GRAS 40LS

1/4" CCP Precision Surface Microphone

Freq range: 5 Hz to 70 kHz
Dyn range: 46 dB(A) to 167 dB
Sensitivity: 1.8 mV/Pa

The GRAS 40LS 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 167 dB.

GRAS Sound & Vibration
Skovlytoften 33, 2840 Holte, Denmark
www.grasacoustics.com

Typical applications and use

- Automotive industry
- Wind-induced noise measurement on vehicles
- Outdoor measurements on testing grounds
- Wind-tunnel testing

Design

Just 2.5 mm thick, the 40LS 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 40LS 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 40LS with a high degree of interchangeability; a major advantage which excludes accounting for individual characteristics.

The 40LS is both very stable and robust. It has an integrated 1.5 m co-axial cable with a microdot connector and is delivered with a supple detachable silicon-rubber fairing.

Because of its lightness, the microphone with fairing can readily be mounted on surfaces using double-sided adhesive tape.

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.

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

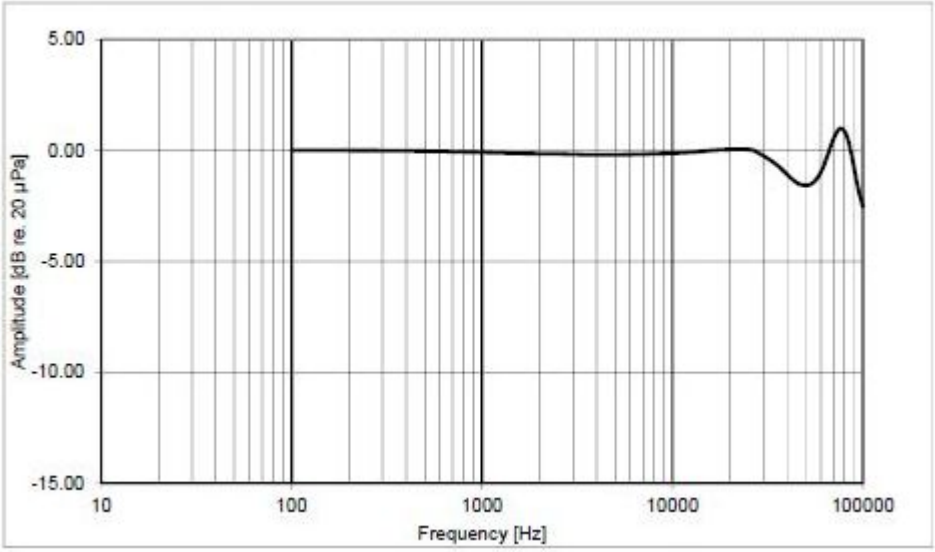
microphone terminal guarantees a highly reliable connection. Thanks to the high quality, our warranty against defective materials and workmanship is 5 years.

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.

Specifications

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)	< 46
Dynamic range upper limit with GRAS preamplifier	dB	167
Set sensitivity @ 250 Hz (±2 dB)	mV/Pa	1.8
Power supply (Constant Current Power)	mA	2 to 20
Microphone venting		Front
IEC 61094-4 Compliance		WS3P
Output impedance	Ω	<50
Temperature range, operation	°C / °F	−55 to 100 / -67 to 212
Temperature range, storage	°C / °F	-40 to 85 / -40 to 185
TEDS (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

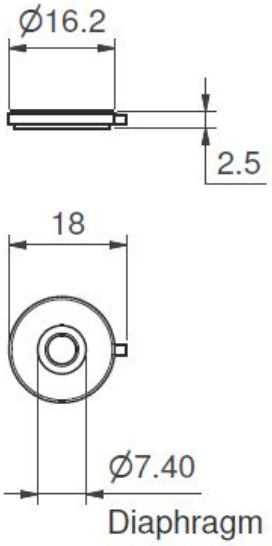


Typical frequency response

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

Dimensions

Dimensions in mm



Ordering info

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 RA0156	Mounting Tape Kit for 40PS-1/40LA/40LS (includes 5x of: GR0934 adhesive tape, GR0933 adhesive tape, MI0031 cleaning tissue)
GRAS 12AQ	Power Module (2-ch.)
GRAS RA0202	Calibration Adapter (required)
GRAS 42AP	Intelligent Pistonphone with built-inprecision barometer (250 Hz or 251.2 Hz,114 dB ±0.05 dB) (recommended)
GRAS 42AA	Pistonphone (250 Hz, 114 dB ±0.08 dB)
GRAS GR1297	Stainless-steel fairing
GRAS CA0029	Traceable Calibration of Microphone Set
GRAS CA2301	Accredited Calibration of Microphone Set

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

GRAS Worldwide

Subsidiaries and distributors in more than 40 countries

HEAD OFFICE, DENMARK
GRAS SOUND & VIBRATION
Skovlytoften 33
2840 Holte
Denmark
Tel: +45 4566 4046
www.GRASacoustics.com
gras@grasacoustics.com

USA
GRAS SOUND & VIBRATION
9290 SW Nimbus Avenue
Beaverton, OR 97008
Tel: 503-627-0832
Toll Free: 800-231-7350
www.GRASacoustics.com
sales-usa@grasacoustics.com

UK
GRAS SOUND & VIBRATION
Unit 115, Gibson House,
Ermine Business Park, Huntingdon,
Cambridgeshire, PE29 6XU
Tel: +44 (0)7762 584 202
www.GRASacoustics.com
sales-uk@grasacoustics.com

CHINA
GRAS SOUND & VIBRATION
Room 502, Building T1,
No.1398 Ali Center
Shenchang Road,
Minhang District,
Shanghai, China, 201107
Tel: +86 21 400-888-9826
www.GRASacoustics.cn
cnsales@grasacoustics.com

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

www.GRASacoustics.com

GRAS

An Axiometrix Solutions Brand