



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 Pa (in 1/3-octave bands) from 20 Hz to 20 kHz.



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.

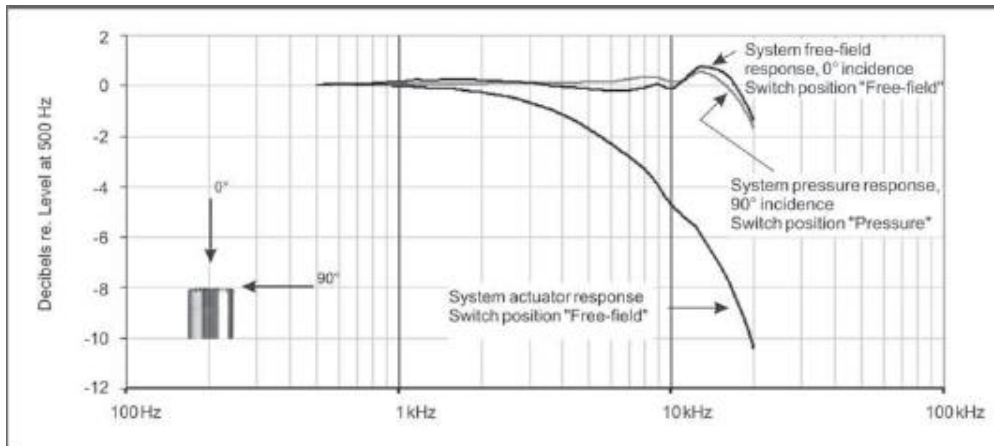
Frequency Response and Noise Floor

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.

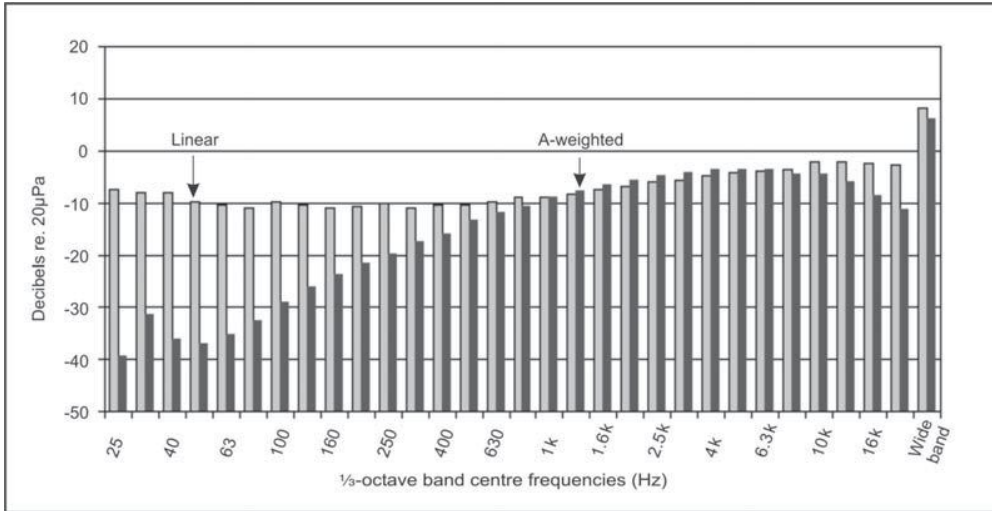


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|--|---------------------------------------|------------------------|
| Frequency range (± 1 dB) | Hz | 12.5 to 10k |
| Frequency range (± 2 dB) | Hz | 10 to 16k |
| Frequency range (± 3 dB) | Hz | 6 to 20k |
| Dynamic range lower limit (microphone 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 | $^{\circ}\text{C} / ^{\circ}\text{F}$ | -20 to 60 / -4 to 140 |
| Temperature range, storage | $^{\circ}\text{C} / ^{\circ}\text{F}$ | -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.



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 |
| GRAS AA0053-CL | Customized length LEMO 7-pin - LEMO 7-pin Cable for Low-noise measuring system |

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than 40 countries

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