Casella 63X Digital Sound Level Meter

Applications

Occupational Noise Measurement

- Workplace noise assessments according to ISO9612, OSHA 29CFR 1910.95
- Selection of hearing protection
- Calculation of noise exposure
- Ensuring compliance with workplace noise legislation

Environmental Noise Measurement

- Boundary noise assessments
- Noise nuisance complaints
- Measurements according to ISO1996, BS4142
- UK Construction Section 61 notices

Key features

- Ideal for environmental or occupational monitoring
- Easy to use switch-on-and-go functionality
- Latest digital technology with a high resolution colour TFT display
- Pre-configured setups for occupational and environmental measurements
- Voice notes to annotate measurements
- Audio (WAV) recording
- Single measurement range up to 140dB, no range adjustment required
- Data markers, back erase function and audio recording
- Level triggered events for transient measurements
- Real-time octave & 1/3 octave measurements
- Simultaneous measurement of all parameters with all frequency and time weightings
- Class 1 or Class 2 models available
- 2GB memory for more than 1 year of data storage
- Removable pre-amp
- Environmental outdoor kit available

Noise measurements could not be easier — a step by step guide on how simple the 63X Series is to use!

Step 1

Switch On

When powered up the 63X Series will show battery status and memory capacity, as well as the measurement view currently selected.

- 2GB of memory stores more than 1 year of continuous data
- Automatically powers up in the last setup used
- Up to 15 hours of battery life

Status

CEL-633C

|	
Time:	14/Feb/11 10:48:57
Runs free:	985
1GB uSD Card	
Battery:	4.80 V
Response:	Freefield
View:	User 1
Serial number:	0411772
Firmware version:	129.99.34
Casella CEL	++44 (0)1234 844100

For Occupational Noise

- Simultaneous measurements of all workplace noise parameters
- Standard setups for workplace noise legislation
- Measures parameters for hearing protection selection by the SNR, HML and octave band method
- Analyse time history of noise levels
- Optional high range microphone, up to 165dB

The 63X Series is designed to make workplace noise measurements as quick and simple as possible. The displayed information can be made as simple or comprehensive as required and all measurement parameters are stored simultaneously, so no incorrect measurements can be made.

When the instrument is calibrated with the 120 calibrator, the calibration dates and times are stored and can be downloaded to Casella Insight software, validating the accuracy of measurements.

Average, Peak, and Octave Band measurements are performed at the same time, so only one measurement needs to be made for all workplace noise applications.
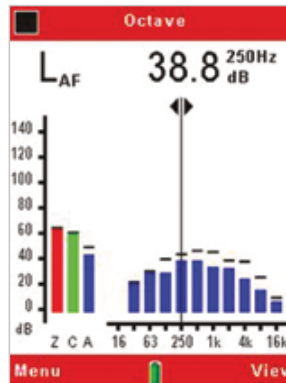
Small and lightweight with a bright colour display, the 63x Series makes workplace noise measurements easy
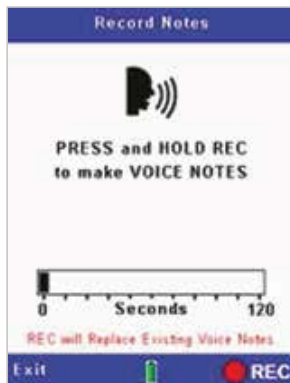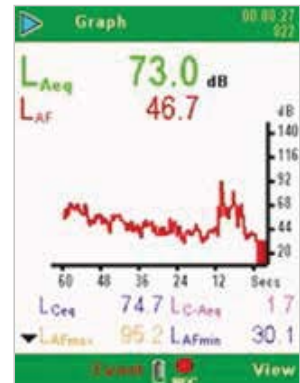
Record voice notes to easily identify measurements

Simple icon based user interface

Octave measurements for the selection of PPE

See the time history of noise levels

Step 2

Select Data to View

Pick from a selection of workplace or environmental views, or define your own.

- Make displayed data as simple or comprehensive as needed
- Regardless of data viewed, stores ALL parameters
- Pick from a selection of workplace or environmental views, or make your own

Measurement View

View
1) ISO (EU)
2) OSHA (USA)
3) ACGIH (USA)
4) DOD (USA)
5) Environmental 1
6) Environmental 2
7) User 1   Active
8) User 2

Exit   Edit

Step 3

Calibration

Calibration is important to validate your measurement data. Once the 120 calibrator is placed on the microphone, the 63X Series recognises when a calibration tone is present and enters the calibration mode, it will then automatically adjust to the calibration level when selected by the user.

- Automatic calibration
- Stores calibration level, time and date to validate results
- Can store pre and post measurement calibration values

For Environmental Noise

- Simultaneous broadband and frequency measurement
- Data markers
- Back erase function
- Real-time frequency analysis
- Single measurement range
- Triggered 'event' capture

Data can be marked to signify any significant events, the data from which can be removed afterwards in insight software.

Up to 60 hours of audio files can be stored, commonly used for noise source identification. Stored audio can be played back on the instrument using headphones or downloaded to Casella insight software.

For unattended monitoring, event mode (CEL-633) allows trigger levels (dB) to be set, so additional data (e.g. Leq, Lmax) is stored together with the audio file for later play back or analysis, as well as a profiles down to 10ms intervals.

An environmental noise monitoring kit is available which protects the instrument and microphone from the weather and allows unattended monitoring for up 10 days.
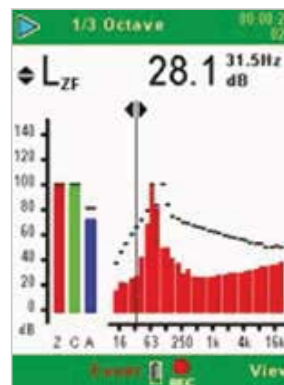
A dedicated environmental kit is available
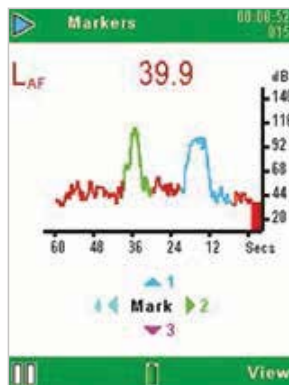
Significant noise events can be marked

Listen to audio files from the 63X Series with headphones

Realtime frequency analysis and single measurement range

Set 2 levels of time history storage

Step 4

Record Voice Notes

Once the 'Play' key has been pressed you can record an audio (voice) note to define the measurement. Once this is done your measurement will begin.
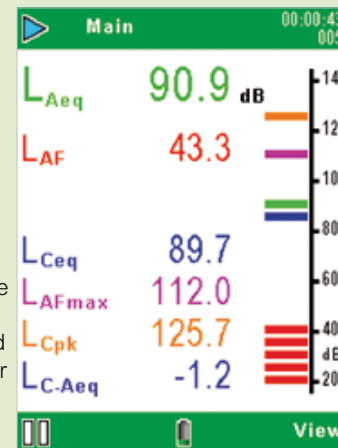
- Record voice notes to identify your measurement
- Record audio during measurements
- Automatic 'events' trigger audio recording

Record Notes

PRESS and HOLD REC
to make VOICE NOTES
or
EXIT to START RUN

0   Seconds   120

Exit   REC

Step 5

Start a Measurement

When the measurement is started the status bars at the top and bottom of the screen go green, when the measurement is stopped the bars go red. During a measurement, simply press the 'View' key to scroll through the data. All parameters are stored together so there is no need for multiple measurements. Once the measurement is stopped, data can be reviewed in the instrument memory.

Main   00:00:43 005

L_{Aeq} 90.9 dB
L_{AF} 43.3
L_{Ceq} 89.7
L_{AFmax} 112.0
L_{Cpk} 125.7
L_{C-Aeq} -1.2

View

- Single measurement range, no adjustment required
- Colour coded, easy to read measurements
- The most important parameters displayed on screen
- Simultaneous measurement of broadband and frequency data

63X Series Model Selection

Model Functionality

There are 2 models available, please see the model selection table below for the one you require (e.g. CEL-632). Then select your frequency analysis requirements by adding 'A' for broadband, 'B' adds octave band and 'C' adds 1/3 octave e.g. CEL-632C. Then add your class, '1' for class 1 and '2' for class 2 e.g. CEL-632C1 for a class 1 instrument. Each instrument comes complete with a standard kit case, windshield and calibration certificate.

Model	632	633
Cumulative Results	Y	Y
Period Results	Y	Y
Profile Results	Y	Y
Statistical Values (Ln%)		Y
Audio Voice Notes	Y	Y
Marker Events	Y	Y
Level Events		Y
External Events	Y	Y

Accessories

CEL-6840	Standard kit case*
196030C	Executive kit case**
CEL-251	Microphone Class 1*
CEL-252	Microphone Class 2*
CEL-120/1	Acoustic Calibrator Class 1**
CEL-120/2	Acoustic Calibrator Class 2**
PC18	Universal power supply
CMC51	USB download cable*
CEL-6718	Lightweight tripod
CMC73	Portable printer kit (fits in 196030 kit case)
196137B	Printer cable
MIC1	High range microphone (to 165dB)
MPA1	High range microphone adaptor (for use with MIC1)

* included with instrument
** included with instrument kit (with CEL-63XY/K1 where 'X' and 'Y' represent the model numbers)

Instrument Kits

For an instrument kit add /K1 to the instrument part number e.g. CEL-632C1/K1. Instrument kits include the relevant instrument, acoustic calibrator (CEL-120), USB download cable, batteries, calibration certificates and an executive kit case.

Casella Insight Data Management Software

- Analysis of noise level time history
- Replay voice notes and event audio
- Intuitive user interface
- Remove anomalous data from results
- Analysis of time history
- Generate comprehensive reports
- Store data by, person, place, location
- Manage multiple instruments and calibration

CASELLA≣
INSIGHT

Switch between managing data or instruments with simple tabs

Simple tree structure to manage data e.g. person, place, etc

Time history may be viewed, analysed and annotated as required

Sort data by person, process, etc

Multiple parameters can be displayed and sorted simultaneously

Data can be dragged and dropped to the tree structure as required

Data is automatically graphed and can be copied to other applications

Casella Insight data management software is a powerful yet simple tool to download, analyse and report from either workplace or environmental noise data.

Once the 63X series is connected by the USB cable, Insight software automatically recognises that the instrument is connected and downloads the data. Data is automatically saved to a database so data cannot accidentally be deleted.

Noise exposure or environmental exceedance levels can be colour coded by a simple 'traffic light' system, it is easy to see which measurements have exceeded specific levels. Stored data can be analysed and graphs zoomed in to look at specific times. Graphs can be coloured as required, and notes inserted to illustrate important events.

Graphs can be further analysed by adding 'zones' which subsequently recalculates levels inside and outside these zones, this can be used to see what effect on overall levels is coming from specific environmental noise sources, or in the case of workplace noise, to investigate 'what if' scenarios, taking noise exposure levels out of a workers day.

A simple 'tree view' can be created with which to store and manage data by person, place or process. Once data is downloaded, files can be dragged and dropped to the relevant tree location and all data is stored within a central database. Templates are provided to view data for local legislation (e.g.OSHA) or can be customised, displayed and reported simply or comprehensively as required. Exposure data from multiple hazards such as noise and dust can be viewed and reported simultaneously. Reports can be stored in multiple formats (e.g .pdf, .jpg, or .csv) allowing them to be shared and viewed easily, as well as exported to other applications. To create a report, simply 'right click' on the appropriate part of the tree view and the report wizard allows creation of a report for people, processes etc. from that part of the tree. The integral report wizard allows reported parameters to be selected as required and report settings are retained for the next time it is used. Written notes can be added to data (on top of any audio notes recorded when taking a measurement), which appear on reports as required.

Technical Specification

Standards

IEC61672: 2002 Class 1 and 2, ANSI S1.4: Type 1 and 2 (1983)

Filters: IEC61260: Class 0, ANSI S1.43: (1996)

Note: IEC61672 replaces 2 obsolete standards, IEC60651 and IEC60804

General

Measurement range:	20-140dB RMS (143.3dB peak)
Total Noise floor:	19dB(A) Class 1, 25dB(A) Class 2
Time weightings:	Fast, Slow and Impulse simultaneously
Frequency weightings:	A, C and Z (un-weighted) simultaneously
Frequency bands:	11 Octave bands 16Hz-16kHz (B&C models)
	33 Octave bands 12.5Hz-20kHz (C models)
Amplitude weighting (Q):	3, 4 and 5 simultaneously
Back erase:	Last 10s in cumulative mode (all models)
Timers:	Duration 1s-24h,
On/Off timers:	6 sets with selectable times and a repeat function

Physical

Tripod mount:	1/4" Whitworth socket
Batteries:	3x AA Alkaline, 10-15 hours dependent on back light
External power:	9-14V DC at 150mA
Weight:	332g including batteries
Size:	230x72x31mm inc preamp and microphone

Measured Parameters

Broadband: LXY, LXYmax, LXYmin, LXeq, LXpeak, Lavg, LC-LA, LXIeq, LTM3, LTM5, LAE. Workplace dose values are calculated within insight software.

Octaves & 1/3 octaves: LXY, LXeq, LXYmax, 5x Ln% (on CEL-633). Where X is the frequency weighting A, C or Z and Y represents time weighting Fast (F), Slow (S) or Impulse (I). All weightings simultaneously measured where appropriate.

CEL-633 model additionally stores 5x Ln values in broadband and octave modes.

For time history data, all parameters are logged for period times plus 6 selectable profile parameters (plus 5x Ln values on CEL-633).

Memory

Memory: 2GB (>1 year logging when set to 1 second interval, 999 runs). All parameters stored and accessible via Casella insight. Total measurement runs: 999.

Events: 999 events/run. 10 hours of audio recording in high quality mode, 60 hours in low quality mode. For long term unattended monitoring the CEL-630 takes a new run daily for up to a total of 400 days.

Audio Recording

Low Quality:	8,000 samples/s @ 8bit (64kb/s), up to 4kHz
High Quality:	24,000 samples/s @ 8 bit (192kb/s), up to 12kHz

Environmental

Operating 0 to 90%RH in the absence of condensation

Conditions: Temperature of -10 to +50°C (Class 1) and 0 to 40°C
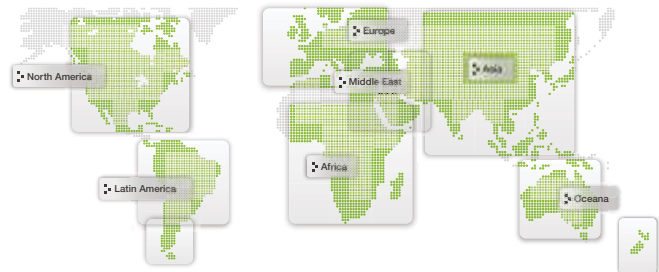
(Class 2) Atmospheric pressure of 65 to 108kPa.

Languages

User interface can be changed via the menu: English, French, German, Spanish, Italian, Portuguese, Chinese.

Global Company

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