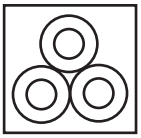
50/200 kHz-Glq (50 kHz)

Array

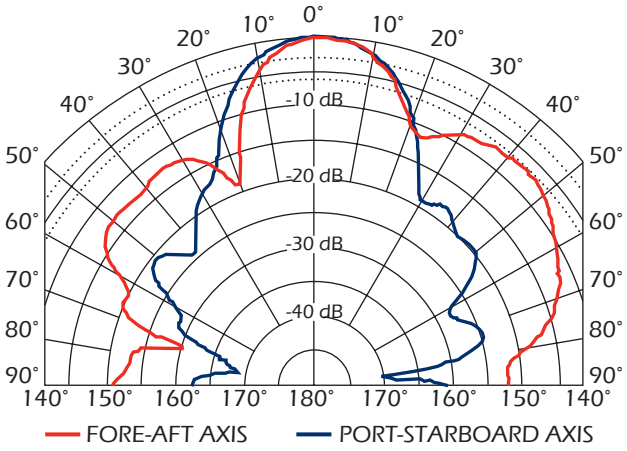


Ceramics wired in parallel
Transformed to 240 ohms
Power Rating: 1 kW rms @ 2% duty cycle
3 x 35 mm (1.38") PZT4
Active Area: 29 cm²
Epoxy/Urethane Window

Beamwidth:
-3 dB: 22° / 20°
-6 dB: 31° / 27°
-10 dB: 39° / 34°

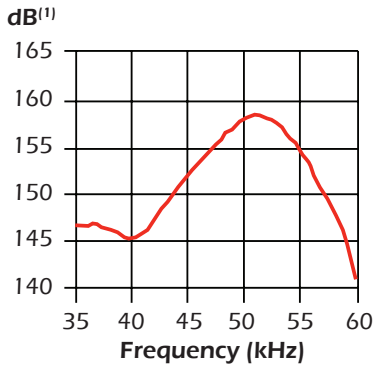
Directivity Index:	17
Frequency Tolerance:	± 2 kHz
Peak TVR(1), nominal:	158 dB
Peak TVR(1), minimum:	156 dB
Q (transmit):	7
Peak Source Level(4):	212 dB
Peak RVR(2), nominal:	-174 dB
Peak Figure of Merit(3):	-23 dB

Transmit Radiation Pattern



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

TVR



RVR

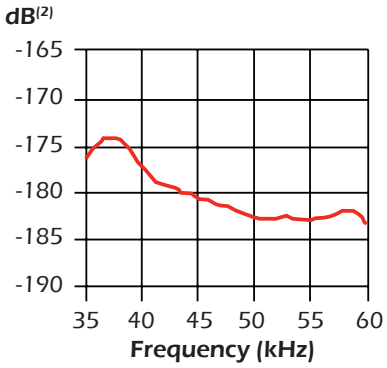
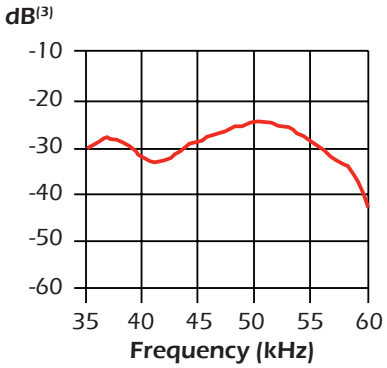


Figure of Merit



50/200 kHz-Glq (50 kHz)

3 x 35 mm (1.38”) PZT4

Cable Type: C332
Cable Length: 10.4 m (34’)

Note:
Impedance data includes cable

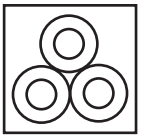
Impedance Data		
	Balanced	*Unbalanced*
Parallel: Rp.	240 Ω: -20%, +40%	240 Ω: -20%, +40%
Parallel: Cp. (nominal)	1,190 pF	1,190 pF
Series [R - jX]: (nominal)	240 - j20 Ω	240 - j20 Ω
1 kHz capacitance: (nominal)	n/a	n/a

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)
40.00	1612.74	-14.04	1564.56	-391.27	0.6015	0.1504	1662.41	598.56
40.50	1489.57	-21.62	1384.82	-548.73	0.6241	0.2473	1602.25	971.85
41.00	1360.55	-28.57	1194.84	-650.74	0.6455	0.3515	1549.25	1364.63
41.50	1209.24	-34.00	1002.49	-676.22	0.6856	0.4624	1458.63	1773.52
42.00	1059.11	-37.85	836.25	-649.93	0.7455	0.5794	1341.37	2195.60
42.50	936.96	-40.85	708.71	-612.88	0.8073	0.6981	1238.71	2614.37
43.50	746.52	-43.15	544.67	-510.52	0.9773	0.9161	1023.18	3351.62
44.00	672.20	-43.96	483.89	-466.58	1.0709	1.0326	933.78	3735.12
44.50	616.54	-43.74	445.47	-426.23	1.1719	1.1213	853.30	4010.43
45.00	561.12	-42.93	410.86	-382.17	1.3049	1.2138	766.35	4292.92
45.50	510.99	-42.67	375.69	-346.36	1.4388	1.3265	695.01	4639.93
46.00	472.55	-42.12	350.49	-316.95	1.5696	1.4194	637.11	4910.85
47.00	393.60	-38.19	309.36	-243.34	1.9969	1.5708	500.77	5319.03
47.50	362.22	-36.57	290.89	-215.84	2.2171	1.6451	451.04	5511.97
48.00	331.66	-33.45	276.72	-182.82	2.5157	1.6621	397.51	5510.92
48.50	306.15	-29.35	266.85	-150.06	2.8471	1.6011	351.23	5253.94
49.00	282.40	-25.31	255.29	-120.75	3.2010	1.5141	312.40	4917.80
49.50	265.98	-19.74	250.34	-89.85	3.5387	1.2701	282.59	4083.55
50.50	243.78	-5.28	242.74	-22.42	4.0848	0.3772	244.81	1188.81
51.00	247.15	1.61	247.05	6.95	4.0445	-0.1138	247.25	-355.14
51.50	254.38	8.95	251.28	39.59	3.8832	-0.6118	257.52	-1890.77
52.00	263.94	15.72	254.07	71.50	3.6471	-1.0264	274.19	-3141.38
52.50	281.07	21.22	262.02	101.72	3.3167	-1.2876	301.51	-3903.33
53.00	304.27	26.36	272.64	135.08	2.9449	-1.4591	339.57	-4381.50
54.00	352.46	35.87	285.63	206.50	2.2992	-1.6623	434.93	-4899.26
54.50	387.62	39.82	297.72	248.22	1.9815	-1.6521	504.67	-4824.48
55.00	432.70	44.06	310.95	300.89	1.6608	-1.6071	602.11	-4650.46
55.50	489.16	47.15	332.66	358.63	1.3903	-1.4988	719.28	-4298.02
56.00	561.04	49.18	366.77	424.56	1.1652	-1.3488	858.22	-3833.31
56.50	652.84	50.36	416.51	502.72	0.9773	-1.1795	1023.27	-3322.62
57.50	870.59	49.30	567.69	660.04	0.7490	-0.8708	1335.10	-2410.43
58.00	1014.58	47.64	683.67	749.65	0.6642	-0.7283	1505.66	-1998.37
58.50	1186.92	45.36	834.06	844.47	0.5920	-0.5994	1689.07	-1630.82
59.00	1401.70	41.49	1049.90	928.70	0.5344	-0.4727	1871.39	-1275.07
59.50	1660.74	36.27	1338.97	982.46	0.4855	-0.3562	2059.84	-952.82
60.00	1988.72	29.26	1734.94	972.11	0.4387	-0.2458	2279.62	-651.98

50/200 kHz-Glq (200 kHz)

Array

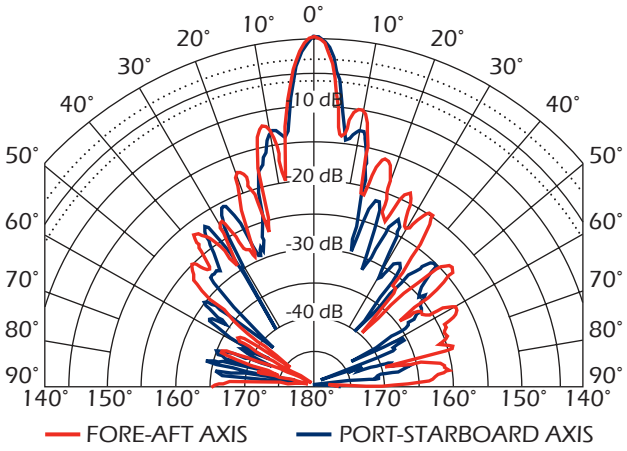


Ceramics wired in parallel
Transformed to 180 ohms
Power Rating: 1 kW rms @ 2% duty cycle
3 x 35 mm (1.38") PZT4
Active Area: 29 cm²
Epoxy/Urethane Window

Beamwidth:
-3 dB: 6° / 6°
-6 dB: 8° / 8°
-10 dB: 11° / 10°

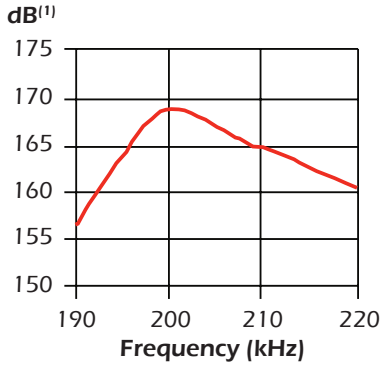
Directivity Index:	28.6
Frequency Tolerance:	± 4 kHz
Peak TVR(1), nominal:	168 dB
Peak TVR(1), minimum:	166 dB
Q (transmit):	17
Peak Source Level(4):	220 dB
Peak RVR(2), nominal:	-187 dB
Peak Figure of Merit(3):	-20 dB

Transmit Radiation Pattern



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

TVR



RVR

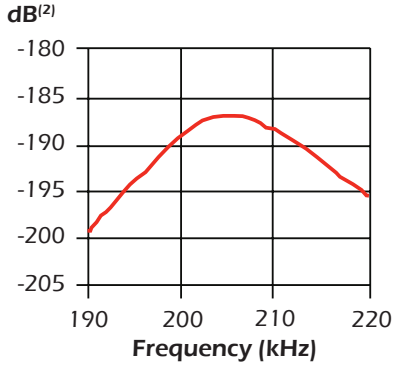
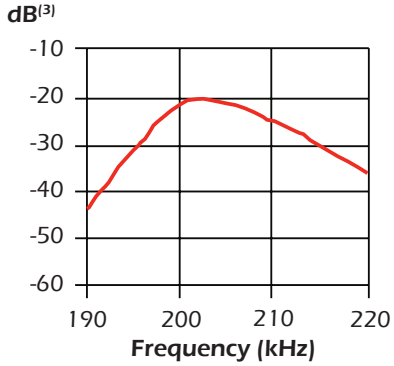


Figure of Merit



50/200 kHz-Glq (200 kHz)

3 x 35 mm (1.38”) PZT4

Cable Type: C332
Cable Length: 10.4 m (34’)

Note:
Impedance data includes cable

Impedance Data		
	Balanced	*Unbalanced*
Parallel: Rp.	180 Ω: -20%, +40%	180 Ω: -20%, +40%
Parallel: Cp. (nominal)	3,790 pF	3790 pF
Series [R - jX]: (nominal)	100 - j90 Ω	100 - j90 Ω
1 kHz capacitance: (nominal)	n/a	n/a

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	162.25	-77.38	35.44	-158.33	1.3461	6.0146	742.87	5038.15
191.00	154.13	-76.10	37.03	-149.61	1.5587	6.2981	641.55	5247.99
192.00	146.54	-74.46	39.25	-141.19	1.8279	6.5745	547.08	5449.79
193.00	139.44	-72.30	42.39	-132.84	2.1800	6.8319	458.71	5633.87
194.00	133.08	-69.54	46.52	-124.68	2.6269	7.0401	380.68	5775.59
195.00	127.82	-66.15	51.69	-116.90	3.1636	7.1552	316.09	5839.91
196.00	123.61	-61.96	58.11	-109.10	3.8032	7.1402	262.93	5797.91
197.00	121.69	-56.91	66.44	-101.95	4.4866	6.8844	222.89	5561.87
198.00	122.69	-51.44	76.48	-95.94	5.0808	6.3733	196.82	5122.90
199.00	127.62	-45.70	89.13	-91.33	5.4730	5.6079	182.71	4485.02
200.00	137.28	-40.84	103.85	-89.78	5.5105	4.7641	181.47	3791.14
201.00	151.14	-37.86	119.33	-92.77	5.2235	4.0608	191.44	3215.37
202.00	168.83	-36.70	135.37	-100.89	4.7493	3.5394	210.56	2788.72
203.00	186.32	-37.60	147.57	-113.75	4.2507	3.2767	235.25	2569.00
204.00	203.94	-39.37	157.67	-129.36	3.7908	3.1100	263.80	2426.37
205.00	218.92	-42.90	160.37	-149.03	3.3461	3.1094	298.86	2414.05
206.00	230.18	-46.37	158.84	-166.60	2.9978	3.1443	333.58	2429.29
207.00	239.75	-50.54	152.37	-185.10	2.6509	3.2203	377.22	2476.00
208.00	243.35	-54.75	140.44	-198.73	2.3716	3.3559	421.65	2567.82
209.00	244.85	-58.57	127.66	-208.94	2.1294	3.4850	469.62	2653.88
210.00	242.54	-62.51	111.95	-215.16	1.9031	3.6576	525.46	2772.00
211.00	237.99	-65.50	98.68	-216.57	1.7423	3.8236	573.96	2884.09
212.00	232.93	-68.46	85.52	-216.66	1.5761	3.9933	634.47	2997.93
213.00	226.23	-70.98	73.74	-213.88	1.4407	4.1789	694.11	3122.48
214.00	219.70	-72.96	64.37	-210.06	1.3335	4.3519	749.88	3236.54
215.00	212.97	-74.86	55.60	-205.58	1.2260	4.5326	815.68	3355.32
216.00	206.00	-76.23	49.04	-200.07	1.1557	4.7149	865.24	3474.06
217.00	199.64	-77.54	43.08	-194.93	1.0810	4.8911	925.10	3587.27
218.00	193.23	-78.54	38.39	-189.38	1.0280	5.0720	972.74	3702.90
219.00	187.28	-79.27	34.88	-184.00	0.9945	5.2462	1005.55	3812.62
220.00	181.43	-79.95	31.66	-178.65	0.9619	5.4271	1039.66	3926.13