



Certificate of Calibration

Ocean Sonics, Ltd.

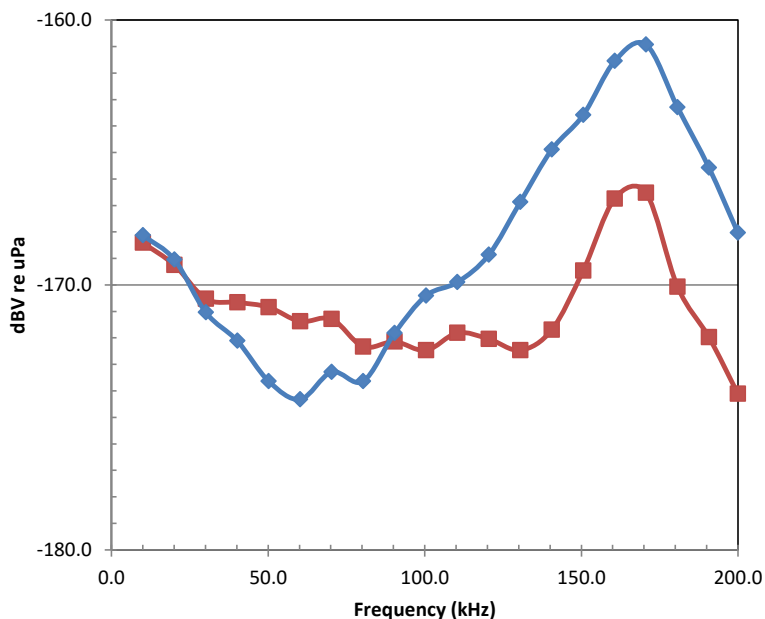
Calibration Certificate Number: **C4271**

Test Result: 10 kHz to 100 kHz: -171.2 ± 3.1
10 kHz to 200 kHz: -167.6 ± 6.7

Model Number SB35-ETH
Serial Number 1271
Manufacture Date 11-Oct-2017
Measurement Date 2-Nov-2017
Certificate Date 2-Nov-2017
Sensitivity @ 26 Hz -169.2 dB re V / μ Pa
Case Type Titanium
Element Manufacturer GeoSpectrum
Element Model M24HF
Element Serial 840
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 125.8 dB re μ Pa @ 1 m
Tone Burst 100.0 μ s / 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 μ Pa]	
kHz	0 deg	90 deg
10.0	-168.4	-168.1
20.1	-169.3	-169.0
30.1	-170.5	-171.0
40.2	-170.7	-172.1
50.2	-170.8	-173.6
60.2	-171.4	-174.3
70.3	-171.3	-173.3
80.3	-172.3	-173.6
90.4	-172.1	-171.8
100.4	-172.5	-170.4
110.4	-171.8	-169.9
120.5	-172.0	-168.9
130.5	-172.5	-166.9
140.5	-171.7	-164.9
150.6	-169.5	-163.6
160.6	-166.7	-161.5
170.7	-166.5	-160.9
180.7	-170.1	-163.3
190.7	-172.0	-165.6
200.0	-174.1	-168.0