

## CEL-240 Digital Sound Level Meter

### Introduction

The CEL-240 is a completely new design of sound level meter featuring the power of Digital Signal Processing (DSP) technology and the simplicity and low cost of a traditional analog instrument. It can be used for a wide range of noise measurement tasks and is suitable for many everyday tasks. Complying with all the ANSI and IEC accuracy specifications in the Type 2 category the CEL-240 will appeal to new and experienced users alike.

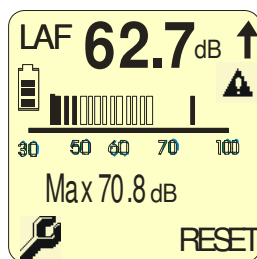


### Key benefits

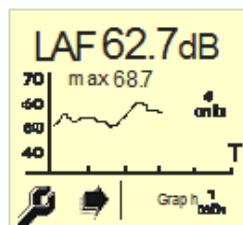
- Simple 2 button operation
- Wide range from 30 to 130dB
- Large backlit graphic LCD screen 128 x 128 pixels
- Slow, Fast and Impulse time weightings
- Current and highest noise level shown in display
- Large numeric and analog bar graph display
- Output to computer for simple data logging with pc
- Auto calibration at selected decibel level
- Scrolling sound level display

### Applications

The CEL-240 will be an ideal instrument for industrial hygiene measurements of noise in the workplace. The meter has a low and high measurement range that covers a full 70dB on each range. It can be used for machinery noise surveys as well as all general purpose workplace noise level measurements. With the A and C frequency scales and the Slow time response the meter can be used to assess the right hearing protectors using the NRR method. A non-decaying maximum hold feature captures and displays the highest sound pressure level of any noise.



main display



scrolling time history display

The CEL-240 features an automatic back light for the display that comes on for 30 seconds whenever a key is pressed. A standard 1/4" threaded socket is provided on the back of the meter to allow it to be mounted on a tripod for fixed applications. The meter is powered from 3 x AA alkaline batteries and will run for up to 20 hours or continuously when powered from mains to USB style adaptor. Digital and analog outputs are available via a USB mini A or 2.5mm jack sockets to connect the CEL-240 to other external computers or recorders.

### Ordering information

CEL-240  
CEL-110/2  
CEL-4627  
CEL-XXXX  
CEL-XXXX  
Other items available -  
CEL-240/K1  
CEL-240/6

Digital Sound Level Meter Type 2 with standard accessories  
Acoustic calibrator Class 2 including 1/2" to 1/4" microphone coupler  
Foam windscreen to protect against wind induced interference  
Attaché kit case for meter and standard accessories  
Universal Mains power supply from 110/240 ac to 5V via USB mini A

Standard sound level meter kit including meter, calibrator, windscreen and kit case plus various accessories, batteries, etc  
Pack of 6 x CEL-240 sound level meters for larger bulk purchases

**PROVISIONAL INFORMATION – SUBJECT TO FINAL CONFIRMATION AND CHANGES**

<b>Technical Specification - General</b>	
Accuracy:	ANSI S1.4 Type 2, IEC 61672-1 2002-5
Microphone type:	¼" Electret mic. in standard ½" fixed housing
Reference Conditions:	68°F (20°C) air temperature, 65% Relative Humidity, 1013 mbar (101.325 kPa) atmospheric pressure.
Operating Temperature Range:	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 AAA Alkaline or rechargeable types
Battery Life: (hours)	20 hours without backlight
Dimensions w x h x d: (in/mm)	2.8 x 9.0 x 1.2 in (71.5x 230.0x 31.0mm) including preamplifier and microphone
Weight including batteries: (oz/gm)	8.8 oz (< 250g)
Controls:	3 buttons for power and context sensitive menus selection with initial regional configuration screen

<b>Technical Specification - Performance</b>	
Total measurement range (dB)	30 to 130
Dynamic span on single range (dB)	70
Number of measurement ranges - 2 ranges (Low and High dB)	(30 – 100 & 60 – 130)
Noise floor (A weighted dB)	< 33
Frequency weightings	A and C
Time weightings	Slow, Fast and Impulse
Displayed parameters	Instantaneous level - Lp, Maximum level - Lmx
Reset of maximum level from key press by user	Yes – with non-decaying max hold
Display type	128 x 128 dot matrix LCD digital including real-time analog bar graph scale
Display resolution – numeric (dB)	0.1
Display resolution – graphical (dB)	1
Update rate for display (seconds)	0.5
Displayed time span for time history chart (minutes)	Last 1 or 5
Backlight for display	30 sec after key press
Calibration method	Automatically recognized by meter
Signal detected when calibrator placed over microphone	Display level set to 114.0 dB
External power option (5 Vdc)	Yes via CEL- XXXX PSU via USB socket
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 0.5V 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 3.3V DC for FSD on selected range. Output corresponds to selected frequency and time weighting. 2kΩ Output impedance
Digital output	USB 2.0 format of instantaneous sound level via 'mini A' USB socket (also powers meter)
Digital output characteristics – (value output once per second)	Instantaneous SPL output (software required) as per selected frequency and time weightings.