EM SERIES

STANDARD

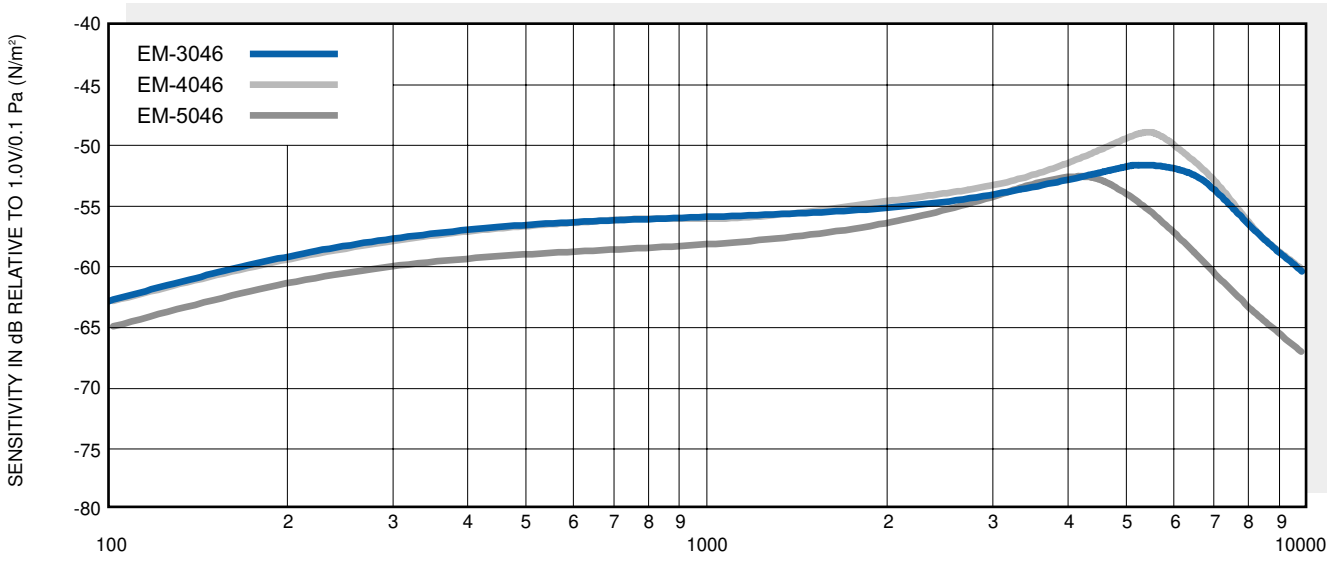
Actual Size

Features

- Electret condenser microphone
- Rugged construction to withstand severe environmental conditions
- Most popular Knowles microphone
- High resistance to mechanical shock
- Low vibration sensitivity
- Various responses available
- Ideal for ITC and CIC applications
- Available with RFI suppression

DUAL

Standard Response



Open circuit sensitivity with 1.3VDC supply

Knowles®

data sheet

Power Requirements

Supply Voltage (V_s)
range: 0.9 to 10.0V_{DC}
typical: 1.3V_{DC}

Quiescent Current Drain (@ V_s = 1.3V_{DC})
21µA typical, 30µA for 5000 series
50µA maximum, 80µA for 5000 series

Performance

Response/Sensitivity
see curves, pages 1, 4-6

Sensitivity Range @ primary test frequency
Ski Slope and Step responses: ±4dB
all other responses: ±3dB

Low Supply Voltage Sensitivity Loss
(V_s reduced from 1.3 to 0.9V_{DC})
typical: 0.4dB
maximum: 3.0dB

Humidity Coefficient of Sensitivity
typical: 0.03dB per %RH
(in the absence of condensation)

Output Impedance @ 1kHz
range: 2.8 to 6.8kΩ
nominal: 4.4kΩ
5000 Series
range: 2.0 to 4.0kΩ
nominal: 2.8kΩ

Acoustic Polarity
Increased pressure at sound inlet causes a positive going voltage to appear at the output terminal, relative to the negative terminal

Power Supply Feedthrough Attenuation
typical: 11dB, output-referred

Load Voltage (V_L)
range: 0.2 to 0.9V_{DC}
typical: 0.4V_{DC}

Output Noise Level
(A-weighted)
typical: -103dBV*
maximum: -97.0dBV (Ski Slope models)

Input-Referred Noise Level*
(A-weighted, 1kHz ref.)
typical: 28dB SPL
maximum: 31dB SPL

Input-Referred Vibration Sensitivity*
(1g acceleration, 1kHz ref.)
maximum: 66dB SPL

Temperature Range
operating: -17°C to 63°C
storage: -40°C to 63°C

ESD Tolerance
MIL-STD-750 Class 1 rating
EOS/ESD-S5.1-1993 Class 2 rating

*For standard, damped and undamped models only

Mechanical

Weight
0.08 grams

Dimensions
See outline drawings, page 7

Case Material
Type 305 stainless steel

Solder Content
Sn62Pb36Ag02

Optional Soldering Fixture

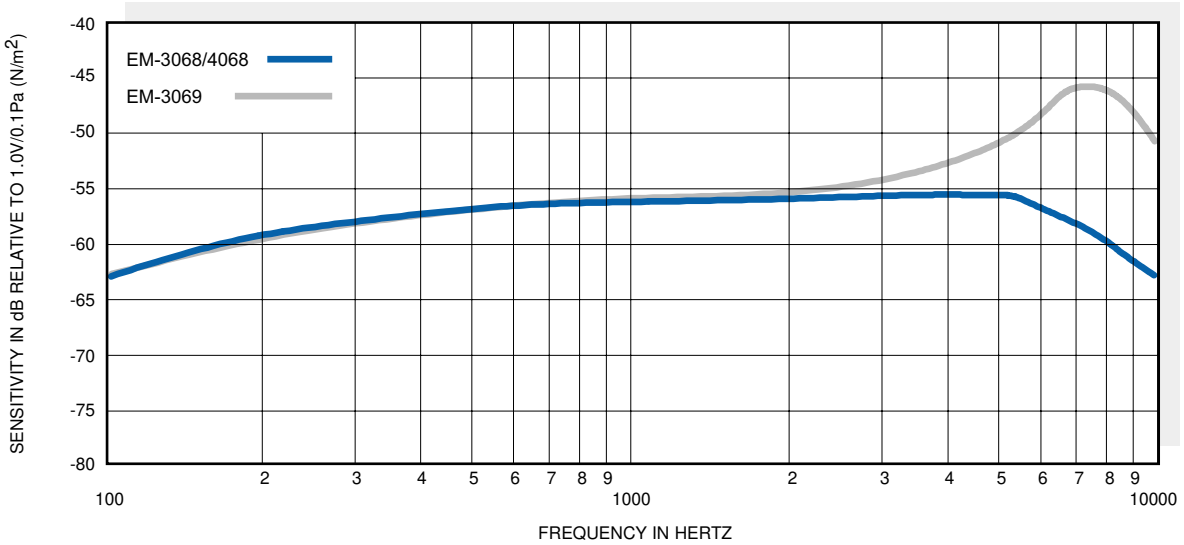
Base: ET-3838
Nest Plate: ET-804

Model	Port	Response
EM-3046	12B	Standard
EM-3047	12B	6dB/octave Ski Slope
EM-3056	12KP	Standard
EM-3058	12B	Step
EM-3059	12B	12dB/octave Ski Slope
EM-3068	12B	Damped Peak
EM-3069	12Kn	Undamped Peak
EM-3070	12Kn	6dB/octave Ski Slope
EM-3084	12Kn	12dB/octave Ski Slope
EM-4046	12SL	Standard
EM-4047	12SL	6dB/octave Ski Slope
EM-4058	12SL	Step
EM-4059	12SL	12dB/octave Ski Slope
EM-4068	12SL	Damped Peak
EM-5046	12SL	Standard (Screenless, Shifted Peak)
EM-5047	12SL	6dB/octave Ski Slope (Shifted Peak)
EM-5059	12SL	12dB/octave Ski Slope (Shifted Peak)
EM-7012	12B	6dB/octave Ski Slope, Damped
EM-7013	12B	12dB/octave Ski Slope, Damped
EM-7079	12n	Undamped
EM-7080	12n	6dB/octave Ski Slope
EM-7131	12SL	6dB/octave Ski Slope, Damped
EM-7133	12SL	12dB/octave Ski Slope, Damped
EM-7451	12SL	6dB/octave Ski Slope, Damped
EM-7452	12SL	12dB/octave Ski Slope, Damped
EM-9867	12KP	6dB/octave Ski Slope
EM-9896	12KP	12dB/octave Ski Slope
EM-9932	12KP	Damped Peak

Microphones are also available with RFI suppression filters.

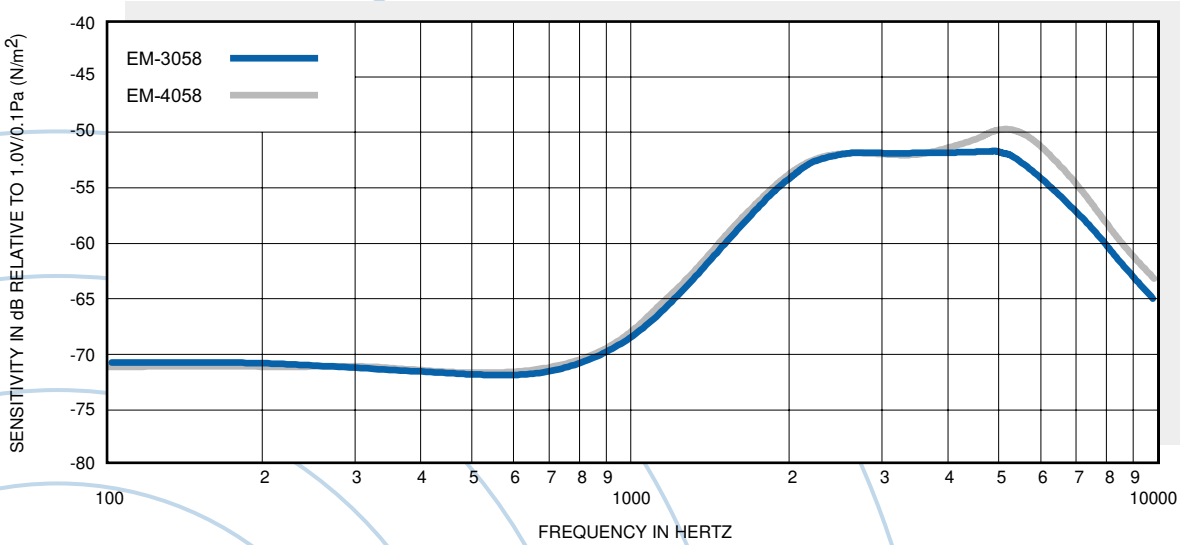
Other model variations available upon request. Contact Knowles Electronics for details.

Damped and Undamped Peak Response



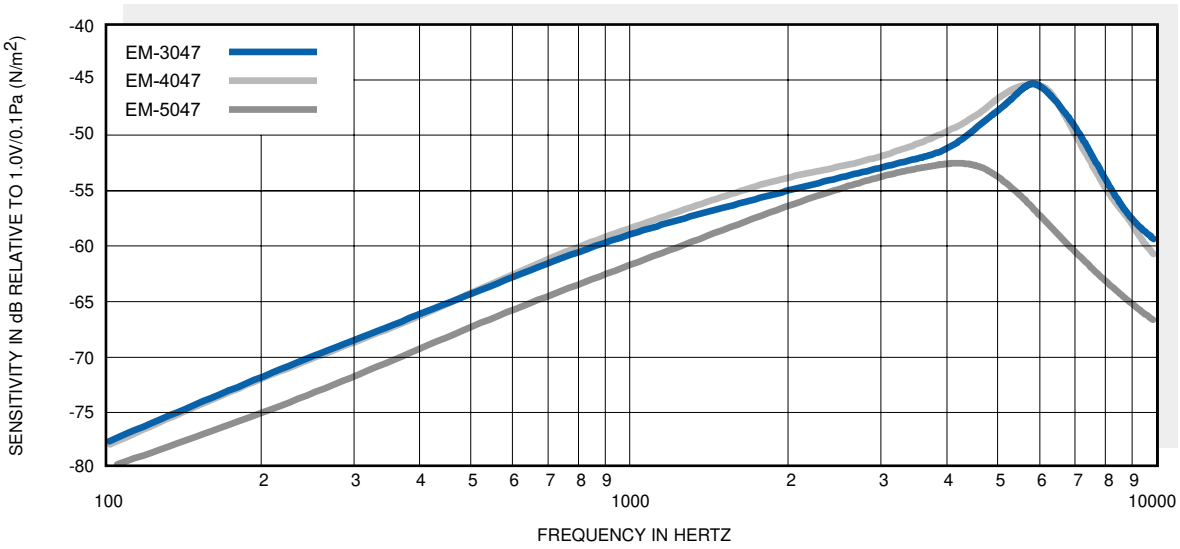
Open circuit sensitivity with 1.3VDC supply

Step Response



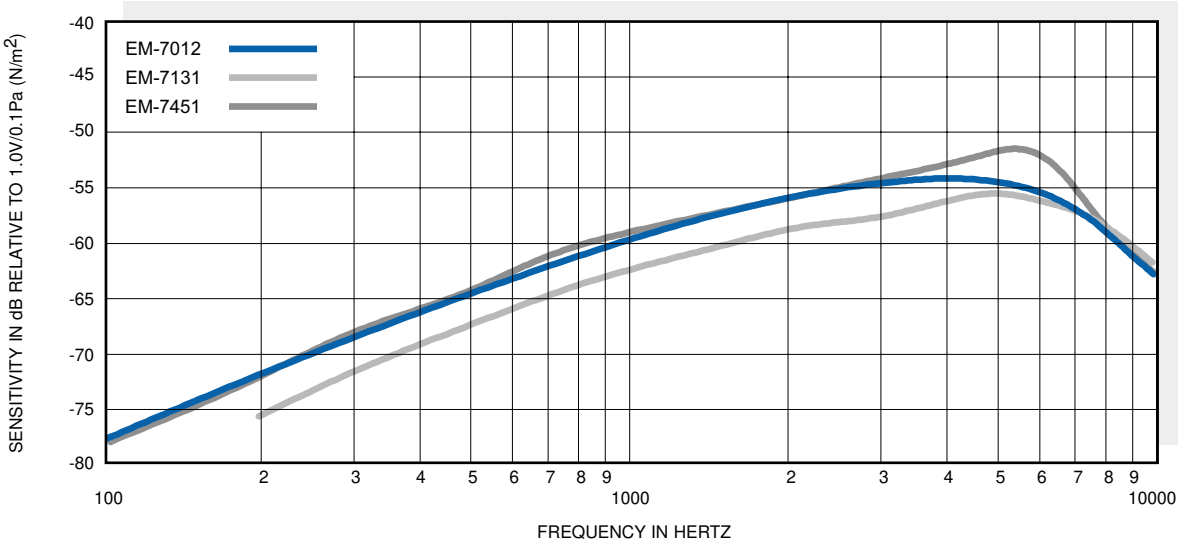
Open circuit sensitivity with 1.3VDC supply

6dB/Octave Ski Slope Response



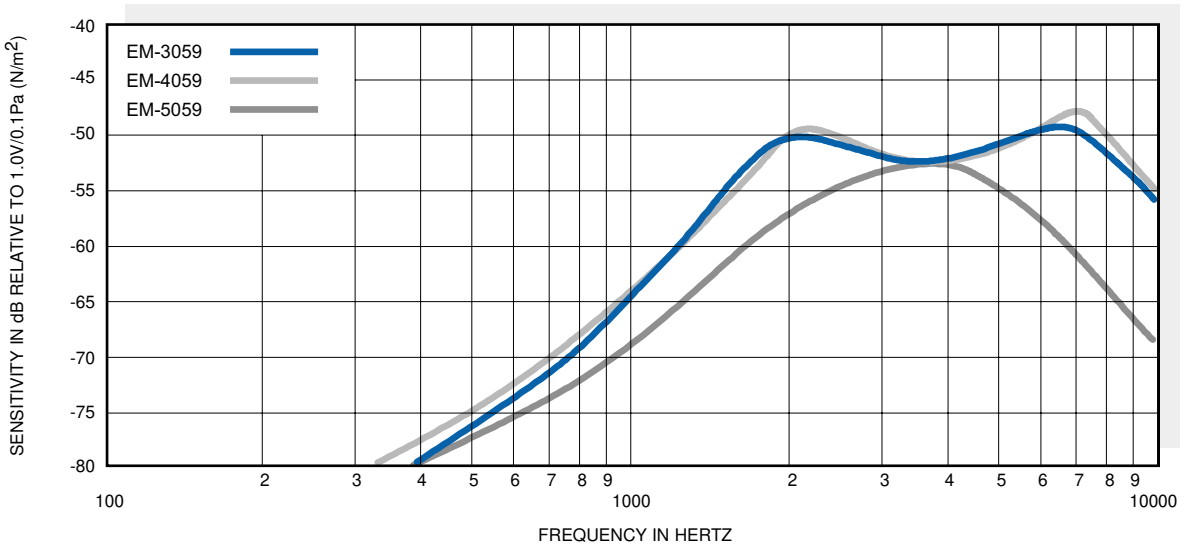
Open circuit sensitivity with 1.3VDC supply

6dB/Octave Ski Slope, Damped Response



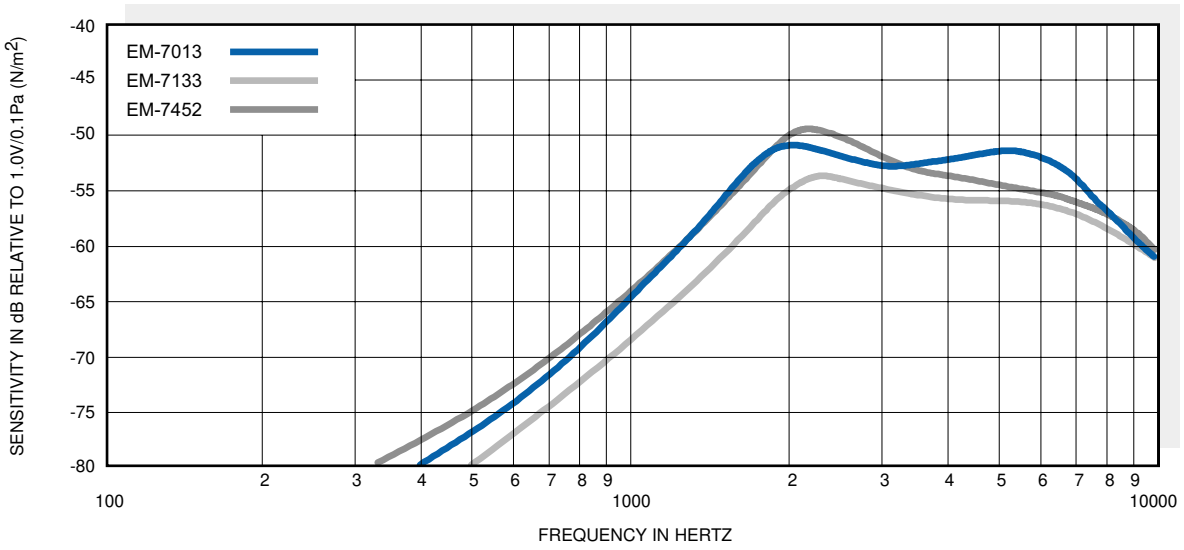
Open circuit sensitivity with 1.3VDC supply

12dB/Octave Ski Slope Response



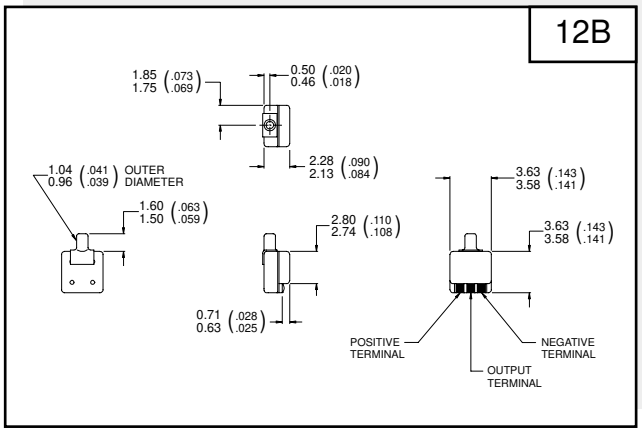
Open circuit sensitivity with 1.3VDC supply

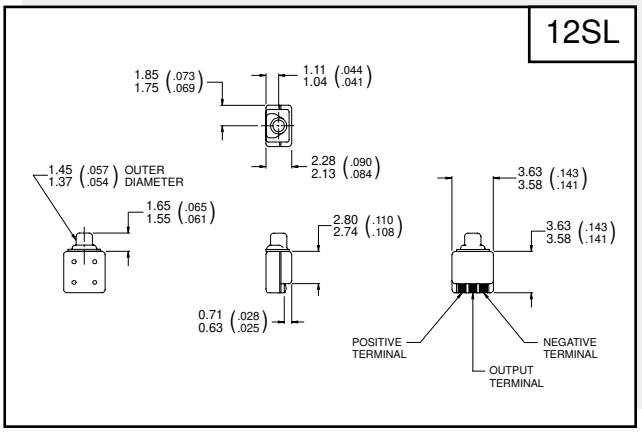
12dB/Octave Ski Slope, Damped Response

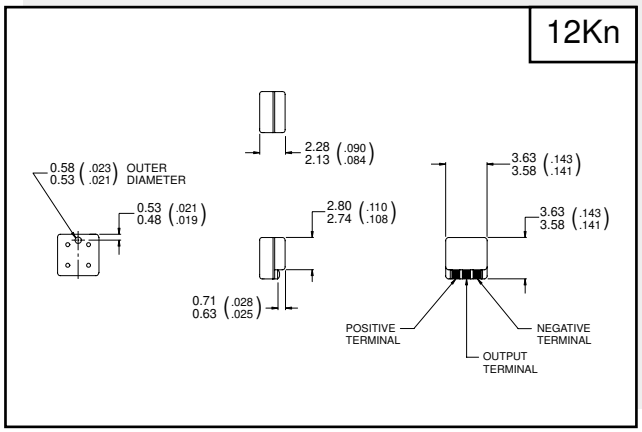


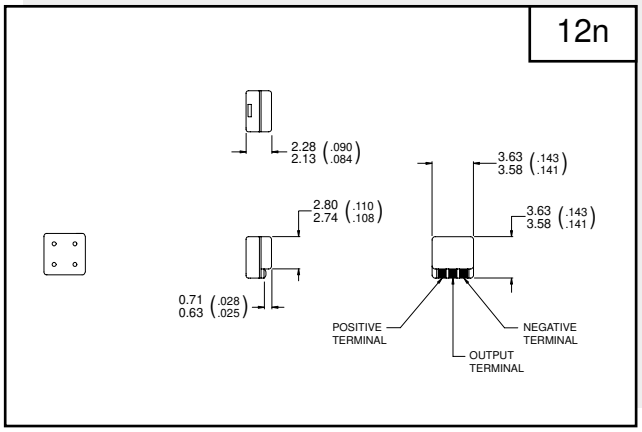
Open circuit sensitivity with 1.3VDC supply

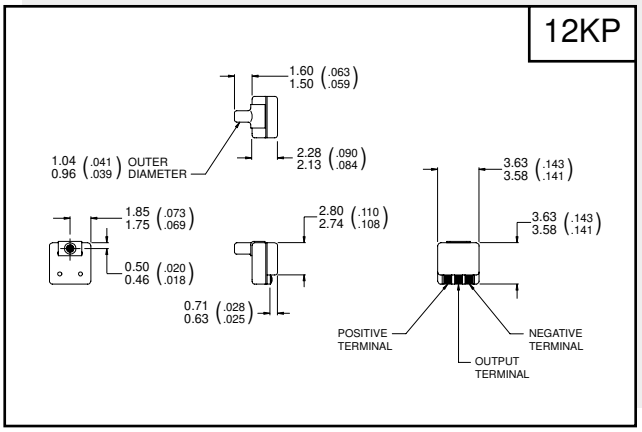
Signal Port Locations





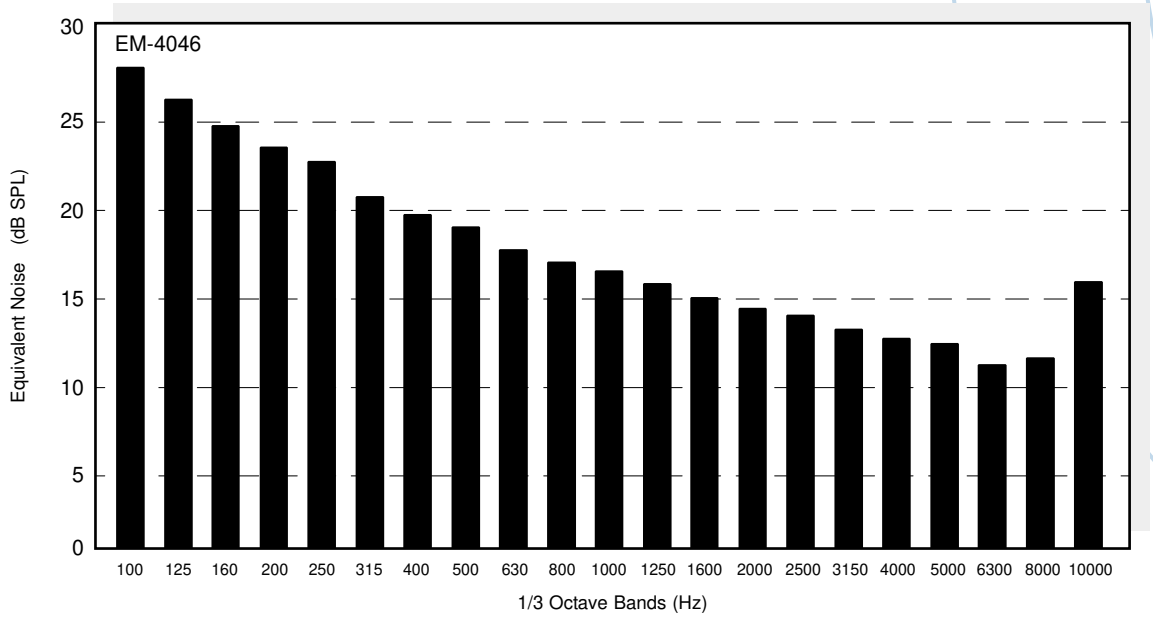


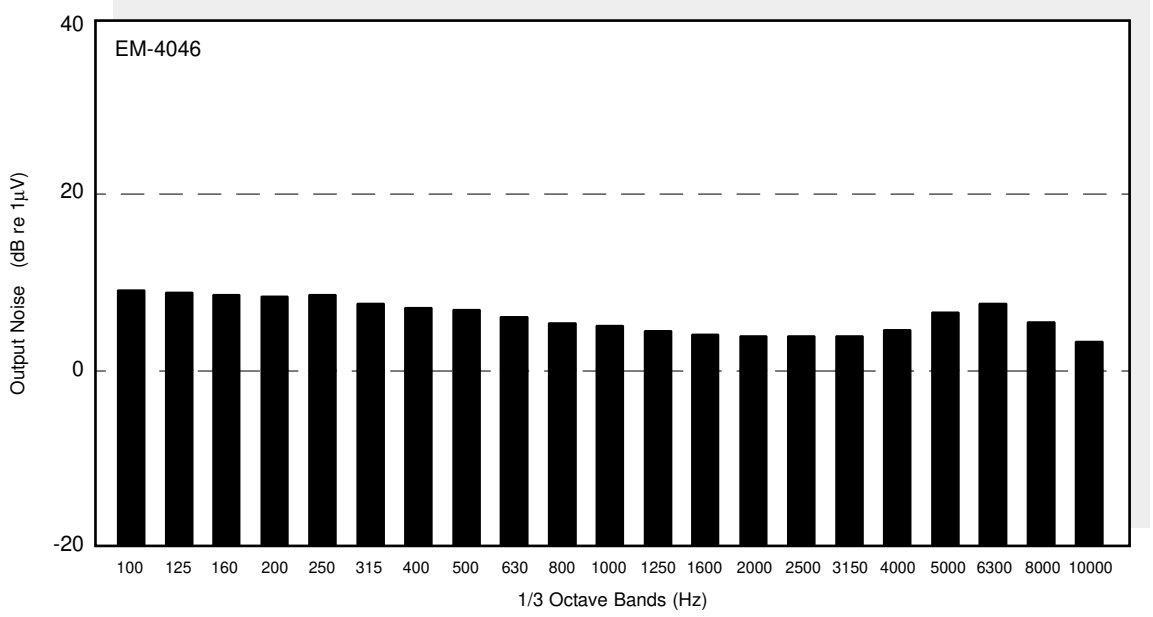




Dimensions in millimeters (inches)

1/3 Octave Equivalent Noise & Output Noise





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