SC250 Sound level meter class 1 and spectrum analyser* (1/1 and 1/3 oct)

TECHNICAL SPECIFICATIONS

D_SC250_v0005_20211112_EN

*Optional

+ In preparation

The *SC250* is a class 1 sound level meter expandable to octave band and third octave band spectrum analyser* that measures all parameters simultaneously with all frequency and time weightings in different time bases without configuration.

Its colour touch screen allows you to easily scroll through all the screens and display and configure in real time the different analyses carried out by the sound level meter during the measurement.

The *SC250* stores the registers in memory in csv format, so they can be opened from different operating system such Microsoft Windows®, Mac OS® or LINUX®. These csv files can be exported to CESVA *Lab* application.

The *SC250* has a USB-C connector to power the equipment, transfer the data to the computer and communicate using the real-time protocol.

Because of the Bluetooth communication, the *SC250* is ready to be managed from the mobile or the Tablet through the *SC250 Link*+ App. In addition the WIFI communication allows the sound level meter to be updated online to the latest version, instant activate a purchased module or upload the measurements made to CESVACloud server+ so the measurements will be available from anywhere.

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Examen de Tipo:
210796001

APPLICATIONS

- Evaluation of environmental noise (ISO 1996-2): tonality*, impulsivity and low frequency content
- Noise at Work (DIRECTIVE 2003/10/EC)
- PPE hearing protection selection (SNR, HML and octave*)
- Evaluation of room background noise (NC & NR curves)*
- Motor vehicle noise inspection
- Control of the music level in concerts
- Noise assessment of HVAC systems
- Determination of sound power and sound level emitted by machinery (ISO 3744 and ISO 11202)
- Sound level measurement from service equipment in buildings (ISO 16032)
- Industrial noise analysis of machinery (product development, quality control and maintenance)
- Control of noise emitted by warning and alarm systems

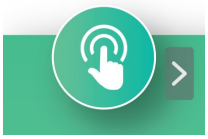
CHARACTERISTICS

- Capacitive colour touch screen
- Single measuring range 16,5 dBA -140,1 dBC peak
- Class 1 according to IEC 61672-1
- Sound level meter expandable to 1/3 octave band through *FR250** module
- Backerase of the last 10 seconds
- NC/NR curves
- Bluetooth BLE ready for the Wireless communication through Apps+ for mobile or Tablet (Android)
- WIFI communication prepared to sent data to the Cloud.
- Built-in memory and files in CSV format
- Compatible files to CESVA *Lab* software

SC250 Sound level meter class 1 and spectrum analyser* (1/1 and 1/3 oct)

*Optional
+ In preparation

MAIN CHARACTERISTICS

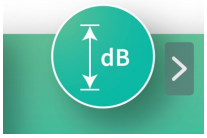


COLOUR TOUCH SCREEN

The *SC250* has a colour touch screen to manage the complete equipment.

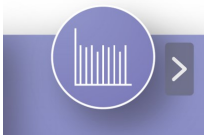
Its capacitive screen is 3,5” size, it helps to any action will be very fast and intuitive.

The screen of the *SC250* shows a clear and sharp view even in broad daylight; it also lights up automatically when the sound level meter is turned on.



SINGLE MEASURING RANGE

The *SC250* has a single measurement range, from 16,5 dBA to 140,1 dBC peak. This fact saves time since it is not necessary to configure the equipment previously. It also avoids having to repeat measurements due to measuring out range.



SOUND LEVEL METER EXPANDABLE TO 1/3 OCTAVE

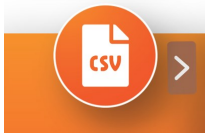
The *SC250* is expandable through *FR250* module*, this activates the spectral analysis by octave band (1/1) and third octave band (1/3).

Performing frequency analysis increases the applications that can be evaluated with the *SC250*, such as tonal components, low frequency or acoustic absorption of materials.

WIRELESS SOUND LEVEL METER : BLUETOOTH / WIFI

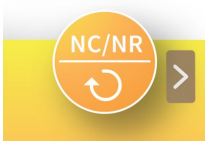
The *SC250* has internal *Bluetooth*® communication to connect it to a device (Tablet, mobile,…) and thus to be able to operate the *SC250* remotely using the *SC250 Link*+ App from CESVA.

The WIFI communication of the *SC250* allows to send the memories to the *CESVACloud*+ server this means to have the memories immediately from anywhere. It also allows to update the firmware version and activate the modules purchased, only by connecting the sound level meter to internet.



BUILT-IN MEMORY WITH CSV FILES

The *SC250* has internal memory to store the recordings made and final results. In addition to the history of date and time changes, sensitivity adjustment and firmware version. These data are saved in csv files and can be opened from different operating systems as Microsoft Windows®, Mac OS® or LINUX®. The *SC250* csv files are compatible with the CESVA *Lab* application.



NC/NR CURVES AND BACKERASE

The *SC250* evaluates the spectrum according the NC (Noise Criterion) and NR (Noise Reduction) curves families, this feature allows the equipment to carry out the evaluation of background noise in rooms.

With the BACKERASE option, allows the *SC250* to eliminate unwanted audible events corresponding to the last 10 seconds before a pause.

SC250 Sound level meter class 1 and spectrum analyser* (1/1 and 1/3 oct)

*Optional

TECHNICAL SPECIFICATIONS

CERTIFICATIONS AND STANDARDS

- IEC 61672-1:2013 class 1, EN 61672-1:2013 class1
- IEC 61260-1:2014 class 1, EN 61260-1:2014 class 1
- ANSI S1.4:2014/ Part1 type 1, ANSI S1.43:97 (R2007) type 1, ANSI S1.11:04 type 1
- DIN 45657:2014 regarding the Taktmaximalpegel function
- IEC 61010-1:2010/A1:2016/COR1:2019 II pollution degree
- CE Marking. Complies with 2014/35/UE and EMC 2014/30/UE low tension regulation.
- Pattern approval certificate for Spain.

MICROPHONE

MODEL C140:

TYPE:	½" condenser microphone
POLARIZATION:	200 V
NOMINAL CAPACITY:	20,0 pF
NOMINAL SENSITIVITY:	43,5 mV/Pa
PREAMPLIFIER:	PA020

MEASUREMENT RANGES

MEASUREMENT RANGE for LF, LS, LI, Lt and LT functions from typical noise to maximum level:

	Weigh. A(dB)	Weigh. C(dB)	Weigh. Z(dB)
C140+PA020:	16,5-137,0	16,3-137,0	19,9-137,0

LINEAR RANGE for LF, LS, LI, Lt and LT functions:

	Weigh. A(dB)	Weigh. C(dB)	Weigh. Z(dB)
C140+PA020:	23,5-137,0	23,3-137,0	26,9-137,0

RANGE for LCpeak function:

	Weigh. C(dB)
C140+PA020:	55,0-140,1

NOISE

C140+PA020:

	Weigh. A(dB)	Weigh. C(dB)	Weigh. Z(dB)
ELECTRIC:	10,2	11,2	16,4
TOTAL AT 20ºC:	16,5	16,3	19,9

FREQUENCY and TIME WEIGHTING

CLASS ACCORDING TO IEC 61672:	class 1
FREQUENCY WEIGHTING:	A, C and Z
TIME WEIGHTING:	F, S and I

FUNCTIONS

AVAILABLE FUNCTIONS: see functions section

RESOLUTION	0,1 dB

PEAK DETECTOR

ON SET TIME CONSTANT:	< 75 µs

1/1 and 1/3 OCTAVE BAND FILTERS (Optional)

Class 1 according to IEC 61260

Octave band	from 8 to 16.000 Hz
One-third octave band	from 6,3 to 20.000 Hz

ENVIRONMENTAL CRITERIA

STATIC PRESSURE INFLUENCE:

OPERATING RANGE MAXIMUM ERROR

from 65 to < 85 kPa (up to 3.500 m):	0,9 dB
from 85 to 108 kPa (up to 2.000 m):	0,4 dB

TEMPERATURE INFLUENCE:

OPERATING RANGE MAXIMUM ERROR

from -10 to +50 °C:	0,5 dB

HUMIDITY INFLUENCE:

OPERATING RANGE MAXIMUM ERROR

(at 40°C and 1 kHz in the absence of condensation)

from 25 to 90 %:	0,5 dB

INPUTS AND OUTPUTS

USB COMMUNICATION

TYPE	Digital according to USB rev. 2.0. full-speed
CONNECTOR:	USB type C
CONNECTION CABLE:	CN500 of 0,5 m long

WIRELESS COMMUNICATION:

TYPE:	Bluetooth® v4.2 BLE
RANGE (free space):	50 m
TYPE:	WIFI (2,4 GHz)

AC OUTPUT:

CONNECTOR:	Mini Jack female (∅ 3,5mm)

POWER

BATTERIES:

TYPE:	3 alkaline batteries 1,5 V AA(LR6) size
	3 lithium batteries 1,5 V AA(LR6) size
	3 rechargeable batteries 1,2 V AA size NiMH

TYPICAL DURATION:

Alkaline	11:00 hours
Lithium	21:00 hours
Rechargeable (2650mAh)	12:00 hours

EXTERNAL POWER:

VOLTAGE INPUT RANGE:	5 VDC ± 5%
MINIMUM CURRENT:	1 A

To feed the *SC250* from alternate public current, the use of *AM300* mains feeder and *CN500* cable are recommended.

DIMENSIONS AND WEIGHT

DIMENSIONS:	296 x 85 x 26,5 mm
WEIGHT:	with batteries 358 g
	without batteries 288 g

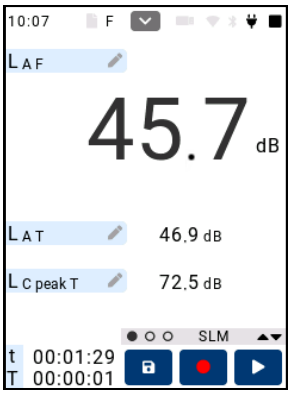
The characteristics, technical specifications and accessories may be altered without prior notice

SC250 Sound level meter class 1 and spectrum analyser* (1/1 and 1/3 oct)

*Optional

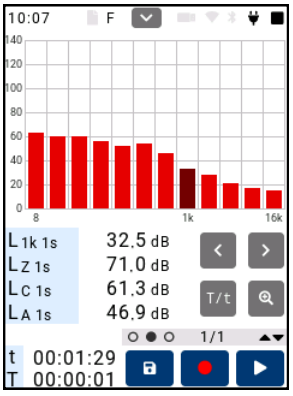
SCREENS

SLM



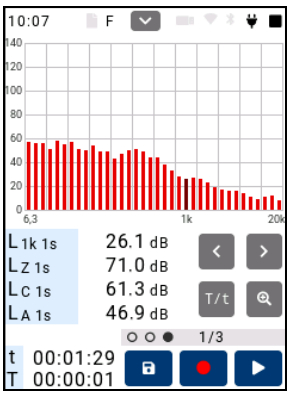
Numeric

1/1 ANALYSER*



Graphic

1/3 ANALYSER*



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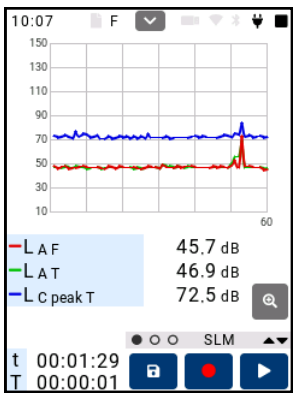

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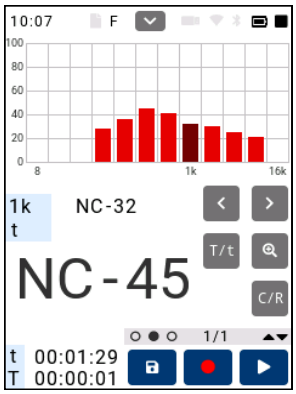
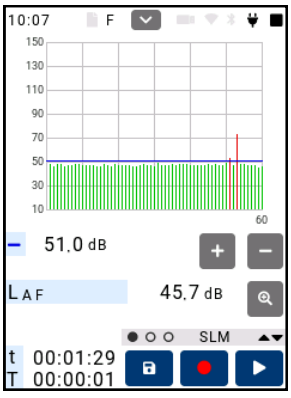


Curves



Pass / Fail

* Optional screens available on *FR250* module

The *SC250* simultaneously measures all functions of sound level meter, spectrum analyser* in octave bands and 1/3 octave bands, for integration times of t, T, t1, t2, 1 second and 20 milliseconds*.

By simply scrolling through the screens the *SC250* displays the global sound pressure level (instantaneous and averaged values), the equivalent continuous sound pressure level in real time by octave bands (from 8 Hz to 16 kHz) and 1/3 octave bands (from 6,3 Hz to 20 kHz), as well as statistical data, maximum and minimum values and percentiles. Also the evaluation of the background noise of rooms with NC (Noise Criterion) and NR (Noise Reduction) curves.

On graphical screens, you can zoom in to see the differences and similarities between levels in greater detail.

During the measurement in addition to selecting the parameters displayed on the screen and the time base, the evaluation threshold can be modified on the Pass / Fail screen.

SC250 Sound level meter class 1 and spectrum analyser* (1/1 and 1/3 oct)

*Optional

FUNCTIONS

SLM	L_{AF}, L_{CF}, L_{AFmaxY}, L_{CFmaxY}, L_{AFminY}, L_{CFminY}, L_{AS}, L_{ASmaxY}, L_{ASminY}, L_{AI}, L_{AImaxY}, L_{AIminY}, L_{Cpeakt}, L_{CpeakT}, $L_{Cpeak1s}^{+}$, L_{nt}, L_{nT}, L_{Xt}, L_{XT}, L_{XTmaxt}, L_{XTmint}, L_{X1s}, L_{AIY}, $L_{A\tau}$, $L_{A\tau maxT}$, $L_{A\tau maxt}$, $L_{A\tau minT}$, $L_{A\tau mint}$, $L_{C\tau}$, $L_{C\tau maxT}$, $L_{C\tau maxt}$, $L_{C\tau minT}$, $L_{C\tau mint}$, L_{AF5t}, L_{AF5T}, L_{AF51s}^{+}, L_{AF20ms}^{+}, L_{A20ms}^{+} + Not shown on the screen	
1/1 ANALYSER	L_{ft}, L_{fT}, L_{f1s}, NC, NC_f, NR, NR_f	f: 8 Hz to 16 kHz
1/3 ANALYSER	L_{ft}, L_{fT}, L_{f1s}	f: 6,3 Hz to 20 kHz

t: Measuring time
T: Integration time
t_1, t_2: Sliding integration time
X: Frequency weighting A,C and Z
Y: t, T and 1 second integration time
n: 1%, 5%, 10%, 50%, 90%, 95% and 90%

INCLUDED ACCESSORIES

CN500	PC (USB type C – USB) connection cable
PV009	Wind screen
FN004	Soft case
	3 1,5 V batteries

OPTIONAL AC-

CB006	Class 1 sound calibrator
CB011	Class 1 sound calibrator
TR040	1,10 m tripod
TR050	1,50 m tripod
ML043	Transport briefcase (48x37x16 cm)
ML013	Transport briefcase (39x32x12 cm)
ML063	Special outdoor briefcase (51x38x15 cm)
AM300	Mains feeder (V= 100/240 V, 50/60 Hz)
TK200	Outdoor kit
CN003	Microphone extension cable 3 m
CN010	Microphone extension cable 10 m
CN030	Microphone extension cable 30 m
TR001	Tripod adapter
PR003	Extension rod 3 m

OPTIONAL MODULES

FR250	Spectrum analyser by octave band to 8 Hz to 16 kHz, NC and NR curves and spectrum analyser by 1/3 octave band to 6,3 Hz to 20 kHz module.