Measure Sounds Reliably

Sound Level Meter
class1
NL-52

Sound Level Meter
class2
NL-42

Free trial optional programs now available on our website

http://rimon-sv.com/
Extremely user friendly!
Rion’s NL-52 and NL-42 sound level meters provide full support for the measurement process.

The NL-52 and NL-42 were developed to eliminate the trouble of reading instruction manuals when conducting measurements.
Large and easily viewable three-inch LCD color display.
The unit (except for the microphone) is water-resistant, which means that it is unaffected by sudden rain showers.
You can use rechargeable batteries to help cut down on waste, making this an environmentally friendly product.

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

**Measurement Display**
- (Level-Time graph)

**Measurement Display**
- (Simultaneous display of Main and Sub channel)

**Parameter Screen**

**Menu screen**

**Help screen**

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**Water-resistant** (Except for the microphone)

Guaranteed water-resistant to at least level IPX4 (resistant to spraying water).
Helps reduce failures caused by sudden rain showers.

*Mounting the all-weather windscreen or rain-proof windscreen helps raise the water-resistant performance of the entire unit, so that the microphone will meet IPX3 specifications.*

**Use of rechargeable batteries**

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

* Please use the dedicated charger to charged eneloop batteries.
* When using eneloop batteries, please read the eneloop battery instruction manual.
* eneloop is a registered trademark of Panasonic group.

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**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)

<table>
<thead>
<tr>
<th>Duration of recording</th>
<th>NL-52/42</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 h (approx. one month)</td>
<td></td>
</tr>
</tbody>
</table>

**Previous model**

| Duration of recording | 200 h (approx. one week) |

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**Functionality can be extended by a range of options**

Additional functions can be added, such as simultaneous logging of raw data (100 ms \( L_p \)) and processed data (\( L_{eq} \) and other indices), frequency analysis reverberation time measurement and long-term data recording.

1/3 octave band analysis screen

FFT analysis screen (x40)

Data management screen of AS-60 software
Optional program function list

When the optional programs are installed, the following functions are added:

**Extended function program**

**NX-42EX**

*Prepares for other programs*

When NX-42EX is installed, NX-42WR, NX-42RT, NX-42RV and NX-42FT can be added.

The NX-42EX program cannot be uninstalled.

**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

![Graph showing simultaneous recording in both $L_p$ mode (Auto 1) and $L_{eq}$ mode (Auto 2)]

**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.
Waveform recording program
NX-42WR

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.

FFT analysis program
NX-42FT

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

Octave, 1/3 octave real-time analysis program
NX-42RT

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

Reverberation Time Measurement Program
NX-42RV

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.

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

(Compressed waveform WAVE file)

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

Maximum recording time (16 bit)

<table>
<thead>
<tr>
<th>Sampling frequency</th>
<th>Memory card</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 kHz</td>
<td>512 MB: 1 h</td>
</tr>
<tr>
<td>24 kHz</td>
<td></td>
</tr>
<tr>
<td>12 kHz</td>
<td></td>
</tr>
</tbody>
</table>

By adding the NX-42RT program to the NL-52/NL-42, octave band and 1/3 octave band analysis can be performed. 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. Using the AS-60RT software, data can be utilized and managed on a computer.

By adding the NX-42RV program to the NL-52/NL-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.

By adding the NX-42FT program to the NL-52/NL-42, FFT analysis can be performed. The analysis frequency range is 20 kHz, with 8 000 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.
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)

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**


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.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Waveform analysis</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maximum value, Minimum value, Average value, RMS, Variance, Differential and integral calculus, HPF, LPF</td>
</tr>
<tr>
<td>Frequency weighting</td>
<td>Analysis points</td>
<td>32 to 65536 points</td>
</tr>
<tr>
<td>FFT analysis</td>
<td>Display data</td>
<td>Power spectrum, Power spectral density, Spectrogram</td>
</tr>
<tr>
<td>Time weighting</td>
<td>Nominal acoustic pressure level</td>
<td>114 dB</td>
</tr>
<tr>
<td>Octave band analysis</td>
<td>Nominal frequency</td>
<td>94 dB</td>
</tr>
<tr>
<td>Analysis range</td>
<td>1 kHz</td>
<td></td>
</tr>
<tr>
<td>Octave band 0.5 Hz to 16 kHz (16 bands)</td>
<td>Octave band 0.5 Hz to 16 kHz (16 bands)</td>
<td></td>
</tr>
<tr>
<td>1/3 octave band 0.4 Hz to 20 kHz (48 bands)</td>
<td>1/3 octave band 0.4 Hz to 20 kHz (48 bands)</td>
<td></td>
</tr>
</tbody>
</table>

Recommended computer specifications:
- **CPU**: Intel Core™ 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 × 768) or more
- **OS**: Microsoft Windows Professional 32 bit / 64 bit, 8.1 Pro 64 bit, 10 Pro 64 bit
Complete software for environmental measurements

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

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Data management software for environmental measurement AS-60RT

Includes the octave and 1/3 octave data management software

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

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

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Data management software for environmental measurement AS-60VM

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

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Supported models

- NL-62
- NL-32/31/22/21
- DA-40Viewer

- Only auto store data are supported.

Recommended computer specifications

(Common for AS-60/60RT/60VM)

- CPU: Intel Core™2 Duo 2.0 GHz or higher
- RAM: 2 GB or more
- DISPLAY: XGA (1024 x 768) or more, at least 65536 colors
- OS: Microsoft Windows 7 Professional 32 bit and 64 bit, 8.1 Pro 64 bit, 10 Pro 64 bit

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Supported models

- SX-A1RT
- NX-62RT

- Only auto store data are supported.

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Supported models

- VM-55EX
- VM-53A

- Only auto store data are supported.
### Specifications

<table>
<thead>
<tr>
<th></th>
<th>NL-52</th>
<th>NL-42</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ANBUSA S1-4.2014/Part1 class 1</td>
<td>ANBUSA S1-4.2014/Part2 class 2</td>
</tr>
<tr>
<td></td>
<td>JIS C 1509-1:2017 class 1</td>
<td>JIS C 1509-1:2017 class 2</td>
</tr>
</tbody>
</table>

#### Measurement functions
- Instantaneous sound pressure level: $L_I$
- Equivalent continuous sound pressure level: $L_{eq}$
- Sound exposure level: $L_e$
- Maximum sound pressure level: $L_{max}$
- Minimum sound pressure level: $L_{min}$
- Percentile sound levels: $L_{10} \text{ to } L_{90}$ (9.9% steps, max. 5 values)

#### Processing (main ch)
- Processing (sub ch):
  - Instantaneous sound pressure level: $L_I$
  - Equivalent continuous sound pressure level: $L_{eq}$

#### Additional processing
- In addition to main processing items, one of the following can be selected for simultaneous processing:
  - C-weighted equivalent continuous sound level: $L_{eq}$
  - C-weighted peak sound level: $L_{peak}$
  - Z-weighted peak sound level: $L_{peak,Z}$
  - Maximum time-weighted equivalent continuous sound level: $L_{eq,WT}$
  - Z-weighted peak sound level: $L_{peak,Z}$

#### Sensitivity level
- $-27 \text{ dB}$ to $-33 \text{ dB}$
- $-27 \text{ dB}$ to $-33 \text{ dB}$

#### Measurement range
- A-weighting: 25 dB to 138 dB
- C-weighting: 30 dB to 138 dB
- Z-weighting: 38 dB to 138 dB
- C-weighting peak sound level: 55 dB to 141 dB
- Z-weighting peak sound level: 60 dB to 141 dB
- A, C, and Z-weighting

#### Frequency range
- $10 \text{ Hz}$ to $20 \text{ kHz}$
- $20 \text{ Hz}$ to $8 \text{ kHz}$

#### Frequency weighting
- A, C, and Z

#### Time weighting
- F (Fast) and S (Slow)

#### Level range
- Single range (Linearly: 113 dB)

#### Sampling cycle
- $20.8 \mu s$ (of the sub-channel, so when the sub-channel has A-weighting, $L_{eq,WT}$ can be selected).
- $100 \text{ ms}$, $200 \text{ ms}$, $1 \text{ s}$, $5 \text{ s}$, $15 \text{ s}$, $30 \text{ min}$, $1 \text{ h}$, $8 \text{ h}$, $24 \text{ h}$

#### Calibration
- Electrical calibration performed according to IEC and JIS standards, using internally generated signals: acoustic calibration performed with the NC-75.

#### 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-set trigger is triggered.

#### Back-erase function
- When the PAUSE key is pressed to pause measurement, the preceding (user-selectable) 0, 1, 3 or 5 data are excluded from processing.

#### Display
- Backlight semitransparent color TFT LCD display WQVGA (400 x 240 dots)
- Temperature: $-10 \text{ to } +50 ^\circ C$

#### Print out
- Printing of measurement results on dedicated printer DPU-414

#### Data continuous output
- Output AC signals when the frequency weighting characteristic is selected by AC or C, Z-weighting.
- Max. $1 \text{ V} (\text{rms} \text{ values})$ at $1 \text{ bar}$ display full scale

#### USB
- Allows USB to be connected to a computer and recognized as a removable disk
- Allows USB to be controlled via communication commands

### Options

#### Service Plan

#### Power supply
- Type: NiC/H (size AA) batteries (alkaline or rechargeable batteries) or external power supply

#### Battery life
- At the maximum $\text{10}$ Depends on the setting

#### Ambient temperature
- $-10 \text{ to } +50 ^\circ C$

#### Humidity
- $10 \text{ to } 90 \% \text{ RH}$

#### Dimensions
- Approx. 250 (H) x 70 (W) x 33 (D)mm, approx. 400 g (with batteries)

#### Weight
- Approx. $400 \text{ g}$

### Distributed by:

RION Co., Ltd. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and bases its accreditation on the accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC). RION Co., Ltd. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and bases its accreditation on the accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC). RION Co., Ltd. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and bases its accreditation on the accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC).