

CEL-633 Data Logging & Environmental Noise Analyzer

Introduction

Noise measurements from complex sources require a complete knowledge of the variable noise climate over an extended period of time. The **CEL-632** model is designed to satisfy this need by providing overall, periodic and profile time history recording to suit almost any industrial or environmental measurement requirement.

A super wide 120 dB dynamic range means that the user does not need to worry about selecting scales as the meter will always be on the right range. The provision of all the popular frequency and time weightings simultaneously allow many different noise measurements to be taken by new and experienced users alike. The full-color, high-precision, graphic LCD enhances the user experience with this new meter. Audio recording is possible.

Applications

For measurements of outdoor noise levels over extended periods of time the **CEL-633** will be the most appropriate model. It provides all the required parameters for comprehensive EPA, HUD or similar studies. It provides the popular max, min, and time average levels in addition to the statistical or LN% parameters. The **CEL-633** is designed to provide all the key

results for these difficult environmental noise climates. Regular periodic recording at fixed intervals is provided in the **CEL-633** model plus the addition of extra time history profile recording. The changing noise intervals are stored with the overall time average answer and displayed annotated with the time they occurred. Significant events can be triggered by noise level

Key benefits

- ❑ Wide dynamic range from 20 to 140 dB on single span
- ❑ A, C and Z simultaneous frequency weightings
- ❑ Slow, Fast and Impulse rms. time responses
- ❑ Large 240 x 320 pixel color ¼ VGA graphic display
- ❑ Easy to use menu structure
- ❑ Optional data logging capability (model specific)
- ❑ Regular timed or event triggered recording possible (model specific)
- ❑ Available in ANSI/IEC class 1 and class 2 accuracy
- ❑ Available with real time octave & 1/3 octave band filters plus 3 broad band results A, C & Z
- ❑ Storage of all results simultaneously in a huge non-volatile memory
- ❑ Period and time history profile recording
- ❑ Noise event recording



CEL-633.C Real time third octave band logging analyzer

exceedances providing even more detail about what has happened. The audio signature is captured and can be used to identify the cause. Additionally, octave and third octave band filters in the B and C versions can provide frequency analysis of tonal noise levels that are important for the correct prescription of hearing protectors or noise reduction applications.

Ordering information

General purpose analyzers

- CEL-633.A2**
- CEL-633.A2/K1**
- CEL-633.B2**
- CEL-633.B2/K1**
- CEL-633.C2**
- CEL-633.C2/K1**

Precision sound meters

Logging & Env. Type 2 sound level meter with wrist strap and windscreen
Type 2 Sound level meter kit with calibrator, USB cable, software and case
Log & Env. Type 2 octave band analyzer & wrist strap and windscreen
Type 2 octave band analyzer kit with calibrator, USB cable, s'ware and case
Log & Env. Type 2 1/3 oct. band analyzer & wrist strap and windscreen
Type 2 1/3 oct. band analyzer kit with calibrator, USB cable, s'ware & case
Type 1 versions of all the above meters are available by specifying the part number as **CEL-633.B1/K1** for example

Technical Specification - General	
Accuracy:	ANSI S1.4 & S1.43, IEC 61672-1 2002-5
Frequency filters comply with:	ANSI S1.11 and IEC 61260
Microphone type:	½" Free field Electret microphone & preamplifier Type 1 or Type 2 on a removable CEL-495 preamplifier
Reference Conditions:	68°F (20°C) air temperature, 65% Relative Humidity, 1013 mbar (101.325 kPa) atmospheric pressure.
Operating Temperature Range:	14 to 122°F (-10 to 50°C) (Class 1) 32 to 104°F (0 to 40°C) (Class 2)
Effect of Humidity:	Less than ±0.5dB over the range 30 to 90% RH (non-condensing), rel. to value at ref. conditions
Operating pressure range:	650 to 1080 mbar (65 to 108 kPa)
Batteries:	3 x AA Alkaline or NiMH rechargeable types
Battery Life: (hours)	Up to 12 hours without backlight
Dimensions w x h x d: (in/mm)	2.8 x 10.5 x 1.2 in (71.5x 267.0x 31.0mm) including preamplifier and microphone
Weight including batteries: (oz/gm)	10.1 oz (< 291g)
Tripod socket for fixed measurements	Yes via standard camera thread (1/4" size)
Operator controls:	8 buttons for power On/Off + 2 x context sensitive menu selection + 4 navigation + confirm selection

Technical Specification – Performance	
Total measurement range (dB)	20 to 140
Dynamic range on single measurement span (dB)	120
Input preamplifier/microphone	CEL-495 removable preamp. plus ½" mic. capsule
Noise floor (A weighted dB)	< 20 (Class 1), < 25 (Class 2)
Frequency weightings	Simultaneous A, C & Z (unweighted)
Time weightings	Simultaneous Slow, Fast and Impulse
Amplitude weightings (Exchange rate)	Simultaneous Q=3, Q=4 and Q=5 dB
Displayed parameters available as per user selected list or using pre-configured setups (depending on model)	Lp, Lmx, Lmn, Lpk Leq, Lleq, LDOD, Lavg, LAE, Ltm3, Ltm5 LDN, LDEN, CNEL, 5 x LN%
Narrow band real time measurements	(B version) 11 octave bands 16 Hz to 16 kHz (C version) 33 third octave bands 12.5 Hz to 20 kHz with cursor readout plus A & C & Z broad band levels
Display of octave and third octave band levels	Graphical spectrum including broad band values & With listing of individual band levels in tabular format
Measurements in octave (& 1/3) band mode include	Lmx and Leq with selected freq and time weightings
Display type	240 x 320 full color dot matrix LCD digital including real-time analog bar graph scale
Data storage for time history logging – periods and profiles (depending on model) 1 Gb internal memory	999 run maximum memory, long term recording is separated into "24 hr days" that can be recombined in Insight software for later analysis and review
Timed interval for regular data storage in periods and profiles	1 sec to 1 hour in 13 fixed intervals for Periods 1 sec to 30 mins for Profiles
Event capture above user selectable level with audio recording in wav format for identification	User selectable trigger level 40 – 140 db in 1 dB steps Wav file stored at hi, med or lo resolution
Displayed time span for time history graph on LCD	Last 60 seconds
Signal detected when calibrator placed over microphone at 1 kHz frequency	Calibration level set to 114.0 or 94.0 dB With +/-1 dB span and 0.1 dB resolution by user
External power option (12 Vdc) or via USB 5V line	Yes via universal CEL-PC18 unit
Analog outputs	AC (and optional DC) via 2.5 mm jack socket
AC output characteristics - (Provided for DAT tape / PC wav file recording or headphone applications)	Approx 0.85V RMS FSD output on selected sound level measurement range. Minimum load impedance 22kΩ.
DC output characteristics -	0 to 1.3V DC for FSD on selected range.
Digital output of stored result sets	Via USB 2.0 mini B connector to Casella Insight program