

A New Dimension in Sound Measurement

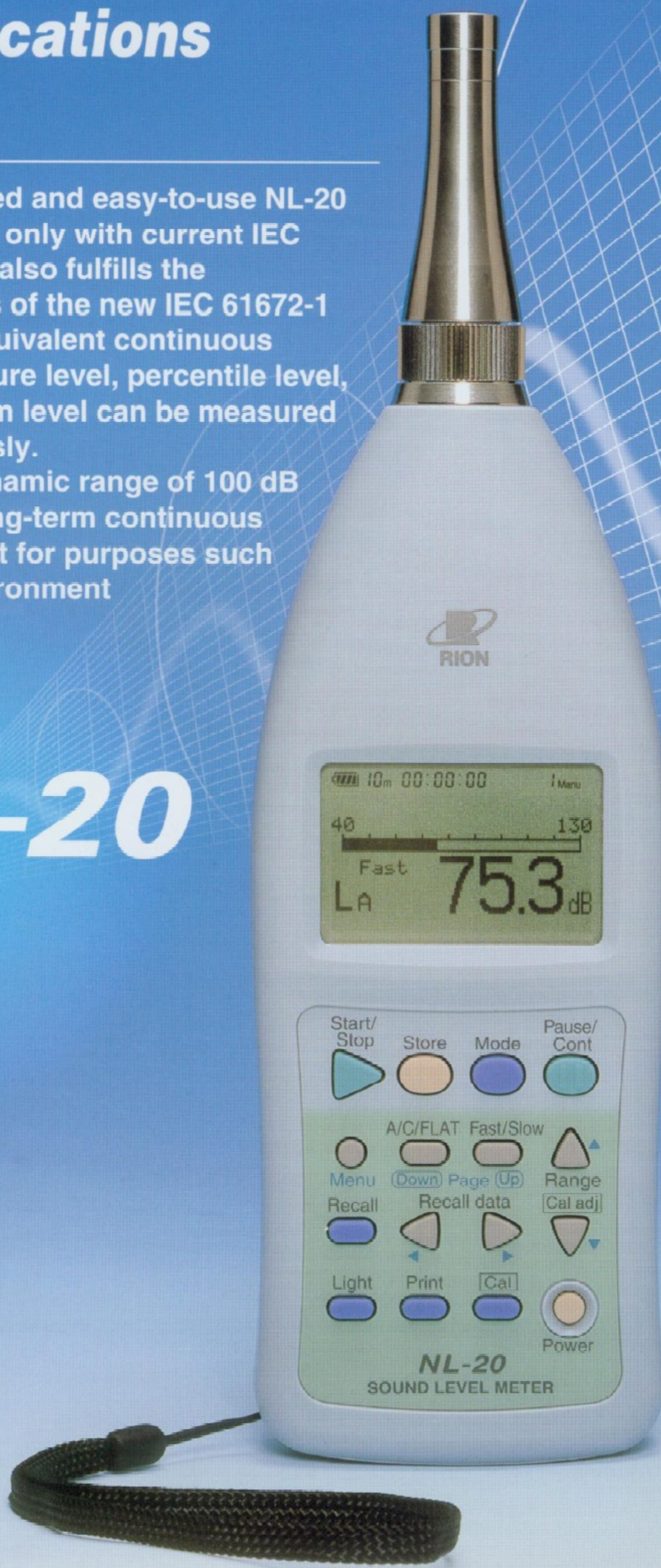
Sound Level Meter for Wide Range of Applications

Outline

The low-priced and easy-to-use NL-20 complies not only with current IEC standards, it also fulfills the requirements of the new IEC 61672-1 standard. Equivalent continuous sound pressure level, percentile level, and maximum level can be measured simultaneously.

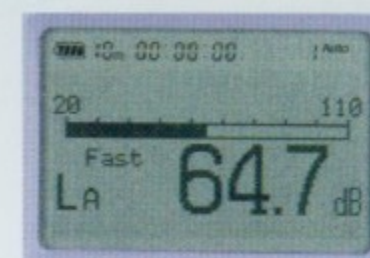
The wide dynamic range of 100 dB facilitates long-term continuous measurement for purposes such as work environment evaluation.

NL-20



Features

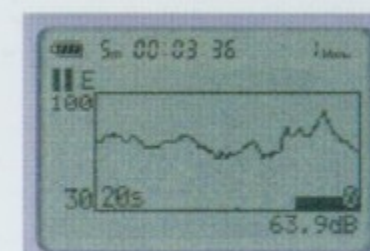
- Compliant with IEC standards and new IEC/CDV 61672-1 standard
- Wide dynamic range of 100 dB eliminates need for range switching
- Simultaneous measurement of equivalent continuous sound level $\langle L_{eq} \rangle$, percentile level $\langle L_N \rangle$, maximum sound level $\langle L_{max} \rangle$ etc.
- Graph display shows sound level fluctuation; available when using back-erase function
- Easy-to-read backlit LCD display
- Up to 34 hours of continuous operation possible with four IEC R6 (size AA) alkaline batteries; external power supply by AC adapter



LCD display screen



Backlighting screen



Back-erase function screen



I/O connector

Specifications

Applicable standards

IEC 60651: 1979 Type 2
 IEC 60804: 1985 Type 2
 IEC/CDV 61672-1 Class 2

Measurement functions

Sound level L_p
 Equivalent continuous sound level L_{eq}
 Sound exposure level L_E
 Maximum sound level L_{max}
 Minimum sound level L_{min}
 Percentile sound level L_N (5 selectable settings)

Measurement time

10 seconds, 1, 5, 10, 15, 30 minutes, 1, 8, 24 hours, and manual (maximum 200 hours)

Measurement range

A weighting: 28 to 138 dB
 C weighting: 33 to 138 dB
 FLAT: 38 to 138 dB

Inherent noise

A weighting: 20 dB or less
 C weighting: 27 dB or less
 FLAT: 32 dB or less
 Linearity range: 100 dB
 Reference sound pressure level: 94 dB
 Reference level range: 30 to 120 dB

Level range selection

6 ranges in 10- dB steps
 20 to 80 dB
 20 to 90 dB
 20 to 100 dB
 20 to 110 dB
 30 to 120 dB
 40 to 130 dB

Frequency range

Overall characteristics including microphone: 20 to 8000 Hz
 Electrical circuit characteristics (AC output): 10 to 20000 Hz
 Electrical circuit characteristics (RMS): 10 to 14000 Hz

Frequency weighting

A, C, FLAT

RMS detection Digital processor

Time weighting: Fast, Slow

Calibration

Electrical calibration with 1-kHz sine wave signal from built-in oscillator
 Acoustic calibration using sound calibrator

Back-erase function

Pause key can be set to erase data from preceding 5 seconds

Processing functions

Digital processing
 Sampling interval: 30.3 μ s (L_{eq} , L_E)
 100 ms (L_N)

Data store functions

Data can be stored in the internal memory.

Microphone

1/2-inch electret condenser type

Model: UC-52
 Pre-amplifier: NH-21

Display

Backlit LCD (128 X 64 dots +121 icons)

Display screens

Numeric and bar graph indication of sound level
 Processing results screen
 Level-time graph (real-time level recording with 20-second horizontal axis)
 Messages on menu screens can be changed into English, Germany or Spanish

Outputs

AC/DC output
 I/O connector (Sound level meter control from and data output to a computer)
 Data output to printer DPU-414/CP-11/CP-10

Power requirements

Four IEC R6 (size "AA") batteries
 Battery life (20 °C)
 Approx. 34 h (alkaline batteries LR6),
 Approx. 14 h (manganese batteries R6P)
 With backlighting, battery life is reduced to about half.
 When auxiliary processing functions are enabled, battery life is reduced by about 20%.
 When the optional filter is enabled, battery life is reduced by about 15%.

AC adapter (option)

NC-34: 100V AC
 NC-34A: 120V AC
 NC-34B: 220V AC

UP01811065A: 100 to 250 VA (CE-marked)

Current rating (when 6 V DC is input)

Approx. 50 mA

Ambient conditions

-10 °C to +50 °C, 10 % to 90 % RH

Dimensions

Approx. 260 X 76 X 33 mm

Weight (excluding batteries)

Approx. 400 g

Supplied accessories

Windscreens	WS-10	1
Carrying case	NL-21-031	1
Connector cover (mounted on unit)	NL-21-005	1
Hand strap	VM-63-017	1
Batteries	IEC R6P	4

Instruction manuals

1 set (Instruction Manual, Technical Notes, Serial Interface Manual, 1 each)

Optional equipment

AC adapter	NC-34 series
AC adapter with CE mark	UP0181165A (100 to 250 V, 50 /60 Hz)
BNC-to-RCA cable	CC-24
Microphone extension cable	EC-04 series
Serial I/O cable	CC-92
Printer cable	CC-93
Printer	DPU-414
Sound calibrator	NC-74
Pistonphone	NC-72
Level recorder	LR-06/LR-07