



Certificate of Calibration

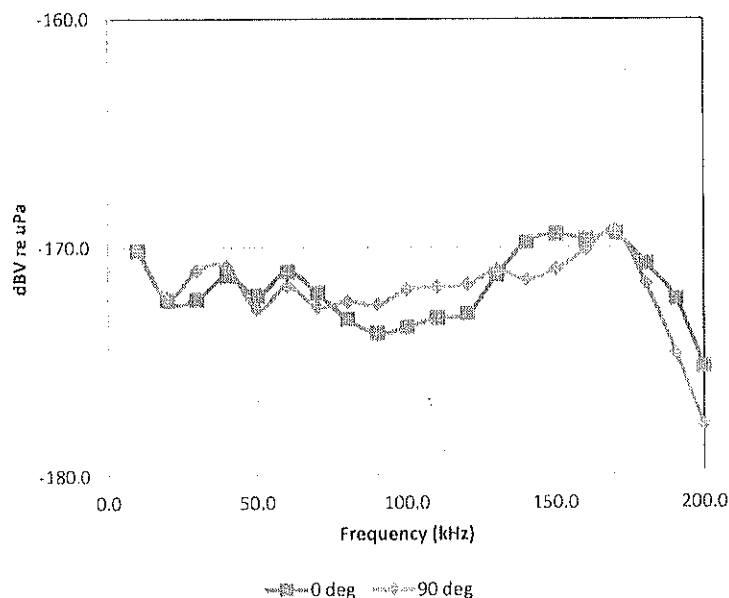
Ocean Sonics, Ltd.

Calibration Certificate Number: **C7055**

Test Result: 10 kHz to 100 kHz: -171.9 ± 1.9
10 kHz to 200 kHz: -173.5 ± 4.3

Model Number	SB35-ETH	Projector Manufacturer	Ocean Sonics
Serial Number	1291	Projector Model	TH2-SER-4F
Manufacture Date	20-Oct-2017	Projector Serial	2225
Measurement Date	1-Mar-2023	Measurement Distance	1 m
Certificate Date	1-Mar-2023	Output Level	130 dB re μ Pa @ 1 m
Sensitivity @ 26 Hz	-170.5 dB re V / μ Pa	Tone Burst	100.0 μ s / 300 ms
Case Type	Titanium	Reference Manufacturer	Ocean Sonics
Element Manufacturer	GeoSpectrum	Reference Model	RB9-ETH
Element Model	M24HF	Reference Serial	2080
Element Serial	F000846	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 kHz	Sensitivity [dBV re μ Pa]	
	0 deg	90 deg
10.0	-170.1	-170.1
20.1	-172.3	-172.2
30.1	-172.3	-171.0
40.2	-171.3	-170.8
50.2	-172.1	-172.7
60.2	-171.1	-171.7
70.3	-172.0	-172.7
80.3	-173.2	-172.4
90.4	-173.8	-172.5
100.4	-173.5	-171.9
110.4	-173.1	-171.8
120.5	-172.9	-171.7
130.5	-171.2	-171.0
140.5	-169.8	-171.4
150.6	-169.4	-171.0
160.6	-169.7	-170.1
170.7	-169.4	-169.3
180.7	-170.7	-171.6
190.7	-172.3	-174.7
200.0	-175.3	-177.8