

GRAS 40LA

1/4" CCP Precision Surface Microphone, High Pressure



Freq range: 5 Hz to 70 kHz
Dyn range: 56 dB(A) to 178 dB
Sensitivity: 0.5 mV/Pa

The GRAS 40LA High-Precision Surface Microphone is a high-precision microphone for measurements on planar and curved surfaces. It has a wide useful frequency range reaching up to 70 kHz and a large dynamic range topping at around 178 dB.

Typical applications and use

- Aerospace industry
- Wind-induced noise analysis on airplanes
- In-flight measurements
- Wind-tunnel testing
- Acoustic-fatigue testing

Design

Just 2.5 mm thick, the 40LA has an integrated CCP preamplifier and is delivered with a built-in TEDS chip, which enables it to be programmed as a complete unit.

The 40LA requires a constant-current power supply, such as the GRAS 12AL CCP Supply or any other CCP compatible power supply. Close manufacturing tolerances, together with the advantages of the TEDS chip, provide the 40LA with a high degree of interchangeability; a major advantage which excludes accounting for individual characteristics.

The 40LA is both very stable and robust. It has an integrated 1.5 m coaxial cable with a Microdot connector and is delivered with a supple, detachable silicon-rubber fairing. GRAS 40LA is also available with customized cable lengths – see Ordering info for more options.

Because of its lightness, the microphone with fairing can readily be mounted on surfaces using double-sided adhesive tape. The broad temperature range makes the 40LA well-suited for the aerospace industry.

All GRAS microphones are individually checked and calibrated before leaving the factory. An individual calibration chart is supplied with each microphone.

Calibration

When leaving the factory, all GRAS microphones have been calibrated in a controlled laboratory environment using traceable calibration equipment.

Depending on the use, measurement environment and internal quality control programs we recommend that the microphone is recalibrated at least once a year.

We offer two kinds of calibration as an optional after-sales service: GRAS Traceable Calibration and GRAS Accredited Calibration.

GRAS Traceable Calibration is a traceable calibration performed by trained personnel under controlled conditions according to established procedures and standards. This is identical to the rigorous calibration that all GRAS microphones are subjected to as an integral part of our quality assurance.

GRAS Accredited Calibration is performed by the GRAS Accredited Calibration Laboratory that has been accredited in accordance with ISO 17025 by DANAK, the Danish Accreditation Fund.

If you want a new microphone set delivered with an accredited calibration in stead of the default factory calibration, specify this when ordering.

Learn more at [gras/calib](https://www.gras.com/calib).

Quality and warranty

GRAS microphone sets are made of components from our proven standard portfolio and are all manufactured of high-quality material and branded parts that were chosen and processed to ensure life-long stability and robustness.

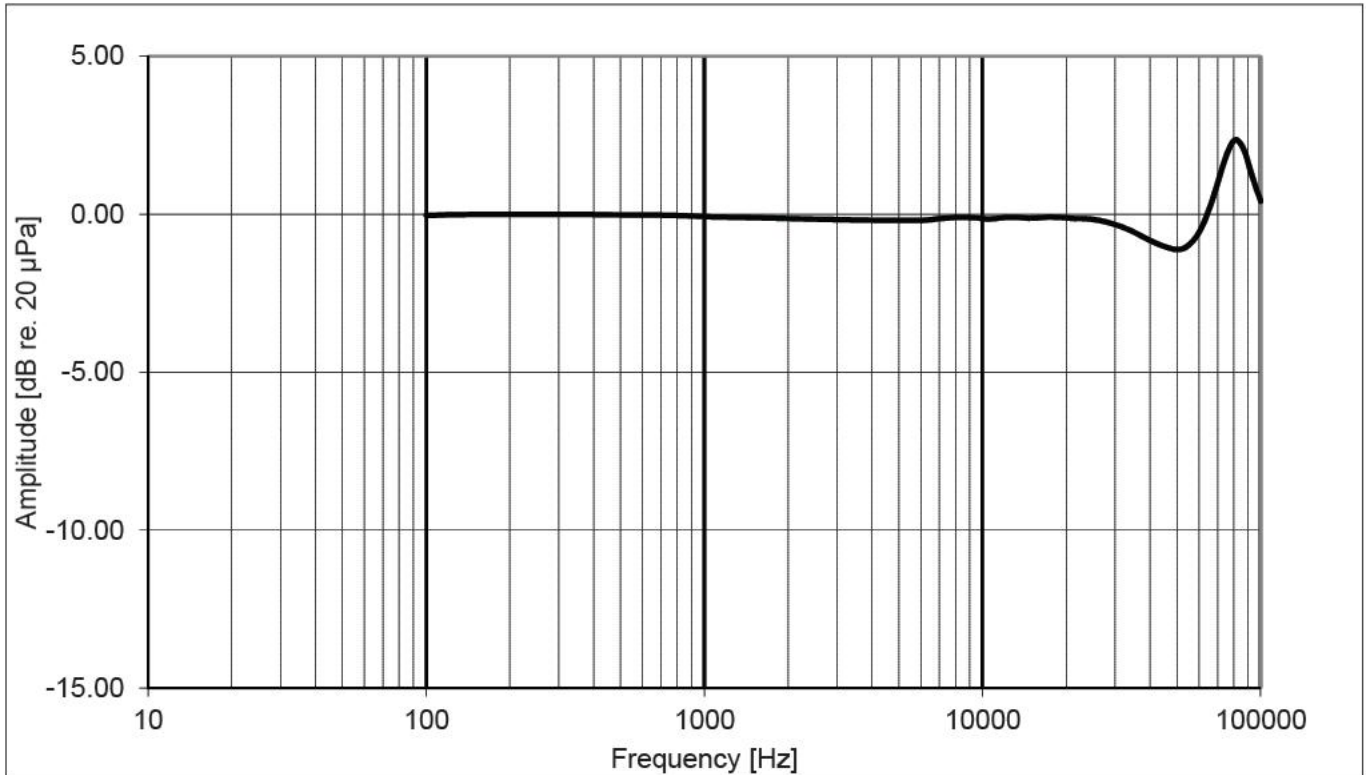
All parts are manufactured and assembled at the factory in Denmark by skilled and dedicated operators in a verified clean-room environment. The microphone diaphragm, body and unique protection grid are made of high-grade stainless steel and make the microphone set resistant to physical damage as well as corrosion caused by aggressive air or gasses.

This, together with the enforced gold-plated microphone terminal guarantees a highly reliable connection. Thanks to the high quality, our warranty against defective materials and workmanship is 5 years.

Service

Should you by mistake damage the diaphragm on a GRAS microphone we will in most cases be able to exchange it at a very reasonable cost and short turn-around time. This not only protects your investment but also meets your quality assurance department since you do not have to worry about new serial numbers etc.

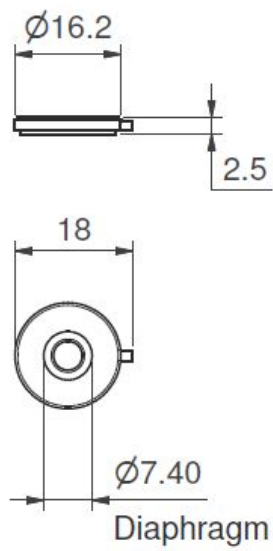
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|--|---------------------------------------|-------------------------|
| Polarization/Connection | | 0 V / CCP |
| Frequency range (± 1 dB) | Hz | 10 to 20 k |
| Frequency range (± 3 dB) | Hz | 5 to 70 k |
| Dynamic range lower limit (microphone thermal noise) | dB(A) | < 56 |
| Dynamic range upper limit with GRAS CCP preamplifier | dB | 178 |
| Set sensitivity @ 250 Hz (± 2 dB) | mV/Pa | 0.5 |
| Power supply (Constant Current Power) | mA | 2 to 20 |
| Microphone venting | | Front |
| IEC 61094-4 Compliance | | WS3P |
| Output impedance | | <50 |
| Temperature range, operation | $^{\circ}\text{C} / ^{\circ}\text{F}$ | -55 to 100 / -67 to 212 |
| Temperature range, storage | $^{\circ}\text{C} / ^{\circ}\text{F}$ | -40 to 85 / -40 to 185 |
| TEDS UTID (IEEE 1451.4) | | 27 v. 1.0 |
| Connector type | | Microdot 10/32 |
| CE/RoHS compliant/WEEE registered | | Yes / Yes / Yes |
| Weight | g / oz | 3 / 0.101 |



Typical pressure frequency response

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

Dimensions in mm



Included items

| | |
|-------------|--------------------------------------|
| GRAS GR0933 | Adhesive tape, pre-cut, single-sided |
| GRAS GR0934 | Adhesive tape, pre-cut, double-sided |
| GRAS MI0031 | Cleaning tissue |
| GRAS AE0046 | Adapter, BNC male to Microdot female |
| GRAS GR1252 | Silicon-rubber fairing |

Optional items

| | |
|-----------------------------|--|
| GRAS 12AQ | Power Module (2-ch.) |
| GRAS 42AP | Intelligent Pistonphone with built-in precision barometer (250 Hz or 251.2 Hz, 114 dB \pm 0.05 dB) (recommended) |
| GRAS 42AA | Pistonphone (250 Hz, 114 dB \pm 0.08 dB) |
| GRAS GR1297 | Aluminum fairing |
| GRAS OP0025 | Kit for Sensitivity Calibration of Surface Microphone Sets |
| GRAS OP0026 | Kit for Frequency Calibration of 1/4" Surface Microphone Sets |
| GRAS CA0029 | Traceable Calibration of Microphone Set |
| GRAS CA2301 | Accredited Calibration of Microphone Set |

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GRAS Worldwide

Subsidiaries and distributors in more than 40 countries

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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 and related equipment for industries where acoustic measuring accuracy and repeatability are of the utmost importance. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, consumer electronics and other highly demanding industries. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect, trust and require.

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

grasacoustics.com

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