

Scaled data based on original data using  
LM-66-11 Electrical and Photometric Measurements of Single-Ended Compact  
Fluorescent Lamps

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: SHAPER

Report Number: 18652A

Luminaire Tested: **638-12-CF2/13**

Issue Date: 3/3/2020

**Test Information**

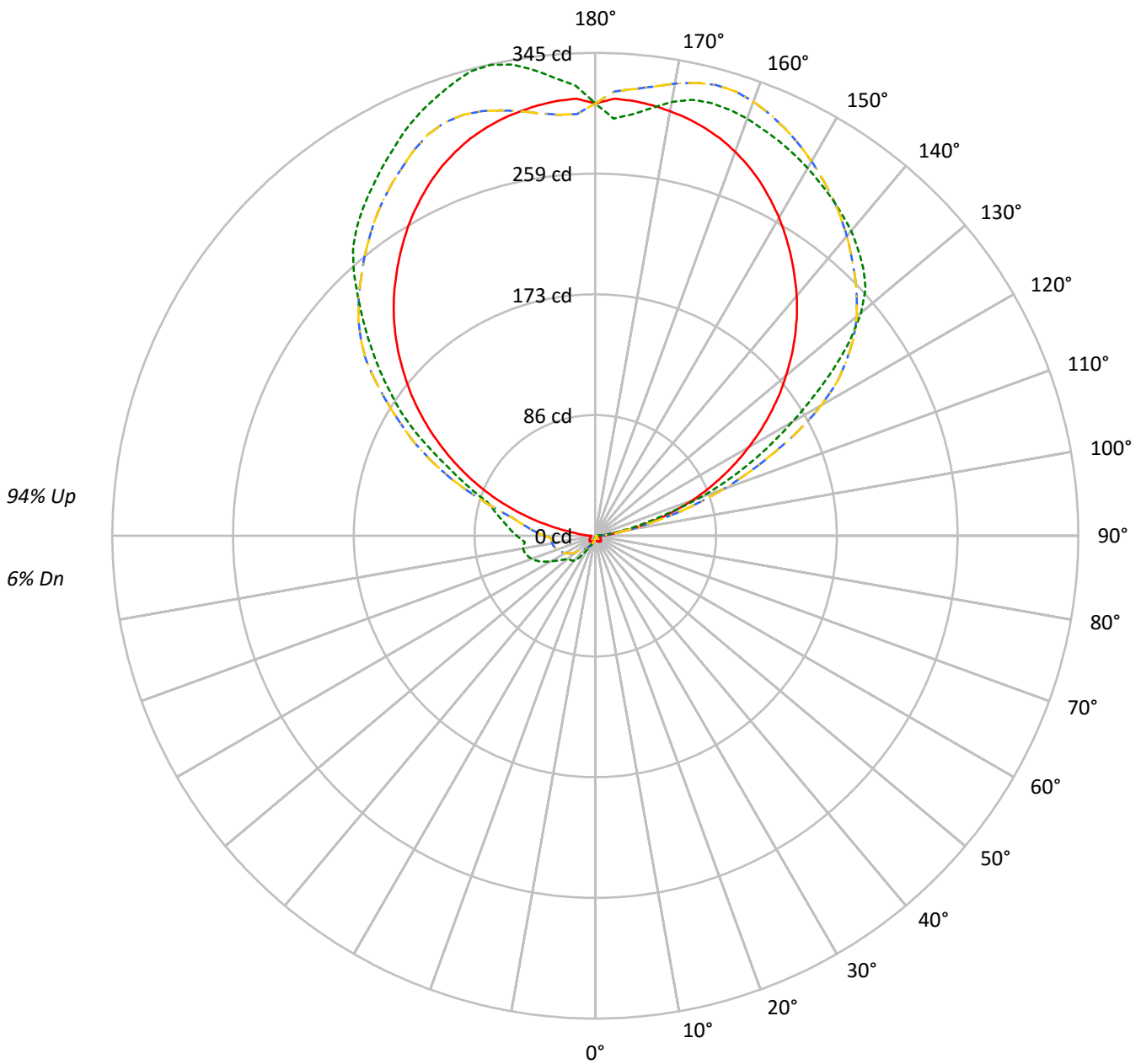
Test Method: LM-66-11  
Report Number: 18652A  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: SHAPER  
Catalog Number: 638-12-CF2/13  
Description: FLUORESCENT WALL MOUNT LUMINAIRE WITH WHITE INTERIOR AND NO LENS  
  
Light Source: TWO 13 WATT CPFL LAMPS. LUMEN RATING = 1600 LMS.  
  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 1600 (1 lamp)  
Luminaire Lumens: 1064.9 lumens  
Efficiency: 66.6%  
Efficacy: -  
Spacing Criteria (0/90/45): 3.1 / 6.12 / 4.77  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Indirect  
  
Input Watts (W): 0  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

TEST NUMBER: 18652A  
CATALOG NUMBER: 638-12-CF2/13

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - · - 90°-270°    - · - 135°-315°



TEST NUMBER: 18652A  
 CATALOG NUMBER: 638-12-CF2/13

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	64	64	64	64	56	56	56	56	39	39	39	24	24	24	11	11	11	4
1	58	55	53	50	50	48	45	44	34	32	31	21	20	19	9	8	8	3
2	53	48	44	40	45	41	38	35	29	27	25	18	17	15	7	7	6	2
3	48	42	37	33	41	36	32	29	25	23	21	15	14	13	6	6	5	1
4	44	37	32	28	37	32	28	24	22	20	17	14	12	11	5	5	4	1
5	40	32	27	24	34	28	24	21	20	17	15	12	10	9	5	4	4	1
6	36	29	24	20	31	25	21	18	18	15	13	11	9	8	4	4	3	1
7	34	26	21	17	29	22	18	15	16	13	11	10	8	7	4	3	3	0
8	31	23	18	15	27	20	16	13	14	11	9	9	7	6	4	3	2	0
9	29	21	16	13	25	18	14	12	13	10	8	8	6	5	3	2	2	0
10	27	19	15	12	23	17	13	10	12	9	7	7	6	5	3	2	2	0

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	Luminaire represents a point source (luminous area is zero).			
5°	No luminance values can be calculated.			
10°				
15°				
20°				
25°				
30°				
35°				
40°				
45°				
50°				
55°				
60°				
65°				
70°				
75°				
80°				
85°				



TEST NUMBER: 18652A  
 CATALOG NUMBER: 638-12-CF2/13

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	0.2	0.0	0.0
10°-20°	0.9	0.1	0.1
20°-30°	2.2	0.2	0.1
30°-40°	4.4	0.4	0.3
40°-50°	7.1	0.7	0.4
50°-60°	9.5	0.9	0.6
60°-70°	12.5	1.2	0.8
70°-80°	15.0	1.4	0.9
80°-90°	16.3	1.5	1.0
90°-100°	26.2	2.5	1.6
100°-110°	63.7	6.0	4.0
110°-120°	123.0	11.5	7.7
120°-130°	168.1	15.8	10.5
130°-140°	184.5	17.3	11.5
140°-150°	172.6	16.2	10.8
150°-160°	139.6	13.1	8.7
160°-170°	89.3	8.4	5.6
170°-180°	29.7	2.8	1.9
0°-30°	3.3	0.3	0.2
0°-40°	7.7	0.7	0.5
0°-60°	24.3	2.3	1.5
0°-90°	68.2	6.4	4.3
90°-120°	212.9	20.0	13.3
90°-150°	738.1	69.3	46.1
90°-180°	997.0	93.6	62.3
0°-180°	1064.9	100.0	66.6

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2	2	2	2	2	
5°	2	1	2	1	2	0
15°	4	2	4	4	4	1
25°	4	2	4	8	4	2
35°	5	2	5	17	5	3
45°	6	1	6	25	6	4
55°	5	0	5	30	5	4
65°	4	0	4	43	4	4
75°	4	1	4	51	4	4
85°	3	0	3	51	3	2
90°	3	0	3	56	3	2
95°	10	4	10	62	10	11
105°	47	40	47	76	47	50
115°	100	120	100	116	100	99
125°	153	208	153	179	153	136
135°	202	271	202	239	202	155
145°	244	294	244	288	244	152
155°	279	311	279	320	279	128
165°	302	320	302	344	302	85
175°	312	302	312	328	312	30
180°	309	309	309	309	309	



TEST NUMBER: 18652A  
 CATALOG NUMBER: 638-12-CF2/13

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2.5°	2.1	1.9	1.5	1.1	1.2	1.1	1.5	1.9	2.1	2.1	1.6
5°	2.3	2.0	1.7	1.1	1.3	1.1	1.7	2.0	2.3	2.5	2.4
7.5°	2.7	2.2	1.9	1.4	1.3	1.4	1.9	2.2	2.7	3.0	3.0
10°	3.0	2.3	2.0	1.6	1.3	1.6	2.0	2.3	3.0	3.7	3.5
12.5°	3.3	2.5	2.1	1.7	1.3	1.7	2.1	2.5	3.3	4.2	3.9
15°	3.5	2.5	2.2	1.7	1.6	1.7	2.2	2.5	3.5	4.5	4.5
17.5°	3.8	2.7	2.2	1.6	1.7	1.6	2.2	2.7	3.8	5.0	5.2
20°	4.1	2.8	2.2	1.6	1.7	1.6	2.2	2.8	4.1	5.3	5.9
22.5°	4.3	2.9	2.2	1.7	1.7	1.7	2.2	2.9	4.3	5.9	6.6
25°	4.5	2.9	2.2	1.6	1.6	1.6	2.2	2.9	4.5	6.4	7.4
27.5°	4.7	2.9	2.2	1.6	1.6	1.6	2.2	2.9	4.7	6.9	8.2
30°	4.8	2.9	2.1	1.5	1.6	1.5	2.1	2.9	4.8	7.5	9.1
32.5°	5.1	3.0	2.1	1.6	1.6	1.6	2.1	3.0	5.1	7.9	10.0
35°	5.3	3.0	2.1	1.6	1.5	1.6	2.1	3.0	5.3	8.4	10.9
37.5°	5.4	3.0	2.2	1.4	1.3	1.4	2.2	3.0	5.4	8.9	12.1
40°	5.6	3.0	2.1	1.3	1.1	1.3	2.1	3.0	5.6	9.4	13.1
42.5°	5.7	2.9	1.9	1.2	0.9	1.2	1.9	2.9	5.7	10.0	14.2
45°	5.5	2.7	1.7	1.1	0.9	1.1	1.7	2.7	5.5	10.5	15.1
47.5°	5.3	2.5	1.5	0.9	0.8	0.9	1.5	2.5	5.3	10.6	16.1
50°	5.3	2.4	1.4	0.9	0.7	0.9	1.4	2.4	5.3	10.7	18.1
52.5°	5.0	2.2	1.3	0.7	0.6	0.7	1.3	2.2	5.0	10.8	20.6
55°	4.9	2.1	1.2	0.7	0.5	0.7	1.2	2.1	4.9	11.0	22.3
57.5°	4.7	2.0	1.1	0.6	0.5	0.6	1.1	2.0	4.7	11.2	23.5
60°	4.5	1.9	1.1	0.6	0.5	0.6	1.1	1.9	4.5	11.3	24.8
62.5°	4.3	1.7	0.9	0.5	0.5	0.5	0.9	1.7	4.3	11.4	25.9
65°	4.2	1.6	0.8	0.5	0.5	0.5	0.8	1.6	4.2	11.6	27.1
67.5°	4.0	1.5	0.8	0.6	0.6	0.6	0.8	1.5	4.0	11.7	28.0
70°	3.8	1.4	0.7	0.6	0.6	0.6	0.7	1.4	3.8	12.0	29.0
72.5°	3.7	1.3	0.7	0.6	0.6	0.6	0.7	1.3	3.7	12.0	29.7
75°	3.5	1.2	0.6	0.6	0.6	0.6	0.6	1.2	3.5	12.1	30.5
77.5°	3.3	1.2	0.6	0.5	0.5	0.5	0.6	1.2	3.3	12.0	30.9
80°	3.3	1.1	0.5	0.5	0.5	0.5	0.5	1.1	3.3	12.0	31.3
82.5°	3.1	0.9	0.5	0.5	0.5	0.5	0.5	0.9	3.1	11.7	31.4
85°	2.9	0.9	0.5	0.5	0.5	0.5	0.5	0.9	2.9	11.6	31.5
87.5°	2.8	0.8	0.5	0.5	0.5	0.5	0.5	0.8	2.8	11.5	32.2
90°	3.2	0.9	0.5	0.5	0.5	0.5	0.5	0.9	3.2	13.2	36.2
92.5°	6.4	3.6	1.2	0.5	0.5	0.5	1.2	3.6	6.4	15.9	40.3
95°	10.0	9.0	6.8	5.0	3.5	5.0	6.8	9.0	10.0	18.6	44.9
97.5°	14.3	15.4	13.8	12.1	10.3	12.1	13.8	15.4	14.3	22.4	49.6
100°	22.4	25.6	22.7	20.6	18.1	20.6	22.7	25.6	22.4	30.6	54.8
102.5°	33.9	41.8	36.3	30.7	27.1	30.7	36.3	41.8	33.9	41.9	61.2
105°	47.0	63.5	55.0	45.9	40.2	45.9	55.0	63.5	47.0	56.1	72.9
107.5°	60.0	84.7	75.5	65.2	56.6	65.2	75.5	84.7	60.0	71.3	85.0
110°	73.3	106.2	97.2	87.9	79.5	87.9	97.2	106.2	73.3	89.4	100.7



TEST NUMBER: 18652A  
 CATALOG NUMBER: 638-12-CF2/13

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	86.7	124.9	119.0	107.4	100.2	107.4	119.0	124.9	86.7	106.5	116.1
115°	99.8	140.6	141.4	125.9	120.5	125.9	141.4	140.6	99.8	121.6	131.4
117.5°	113.4	154.9	165.0	146.2	141.3	146.2	165.0	154.9	113.4	136.0	146.6
120°	126.5	167.7	186.3	166.6	162.1	166.6	186.3	167.7	126.5	150.0	160.8
122.5°	139.9	180.1	204.8	190.3	184.5	190.3	204.8	180.1	139.9	164.0	175.6
125°	152.7	191.7	219.2	211.6	207.7	211.6	219.2	191.7	152.7	177.3	191.1
127.5°	165.6	203.4	232.6	231.3	229.1	231.3	232.6	203.4	165.6	191.0	206.6
130°	177.7	215.1	243.7	245.2	247.7	245.2	243.7	215.1	177.7	203.4	218.6
132.5°	190.1	226.7	253.3	255.6	261.8	255.6	253.3	226.7	190.1	215.9	229.5
135°	201.7	237.6	262.2	264.6	270.6	264.6	262.2	237.6	201.7	228.1	238.9
137.5°	213.0	248.3	270.8	272.7	277.7	272.7	270.8	248.3	213.0	240.0	248.0
140°	223.8	258.2	279.5	278.8	284.4	278.8	279.5	258.2	223.8	251.6	257.2
142.5°	233.8	267.3	287.5	284.6	289.4	284.6	287.5	267.3	233.8	262.1	266.0
145°	243.8	276.3	295.2	290.4	294.4	290.4	295.2	276.3	243.8	271.6	274.8
147.5°	253.3	284.6	302.1	295.7	298.8	295.7	302.1	284.6	253.3	279.2	283.0
150°	262.5	292.4	308.9	301.1	303.3	301.1	308.9	292.4	262.5	285.8	290.5
152.5°	270.8	298.7	315.2	305.8	307.3	305.8	315.2	298.7	270.8	290.9	297.6
155°	278.8	304.3	320.9	309.9	310.9	309.9	320.9	304.3	278.8	295.1	304.9
157.5°	285.9	308.6	325.9	313.8	314.0	313.8	325.9	308.6	285.9	298.2	310.8
160°	292.0	311.8	330.1	316.7	317.1	316.7	330.1	311.8	292.0	300.4	314.2
162.5°	297.4	314.1	332.9	319.0	319.1	319.0	332.9	314.1	297.4	302.1	315.2
165°	301.7	315.2	333.4	319.6	320.1	319.6	333.4	315.2	301.7	303.2	314.0
167.5°	305.3	315.4	331.5	318.1	319.0	318.1	331.5	315.4	305.3	304.3	311.3
170°	308.0	315.2	328.0	313.9	314.7	313.9	328.0	315.2	308.0	305.6	308.0
172.5°	310.3	315.0	323.7	307.6	308.1	307.6	323.7	315.0	310.3	307.1	304.3
175°	311.8	314.6	320.4	301.7	302.2	301.7	320.4	314.6	311.8	308.7	301.9
177.5°	312.6	313.4	317.8	297.8	298.3	297.8	317.8	313.4	312.6	310.3	301.6
180°	308.8	308.8	308.8	308.8	308.8	308.8	308.8	308.8	308.8	308.8	308.8



TEST NUMBER: 18652A  
 CATALOG NUMBER: 638-12-CF2/13

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1.5	1.5	1.5	1.5	1.5	1.5
2.5°	1.7	1.2	1.7	1.6	2.1	2.1
5°	1.9	1.3	1.9	2.4	2.5	2.3
7.5°	2.2	1.4	2.2	3.0	3.0	2.7
10°	3.0	1.9	3.0	3.5	3.7	3.0
12.5°	3.5	3.1	3.5	3.9	4.2	3.3
15°	4.2	4.5	4.2	4.5	4.5	3.5
17.5°	5.0	5.2	5.0	5.2	5.0	3.8
20°	5.9	5.9	5.9	5.9	5.3	4.1
22.5°	6.6	6.7	6.6	6.6	5.9	4.3
25°	7.5	7.5	7.5	7.4	6.4	4.5
27.5°	8.6	8.9	8.6	8.2	6.9	4.7
30°	9.8	10.6	9.8	9.1	7.5	4.8
32.5°	11.4	13.6	11.4	10.0	7.9	5.1
35°	13.7	16.9	13.7	10.9	8.4	5.3
37.5°	17.7	20.9	17.7	12.1	8.9	5.4
40°	21.6	22.9	21.6	13.1	9.4	5.6
42.5°	24.5	24.3	24.5	14.2	10.0	5.7
45°	25.1	24.6	25.1	15.1	10.5	5.5
47.5°	25.0	25.1	25.0	16.1	10.6	5.3
50°	25.0	25.9	25.0	18.1	10.7	5.3
52.5°	25.4	27.8	25.4	20.6	10.8	5.0
55°	26.7	30.2	26.7	22.3	11.0	4.9
57.5°	28.2	33.2	28.2	23.5	11.2	4.7
60°	29.8	36.5	29.8	24.8	11.3	4.5
62.5°	31.6	40.0	31.6	25.9	11.4	4.3
65°	33.7	43.4	33.7	27.1	11.6	4.2
67.5°	35.4	46.1	35.4	28.0	11.7	4.0
70°	36.9	48.2	36.9	29.0	12.0	3.8
72.5°	38.4	50.0	38.4	29.7	12.0	3.7
75°	39.7	51.3	39.7	30.5	12.1	3.5
77.5°	41.0	52.1	41.0	30.9	12.0	3.3
80°	41.9	52.3	41.9	31.3	12.0	3.3
82.5°	42.5	51.8	42.5	31.4	11.7	3.1
85°	42.7	50.6	42.7	31.5	11.6	2.9
87.5°	45.5	53.2	45.5	32.2	11.5	2.8
90°	50.0	56.2	50.0	36.2	13.2	3.2
92.5°	53.7	58.9	53.7	40.3	15.9	6.4
95°	57.3	61.8	57.3	44.9	18.6	10.0
97.5°	60.9	64.8	60.9	49.6	22.4	14.3
100°	64.6	68.2	64.6	54.8	30.6	22.4
102.5°	68.2	72.1	68.2	61.2	41.9	33.9
105°	72.4	76.1	72.4	72.9	56.1	47.0
107.5°	79.4	81.3	79.4	85.0	71.3	60.0
110°	90.3	91.9	90.3	100.7	89.4	73.3





TEST NUMBER: 18652A  
 CATALOG NUMBER: 638-12-CF2/13

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	100.8	103.4	100.8	116.1	106.5	86.7
115°	114.3	115.9	114.3	131.4	121.6	99.8
117.5°	129.3	131.6	129.3	146.6	136.0	113.4
120°	143.8	148.4	143.8	160.8	150.0	126.5
122.5°	157.6	164.6	157.6	175.6	164.0	139.9
125°	170.9	178.7	170.9	191.1	177.3	152.7
127.5°	184.7	194.0	184.7	206.6	191.0	165.6
130°	198.1	208.9	198.1	218.6	203.4	177.7
132.5°	212.7	224.1	212.7	229.5	215.9	190.1
135°	226.6	239.2	226.6	238.9	228.1	201.7
137.5°	238.3	255.3	238.3	248.0	240.0	213.0
140°	247.8	269.1	247.8	257.2	251.6	223.8
142.5°	255.6	279.3	255.6	266.0	262.1	233.8
145°	263.1	288.1	263.1	274.8	271.6	243.8
147.5°	270.8	296.0	270.8	283.0	279.2	253.3
150°	278.8	304.3	278.8	290.5	285.8	262.5
152.5°	286.5	312.0	286.5	297.6	290.9	270.8
155°	293.8	320.2	293.8	304.9	295.1	278.8
157.5°	299.6	327.2	299.6	310.8	298.2	285.9
160°	305.7	333.1	305.7	314.2	300.4	292.0
162.5°	311.0	338.8	311.0	315.2	302.1	297.4
165°	313.2	343.5	313.2	314.0	303.2	301.7
167.5°	312.3	344.6	312.3	311.3	304.3	305.3
170°	308.4	341.8	308.4	308.0	305.6	308.0
172.5°	302.7	335.6	302.7	304.3	307.1	310.3
175°	297.0	328.2	297.0	301.9	308.7	311.8
177.5°	294.0	321.8	294.0	301.6	310.3	312.6
180°	308.8	308.8	308.8	308.8	308.8	308.8

(END OF REPORT)