USB 2.0)
  - Carrying case
  - Tripod
  - USB cable

Please use a recommended SD card when you use the SD memory function. For more details about the recommended SD card, please contact your nearest distributor or the SONY sales office nearest.
**Offline Software for analysis**

**DS-3000**

The DS-3000 can import the WAVE file which has been recorded by LA-7000 series and LA-0704, and perform FFT analysis offline. The unit is automatically calibrated at the time of installation.

**IIR Filter (OS-2000 series)**

The OS-2000 series can import the WAVE file which has been recorded by LA-7000 series and LA-0704. You can hear the change by increasing or decreasing the frequency level.

**Sound Quality Evaluation (OS-2000 series)**

The sound quality evaluation software can import the WAVE file which has been recorded by LA-7500 and LA-0704, and calculate the loudness, non-constant loudness, sharpness, and fluctuation strength.

**Fluctuation Sound Analysis (OS-2000 series)**

OS-2000 series can show the sound feature by two parameters of frequency and fluctuation frequency. This software enables wide frequency range sound quality evaluation that cannot be performed by "roughness" and "fluctuation strength" fields.

**Sound Source Visualization System BF-3100, MI-5420 etc.**

The sound source visualization system has more advanced function than the LA-7000 series, which identifies and visualizes the sound that you are curious about. (frequency of the 1/3 octave band-pass filter)

**Sound Level Meter LA-1411/1441/4441**

This series has simple function which measures the sound level, equivalent continuous sound level $L_{eq}$, sound exposure $L_{ex}$, maximum, minimum, peak level $L_{max}$, percentile noise level $L_{p}$ etc. Recommended calibrators (Class1 and Class2) are also provided.

- LA-4441 (IEC 61672-1 Class 1)
- LA-1441 (IEC 61672-1 Class 2)
- LA-1411 (IEC 61672-1 Class 2)

*Extension (NC) cable for microphone is sold separately.

**Acoustic sensor (microphone, preamplifier) MI series**

- MI-1271+MI-3170
  - 1/2-inch High performance microphone
  - Operating temperature: -30°C to 80°C
  - Frequency range: 1 Hz to 20 kHz
  - Inherent noise A-weighting: 14 dB
- MI-1235 + MI-3111
  - 1/2-inch Microphone for general usage
  - Equivalent to Class1, 10 Hz to 20 kHz
- MI-1433 + MI-3111
  - 1/2-inch Microphone for general usage
  - Equivalent to Class1, 50 Hz to 20 kHz
- MI-1531 + MI-3140
  - 1/4-inch High performance microphone
  - 1/4-inch diameter, 10 Hz to 100 kHz

*To upgrade the sound level meter after purchase, register the product on the user registration page and download the latest version. To add options, upgrade the sound level meter to the latest version.

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**Reliable and high level calibration JCSS Accredited Calibration Laboratory**

Ono Sokki provides reliable and high level calibration as "Accredited Calibration Laboratory", which is certified by JCSS calibration laboratory accreditation system, based on the skills and know-how of quality assurance system which has been acquired through many years of practice. Under the JCSS of calibration laboratory accreditation system. Ono Sokki is assessed and accredited as Accredited Calibration Laboratories to meet the requirements of the Measurement Law, relevant regulations and ISO/IEC.

1. JCSS (Japan Calibration Service System)
2. IAB: International Laboratory Accreditation Conference
3. MRA: Mutual Recognition Arrangements

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**Accreditation Scope**

- Acoustics & Ultrasound
- Acceleration
- Torque
- Fluid flow
- Electricity (Direct Current & Low Frequency)

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Ono Sokki can issue the calibration certificates with the JCSS accreditation symbol, which assures the traceability to National Measurement Standards as well as a laboratory's technical and operational competence, and is acceptable in the world through the IAB-MRA."