



Certificate of Calibration

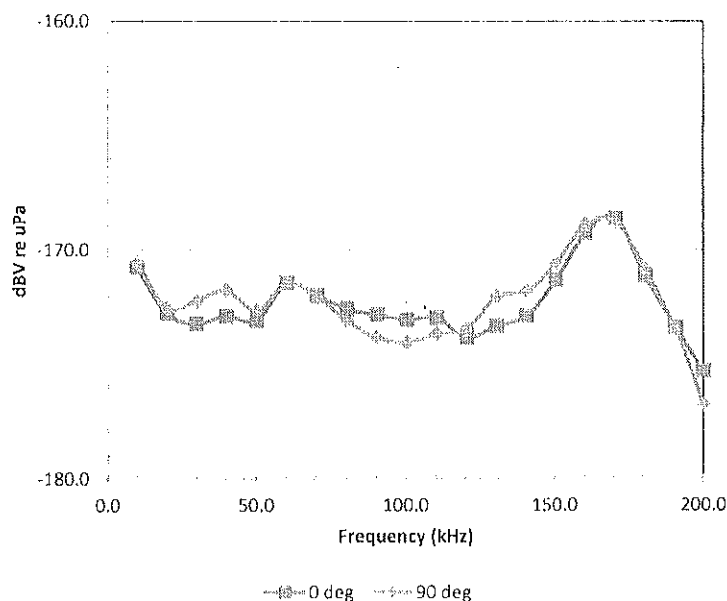
Ocean Sonics, Ltd.

Calibration Certificate Number: **C7056**

Test Result: 10 kHz to 100 kHz: -172.3 ± 1.8
10 kHz to 200 kHz: -172.7 ± 4.1

Model Number	SB35-ETH	Projector Manufacturer	Ocean Sonics
Serial Number	1411	Projector Model	TH2-SER-4F
Manufacture Date	6-Sep-2018	Projector Serial	2225
Measurement Date	1-Mar-2023	Measurement Distance	1 m
Certificate Date	1-Mar-2023	Output Level	130 dB re uPa @ 1 m
Sensitivity @ 26 Hz	-170.5 dB re V / uPa	Tone Burst	100.0 us / 300 ms
Case Type	Titanium	Reference Manufacturer	Ocean Sonics
Element Manufacturer	GeoSpectrum	Reference Model	RB9-ETH
Element Model	M24HF	Reference Serial	2080
Element Serial	F000850	Primary Calibration	20-Jan-2020
Preamplifier Model	04-300435-09	Preamplifier Manufacturer	Ocean Sonics
Calibrated By	D.Lee	Preamplifier Model	04-300449-01
Work Order Number	W45-135	Preamplifier Serial	M58
Test Type	RX Sensitivity	Preamplifier Gain	36 dB
Test Procedure	Complex RMS	ADC Manufacturer	Ocean Sonics
Test Location	Tank #3, 1 m	ADC Model Number	04-300426-01
Water Temperature	16 °C	ADC Serial Number	M59

Receive Sensitivity



Frequency	Sensitivity [dBV re uPa]	
kHz	0 deg	90 deg
10.0	-170.8	-170.5
20.1	-172.8	-172.5
30.1	-173.2	-172.2
40.2	-172.9	-171.8
50.2	-173.1	-172.7
60.2	-171.5	-171.4
70.3	-172.0	-172.1
80.3	-172.6	-173.1
90.4	-172.8	-173.8
100.4	-173.1	-174.1
110.4	-173.0	-173.7
120.5	-173.8	-173.5
130.5	-173.3	-172.0
140.5	-172.9	-171.8
150.6	-171.3	-170.6
160.6	-169.3	-168.9
170.7	-168.6	-168.8
180.7	-171.1	-170.8
190.7	-173.4	-173.5
200.0	-175.3	-176.8