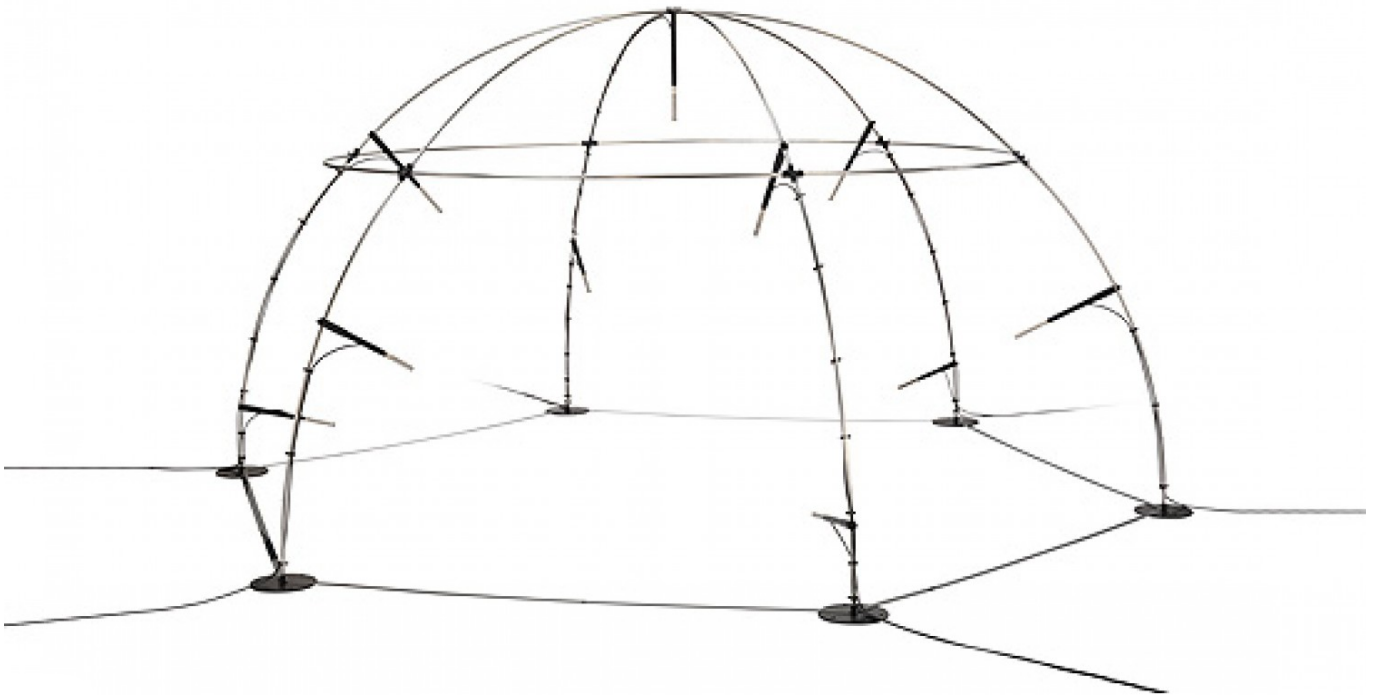


# 67HA-CCP

1 m CCP Hemisphere kit



Freq range: 3.15 Hz to 20 kHz  
Dyn range: 17 dBA to 138 dB  
Sensitivity: 50 mV/Pa  
Measures incl. feet: Diagonal 2716 mm  
Height 1283 mm

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The GRAS hemispheres will hold and position the measurement microphones according to the standards and have been designed with focus on your workflow; They are very easy to assemble and it is easy to position and access the DUT. Furthermore, in best GRAS tradition they are optimized acoustically for correct and repeatable measurement data.

### Introduction

The structure is made portable to achieve a high degree of freedom of location. This, combined with the easy, toolless assembly in minutes, enables you to save expensive anechoic chamber time and to offer on-site sound power diagnostics.

The microphone positions are clearly marked to ease the mounting and maintain measurement repeatability.

The GRAS 67HA-04 1 m CCP Hemisphere kit, 4 channels (4 key + 4 secondary) is ISO 3746:2011 B1 (ANSI S12.56) compliant and includes:

- 1x Hemisphere structure
- 4x GRAS 46AE 1/2" CCP Standard Microphone Sets, cables, holders

The GRAS 67HA-05 1 m CCP Hemisphere kit, 10 channels (10 key + 10 secondary) is ISO 3744:2010 B2 (ANSI S12.54) compliant and includes:

- 1x Hemisphere structure
- 10x GRAS 46AE 1/2" CCP Standard Microphone Sets, cables, holders

The GRAS 67HA-06 1 m CCP Hemisphere kit, 20 channels (20 key) is ISO 3745:2012 E2 (ANSI S12.55) compliant and includes:

- 1x Hemisphere structure
- 20x GRAS 46AE 1/2" CCP Standard Microphone Sets, cables, holders

### Typical applications and use

Depending on the size and the emitted acoustic level of the DUT, the hemispheres will allow sound power measurements on everything from small sized personal electrics to office machines and IT products, household appliances, power tools and smaller engines. The only restriction is, that the characteristic dimension of the DUT may be no more

than half the measurement radius.

### Design

The hemispheres, 1 m or 2 m radius, are available as preconfigured kits with 4, 10 or 20 microphone sets in 3 variations; CCP, LEMO and low-noise LEMO. The microphone sets can be connected directly to all professional measurement systems and are as indicated available for both CCP and 7-pin LEMO inputs. If your system platform supports intelligent transducers according to IEEE 1451.4 (TEDS), the system can be set up to identify the microphone properties and position in the array.

### Calibration

All included microphone sets are delivered with individual calibration charts including sensitivity values and frequency responses. These sensitivity values can be used directly in your system setup.

For frequent measurement chain verification a reference sound source will be required. GRAS supplies 114 dB types for the standard microphone sets and a special 94 dB adapter for the low-noise sets. Depending on the use and your internal quality control requirements we recommend that the sets are re-calibrated at least every second year.

### Performance 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 which guarantees a highly reliable connection, enables us to offer 5 years warranty against defective materials and workmanship. The warranty for cables is 6 months.

Frequency range ( $\pm 2$ dB)	Hz	3.15 to 20k
Dynamic range lower limit with GRAS preamplifier	dB(A)	17
Set sensitivity @ 250 Hz ( $\pm 2$ dB)	mV/Pa	50

## Available configurations

GRAS 67HA-04	1 m CCP Hemisphere kit 4 ch.
GRAS 67HA-05	1 m CCP Hemisphere kit 10 ch.
GRAS 67HA-06	1 m CCP Hemisphere kit 20 ch.

## Included

-	1 m structure
-	Microphone holders (1 per ch.)
GRAS 46AE	1/2" CCP Free-field Standard Microphone Set (1 per ch.)
<a href="#">GRAS AA0037</a>	10 m BNC-BNC cable (1 per ch.)

## Optional

GRAS RA0276	Flight cases (2): One with foam tailored for the microphones and cables One with foam tailored for the structure and microphone holders
<a href="#">GRAS 42AG</a>	Multifunction Sound Calibrator (94 dB or 114 dB)
<a href="#">GRAS 42AP</a>	Intelligent Pistonphone (114 dB).

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

# | We Make Microphones

## Tradition

Since the establishment in 1994, GRAS has been 100% dedicated to developing and manufacturing high-quality measurement microphones and related acoustic equipment.

## Innovation

We work with everybody with an interest in sound or noise within the fields of aerospace, automotive, audiology, consumer electronics, noise monitoring, building acoustics and telecommunications.

## Quality

At GRAS we know that in order for you to trust your measurement results; signal quality, stability and robustness are essentials. We design and build them to perform under real life conditions – and beyond.

