



## Certificate of Calibration

Ocean Sonics, Ltd.

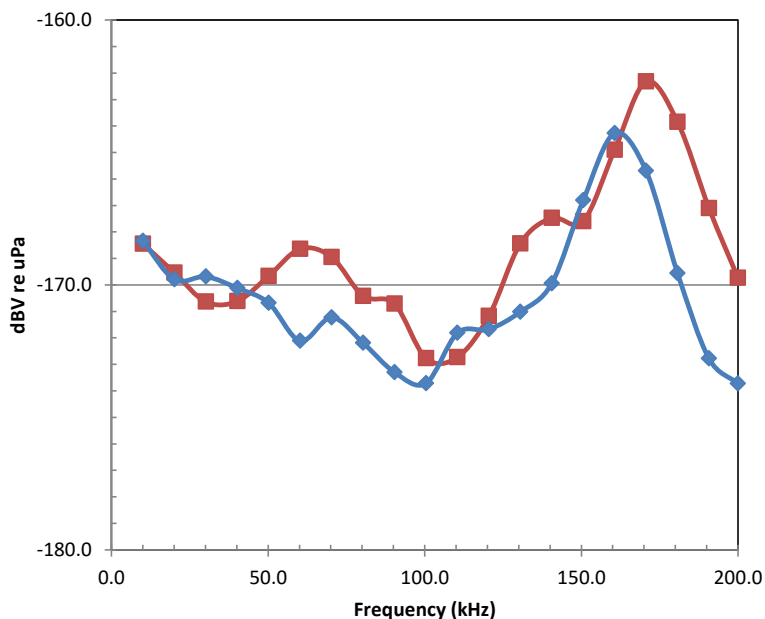
Calibration Certificate Number: **C4263**

Test Result: 10 kHz to 100 kHz:  $-171.0 \pm 2.7$   
10 kHz to 200 kHz:  $-168.0 \pm 5.7$

Model Number SB35-ETH  
Serial Number 1270  
Manufacture Date 11-Oct-2017  
Measurement Date 31-Oct-2017  
Certificate Date 31-Oct-2017  
Sensitivity @ 26 Hz -169.6 dB re V / uPa  
Case Type Titanium  
Element Manufacturer GeoSpectrum  
Element Model M24HF  
Element Serial 842  
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 126 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	-168.3
20.1	-169.5	-169.8
30.1	-170.6	-169.7
40.2	-170.6	-170.1
50.2	-169.7	-170.7
60.2	-168.6	-172.1
70.3	-168.9	-171.2
80.3	-170.4	-172.2
90.4	-170.7	-173.3
100.4	-172.8	-173.7
110.4	-172.7	-171.8
120.5	-171.2	-171.7
130.5	-168.4	-171.0
140.5	-167.5	-169.9
150.6	-167.6	-166.8
160.6	-164.9	-164.3
170.7	-162.3	-165.7
180.7	-163.8	-169.6
190.7	-167.1	-172.8
200.0	-169.7	-173.7