

CEL-4 Measurement microphone for smartphone/tablet



Actual size (A4)

The measurement microphone **CEL-4** has been realized for adequately equipping our small portable devices that become more powerful day by day. When we do not have enough time to verify thoroughly our set-ups, or when it is acceptable performing a little bit less accurate tests, we can still get satisfying results from our powerful smartphones and tablets. There may be cases where we need or simply want to check the sound pressure for technical reasons.

The new microphone capsule that equips the CEL-4 has been selected for the linearity and the extension of the frequency response, low noise, low THD and high immunity to electromagnetic interference (EMI).



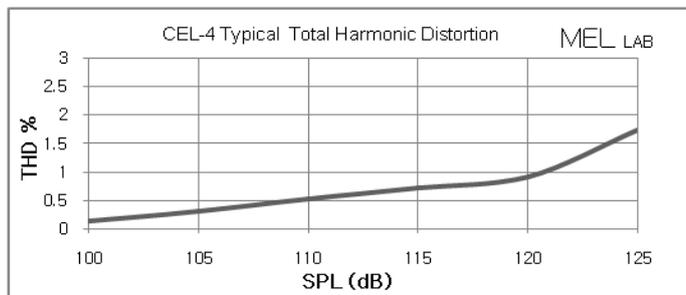
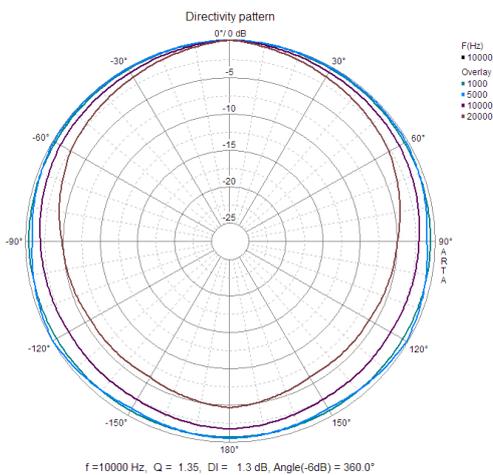
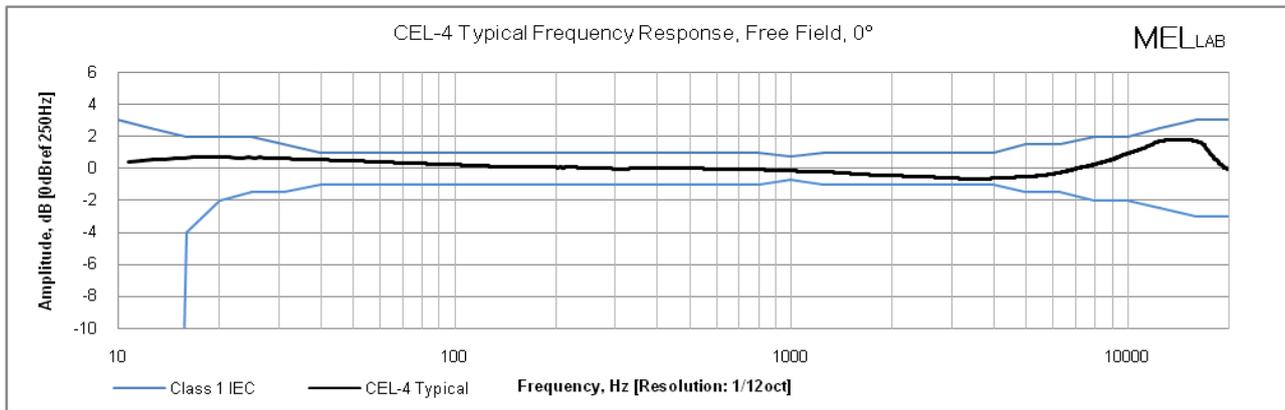
- > Free field **frequency response** between 10 and 20000 Hz falls within the tolerance limits of ± 2 dB, and each microphone has its own frequency response **compensation file** and **calibration chart**.
 - > **Total harmonic distortion** at the sound pressure level of 125 dB is less than 3%.
 - > The **sensitivity** (± 3 dB) is equal to -44 dBV re 1 V/Pa (equivalent at 6.3 mV/Pa). A lower sensitivity version for Android* is available.
 - > The **signal/noise** ratio is greater than 70 dB.
 - > The **body** has been realized with the highest quality stainless steel (AISI 316 marine grade), and high precision machinery. It is treated with the passivation process to make it absolutely corrosion-resistant
 - > Serial number is **laser-engraved** so it can't be cancelled.
 - > Thanks to its **compact size** and practical watertight case, you can always keep it in your pocket.
 - > **The 4 poles 3.5 mm jack connector** lets you connect the microphone directly to smartphones or tablets as per CTIA Standard.
 - > The **tip** of the microphone has a diameter of 7 mm and can be inserted in standard 1/4" calibrators. It is firmly screwed to the microphone body so it can be replaced, if necessary, in case of an accident as well as a future possible upgrades.
- The microphone is protected by a **cylindrical aluminum watertight case** ("O-Ring" closure). The whole device looks like a closed tube: 10 cm length, 16 mm diameter, for a total weight less 25 g. Maximum protection, minimum size and weight.
- *Registered marks

TECHNICAL SPECIFICATIONS

Omni-directional pre-polarized condenser microphone

Polarity: a positive pressure variation on the diaphragm produces a negative voltage at output jack

Free field frequency response, 0°, +/- 1dB	10–10000 Hz
Free field frequency response, 0°, +/- 2dB	10–22000 Hz
Sensitivity (@ 250Hz; +/-2 dB)	7 mV/Pa [-43 dB re 1 V/Pa]
Max SPL (THD<3 %)	125 dB SPL
Signal to Noise Ratio	70 dB
Temperature coeff.	+0.04 dB/°C
Operating temperature range	-10 °C to +50 °C (14 to 122 °F)
Powering	3 Vdc
Weight	14 g
Length	76 mm



This specs refer to a typical CEL-4 microphone connected to a MELLab unbalanced microphone amplifier: 10 kΩ Zin / 2.8 Vdc via 2.2 kΩ resistor.
 Frequency response measured in anechoic chamber (f>250 Hz) and pressure chamber (f<250 Hz).
 Reference microphone Bruel&Kjaer Type 4958 s/n 2864560.
 Reference pistonphone Bruel&Kjaer Type 4220 s/n 613857.
 Soundcard: RME Fireface 800. Software: ARTA. Calibration accuracy > +/- 0.5dB.
 Standard environmental conditions (23 °C, 50% UR, 1013.25 mb/hPa).