

LF010

DATASHEET

D_LF010_v0002_20180125_EN

Sound level limiter

Spectrum analyser and register by 1/3 octave band

PRESENTATION

The *LF010* limiter continues the **CESVA** philosophy of offering the ideal balance between noise control and maximum quality of the music, while respecting the dynamics of 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) up to four points (a main control sensor and up to 3 optional secondary ones) and the sound level transmitted to a neighbouring dwelling, facing façade or outdoors (Reception) thanks to the sound insulation by 1/3 octave between 50 Hz and 5 kHz.

It also registers in memory the time history of these levels and spectra, as well as all incidents and manipulations detected.

From the measured levels, the *LF010* controls the overall musical level (without equalizing) so that the programmed limits in emission and reception 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 dance music club sessions.

APPLICATIONS

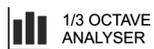
- Discotheques & Clubs
- Music & Sports Bars
- Live concerts
- Music festivals
- Karaoke
- Terraces
- Bars & Pubs
- Shops
- Fitness clubs
- Restaurants
- Fast food chains
- Dance academies
- Hotels
- Multipurpose rooms
- Parties with musical ambience: Weddings, graduation day, ...

MAIN FEATURES

- Clear sound, no distortion or cuts. Maximum music quality.
- It measures, controls (sound insulation) and registers 1/3 octave spectrum from 50 Hz to 5 kHz according to IEC 61260.
- FullHD video output for HDMI monitors: Intuitive 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 like Spotify or professional mixing software.
- Biannual calendar for programming closing times for public holidays, holidays (Summer) and special public holidays (New Years 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

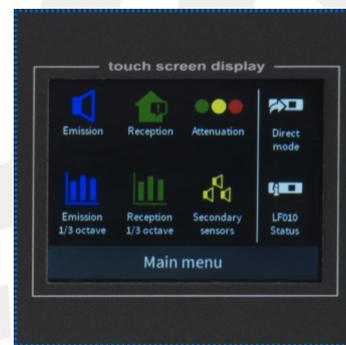


LF010

MAIN FEATURES

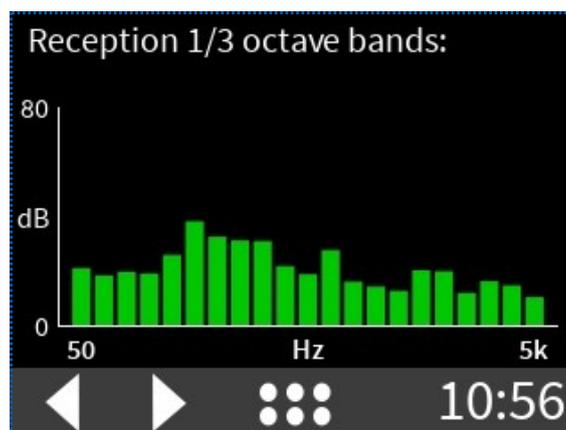
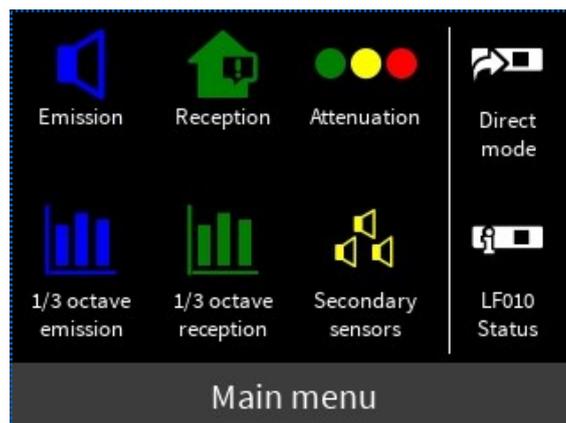
Sound level limiter

Spectrum analyser and register by 1/3 octave band



ACCURACY AND POWER:

- It continuously measures and registers the sound emission level in the venue and the level of immission in the receiving environment (adjacent dwelling, facing façade or outdoors) thanks to the programmed sound insulation by 1/3 octave bands (50 Hz to 5 kHz) .
- Measures and registers a wide range of acoustic functions: LAeq, LCEq, Sliding LAeq, Expected music level, spectrum by 1/3 octave band (50 Hz to 5 kHz).
- When sensors can not be placed at the desired evaluation point, the LF010 allows applying different offsets to each sensor.
- The main and secondary sensors have a class 1 measuring accuracy according to IEC 61672-1. 1/3 octave band filters comply with IEC 61260 and National building codes.
- The LF010 detects manipulations of the limiter, sensors and sound system: Limit exceedance in emission and reception, parallel sound sources, manipulation of the limiter and the sound system chain, disconnection or change of the main and secondary sensors. The LF010, the main and secondary sensors are fully sealable.
- The LF010 can register sound levels and incidences up to every minute and can keep in memory two years of information every 10 minutes. It also registers any action done in the limiter, keeping track of what has been done, when and who has done it.
- The LF010 has a colour touch screen to show the measured information and the state of the communications.



FullHD 1080p VIDEO OUTPUT:

- Video output compatible with HDMI monitors, it allows the sound engineer/DJ to see in real time clear and intuitive information to keep optimally controlled sound levels below the limit. This new approach allows the DJ to perform self-control and in this way the limiter does not have to apply abrupt attenuations.
- It allows the activity owner to give visibility to events, parties, advertisements of sponsoring brands and also to show own promotions and articles.



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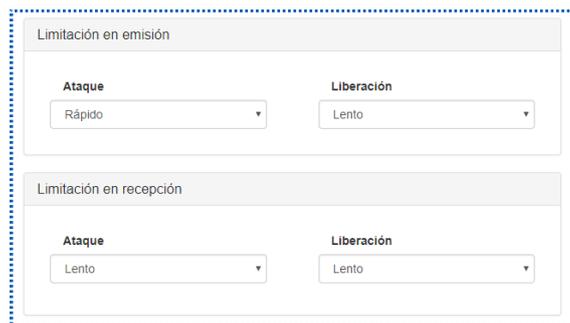
MAIN FEATURES

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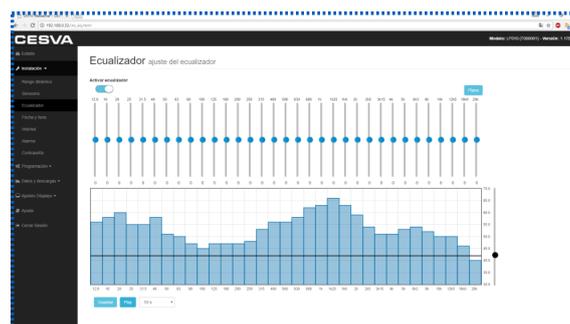
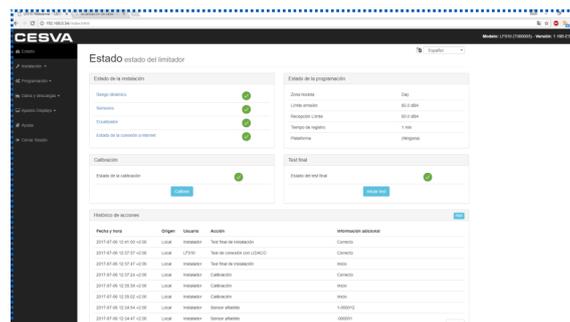
ADAPTABLE LIMITATION AND CONTROL:

- It allows programming different emission and reception limits for the three day/evening/night time zones.
- It has different control modes for emission/reception and attack/release, configurable with different speeds (slow/medium/fast).
- It incorporates a music gap (silence) detection system that maintains the attenuation between song tracks.
- It incorporates the ENOS 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.



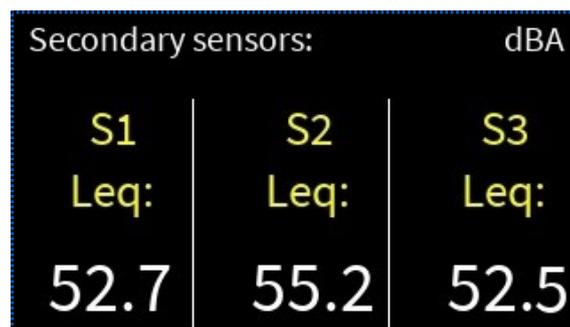
EASY TO INSTALL:

- 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 LIDACO (online activity inspection platform).
- It also has a 1/3 octave band equalizer (10 Hz to 20 kHz) to equalize the room and achieve the highest sound quality.
- Minimum noise is guaranteed for any type of source: Mixer, MP3 player, laptop with multimedia playback programs, subscription services like Spotify or professional mixing software.
- The LF010 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.
- The final test option allows a short 3-minute test to verify that the limiter is properly installed.



UP TO THREE SECONDARY SENSORS:

- The LF010 has 1 main control sensor that can be complemented with up to 3 additional secondary sensors; All pre-calibrated, without adjustment. The number of additional secondary sensors recommended is: 1 for L-shaped rooms, 2 for U-shaped rooms or 3 for large rooms.
- The LF010 detects manipulations of all the sensors, including the secondary ones and controls the serial number of all of them, avoiding the fraudulent use of diverse sensors.



LF010

TECHNICAL SPECIFICATIONS

Sound level limiter
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INPUTS AND OUTPUTS

AUDIO INPUTS AND OUTPUTS:

I/O BALANCED CONNECTORS :	Input female XLR
	Output male XLR
INPUT IMPEDANCE:	20 k Ω
OUTPUT IMPEDANCE:	100 Ω
FREQUENCY RESPONSE (± 0.5 dB):	from 20 to 20000 Hz
TOTAL HARMONIC DISTORTION (THD):	0.008 %
MAXIMUM INPUT PEAK VOLTAGE:	18 V _{peak}
Scale	10 V 3,1 V 1 V 0,3 V
MAX VOLTAGE no clipping	28.3 8.94 2.83 0.894 V _{peak}
TYPICAL NOISE (A no bal.)	-76.7 -86.6 -95.9 -102.5 dBu
SNR	98.9 98.8 98.1 94.7 dB

MAIN AND SECONDARY SENSORS 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:

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	1.5	5	10 dB/s
RELEASE	1.5	5	10 dB/s

ACCESSORIES

SUPPLIED ACCESSORIES

XP010*	Main sensor
CX010	10 m cable to connect the sensor to the limiter
TP010	Back cover for sealing connections Power cable

* By default, it is supplied in black. Optionally and under express request it can be supplied in white.

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

EQUALIZER

TYPE: Graphic by 1/3 octave bands
FILTERS: 33 filters from 12,5 to 20000 Hz
ATTENUATION RANGE : ± 12 dB

SENSOR

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

ONE THIRD OCTAVE BAND FILTERS

Normalized according to IEC 61260:1995/A1:2001 class 1. Central frequencies from 50 to 5000 Hz. It comprises the bands recommended by ISO 16283-1 and Building codes for the description of the sound insulation of buildings.

POWER SUPPLY

100-230 ~ VAC
50/60 Hz

TYPICAL CONSUMPTION

25 W

DIMENSIONS AND WEIGHT

DIMENSIONS: 2 rack units (19") 440 x 227 x 96 mm
WEIGHT: 3.5 kg

STORAGE CAPACITY

2 years (record time = 10 minutes)
73 days (record 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 (10m)
DL100	Giant external display of 61x32x8 cm
AL001	Pliers for sealing
PT001	Plastic seals 9 mm \varnothing (100 units)
RP001	Special wire for sealing (10 m roll)
REL2	Controlling relay box
EL001	Set of brackets for 19" rack mounting

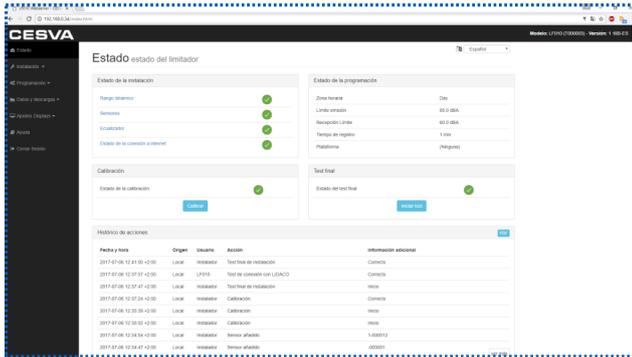
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WEBSERVER SCREENSHOTS

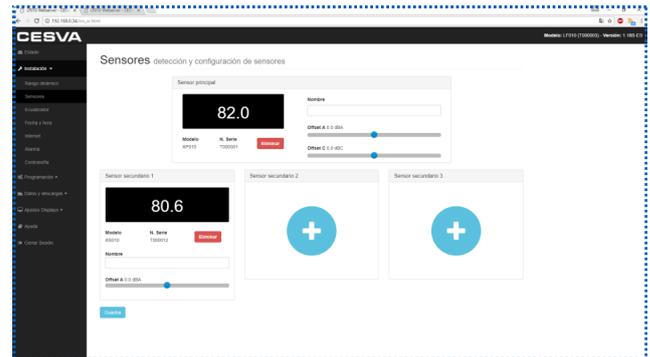
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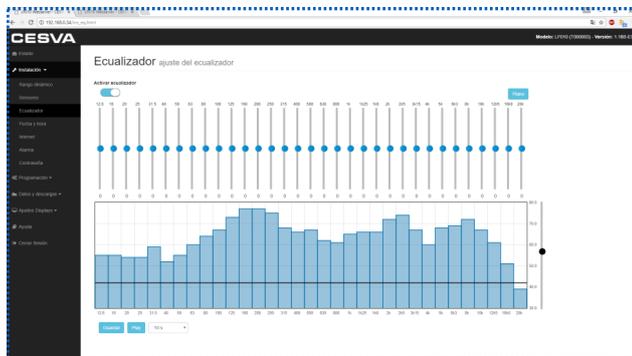
WEBSERVER SCREENSHOTS: INSTALLATION, PROGRAMMING AND DATA & DOWNLOADS



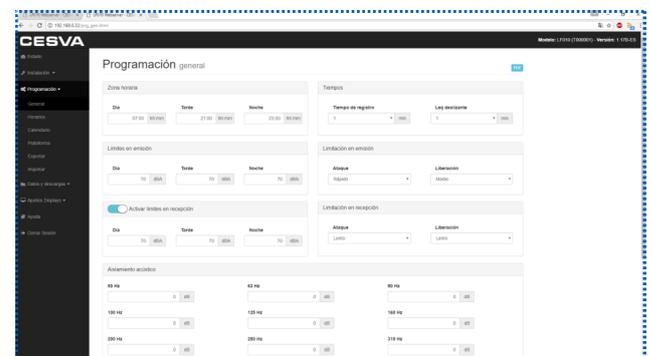
Limiter status



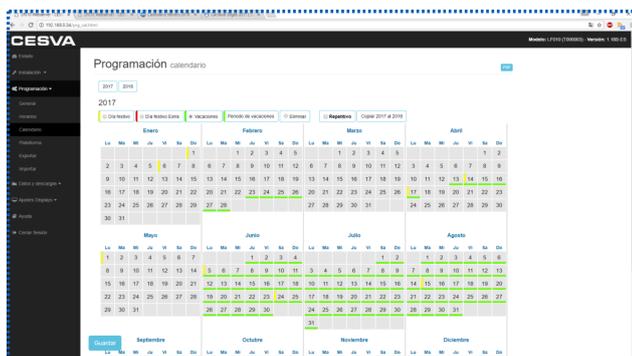
Sensors installation



1/3 octave band graphic equaliser installation



Main programming



Schedule programming



Data graphic display