



Array Paddle2x24 | AC pro

24 double-layer channel
system for low frequency application



At a glance:



Paddle2x24 - 30 | AC pro

48 microphones in pairs of two

30cm diameter

carbon fibre structure

weight: 1.5 kg

recommended mapping
frequencies: 30Hz...2kHz

recommended measurement
distance: 0.1 ... 0.15m

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 portable handheld paddle features 48 double-layered microphone channels that allow for real-time acoustic near field measurements. The double-layer structure enables the measurement of acoustic pressure signals while particle velocity/acoustic intensity on the measurement plane is calculated and mapped simultaneously.

Furthermore, this microphone layout facilitates a differentiation between noise sources on the measurement plane or in the field behind the paddle. The double-layered microphones act like intensity probes, delivering a vector used to calculate an acoustic map.

The paddle is available as an add-on to an Acoustic Camera system or as a stand-alone solution.

The kernel for acoustic near field calculations is embedded in NoiseImage.



The design of the paddle allows for easy handling as it is lightweight and features cable bundling with one cable bundle holding 24 microphone channels.

The lightweight array-body is designed as slim as possible. 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. Additionally, the array design effectively minimizes partial reflections and resonance effects between the measured object and the array. 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 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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At a glance:

- Compatible with the AC pro product line
- Compact and easy to use
- Very fast and flexible test set-up
- Sound maps of intensity and pressure
- Recommended mapping frequency from 30Hz - 2kHz
- Works for interior and exterior sound fields
- Works in non-ideal test environments
- Back noise suppression through intensity probe approach
- Allows to separate low-frequency sources as well as correlated sources

Paddle Characteristics:

- Grid size: 310x322mm
- Grid microphone spacing: 7cm
- Spacing between microphone pairs: 12mm
- Ergonomic handle with trigger
- built-in LEDs to illuminate measurement scene



Technical Characteristics:

- Array-body diameter: 30cm
- Weight: 2.0kg
- SymBus microphone connectors via differential conditioning, connecting Array Cable length to data recorder: 1...20m
- Recommended measurement distance: 0.1... 0.15m
- Advanced disturbance tolerant ¼" symmetrically buffered electret pressure receivers (based on Sennheiser microphone capsule 4211)
- Number of microphones: 48
- Frequency response of microphones: 20Hz...20kHz (± 3 dB)
- Dynamic range of microphones: 28...130dB (A-weighted)
- Max. equivalent sound level: 130dB
- Symmetrical output resistance: 100 Ω
- Video camera: USB or Ethernet connector; different frame rates and resolutions available
- Five super bright LEDs to object plane
- 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 case (8.6kg)