Calibration Chart for Hydrophone Type 8103

Brüel & Kjær

Serial No.: 2928696

Reference Sensitivity at 250 Hz* ± 2 % at 24.0 °C

Including integral cable 6.0 m

Voltage Sensitivity (Open Circuit Sensitivity):

-211.5 dB re 1 V/µPa** or 26.8 µV/Pa

Charge Sensitivity: 0.0991 pC/Pa

Capacitance (including integral cable): 3706 pF

Cable Capacitance: 95 pF/m

Leakage Resistance: 500 GΩ at 24.0 °C

Measuring Uncertainty

Sensitivity at 250 Hz: ± 0.25 dB
Frequency Response at 4 kHz to 200 kHz: ± 1 dB

Frequency Response (at ref. pos.):
Individual Free Field Frequency Response Curve attached

Measured in watertank at 19.8 °C

Summarized Specifications (re 250 Hz)

Frequency Response, PD values:
(For actual values, please see attached curve)

0.1 Hz to 20 kHz:	+1 dB, -1.5 dB
0.1 Hz to 100 kHz:	+1.5 dB, -6 dB
0.1 Hz to 180 kHz:	+3.5 dB, -14.0 dB

Horizontal Directivity 100 kHz:
(XY – plane) ± 2 dB

Vertical Directivity 100 kHz:
(XZ – plane) ± 4 dB

For further information, please see http://www.bk.dk and Product Data Sheet BP 0317

Date 12 Mar. 2014 10:15 Operator LF

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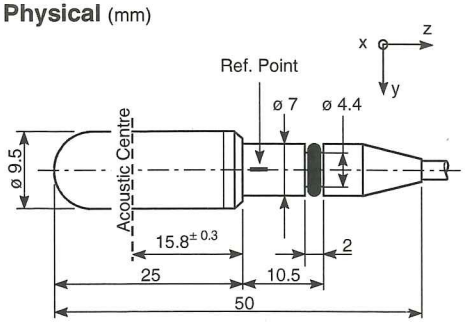
Physical (mm)



Cable: Double shielded low noise

Weight (including 6 m cable): 170g

Environmental

Operating Temperature Range:
Short term – 40 °C to + 120 °C
Continuous – 40 °C to + 80 °C

Change of Sensitivity with Temperature:
Charge 0 to 0.03 dB/°C
Voltage 0 to – 0.03 dB/°C

Change of Sensitivity with Static Pressure:
0 to – 3 x 10^7 dB/Pa
(0 to – 0.03 dB/atm)

Temperature Transient Sensitivity: ≤ 50 Pa/°C
(ANSI S.2.11–1969); measured with Brüel & Kjær Charge Preamplifier Type 2626, LLF 3 Hz

Allowable Total Radiation Dose: 5 x 10^7 Rad

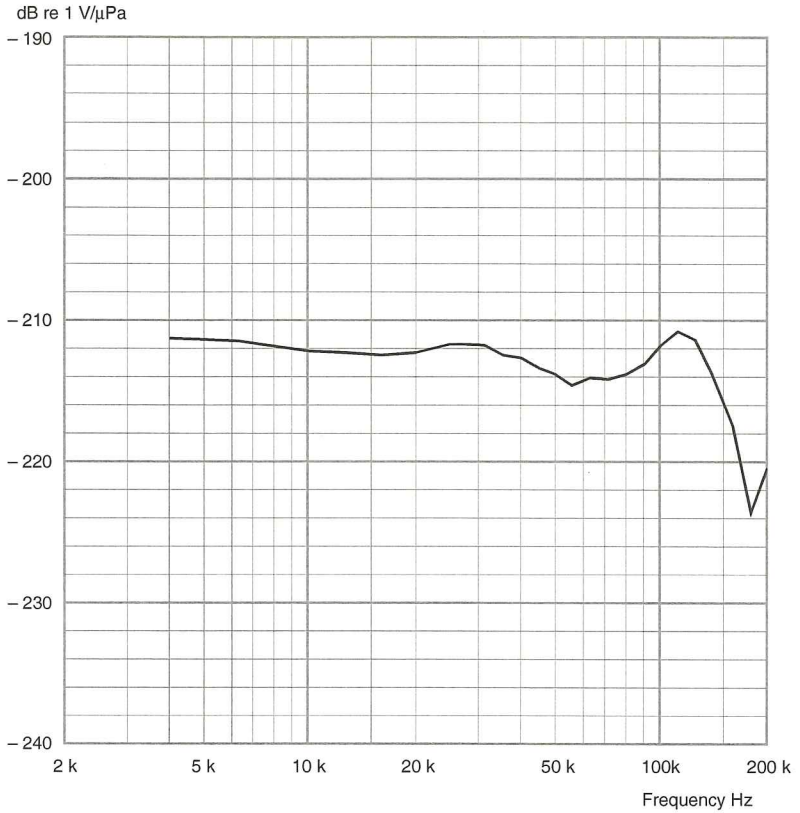
Acceleration Sensitivity: < 130 dB re 1 µPa/ms^{-2}

Maximum Operating Static Pressure:
4 x 10^6 Pa (40 atm)

Note: All Values are typical at 25 °C (77 °F), unless measurement uncertainty or tolerance limit is specified. All uncertainty values are specified at 2 σ (i.e. expanded uncertainty using a coverage factor of 2).

For further information see User manual

* Sensitivity Traceable to:
DPLA: Danish Primary Laboratory of Acoustics
NIST: National Institute of Standards and Technology, USA
** 1 Pascal = 1N/m^2 = 10 µbar



Frequency [kHz]	Sensitivity [dB re 1 V/uPa]	Frequency [kHz]	Sensitivity [dB re 1 V/uPa]
4.0	-211.3	50.0	-213.8
5.0	-211.4	56.1	-214.6
6.3	-211.5	63.0	-214.1
8.1	-211.9	71.0	-214.2
10.0	-212.2	80.0	-213.8
12.5	-212.3	90.0	-213.1
16.0	-212.5	100.0	-211.8
20.0	-212.3	112.0	-210.8
25.0	-211.7	125.1	-211.4
28.0	-211.7	140.0	-213.8
31.5	-211.8	160.0	-217.5
35.5	-212.5	180.0	-223.6
40.1	-212.7	200.1	-220.5
45.1	-213.4		

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