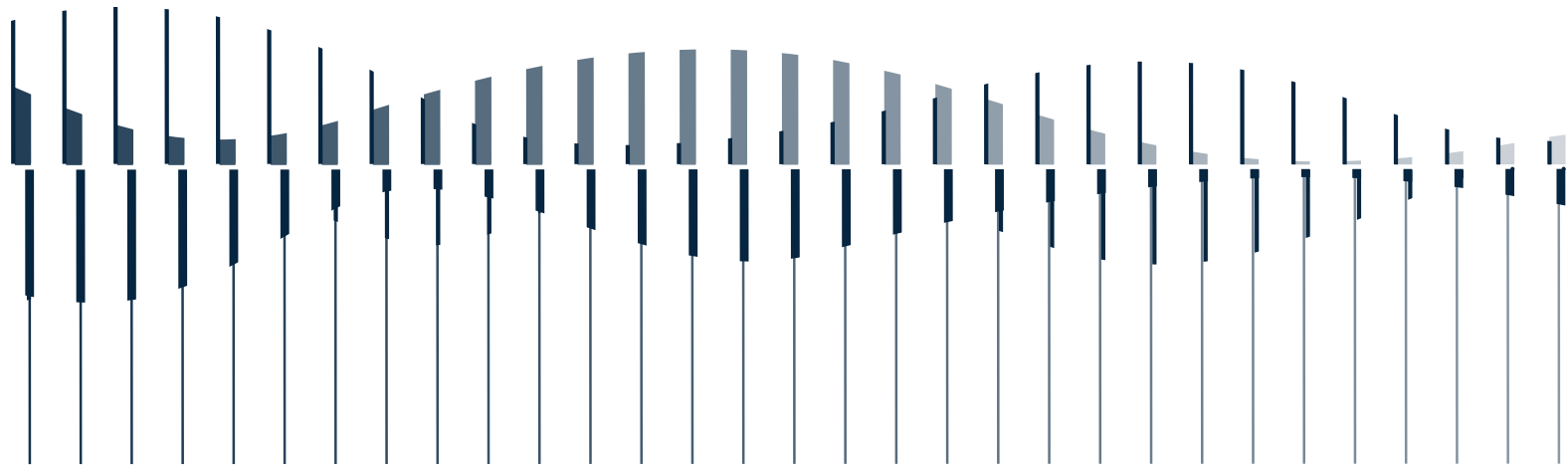




# Instruction Manual

GRAS 48LX-4 and 48LX-8 UTP Line Arrays

Mounting and In-Situ Verification



## Revision History

Revision	Date	Description
1	2 November 2020	First edition



Do not touch the diaphragm

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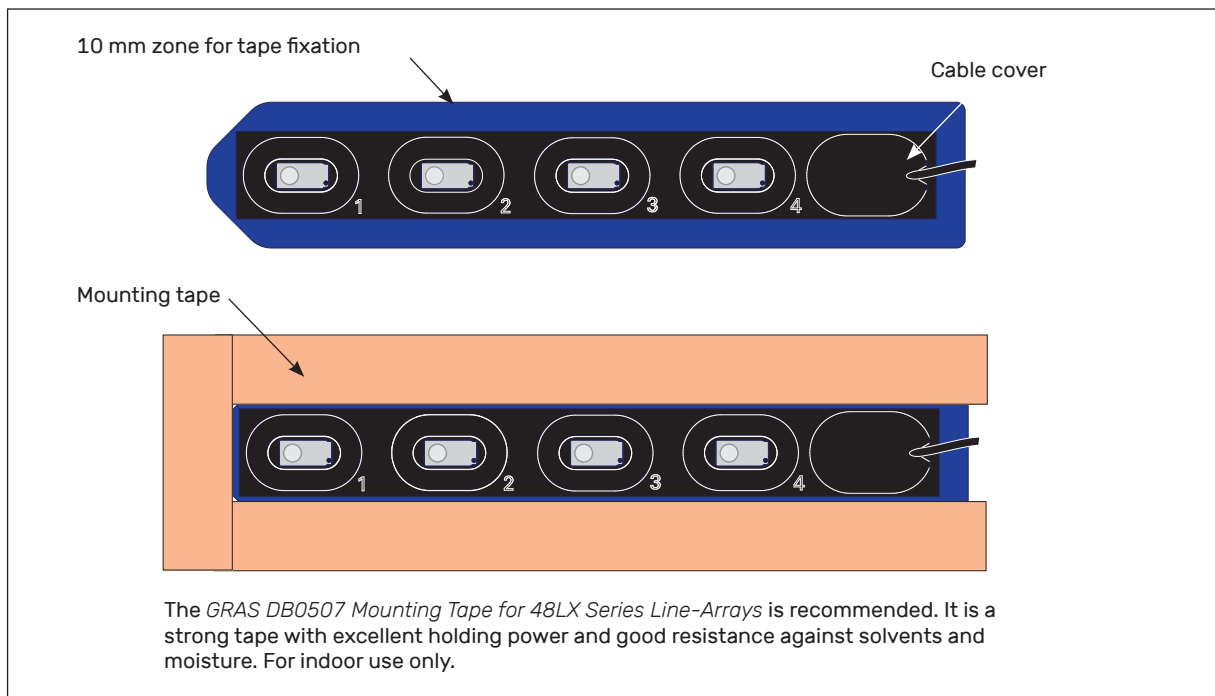
## Introduction

Ease of use when preparing for measurements is important. The UTP line arrays are easy to handle and mount because the microphones and cabling are integrated on a flexible PCB that makes it possible to mount microphones and the cable in one process. A special verification adapter makes it easy to verify the integrity of the measurements setup after mounting/prior to measurements.

## Mounting

The 48LX-4 and 48LX-8 line arrays consist of four and eight UTP microphones mounted on flexible PCBs. In addition to their electrical function these flexible PCBs have a 10 mm zone at the sides and ends for mounting with masking tape as shown below.

When reinstalling the line arrays, the original geometry is automatically retained.



**Fig. 1.** Line array mounting with masking tape.

**Important.** Having mounted the strip with tape, you probably will want to also secure the cable to the structure. When doing this, ensure that you do not accidentally pull the cable away from the strip. There is a built-in strain relief under the cable cover but it is still necessary to be careful to protect the cable assembly from strain as all parts are very small.

### Cleaning after Removal

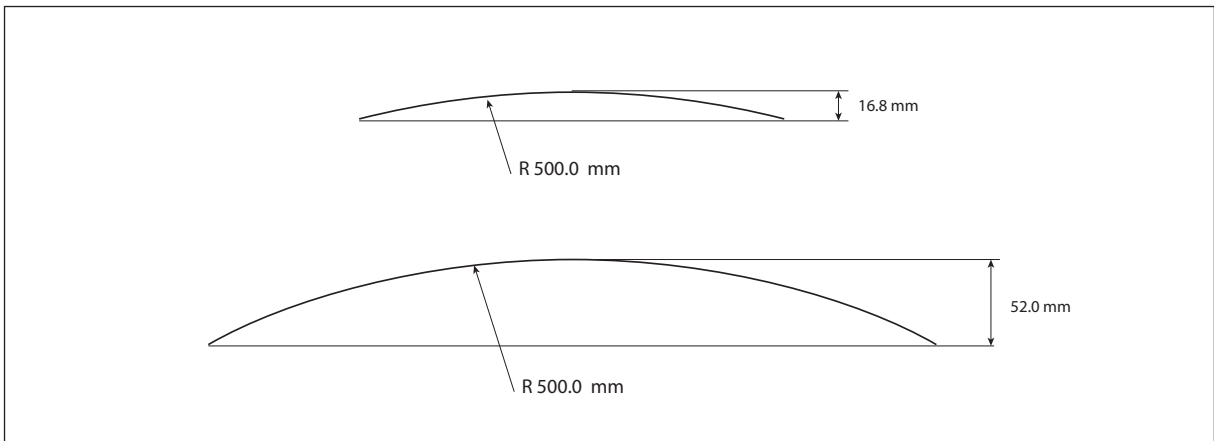
Residues from the tape can be removed by gently rubbing with a cleaning tissue (part of the delivery) or a soft cloth moist with pure alcohol.

## Mounting on Curved Surfaces

Both 48LX-4 and 48LX-8 can be mounted on curved surfaces because the PCB on which the microphones are mounted is flexible. Mounting can still be done using masking tape.

As shown below, the radius of the bend must not be less than 500 mm. Mounting on a smaller radius would affect the mounting of the microphones in the fairings.

For the 48LX-4 this corresponds to an arch with a height of 16.8 mm, and for the 48LX-8 it corresponds to an arch with a height of 52 mm.



**Fig. 2.** Showing how much 48LX-4 And 48LX-8 can be bent.

### Maximum curvature

	Radius	Arch height
48LX-4	500 mm	16.8 mm
48LX-8	500 mm	52 mm

## Verification

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### In-Situ Sensitivity Verification

The 48LX-4 and 48LX-8 can be verified without being demounted. When using the RA4800 Adapter for Sensitivity Verification of Flush/Surface Microphones there is no need for dismounting.

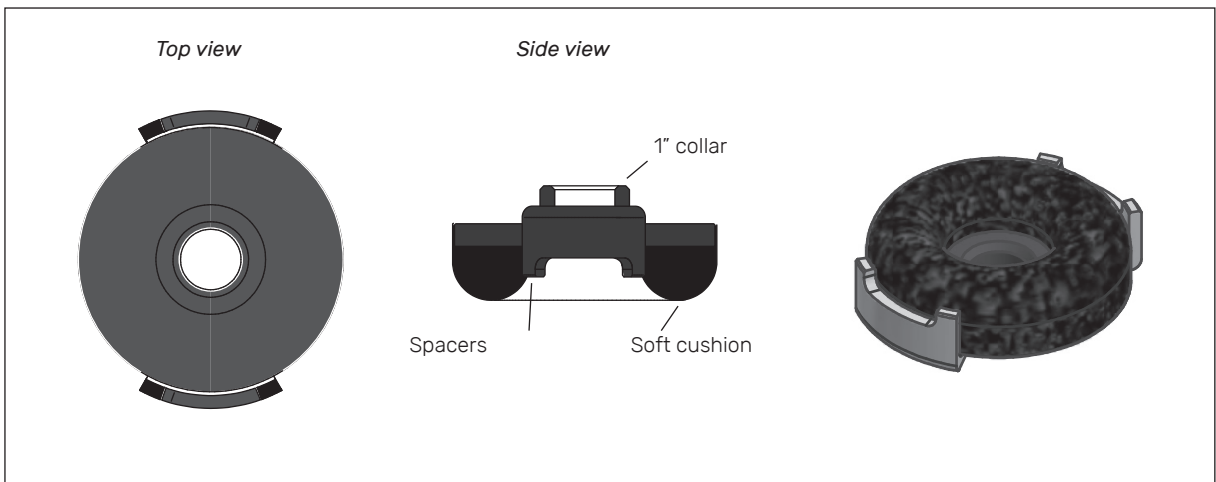
Proper laboratory calibration of sensitivity and frequency is covered by a separate manual.

### The Adapter

For the UTP microphone series a special adapter can be used for in-situ verification.

The adapter has three main features.

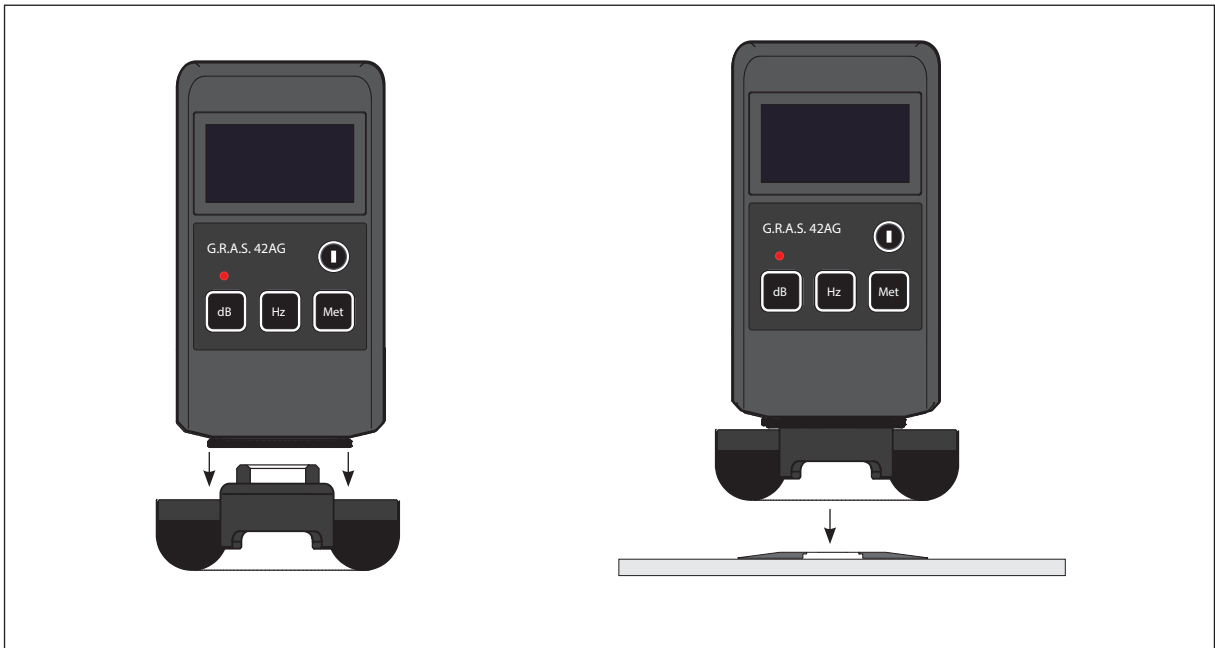
- It has a 1" stud/collar for fit with any GRAS pistonphone/calibrator fitted for use with a 1" adapter.
- It has a soft cushion similar to those found on circumaural headphones. It creates a closed cavity over the microphone to be verified.
- It has four distance spacers that ensure – when the cushion is depressed – that the cavity is well-defined and will be the same from one verification to the next.



**Fig. 3.** The RA4800 adapter/field verification set for level calibration.

## Procedure

**Important.** Before verification, you must ensure that the microphones to be verified are properly connected. 48LX-4 and 48LX-8 need a warm-up period of about 3 minutes to obtain stable sensitivity.



**Fig. 4.** In-situ verification using 42AG and RA4800.

Place the calibrator over the microphone and press it down until stopped by the four distance spacers. You must keep it still in this position during the calibration.

When you have turned on the calibrator and pressed it down over the microphone, you must keep it there until the reading on the analyzer is stable (normally after about 30 seconds).

However, if you do not need the verification to be very accurate, this is not critical and the verification can be done quite quickly.

Refer to the manual for 42AG for further information about how to operate the calibrator.

## Correction Factors

Frequency	Correction Factor	Accuracy
250 Hz	-0.8 dB	± 0.2 dB
1 kHz	-3.0 dB	± 0.2 dB

## Ordering Information

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### Verification Items

42AG	Multifunction Sound Calibrator
RA4800	Adapter for Sensitivity Verification of Flush/Surface Microphones

### Mounting Accessories

DB0507	Mounting Tape
MI0031	Cleaning Tissue

## Warranty, Service and Repair

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### Warranty, Service and Repairs

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The warranty does not cover products that are damaged due to negligent use, an incorrect power supply, or an incorrect connection to the equipment.

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