

**42 to 65 kHz-A (Broadband)**  
 Transformed to 100 ohms minimum (B1)

Power Rating:

- 1 kW @ 1% duty cycle
- CW<sup>(4)</sup>: 25W in B265, PM265  
 15W in M265, TM265

7 x 28.6 mm (1.13 in) PZT  
 Active Area: 45 cm<sup>2</sup> (6.9 in<sup>2</sup>)  
 Radiating Surface: Urethane

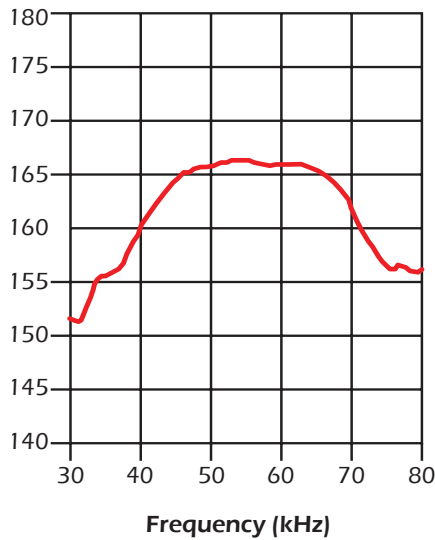
Q ≈ 2

Cable Type: C335  
 Cable Length: 10 m (33 ft)

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) CW Power ratings is for 20°C seawater temperature. Consult Airmar for different housing CW ratings.

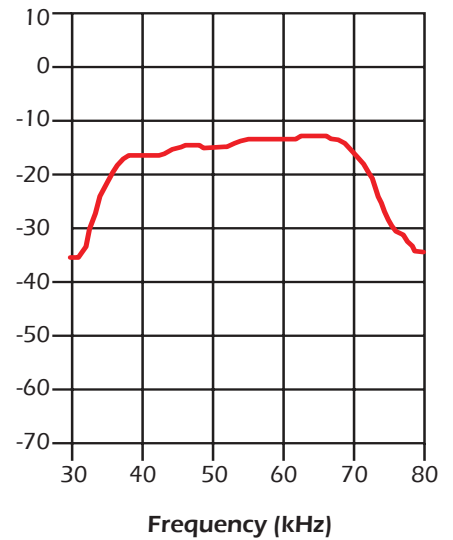
**TVR**  
dB<sup>(1)</sup>



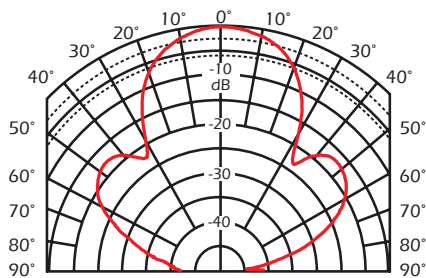
**RVR**  
dB<sup>(2)</sup>



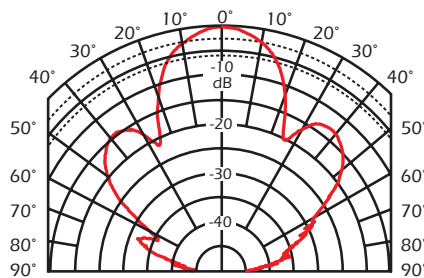
**FOM**  
dB<sup>(3)</sup>



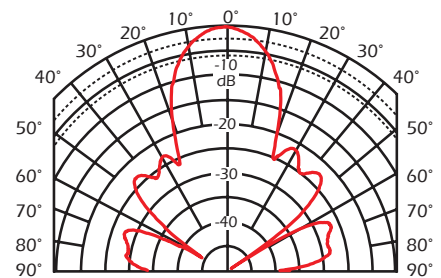
**Transmit Radiation Pattern**



Beamwidth	@ 42 kHz
-3 dB	25°
-6 dB	35°
-10 dB	43°



Beamwidth	@ 50 kHz
-3 dB	20°
-6 dB	28°
-10 dB	34°



Beamwidth	@ 65 kHz
-3 dB	16°
-6 dB	22°
-10 dB	28°

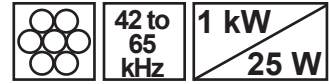
# Technical Data Catalog

## 42 to 65 kHz-A (Broadband)

Note: Impedance data includes cable

**Balanced Impedance Table (Nominal Value) in 20°C Water**

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	305.87	-15.48	294.78	-81.62	3.15	0.87	317.38	3470.98
41.00	247.24	-19.88	232.50	-84.08	3.80	1.38	262.91	5339.42
42.00	203.32	-20.42	190.54	-70.94	4.61	1.72	216.95	6502.90
43.00	173.62	-19.56	163.60	-58.14	5.43	1.93	184.26	7138.63
44.00	152.61	-16.64	146.22	-43.70	6.28	1.88	159.28	6786.59
45.00	140.30	-12.05	137.20	-29.29	6.97	1.49	143.46	5262.71
46.00	134.39	-8.36	132.96	-19.55	7.36	1.08	135.83	3745.19
47.00	129.98	-5.84	129.31	-13.23	7.65	0.78	130.66	2651.98
48.00	126.28	-3.80	126.00	-8.37	7.90	0.53	126.55	1740.80
49.00	123.64	-1.69	123.58	-3.64	8.08	0.24	123.69	773.95
50.00	119.60	0.02	119.60	0.03	8.36	0.00	119.60	-7.13
51.00	115.87	3.54	115.65	7.15	8.61	-0.53	116.09	-1661.96
52.00	116.85	7.67	115.81	15.59	8.48	-1.14	117.91	-3495.61
53.00	120.09	11.08	117.86	23.07	8.17	-1.60	122.37	-4803.73
54.00	125.09	13.76	121.50	29.74	7.77	-1.90	128.78	-5602.29
55.00	131.10	15.44	126.37	34.90	7.35	-2.03	136.01	-5875.61
56.00	138.17	16.25	132.65	38.67	6.95	-2.03	143.92	-5757.18
57.00	144.18	16.30	138.39	40.46	6.66	-1.95	150.22	-5434.31
58.00	147.81	16.55	141.69	42.11	6.48	-1.93	154.20	-5288.48
59.00	154.64	17.23	147.70	45.81	6.18	-1.92	161.91	-5167.01
60.00	159.67	16.88	152.79	46.36	5.99	-1.82	166.86	-4823.14
61.00	164.96	17.59	157.25	49.84	5.78	-1.83	173.05	-4778.87
62.00	171.78	18.35	163.05	54.08	5.53	-1.83	180.99	-4704.40
63.00	182.10	18.89	172.28	58.97	5.20	-1.78	192.47	-4492.47
64.00	190.26	19.35	179.52	63.03	4.96	-1.74	201.65	-4330.09
65.00	203.20	20.59	190.22	71.47	4.61	-1.73	217.07	-4238.17
66.00	220.23	21.49	204.92	80.67	4.23	-1.66	236.68	-4010.94
67.00	244.22	21.86	226.65	90.94	3.80	-1.52	263.14	-3622.18
68.00	275.19	21.56	255.95	101.11	3.38	-1.34	295.89	-3124.79
69.00	319.03	20.17	299.48	109.98	2.94	-1.08	339.87	-2492.40
70.00	381.73	15.34	368.12	101.01	2.53	-0.69	395.84	-1576.06



## 42 to 65 kHz-A (Broadband)

Transformed to 100 ohms minimum with internal diplexer (B1)

### Power Rating:

- 1 kW @ 1% duty cycle
- CW<sup>(4)</sup>: 25W in B265, PM265  
15W in M265, TM265

7 x 28.6 mm (1.13 in) PZT

Active Area: 45 cm<sup>2</sup> (6.9 in<sup>2</sup>)

Radiating Surface: Urethane

Q ≈ 2

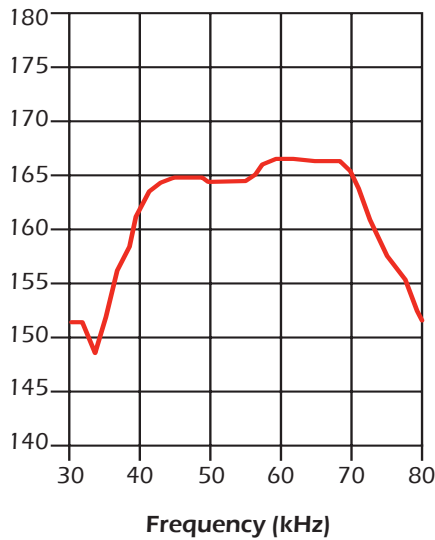
Cable Type: C332

Cable Length: 10 m (33 ft)

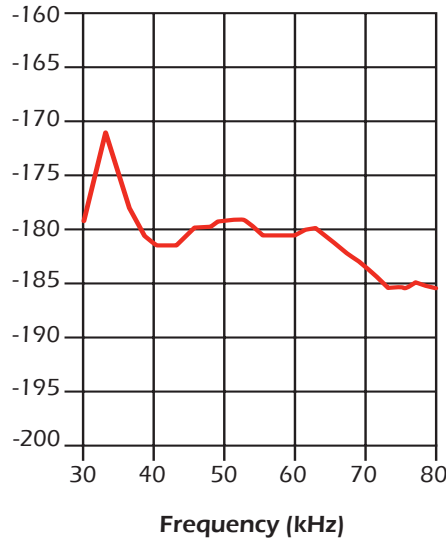
### Notes:

- (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) CW Power ratings is for 20°C seawater temperature. Consult Airmar for different housing CW ratings.

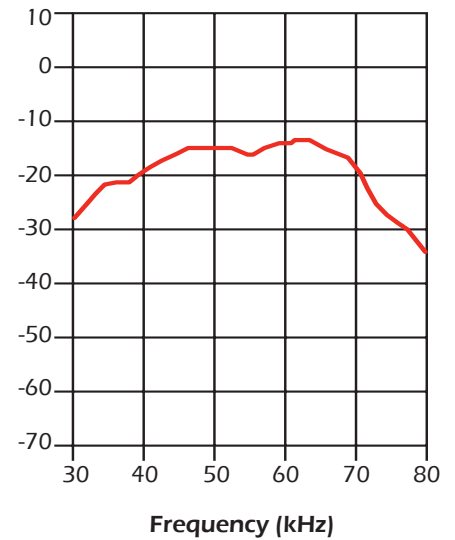
**TVR**  
dB<sup>(1)</sup>



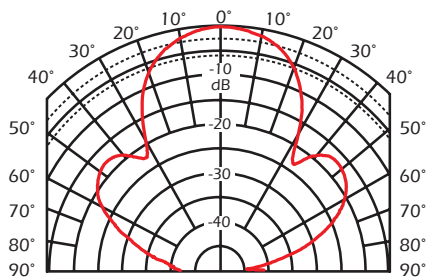
**RVR**  
dB<sup>(2)</sup>



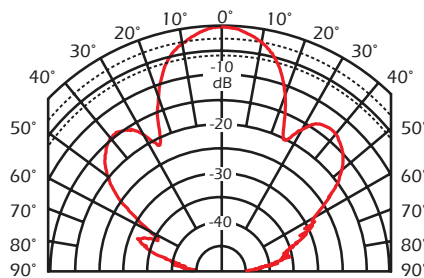
**FOM**  
dB<sup>(3)</sup>



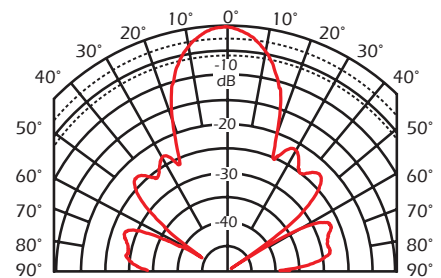
## Transmit Radiation Pattern



Beamwidth	@ 42 kHz
-3 dB	25°
-6 dB	35°
-10 dB	43°



Beamwidth	@ 50 kHz
-3 dB	20°
-6 dB	28°
-10 dB	34°



Beamwidth	@ 65 kHz
-3 dB	16°
-6 dB	22°
-10 dB	28°

# Technical Data Catalog

## 42 to 65 kHz-A (Broadband)

Note: Impedance data includes cable

**Balanced Impedance Table (Nominal Value) in 20°C Water**

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)
30.00	369.73	83.91	39.20	367.64	0.29	-2.69	3487.58	-14268.01
31.00	458.23	80.95	72.10	452.52	0.34	-2.16	2912.20	-11064.50
32.00	612.89	75.00	158.64	592.00	0.42	-1.58	2367.81	-7838.46
34.00	1307.23	21.62	1215.29	481.58	0.71	-0.28	1406.12	-1319.17
35.00	895.70	-24.50	815.05	-371.44	1.02	0.46	984.32	2105.29
36.00	521.51	-39.81	400.58	-333.93	1.47	1.23	678.95	5428.02
38.00	236.80	-41.41	177.59	-156.64	3.17	2.79	315.76	11699.57
39.00	179.20	-35.91	145.14	-105.10	4.52	3.27	221.25	13357.34
40.00	142.39	-27.65	126.13	-66.07	6.22	3.26	160.74	12967.03
42.00	113.37	-4.79	112.98	-9.46	8.79	0.74	113.77	2790.29
43.00	112.00	5.56	111.47	10.86	8.89	-0.87	112.53	-3204.41
44.00	118.72	12.92	115.71	26.54	8.21	-1.88	121.80	-6812.68
46.00	132.25	19.33	124.79	43.78	7.14	-2.50	140.15	-8660.73
47.00	135.14	22.06	125.24	50.76	6.86	-2.78	145.81	-9412.51
48.00	140.50	24.34	128.01	57.91	6.48	-2.93	154.21	-9726.54
50.00	156.97	25.32	141.89	67.14	5.76	-2.73	173.66	-8673.82
51.00	162.23	23.71	148.53	65.24	5.64	-2.48	177.19	-7736.13
52.00	164.41	22.36	152.06	62.54	5.63	-2.31	177.77	-7080.60
54.00	162.16	17.95	154.26	49.98	5.87	-1.90	170.45	-5602.39
55.00	154.93	16.29	148.71	43.45	6.20	-1.81	161.40	-5239.04
56.00	145.43	16.49	139.45	41.28	6.59	-1.95	151.67	-5547.28
58.00	129.54	21.14	120.83	46.72	7.20	-2.78	138.89	-7639.77
59.00	126.81	25.10	114.84	53.79	7.14	-3.34	140.04	-9023.02
60.00	128.44	29.21	112.10	62.68	6.80	-3.80	147.15	-10079.31
62.00	136.41	33.56	113.67	75.41	6.11	-4.05	163.70	-10403.53
63.00	139.81	34.06	115.82	78.31	5.93	-4.01	168.77	-10120.97
64.00	140.07	33.41	116.92	77.13	5.96	-3.93	167.80	-9776.78
66.00	128.22	34.77	105.32	73.13	6.41	-4.45	156.10	-10726.58
67.00	120.52	38.43	94.41	74.91	6.50	-5.16	153.84	-12251.04
68.00	114.92	44.40	82.11	80.40	6.22	-6.09	160.84	-14249.97
70.00	120.19	60.97	58.32	105.09	4.04	-7.28	247.70	-16541.12
71.00	131.74	67.88	49.62	122.04	2.86	-7.03	349.82	-15762.33
72.00	147.83	72.91	43.45	141.30	1.99	-6.47	502.95	-14291.97
74.00	187.22	77.96	39.06	183.10	1.11	-5.22	897.37	-11234.73
75.00	208.62	79.19	39.12	204.92	0.90	-4.71	1112.62	-9991.31
76.00	231.26	79.96	40.31	227.72	0.75	-4.26	1326.69	-8916.77
78.00	283.38	80.75	45.57	279.69	0.57	-3.48	1762.21	-7106.74
79.00	314.90	80.70	50.89	310.76	0.51	-3.13	1948.60	-6313.52
80.00	351.93	79.83	62.14	346.40	0.50	-2.80	1993.06	-5564.04

## 150 to 250 kHz-A (Broadband)

Transformed to 100 ohms minimum (B1)

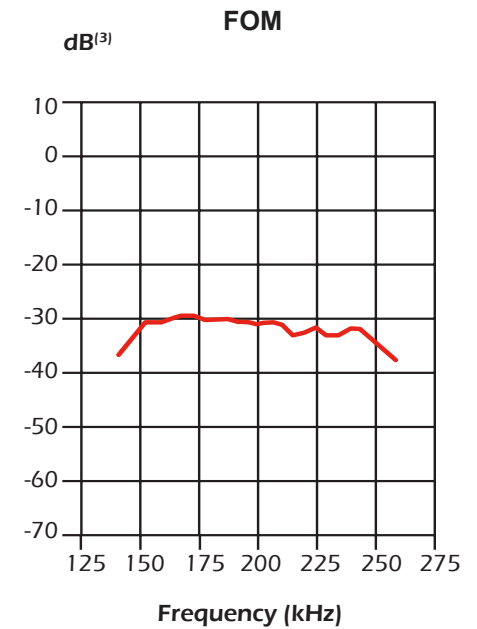
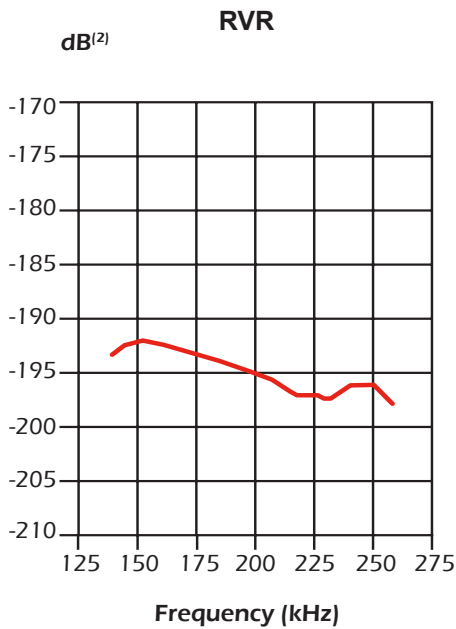
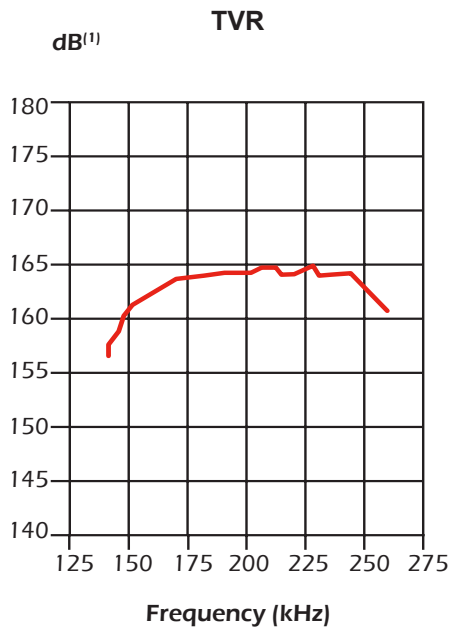
**Power Rating:**

- 1 kW @ 1% duty cycle
- CW<sup>(4)</sup>: 18 W in B175, B275, B285, CM599, PM111, PM275, R109, R509  
12W in CM275, TM185, TM275

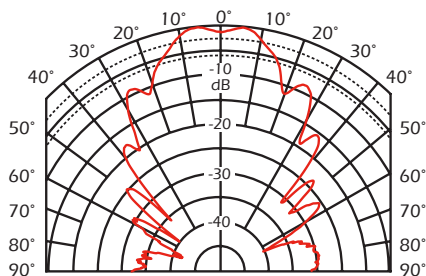
65 mm (2.56 in) PZT  
 Active Area: 34.4 cm<sup>2</sup> (5.3 in<sup>2</sup>)  
 Radiating Surface: HPC/Urethane  
 Q ≈ 2.3  
 Cable Type: C334  
 Cable Length: 12 m (40 ft)

**Notes:**

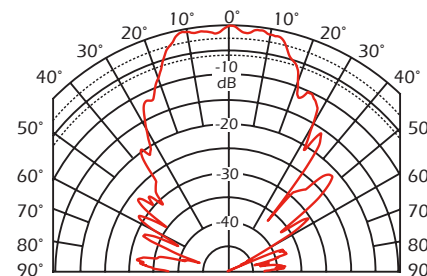
- (1) dB re 1 μPa per volt at 1 meter
- (2) dB re 1 volt per μPa
- (3) Sum of transmitting voltage response and receiving voltage response
- (4) CW Power ratings is for 20°C seawater temperature. Consult Airmar for different housing CW ratings.



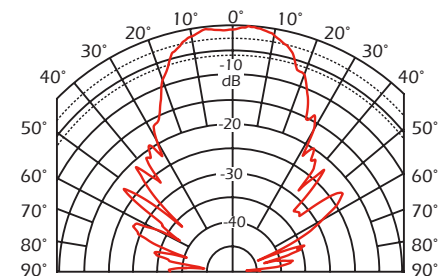
### Transmit Radiation Pattern



Beamwidth	@ 160 kHz
-3 dB	24°
-6 dB	32°
-10 dB	39°



Beamwidth	@ 200 kHz
-3 dB	30°
-6 dB	38°
-10 dB	44°



Beamwidth	@ 235 kHz
-3 dB	26°
-6 dB	33°
-10 dB	43°

# Technical Data Catalog

## 150 to 250 kHz-A (Broadband)

Note: Impedance data includes cable

**Balanced Impedance Table (Nominal Value) in 20°C Water**

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)
140.00	213.73	23.07	196.63	83.76	4.30	-1.83	232.31	-2084.55
142.00	210.53	18.00	200.22	65.07	4.52	-1.47	221.36	-1645.47
146.00	193.34	9.57	190.65	32.13	5.10	-0.86	196.06	-937.09
148.00	182.66	6.91	181.33	21.98	5.43	-0.66	184.00	-708.56
152.00	168.28	4.38	167.78	12.85	5.93	-0.45	168.77	-475.15
154.00	162.84	3.22	162.58	9.15	6.13	-0.35	163.09	-356.77
158.00	154.21	1.38	154.16	3.71	6.48	-0.16	154.25	-156.98
160.00	150.70	0.74	150.69	1.94	6.64	-0.09	150.72	-85.05
164.00	146.19	-0.85	146.17	-2.16	6.84	0.10	146.20	98.16
166.00	142.90	-2.10	142.80	-5.24	6.99	0.26	142.99	246.27
170.00	134.45	-3.02	134.26	-7.08	7.43	0.39	134.64	366.64
172.00	131.48	-2.92	131.31	-6.70	7.60	0.39	131.65	358.37
176.00	128.39	-2.48	128.27	-5.55	7.78	0.34	128.51	304.44
178.00	127.87	-2.35	127.76	-5.25	7.81	0.32	127.98	287.00
182.00	129.72	-1.93	129.64	-4.38	7.70	0.26	129.79	227.58
184.00	131.65	-3.45	131.41	-7.92	7.58	0.46	131.89	395.40
188.00	126.92	-6.72	126.04	-14.85	7.83	0.92	127.80	780.66
190.00	123.22	-6.96	122.31	-14.94	8.06	0.98	124.14	824.33
194.00	119.44	-5.67	118.86	-11.80	8.33	0.83	120.03	678.49
196.00	120.32	-4.77	119.91	-10.00	8.28	0.69	120.74	560.88
200.00	124.52	-5.54	123.93	-12.02	7.99	0.78	125.10	617.12
202.00	125.98	-7.40	124.93	-16.24	7.87	1.02	127.04	805.97
206.00	119.49	-11.90	116.92	-24.64	8.19	1.73	122.11	1333.10
208.00	113.53	-11.49	111.25	-22.61	8.63	1.75	115.85	1342.41
212.00	110.69	-8.53	109.46	-16.42	8.93	1.34	111.92	1006.20
214.00	111.72	-7.92	110.66	-15.40	8.87	1.23	112.80	917.63
218.00	111.18	-8.27	110.02	-16.00	8.90	1.29	112.35	944.92
220.00	110.57	-8.17	109.44	-15.71	8.95	1.28	111.70	929.56
224.00	106.52	-8.15	105.44	-15.10	9.29	1.33	107.61	945.73
226.00	103.16	-6.65	102.47	-11.94	9.63	1.12	103.86	790.09
230.00	104.24	-0.17	104.24	-0.30	9.59	0.03	104.24	19.23
232.00	109.08	2.09	109.01	3.98	9.16	-0.33	109.16	-229.43
236.00	119.52	2.97	119.36	6.19	8.36	-0.43	119.68	-292.38
238.00	122.98	2.87	122.83	6.15	8.12	-0.41	123.14	-271.84
242.00	129.46	3.52	129.21	7.95	7.71	-0.47	129.70	-312.09
244.00	134.32	4.59	133.89	10.75	7.42	-0.60	134.75	-388.72
248.00	151.36	6.37	150.43	16.79	6.57	-0.73	152.30	-470.39
250.00	165.02	6.14	164.07	17.64	6.03	-0.65	165.97	-412.42
254.00	197.22	1.17	197.18	4.01	5.07	-0.10	197.26	-64.62
256.00	210.94	-3.31	210.59	-12.18	4.73	0.27	211.29	170.16
260.00	228.00	-13.43	221.77	-52.95	4.27	1.02	234.41	623.51