



Certificate of Calibration

Ocean Sonics, Ltd.

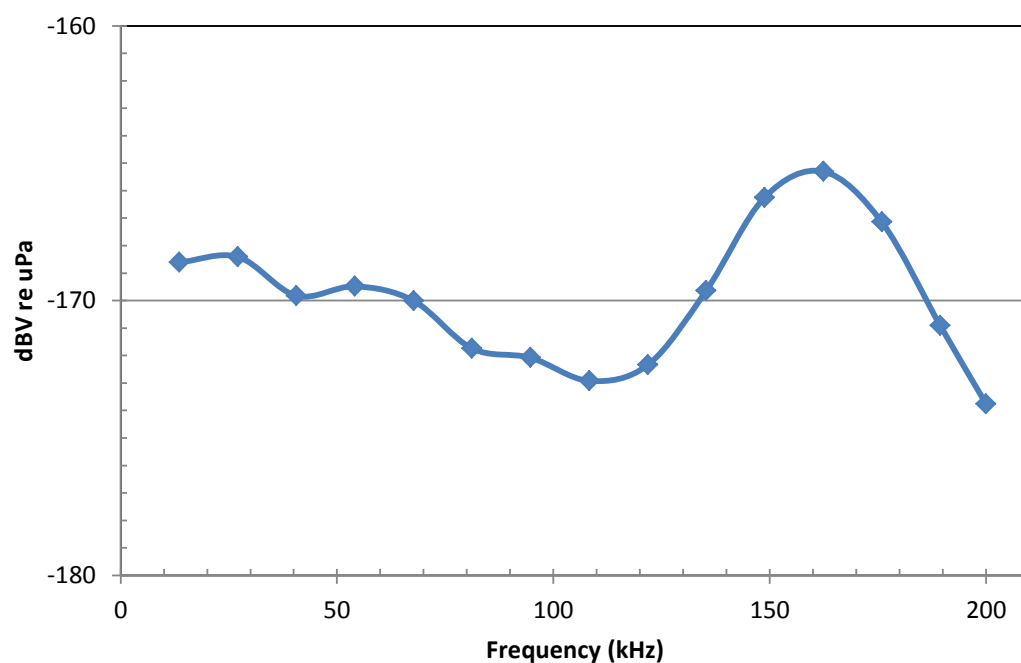
Calibration Certificate Number

C3037

Test Result: 10 kHz to 100 kHz: -170.2 ± 1.8
10 kHz to 200 kHz: -169.5 ± 4.2

Model Number	SB35-ETH	Projector Manufacturer	Ocean Sonics
Serial Number	1273	Projector Model	TH2-SER-4F
Manufacture Date	9-Dec-2013	Projector Serial	2206
Measurement Date	11-Dec-2013	Measurement Distance	0.5 m
Certificate Date	11-Dec-2013	Projector Mode	Wideband
Sensitivity @ 26 Hz	-169.2 dBV re μ Pa	Output Level	131.5 dB re μ Pa @ 1.0 m
Case Type	Titanium	Reference Manufacturer	Reson
Element Manufacturer	GeoSpectrum	Reference Model	TC4034-1
Element Model	M24HF	Reference Serial	4211050
Element Serial	843	Preamp Manufacturer	Ocean Sonics
Software Release	22	Preamp Model	300415-01-X1
Calibrated By	M. Ceekala	Preamp Serial	78
Work Order Number	1052	Preamp Gain	30 dB
Test Type	RX Sensitivity	ADC Manufacturer	Ocean Sonics
Test Procedure	Gated FFT	ADC Model Number	04-300422-01
Test Location	Tank #1, 0.5 m	ADC Serial Number	93

Receive Sensitivity



Frequency kHz	Sensitivity dBV re μ Pa
13.5	-168.6
27.1	-168.4
40.6	-169.8
54.1	-169.5
67.7	-170.0
81.2	-171.7
94.7	-172.1
108.3	-172.9
121.8	-172.3
135.3	-169.6
148.8	-166.2
162.4	-165.3
175.9	-167.1
189.4	-170.9
200.0	-173.8