





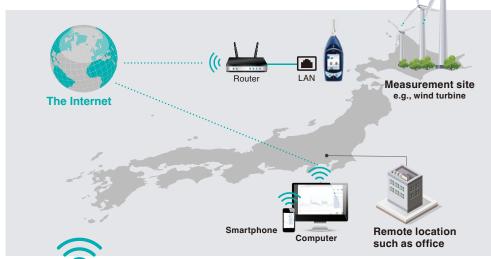
Sound Level Meter **NL-43** Sound Level Meter



Case

Environmental noise monitoring of remote locations

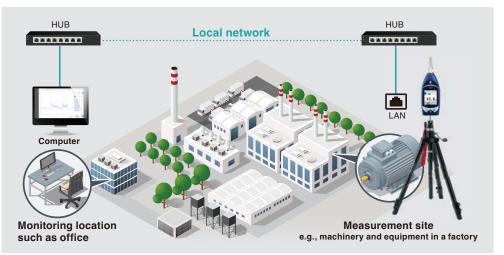
The operational status of the sound level meter can be checked remotely from a web browser, reducing the number of site visits. You can also use the meter with a mobile router for wireless communications.



Case

Noise monitoring of equipment and machinery at factories and site boundary lines

Connecting the LAN terminal on the sound level meter and computer with a LAN cable allows noise monitoring from the web browser.



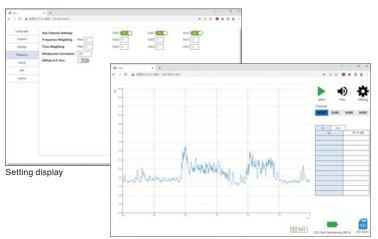
*A NX-43WR is required to listen to the sound during noise measurement on your browser.



Web browser

By connecting to a network, remote connection via web browser of PC or smartphone is established.

- View and acquire measurement date Remote operation of the sound level meter (measurement settings, start and stop of measurement, time adjustment, etc.)
- Main function Real-time audio playback (with optional NX-43WR, Supported by only Google Chrome) File download (Downloads are limited to one file at a time.) Marker function (up to four colors) Calculated value and Level-Time graph of a single octave band are displayed. *NL-53/43 require NX-43EX and NX-43RT. NL-63 requires NX-63RT.



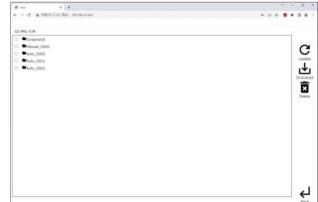
Marker function

Sections of characteristic sounds can be color-marked for later examination.



Stored data can be retrieved remotely.

*Downloads are limited to one file at a time.



Measurement screen

(Time-Level graph display, calculated value display)



Feature-packed interface

LAN terminal

*NX-43EX is required for NL-43/53
*NX-43WR is required for listening to sound

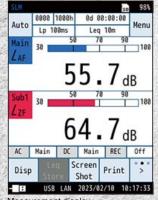


I/O terminal

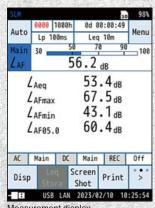
- *RS-232C, comparator output, trigger input, printer
- *The unit features a protective cover for the SD card slot located at the side of the unit.

Intuitive operation without the need to refer to manual

Color LCD with touch panel



Measurement display (instantaneous SPL, 2 channels)



Measurement display (calculated values)

New Feature

Portable charger

Equipped with USB Type-C connector

- for enhanced efficiency of on-site measurement tasks -

Compatible with USB power supply

Power can be supplied from commercially available portable charger compatible with USB Type-C connections or from USB ports on PCs, enabling use at sites without other power sources.



Simple hardware configuration

The sound level meter can be connected to a computer with a single USB Type-C cable that permits power supply, communication control, and retrieval of measurement data stored on the SD card.





Measuremen data transfer

512_{ms}

SD Card

PCs can

PCs can read the SD card inside the sound level meter as a removable disk.

Convenient for noise and low frequency sound measurements

A-weighted, G-weighted*, and Z-weighted (LPF 100 Hz*) sounds can be saved in a single measurement run.

E.g.) Set with LAF, LGS, LZS (LPF100Hz)

Event

2022/01/23 06:21:53

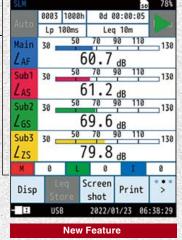
0d 00:00:00

Leg 10m

*Only with NL-63

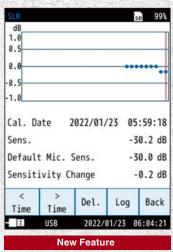


Language settings display



A single meter can measure with up to 4 different settings simultaneously and reduces measurement time

You can set 4 different frequency and time weighting and save instantaneous and calculated values.



View and manage a unit's calibration history and save to SD card

Recording changes in microphone sensitivity leads to reliable data management.



Water resistance

IP54 water-resistant performance (except for microphone) helps reduce risk of failure due to sudden rain showers, etc.

*Mounting the all-weather windscreen or rainproof windscreen boosts the water resistant performance of the microphone unit to meet IPX3 specifications.



Rechargeable batteries are available as more sustainable option

AC Main DC Main REC

Weight Weight

Freq.

US8

(Time-Level Graph)

Measurement display

8881 18s

Lp 188ms

LAF 44.4dB

ZF 60.6dB



Sound calibrators meeting requirements of IEC 60942

Optional: see p. 9 for more information.



Comply with the international standards IEC 61672-1:2013, ANSI/ASA S1.4

Capable of various noise measurements Newly enhanced functions help achieve your tasks more comprehensively, with less effort.



Extended function program NX-43EX



Compatible models

NL-43 NL-53

NL-63 (pre-installed)

*NX-43EX required for NL-53/NL-43

512 MB

The NX-43EX is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

Auto store function

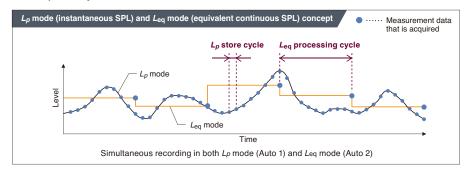
This function allows simultaneous and continuous measurements in L_p (instantaneous value) and L_{eq} calculation (calculated values such as equivalent continuous sound pressure level, percentile sound levels, maximum sound pressure level).



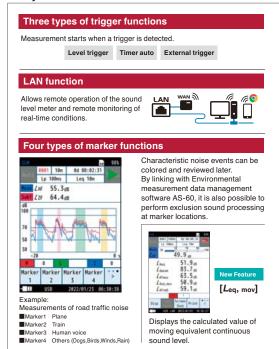
Upgrade function from conventional model

Compatible with long-term environmental measurements —allows recordings of up to 1,000 hours (1 month) or longer!

Example of recording: Approximately 8,500 hours (354 days) of recording possible with L_P store cycle of 100 ms and use of 32 GB SD card.



Newly added features



Comparator function

This function turns on when the open collector output exceeds the set value [Maximum input voltage 24 V, Internal resistance approx. 480 Ω , Allowable power dissipation 300 mW].

Continuous data output function

This function enables the continuous acquisition of instantaneous calculated and processed values during USB, RS-232C and LAN communication. It is convenient for designing users' own control programs where data has to be transferred continuously from the meter to the computer.

Waveform recording program NX-43WR



Compatible models

NL-43* / NL-53* / NL-63 *NX-43EX required for NL-53/NL-43

2 GB

The NX-43WR 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 while processing sound levels.

Recorded data can be played back on computers and used for frequency analysis (uncompressed waveform WAVE file). The data can be processed with waveform analysis software such as AS-70 for graphing, sound level calculations,

frequency analysis, file output, and sound file playback.

Ideal for long-term monitoring of low frequency sound

240 Hz and 1200 Hz are added for NL-63.

This realizes FFT analysis in higher resolution and longer recording duration in low frequency sound measurement.

Sampling frequency (24 bit or 16 bit)

New	ly add	ed function			
24	10 Hz	1200 Hz	12 kHz	24 kHz	48 kHz
	For NL	-63 only		NL-43/53/63	3

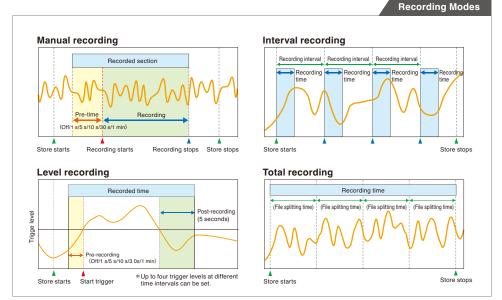
Maximum recording time

(Assumes certain settings for auto store mode,

16 bit, and Lp store cycle of 100 ms:) *For NL-63 only

Memory card Sampling frequency	512 MB	2 GB	32 GB
48 kHz	1 h	4 h	74 h
24 kHz	2 h	9 h	146 h
12 kHz	4 h	18 h	278 h
1200 Hz*	24 h	100 h	1520 h
240 Hz*	41 h	165 h	2520 h

Recording in 24 bit creates files 1.5 times larger than 16-bit recordings. Accordingly, the maximum recording time is reduced to 2/3.



FFT analysis program NX-43FT



Compatible models

NL-43*/NL-53*/NL-63 *NX-43EX required for NL-53/NL-43

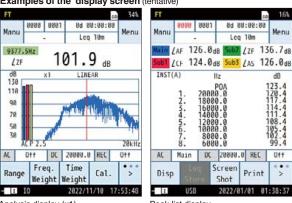
512 MB

The NX-43FT 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 enables sound level measurements for each frequency.

The analysis frequency range is 20 kHz with frequency resolution of 2.5 Hz (8,000 spectrum lines). Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. The maximum zoom ratio is x40. The peak list display shows up to 8 peaks of frequency lines.

Examples of the display screen (tentative)



Analysis display (x1)

Peak list display

Octave, 1/3 octave real-time analysis program NX-43RT



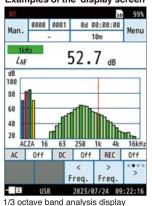
Compatible models NL-43* / NL-53*

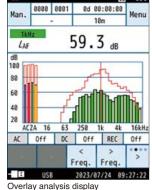
*NX-43EX required for NL-53/NL-43

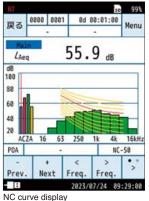
Both allow measurement compliant IEC 61260-1:2014 Electroacoustics - Octave-band and 1/N (fractional) - octave-band filters Part1:Specifications

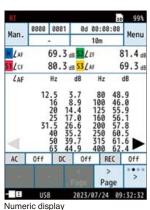
Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. The measurement results can be displayed in a graph of NC, NR and CZ values required for evaluating indoor noise immediately after the measurement is completed.

Examples of the display screen











Measurement display (Level-Time graph)

512 MB

The NX-43RT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

The NX-63RT enables octave, 1/3 octave band analysis from 1 Hz for insight on cause of low-frequency noise which is out of audible range.

The instantaneous value can be saved as well as calculated data.

Octave, 1/3 octave real-time analysis program NX-63RT

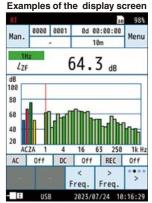


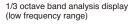
Compatible models

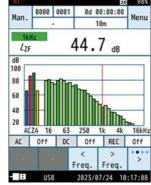
NL-63

512 MB

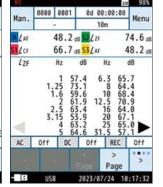
The NX-63RT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.







1/3 octave band analysis display (high frequency range)



Numeric display (1 Hz~)

Newly added features NX-43RT) (NX-63RT)

- Leg value can be evaluated and displayed by displaying the selected NC, NR and CZ curves for evaluating indoor noise in an overlay graph immediately after the measurement is completed.
- · Auto store function allows simultaneous recording of L_p and L_{eq} .
- · AP values of up to 4 different settings, a single octave band value and a POA value are saved.
- · The different time weighting F (fast) and S (slow) are added and enabled octave analysis simultaneously.

 $*L_{eq}$ and L_E are not applicable.

- Web browser compatible -

Calculated value and Level-Time graph of a single octave band are displayed

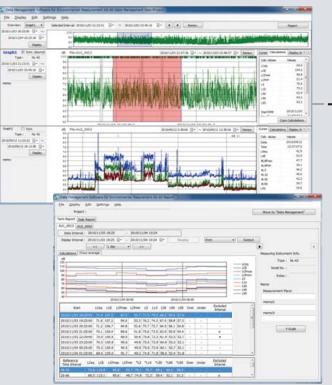
Complete software for environmental measurements

Data management software for environmental measurement **AS-60**

Free trial Softwares Now available on our website

This software enables the graph display of measurement data, arithmetic processing, excluded sound processing, preparation of reports, file output, and playback of real sound files for data stored by sound level meters (NL-43/53/63, NL-42A/52A/62A, NL-42/52/62, NL-21/22/31/32).

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



Report preparation screen

Recommended computer specifications (Common for AS-60/60RT)

pato.	openionic (common to the corectity)
CPU	Intel Core i5 2 GHz or higher
RAM	2 GB or more (4 GB recommended)
DISPLAY	XGA (1024 x 768) or more, at least 65 536 colors
OS	Microsoft Windows 10 Pro 64 bit, 11 Pro 64 bit

^{*}The AS-60/60RT software requires the USB digital rights management key (a hardware key bundled with software).

Data management software for environmental measurement

(Includes the octave and 1/3 octave data management software)

AS-60RT

In addition to the functions provided by the AS-60, the AS-60RT offers functions needed to manage data saved to computer by the NX-43RT/63RT, NA-28 or SX-A1RT,



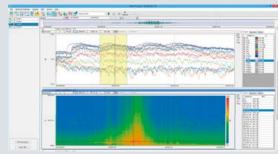
Supported models (Only auto store data are supported, excl. DA-40 Viewer)

Hard ware Software	AS-60	AS-60RT
NL-43*1/53*1/63	•	•
NL-42A*2/52A*2/62A	•	•
NL-42*2/52*2/62	•	•
NL-21/22/31/32	•	•
DA-40 Viewer	•	•
SX-A1RT		•
NX-63RT		•
NX-43RT		•
NX-62RT		•
NX-42RT		•
NA-28		•
*1 The NX-43EX is also needed *2	The NY-42EY is also needed	4

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.



Frequency analysis screen

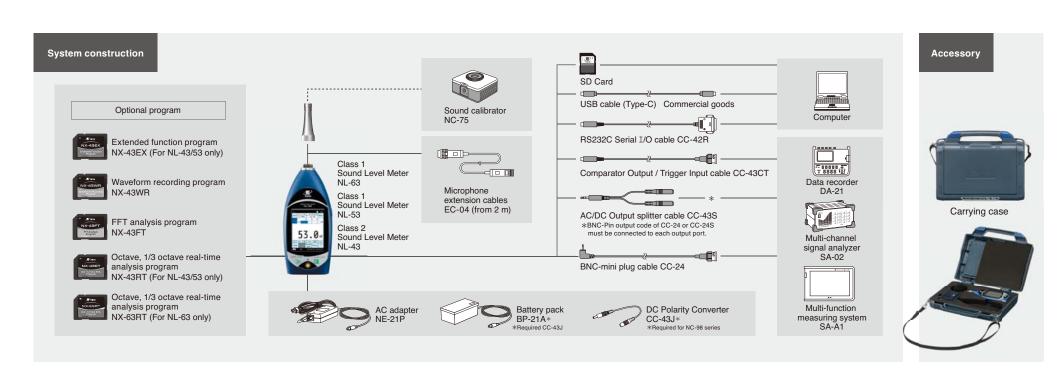


Frequency analysis screen

	Specifica	1110115			
	Waveform	Calculations	Maximum value, Minimum value, Average value, RMS,		
	analysis		Variance, Differential and integral calculus, HPF, LPF		
	Frequency weighting		Z, A, C, G, C to A, Lvz (vertical) (JIS C 1510),		
			Lvxy (horizontal) (JIS C 1510)		
	FFT	Analysis points	32 to 65 536 points		
analysis Display data Power spectrum, Power spectral density		Power spectrum, Power spectral density, Spectrogram			
	Time weighting		10 ms, F, 630 ms, S, 10 s		
	Octave	Applicable	IEC 61260-1: 2014 class 1 (JIS C 1513-1: 2020 class 1)		
	band	standards			
	analysis Analysis		Octave band 0.5 Hz to 16 kHz (16 bands)		
		frequency range	1/3 octave band 0.4 Hz to 20 kHz (48 bands)		

Recommended computer specifications

CPU	Intel Core i5 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 (1024 × 768) or more
OS	Microsoft Windows 10 Pro 64 bit, 11 Pro 64 bit



Peripheral devices

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.

Specifications	
Nominal sound	94 dB
pressure level	
Nominal frequency	1 kHz

Sound calibrator Nor1256



 Conforms to IEC 60942 : 2017 Class 1 and ANSI/ASA S1.40-2006 (R2016) Class 1

Specifications
Two sound pressure levels (114 dB/94 dB) and two frequencies (1 000 Hz/250 Hz) switchable.

Pistonphone NC-72B



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

Specifications

Nominal sound 114 dB
pressure level

Nominal frequency 250 Hz

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.

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.

WS15006 mounting adapter and EC-04 series cable required separately

*For All-weather windscreen WS-15, use of ST-91 is recommended.

Tripod ST-80



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

	Specifications	
	Max. Height	1460 mm
	Min. Height	570 mm
- 1	& Total haight when may	inted using a tripod

*Total height when mounted using a tripo extension column (optional): 2 060 mm

All-weather Windscreen Tripod ST-91



Designed for use with an all-weather windscreen, this tripod is suitable for unattended measurements.

1820 mm

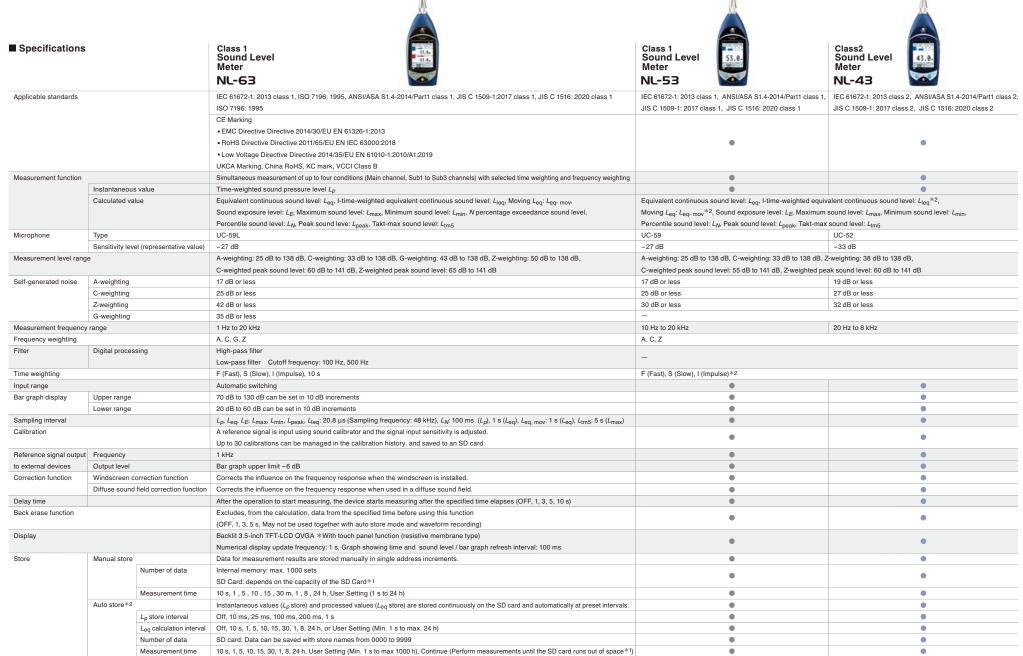
1160 mm

	Specifications		
n*	Max. Height		
n	Min. Height		

Anechoic Box AR series



The anechoic box AR series offer superior sound insulation performance as well as reject the reflected noise in the box for accurate measurement. It's ideal for product inspections or measurements in the development of small precision instruments. Compact dimensions allow positioning near your workspace. The dimensions and optional features can be customized.



Data format			CSV file				. Same content as We of
Data recall					•		•
Memorizing Settings			Browses stored data and screenshot images Setting information can be saved to the internal memory or SD card and recalled at startup or at a specified time				•
0 0				and recalled at startup or at a specified time			•
Waveform recording*2*3	File format		Uncompressed waveform WAVE file				
_	Sampling freq	luency	Select 48 kHz, 24 kHz, 12 kHz, 1200 Hz or 240 kHz		Select 48 kHz, 24 kHz or 12 kHz		
	Data length		Select 24 bit or 16 bit		•		•
Outputs	AC output		Output voltage: 1 V rms at the output level range Enables simultaneous output of DC output and AC output		•		•
	DC output		Output voltage: 2.5 V, 25 mV/dB at the output level range		•		•
_	Output range		Can be linked to the bar graph upper limit, or set from 70 dB to 130		•		•
	Comparator*	2	The comparator output turns on when the specified channel exceed	ds the set level	•		•
			(Maximum input voltage 24 V, internal resistance approx. 480 Ω, Allowable power dissipation 300 mW)				
RS-232C Communication	1		Measurement values can be acquired and settings can be changed	by using communication commands	•		•
USB	Communication	on	Measurement values can be acquired and settings can be changed	by using communication commands	•		•
	Data transfer		Enables the transferring of data by making the computer recognize	the SD card as a removable disk	•		•
LAN*2	Communication	on	Measurement values can be acquired and settings can be changed	by using communication commands	•		•
	Data transfer		Data on an SD card can be transfered to a computer		•		•
	Web browser	display	Via a web browser, settings can be changed and measured values	displayed. Via Google Chrome on PC, audio can be played.*3	•		•
Data	Type of data	Instantaneous value	L_p		•		•
continuous		Processed value	L _{eq} , L _{max} , L _{min} , L _{peak}		•		•
output*2	Output interva	al	100 ms (0.1 s)		•		•
Power supply			4 x AA batteries, power supply to DC jack and USB port		•		•
	Operating time	е	Alkaline battery LR6: Approx. 12 hours		Alkaline battery LR6:	Approx. 16 hours	
	(at 23°C, ECC	setting)	Ni-MH rechargeable battery HR6: Approx. 12 hours		Ni-MH rechargeable battery HR6: Approx. 16 hours		
			Portable charger: Approx. 20 hours of power at 5000 mAh		Portable charger: Approx. 24 hours of power at 5000 mAh		
			*When making Auto store mode and ECO settings		*When making Auto store mode *2 and ECO settings		
			The operating time varies depending on the device settings and the battery manufacturer		The operating time varies depending on the device settings and the battery manufacturer		
	AC adapter		NE-21P (Input: 100 to 240 V AC, 50/60 Hz, Output: 12 V DC)		•		•
-	External power supply voltage		5.7 V to 15 V (rated voltage 12 V)				
			USB port: 5 V (See precautions on mobile battery usage)		•		•
	Primary side (100 V side) power	Approx. 3 W (With NE-21P usage)		•		•
	consumption				•		•
Operating temperature Temperature			−10 °C to 50 °C		•		•
and humidity range	Humidity		10 % to 90 % RH (no condensation)		•		•
Dustproof and waterproof	f performance*	<4	IP rating: IP54 (excluding microphone)		•		•
Dimensions, weight			Approx. 265 mm (H) × 83.5 mm (W) × 34.5 mm (D), approx. 400 g (including batteries)	Approx. 258 mm (H) × 83.5 mm (W) × 3	34.5 mm (D), approx. 400 g (including	batteries)
Accessories			Carrying case ×1, Windscreen WS-10 ×1, Windscreen fall prevention		Carrying case x1, Windscreen WS-10 x1, Windscreen fall prevention rubber x1, Hand strap x1,		
			Size AA alkaline batteries ×4, SD card 512 MB		Size AA alkaline batteries x4, SD card 512 MB (NX-43EX preinstalled model only)		
							- 11

Options

Product name	Product number	Compatible models	
Extended Function Program (Inst.on 512 MB SD card)	NX-43EX	NL-43/53	
Waveform Recording Program (Inst.on 2 GB SD card)	NX-43WR	NL-43/53/63	
Octave-1/3 Octave Real-time Analysis Program (Inst.on 512 MB SD card)	NX-43RT	NL-43/53	
Octave-1/3 Octave Real-time Analysis Program (Inst.on 512 MB SD card)	NX-63RT	NL-63	
FFT Analysis Program (Inst.on 512 MB SD card)	NX-43FT		
512 MB SD Card	_		
2 GB SD Card	_		
32 GB SD Card	_		
AC adapter (100 V to 240 V AC)	NE-21P		
Battery pack (Using four D alkaline batteries)	BP-21A		
Microphone extension cable	EC-04 series		
BNC pin output cable	CC-24/CC-24S	NL-43/53/63	
Printer cable	CC-42P		
RS-232C serial I/O cable	CC-42R		
Comparator Output / Trigger Input Cable	CC-43CT		
AC/DC Output Splitter Cable	CC-43S		
DC Polarity Converter	CC-43J		
USB cable (Type-C)	_		
Sound calibrator	NC-75		
Sound calibrator	Nor1256		

Product name	Product number	Compatible models
Pistonphone	NC-72B	
Dedicated soft case	_	
Rubber cover for external power use	_	
All-Weather Windscreen	WS-15	
Windscreen mounting adapter	WS15006	NL-43/53/63
Rain-protection Windscreen	WS-16	
Tripod for sound level meter	ST-80	
Tripod extension rod (For ST-80)	ST-80-100	
Tripod for All-Weather Windscreen	ST-91	
Data Management Software for Environmental Measurement	AS-60	
Data Management Software for Environmental Measurement	AC CODT	00
(Includes the Octave and 1/3 Octave Data Management Software)	AS-60RT	See.p.8
Waveform Analysis Software	AS-70	

^{*1} Use Rion fully guaranteed products. *2 NX-43EX required for NL-43/NL-53 (sold separately) *3 NX-43WR required (sold separately).

Precautions on portable charger usage

Avoid portable charger with functions that monifor device power consumption and are capable of interrupting the power supply.

The power consumption of NL-43/53/63 is relatively low compared to smartphones; portable charger equipped with such features may erroneously terminate power supply to the unit.

 $[\]ensuremath{\ast} 4$ Protection against harmful dust and water splashing from any direction.







RION CO., LTD. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and bases its accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Accreditation Cooperation (APAC) as well as the International Laboratory Accreditation Cooperation (ILAC). The Quality Assurance Section of RION CO., LTD. is an international MRA compliant JCSS operator with the accreditation number JCSS 0197.

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