

## CCp-1 Constant Current (IEPE) Free Field Measurement Microphone

CCp-1 is a BNC terminated measurement microphone intended to be powered by industry standard IEPE interfaces. It shows an extremely linear frequency response (Class 1), low-distortion and noise. It's small, compact and robust. It is hand made and tested with great care. It has several high-level features, such as removable tip with spring contact, colored ring, laser-engraved serial number and waterproof case. Its performance, cost and features are unique compared with those commercially available.



Actual size (A4)

- > The free field **frequency response** between 10 and 20000 Hz falls within the tolerance limits of  $\pm 2$  dB, and each microphone is equipped with its own **response correction file** and **calibration chart**.
- > **Total harmonic distortion** at the sound pressure level of 130 dB is around 1% and less than 3% at 140 dB.
- > Thanks to its **very low intrinsic noise**, less than 23 dBA SPL equivalent and the **sensitivity** of  $-36$  dBV, this is a versatile device that can be used both in conditions of extremely high sound pressure levels and in the presence of particularly quiet sound fields.
- > The **body** is 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 solid structure this device is easily handled and it can even be "carelessly" used.
- > The **BNC connector** ensures immediate connection to IEPE equipped devices. It can house the distinctive **colored identification ring**. (When using multiple microphones, it is very useful to use a color code to distinguish microphones and curves on the analyzer, but also measuring points on a map, cables, compensation file names, etc.).
- > The **tip** of the microphone has a diameter of 7 mm allowing the use of standard 1/4" calibrators. It's a separate part that houses the microphone capsule and an electronics. It is screwed to the microphone body entrusting the electrical connection to a high quality spring contact.
- > The internal **head amp** is realized with selected components in order to achieve very low distortion and noise. Each circuit is tested for the full compliance to specifications.
- > The **power supply** complies with IEPE system (ICP, CCP, DeltaTron etc.) – 24–30V / 2...20mA

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 than 43 g. Maximum protection, minimum size and weight.

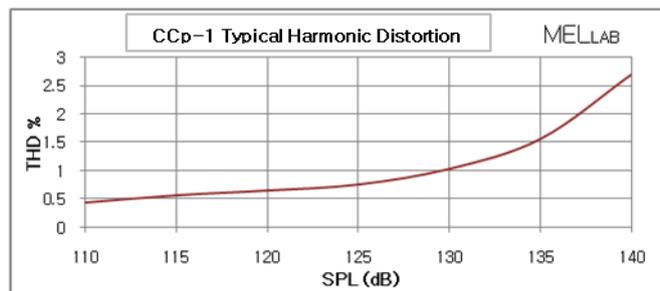
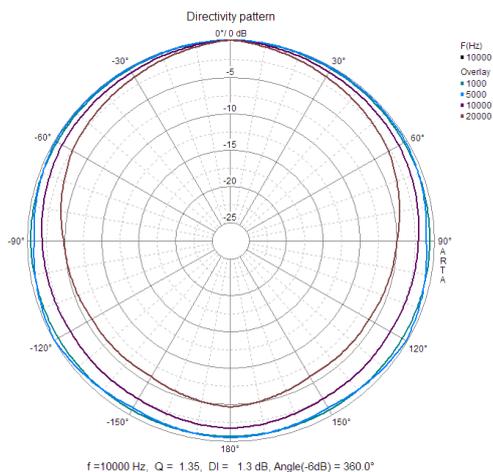
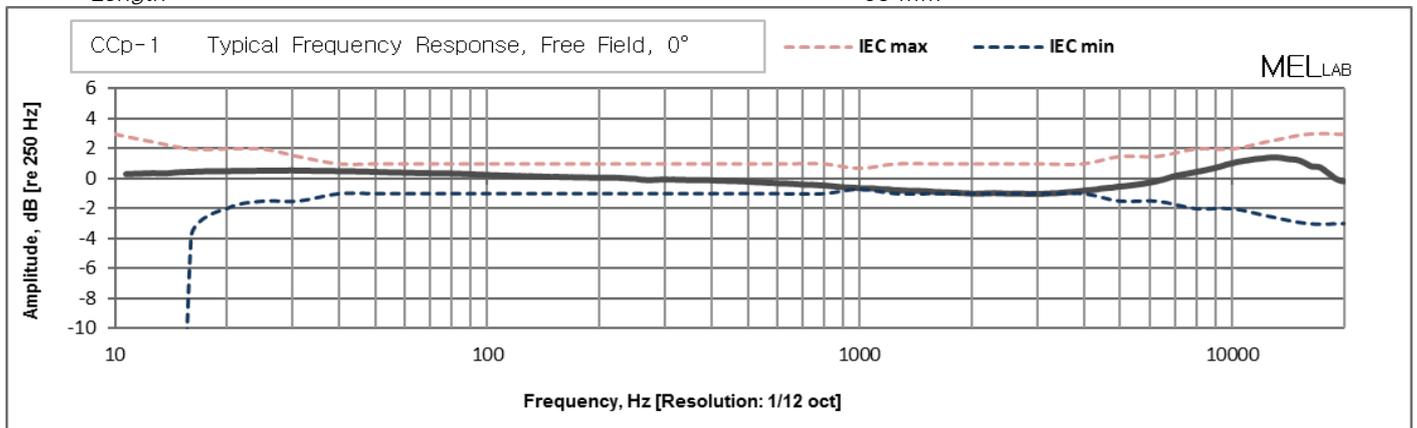
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**TECHNICAL SPECIFICATIONS**

*Omni-directional pre-polarized condenser microphone*

*Polarity: a positive pressure variation on the diaphragm produces a positive voltage at BNC central pin.*

Free field frequency response, 0°, +/- 1dB	10–10000 Hz
Free field frequency response, 0°, +/- 2dB	10–22000 Hz
Sensitivity (@ 250Hz: +/-2 dB)	15 mV/Pa [-36.5 dB re 1 V/Pa]
Max SPL (THD<3 %)	140 dB SPL
Noise	<23 dBA SPL equiv. (typical 22 dBA)
Temperature coeff.	+0.035 dB/°C
Operating temperature range	-10 °C to +50 °C (14 to 122 °F)
Balanced output impedance	40 ohm
Powering	4 mA / 12 Vdc (V <sub>Compl.</sub> = 24–30V)
Weight	17 g
Length	65 mm



This specs refer to a typical CCp-1 microphone connected to a MELLab measurement amplifier:  
 100 kΩ input impedance / IEPE power (24 Vdc / 2...20 mA).  
 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 microphone Bruel&Kjaer Type 4189 s/n 3036711.  
 Reference pistonphone Bruel&Kjaer Type 4220 s/n 613857.  
 Soundcard: RME Fireface 800. Software: ARTA. Calibration accuracy > +/- 0.5 dB.  
 Standard environmental conditions (23 °C, 50% UR, 1013.25 mb/hPa).