

## CEL-610 Wide range Sound level meter

### Introduction

Many basic noise measurements require a simple “quick-look” to see what is currently happening. The **CEL-610.A** meter is designed to satisfy this need and to enhance it by providing the capture and display of the highest maximum level and the lowest minimum level together with a real time bar graph display.

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



CEL-610.A Wide range  
sound level meter

### Key benefits

- ❑ Wide dynamic range from 20 to 140 dB on a single setting
- ❑ A, C and Z simultaneous frequency weightings
- ❑ Slow, Fast and Impulse time responses at the same time
- ❑ Large 240 x 320 pixel color ¼ VGA graphic display
- ❑ Real time bar graph display in addition to numeric display
- ❑ Easy to use menu structure
- ❑ Pre-configured setups
- ❑ Available in ANSI/IEC class 1 and class 2 accuracy depending on application by simple microphone exchange
- ❑ Tripod socket for longer term measurements using the meter as a front end to a computer
- ❑ Digital output to external computer for simple data logging with instrument appearing as a memory card

### Applications

Noise measurements with traditional sound level meters have always been a tricky task due to the need to make sure that the right range is selected. This is completely eliminated in the all new **CEL-610** meter because of an incredibly wide dynamic range capability. The single range covers all noise levels from 20 to 140 dB in one setting. This eliminates the worry of overloads or under range signals during the measurement.

Careful design of the circuitry in the **CEL-610** using the latest digital signal processing (DSP) technology ensures that everything can be measured simultaneously. The measured parameters include the current sound level, the maximum and the minimum sound levels. A non decaying hold feature enables the user to gain a better understanding of the noise level climate than was previously possible at this price point.

The large color graphic display, unique in such a low cost meter, is used to excellent benefit to show the key measurement parameters easily and clearly on a quarter VGA size screen. A simple context sensitive menu is provided to control the functions of the **CEL-610**. The menu itself can be customized by the user to have the screen messages available in English, French, Spanish or other major languages as required.

### Ordering information

General purpose sound meter

CEL-610.A2

CEL-610.A2/K1

Precision sound meter

CEL-610.A1

CEL-610.A1/K1

Wide range type 2 sound level meter with wrist strap and windscreen  
Sound level meter kit with calibrator, USB cable and carrying case

Wide range type 1 sound level meter with wrist strap and windscreen  
Sound level meter kit with calibrator, USB cable and carrying case

| <b>Technical Specification - General</b> |  |
|--|--|
| Accuracy:                                | ANSI S1.4 Type 2 or Type 1, IEC 61672-1 2002-5   |
| Microphone type:                         | Removable ½" Free field Electret microphone on fixed preamplifier  |
| Reference Conditions:                    | 68°F (20 °C) air temperature,<br>65% Relative Humidity,<br>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 AA Alkaline or rechargeable types  |
| Battery Life: (hours)                    | Up to 20 hours without backlight   |
| Dimensions w x h x d: (in/mm)            | 2.8 x 9.0 x 1.2 in (71.5x 229.0x 31.0mm) including preamplifier and microphone                           |
| Weight including batteries: (oz/gm)      | 10.4 oz (< 291g)   |
| Tripod socket for fixed measurements     | Yes via standard camera thread (1/4" size)   |
| Operator controls:                       | buttons for power On/Off and 2 x context sensitive menu selection + 4 navigation and confirm buttons     |

| <b>Technical Specification - Performance</b>   |   |
|--|---|
| Total measurement range (dB)   | 20 to 140   |
| Dynamic range on single measurement span (dB)  | 120   |
| Noise floor (A weighted dB)  | < 33  |
| Frequency weightings   | A, C & Z (unweighted)   |
| Time weightings  | Slow, Fast and Impulse  |
| Displayed parameters always available on all user available screens  | Instantaneous level - Lp,<br>Maximum level – Lmx<br>Minimum level - Lmn   |
| Reset of max/min level from key press by user  | Yes – with non-decaying max/min hold  |
| Display type   | 240 x 320 full color 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   |
| Calibration method   | Automatically recognized by meter   |
| Signal detected when calibrator placed over microphone at 1 kHz frequency  | Calibration level set to 114.0 or 94.0 dB   |
| External power option (5 Vdc)  | 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   | USB 2.0 format of instantaneous sound level via 'mini A' USB (meter acts as memory card)                                  |
| Digital output characteristics – (value output once per second)  | Instantaneous SPL output (software required) as per selected frequency and time weightings.                               |