

## SC-20c

### Integrating averaging sound level meter

#### Applications

- Leisure and community noise activities
- Sound power
- Vehicle and traffic noise

#### User friendly

- All parameters are measured simultaneously:  $L_S$ ,  $L_F$ ,  $L_{eq}$ ,  $L_{eq1'}$ ,  $L_{eq1''}$ ,  $L_{Cpk}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ , maximum values and duration of the measurement
- Measure range 23 – 140 dB
- It has a single range (no range change)

#### Features

- Integrating averaging sound level meter type 1 meeting EN 60651 and EN 60804
- A and C frequency weightings
- It allows you to store the measurement results into SLM's internal memory and register all parameters second by second up to 3 hours
- AUTOSTORE recording mode to carry out long  $L_{eq}$  measurements (1 week).
- Software application to retrieve all measured parameters and memories to a PC computer

The **SC-20c** is a type 1 sound level meter that includes many features and it is very easy to operate. It has a single range, and so it is not necessary to pre-set the measurement range in terms of the signal level to be measured. All the functions are processed at the same time but only the value of the selected function is displayed. When the measurement is finished all the functions can be consulted, together with their maximum values.

It is possible to connect a printer to register the values of the selected function. Printing can be carried out in real time or at the end of the measurement, so that the noise of the printer does not interfere with the measurement. At the end of each printout, there is a summary with all the functions and a statistical analysis.

The **SC-20c** also can be connected to a computer. A program for PC or compatible is supplied with the **SC-20c**. This program allows the communication with the **SC-20c**, graphic and numeric presentations, to store results on the hard disk of the computer, statistical analysis, etc.

The DC output supplies a continuous voltage that is equivalent to the value shown on the display. This output can be used to connect a graphic recorder. The AC output is the preamplifier's output and has no frequency weighting. This output can be used to record the signal on DAT or magnetic tape.

Once the measurement has been completed, the length of time that the measurement has lasted and the percentiles  $L_{10}$ ,  $L_{50}$  and  $L_{90}$  can be consulted.

The CESVA **SC-20c** sound level meter allows you to make RECORDINGS of the measured data, store MEMORIES of the final measurement results and make equivalent continuous level AUTOSTORE recordings. While measurement is in progress, a RECORDING stores all the data being measured. These parameters are stored every second as measurement lasts. On the other hand, a MEMORY stores the final result of a measurement once it has been made. AUTOSTORE recordings allow you to store in a memory, and during a programmable period, 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 be retrieved only by the PC software specially designed for the **SC-20c** sound level meter.



### Standards

It 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 (A1:85) type 1, ANSI S1.43:97 type 1
- Mark **CE**. It complies with the low voltage directive 73/23/EEC and the EMC directive 89/336/EEC amended by 93/68/EEC.
- Swiss approval certificate (OFMET) n° S-60 according type 1
- AENOR conformity certificate (1996-02-23) as type 1

### Measurement range

- $L_F, L_S, L_E, L_{eqT}, L_{eq1''}$  and  $L_{eq1'}$   
Limits: 0 - 137 dBA  
Upper limit for crest factor 3: 130 dBA  
Primary range: 50 -120 dBA
- $L_{Cpk}$   
Limits: 70 -140 dBC

### Noise

- Electrical noise:
 

	A	C
Maximum	15,5	18,0
Typical	14,5	17,6
- Total noise (electrical + thermal of microphone)
 

Maximum	21,5	23,2
Typical	19,0	22,0

### Frequency weighting

It complies with the standard EN 60651:1994(A1:1994) type 1  
A and C frequency weightings: type 1.

### AC output

Frequency weighting: linear  
Sensitivity at 137 dB and 1 kHz: 3,8 Vrms (typical)  
Upper limit: 4,5 Vrms (típico)  
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 with regard to the display value)

### Serial transmission

- 9 pins sub-D Connector
- Speed: 9600 bauds
- Data bits: 8 bits
- Stop bits: 1 bit
- Parity: No

### Microphone

- Model **CESVA C-130**:  $\frac{1}{2}$ " Condenser microphone. Polarization: 200 V. Nominal capacitance: 22.5 pF. Nominal sensitivity: 17,5 mV/Pa  $\pm$  0,5 dB under the reference conditions.



### Time weighting

$L_F$  and  $L_S$  according to tolerances for type 1

### Parameters

Functions:  $L_F$ ,  $L_S$ ,  $L_E$ ,  $L_{Cpk}$ ,  $L_{eqT}$ ,  $L_{eq1''}$  and  $L_{eq1'}$

Resolution: 0,1 dB

### Memory

Storage capacity:

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

### Influence of humidity

Operation range: 30 to 90 %

Maximum error at 30%<H.R.<90%, 40 °C and 1 kHz: 0,5 dB

Storage without batteries: < 93 %

### Influence of magnetic fields

In an 80 A/m magnetic field (1 oersted) at 50 Hz, a reading of less than 25 dB(A) is given

### Influence of temperature

Operation range: -10 to +50 °C

Maximum error (-10 to +50°C): 0,5 dB

Storage without batteries: -20 to +60 °C

### Effects of vibrations

For frequencies between 20 and 1000 Hz and 1 m/s<sup>2</sup>: < 75 dB(A)

### Battery

One 9-volt battery type 6LF22. Battery life with continued use:

- Alkaline: 5 h
- Lithium: 15 h

### Dimensions and weight

Dimensions: 301x82x19 mm

Weigh with battery: 600 g

Weight without battery: 545 g

### Supplied accessories

**FNS-020** Case

**PVM-05** Windscreen

**SFT-020** Program for PC

**CNR-232** Connecting cable for PC

9-volt battery

### Optional accessories

**CB-5** Sound calibrator

**TR-40** Tripod. Maximum height 1.1 meters

**TR050** Tripod. Maximum height 1.55 meters

**ML-50** Transporting briefcase (49x36x14 cm)

**ML-10** Transporting briefcase (30x38x8 cm)

**A-200** Mains feed 220 V to 9 V

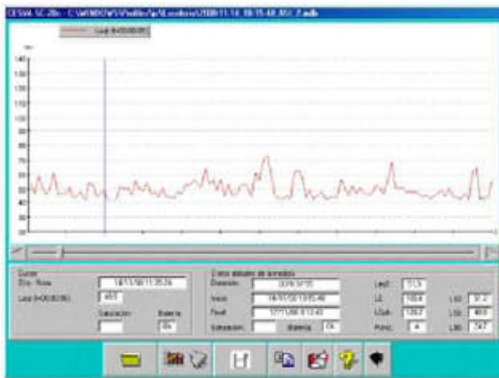
**A-100** Battery feed 12 V to 9 V

**CN-USB** Serial-USB converter

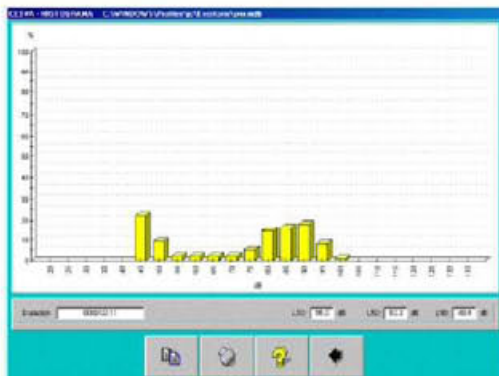
**IM003** Serial printer of 40 columns



Graphical display of data



Autostore recordings display

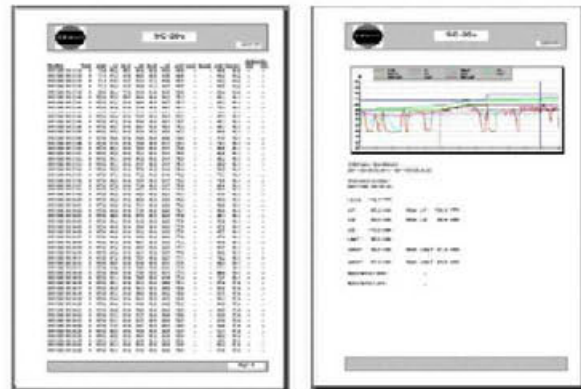


Statistical display of data

The **SC-20c** is supplied with free software that allows you to visualise on the PC screen and in real time all the data measured by the SLM and to retrieve the data recorded in its memory.

With this software it is possible to generate complete measurement reports, visualise all the data numerically, graphically and statistically, and carry out advanced calculations of acoustic parameters.

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



Print reports

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