



# Wide Range Measurement From **1 to 20 000 Hz**



**Sound Level Meter  
Class1**

( With low-frequency sound )  
measurement function

**NL-62**

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

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.

255 mm  
10 inch



Equipped with non-slip rubber grips

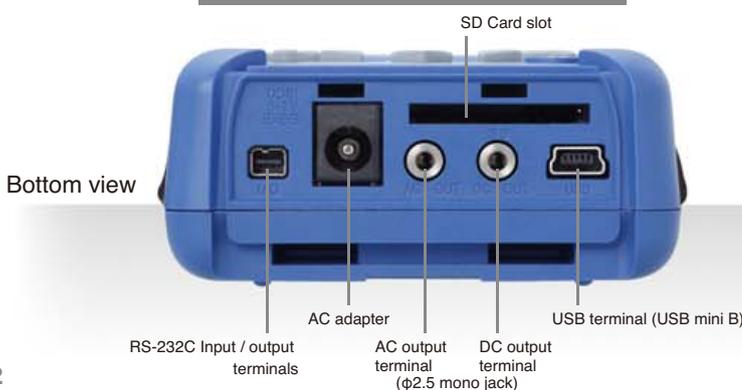
## Large color LCD screen

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



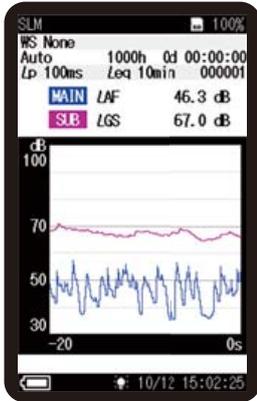
(Full scale)

### Variety of I/O Connections

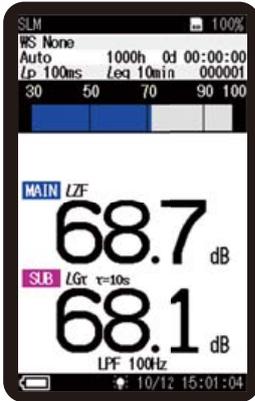


## No paper manual is needed.

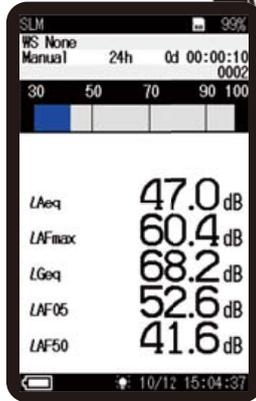
The manual and a help function can be easily accessed on the device.



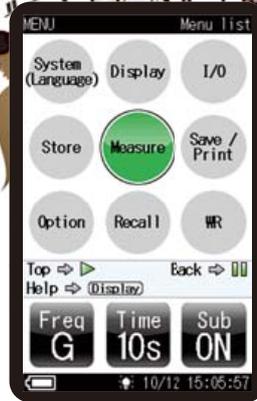
Measurement Display (T-L graph)



Measurement Display (low-frequency sound)



Parameter Screen



Menu screen



Help screen

## 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.



\* Mounting the outdoor windscreen and rainproof windscreen helps raise the water-resistant performance of the entire unit, so that the microphone will also meet IPX3 specifications.

## Use of rechargeable batteries

In these new models it is possible to use rechargeable batteries which make these meters environmentally-friendly. 16 hour continuous measurement is possible (when using 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

**NL-62**

1000 h (approx. one month)

Previous model

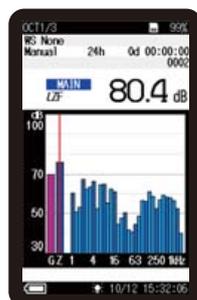
200 h (approx. one week)

Example of detailed recording

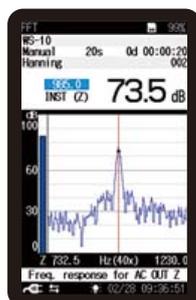
If the  $L_p$  is measured at 100 ms intervals and the  $L_{eq}$  is simultaneously measured at 10 m intervals over a 24 h period, the total size of accumulated data is approximately 74 MB (reference value)

## Functionality can be extended by a range of options

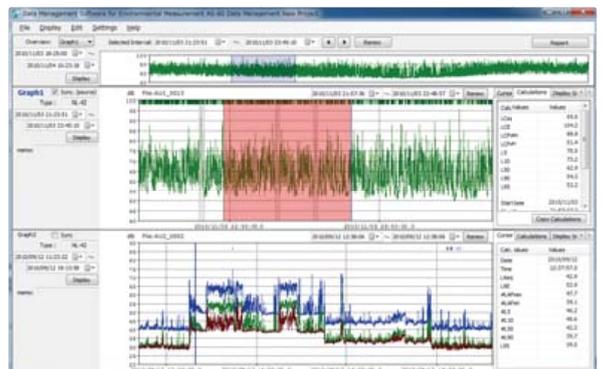
Add long-term data recording capability and frequency analysis function



1/3 octave band analysis screen (low range)



Analysis screen (x40)



Data management screen using AS-60 software

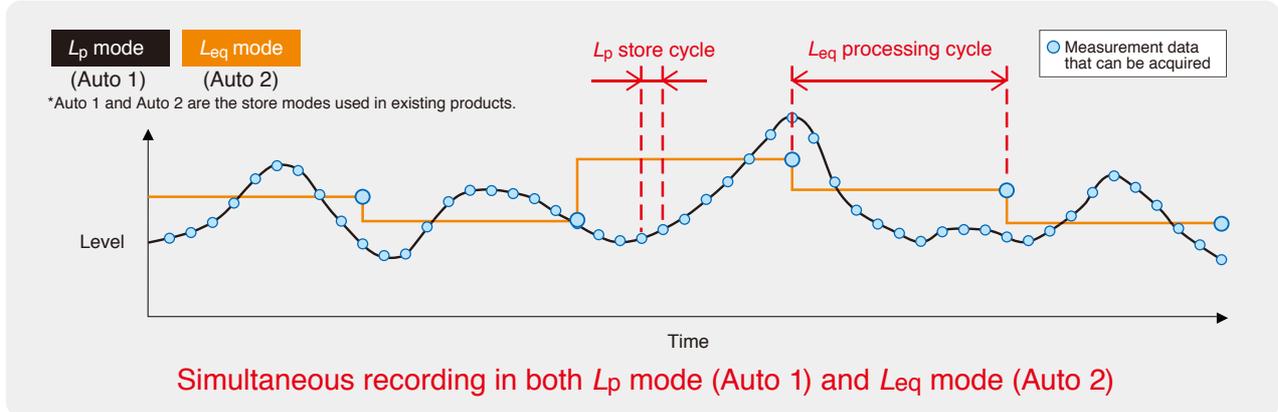
# Program function list

## 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.

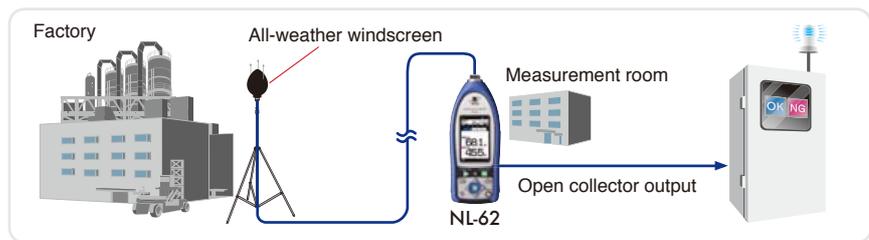
Total measuring time of Auto store function	Up to 1000 h	Equipped with a timer function
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$L_p$  mode (instantaneous SPL) and  $L_{eq}$  mode (equivalent continuous SPL) concept



## 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, such as a program to be used as an indicator.

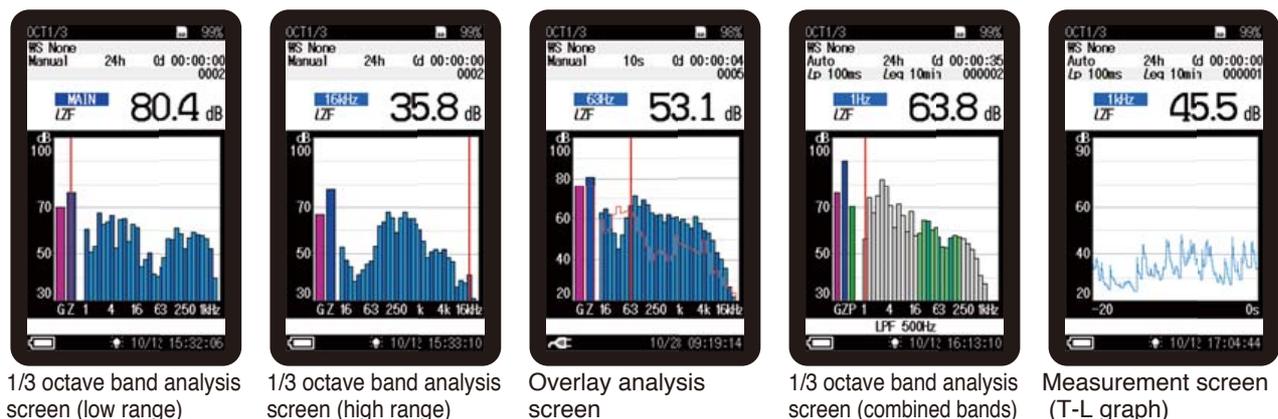
# Optional program function list

## 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 a 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



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.

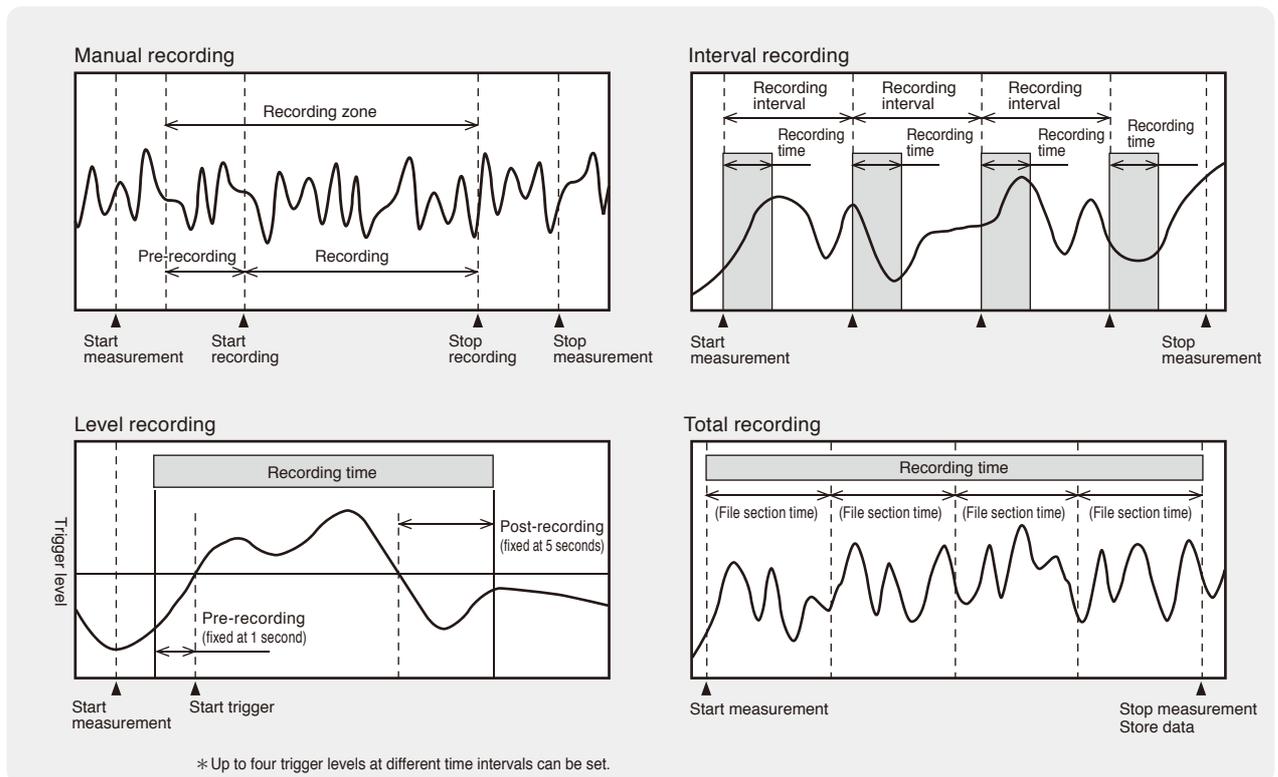
This function enables users to record sounds and processing sound to process sound levels simultaneously. Recorded data can be played on computer and used for frequency analysis. (Uncompressed waveform WAVE file)

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

Maximum recording time (16 bit)

Sampling frequency	Memory card	
	512 MB	2 GB
48 kHz	1 h	4 h
24 kHz	2 h	8 h
12 kHz	4 h	16 h

### Recording concept

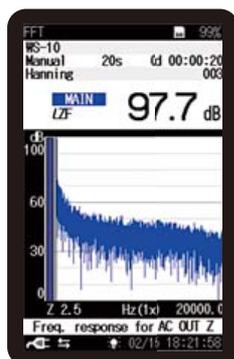


## FFT analysis program NX-42FT

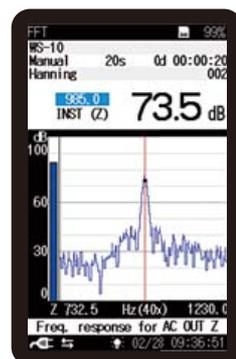


The NX-42FT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

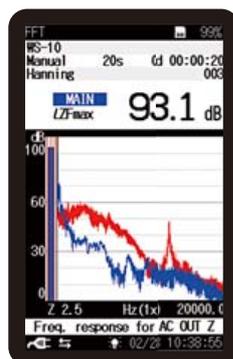
By adding a program to the NL-62, FFT analysis can be performed. The analysis frequency range is 20 kHz, with 8 000 spectrum lines (200 displayed). Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. Maximum zoom ratio is x40, and the top list screen can show up to 20 lines.



Analysis screen (x1)



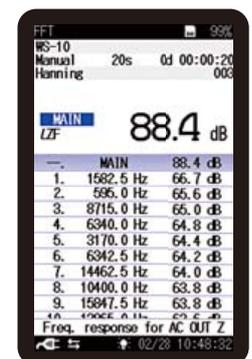
Analysis screen (x40)



Overlay analysis screen

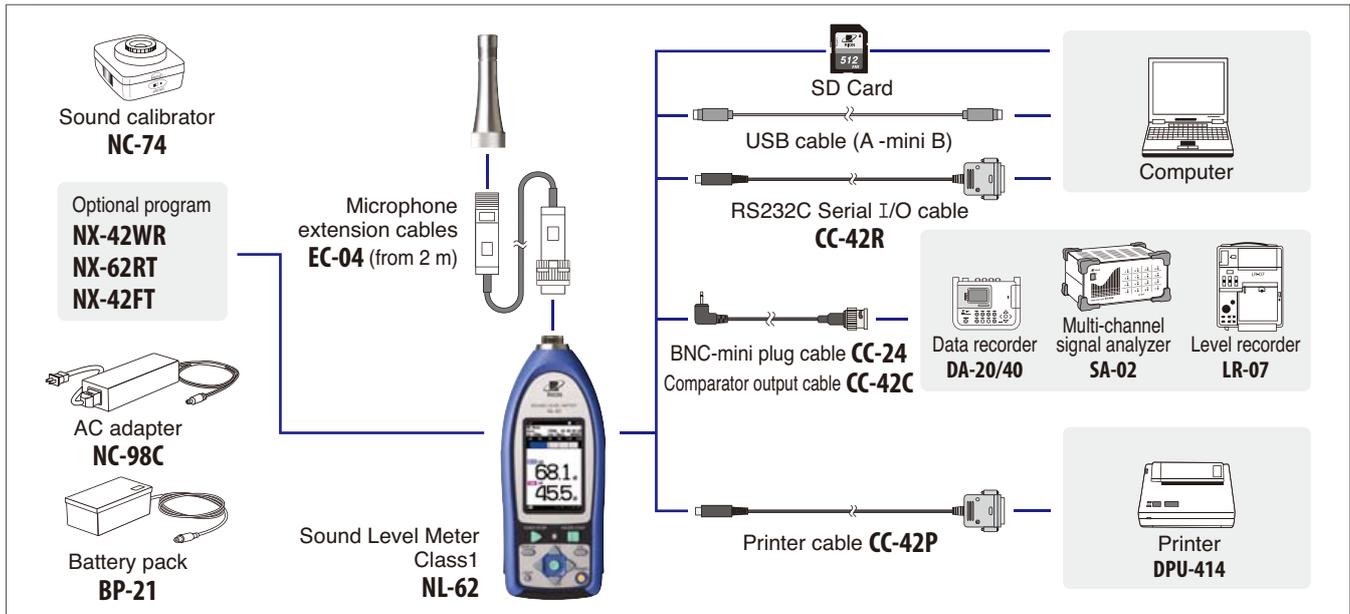


Linear average screen



Top list screen

## System construction



## 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-74



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.

Specifications	
Nominal acoustic pressure level	94 dB
Nominal frequency	1 kHz

### Tripod

This stand can be used for general acoustic measurements. The sound level meter and microphone can be mounted on the stand.



ST-80

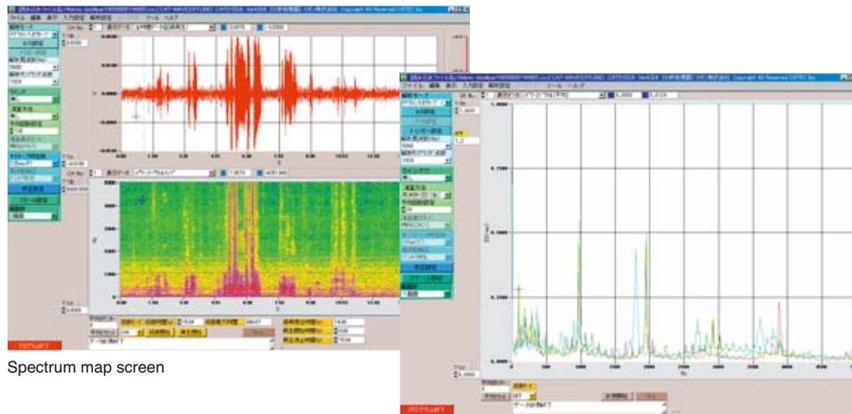
ST-81

(For All-weather windscreen WS-15, use of ST-81 is recommended.)

## Waveform analysis software

### CAT-WAVE (made by CATEC Inc.)

This software analyzes and stores data files (recorded by the NX-42WR) in the WAVE format. You can select to perform FFT analysis or octave band analysis.



Spectrum map screen

Overlapping Screen

#### Specifications

Waveform	Display function	Scaling of time base, differential and integral calculus
FFT analysis	Analysis points	64 to 32 768 points
	Display function	Power spectrum, cross-spectrum, transfer function (amplitude), transfer function (phase), coherence function, power spectrum map, octave map, differential and integral calculus for spectral areas
Octave band analysis	Applicable standards	IEC 61260 (JIS C 1514) Class 1
	Analysis frequency range	Octave band 0.5 Hz to 8 kHz (15 bands), 1/3 octave band 0.4 Hz to 10 kHz (45 bands), 1/12 octave band 0.36 Hz to 11 kHz (180 bands)

#### Recommended operating environment

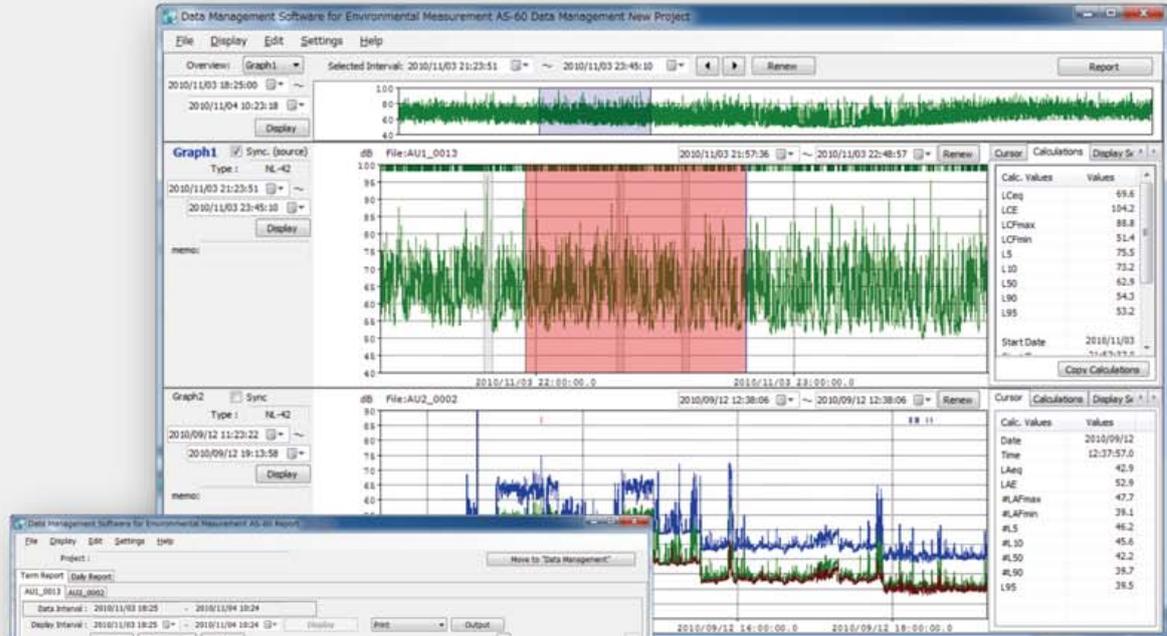
CPU	Intel Core™2 Duo 2.4 GHz or higher
RAM	2 GB or more
HDD	60 GB or more (free space)
DISPLAY	SXGA (1280 × 1024) or more
OS	Microsoft Windows XP Professional 32 bit, Vista Business 32 bit, 7 Professional 32 bit and 64 bit

# Complete software for environmental measurements

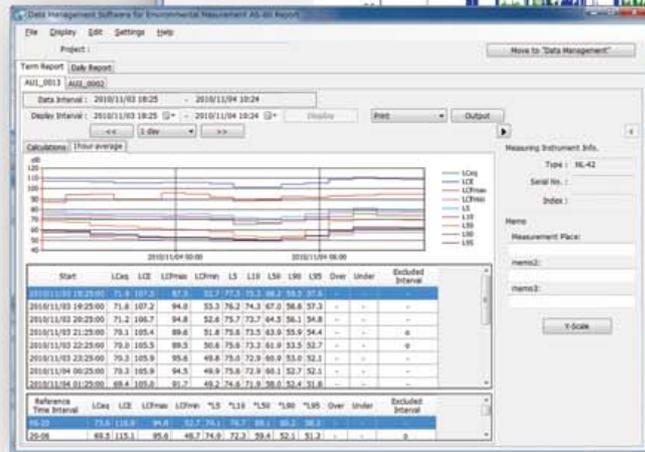
## Data management software for environmental measurement AS-60

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

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



Data management screen



Report preparation screen

### Supported models

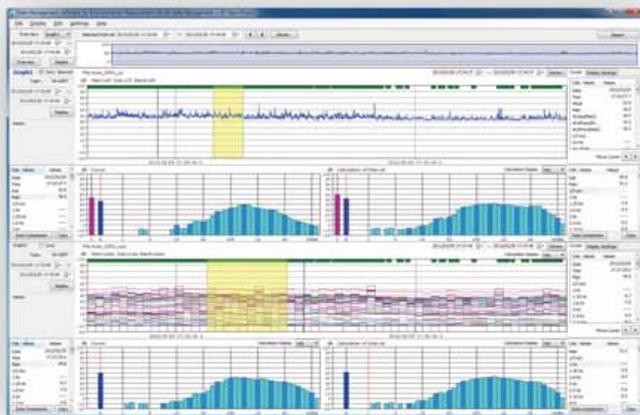
- NL-62\*
  - NL-52/42\*
  - NL-32/31/22/21\*
  - DA-40Viewer
- \* Only auto store data are supported.

### 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 65 536 colors
OS	Microsoft Windows XP Professional 32 bit, 7 Professional 32 bit and 64 bit

● If AS-60/60RT/60VM is used on the NL-52/42, the NX-42EX is also needed.

## Data management software for environmental measurement AS-60RT (Includes the octave and 1/3 octave data management software)



Data management screen

### Adds support for handling octave band analysis data to AS-60

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

### Supported models

- NX-62RT\*
  - NX-42RT\*
  - NA-28\*
- \* Only auto store data are supported.

## Data management software for environmental measurement AS-60VM (Includes the vibration level data management software)

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

### Supported models

- VM-53A\*
- \* Only auto store data are supported.

# Specifications

		NL-62
Applicable standards	IEC 61672-1: 2002 Class 1 ISO 7196: 1995 ANSI S1.4-1983 Type 1 ANSI S1.4A-1985 Type 1 ANSI S1.43-1997 Type 1 JIS C 1509-1: 2005 Class 1	
	CE Marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC), WEEE Directives, Chinese RoHS (export model for China only)	
Measurement functions	Simultaneous measurement of the following items, with selected time weighting and frequency weighting	
Processing (main ch)	Instantaneous sound pressure level: $L_p$ Equivalent continuous sound pressure level: $L_{eq}$ Sound exposure level: $LE$ Maximum sound pressure level: $L_{max}$ Minimum sound pressure level: $L_{min}$ Percentile sound levels: $L_N$ (0.1 to 99.9 %, 0.1-increment steps, max. 5 values)	
	Processing (sub ch) Instantaneous sound pressure level: $L_p$	
Additional processing	One of the following can be selected: C-weighted equivalent continuous sound level: $L_{Ceq}$ G-weighted average sound level: $L_{Geq}$ C-weighted peak sound level: $L_{Cpeak}$ Z-weighted peak sound level: $L_{Zpeak}$ Power average of max. level in time weighted sound level interval $L_{Atrms}$ I-time-weighted average sound level: $L_{Ateq}$ Max. value of I-time-weighted average sound level: $L_{AImax}$ * Because additional processing frequency characteristics are linked to sub channel frequency characteristics, $L_{Atrms}$ , $L_{Ateq}$ , $L_{AImax}$ can be selected when A characteristics are selected for sub channel. When C, G, or Z characteristics are selected, $L_{Ceq}$ and $L_{Cpeak}$ , $L_{Geq}$ , and $L_{Zpeak}$ can be selected for additional processing.	
	Measuring time 10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h) Max. 1000 hours with auto store	
Microphone	Type	UC-59L
	Sensitivity level	-27 dB
Measurement range	A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB G-weighting: 43 dB to 138 dB Z-weighting: 50 dB to 138 dB C-weighting peak sound level: 60 dB to 141 dB Z-weighting peak sound level: 65 dB to 141 dB	
	Inherent noise	A-weighting: 17 dB or less C-weighting: 25 dB or less G-weighting: 35 dB or less Z-weighting: 42 dB or less
Frequency range	1 Hz to 20 kHz	
Frequency weighting	A, C, G and Z	
Time weighting	F (Fast) and S (Slow), I (Impulse) and 10 s	
Level range	Single range (Linearity range: 113 dB)	
	Bar graph display range max	Max. 110 dB (20 to 130 dB)
Switching of bar graph display	Set the upper/ lower limit in 10 dB increments.	
RMS detection circuit	Digital processing method	
Sampling cycle	20.8 $\mu$ s ( $L_p$ , $L_{eq}$ , $LE$ , $L_{max}$ , $L_{min}$ , $L_{peak}$ : sampling frequency: 48 kHz) 100 ms ( $L_N$ )	
Calibration	Measurement Law: 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) 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-set trigger is exceeded.	
Back erase function	When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.	
Display	Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel) Numerical display update frequency: 1 s Bar graph update frequency: 100 ms	
	Store	Manual Data for measurement results are stored manually in single address increments. Internal memory: max. 1000 sets SD Card: depends on the capacity of the SD Card*1
Store	Auto	Instantaneous values ( $L_p$ mode) and processed values ( $L_{eq}$ mode) are stored continuously and automatically at preset intervals.
	$L_p$ sampling cycle	100 ms, 200 ms, 1 s, $L_{eq}$ 1s
	$L_{eq}$ sampling cycle	10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h
	Measurement Time	Max. 1000 h (depends on the capacity of the SD Card)*1

\* Windows is a trademark of Microsoft Corporation.  
\* Specifications subject to change without notice.

Data recall	Allows viewing of stored data	
Setup memory	Up to five setup configurations can be saved in internal memory, for later recall Start up via file settings previously stored on SD card possible	
Waveform recording*2	File format	Uncompressed waveform WAVE file
	Sampling frequency	Select 48 kHz, 24 kHz or 12 kHz
	Data length	Select 24 bit or 16 bit
	Outputs	DC output Output DC signals using a frequency weighting characteristic selected by processing.
AC output	Output voltage	2.5 V, 25 mV / dB at bar graph display full scale
	Comparator output	Output AC signal using frequency weighting selected by processing or by A, C, Z, G weighting Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).
USB	Allows USB to be connected to a computer and recognized as a removable disk Allows USB to be controlled via communication commands	
RS-232C communication	Allows for RS-232C communication via use of a dedicated cable	
Data continuous output	Type of data Instantaneous value $L_p$ Processed value $L_{eq}$ , $L_{max}$ , $L_{min}$ , $L_{peak}$	
Output interval	100 ms	
Print out	Printing of measurement results on dedicated printer DPU-414	
Power requirements	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply	
Battery life (23 °C)	Alkaline battery LR6 (AA): 16 h Ni-MH secondary battery: 16 h At the maximum * Depends on the setting	
	AC adapter	NC-98C
External power voltage	5 to 7 V (rated voltage: 6 V)	
Current consumption	Approximately 120 mA (normal operation, rated voltage)	
Ambient conditions	Temperature	-10 to +50 °C
Dustproof / water-resistant performance*3	Humidity	10 to 90 % RH (non-condensing)
	IP code: IP54 (except for microphone)	See precautions regarding waterproofing
Dimensions, weight	Approx. 255 (H) x 76 (W) x 33 mm(D), approx. 400 g (with batteries)	
Supplied accessories	Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MBx1	

## Options

Product name	Product number
Waveform recording program (Inst.on 2 GB SD card)	NX-42WR
Octave, 1/3 octave real-time analysis program (Inst.on 512 MB SD card)	NX-62RT
FFT analysis program (Inst.on 512 MB SD card)	NX-42FT
Data management software for environmental measurement	AS-60
Data management software for environmental measurement (includes the octave and 1/3 octave data management software)	AS-60RT
Data management software for environmental measurement (includes the vibration level data management software)	AS-60VM
Waveform analysis software	CAT-WAVE
SD Card 512 MB	SD-512M
SD Card 2 GB	SD-2G
AC adapter (100 V to 240 V)	NC-98C
Battery pack	BP-21
Microphone extension cables	EC-04 (from 2 m)
BNC-Pin output code	CC-24
Comparator output cable	CC-42C
Printer	DPU-414
Printer cable	CC-42P
RS 232C serial I/O cable	CC-42R
USB cable	—
Sound calibrator	NC-74
All-weather windscreen	WS-15
Windscreen mounting adapter	WS-15006
Rain-protection windscreen	WS-16
Sound level meter tripod	ST-80
All-weather windscreen tripod	ST-81

\* 1 Use Rion fully guaranteed products. \* 2 NX-42WR required (sold separately).  
\* 3 Protection against harmful dust and water splashing from any direction.

### 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 two years (at cost).



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ISO 9001 RION CO., LTD.

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