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MC22E MICROPHONE (RANDOM INCIDENCE)

MC22E is a condenser type microphone, pre-polarized (0V) with standard ½" diameter. The frequency response, optimized for diffused field, is flat from 3.15 Hz to 12.5 kHz.

Applications

- Sound pressure level measurements according to ANSI standards
- Building acoustics measurements
- Class 1 precision sound pressure level measurements
- Optimized diffuse field response
- Inside vehicle measurements

Random incidence microphones are used to measure the sound field when acoustic waves come from many directions for example in a reverberating room or in presence of several reflecting surfaces.

ANSI standards specify the use of random incidence microphones for sound pressure level measurements.

TAB 1

Model	**MC22E**
Technical Specifications	
Nominal diameter	½”
Precision class	1
Acoustic Response	Random incidence
Frequency range	3.15Hz ÷ 12.5KHz (±2dB)
Polarization (V)	0
Sensitivity (dB re. 1V/Pa)	-26
Nominal sensitivity (mV/Pa)	50
Temperature range	-40 ÷ +120 °C
Temperature coefficient	0.009 dB/°C
Pressure coefficient	-1.1×10^{-5} dB/Pa
Capacity (pF)	11
Max level (dB)	144
Intrinsic noise (A weighted)	15
Membrane material	Nickel
Dimensions (mm)	13.2 (diam) x 16.2

MICROPHONE DRIFTS

Microphone drift coefficient	**Value**	**Maximum Drift [dB]**
Ct – temperature	0.009dB/°C	± 0.3
Cp – static pressure	-0.011dB/kPa	± 0.2
Cu – relative humidity	-	± 0.3

Drift coefficients of acoustic sensitivity, due to temperature and static pressure, generating the sensitivity of microphone-preamplifier-instrument chain to drift (within the limits specified for class 1 according to IEC

61672: 2002). Validity of coefficients: temperature range –10° C to + 50° C; static pressure range 65 kPa to 108 kPa; relative humidity range 25% to 90%

Typical (Random) frequency response of MC22E microphone

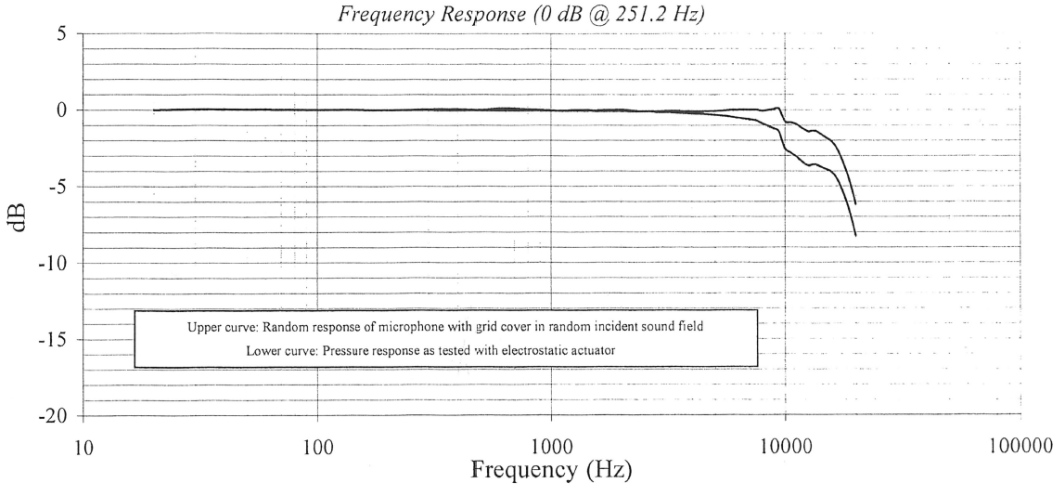
Calibration Data

Open Circuit Sensitivity @ 251.2 Hz: 55.80 mV/Pa
-25.07 dB re 1V/Pa

Polarization Voltage, External: 0 V
Capacitance: 11.8 pF

Temperature: 71 °F (22°C) Ambient Pressure: 987 mbar Relative Humidity: 28 %

Frequency Response (0 dB @ 251.2 Hz)



Freq (Hz)	Lower (dB)	Upper (dB)	Freq (Hz)	Lower (dB)	Upper (dB)	Freq (Hz)	Lower (dB)	Upper (dB)	Freq (Hz)	Lower (dB)	Upper (dB)
20.0	0.00	0.00	1584.9	-0.06	-0.02	6683.4	-0.57	0.02	-	-	-
25.1	0.04	0.04	1678.8	-0.06	-0.01	7079.5	-0.62	0.02	-	-	-
31.6	0.05	0.05	1778.3	-0.06	0.00	7498.9	-0.68	0.03	-	-	-
39.8	0.05	0.05	1883.7	-0.07	0.01	7943.3	-0.87	-0.04	-	-	-
50.1	0.04	0.04	1995.3	-0.07	0.02	8414.0	-1.02	-0.01	-	-	-
63.1	0.03	0.03	2113.5	-0.08	0.00	8912.5	-1.20	0.04	-	-	-
79.4	0.03	0.03	2238.7	-0.08	-0.03	9440.6	-1.43	0.08	-	-	-
100.0	0.02	0.02	2371.4	-0.09	-0.07	10000.0	-2.51	-0.74	-	-	-
125.9	0.02	0.02	2511.9	-0.09	-0.09	10592.5	-2.81	-0.83	-	-	-
158.5	0.01	0.01	2660.7	-0.09	-0.08	11220.2	-3.09	-0.96	-	-	-
199.5	0.00	0.00	2818.4	-0.14	-0.11	11885.0	-3.44	-1.23	-	-	-
251.2	0.00	0.00	2985.4	-0.14	-0.07	12589.3	-3.64	-1.41	-	-	-
316.2	-0.01	0.05	3162.3	-0.15	-0.05	13335.2	-3.56	-1.35	-	-	-
398.1	-0.01	0.05	3349.7	-0.17	-0.04	14125.4	-3.70	-1.55	-	-	-
501.2	-0.02	0.00	3548.1	-0.19	-0.06	14962.4	-3.87	-1.80	-	-	-
631.0	-0.02	0.12	3758.4	-0.20	-0.07	15848.9	-4.07	-2.07	-	-	-
794.3	-0.03	0.04	3981.1	-0.22	-0.09	16788.0	-4.59	-2.62	-	-	-
1000.0	-0.04	-0.02	4217.0	-0.24	-0.10	17782.8	-5.49	-3.52	-	-	-
1059.3	-0.04	-0.04	4466.8	-0.26	-0.09	18836.5	-6.71	-4.71	-	-	-
1122.0	-0.04	-0.03	4731.5	-0.29	-0.08	19952.6	-8.22	-6.17	-	-	-
1188.5	-0.04	-0.02	5011.9	-0.32	-0.06	-	-	-	-	-	-
1258.9	-0.04	0.00	5308.8	-0.37	-0.05	-	-	-	-	-	-
1333.5	-0.05	0.00	5623.4	-0.41	-0.02	-	-	-	-	-	-
1412.5	-0.05	0.00	5956.6	-0.47	0.00	-	-	-	-	-	-
1496.2	-0.06	-0.02	6309.6	-0.52	0.01	-	-	-	-	-	-