

CEL-632 Data Logging Real Time 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.

Applications

The **CEL-632** will be most suitable for measurements of noise levels as they vary with time. It provides all the required parameters for comprehensive OSHA, ACGIH workplace or environmental or similar noise studies. Time history information based on the Leq and max, min levels are best suited to describe the changing noise levels that can be present in the workplace or outdoors. The **CEL-632** is

designed to assist in the correct interpretation of these difficult noise climates. Regular periodic recording at fixed intervals from 1 sec to 1 hour is provided using a large 1 GB onboard memory chip. The changing noise intervals are stored together with the overall time average answer such as LDN, LDEN. Results are based on 24 hour overall intervals and can be linked in the Insight software into longer runs

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
- ❑ Direct printing to portable printer for hard copy on site



CEL-632.C Real time third octave band logging analyzer

if needed. This enables the **CEL-632** to correctly record changing noise levels and enables the user to visualize how the noise levels varied during the measurement. Full data logging and the measurement of the LN% values is available in the **CEL-633** top of the line model. Additionally, octave and third octave band filters in the B and C versions can provide frequency analysis of tonal noises.

Ordering information

General purpose analyzers

- CEL-632.A2**
- CEL-632.A2/K1**
- CEL-632.B2**
- CEL-632.B2/K1**
- CEL-632.C2**
- CEL-632.C2/K1**

Precision sound meters

Data Logging Type 2 sound level meter with wrist strap and windscreen
Type 2 Sound level meter kit with calibrator, USB cable, software and case
Logging. Type 2 octave band analyzer & wrist strap and windscreen
Type 2 octave band analyzer kit with calibrator, USB cable, s'ware and case
Logging. 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-632.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
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 -632 & 633 models	1 sec to 1 hour in 13 fixed intervals for Periods 1 sec to 30 mins for Profiles
Event capture above user selectable -632 & 633 models	User selectable trigger level 40 – 140 db in 1 dB steps
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 - (Provided at time of order as option for connection to chart recorder or pc data logging system)	0 to 1.3V DC for FSD on selected range. Output corresponds to selected frequency and time weighting. 2kΩ Output impedance
Digital output of stored result sets	Via USB 2.0 mini B connector to Casella Insight program