Calibration Chart for Condenser Microphone Cartridge Type 4145

Brüel & Kjær
Denmark

Serial No. 415037..

Open Circuit Sensitivity at 760 mm Hg

-25,6 dB re. 1 V per N/m² or 52,5 mV per N/m²

This Calibration is traceable to the National Bureau of Standards, Washington D.C.

Open Circuit Correction Factor:

K_0*) = -0,4 dB

Cartridge Capacitance:

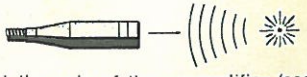
C = 63,3 pF

Lower Limiting Frequency (– 3 dB) determined by pressure equalization, which takes place at the side:

0,03 ~~1,8~~ Hz 2 2/3 88

Leakage Resistance tested at 52 % relative humidity $> 10^{15}$ Ω.

Frequency Response Characteristics:
The upper curve is the open circuit free field characteristic, valid for the Microphone Cartridge with protecting grid. Sound waves perpendicular to diaphragm (see Fig.). The lower curve is the open circuit pressure response recorded with electrostatic actuator.



*) Subtract the gain of the preamplifier (see back of this card) from K_0 to get the actual correction factor K. (See instruction manual for the use of K).

1 N/m² = 10 dynes/cm² = 10 μbar = 1 Pascal.

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Conditions of Tests:

Frequency: 250 Hz

Polarization voltage: 200 V

Barometric Pressure: 762 mm Hg

Relative Humidity: 46 %

Temperature: 22 °C

7-12 78

Date: 31-1-73 Signature: K.R.

Summarized Specifications

Type 4145 satisfies the specifications for Laboratory Standard Microphones Type L of the American National Standards Institute S1.12-1967. The requirements of the standard are given in brackets for each item.

Outside Diameter:
0.936 ± 0.0008 in. (0.936 ± 0.0020 in.).

Coupler Mounting Thread (grid thread): 0.910 in. 60 NS2.

Frequency Response Characteristic:
Frequency below which pressure response shall be flat within 2 dB: 12.5 kHz (7 kHz).

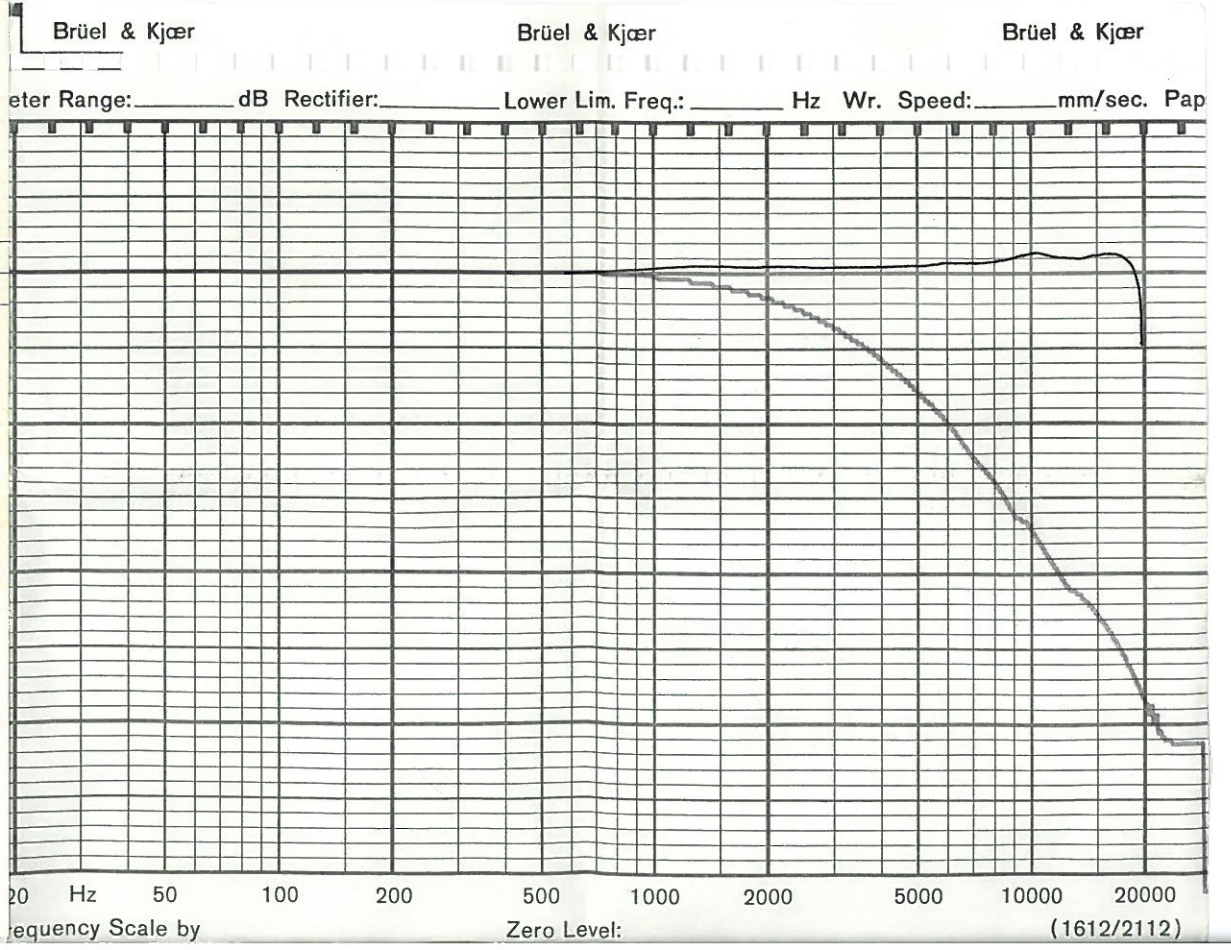
Resonance Frequency: 9.0 kHz.

Equivalent Air Volume at 1 atm., about 0.15 cm³ (max. 0.2 cm³).

Ambient Pressure: Influence on response less than ± 0.5 dB between 0.8 and 1.2 atm. (0.9 and 1.1 atm.).

Temperature Coefficient between – 50 and + 60 °C, maximum ± 0.006 dB/°C (± 0.03 dB/°C).

Relative Humidity: The influence of humidity does not exceed ± 0.1 dB in the absence of condensation.

Dynamic Range: Sound Pressure Level below which the total harmonic distortion remains less than 1 %: 140 dB (130 dB).

Sensitivity: see calibration (> – 45 dB re. 1 V per N/m²).