GRAS 40HH

1/2'' Lownoise Microphone System

Freq range: 10 Hz to 16 kHz
Dyn range: 6.5 dB(A) to 113 dB
Sensitivity: 800 mV/Pa

The GRAS 40HH 1/2" Lownoise Microphone System can measure sound pressure levels down to close to the threshold of human hearing; and is amply suitable for use in sound-power measurements on even very quiet products. Its very wide dynamic range permits measurements down to 6.5 dB re. 20 µPa (in 1/3-octave bands) from 20 Hz to 20 kHz.

GRAS Sound & Vibration
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Typical applications and use

- Very Low Sound pressure measurements
- Low noise product measurements
- Sound power measurements at low sound pressure levels
- Measurements on hard-disk drives, computerproducts, quiet rooms etc.

The 40HH comprises:

- a special high-sensitive 1/2" GRAS 40AH Condenser Microphone
- a special 1/2" GRAS 26HH Lownoise Preamplifier

The preamplifier and microphone are an individually matched combination. To complete the system, a special single or 10-channel power module is required and is available, i.e. GRAS 12HF for single-channel measurements or GRAS 12HM for multi-channel measurements.

The chosen power module provides all necessary voltages for powering the preamplifier(s) as well as polarizing the microphone(s).

Preamplifier

The GRAS 26HH Preamplifier has a built-in overload indicator (which is repeated on the chosen power supply) and a frequency correction facility for both pressure-microphone operation as well as free field microphone operation.

Microphone

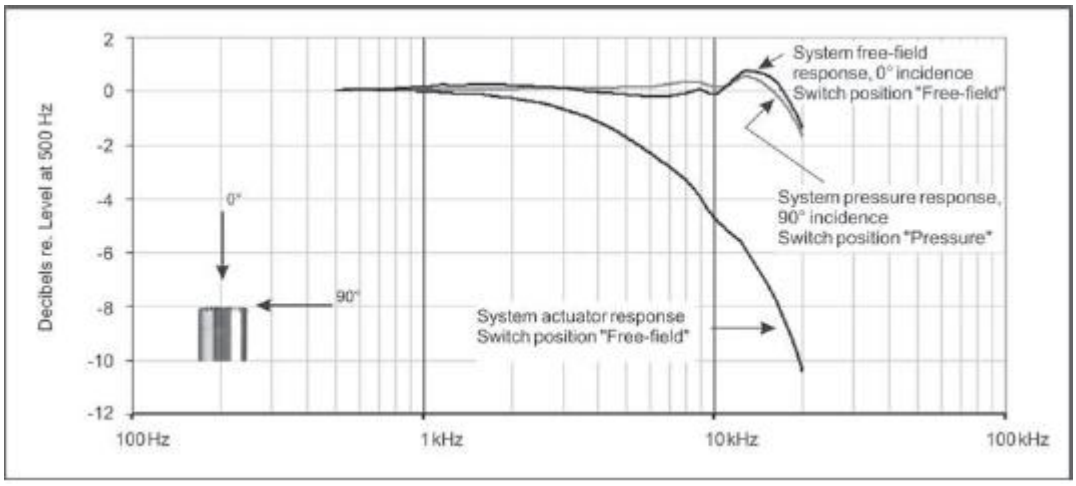
The GRAS 40AH Microphone is an externally polarized microphone with a specially reduced inherent noise floor in order to achieve a high dynamic range and wide frequency range. Its diaphragm is specially tuned to yield high sensitivity coupled with low internal-noise generation.

Frequency Response and Noise Floor

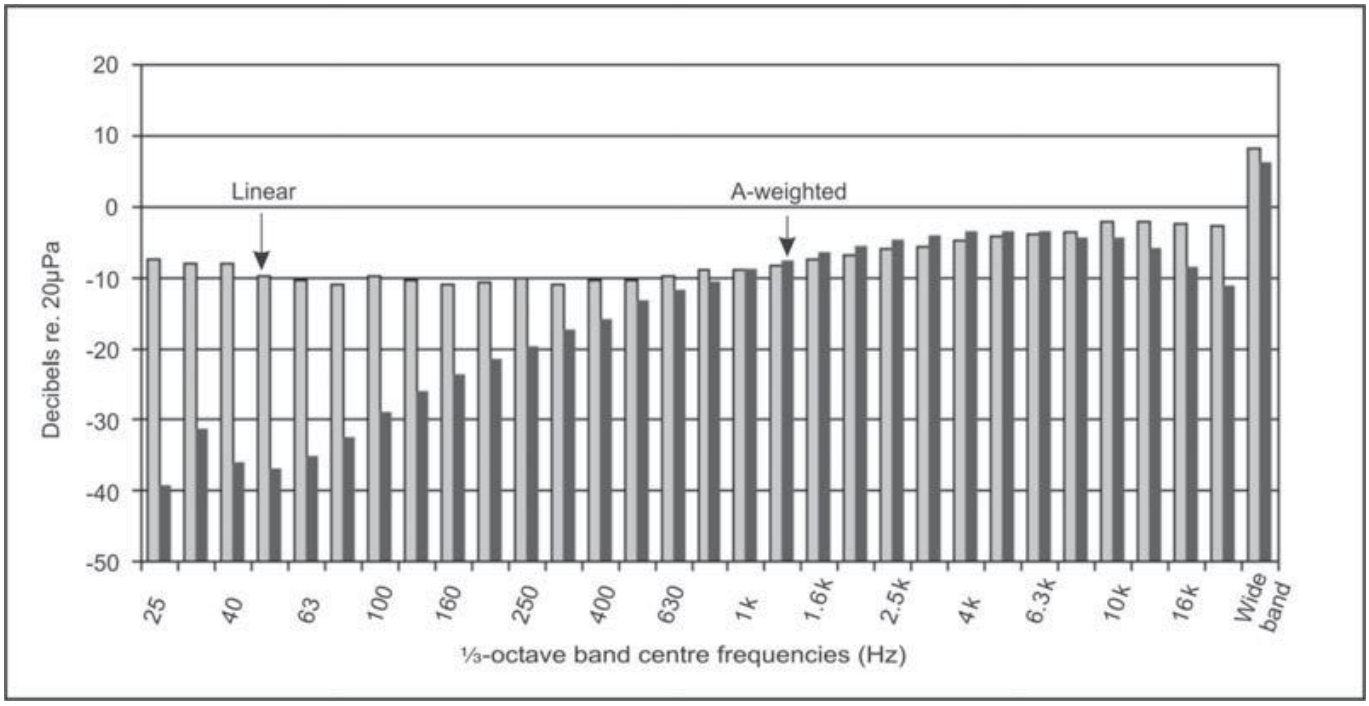
The chosen power supply has a two-position switch for selecting which microphone operation to use, i.e.pressure or free-field. A typical free-field response for an angle of incidence of 0° is shown in the data sheet when GRAS 40HH is switched to free-field operation. Also shown is a complete low-noise measuring system, a typical noise floor in 1/3-octave bands for both the linear and A-weighted cases.

Specifications

Frequency range (±1 dB)	Hz	12.5 to 10k
Frequency range (±2 dB)	Hz	10 to 16k
Frequency range (±3 dB)	Hz	6 to 20k
Dynamic range lower limit (microphone thermal noise)	dB(A)	6.5
Dynamic range upper limit	dB	113
Set sensitivity @ 250 Hz (±2 dB)	mV/Pa	800
Polarization voltage	V	200 V / Traditional
Microphone venting		Rear
Output impedance	Ω	47
Temperature range, operation	°C / °F	−20 to 60 / -4 to 140
Temperature range, storage	°C / °F	-40 to 85 / -40 to 185
CE/RoHS compliant/WEEE registered		Yes/Yes/Yes



Typical frequency response



Typical noise floor shown in 1/3-octave bands - linear and A-weighted cases

GRAS Sound & Vibration reserves the right to change specifications and accessories without notice.

Ordering info

Included items

GRAS 40AH	High sensitive 1/2" microphone
GRAS 26HH	Lownoise 1/2" preamplifier

Optional items

GRAS 12HF	1-Channel Power Module for Lownoise Systems
GRAS 12HM	10-Channel Power Module for Lownoise Systems
GRAS AM0363	Windscreen for 1" Microphones
GRAS 42AA	Pistonphone, Class 1
GRAS RA0090	Pistonphone Coupler
GRAS AL0006	Tripod
GRAS RA0093	Adjustable, high quality, stainless steel tripod adapter
GRAS RA0095	Dehumidifier for 1” microphones
GRAS AA0046	3 m LEMO 7-pin - LEMO 7-pin Cable for Low-noise measuring system
GRAS AA0047	10 m LEMO 7-pin - LEMO 7-pin Cable for Low-noise measuring system

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GRAS Worldwide

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About GRAS Sound & Vibration

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands. Read more at www.GRASacoustics.com

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