

PRODUCT DATA

Short 20 kHz Array Microphone — Type 4959

Array Microphone Type 4959 is a ¼" prepolarized microphone specially designed for use in Brüel & Kjær's hand-held and foldable arrays.

Uses

- In Brüel & Kjær hand-held and foldable arrays

Features

- Sensitivity: 11.2mV/Pa (–39 dB re 1 V/Pa)
- Frequency Range: 50 Hz – 20 kHz
- Dynamic Range: 32 – 134 dB
- Built-in DeltaTron® preamplifier with TEDS (IEEE 1451.4 V.1.0)
- Specified phase-matching
- Transfer function described in TEDS
- Dimensions: 13 mm long, 7 mm diameter
- Temperature Range: –10 to +55°C (+14 to +131°F)



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Description

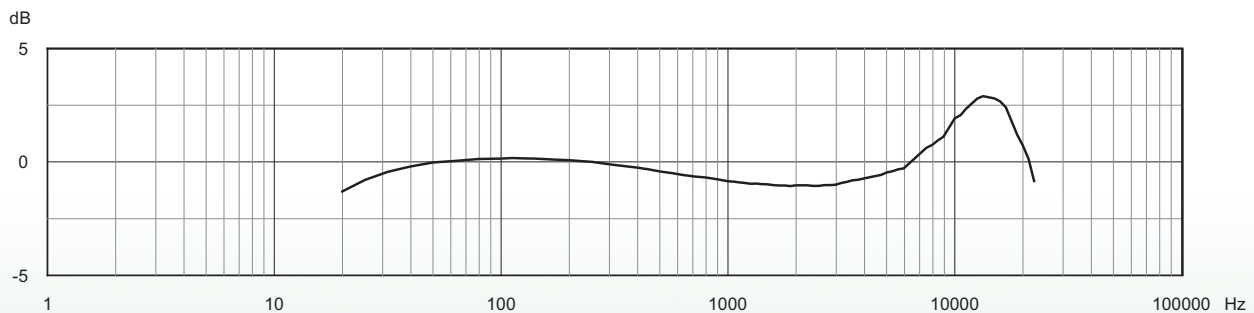
Type 4959 microphones have good, stable amplitude and phase-matching over wide ranges of temperature and humidity. Their frequency response is optimised for a flat response in a pressure field.

Each microphone's built-in TEDS (Transducer Electronic Data Sheet) contains information about the complex transfer function, enabling applications to use data for individual transducers, resulting in more precise measurements.

The preamplifier is an industry standard DeltaTron (constant current line drive) type, allowing the use of the same coaxial cable for signal, power supply and TEDS.

A rugged protection grid provides an integrated heat shield. The microphone is front-vented for pressure equalization.

Fig. 1 Typical pressure-field response



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Specifications – Type 4959

Specifications	Value
Guaranteed Specifications*	
Sensitivity	-39 dB re 1 V/Pa ± 3 dB
	11.2 mV/Pa (@ 250 Hz)
Pressure-field Frequency Response (re 250 Hz)	± 2 dB, 100 Hz to 5 kHz
	± 3 dB, 50 Hz to 10 kHz
	$\pm 5/-3$ dB, 10 kHz to 20 kHz
Inherent Noise (without RF field)	<32 dB SPL (A-weighted)
Upper Limit of Dynamic Range	134 dB (THD <3%)
Phase Matching relative to a factory reference	< $\pm 5^\circ$, 100 to 3 kHz
	< $\pm 10^\circ$, 3 kHz to 10 kHz
General Specifications†	
Inherent Noise (A-weighted)	32 dB (-10 to +40°C, +14 to +104°F)
	37 dB (-10 to +55°C, +14 to +131°F)
Output Impedance	<150 Ω
Output Voltage Voltage Swing DC Bias	>5 V _{pp}
	12 V ± 4 V
Output Socket	Dedicated Brüel & Kjær Hand-held Array socket
Polarization Voltage	Prepolarized
TEDS	IEEE 1451.4 V.1.0 Template I27-0-0-1U
Environmental	
Operating Temperature Range	-10 to +55°C (+14 to +131°F)
Storage Temperature	-25 to +70°C (-13 to +158°F)
Operating Humidity Range	0% to 90% RH without condensation
Vibration Sensitivity (20 to 1000 Hz)	Approx. 50 dB equivalent SPL for 1 m/s ² axial acceleration
Magnetic Field Sensitivity	40 dB SPL for 80 A/m, 50 Hz field
Physical	
Diameter	7 mm (~1/4")
Length	13 mm (1.34")
Weight	3 g (0.9 oz.)

* Valid at +23°C (+73.4°F) with 4.5 mA current drive with a compliance voltage of 28 V

† General specifications are typical values

Ordering Information

Type 4959 Short 20 kHz Array Microphone
Type 4959 is delivered in an ESD safe plastic bag

Optional Accessories	
Type 4228	Pistonphone
WA-0728	6-microphone Adaptor for Pistonphone Type 4228
Traceable Calibration	
4959-CFF	Factory Standard Calibration – includes TEDS update (included with delivery)



Compliance with EMC Directive and Low Voltage Directive of the European Community
Compliance with EMC Requirements of Australia and New Zealand

Safety: EN/IEC 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use
EMC Emission: EN/IEC 61000-6-3: Generic emission standard for residential, commercial and light industrial environments
EMC Immunity: EN/IEC 61000-6-2: Generic standards – Immunity for industrial environments.

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