

Sphere48 AC Pro

48 CHANNEL SYSTEM FOR ACOUSTIC MEASUREMENTS IN 2D AND 3D



The spherical 48 channel microphone array is primarily designed for 360° sound source localization. The light carbon fiber structure ensures easy handling as well as fast and precise array positioning, even under rough conditions. The omnidirectional microphone positioning of the Sphere48 is particularly well-suited for sound source localization in enclosed spaces. Due to its acoustically transparent design, accurate measurements are carried out without influencing the sound field.

In combination with the Noiselmage software, sound sources can be isolated, localized, and analyzed with respect to both frequency and time response. Additionally, this acoustic measurement system enables the determination of a three-dimensional acoustic map.

The array comes with an integrated Intel® RealSense™ Depth Camera which features Full HD resolution and the ability to record depth information.

BENEFITS

- Lightweight array-body ensures easy handling and accurate microphone positioning
- Easy set up in vehicles for measurements while driving
- Three-dimensional acoustic analysis
- Sound source localization in all directions
- Acoustically transparent array design
- Mapping onto 3D model ensures accurate focus distance for complex structures

APPLICATIONS

- NVH analysis
- Vehicle interiors (e.g. car, train, airplane)
- Buzz, squeak and rattle
- Leakage detection
- Sound design
- Room & building acoustics



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TECHNICAL DATA

Size and Weight

Array-body diameter	35 cm
Weight	0.9 kg

Features

Video camera	Intel® RealSense™ Depth Camera D435
Resolution	1920 x 1080 (Full HD)



Operating Conditions

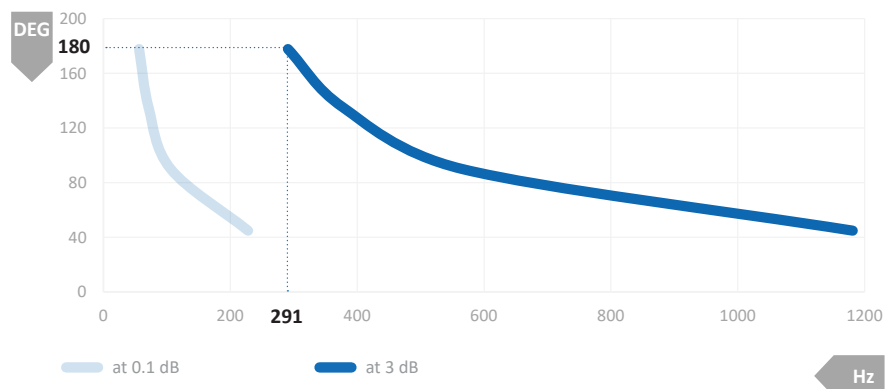
Ingress protection code	IP20
Cable length to data recorder	Up to 20 m (on request: 50 m)
Operating environment	0°C – 35°C, up to 80% RH

Microphone Data

Microphones	Electret condenser capsule + special designed preamplifier
Frequency response	100 Hz – 15 kHz (< 0.5 dB) 20 Hz – 20 kHz (< 3 dB)
Max. sound pressure level	130 dB Peak at 3% THD
Noise level	27 dB(A)
Sensitivity	20 mV/Pa

Array Data

Channels	48
Recommended measurement distance	> 0.3 m
Acoustic mapping range	12 dB – 130 dB
Backward attenuation	> -15 dB
Recommended mapping frequencies	291 Hz – 20 kHz
Dynamic range*	9 dB – 14 dB, up to 50 dB with Advanced Algorithms



Calculation of the lowest frequency (Hz) at 180° opening angle (DEG)

* Distance to the source: 1 m; calculation points: 90,000