

CEL-302 ¼" measurement microphone capsule

Introduction

The **CEL-302** ¼" measuring microphone capsule is designed for specialized acoustical measurements such as high noise levels exceeding the usual 140 dB limit of traditional ½" microphones.

The microphone capsule is used as an accessory transducer for the CEL-553, 573 & 593 - series of noise meters and real time analyzers.

The extended frequency response and high upper limit make the **CEL-302** suitable for the investigation of impulsive signals.



CEL-302 microphone capsule

Key benefits

- ❑ industry standard 0.25 inch size
- ❑ free field response
- ❑ 3.5 mV/Pa sensitivity
- ❑ -49 dB re 1 V/Pa
- ❑ frequency response from 5Hz-60kHz
- ❑ measurement of high sound levels up to 165 dB rms. with CEL-500 real time analyzers
- ❑ requires 200 Vdc power supply
- ❑ each microphone capsule is supplied with an individual frequency response calibration chart and pre-amplifier adaptor
- ❑ nickel diaphragm
- ❑ side vented design

Applications

This ¼" microphone capsule is a high quality transducer that can be used on many popular CEL sound level meters and real time analyzers including the CEL-500 series instruments.

It features a free field frequency response to satisfy the requirements of IEC and other international sound level meter standards.

The microphone requires a 200 Vdc polarization supply and can therefore be used with any sound level meter or measurement system that provides such a bias voltage.

The capsule is supplied with an A67 ¼" to ½" adaptor to allow it to be fitted on the end of standard ½ inch instrument preamplifiers.

The lower microphone sensitivity of nominally 3.5 mV/Pa enables the sound level meter to measure sound levels up to a maximum of 165 dB rms (168 dB peak).

This makes it suitable for high level monitoring of transient phenomenon such as gunfire or other very impulsive sources where the peak level may reach up to 170 dB.

Ordering information

CEL-302

Recommended calibrators
CEL-120/1

CEL-284 or CEL-110/1

¼" free field measurement microphone capsule supplied in wooden box with A67 ¼" to ½" preamplifier adaptor and individual calibration certificate

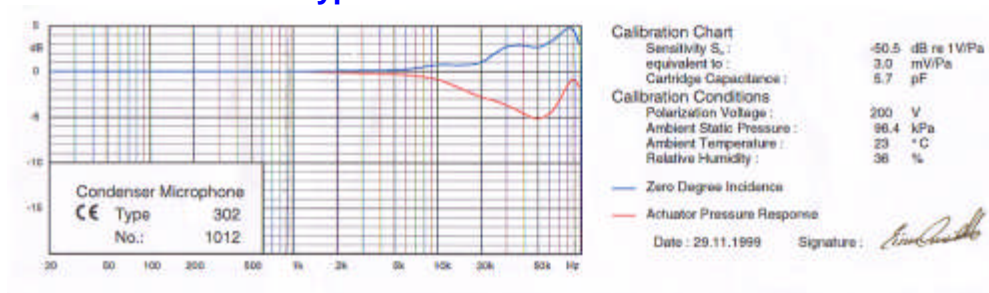
Dual level acoustic calibrator Class 1 (114 and 94 dB at 1 kHz)

Single level acoustic calibrator Class 1 (114 dB at 1 kHz)

Technical Specifications

Transducer type	Capacitive pressure transducer
Frequency range (free-field response)	5 Hz ... 60 kHz (± 2 dB)
Sensitivity at 1 kHz (nominal)	3.5 mV/Pa*
Max. rms. (peak) SPL for THD ≤ 3 % at 1 kHz	165 (168) dB
Inherent 'A' weighted noise level with CEL-500 sound level meter	40 dB
Polarization voltage used	200 V dc required
Polarized cartridge capacitance (at 1 kHz)	6.8 pF*
Operating temperature range	14 °F to 230 °F (-10 ... +110 °C)
Main ambient temperature coefficient	$\leq 0,01$ dB/K
Main ambient pressure coefficient	-1×10^{-5} dB/Pa
Diameter (with protection grid)	0.28 in (7.0 \pm 0,02 mm)
Diameter (without protection grid)	0.25 in (6.35 \pm 0,02 mm)
Height	0.38 in (9.7 mm)
Weight	0.07 oz (2.0 g)
Preamplifier thread	11,7 mm 60 UNS
Protection grid thread	5,7 mm 60 UNS
Preamplifier adaptor supplied as standard accessory	A67 ¼" to ½" for standard preamps

Typical calibration certificate



every CEL-302 microphone is supplied with an individual calibration certificate



CEL-302 individual microphone capsule

CEL-302 microphone with A67 adaptor fitted to CEL-593 real time analyzer and preamplifier