



Array Ring 48-75 | AC pro

48 channel system for various measurement scenarios



At a glance:



Ring 48-75 | AC pro

48 microphones

75cm diameter

carbon fibre structure

7...8 dB single map dynamic (CBF)

recommended mapping frequencies: 400Hz...20kHz

recommended measurement distance: 0.5...5m

This array has been used for the following applications:

engine development/ refinement

white goods/ major appliances

brown goods/ small appliances

underhood measurements

windtunnel measurements

This ring array is a 48 channel measurement system designed for applications in acoustic labs.

Depending on a signal's spectral composition, the recommended measurement distance varies between 0.5 and 5 meters. Longer ranges are possible for measurements in considerably higher frequency ranges.

The lightweight array-body is designed as slim as possible and is made of carbon fiber. This ensures easiest handling and accurate microphone positioning. The wiring of the microphones is enclosed in and protected by the array-body which guarantees best possible acoustic transparency to measure accurate sound levels. The array design is optimized to provide the highest spatial resolution possible while providing a high depth of field to see all sources in one acoustic map independent of distance (within reason). Additionally, the array design effectively minimizes partial reflections and resonance effects between the measured object and the array when compared to other arrays shapes. Furthermore, the ring geometry minimizes aliasing effects which are easy to interpret as they indicate possible source locations.

This microphone array acts omnidirectional. Therefore it should be facing the measured object without any sound sources at the arrays backside. If this cannot be granted, sound absorbing or sound diffusing background to reduce disturbances will improve results.

The built-in studio microphones have an extremely linear frequency response. All are carefully hand selected and calibrated to ensure stable sound pressure levels (+/- 0.5 dB). To allow long distances the array is connected to the data recorder via two differential SymBus microphone connector cables (max. 20m).

The array comes with an integrated fixed focus camera, which can be supplied as USB or Ethernet version, delivered in different sensor sizes, resolutions and frame rates.

The included high end Manfrotto tripod allows a set up in almost any measurement environment imaginable. Array and tripod are supplied in a transport case and bag respectively.

With this system, high quality acoustic images are acquired within seconds.





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Technical Characteristics:

Carbon array-body diameter: 75cm

Weight: 1.8kg

SymBus microphone connectors via differential conditioning

Advanced disturbance tolerant $\frac{1}{4}$ " symmetrically buffered electret pressure receivers (based on Sennheiser microphone capsule 4211)

Number of microphones: 48

Frequency response of microphones: 20hz...20kHz

Dynamic range of microphones: 28...130dB (A-weighted)

Acoustic maps from 23dB - 130dB

Max. equivalent sound level: 130dB

Symmetrical output resistance: 100 Ω

Recommended measurement distance: 0.5...5m

Recommended mapping frequencies: 400Hz...20kHz

Single map dynamic: 7 - 8dB (CBF) using HDR 20 - 40dB

Connecting Array Cable length to data recorder: 1...20m

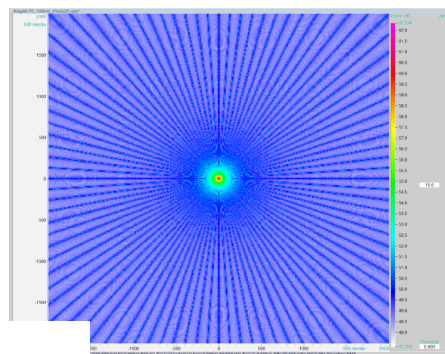
Video camera: USB or Ethernet connector; different frame rates and resolutions available

Ingress protection code: IP20

Operating environment: 0°...45°C, up to 80% r.h.

Components:

- Array mounted on camera quick release plate
- High end Manfrotto tripod with three-way head and bag
- Protective transport box (8.6kg)



Array-pattern

70dB white noise source at 2m distance

192kHz sampling frequency

Displayed at 15dB map dynamic

The aliasing figures point towards the source