

Product Data

Typical Applications

- Precision acoustic measurements
- Type 0 and 1 SPL measurements
- Free-field measurements
- Precision laboratory measurements

The G.R.A.S. Microphone Type 40AM is a 1/2" wide-frequency, precision condenser microphone for laboratory work as well as for measurements in open acoustic fields. It is a pre-polarized free-field microphone with a large dynamic range and an extended frequency response.

As a free-field microphone, the Type 40AM is for measuring the sound pressure which existed before it was placed in the sound field, and pointing towards the sound source.

The disturbing effects of its presence in the sound field are minimal at low frequencies (large wavelengths compared with microphone size). At higher frequencies, the effects of reflections and diffractions generally lead to an increase in the measured sound pressure levels.

Fig. 3 shows what these are in a free-field for various angles of incidence. The Type 40AM compensates for this to provide a flat frequency response at an angle of 0° incidence in a free-field (see Fig. 2).

Specifications

Frequency response:		Dynamic range:	
3.15 Hz - 31.5 kHz	±2.0 dB	Upper limit (3% distortion)	160 dB re. 20 µPa
5 Hz - 16 kHz	±1.0 dB	Microphone thermal noise:	20 dBA re. 20 µPa
3.15 Hz - 40 kHz	±3.0 dB	Capacitance:	17 pF
Nominal sensitivity:	12.5 mV/Pa	Temperature range:	-10 °C to +50 °C
Polarization voltage:	0 V		...continued overleaf



Fig. 1 1/2" Wide-frequency, Free-field Microphone Type 40AM

G.R.A.S. CCP preamplifiers are also available for use with the Type 40AM, these are:

- 1/2" Preamplifier Type 26CA
- 1/4" Preamplifier Type 26CB with the included adaptor GR0010 (see separate data sheets).

G.R.A.S. microphones comply with the specifications of IEC 1094: *Measurement Microphones, Part 4: Specifications for working standard microphones.*

Non-corrosive, stainless materials are used in manufacturing these microphones to enable them to withstand rough handling and corrosive environments.

All G.R.A.S. microphones are guaranteed for 5 years and are individually checked and calibrated before leaving the factory. An individual calibration chart is supplied with each microphone.

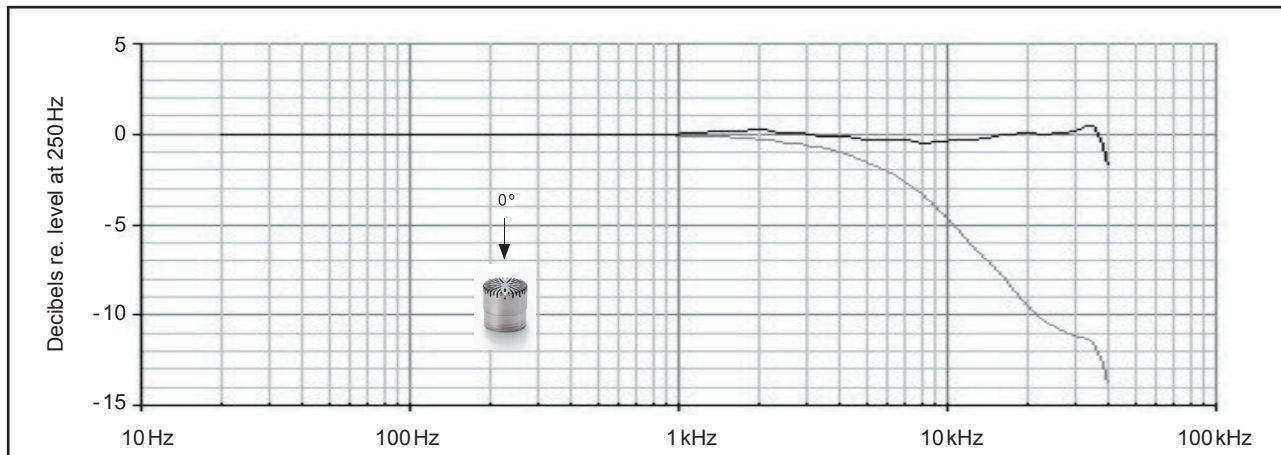


Fig. 2 Typical frequency response of Type 40AM. Upper curve shows free-field response for 0°, lower curve shows pressure response

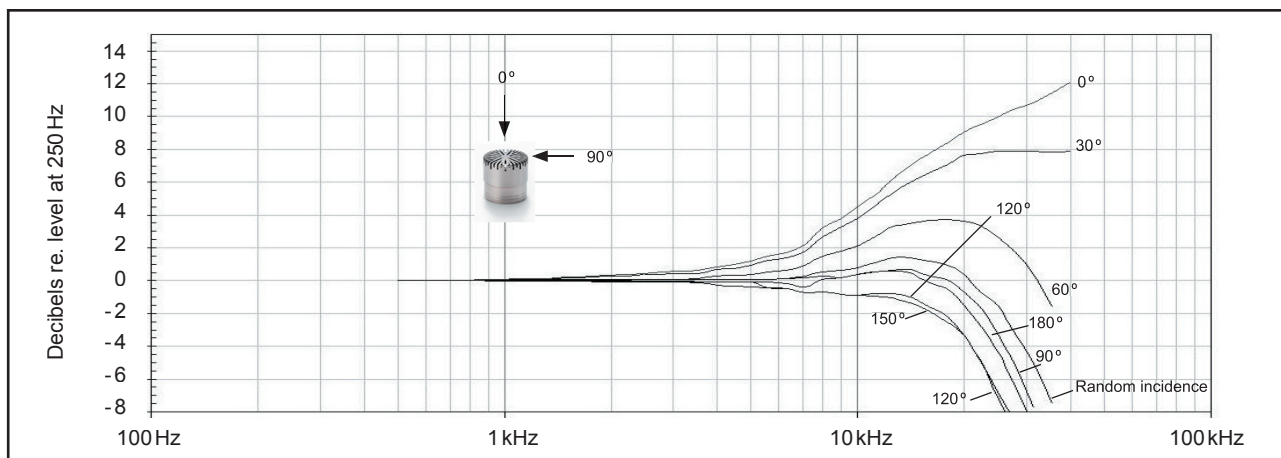


Fig. 3 Free-field corrections for various angles of incidence

Specifications (continued)

Temperature coefficient (250 Hz):	-0.008 dB/°C	Dimensions (with protection grid):	
Static-pressure coefficient:	-0.008 dB/kPa	Length:	12.5 mm
Humidity range:	0 - 100% (non-condensing)	Diameter:	13.2 mm
Influence of humidity (250 Hz):	<0.1 dB (0 - 100% RH)	(without protection grid):	
Influence of axial vibration, 1 m/s²:	66 dB re. 20 μPa	Length:	11.6 mm
Venting:	Rear-vented	Diameter:	12.7 mm
IEC 1094-4 designation:	WS2F	Diameter (diaphragm ring):	12.1 mm
		Threads:	
		Protection Grid:	12.7 mm - 60 UNS
		Preamplifier Mounting:	11.7 mm - 60 UNS
		Weight:	7 gm

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice.