Turnkey® C1000 MEMS Microphone

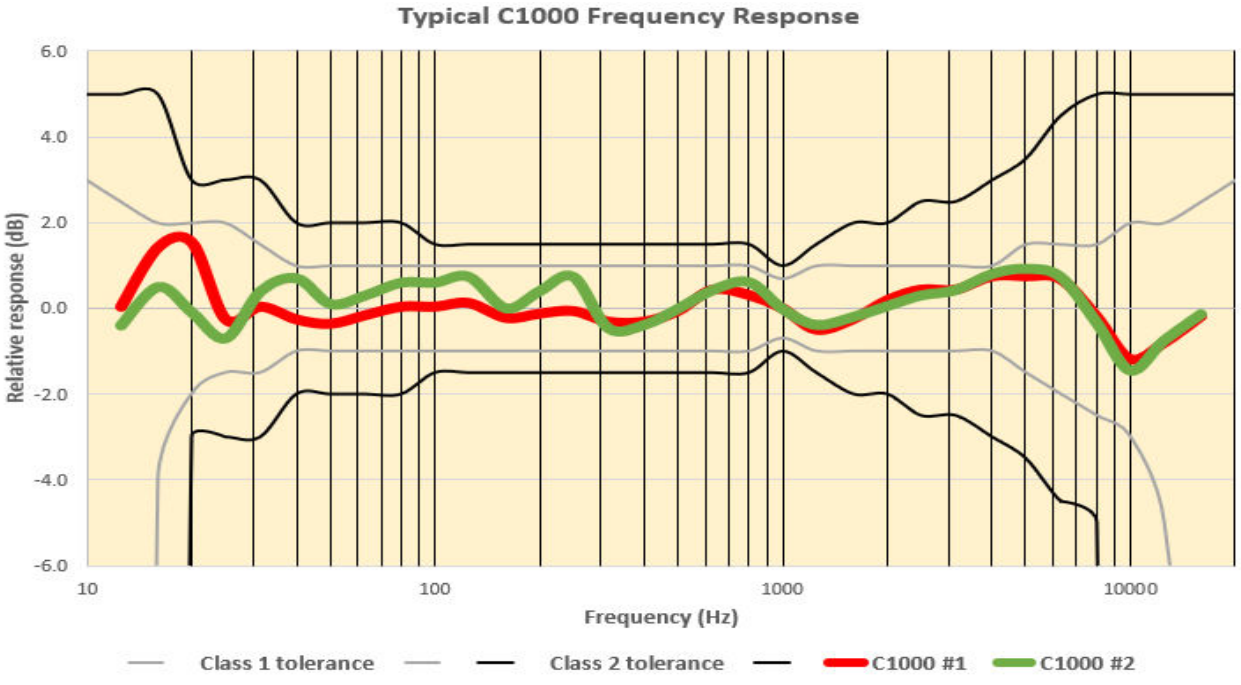


The Turnkey® C1000 MEMS microphone is suitable for use with both the iVIBE® and iDB® instruments and provides a lower cost alternative to the Class 1 free-field microphone normally supplied with those instruments.

The C1000 microphone employs a rugged MEMS (MicroElectroMechanicalSystem) sensing element which has a linear response to 130 dB SPL, extended low frequency response down to 6 Hz (-3 dB), dynamic range of 99 dB, and less than 31 dBA of self-noise.

The C1000 uses an acoustic sensor fabricated on semiconductor production lines from silicon wafers using highly automated processes.

This assures excellent reproducibility between microphones, for example the sensitivity tolerance between C1000's is better than ±2 dB and the temperature coefficient is less than 0.005 dB/°C. The chart below compares the frequency response of two typical C1000 microphones.



www.iVIBE.uk/iDB
www.turnkey-instruments.com

Turnkey C1000 Microphone Specification

Parameter	Typical value	Notes
Nominal diameter	½ inch	
Pressure sensitivity	40.0 mV/Pa	-28 dB ref. 1 Volt/Pa
Sensitivity tolerance	±2 dB	
Frequency Response	< 6 Hz to > 20 kHz 10 Hz to 18 kHz ±2 dB 25 Hz to 10 kHz ±1.5 dB	See sample chart
Total Harmonic Distortion	0.2 %	Typical, 105 dB SPL
Maximum sound pressure level	160 dB	
Mechanical shock	10,000 g	
Vibration	Per MIL-STD-883	Method 2007 Test condition B
Acoustic overload	130 dB SPL	10% THD
Self noise	31 dBA	
Dynamic range	99 dB	
Temperature coefficient	< +0.005 dB/ºC up to 80 ºC	Measured at 1000 Hz
Power supply and voltage	DC only, 15 to 24 Volt	
Constant current	0.5 mA to 4 mA	
Output impendence	Approx. 50 Ohms	
Connector	Shrouded BNC	Fitted with waterproof boot
Operating temperature	-40 ºC to +80 ºC	
Storage temperature	-55 ºC to + 150 ºC	
Operating humidity	Up to 95% RH	Non condensing
Weight	18 gram	
Overall length	60 mm	

product development is continuous and specifications may change without notice

© 2017, Turnkey, MJL, Issue1

Turnkey®, iVIBE® and iDB® are registered trademarks

www.iVIBE.uk/iDB
www.turnkey-instruments.com