

50/200 kHz-L (50 kHz)

Ceramics Wired in Parallel

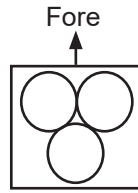
Power Rating: 1.5 kW @ 1% duty cycle
 3 x 42.4 mm (1.67") PZT
 Active Area: 42.38 cm² (6.57 in²)
 Radiating Surface: Urethane

Beamwidth:

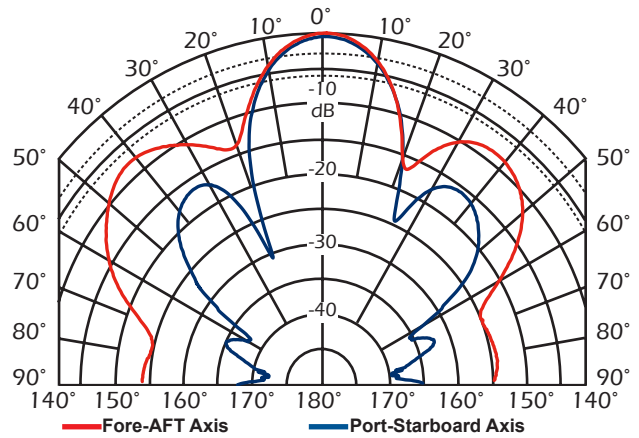
-3 dB: 18°/18°
 -6 dB: 25°/25°
 -10 dB: 32°/31°

Directivity Index: 20
 Frequency Tolerance: ± 2 kHz
 Peak TVR⁽¹⁾, nominal: 159 dB
 Peak TVR⁽¹⁾, minimum: 157 dB
 Q (transmit): 8
 Peak Source Level⁽⁴⁾: 215 dB
 Peak RVR⁽²⁾, nominal: -173 dB
 Peak Figure of Merit⁽³⁾: -20 dB

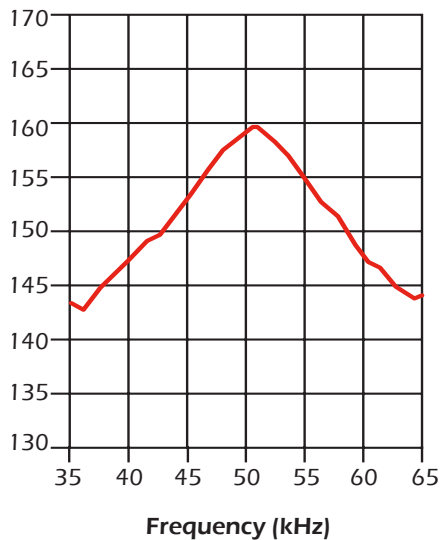
Array



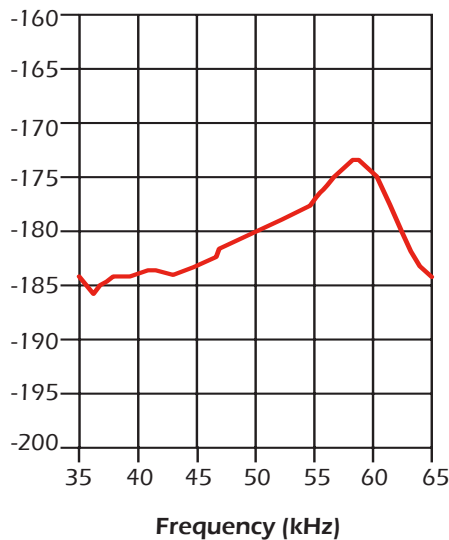
Transmit Radiation Pattern



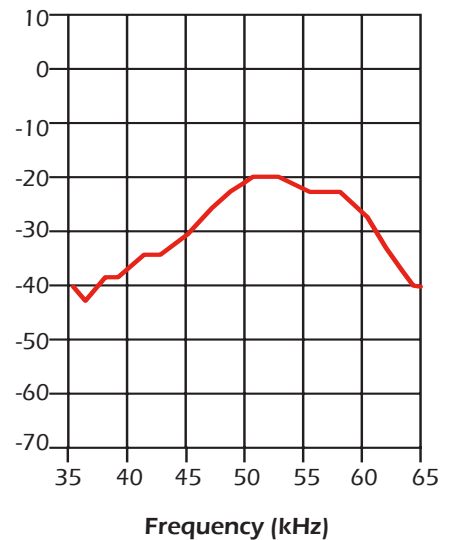
TVR
dB⁽¹⁾



RVR
dB⁽²⁾



FOM
dB⁽³⁾



Notes:

- (1) dB re 1 µPa per volt at 1 meter
- (2) dB re 1 volt per µPa
- (3) Sum of transmitting voltage response and receiving voltage response
- (4) Nominal peak TVR, rated power, and no cavitation

Technical Data Catalog

50/200 kHz-L (50 kHz)

3 x 42.4 mm (1.67") PZT

Cable Type: C315

Cable Length: 15 m (50')

Note:

Impedance data includes cable

Impedance Data		
	<i>Balanced</i>	<i>Unbalanced</i>
Parallel: Rp.	310 Ω: -20%, +40%	290 Ω: -20%, +40%
Parallel: Cp. (nominal)	3360 pF	2850 pF
Series [R - jX]: (nominal)	280 - j100 Ω	270 - j70 Ω
1 kHz capacitance: (nominal)	4980pF	5160pF

Balance Impedance Table

Test Frequency (kHz)	Impedance Magnitude (Ω)	Phase Angle (°)	Series Resistance (Ω)	Series Reactance (Ω)	Parallel Conductance (mS)	Parallel Susceptance (mS)	Parallel Resistance (Ω)	Parallel Capacitance (pF)
35.00	751.81	-86.06	51.70	-750.03	0.09	1.33	10932.33	6034.15
36.00	712.74	-85.98	50.02	-710.98	0.10	1.40	10156.22	6187.48
37.00	672.28	-85.64	51.08	-670.33	0.11	1.48	8847.94	6379.89
38.00	633.11	-85.07	54.39	-630.77	0.14	1.57	7369.96	6590.99
39.00	595.56	-84.40	58.10	-592.72	0.16	1.67	6104.41	6819.52
40.00	556.82	-83.58	62.26	-553.33	0.20	1.78	4979.70	7100.92
41.00	518.69	-82.38	68.76	-514.11	0.26	1.91	3912.87	7417.91
42.00	478.86	-80.81	76.45	-472.72	0.33	2.06	2999.59	7811.91
43.00	440.45	-78.65	86.72	-431.83	0.45	2.23	2237.14	8238.94
44.00	400.22	-75.57	99.73	-387.60	0.62	2.42	1606.13	8752.79
45.00	364.19	-71.17	117.56	-344.69	0.89	2.60	1128.17	9191.57
46.00	332.06	-65.25	139.02	-301.55	1.26	2.73	793.14	9462.53
47.00	308.92	-57.93	164.02	-261.78	1.72	2.74	581.82	9288.88
48.00	290.81	-49.79	187.74	-222.09	2.22	2.63	450.45	8707.37
49.00	277.52	-40.19	212.02	-179.08	2.75	2.33	363.27	7551.96
50.00	270.95	-27.91	239.45	-126.81	3.26	1.73	306.61	5498.23
51.00	282.47	-13.28	274.91	-64.89	3.45	0.81	290.23	2537.90
52.00	325.46	0.86	325.42	4.90	3.07	-0.05	325.49	-141.54
53.00	408.14	10.62	401.14	75.25	2.41	-0.45	415.26	-1356.53
54.00	492.50	16.85	471.35	142.79	1.94	-0.59	514.61	-1735.06
55.00	638.67	25.92	574.43	279.17	1.41	-0.68	710.10	-1980.45
56.00	900.07	26.23	807.40	397.78	1.00	-0.49	1003.37	-1395.49
57.00	1203.65	22.02	1115.81	451.38	0.77	-0.31	1298.40	-869.93
58.00	1621.71	15.29	1564.30	427.67	0.59	-0.16	1681.22	-446.22
59.00	2177.70	2.28	2175.98	86.61	0.46	-0.02	2179.42	-49.26
60.00	2653.97	-17.98	2524.41	-819.10	0.36	0.12	2790.18	308.47
61.00	2693.87	-40.61	2045.04	-1753.49	0.28	0.24	3548.55	630.44
62.00	2375.33	-57.19	1287.25	-1996.29	0.23	0.35	4383.14	908.25
63.00	2023.06	-67.98	758.49	-1875.49	0.19	0.46	5395.92	1157.65
64.00	1748.82	-74.66	462.77	-1686.48	0.15	0.55	6608.87	1371.30
65.00	1532.95	-78.87	295.98	-1504.10	0.13	0.64	7939.51	1567.22

50/200 kHz-L (200 kHz)

Ceramics Wired in Parallel

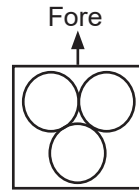
Power Rating: 1.5 kW @ 1% duty cycle
 3 x 42.4 mm (1.67") PZT
 Active Area: 42.38 cm² (6.57 in²)
 Radiating Surface: Urethane

Beamwidth:

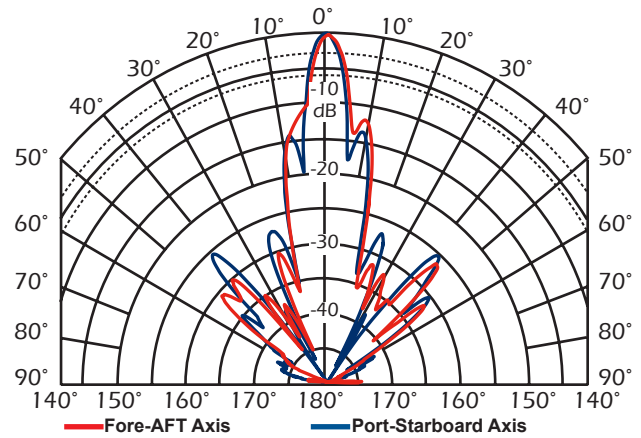
-3 dB: 5°/5°
 -6 dB: 7°/7°
 -10 dB: 9°/8°

Directivity Index: 31
 Frequency Tolerance: ± 4 kHz
 Peak TVR⁽¹⁾, nominal: 172 dB
 Peak TVR⁽¹⁾, minimum: 170 dB
 Q (transmit): 14
 Peak Source Level⁽⁴⁾: 227 dB
 Peak RVR⁽²⁾, nominal: -179 dB
 Peak Figure of Merit⁽³⁾: -10 dB

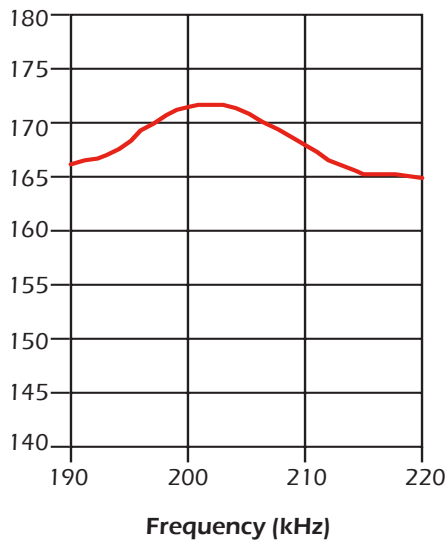
Array



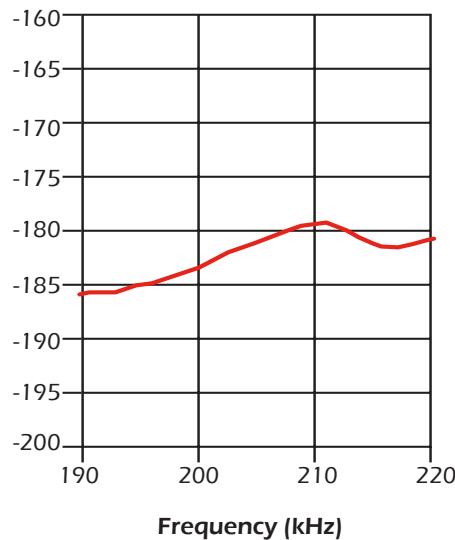
Transmit Radiation Pattern



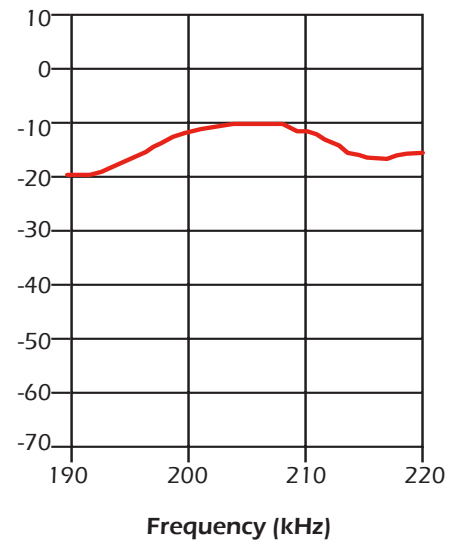
TVR
dB⁽¹⁾



RVR
dB⁽²⁾



FOM
dB⁽³⁾



Notes:

- (1) dB re 1 µPa per volt at 1 meter
- (2) dB re 1 volt per µPa
- (3) Sum of transmitting voltage response and receiving voltage response
- (4) Nominal peak TVR, rated power, and no cavitation

Technical Data Catalog

50/200 kHz-L (200 kHz)

3 x 42.4 mm (1.67") PZT

Cable Type: C315

Cable Length: 15 m (50')

Note:

Impedance data includes cable

Impedance Data		
	<i>Balanced</i>	<i>Unbalanced</i>
Parallel: Rp.	230 Ω: -20%, +40%	220 Ω: -20%, +40%
Parallel: Cp. (nominal)	1390 pF	2110 pF
Series [R - jX]: (nominal)	200 - j80 Ω	160 - j100 Ω
1 kHz capacitance: (nominal)	4940pF	5140pF

Balance Impedance Table

Test Frequency (kHz)	Impedance Magnitude (Ω)	Phase Angle (°)	Series Resistance (Ω)	Series Reactance (Ω)	Parallel Conductance (mS)	Parallel Susceptance (mS)	Parallel Resistance (Ω)	Parallel Capacitance (pF)
190.00	256.72	-52.39	156.69	-203.36	2.38	3.09	420.62	2584.69
191.00	254.33	-53.54	151.12	-204.57	2.34	3.16	428.03	2635.20
192.00	249.51	-54.10	146.32	-202.10	2.35	3.25	425.47	2691.07
193.00	242.47	-54.82	139.70	-198.18	2.38	3.37	420.84	2779.74
194.00	231.09	-54.85	133.04	-188.95	2.49	3.54	401.39	2902.76
195.00	218.70	-53.72	129.42	-176.29	2.71	3.69	369.56	3008.31
196.00	206.68	-51.07	129.87	-160.78	3.04	3.76	328.92	3056.29
197.00	198.26	-47.53	133.87	-146.23	3.41	3.72	293.61	3005.72
198.00	192.24	-43.02	140.54	-131.16	3.80	3.55	262.94	2852.86
199.00	189.85	-37.92	149.78	-116.67	4.16	3.24	240.65	2588.70
200.00	191.49	-32.35	161.77	-102.45	4.41	2.79	226.66	2223.53
201.00	197.17	-26.83	175.94	-89.00	4.53	2.29	220.96	1812.80
202.00	206.55	-21.42	192.28	-75.44	4.51	1.77	221.88	1393.32
203.00	221.77	-16.49	212.65	-62.95	4.32	1.28	231.29	1003.43
204.00	241.28	-12.02	235.99	-50.23	4.05	0.86	246.68	673.14
205.00	268.98	-8.98	265.69	-41.98	3.67	0.58	272.32	450.44
206.00	300.69	-6.95	298.48	-36.37	3.30	0.40	302.91	310.79
207.00	337.78	-6.21	335.80	-36.53	2.94	0.32	339.77	246.19
208.00	378.90	-6.24	376.66	-41.22	2.62	0.29	381.17	219.67
209.00	429.27	-7.28	425.81	-54.36	2.31	0.30	432.75	224.64
210.00	483.94	-10.20	476.29	-85.68	2.03	0.37	491.70	277.26
211.00	539.25	-15.07	520.71	-140.20	1.79	0.48	558.46	363.66
212.00	579.32	-20.67	542.04	-204.45	1.62	0.61	619.16	457.34
213.00	604.28	-26.75	539.61	-271.98	1.48	0.74	676.70	556.55
214.00	606.15	-32.42	511.69	-324.95	1.39	0.88	718.05	657.76
215.00	596.50	-36.28	480.84	-352.98	1.35	0.99	739.96	734.38
216.00	581.74	-38.04	458.14	-358.51	1.35	1.06	738.68	780.56
217.00	583.62	-38.03	459.69	-359.58	1.35	1.06	740.96	774.27
218.00	608.20	-37.77	480.75	-372.54	1.30	1.01	769.44	735.26
219.00	659.55	-39.07	512.05	-415.71	1.18	0.96	849.54	694.49
220.00	716.41	-43.20	522.27	-490.38	1.02	0.96	982.71	691.21