



CEL-480.B2 Logging octave band sound level meter (Type 2)

The CEL-400 series consists of 12 versions based on a common instrument platform that provide a comprehensive family of sound level meters. The multi function meters satisfy many of the classical requirements for sound level meters to measure broadband noise levels in terms of the 'A' weighted results. They can also be used to analyse tonal noises into whole octave or third octave frequency bands. Designed to fulfil the international requirements as a type 1 or type 2 instrument (depending on the microphone assembly in use) the CEL-400 series meters are easy to use and versatile in their operation.

Two main instrument types are available, called the CEL-440 and the CEL-480 with the latter being a logging version of the simpler CEL-440 meter.

The CEL-440 has a large dot matrix graphical display giving the user a logical, clear display of up to 5 of the main noise parameters at the same time. A concise menu system enables the operator to navigate through the various instrument options. Text menus are available in 5 major languages to localise the instruments for English, French, German, Italian and Spanish speaking areas. A factory default setup and up to 4 user definable set-ups are available for every operating mode in each instrument to configure the meter to carry out repetitive tasks quickly and easily. Icons are used in the display to guide the new and experienced user through the operations and results are displayed clearly and concisely with appropriate abbreviations to satisfy the latest draft of the international sound level meter standards.

The instantaneous level is displayed together with up to four secondary parameters chosen by the user. The broadband 'A', 'C' and 'Z' (unweighted) weightings are available together with the Slow, Fast and Impulse time weightings for the rms. Levels. A peak detector with both the 'C' and 'Z' frequency weighting is available as a separate channel. Calculated values include the maximum, minimum and time average levels Leq, Lavg (when Q=5 is selected) and single event level. 5 user definable statistical levels with 0.1% resolution can be measured with default settings of L10%, L50%, L90%, L95% and L99%.

Measurements are stored as separate runs and every instrument can save up to 999 sets of results in a large non-volatile 512kb memory. A real time calendar clock tags all runs with the start date and time to the nearest second so that any individual run can be quickly identified at the time of data recall. A pause control allows unwanted sound to be excluded from the middle of a run and runs can be reset or stopped when completed.

The CEL-480 Logging versions of the sound level meters feature the added advantage of regular interval recording based on short to medium length periods from 1 minute to 1 hour. Up to 9999 periods can be stored per run. For even greater detail the CEL-480 is fitted with a system that allows very short time history profiles to be recorded in addition to the period data sets. Two noise profiles from 1 second to 1 minute can be saved up to a maximum of over 220,000 values. A standard computer package is provided with every CEL-480 instrument that allows run data to be downloaded to a Microsoft Windows computer operating system. This is an optional extra for the CEL-440 models.

Outputs from the CEL-400 series include an unweighted analogue signal suitable for audio tape recording and a digital output suitable for connection to computers and, via an interface adaptor, to a standard office parallel printer. An electrical input connector is provided to allow signals from DAT tape recorders to be analysed after the event when recordings have been made using other instruments.

Also for long term monitoring GSM communication can be used to remove the requirement of site visits to retrieve data.

CEL-480

Specification

IEC 60651 - 1979 Type 1 & 2 IEC 60804 - 2000 Type 1 & 2 ANSI S1.4 - 1983 Type S(1) & S(2)	Type 1 & 2 Sound level meter
Total measurement range (dB)	10 to 140 in 7 ranges
Frequency analysis range	31 Hz to 8 kHz Octave

	25 Hz to 12.5 kHz 1/3 Octave
Measurement ranges	10 to 80 20 to 90 30 to 100 40 to 110 50 to 120 60 to 130 70 to 140
Frequency weightings rms	A, C & Z (Lin)
Frequency weightings peak	C & Z (Lin)
Time weightings	Slow, Fast & Impulsive
Amplitude weightings Q	3, 3+4, 3+5 & 3+6
Measured Parameters, Broadband mode x = frequency weighting y = time weighting z = amplitude weighting	Lxy, Lxymx, Lxymn, Lxpk, Lxeq, Lxyeq, LxE, Ltm3, Ltm5, Lxyavz, LEP, d, 5 x LN%, TWA, Duration
Measured Parameters, Frequency analysis mode x = frequency weighting y = time weighting	Lxy, Lxyeq, Lxymx, Duration
Runs stored	999
Periods per run	9999
Parameters per period	Up to 14
Period times	1, 5, 10, 15, 20, 30 sec, 1, 5, 10, 15, 30, 60 min
Profiles available	At least 220,000
Profile times	1, 5, 10, 20, 30, 60 sec
Parameters per profile	Up to 2
Histogram for run	145 cells at 0.5dB class width
Default set-ups	1 for each operating mode
User setups	4 user setups for each mode
Fixed elapsed timers	1, 5, 10, 15, 20, 30, 60 min, 2, 4, 8, 12, 24 hours
Delay Timers	7 pairs of start and stop times up to 31 days in advance
Calibration information	Stores pre and post run calibration date/time
Pause during run	Yes
Output - parallel	Preformatted report direct to printer via adaptor
Output - serial	Download to CEL software package
Power supply	4 x AA batteries
External power supply	12 V dc at 150 mA
Battery life (hours)	25hrs in Broadband
GSM Communication	Optional
Size mm (in)	340 x 100 x 40 (13.5 x 4 x 1.5)
Weight gm (oz)	500 (17)
Tripod socket	1/4 inch Whitworth