Wide Range Measurement
From 1 to 20 000 Hz

Sound Level Meter Class1
(With low-frequency sound measurement function)

NL-62

http://rion-sv.com/
With the auto store function included as standard, as well as a timer function and external power supply support, the NL-62 is ideal for continuous measurement. Designed for intuitive ease of use, there is no more need to consult the manual during a measurement. The large 3-inch color screen is bright and easy to read. Sudden rainfall is also no problem, thanks to the water-resistant construction. Using the optional octave and 1/3 octave band real-time analysis program NX-62RT (under development), the unit can even operate as a frequency analyzer. The High-Precision Sound Level Meter NL-62 supports all your measurement needs.

Measure Frequencies from 1 to 20 000 Hz.
Measure Low-Frequency Sound and Noise with a Single Unit.

Equipped with non-slip rubber grips

Large color LCD screen
Three-inch LCD screen with a touch panel
High resolution screen is easy to see indoors or outdoors and even in the dark.

Variety of I/O Connections
- SD Card slot
- AC adapter
- AC output terminal (x2.5 mono jack)
- DC output terminal
- USB terminal (USB mini B)
- RS-232C input/output terminals

Bottom view

255 mm
10 inch
No paper manual is needed.
User instructions and a help function can be easily accessed on the device.

Water-resistant (Except for the microphone)
Guaranteed water-resistant to at least level IP54 (resistant to spraying water).
Helps reduce failures caused by sudden rain showers.

Use of rechargeable batteries
In these models it is possible to use rechargeable batteries which make these meters environmentally-friendly.
16 hour continuous measurement is possible (when using eneloop® or dry alkaline batteries).

Continuous detailed measurements for one month
This meter can be used to conduct long-term measurements, such as environmental measurements.
(If an AC adapter is used)
Duration of recording

<table>
<thead>
<tr>
<th>Model</th>
<th>Duration of Recording</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL-62</td>
<td>1000 h (approx. one month)</td>
</tr>
<tr>
<td>Previous model</td>
<td>200 h (approx. one week)</td>
</tr>
</tbody>
</table>

Example of detailed recording
If the $L_T$ is measured at 100 ms intervals and the $L_{eq}$ is simultaneously measured at 10 min intervals over a 24 hour period, the total size of accumulated data is approximately 74 MB (reference value).

Functionality can be extended by a range of options
Add long-term data recording capability and frequency analysis function
Program function list

**Auto store function**

This function enables continuous measurement in $L_P$ mode (instantaneous SPL) and $L_{eq}$ mode (equivalent continuous SPL) to be conducted simultaneously.

- **Total measuring time of Auto store function**: Up to 1000 h
- **Equipped with a timer function**

$L_P$ mode (instantaneous SPL) and $L_{eq}$ mode (equivalent continuous SPL) concept

**Comparator function**

This function turns on when the open collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).

**Continuous data output function**

This function enables the continuous acquisition of instantaneous values and processed values during both USB and RS-232C communication.

This is a convenient function for users who can design their own control programs, where data has to be transferred continuously from the sound level meter to the computer.

Optional program function list

**Octave, 1/3 octave real-time analysis program**

**NX-62RT**

The NX-62RT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

By adding the NX-62RT program to the NL-62, octave band and 1/3 octave band real-time analysis can be realized. Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. NC curve graph display and NC value calculation/display are also possible.
Waveform recording program

NX-42WR

This function enables users to record sounds and processing sound to levels simultaneously. Recorded data can be played on computer and used for frequency analysis.

(Uncompressed waveform WAVE file)

Sampling at 48 kHz, 24 kHz, 12 kHz, Selection of 24 bit or 16 bit

<table>
<thead>
<tr>
<th>Maximum recording time (16 bit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling frequency</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>48 kHz</td>
</tr>
<tr>
<td>24 kHz</td>
</tr>
<tr>
<td>12 kHz</td>
</tr>
</tbody>
</table>

The NX-42WR is supplied on the 2 GB SD card. The 2 GB SD card can be used as a memory card after installing the program.

Reverberation Time Measurement Program

NX-42RV

By adding the NX-42RV program to the NL-52/42, reverberation time measurements can be performed. The measurement method is the interrupted noise method. This program allows storage of reverberation time decay curves, T20/T30 calculation, Txx calculation (reverberation time calculation based on a user-defined interval) and averaged reverberation time results displayed on the SLM screen.

<table>
<thead>
<tr>
<th>Maximum recording time (16 bit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling frequency</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>48 kHz</td>
</tr>
<tr>
<td>24 kHz</td>
</tr>
<tr>
<td>12 kHz</td>
</tr>
</tbody>
</table>

The NX-42RV is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

FFT analysis program

NX-42FT

By adding the NX-42FT program to the NL-52/42, FFT analysis can be performed. The analysis frequency range is 20 kHz, with 8000 spectrum lines (200 displayed). Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. Maximum zoom ratio is x40, and the top list screen can show up to 20 lines.

The NX-42FT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.
### System construction

- Sound calibrator NC-75
- Microphone extension cables EC-04 (from 2 m)
- AC adapter NC-98E
- Battery pack BP-21A
- Sound Level Meter class 1 NL-62

### Peripheral devices

#### All-weather windscreen WS-15
This windscreen is designed for outdoor installations. It helps to reduce wind noise and is equipped with rainproof features that satisfy the IPX3 water-resistant specifications. It is used with a microphone extension cable. (Mounting adapter WS15006 required separately) (For All-weather windscreen WS-15, use of ST-81 is recommended.)

#### Rain-protection windscreen WS-16
This screen protects the microphone against rain for a short period of time. The rainproof performance of this windscreen is designed to satisfy the IPX3 water-resistant specifications.

#### Sound calibrator NC-75
This Sound calibrator conforms to IEC 60942 (JIS C 1515), class 1, providing a level of performance sufficient for calibrating the precision sound level meter.

#### PISTONPHONE NC-72A
Compliant with JIS C 1515: 2020 (IEC 60942: 2017) class LS/M, class 1/M Allows calibration with accuracy of ± 0.10 dB.

#### Tripod ST-80
This stand can be used for general acoustic measurements. The sound level meter and microphone can be mounted on the stand.

### Waveform analysis software AS-70
This software allows you to load stored WAVE files from a RION sound level meter, vibration meter or data recorder. Octave, 1/3 octave, and FFT analyses can then be performed. Playback of the real sound files is also possible.

#### Specifications
- **Waveform analysis**
  - Calculations: Maximum value, Minimum value, Average value, RMS, Variance, Differential and integral calculus, HPF, LPF
  - Frequency weighting: Z, A, C, G, C to A, L_{vy} (vertical) (JIS C 1510), L_{vx} (horizontal) (JIS C 1510)
  - FFT analysis: Analysis points 32 to 65 536 points
  - Time weighting: 10 ms, F, 630 ms, S, 10 s
- **Octave band analysis**
  - Applicable standards: IEC 61260 Class 1 (JIS C 1514 Class 1)
  - Analysis frequency range: Octave band 0.5 Hz to 16 kHz (16 bands) 1/3 octave band 0.4 Hz to 20 kHz (48 bands)

#### Recommended computer specifications
- **CPU**: Intel Core TM2 Duo 2 GHz or higher
- **RAM**: 2 GB or more (4 GB recommended)
- **HDD**: 20 GB free or more (100 GB or more recommended)
- **DISPLAY**: XGA (1 024 x 768) or more
- **OS**: Microsoft Windows 8.1 Pro 64 bit, 10 Pro 64 bit
Data management software for environmental measurement AS-60

Data management software for environmental measurement AS-60 enables the graph display of measurement data, arithmetic processing, excluded sound processing, preparation of reports, output of files, and playback of real sound files.

- Easy to use
- Simultaneous display of multiple data items (up to 8 data items)
- Reports easy to prepare
- Data stored in a data recorder can be loaded (CSV file for DA-40 Viewer)
- Data combination

Data management screen

Reports easy to prepare
- Data stored in a data recorder can be loaded (CSV file for DA-40 Viewer)

Data stored in a data recorder can be loaded (CSV file for DA-40 Viewer)

Supported models
- NL-62
- NL-52/42
- DA-40 Viewer
  * Only auto store data are supported.
- Recommended computer specifications
  (Common for AS-60/60RT/60VM)
  - CPU: Intel Core i5 2 GHz or higher
  - RAM: 2 GB or more (4 GB or more recommended)
  - DISPLAY: XGA (1024 x 768) or more, at least 65,536 colors
  - OS: Microsoft Windows 8.1 Pro 64 bit, 10 Pro 64 bit
  - AS-60/60RT/60VM is used for NL-62/42 data, the NX-42EX is also needed.

Add support for handling octave band analysis data to AS-60

AS-60RT is for managing SX-A1RT, NX-62RT/42RT or NA-28 data on a computer.

Supported models
- SX-A1RT
- NX-62RT
- NA-28
  * Only auto store data are supported.

Add support for handling data measured with VM-55EX/53A to AS-60

Supported models
- VM-55EX
- VM-53A
  * Only auto store data are supported.
Specifications

IEC 61672-1: 2013/D02 class 1
ANSI S1.4:2014-Part 1 class 1
JIS C 1509-1: 2017 class 1

Processing (main ch)

- Instantaneous sound pressure level: Lp
- Equivalent continuous sound pressure level: Lc
- Sound exposure level: LEx
- Maximum sound pressure level: Lpmax
- Minimum sound pressure level: Lpmin
- Percentile sound levels: L90, L50, L10, L30, L90

Processing (sub-ch)

- Instantaneous sound pressure level: Lp

Additional processing

- One of the following can be selected:
  - C-weighted equivalent continuous sound level: Lc≤
  - G-weighted average sound level: LG
  - C-weighted peak sound level: LC\text{peak}
  - Z-weighted peak sound level: LZ\text{peak}
- Power average of max. level in time-weighted sound level interval Lw\text{Aeqmax}
- 1-year-time-weighted average sound level: LA\text{eq1y}
- Max. value of 1-time-weighted average sound level: LA\text{eqmax}
- Because additional processing frequency characteristics are linked to sub-channel frequency characteristics, Level (Lp\text{max}, Lp\text{min}, Lp\text{c}, Lp\text{eq},... ) can be selected when A characteristics are selected for sub-channel. When C, G, or Z characteristics are selected, Lc\text{eq}, LG\text{eq}, LZ\text{eq}, and Lz\text{eq} can be selected for additional processing.

Microphone Type

UC-59L

Noise

- Inherent noise: 1/12 dB or less
- Weighting: 0.25 dB or less
- Z-weighting: 0.42 dB or less

Frequency weighting

- Frequency range: 1 Hz to 20 kHz
- A, C, G, and Z weighting

Time weighting

- Time weighting: F (Fast) and S (Slow), 1 (Impulse) and 10 s

Level range

- Single range (Linear range): 113 dB
- Bar graph range: Max. 110 dB (20 to 130 dB)

RMS detection circuit

Digital processing method

Sampling cycle

- 20.8 μs (Lp\text{max}, Lp\text{c}, Lc\text{eq}, Lg\text{eq}, Lz\text{eq}, Lp\text{peak}, : sampling frequency: 48 kHz)
- 100 ms (Lc)

Calibration

- Electrical calibration performed according to IEC and JIS standards, using internally generated signals: acoustic calibration performed with the NC-74.

Correction functions

- Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed.
- Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4-2) in diffuse sound field.

Delay time

- The meter can be set to start measuring a specified time (OFF, 1.3, 5, or 10 s) after the start button has been pressed or when a user-triggered event is detected.

Back erase function

- When the PAUSE key is pressed to pause measurement, the preceding user-selectable 0.1, 0.3, or 5 s data are excluded from processing.

Display

- Backlit semitransparent color TFT LCD display WVQGA (400 x 240 dots) + LCD with touch panel (Capacitive Touch Panel)
- Numberical display update frequency: 1 s Bar graph update frequency: 100 ms

Store

- Maximum number of data: 1,000 sets
- Total memory: max. 1,000 sets
- SD Card: Depends on the capacity of the SD Card

Options

- Product name: Product number
- Waveform recording program: NX-42WR
- Waveform analysis software: AS-70
- Waveform analysis software (for environmental measurement): AS-60VM

Precautions regarding waterproofing

- Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.
- To maintain the water and dust proof rating, internal packing replacement is required every five years (at cost).

Wavescan Corporation is a trademark of Microsoft Corporation. Specifications subject to change without notice.