





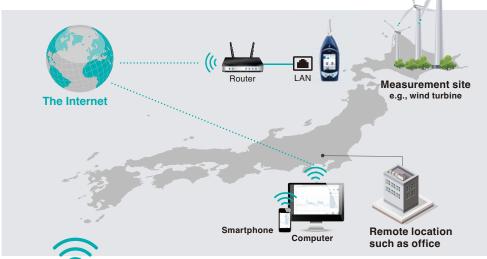
NL-43



Case

Environmental noise monitoring of remote locations

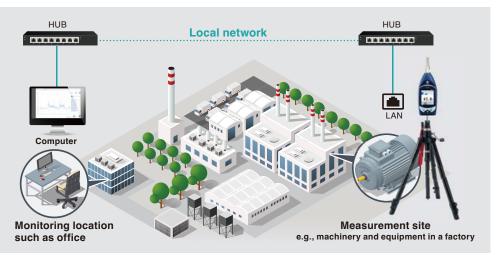
The operational status of the sound level meter can be checked remotely from a web browser, reducing the number of site visits. You can also use the meter with a mobile router for wireless communications.



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.

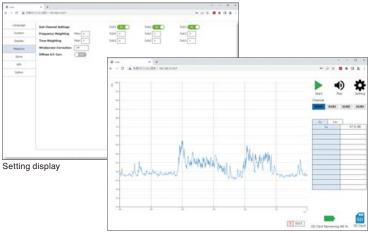


Web browser

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

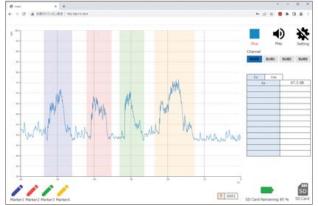
Main function

- View and acquire measurement date
 Remote operation of the sound level meter (measurement settings, start and stop of measurement, time adjustment, etc.) 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)



Marker function

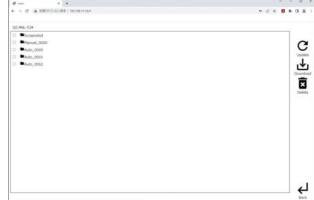
Sections of characteristic sounds can be color-marked for later examination.



File download

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

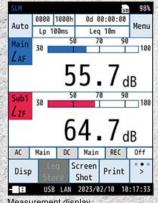


I/O terminal

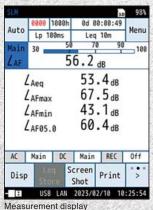
- *RS-232C, comparator output, trigger input, printer
- *The unit features a protective cover for the SD card slot located at the side of the unit.

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

Equipped with USB Type-C connector

- for enhanced efficiency of on-site measurement tasks -

SD Card

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.





data transfer 512_{мв}

> 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

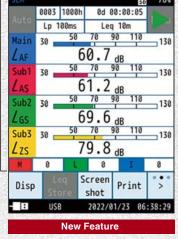
0d 00:00:00

Leg 10m

*Only with NL-63

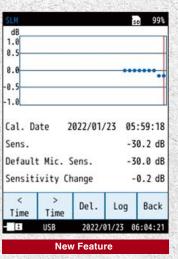


Language settings display



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.



8881 18s

Lp 188ms

LAF 44.4dB

ZF 60.6dB

AC Main DC Main REC

Weight Weight

Freq.

US8

(Time-Level Graph)

Measurement display

Rechargeable batteries are available as more sustainable option

2022/01/23 06:21:53



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

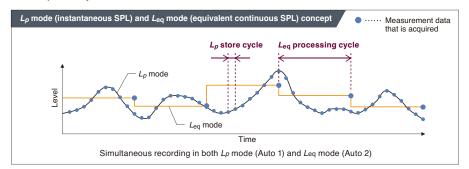
This function allows simultaneous and continuous measurements in L_p (instantaneous value) and L_{eq} calculation (calculated values such as equivalent continuous sound pressure level, percentile sound levels, maximum sound pressure level).



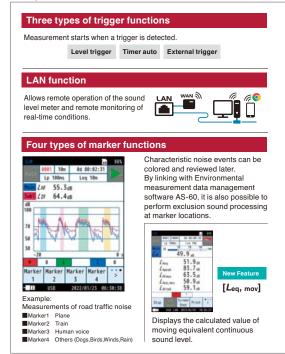
Upgrade function from conventional model

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)

Newly add	ed function			
240 Hz	1200 Hz	12 kHz	24 kHz	48 kHz
For NL	-63 only		NL-43/53/63	3

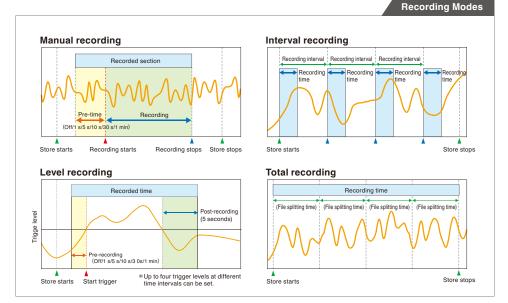
Maximum recording time

(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

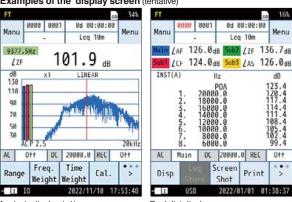
512 MB

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

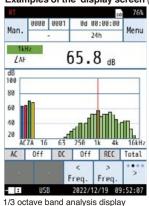
512 MB

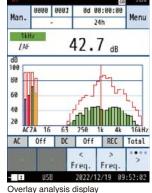
The NX-43RT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a

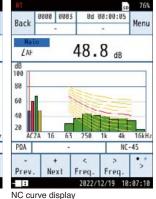
Both allow measurement compliant IEC 61260-1:2014 Electroacousutics - Octave-band and 1/N (fractional) - octave-band filters Part1:Specifications

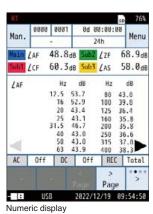
It has a function to read out the saved analysis results, superimpose it on the graph being analyzed, display the graph of the NC curve required for evaluating indoor noise, and calculate and display the NC value. Using the environmental measurement data management software AS-60RT enables recalculation and data management on a computer. It is also possible to output the voltage (AC out, DC out) of the arbitrarily selected band.

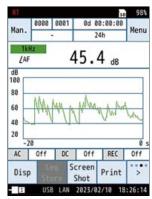
Examples of the display screen (tentative)











Measurement display (Level-Time graph)

memory card after installing the program.

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



Compatible models

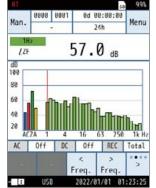
NL-63

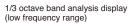
512 MB

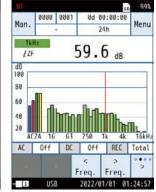
The NX-63RT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

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.

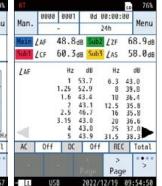
Examples of the display screen (tentative)







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



Numeric display (1 Hz~)

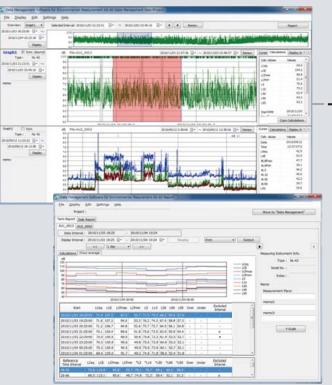
Complete software for environmental measurements

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)

The comment of the contract of		
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,



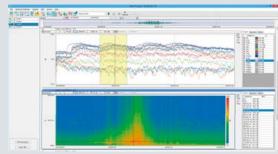
Supported models (Only auto store data are supported, excl. DA-40 Viewer)

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

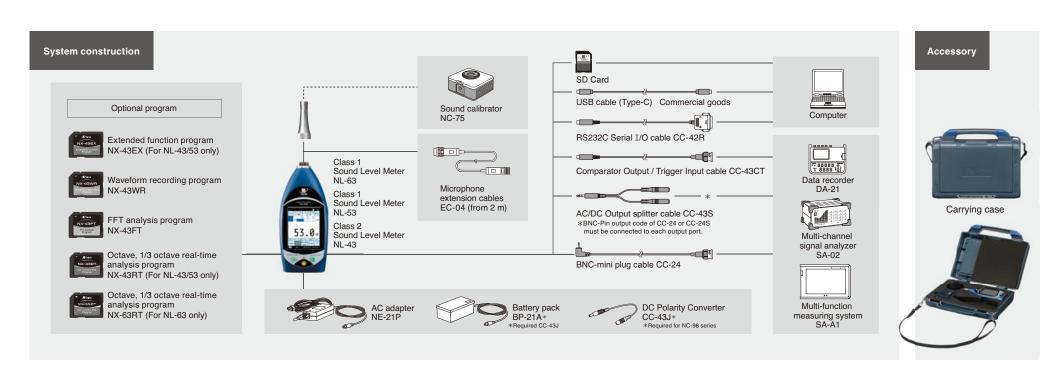


Frequency analysis screen

Specifications					
	Waveform	Calculations	Maximum value, Minimum value, Average value, RMS,		
	analysis		Variance, Differential and integral calculus, HPF, LPF		
	Frequenc	y 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, 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 acoustic pressure level 94 dB Nominal frequency 1 kHz

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.

Nominal acoustic pressure level 114 dB Nominal frequency

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

*Total height when mounted using a tripod extension

All-weather Windscreen Tripod ST-91



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

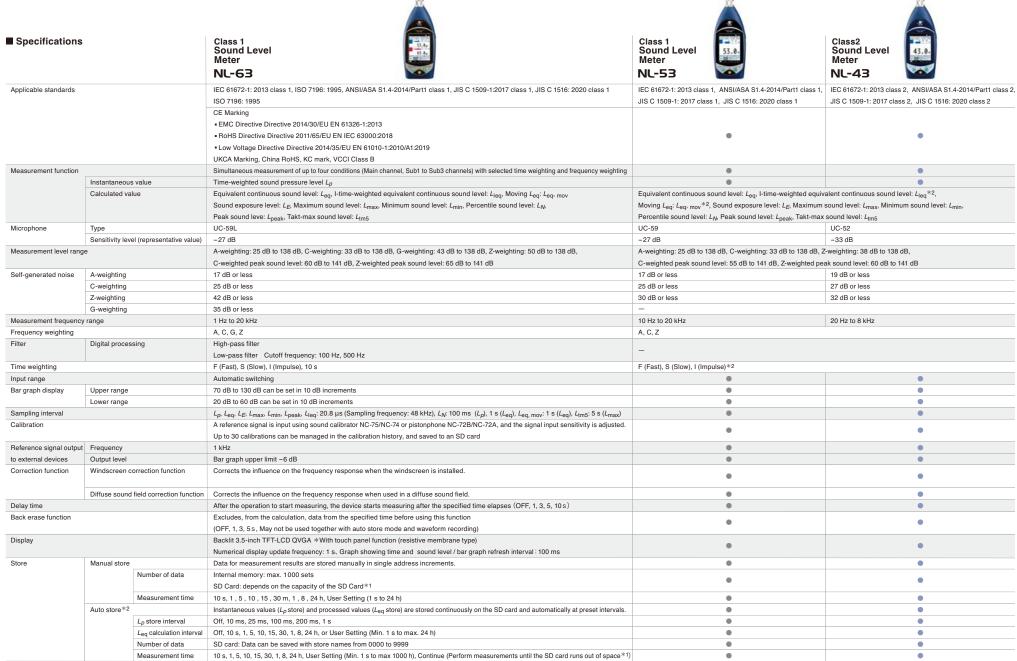
Specifications

Max. Height	1820 mm
Min. Height	1160 mm

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			COVE			
Data recall			CSV file		•	
			Browses stored data and screenshot images			•
Memorizing Settings	F1 (Setting information can be saved to the internal memory or SD card and recalled at startup or at a specified time			•
Waveform recording*2*3	File format		Uncompressed waveform WAVE file			
	Sampling free	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 dB in 10 dB increments		•	•
	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 , A	llowable power dissipation 300 mW)		
RS-232C Communicatio	n		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 tim	e	Alkaline battery LR6: Approx. 12 hours		Alkaline battery LR6: A	pprox. 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	
	AC adapter		*When making Auto store mode and ECO settings The operating time varies depending on the device settings and the battery manufacturer		*When making Auto store mode*2 and ECO settings	
					The operating time varies depending on the device settings and the battery manufacturer	
			NE-21P (Input: 100 to 240 V AC, 50/60 Hz, Output: 12 V DC)		•	•
	External power	er 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		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) × 34.	.5 mm (D), approx. 400 g (including batteries)
Accessories			Carrying case ×1, Windscreen WS-10 ×1, Windscreen fall prevention		Carrying case ×1, Windscreen WS-10 ×1, Windscreen fall prevention rubber ×1, Hand strap ×1,	
			Size AA alkaline batteries x4, SD card 512 MB		Size AA alkaline batteries ×4, SD card 512 MB (NX-43EX preinstalled model only)	
			Sizo / II tamamio Sattorios / 1, SS dard SIZ MD		SIZS FOR GINGING SARROTTES A4, GD GAIG OT	2 mb (100 10EX promotanou modor omy)

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	MC-51SD1	
2 GB SD Card	MC-20SD2	
32 GB SD Card	MC-32SP3	
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	

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	AS-60RT	00
(Includes the Octave and 1/3 Octave Data Management Software)	A5-60H1	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).
- $\ensuremath{\ast} 4$ Protection against harmful dust and water splashing from any direction.

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.







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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