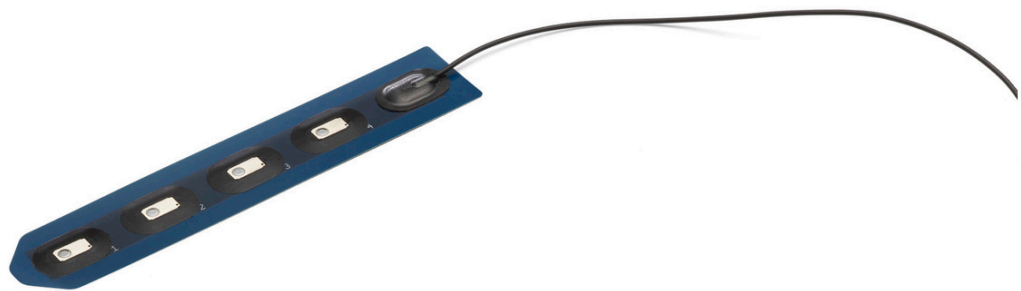


GRAS 48LX-4

UTP Line-Array, 4 Channel, Medium Pressure



Freq range: 20 Hz to 20 kHz (± 1 dB)
10 Hz to 70 kHz (± 3 dB)

Dyn range: 54 dB(A) to 170 dB

Sensitivity: 0.6 mV/Pa (± 3 dB)

Channels: 4

Use: For aeroacoustic measurements

48LX-4 is an Ultra-Thin Precision (UTP) surface microphone line-array for aeroacoustic testing. It consists of four low-profile 1/4" CCP medium-pressure condenser microphones. They are mounted with rubber fairings in a line array configuration on a flexible PCB. 48LX-4 is only 1.35 mm high and can, therefore, be mounted in air-flow without disturbing the sound field.

Introduction

48LX-4 is an Ultra-Thin Precision (UTP) surface microphone line-array for aeroacoustic testing.

It consists of 4 low-profile 1/4" CCP medium-pressure condenser microphones. They are mounted with rubber fairings in a line array configuration on a flexible PCB. The height is 1.35 mm and the angle of the fairings is 6.5 degrees.

It has TEDS for easy channel identification. The 4 channels are connected to a 15 pin D-Sub connector. The total cable length is 3 meters.

48LX-4 line-array is easy to mount and demount. The flexible PCB/plastic strip is about 10 mm wider than the microphones on each side. Therefore, the array can be mounted using masking tape straddling the top side of the strip and the structure.

Remounting is easy, and the geometry of the mounting can easily be maintained and used in a different location or measurement setup.

The strip can be bent along its length, making it possible to mount it on curved surfaces.

Typical applications and use

48LX-4 is for low to medium level surface pressure measurements on planar and curved surfaces for measurements in boundary layers and turbulence, for example in

- Wind-induced noise measurement on vehicles.
- Wind-tunnel testing.

Field Verification

For sensitivity verification in the field using a sound calibrator, a special adapter is available, the RA4800 Adapter for Sensitivity Verification of Flush/Surface Microphones. RA4800 is furnished with a round, soft

pad similar to those used on over-the-ear headphones. This pad ensures a sealed cavity for the calibration signal. Read more [here](#).

With this adapter, quick and convenient in-situ sensitivity verification is possible, and therefore it is possible to check the integrity of the measurement setup immediately before measurements.

Calibration

For sensitivity and frequency calibration, The RA4803 Sensitivity and Frequency Calibration Kit for 48LX-4/48LX-8 is available.

This kit contains an adapter for sensitivity calibration with a pistonphone, and an electrostatic actuator for frequency calibration.

48LX-4 is checked and calibrated before leaving the factory. An individual calibration chart is supplied with each microphone and includes an individual pressure frequency response.

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, which 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 warranty period is 2 years.

The warranty covers defective materials, and workmanship for the sensor element, printed circuit board, and housing.

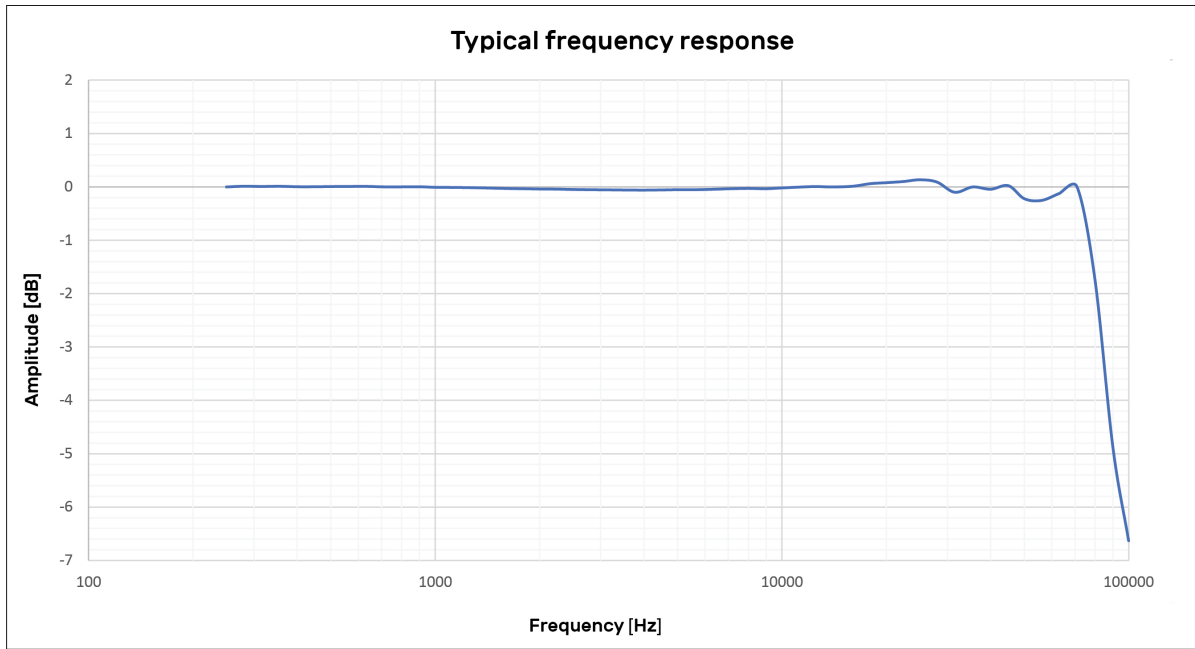
Cable and connectors are covered by a 6 months warranty period.

Service

Should you by mistake damage or destroy a microphone element or the cable, we offer repair or exchange service of the whole line array.

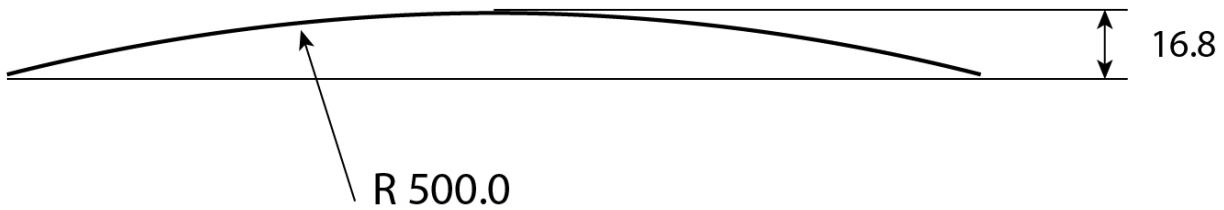
GRAS Sound & Vibration continually strives to improve the quality of our products for our customers. Therefore, the specifications and accessories are subject to change.

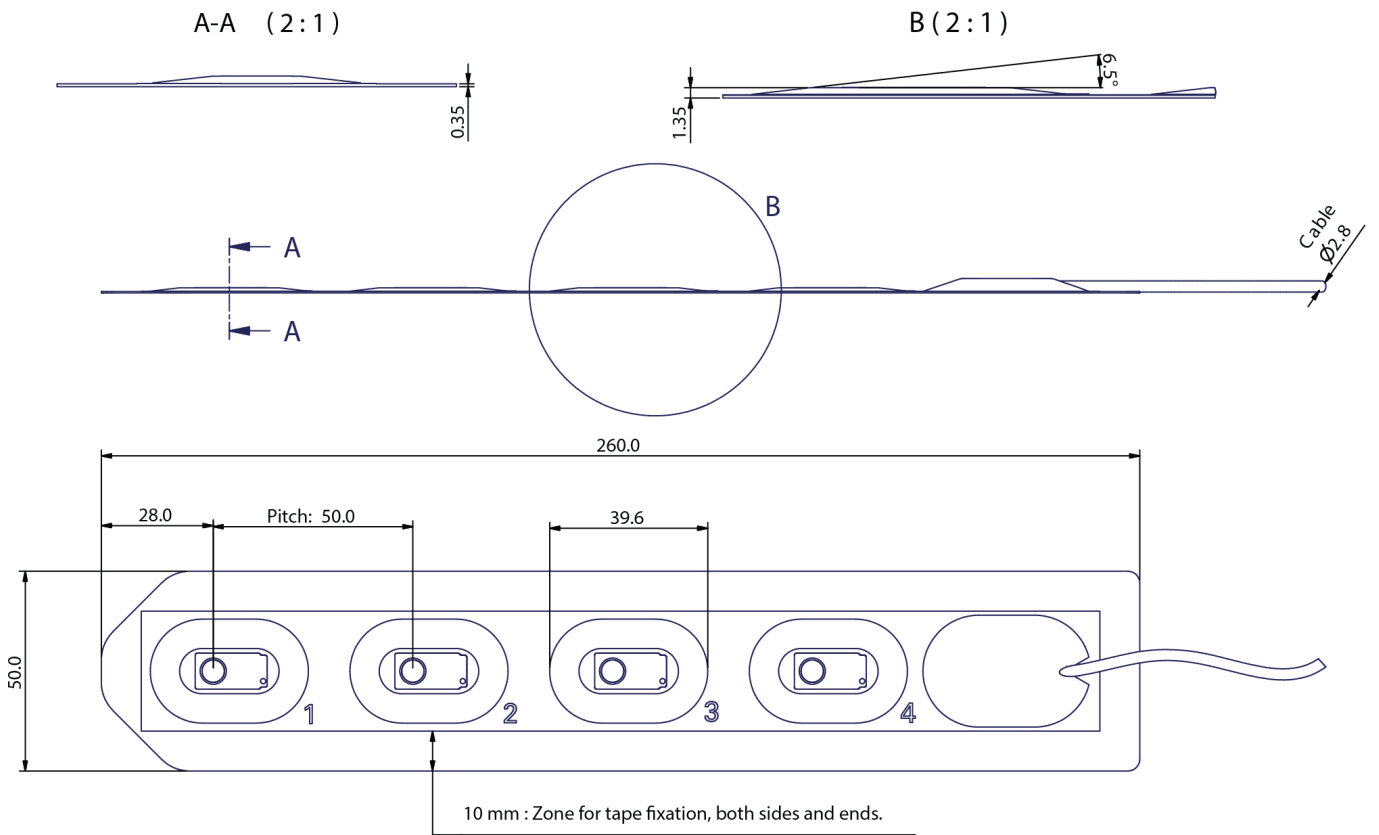
Frequency range (± 1 dB)	Hz	20-20 k
Frequency range (± 3 dB)	Hz	10-70 k
Dynamic range lower limit (microphone thermal noise)	dB(A)	54
Dynamic range upper limit	dB	170
Set sensitivity @ 250 Hz (± 3 dB)	mV/Pa	0.6
Set sensitivity @ 250 Hz (± 3 dB)	dB re 1V/Pa	-64.4
Output impedance	Ω	<50
Power supply min. to max.	mA	2 - 10
Microphone venting		Front
Temperature range, operation	$^{\circ}\text{C} / ^{\circ}\text{F}$	-20 to 70 / -4 to 158
Temperature range, storage	$^{\circ}\text{C} / ^{\circ}\text{F}$	-40 to 85 / -40 to 185
Temperature coefficient @250 Hz	dB/ $^{\circ}\text{C}$ / dB/ $^{\circ}\text{F}$	-0.03
Static pressure coefficient @250 Hz	dB/kPa	-0.0003
Humidity range non condensing	% RH	0 to 80
Humidity coefficient @250 Hz	dB/% RH	-0.01
Influence of axial vibration @1 m/s ²	dB re 20 μPa	73
Sensitivity difference between microphones, max.	dB	2
Phase difference between microphones, 20 Hz to 20 kHz	degrees	± 5
TEDS UDID (IEEE 1451.4) - one for each microphone		I27-0-0-0U
Connector to strip		15 pin D-Sub male
Height	mm	1.35
Dimensions single sensor, width x length	mm	9 x 18
Dimensions strip, width x length	mm	50 x 260
Weight	g / oz	20 / 0.71 (excl. cable) 160 / 5.64 (incl. cable)



The frequency response is within ± 3 dB up to 70 kHz

48LX-4 can be mounted on a curved surface. The radius of the bend must be at least 500 mm, corresponding to an arch with a height of 16.8 mm.





Included items

GRAS 48LX-4	UTP Microphone Line Array, 4 Channel, Medium Pressure, with cable
GRAS DB0507	Mounting Tape for 48LX Series Line Arrays

Optional items

GRAS RA4800	Adapter for Sensitivity Verification of Flush/Surface Microphones
GRAS RA4803	Sensitivity and Frequency Calibration Kit for 48LX-4/48LX-8
GRAS AA4800-4	1.5 m 48LX-4 Splitter Cable D-Sub/4xBNC Male
GRAS AA4801-4	1.5 m 48LX-4 Splitter Cable D-Sub/4xMicrodot Male
GRAS AA4802-4	1.5 m 48LX-4 Splitter Cable D-Sub/4xSMB Female
GRAS AA4803-4	1.5 m 48LX-4 Splitter Cable D-Sub/4xInfiniteband
GRAS AA4804-4	1.5 m 48LX-4 Splitter Cable D-Sub/D-Sub 25
GRAS AA4810	5 m 48LX Extension Cable D-Sub/D-Sub
GRAS AA4811	10 m 48LX Extension Cable D-Sub/D-Sub
GRAS AA4812-CL	48LX Extension Cable D-Sub/D-Sub Custom Length
GRAS DB0507	Mounting Tape for 48LX Series Line Arrays

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

5750 S.W. Arctic Drive
Beaverton, OR 97005
Tel: 503-627-0832
Toll Free: 800-231-7350
www.grasacoustics.com
sales-usa@grasacoustics.com

CHINA GRAS SOUND & VIBRATION

Room 303, Building T6
Hongqiaohui, 990, Shenchang Road
Minhang District, Shanghai
China, 201106
Tel: +86 21 64203370
www.gras.com.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.

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