

Applications

- Evaluation of workers' exposure to noise at work simultaneously with testing of PPE (Personal Protective Equipment)
- Ideal for workers with a high degree of movement in the workplace, or workplaces where the noise level changes constantly.

User-Friendly

- Completely programmable.
- Simultaneous measurement of all parameters, including evaluation of hearing protectors.
- Has predefined settings based on specific norms.
- Single measurement scale and keypad lock using a combination of keys.
- Projected information display during the measurement.

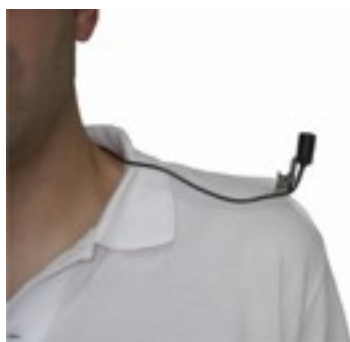
Characteristics

- Real time frequency analysis in octave bands (63 Hz to 8 kHz). (Only **DC112a**).
- Great storage capacity; saves the time history of the measurement.
- Download port and power supply through USB port.
- Projection of parameters; evaluation of exposure to noise for measurement times shorter than the exposure time.
- Record of the sensitivity adjustments.
- Software: Cesva Capture Studio and Capture Studio Editor.
- Microphone adaptable to helmets and earplugs.
- The model **DC112k** can be converted into a **DC112a**, for which it is necessary to acquire the module **EF112a** either at the time of purchasing the instrument, or subsequently.
- Dosimeter conforms to standard ANSI S1.25-1991 class 2.
- Light and robust.

The **DC112k/DC112a** is a high performance dosimeter, the ideal instrument for measuring noise according to ANSI S1.25-1991 class 2, which adapts to technical progress the regulation on the health and safety requirements regarding the exposure of workers to the risks arising from noise.

The two models; DC112d and DC112 have exactly the same characteristics as dosimeters but only the **DC112a** is also a real time spectrum analyser in octave bands.





The **DC112k/DC112a**'s graphic screen provides graphical and numerical representation of the measured functions, to evaluate the time history or to analyse the spectrum contents (**DC112a** only).

The **DC112k/DC112a** enables you to measure simultaneously all the parameters needed to assess the levels of noise to which workers are exposed with and without hearing protectors (NRR and Octaves). The **DC112a**, besides measuring the average sound level [L_{AV}] with A or C frequency weighting (NRR method) like the **DC112k**, simultaneously carries out a real time frequency analysis in octave bands, from 63 Hz to 8 kHz (octave method) with the option of applying A weighting, or not, to the analysis.

The **DC112k/DC112a** measures simultaneously the average sound level [L_{AV}] with A or C frequency weighting, fast or slow time weighting [F or S], exchange rate [$Q=3, 4, 5$ or 6], programmable threshold level [L_{TH}, L_{TH}'], the time weighted average (8hr) [TWA] and noise dose [D] with respect to a programmable Criterion Level [L_C], and, of course, also the Peak Level with C or Z frequency weighting [L_{Cpeak} or L_{zpeak}].

Moreover, it allows you to carry out the measurement during a time shorter than the exposition time, because it shows on the screen all parameters projected to the expected exposure time (programmable projection time [t_p]).

The **DC112k/DC112a**'s screen can be illuminated, allowing the user to work in low-light conditions. The light remains on for five seconds, and then switches off automatically to avoid unnecessary battery consumption.

The **DC112k/DC112a** measures the parameters using two threshold levels simultaneously, which allows standards (OSHA, MSHA and CUSTOM) to be evaluated with double threshold [L_{TH} or L_{TH}'] with only one measurement

The **DC112k/DC112a** stores in its memory the record (time and date) of the sensitivity modifications. Moreover, it allows the measurement to be stopped, turned off and afterwards restarted with the same measurement.

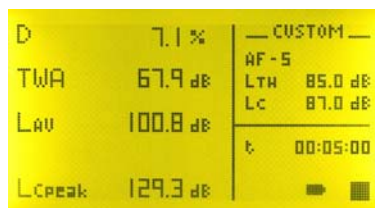
The large memory of the **DC112k/DC112a** allows you to store the time history of the parameters measured (time periods longer than a week), and afterwards recalculate them for any desired time interval.

The **DC112k/DC112a** enables you to assess and measure exposure to noise and also brings you all the data needed to inform and train workers with regard to the significance and potential risks arising from the results of the measurement and assessment.

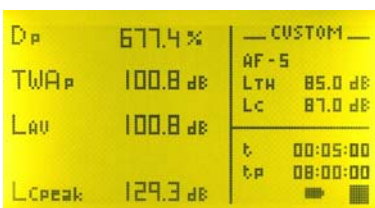
Moreover, It helps you to design and run a reduction programme and to choose the most suitable hearing protectors.



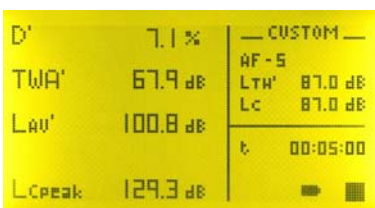
Numerical screen with L_{TH}



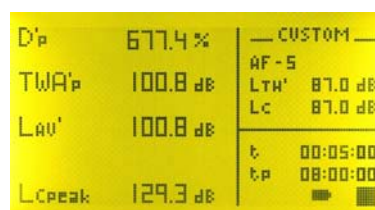
Projected parameters numerical screen



Numerical screen with L_{TH}' (only OSHA, MSHA and CUSTOM)



Projected parameters numerical screen with L_{TH}' (only OSHA, MSHA and CUSTOM)



1/1 Spectrum analyser screen (only available with the DC112a)



Graphic screen (time history)



Nom	Description of functions of L_{TH} numerical screen
D	Noise dose with reference to criterion level (programmable).
TWA	Time weighted average (8h)
L_{AV}	Average sound level [L_{AV}] with A or C frequency weighting, Fast or Slow time weighting [F or S], Exchange rate [Q=3, 4, 5 or 6] and threshold level [L_{TH}]
L_{Cpeak}	Peak sound pressure level with C or Z frequency weighting.
L_{TH}	Threshold level (programmable)
L_C	Criterion level (programmable).
t	Measurement time

Nom	Description of functions of numerical screen with projected parameters
TWA_P	Projected time weighted average (8h)
D_P	Projected noise dose with reference to criterion level
t_p	Projection time, expected time of exposure to noise (programmable)

Nom	Description of functions of numerical screen with L_{TH}'
TWA'	Time weighted average (8h) with L_{TH}'
D'	Noise dose with L_{TH}' with reference to the criterion level
L_{AV}'	Average sound level [L_{AV}] with A or C frequency weighting, Fast or Slow time weighting [F or S], Exchange rate [Q=3, 4, 5 or 6] and with L_{TH}'
L_{TH}'	Second threshold level

Nom	Description of functions of numerical screen with projected parameters and with L_{TH}'
TWA'_P	Projected time weighted average (8h) with L_{TH}'
D'_P	Projected noise dose with L_{TH}' with reference to the criterion level

Nom	Description of functions of numerical screen of the 1/1 spectrum analyser
L_{Tf}	Continuous equivalent sound pressure level with or without A frequency weighting for the octave band f. (See graph).
$L_{A,C}$	Continuous equivalent sound pressure level of the whole measurement with A or C frequency weighting

Nom	Parameters stored in memory. Time history
L_{AV}	Average sound level [L_{AV}] with A or C frequency weighting Fast or Show time weighting [F or S], Exchange rate [Q=3, 4, 5 or 6] and threshold level [L_{TH}]
L_{AT}	Equivalent continuous sound pressure level with A. frequency weighting.
L_{CT}	Equivalent continuous sound pressure level with C frequency weighting.
L_{Tf}	Equivalent continuous sound pressure level with or without A. frequency weighting. (A o sin) for the octave band f.
$L_{C,Zpeak}$	Peak sound pressure level with C or Z frequency weighting.

63	125	250	500	1k	2k	4k	8k
----	-----	-----	-----	----	----	----	----

Certificates and standards

Complies with the following standards:

- ANSI S1.25-1991 class 2
- ANSI S1.11:04 Type 1 (only **DC112a**)
- OSHA, MSHA, NIOSH, ACGIH y DoD.
- **CE** Mark. Complies with the Directive on low voltage 73/23/CEE and Directive CEM 89/336/CEE modified by 93/68/CEE.

Measurement range

- L_T y L_t 140 dB
- L_{peak} 140 dB

Peak detector L_{peak}

Onset time constant < 75 μ s

Frequency weighting

Complies with standard EN 60651
A and C weightings

Memory

64 Mbytes

Microphone

- Model **CESVA** P007: Pre-polarised condenser microphone with pre-amplifier incorporated, (lapel microphone with adjustable clip incorporated). Cable length: 1m.

Battery

One 9 V battery type 6LR61.

Typical duration with continuous use: 20 hours

Size and weight

Dimensions: 144x82x23 mm
Weight with battery: 361 g

Accessories supplied

FNS112 Case
SFT030 Cesva Capture Studio Programme
CN1US USB cable for connection to a PC
One 9 V battery

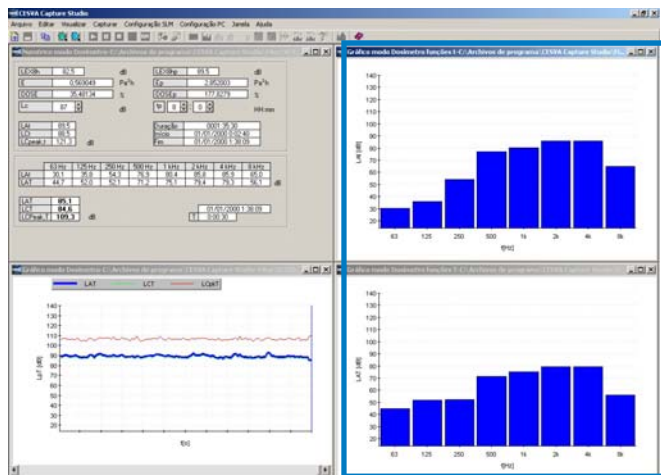
Optional accessories

CB004 Class 2 acoustic calibrator
TR-40 Tripod. Maximum height 1,1 m
TR050 Tripod. Maximum height 1,55 m
A-100 Battery converter 12V to 9V
A-200 Mains feeder 230V to 9V
ML-50 Carrying case (49 x 36 x 14 cm)
ML-10 Carrying case (39 x 32 x 12 cm)
ML060 Special outdoors briefcase (51x38x15 cm)
PB009 Rechargeable 9 V 200 mA battery
CP009 Charger for 9 V 200 mA batteries

Cesva Capture Studio

With the CESVA Capture Studio software supplied with the **DC112k/DC112a**, the following operations can be performed:

- Downloading the registers stored in the memory of the **DC112k/DC112a**.
- Display of the measurement registers.
- Recalculates all the parameters referenced to a different time exposure T_p and different L_c criterium level.
- Export of data and graphics to generate a personalised acoustic report (total compatibility with the Windows® environment).

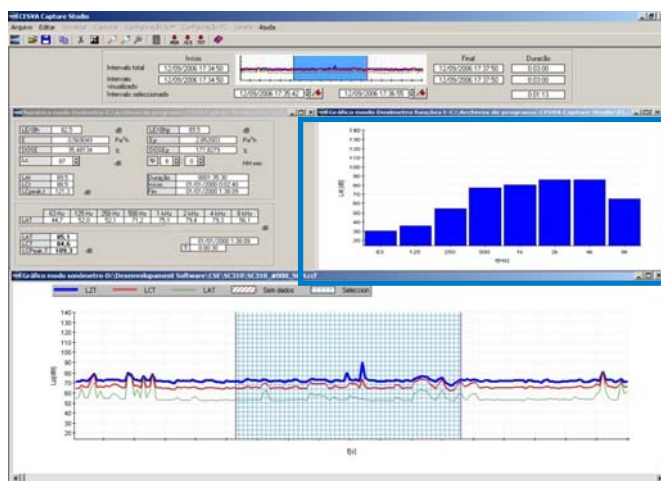


Screen available for DC112a

Capture Studio Editor

Capture Studio Editor is the software which enables you to edit data acquired by the **DC112k/DC112a**:

- Eliminate measurement intervals which corresponds to errors due a false contributions (microphone hits,...).
- Selection of the most significant periods and recalculation of the parameters of the selected period.
- Cycles identification.
- Selectively export data to *.txt, *.xls, and *.mdb formats.



Screen available for DC112a

Both programmes operate in the Windows 9x/Me/2000/NT/XP/VISTA environments.

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