

#### Applications

- Environmental acoustics
- Leisure and community noise evaluation
- Sound power
- Vehicle and traffic noise

#### User friendly

- Measures all parameters simultaneously:  $L_s$ ,  $L_F$ ,  $L_{eqT}$ ,  $L_{eq1''}$ ,  $L_{Cpk}$ ,  $L_1$ ,  $L_5$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{95}$ ,  $L_{99}$ , maximum values, duration of measurement and  $L_{eqt}$  with programmable t.
- 23 – 140 dB measurement range
- One single range (no range changes)

#### Features

- Type 1 integrating sound level meter meeting EN 60651 and EN 60804
- A and C frequency weightings
- Allows you to store the measurement results in the memory and save all the measured parameters second by second for 3 hours
- Equipped with AUTOSTORE recording for long-duration (1 week)  $L_{eq}$  measurements
- Includes software to transfer all measured and recorded parameters to a PC
- Detachable preamplifier for use of the extension cable (CN-010) and the semi-permanent outdoor kit (TK-1000)

The **SC-20e** is a user-friendly, high performance Type 1 integrating-averaging sound level meter. It measures all functions simultaneously and displays the one selected on the screen when the function selector is activated. Once one measurement is completed, they can all be consulted along with their maximum values and percentiles. The **SC-20e** needs no range changes as its single range encompasses the entire measurement range.

The **SC-20e** can be connected to a computer. The **SC-20e** is supplied with a programme for PC or compatible unit that permits communication with the **SC-20e**, graphical and numerical presentations, storing results on the hard disk, statistical analyses and so on. The unit can also be connected to a printer to print out the values of the function selected. At the end of each printout a summary appears with the value of all the functions and a statistical analysis.

The DC output of the **SC-20e** maintains a constant tension equivalent to the value displayed on screen. This output allows you to connect the unit to a graphic recorder. The AC output gives you the preamplifier output signal without frequency weighting. This output can be used for the calibrated recording of the measured signal on DAT or magnetic tape.

The CESVA **SC-20e** integrating-averaging sound level meter allows you to make RECORDINGS of the measured data, store MEMORIES of the final results of the measurements and make AUTOSTORE recordings of the equivalent continuous level. A RECORDING stores all the measured data second by second. The MEMORY saves only the final result of a measurement. The AUTOSTORE recordings allow you, for a programmable period, to store consecutive equivalent continuous level measurements corresponding to an integration time, which is also programmable. All the data stored in the sound level meter's internal memory (recordings, memories and autostore recordings) may only be retrieved by using the PC software designed for the **SC-20e** sound level meter.

The **SC-20e** preamplifier is removable, allowing it to be detached and placed at a distance from the **SC-20e** using the extension cable. There is also an outdoor kit (TK-1000) for taking measurements in the open air.



### Standards and regulations

The SC-20e complies with the following standards.

- EN 60651:94 (A1:94) (A2:01) type 1, EN 60804:00 type 1
- IEC 60651:01 type 1, IEC 60804:00 type 1
- ANSI S1.4:83 (A1:01) type 1, ANSI S1.43:97 (A2:02) type 1
- **CE** mark. Complies with the 73/23/EEC low tension standards and EMC 89/336/EEC amended by 93/68/EEC.

### Measurement range

- $L_F$ ,  $L_S$ ,  $L_E$ ,  $L_{eqT}$ ,  $L_{eq1''}$  and  $L_{eqt}$

Limits: 0 – 137 dBA  
Upper crest factor limit 3: 130 dBA

- $L_{Cpk}$   
Limits: 70 – 140 dBC

### Peak detector $L_{Cpk}$

Onset time constant < 75  $\mu$ s

### Electrical noise

	C-130 + PA-13		C-250 + PA-14	
	A	C	A	C
• Electrical noise:				
Maximum	15,5	22,0	14,5	22,0
Typical	14,5	17,6	12,5	14,5
• Total noise (electrical + thermal of microphone)				
Maximum	21,5	24,0	19,3	23,3
Typical	19,0	23,0	18,0	21,0

### Frequency weighting

Complies with EN 60651:1994(A1:1994) standard as class 1  
A and C weightings: class 1.

### AC output

Frequency weighting: linear  
Sensitivity at 137 dB and 1 kHz: 3,8 Vrms (typical)  
Upper limit: 4,5 Vrms (typical)  
Output impedance: 300  $\Omega$

### DC output

Sensitivity: 10 mV/dB  
Upper limit: 1,4 V (140 dB)  
Output impedance: 100  $\Omega$   
Maximum error:  $\pm 4$  mV ( $\pm 0,4$  dB compared to the on-screen value)

### Serial interface

- 9-pin sub-D connector
- Velocity: 9600 bauds
- Data bits: 8 bits
- Stop bits: 1 bit
- Parity: No

### Microphone

- Model **CESVA C-130**: ½" Condenser microphone. Polarization: 200 V. Nominal capacity: 22,5 pF. Nominal sensitivity: 16 mV/Pa in reference conditions.
- Model **CESVA C-250**: ½" Condenser microphone. Polarization: 0 V (prepolarized). Nominal capacity: 17,0 pF. Nominal sensitivity: 46,4 mV/Pa in reference conditions.

### Time weighting

L<sub>F</sub> and L<sub>S</sub> according to class 1

### Parameters

Functions: L<sub>F</sub>, L<sub>S</sub>, L<sub>E</sub>, L<sub>Cpk</sub>, L<sub>eqT</sub>, L<sub>eq1"</sub> and L<sub>eqt</sub>  
Resolution: 0,1 dB

### Memory

Storage capacity:

- Memories: 1.999 registers
- Recordings: 190 minutes
- AUTOSTORE recordings: 168 h

### Battery

One 9-volt battery 6LF22 type

Normal duration in constant use:

- Alkaline: 5 h
- Lithium: 15 h

### Dimensions and weight

- Dimensions: 335x82x19 mm
- Weight with battery: 565 g
- Weight without battery: 510 g



Extension cable of 3, 10 or 30 m for pre-amplifier and microphone, CN-003, CN-010 and CN-030



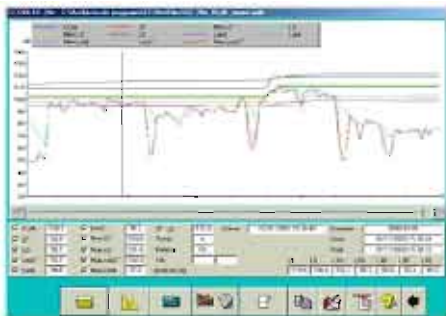
Cable for connection to a PC

#### Standard accessories

- FNS-030** Case
- PVM-05** Windscreen
- SFT-021** Program for PC
- CNR-232** PC connection cable  
9-volt battery

#### Optional accessories

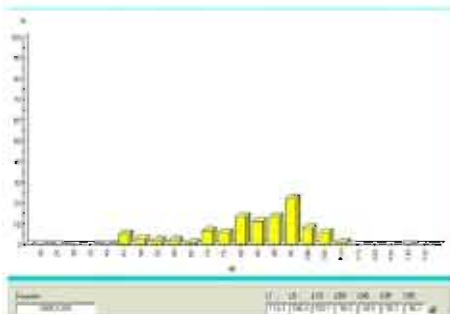
- CB006** Class 1 acoustic calibrator
- TR-40** Tripod. Maximum height 1.1 meters
- TR050** Tripod. Maximum height 1.55 meters
- TR001** Tripod support.
- PR003** 3 m extension pole
- TK-1000** Outdoor kit
- CN-USB** Serial-USB converter
- CN-003** Microphone extension cable 3 m
- CN-010** Microphone extension cable 10 m
- CN-030** Microphone extension cable 30 m
- A-200** Mains feed 230 V 50 Hz to 9 V
- A-100** Battery feed converter 12 V a 9 V
- ML-50** Transporting briefcase (49 x 36 x 14 cm)
- ML-10** Transporting briefcase (30 x 38 x 8 cm)
- IM003** Printer 40 columns serial



Graphical display of data



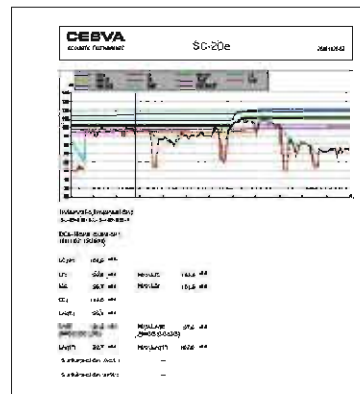
Data copy to other applications



Statistical display of data

The **SC-20e** is supplied with the software application that allows:

- Real time data acquisition
- Generation of graphics for the creation of the personalized reports
- Data obtaining and data exportation
- Configuration of all the parameters for the autostore recording mode
- Graphic, statistical and numerical display of the data files



Graphic and numeric report

This software application runs with Windows 9x/Me/2000/NT/XP/VISTA.

*The characteristics, technical specifications and accessories may vary without prior notice*