



## Array Sphere 48-35 | AC pro

48 channel system for various interior measurement scenarios



### At a glance:



#### Sphere 48-35 | AC pro

48 microphones

35cm diameter

carbon fibre structure

13...17dB single map dynamic (CBF)

recommended mapping frequencies: 400Hz...15kHz

recommended measurement distance: 0.3...5m

#### This array has been used for the following applications:

car interior

train interior

room&building acoustics

leakage detection



This spherical 48 channel microphone array is primarily designed for applications in enclosed spaces. Depending on a signal's spectral composition, the recommended measurement distance varies between 0.3 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 and array positioning even under real test drive conditions on the road. 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 as well as map dynamic possible given the number of microphones used.



Additionally, the array design effectively minimizes partial reflections, sound pressure doubling effects on the surface and resonance effects between the measured object and the array. Furthermore, the sphere geometry minimizes aliasing effects. As this microphone array acts omnidirectional the beamforming results are normally mapped on a scanned 3D point cloud or 3D CAD model of the measurement object, to be imported in the NoiseImage software.

The built-in studio microphones have an extremely linear frequency response. All are carefully hand selected and calibrated to ensure stable sound pressure levels ( $\pm 0.5$  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 USB camera. 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:



Array-body diameter: 35cm  
Weight: 0.9kg  
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 the microphones: 20Hz...20kHz  
Dynamic range of microphones: 28...130dB (A-weighted)  
Acoustic maps from 23dB - 130dB  
Equivalent noise level: 23dBA  
Max. equivalent sound level: 130dB Symmetrical output resistance: 100  $\Omega$

Recommended measurement distance: 0.3...5m

Recommended mapping frequencies: 400Hz...20kHz

Single map dynamic: 13...17dB (CBF) using HDR 20 ..40dB

Backward attenuation of array: > -20 dB

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

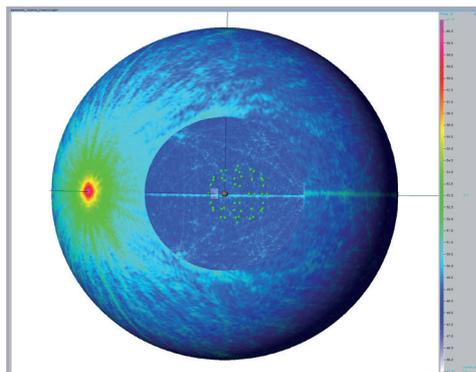
Video camera: USB

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 (6.8kg)



## Array-pattern

70dB white noise source at 2m distance

192kHz sampling frequency

Displayed at 15 dB map dynamic

The aliasing figures point towards the source