



Certificate of Calibration

Ocean Sonics, Ltd.

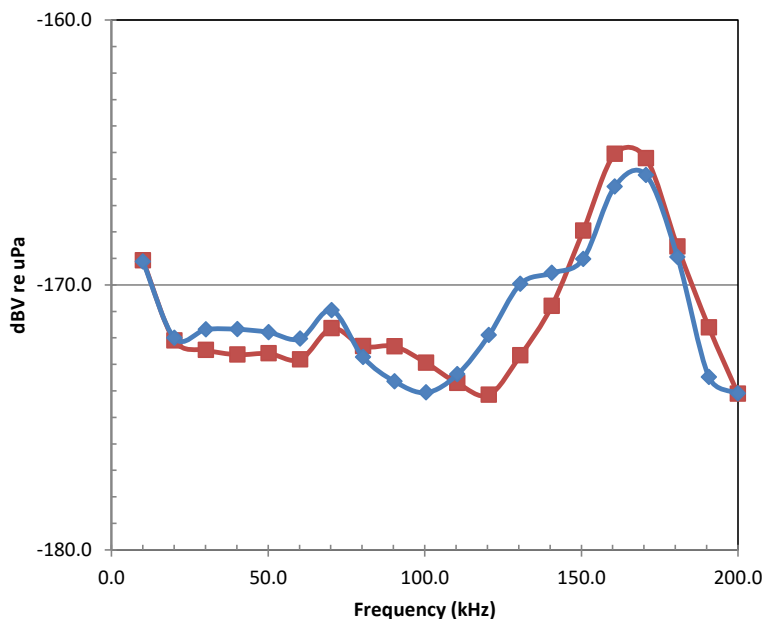
Calibration Certificate Number: **C4276**

Test Result: 10 kHz to 100 kHz: -171.6 ± 2.5
10 kHz to 200 kHz: -169.6 ± 4.5

Model Number SB35-ETH
Serial Number 1291
Manufacture Date 20-Oct-2017
Measurement Date 6-Nov-2017
Certificate Date 6-Nov-2017
Sensitivity @ 26 Hz $-170.2 \text{ dB re V / uPa}$
Case Type Titanium
Element Manufacturer GeoSpectrum
Element Model M24HF
Element Serial 904
Preamp Model 04-300435-01
Calibrated By S.MacLean
Work Order Number W1591
Test Type RX Sensitivity
Test Procedure Complex RMS
Test Location Tank #2, 1 m
Water Temperature 17 °C

Projector Manufacturer Ocean Sonics
Projector Model TH2-SER-4F
Projector Serial 2210
Measurement Distance 1 m
Output Level 125.7 dB re uPa @ 1 m
Tone Burst 100.0 us / 300 ms
Reference Manufacturer Ocean Sonics
Reference Model RB9-ETH
Reference Serial 1492
Primary Calibration 22-Dec-2015
Preamp Manufacturer Ocean Sonics
Preamp Model 04-300434-01
Preamp Serial 473
Preamp Gain 36 dB
ADC Manufacturer Ocean Sonics
ADC Model Number 04-300423-01
ADC Serial Number 473

Receive Sensitivity



Frequency	Sensitivity [dBV re uPa]	
kHz	0 deg	90 deg
10.0	-169.1	-169.1
20.1	-172.1	-172.0
30.1	-172.5	-171.7
40.2	-172.6	-171.7
50.2	-172.6	-171.8
60.2	-172.8	-172.0
70.3	-171.6	-171.0
80.3	-172.3	-172.7
90.4	-172.3	-173.6
100.4	-172.9	-174.1
110.4	-173.7	-173.4
120.5	-174.2	-171.9
130.5	-172.7	-170.0
140.5	-170.8	-169.6
150.6	-168.0	-169.0
160.6	-165.1	-166.3
170.7	-165.2	-165.9
180.7	-168.6	-168.9
190.7	-171.6	-173.5
200.0	-174.1	-174.1