



Certificate of Calibration

Ocean Sonics, Ltd.

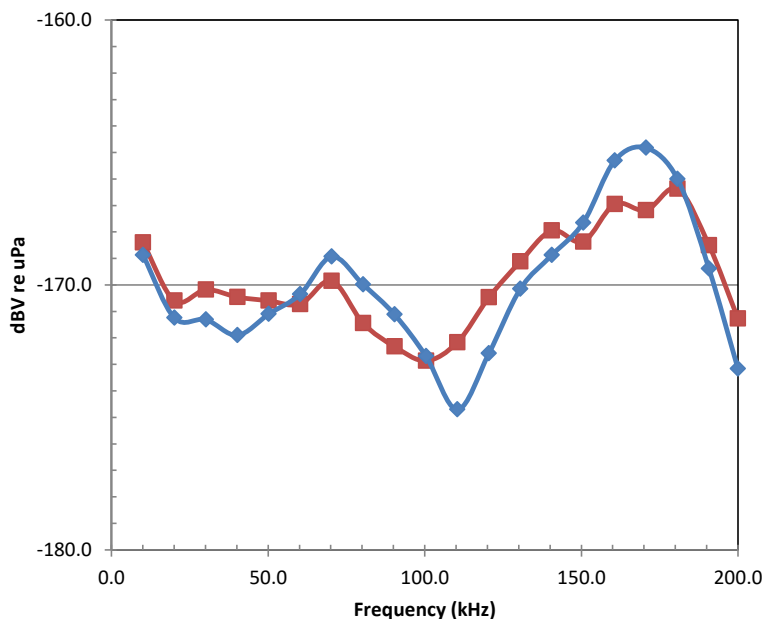
Calibration Certificate Number: **C4346**

Test Result: 10 kHz to 100 kHz: -170.6 ± 2.2
10 kHz to 200 kHz: -169.8 ± 4.9

Model Number SB35-ETH
Serial Number 1412
Manufacture Date 30-Jan-2018
Measurement Date 2-Feb-2018
Certificate Date 2-Feb-2018
Sensitivity @ 26 Hz -168.8 dB re V / uPa
Case Type Titanium
Element Manufacturer GeoSpectrum
Element Model M24HF
Element Serial B002502
Preamp Model 04-300435-01
Calibrated By S.MacLean
Work Order Number W1592
Test Type RX Sensitivity
Test Procedure Complex RMS
Test Location Tank #2, 1 m
Water Temperature 16 °C

Projector Manufacturer Ocean Sonics
Projector Model TH2-SER-4F
Projector Serial 2210
Measurement Distance 1 m
Output Level 129.1 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	-168.4	-168.9
20.1	-170.6	-171.2
30.1	-170.2	-171.3
40.2	-170.5	-171.9
50.2	-170.6	-171.1
60.2	-170.7	-170.4
70.3	-169.8	-168.9
80.3	-171.4	-170.0
90.4	-172.3	-171.1
100.4	-172.9	-172.7
110.4	-172.2	-174.7
120.5	-170.5	-172.6
130.5	-169.1	-170.2
140.5	-167.9	-168.9
150.6	-168.4	-167.7
160.6	-166.9	-165.3
170.7	-167.2	-164.8
180.7	-166.4	-166.0
190.7	-168.5	-169.4
200.0	-171.3	-173.2