

# LF010

## DATASHEET

D\_LF010\_v0004\_20181214\_EN

### Sound level limiter 1/3 octave band Spectrum analyser and register

#### PRESENTATION

The LF010 limiter continues the **CESVA** philosophy of offering the ideal balance between noise control and maximum music quality while also respecting the dynamics of the music and offering clear, distortion-free and uncut music.

Thanks to its power, the LF010 measures the existing sound level in the music venue (emission) at up to four points (one main control sensor and up to 3 optional secondary ones) and the sound level transmitted to a neighbouring house, opposite façade or a point outside (reception) thanks to the sound insulation by 1/3 octave between 50 Hz and 5 kHz.

It also records the time history of these levels and spectra in its memory, as well as any incidents and tampering detected.

The LF010 uses the measured levels to control the overall music level (without equalizing) so that the programmed emission and reception limits are not exceeded in the three day/evening/night time zones. The LF010 performs this control using different Attack and Release modes to adapt its performance to live concerts with great dynamics as well as to dance music club sessions.

#### APPLICATIONS

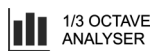
- Discos and Clubs
- Music & Sports Bars
- Live concerts
- Music festivals
- Karaoke
- Terraces
- Bars and Pubs
- Shops
- Fitness clubs
- Restaurants
- Fast food chains
- Dance academies
- Hotels
- Multipurpose rooms
- Parties with music: weddings, graduations, etc.

#### MAIN FEATURES

- Clear sound, no distortion or cuts. Maximum music quality.
- It measures, controls (sound insulation) and records 1/3 octave spectrum from 50 Hz to 5 kHz according to IEC 61260.
- Full HD video output for HDMI monitors: user-friendly information for the DJ / sound engineer and display of events, promotions and sponsors.
- Easy installation and programming by a responsive webserver through laptop, tablets or smartphones (Windows, iOS, Linux, Android).
- Different limitation modes for Attack and Release. Music gap detector and improved ENOS system (no music cuts produced by audience screaming or clapping).
- Adaptable to any music source: Mixer, mp3 player, computer with multimedia player application, subscription service such as Spotify or professional mixing software.
- Biannual calendar for programming closing times for public holidays, holidays (Summer) and special public holidays (New Year's Eve).
- Class 1 main sensor and up to 3 optional secondary ones. All with serial number and tampering detection and programmable offset.



ENOS  
SYSTEM



1/3 OCTAVE  
ANALYSER



WIRELESS  
LAN



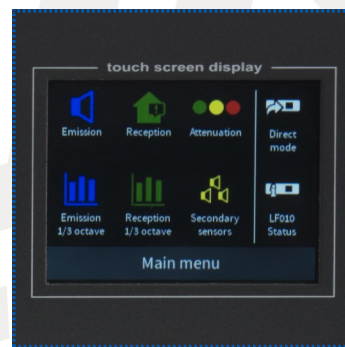
FULL  
HD 1080p  
VIDEO



# LF010

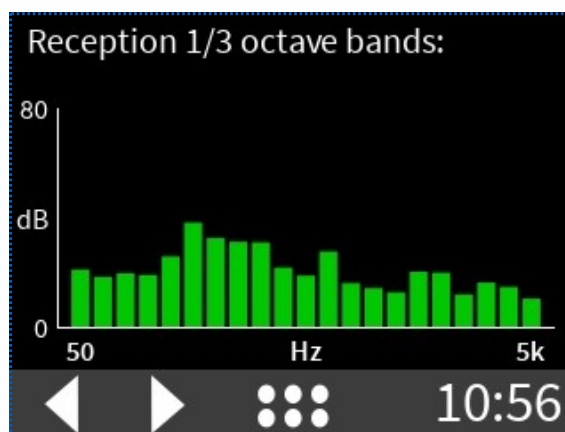
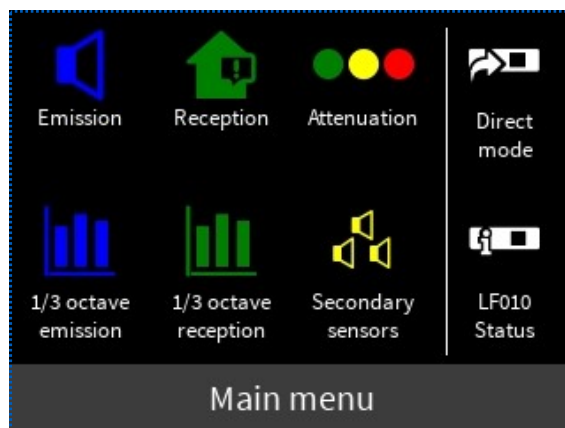
## MAIN FEATURES

### Sound level limiter 1/3 octave band Spectrum analyser and register



#### ACCURACY AND POWER:

- It continuously measures and records the sound emission level in the venue and the level of immission in the receiving environment (adjacent house, point outside or opposite façade) thanks to the programmed 1/3 octave band sound insulation (50 Hz to 5 kHz).
- It measures and records a wide range of acoustic functions: LAeq, LCEq, Sliding LAeq, Expected music level, 1/3 octave band spectrum (50 Hz to 5 kHz).
- When sensors cannot be placed at the desired measuring point, the LF010 allows you to apply different OFFSETS to each sensor.
- The main and secondary sensors have a class 1 measuring accuracy according to IEC 61672-1. The 1/3 octave band filters comply with IEC 61260 and National building codes.
- The LF010 detects tampering of the limiter, sensors and sound system: Emission and reception limit exceedance, parallel sound sources, tampering of the limiter and the sound system chain, disconnection or change of the main and secondary sensors. The LF010, the XP010 main sensor and the XS010 secondary sensors are fully sealable.
- The LF010 can record sound levels and incidents on a by minute basis and can commit two years of information to memory every 10 minutes. It also records all actions performed in the limiter, keeping track of what has been done, when and by whom.
- The LF010 also has a front colour touch screen to display the measured information and communication status.



#### FullHD 1080p VIDEO OUTPUT:

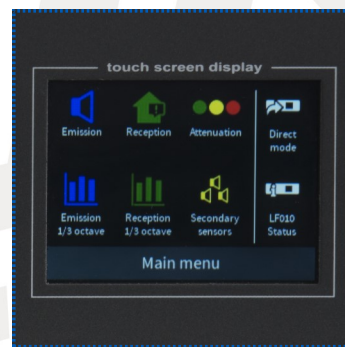
- Video output compatible with HDMI displays, it allows the sound engineer/DJ to view clear and user-friendly information in real time to keep the sound levels under optimal control and below the limit. This new approach gives control to the DJ so that the limiter does not have to abruptly attenuate the sound level.
- It allows the activity owner to afford greater exposure to the events, parties and advertisements of sponsoring brands or to showcase their own articles and promotions.



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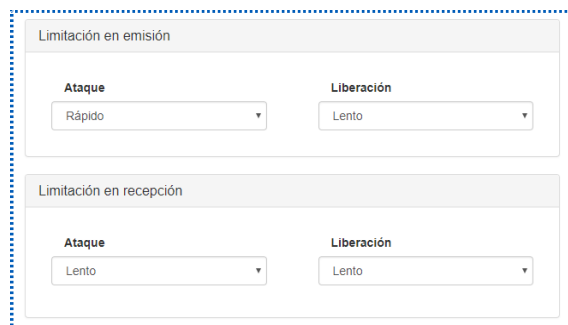
## MAIN FEATURES

### Sound level limiter 1/3 octave band Spectrum analyser and register



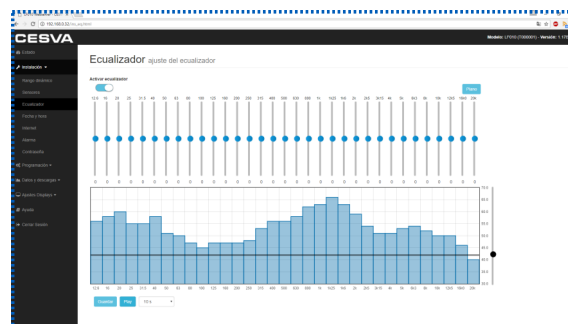
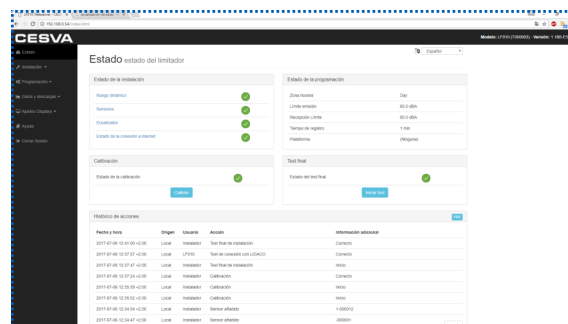
#### ADAPTABLE LIMITATION AND CONTROL:

- It enables you to programme different emission and reception limits for the three day/evening/night time zones.
- It has different control modes for emission/reception and attack/release that can be configured with different speeds (slow/medium/fast).
- It includes a music gap (silence) detection system that maintains attenuation between song tracks.
- It incorporates ENOS (Extraneous Noise Override System) system that allows uncut music playback even when public shouting or clapping: Live concerts, sports broadcasts, etc.
- The LF010 limiter can completely mute the music.



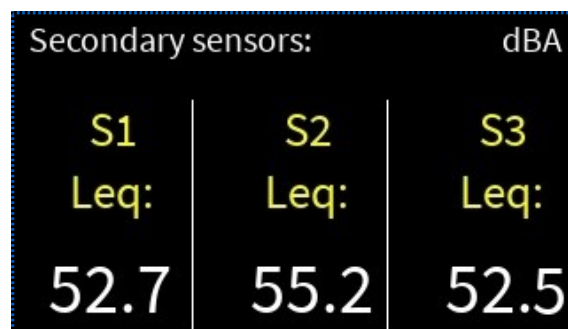
#### EASY TO INSTALL:

- The LF010 is very easy to install as it has a built-in responsive webserver that allows you to install, program and download data from a laptop, tablet or smartphone (Windows, iOS, Linux, Android) via Ethernet (RJ45) or WIFI.
- It has its own communication systems (Ethernet and WIFI) to connect to the Internet and to the LIDACO activity inspection platform.
- It also has a 1/3 octave band equalizer (12,5 Hz to 20 kHz) to equalize the room and achieve the highest possible sound quality.
- It guarantees minimum noise for any type of source: Mixer, MP3 player, laptop with multimedia playback programs, subscription services such as Spotify or professional mixing software.
- It automatically adjusts the capacity of the sound system to the programmed limit (DEN and emission/reception).
- It has a biannual calendar for programming closing times for public holidays, holidays and special public holidays.
- It also features the FINAL TEST option to perform a short 1-minute test to verify that the limiter is properly installed.



#### UP TO THREE SECONDARY SENSORS:

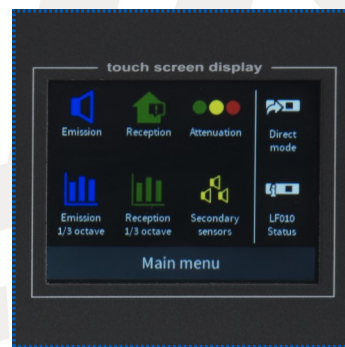
- It has 1 main control sensor that can be complemented by up to 3 additional secondary sensors; all pre-calibrated with no need for any adjustment. The number of additional secondary sensors recommended is: 1 for L-shaped rooms, 2 for U-shaped rooms and 3 for large rooms.
- It can detect tampering of all the sensors, including the secondary ones, and it monitors the serial number of all of them, thus preventing fraudulent use of different sensors.



# LF010

## TECHNICAL SPECIFICATIONS

### Sound level limiter 1/3 octave band Spectrum analyser and register



#### INPUTS AND OUTPUTS

##### AUDIO INPUTS AND OUTPUTS:

I/O BALANCED CONNECTORS :	Input female XLR			
	Output male XLR			
INPUT IMPEDANCE:	20 k $\Omega$			
OUTPUT IMPEDANCE:	100 $\Omega$			
FREQUENCY RESPONSE ( $\pm 0.5$ dB):	from 20 to 20000 Hz			
TOTAL HARMONIC DISTORTION (THD):	0.008 %			
MAXIMUM INPUT PEAK VOLTAGE:	18 V <sub>peak</sub>			
Scale	10 V	3.1 V	1 V	0.3 V
MAX VOLTAGE (w/o clap)	28.3	8.94	2.83	0.894 V <sub>peak</sub>
TYPICAL NOISE (A non bal)	-76.7	-86.6	-95.9	-102.5 dBu
SNR	98.9	98.8	98.1	94.7 dB

##### MAIN AND SECONDARY SENSOR INPUT:

CONNECTORS: 4-pin female XLR

##### FULL HD VIDEO OUTPUT FOR HDMI MONITORS:

CONNECTOR: Compatible with HDMI cable  
RESOLUTION: 1080p FullHD 1920x1080

##### INPUT FOR CONNECTING EXTERNAL DISPLAY DL010:

CONNECTOR: 3-pin male XLR

##### FIRE ALARM INPUT:

CONNECTOR: Screw terminals for two-wire cable

#### COMMUNICATIONS

##### ETHERNET COMMUNICATION 10/100 Mbit/s:

CONNECTOR: RJ45

##### WIRELESS LAN COMMUNICATION IEEE 802.11b/g/n:

WIFI MAXIMUM RANGE: 20 m point-to-point without obstacles

#### ATTENUATOR

ATTENUATION RANGE: 0 - 70 dB

SPEED:	Slow	Medium	Fast
ATTACK	1	2	5 dB/s
RELEASE	0.5	1	2 dB/s

#### ACCESSORIES

##### STANDARD ACCESSORIES

XP010*	Main sensor
CX010	10-metre cable for connecting the sensor to the limiter
TP010	Rear cover for sealing the limiter's cables
EL001	Set of mounting brackets for a 19" rack Power cable

\* The default colour supplied is black. It can also be supplied in white on demand.

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

#### EQUALIZER

TYPE: 1/3 octave-band graphic  
NUMBER OF FILTERS: 33 filters from 12.5 to 20000 Hz  
ATTENUATION RANGE:  $\pm 12$  dB

#### SENSOR

NOISE MEASUREMENT ACCURACY: class 1 IEC 61672-1  
ACOUSTIC VERIFICATION: with IEC 60942 acoustic calibrator  
MEASUREMENT RANGE: from 50 to 130 dBA  
FREQUENCY RANGE: 20 to 20000 Hz

#### THIRD OCTAVE BAND FILTERS

Class 1 IEC 61260:1995/A1:2001-compliant. Central frequencies from 50 to 5000 Hz. It comprises the band filters recommended by the ISO 16283-1 and the Spanish CTE (Building Code) for the description of sound insulation in buildings.

#### POWER SUPPLY

100-230 ~ VAC  
50/60 Hz

#### TYPICAL CONSUMPTION

25 W

#### DIMENSIONS AND WEIGHT

DIMENSIONS: Two 19" racks unit 440 x 227 x 96 mm  
WEIGHT: 3.5 kg

#### STORAGE CAPACITY

2 years (recording time = 10 minutes)  
73 days (recording time = 1 minute)

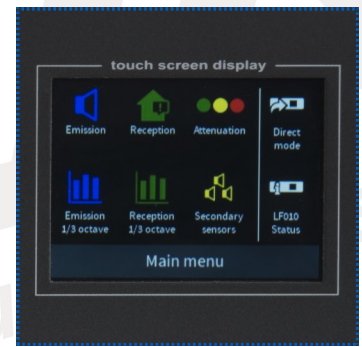
#### OPTIONAL ACCESSORIES

XS010*	Secondary sensor
XH010*	Hub for secondary sensors
CX100	Coil of sensor cable (100 m)
DL010	External display with cable (10 m)
DL100	Giant external 61x32x8 cm display
AL001	Pliers for sealing
PT001	9-mm diameter plastic seals (100 units)
RP001	Special wire for sealing (10 m roll)
REL2	Relay box

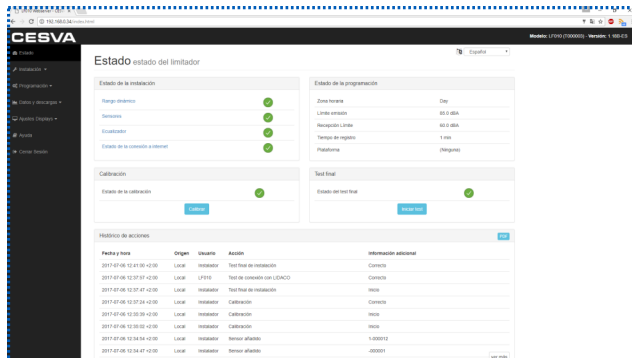
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## WEBSERVER SCREENSHOTS

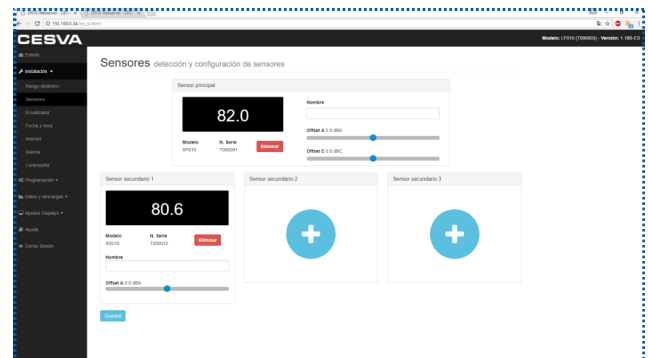
Sound level limiter  
1/3 octave band Spectrum analyser and register



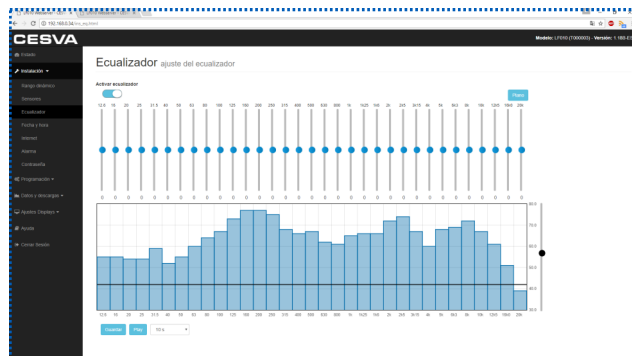
## WEBSERVER SCREENSHOTS: INSTALLATION, PROGRAMMING AND DATA & DOWNLOADS



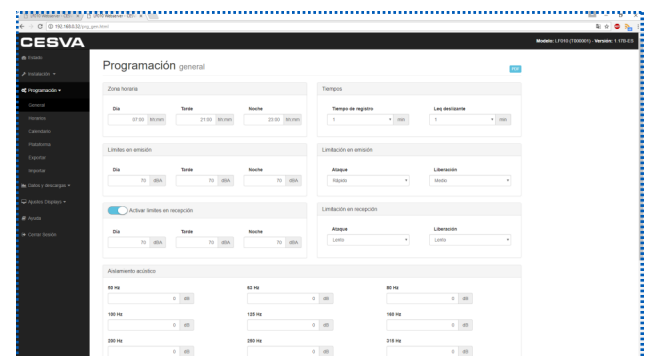
Limiter status



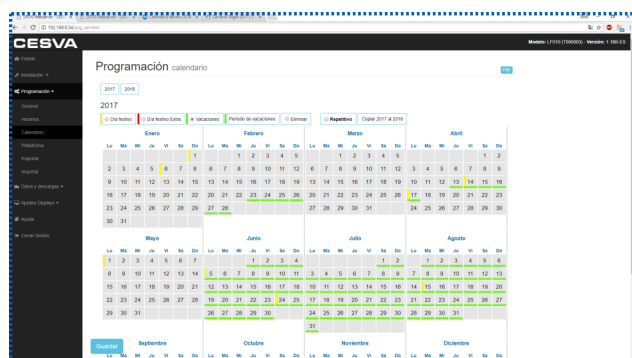
Sensor installation



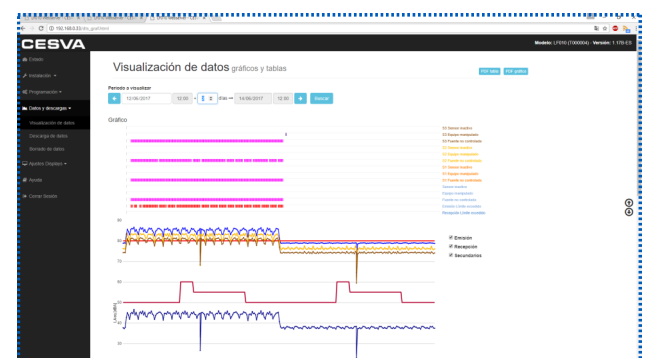
1/3 octave band graphic equaliser installation



Main programming



Schedule programming



Graphic data display