

PRODUCT DATA

1/4-inch Prepolarized Free-field Microphone — Type 4954

Type 4954 is a 1/4-inch Prepolarized Free-field microphone and is specially designed for high-level and high-frequency measurements.

The use of a laser welded stainless steel diaphragm and a stainless steel protection grid, make this microphone capable of withstanding rough environments.

USES

- High-frequency measurements
- High-level measurements
- Cost-effective measurements

FEATURES

- Robust
- Prepolarized
- Sensitivity: 3.16 mV/Pa
- Frequency: 4 – 100000 Hz



- Dynamic Range: Up to 165 dB
- Excellent phase response
- Excellent long-term stability

Description

Prepolarized Free-field Microphone Type 4954 has been optimised for a flat, free-field response and is suited for measurements far beyond the audible range. Due to its wide frequency range, the frequency response in the audible range is typically within ± 1 dB.

Carefully selected materials and advanced production techniques such as artificial aging and clean room assembly guarantee excellent long-term stability and low noise even in harsh environments.

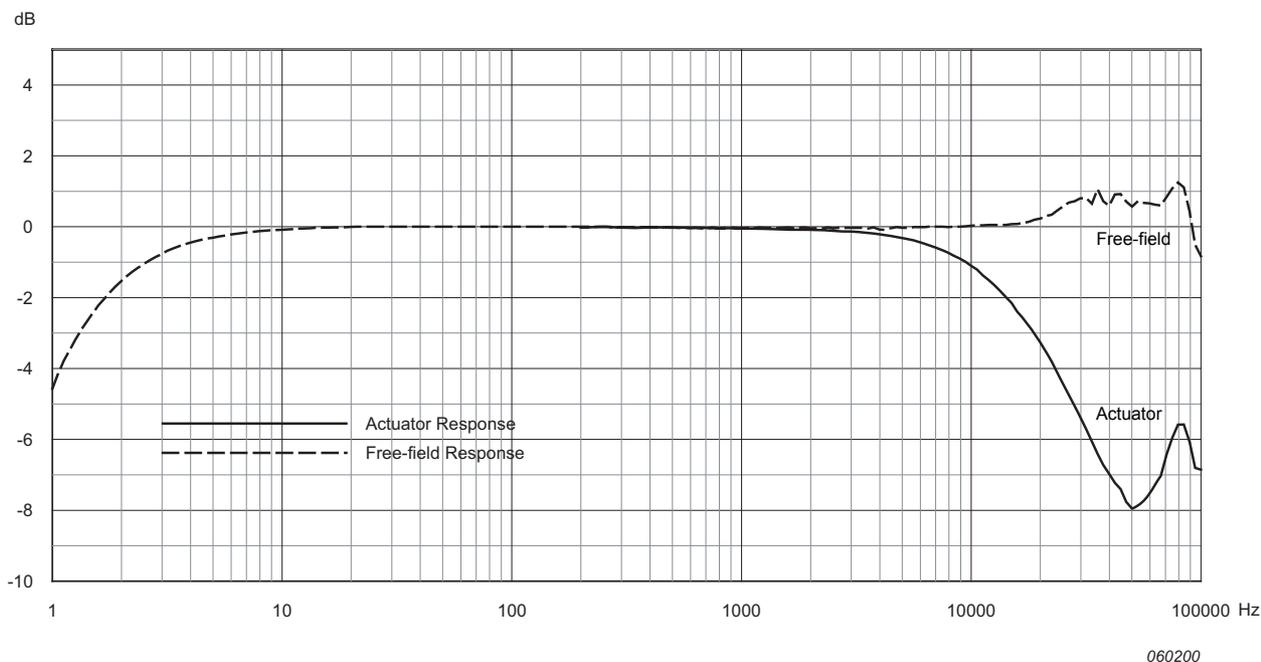
The microphone has excellent amplitude and phase matching over wide ranges of temperature and humidity.

The microphone does not need an external polarization voltage, thus enabling the use of inexpensive 2-wire system (DeltaTron[®]) input.

The microphone is side vented for pressure equalization.

Each microphone is individually calibrated and comes with a calibration chart and a mini CD with calibration data and information about the influence of different measurement conditions and accessories.

Fig. 1 Frequency response without protection grid



Specifications – 1/4-inch Prepolarized Free-field Microphone Type 4954

COMPLIANCE WITH STANDARDS



Compliance with EMC Directive and Low Voltage Directive of the EU



Compliance with the EMC requirements of Australia and New Zealand

Unless otherwise specified the data below is valid at 23°C, 101.3 kPa and 50% RH.

POLARIZATION VOLTAGE

0 V (pre-polarized)

SENSITIVITY

– 50 dB re 1 V/Pa ±3 dB
3.16 mV/Pa (re 250 Hz)

FREQUENCY RESPONSE*

Free-field response (re 250 Hz):
±2 dB, 4 Hz to 80 kHz
±3 dB, 3 Hz to 100 kHz

STANDARDS

IEC 61094 – 4 WS3F

LOWER LIMITING FREQUENCY

0.3 – 3 Hz

CARTRIDGE CAPACITANCE

5.1 pF

* Without protection grid

VENTING

Side vented

CARTRIDGE INHERENT NOISE

<35 dB SPL(A) (<1.6 μV)
<45 dB SPL (Lin, 20 Hz – 100 kHz)
(< 2.52 μV)

COMBINED NOISE LEVEL (WITH PREAMPLIFIER TYPE 2670)

<40 dB SPL(A)
<50 dB SPL (Lin, 20 Hz – 100 kHz)

UPPER LIMIT OF DYNAMIC RANGE (3% DISTORTION)

>164 dB SPL (RMS)

MAXIMUM SOUND PRESSURE LEVEL

174 dB (peak)

DIAPHRAGM RESONANCE FREQUENCY

83 kHz

Environmental

OPERATING TEMPERATURE RANGE

–40 to +150°C (–40 to +302°F)

TEMPERATURE COEFFICIENT

+0.009 dB/°C @ 250 Hz (–10°C to +50°C
(14 to 122°F))

PRESSURE COEFFICIENT

–0.007 dB/kPa

STORAGE TEMPERATURE

In Microphone Box: –30 to +70°C (–22 to +158°F)
With Mini CD: –20 to +70°C (–4 to +158°F)

OPERATING HUMIDITY RANGE

0% – 100% RH without condensation

INFLUENCE OF HUMIDITY

<0.1 dB in the absence of condensation

VIBRATION SENSITIVITY

60 dB equivalent SPL for 1 ms² axial vibration

MAGNETIC FIELD SENSITIVITY

Equivalent to 10 dB SPL @ 80 A/m, 50 Hz field

ESTIMATED LONG-TERM STABILITY

<0.001 dB/year @ 20°C
<0.5 dB/hr @ 150°C

Dimensions

DIAMETER

7 mm (0.28") (with grid)
6.35 mm (0.25") (without grid)

HEIGHT

10.5 mm (0.41") (with grid)
9 mm (0.35") (without grid)

THREAD FOR PREAMPLIFIER MOUNTING

5.7 mm – 60 UNS

Brüel & Kjær reserves the right to change specifications and accessories without notice

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