

**Calibration Chart for  
Condenser Microphone  
Cartridge Type 4165**

**Brüel & Kjær**



Nærum Denmark

Serial No. 1121111

Open Circuit Sensitivity at 1013 mbar, 23°C and 50% R.H.

-25.8 dB re. 1 V per Pa or 51.3 mV per Pa

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

Open Circuit Correction Factor:

$K_0^*$  = -0.2 dB

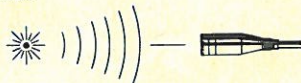
Cartridge Capacitance:

$C$  = 10.7 pF

Leakage Resistance tested at 52% relative humidity > 1016 Ω

Frequency Response Characteristics:

The upper curve is the open circuit free field characteristic, valid for the microphone Cartridge with protecting grid (UA 0646). 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 Pa = 1 N/m<sup>2</sup> = 10 dynes/cm<sup>2</sup> = 10 μbar

BC0089-12

Conditions of Tests:

Polarization voltage 200V

Frequency: 250 Hz

Ambient Pressure: 1005 mbar

Relative Humidity: 50 %

Temperature: 24 °C

Date: 05.09.1984 Signature: [Signature]

Summarized Specifications

Outside Diameter:

0.52 in. (13.2 mm) with protecting grid  
0.50 in. (12.7 mm) without protecting grid

Coupler Mounting Thread (grid thread):

0.50 in. (12.7 mm) 60 UNS 2

Frequency Response Characteristic:

Frequency below which free-field response shall be flat within ± 2 dB: 20 kHz

Lower Limiting Frequency (-3 dB) as determined by pressure equalization is between 1 Hz and 2 Hz

Resonance Frequency: approx. 14 kHz (overdamped)

Equivalent Air Volume: approx. 40 mm<sup>3</sup> at 1013 mbar and 250 Hz

Ambient Pressure Coefficient:

approx. -0,001 dB/mbar at 1013 mbar and 250 Hz

Temperature Coefficient: approx. -0,007 dB/°C between -10 and + 50°C at 250 Hz

Humidity Coefficient: approx. 0,004 dB/% R.H. at 23°C and 250 Hz

Dynamic Range: Sound Pressure Level below which the total harmonic distortion remains less than 3% 146 dB

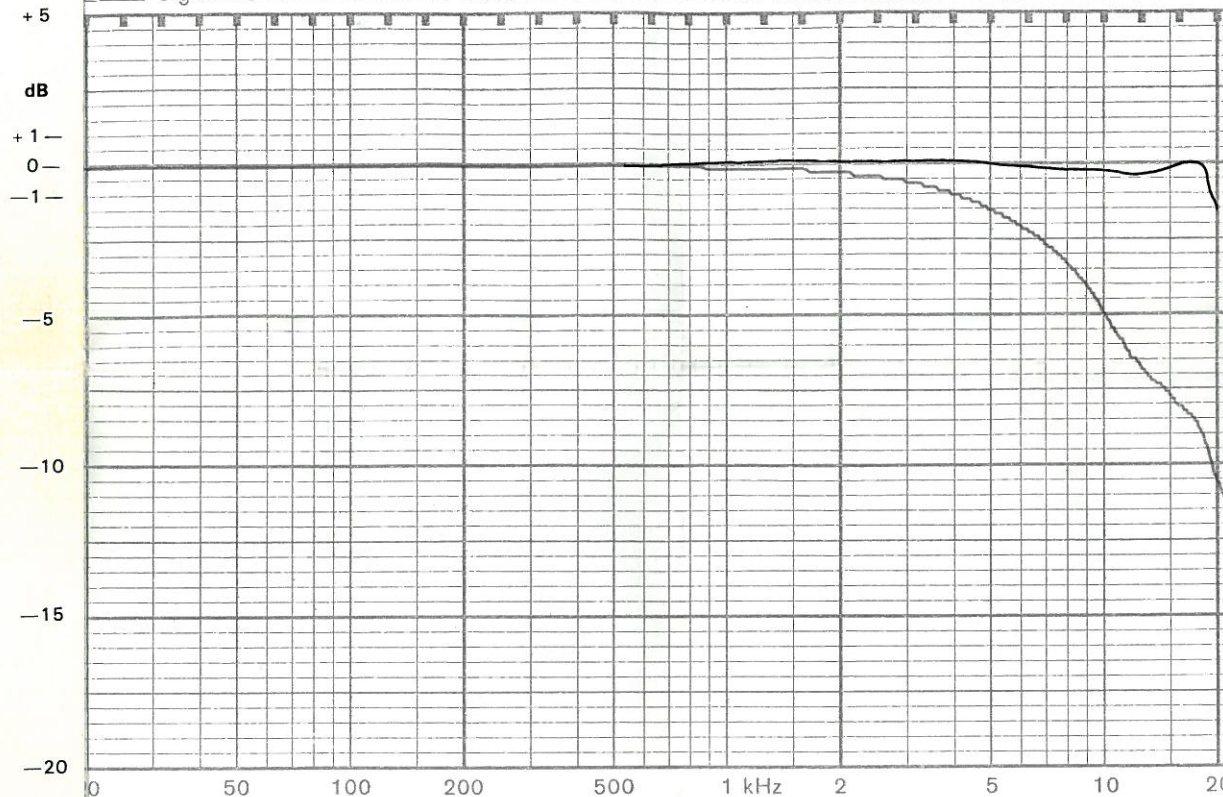
Measuring Object: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

Potentiometer: \_\_\_\_\_

Zero Level: \_\_\_\_\_



Rectifier: \_\_\_\_\_ Lower Lim. Freq.: \_\_\_\_\_ Hz Writing Speed: \_\_\_\_\_ mm/sec. Paper Sp \_\_\_\_\_