

## SC-20e INTEGRATING SOUND LEVEL METER

- Type 1 integrating sound level meter meeting EN 60651 and EN 60804.
- Easy to use.
- 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 – 137 dBA measurement range.
- One single range (no range changes).
- 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.
- Removable preamplifier, CNR-012 extension cable and TK-1000 outdoor kit.

The **SC-20e** is an easy to use, high performance Type 1 integrating-averaging sound level meter. It measures all functions simultaneously and displays the chosen one on screen when the functions selector is activated. Once one measurement is completed, they can all be consulted together 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. A 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 be retrieved only 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 CNR-012 extension cable. There is also an outdoor kit (TK-1000) for taking measurements in the open air.



# TECHNICAL SPECIFICATIONS

## 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 :85) type 1, ANSI S1.43:97 type 1
- mark. Complies with 73/23/EEC low tension standards and CEM 89/336/EEC mod standards for 93/68/EEC

## MEASUREMENT RANGE

$L_F, L_S, L_E, L_{eqT}, L_{eq1"}, L_{eat}$

**Limits:** 0 – 137 dBA

**Upper crest factor limit 3:** 130 dBA

$L_{Cpk}$

**Limits:** 70 – 140 dBC

## ELECTRICAL NOISE

### Electrical noise

*Freq. Wei. A:* 14.5 dB (typical)

*Freq. Wei. C:* 17.0 dB (typical)

### Elec. noise + thermal $\mu$ phone C-130

*Freq. Wei. A:* 19.0 dB (typical)

*Freq. Wei. C:* 23.0 dB (typical)

### Elec. noise + thermal $\mu$ phone C-250

*Freq. Wei. A:* 16.9 dB (typical)

*Freq. Wei. C:* 18.1 dB (typical)

## 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:** None

## 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

$L_F, L_S$ , according to class 1 tolerances.

## PARAMETERS

**Functions:**  $L_F, L_S, L_E, L_{Cpk}, L_{eqT}, L_{eq1"}, L_{eat}$

**Resolution:** 0.1 dB

## MEMORY

Storage capacity:

**Memories:** 1,999 registers

**Recordings:** 190 minutes

**AUTOSTORE recordings:** 168 h

## BATTERY

One 9-volt 6LF22 battery

**Normal duration in constant use:**

Alkaline: 5 h Lithium: 15 h

## DIMENSIONS and WEIGHT

335 x 82 x 19 mm

With battery 565 g without 510 g

**CESVA** *instruments, s.l.*

reserves the right to change specifications and accessories without notice.

## STANDARD ACCESSORIES

- Case **FNS030**
- Wind screen **PVM05**
- 9-volt battery
- PC programme **SFT-021**
- PC connection cable **CNRS232**
- Printer adapter **A232P**

## OPTIONAL ACCESSORIES

- CB-5** Sound calibrator
- TR-40** Tripod
- ML-50** Transporting briefcase (49 x 36 x 14 cm)
- ML-10** Transporting briefcase (30 x 38 x 8 cm)
- A-200** Mains feed 220 V to 9 V
- A-100** Battery feed converter 12 V to 9 V
- CN-003** Microphone extension cable 3m
- CN-010** Microphone extension cable 10m
- CN-030** Microphone extension cable 30m
- CN-USB** Serial-USB converter
- TK-1000** Outdoor kit

