

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: 19147

Luminaire Tested: **603-CF4/13**

Issue Date: 3/3/2020

Test Information

Test Method: LM-66-11
Report Number: 19147
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SHAPER
Catalog Number: 603-CF4/13
Description: INTERIOR WALL MOUNT LUMINAIRE WITH WHITE INTERIOR AND WHITE PLASTIC LENS
Light Source: FOUR SYLVANIA 13 WATT CPFL LAMPS

CF13DS/E/830. LUMEN RATING = 3200 LMS.

Ballast/Driver: -

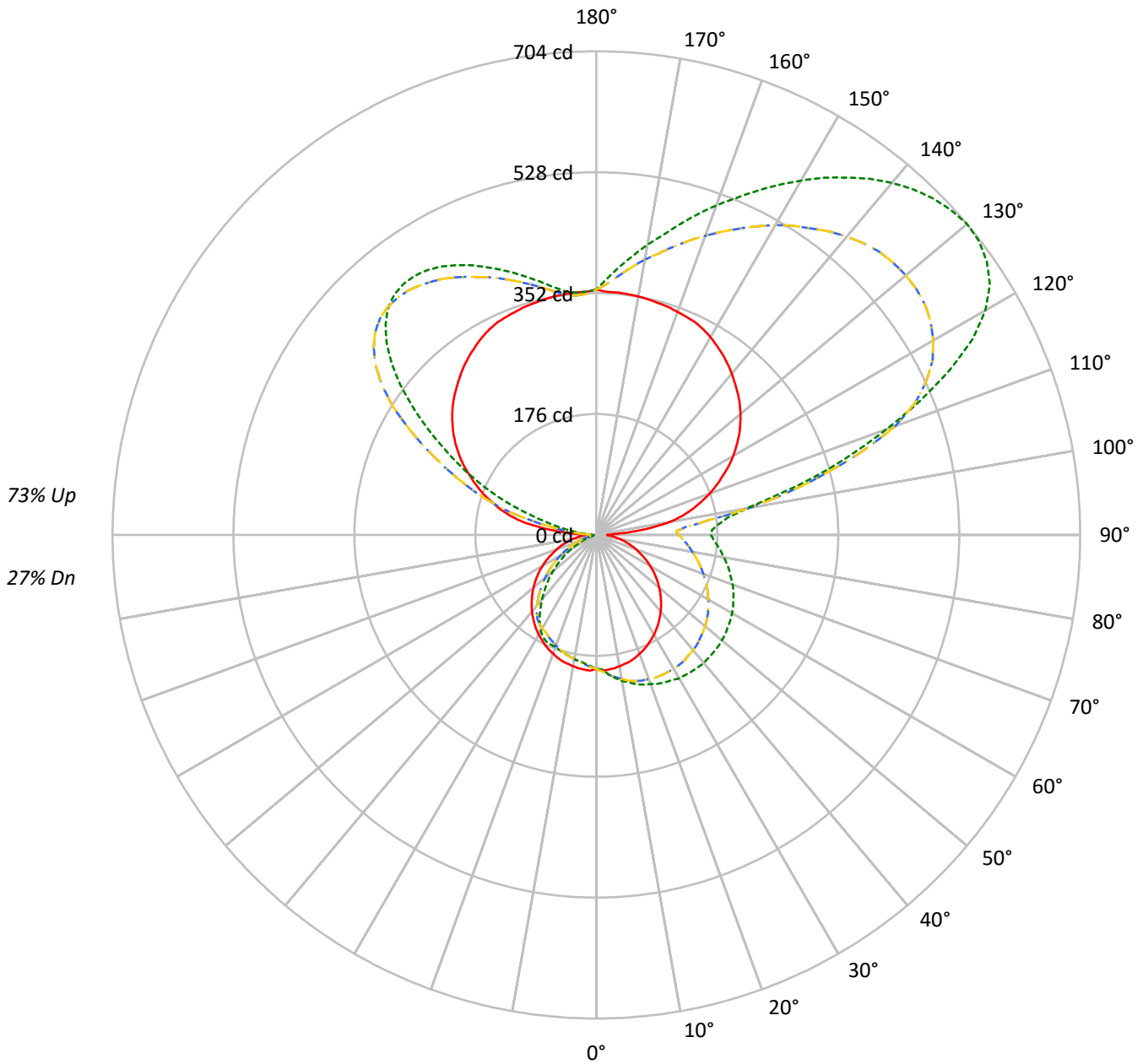
Summary

Lumens per Lamp: 3200 (1 lamp)
Luminaire Lumens: 2862.0 lumens
Efficiency: 89.4%
Efficacy: 53.0 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.49 / 1.54
Luminous Opening: Rectangular w/ Sides (W: 0.34' x L: 2.21' x H: 0.34')
CIE Type: Semi-Indirect

Input Watts (W): 54
Input Voltage (V): NR
Input Current (A_{in}): 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

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Luminous Intensity Polar Plot



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



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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	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	91	91	91	91	81	81	81	81	63	63	63	47	47	47	32	32	32	24																												
1	82	78	74	71	73	70	66	64	54	52	50	40	38	37	26	26	25	19																												
2	74	67	62	57	66	60	55	51	47	43	40	34	32	30	23	21	20	15																												
3	67	59	52	47	60	53	47	42	41	37	34	30	27	25	20	18	17	12																												
4	62	52	45	39	55	46	40	36	36	32	28	26	23	21	18	16	14	10																												
5	56	46	39	33	50	41	35	30	32	27	24	24	20	18	16	14	12	9																												
6	52	41	34	29	46	37	30	26	29	24	21	21	18	16	14	12	11	8																												
7	48	37	30	25	42	33	27	23	26	21	18	19	16	14	13	11	9	7																												
8	44	33	26	22	39	30	24	20	23	19	16	17	14	12	12	10	8	6																												
9	41	30	24	19	36	27	21	17	21	17	14	16	13	11	11	9	7	5																												
10	38	27	21	17	34	25	19	15	19	15	12	15	12	9	10	8	7	5																												

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	2793	2793	2793	2793
5°	2795	2696	2795	2487
10°	2749	2670	2749	2270
15°	2712	2633	2712	2090
20°	2653	2583	2653	1946
25°	2606	2553	2606	1851
30°	2546	2528	2546	1697
35°	2482	2494	2482	1477
40°	2411	2473	2411	1253
45°	2332	2445	2332	1041
50°	2251	2425	2251	835
55°	2158	2401	2158	646
60°	2045	2391	2045	465
65°	1924	2371	1924	288
70°	1805	2360	1805	162
75°	1684	2345	1684	62
80°	1542	2328	1542	15
85°	1436	2333	1436	11



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	18.8	0.7	0.6
10°-20°	56.0	2.0	1.8
20°-30°	89.3	3.1	2.8
30°-40°	113.4	4.0	3.5
40°-50°	123.8	4.3	3.9
50°-60°	120.9	4.2	3.8
60°-70°	106.2	3.7	3.3
70°-80°	86.0	3.0	2.7
80°-90°	69.3	2.4	2.2
90°-100°	94.0	3.3	2.9
100°-110°	227.6	8.0	7.1
110°-120°	347.7	12.2	10.9
120°-130°	393.4	13.7	12.3
130°-140°	368.0	12.9	11.5
140°-150°	295.0	10.3	9.2
150°-160°	203.6	7.1	6.4
160°-170°	113.7	4.0	3.6
170°-180°	35.2	1.2	1.1
0°-30°	164.1	5.7	5.1
0°-40°	277.5	9.7	8.7
0°-60°	522.2	18.2	16.3
0°-90°	783.7	27.4	24.5
90°-120°	669.3	23.4	20.9
90°-150°	1725.7	60.3	53.9
90°-180°	2078.0	72.6	64.9
0°-180°	2862.0	100.0	89.4

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	195	195	195	195	195	
5°	197	204	197	188	197	19
15°	190	225	190	179	190	54
25°	177	237	177	172	177	81
35°	157	242	157	144	157	98
45°	133	241	133	103	133	103
55°	105	233	105	63	105	94
65°	76	220	76	27	76	75
75°	48	200	48	5	48	51
85°	24	176	24	1	24	22
90°	16	166	16	4	16	10
95°	52	178	52	17	52	54
105°	144	331	144	80	144	152
115°	203	567	203	199	203	201
125°	254	693	254	327	254	226
135°	291	693	291	434	291	225
145°	320	635	320	461	320	201
155°	341	553	341	433	341	157
165°	349	468	349	388	349	99
175°	354	392	354	354	354	34
180°	357	357	357	357	357	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	195.0	195.0	195.0	195.0	195.0	195.0	195.0	195.0	195.0	195.0	195.0
2.5°	197.8	198.8	199.0	199.2	195.9	199.2	199.0	198.8	197.8	195.1	192.5
5°	197.0	202.5	203.9	206.4	203.9	206.4	203.9	202.5	197.0	192.9	189.4
7.5°	195.9	204.8	208.7	212.2	210.1	212.2	208.7	204.8	195.9	190.8	187.1
10°	194.1	206.9	213.0	217.9	215.9	217.9	213.0	206.9	194.1	187.9	183.8
12.5°	192.2	208.3	217.3	222.4	220.0	222.4	217.3	208.3	192.2	184.8	181.1
15°	190.4	208.5	220.2	226.1	225.1	226.1	220.2	208.5	190.4	181.4	177.8
17.5°	187.5	209.1	222.3	229.0	228.6	229.0	222.3	209.1	187.5	177.5	174.8
20°	183.8	209.3	223.3	232.5	231.1	232.5	223.3	209.3	183.8	173.1	171.5
22.5°	180.8	208.5	224.9	234.8	234.5	234.8	224.9	208.5	180.8	169.7	167.6
25°	176.7	207.0	224.9	237.1	236.8	237.1	224.9	207.0	176.7	165.5	163.9
27.5°	172.1	205.6	225.3	238.9	238.3	238.9	225.3	205.6	172.1	160.2	159.6
30°	167.6	203.3	224.9	240.1	241.1	240.1	224.9	203.3	167.6	155.7	157.1
32.5°	162.8	200.3	224.3	240.9	241.5	240.9	224.3	200.3	162.8	151.0	153.8
35°	157.2	197.4	223.1	241.4	242.5	241.4	223.1	197.4	157.2	145.6	149.5
37.5°	151.7	193.3	220.6	241.1	243.0	241.1	220.6	193.3	151.7	139.0	142.5
40°	145.6	188.8	219.0	240.4	243.2	240.4	219.0	188.8	145.6	133.3	134.3
42.5°	139.4	185.1	216.7	239.5	242.0	239.5	216.7	185.1	139.4	127.9	125.5
45°	132.8	180.1	213.2	238.1	241.4	238.1	213.2	180.1	132.8	123.2	116.2
47.5°	126.2	174.4	210.1	235.8	240.4	235.8	210.1	174.4	126.2	118.2	106.8
50°	119.5	169.2	206.6	234.1	238.5	234.1	206.6	169.2	119.5	112.3	97.3
52.5°	112.4	163.5	202.7	231.5	236.7	231.5	202.7	163.5	112.4	105.7	88.3
55°	105.4	157.1	198.2	228.2	233.4	228.2	198.2	157.1	105.4	97.1	79.0
57.5°	98.0	151.0	193.3	224.9	231.1	224.9	193.3	151.0	98.0	88.1	69.8
60°	90.4	144.0	188.1	221.0	228.0	221.0	188.1	144.0	90.4	79.3	61.2
62.5°	83.2	136.6	183.0	216.7	224.3	216.7	183.0	136.6	83.2	70.0	52.3
65°	75.5	130.4	177.2	212.6	220.0	212.6	177.2	130.4	75.5	61.8	43.7
67.5°	68.0	123.4	171.1	207.6	215.7	207.6	171.1	123.4	68.0	53.5	35.3
70°	61.3	116.6	165.5	202.7	211.2	202.7	165.5	116.6	61.3	45.1	27.0
72.5°	54.8	108.8	159.8	196.3	205.2	196.3	159.8	108.8	54.8	37.3	19.7
75°	47.9	102.7	154.0	191.2	200.5	191.2	154.0	102.7	47.9	30.0	13.3
77.5°	41.1	96.3	147.7	185.5	194.5	185.5	147.7	96.3	41.1	23.3	8.2
80°	35.0	89.9	141.9	179.7	188.3	179.7	141.9	89.9	35.0	17.6	4.9
82.5°	28.9	84.0	136.3	174.0	183.0	174.0	136.3	84.0	28.9	13.3	3.4
85°	24.1	78.4	130.8	168.4	176.4	168.4	130.8	78.4	24.1	10.6	3.2
87.5°	19.1	72.0	125.1	162.7	171.1	162.7	125.1	72.0	19.1	8.6	2.8
90°	16.0	66.7	119.7	156.7	166.4	156.7	119.7	66.7	16.0	9.3	5.0
92.5°	24.7	66.1	116.1	153.4	168.7	153.4	116.1	66.1	24.7	13.9	10.4
95°	51.9	113.1	129.6	163.7	178.5	163.7	129.6	113.1	51.9	33.4	24.1
97.5°	80.9	170.8	164.9	180.3	192.6	180.3	164.9	170.8	80.9	64.6	43.3
100°	108.4	228.8	225.1	217.9	221.0	217.9	225.1	228.8	108.4	103.3	66.7
102.5°	127.8	271.2	284.7	275.0	269.1	275.0	284.7	271.2	127.8	136.6	97.3
105°	144.5	300.3	344.5	338.9	330.7	338.9	344.5	300.3	144.5	166.5	132.5
107.5°	159.7	323.9	407.2	394.9	388.5	394.9	407.2	323.9	159.7	196.8	162.7
110°	175.3	346.7	462.5	457.5	449.1	457.5	462.5	346.7	175.3	229.7	192.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	189.3	364.8	501.7	519.5	509.5	519.5	501.7	364.8	189.3	260.2	221.3
115°	202.6	380.7	529.9	572.5	566.6	572.5	529.9	380.7	202.6	287.8	252.6
117.5°	217.0	393.8	551.4	614.4	617.0	614.4	551.4	393.8	217.0	312.1	286.1
120°	230.0	405.3	566.0	643.2	653.3	643.2	566.0	405.3	230.0	330.7	319.5
122.5°	241.9	415.4	576.9	663.2	678.8	663.2	576.9	415.4	241.9	345.9	352.5
125°	253.5	422.1	583.9	673.4	693.4	673.4	583.9	422.1	253.5	358.7	380.5
127.5°	263.8	427.7	587.2	679.4	702.0	679.4	587.2	427.7	263.8	368.1	404.7
130°	273.7	431.4	587.9	681.0	704.1	681.0	587.9	431.4	273.7	375.5	422.8
132.5°	282.9	433.3	586.1	678.6	699.8	678.6	586.1	433.3	282.9	379.6	436.4
135°	291.2	434.1	582.5	672.0	692.8	672.0	582.5	434.1	291.2	382.5	445.4
137.5°	298.6	435.1	575.6	662.2	682.3	662.2	575.6	435.1	298.6	383.9	449.7
140°	306.5	435.5	566.8	650.2	668.9	650.2	566.8	435.5	306.5	384.4	450.1
142.5°	313.8	433.5	556.7	635.7	653.5	635.7	556.7	433.5	313.8	384.5	448.9
145°	320.4	433.1	544.6	618.6	634.8	618.6	544.6	433.1	320.4	383.8	444.4
147.5°	326.4	432.8	533.5	600.7	616.6	600.7	533.5	432.8	326.4	384.2	438.6
150°	332.3	431.4	520.6	581.2	595.6	581.2	520.6	431.4	332.3	383.3	431.8
152.5°	337.3	427.5	506.6	560.7	574.4	560.7	506.6	427.5	337.3	382.1	423.4
155°	341.1	422.0	492.0	540.1	552.7	540.1	492.0	422.0	341.1	378.4	414.3
157.5°	343.5	415.4	477.6	518.9	530.6	518.9	477.6	415.4	343.5	374.7	405.9
160°	345.4	408.2	463.6	500.1	510.5	500.1	463.6	408.2	345.4	369.1	396.7
162.5°	347.9	402.0	449.1	479.7	489.1	479.7	449.1	402.0	347.9	364.7	387.2
165°	349.3	396.9	434.3	459.2	468.0	459.2	434.3	396.9	349.3	359.9	378.0
167.5°	351.1	389.9	419.7	439.6	446.8	439.6	419.7	389.9	351.1	355.4	369.0
170°	352.4	383.8	407.0	421.3	429.0	421.3	407.0	383.8	352.4	351.3	360.3
172.5°	353.4	376.4	393.0	404.0	410.0	404.0	393.0	376.4	353.4	349.6	352.9
175°	354.2	369.1	379.2	386.6	392.2	386.6	379.2	369.1	354.2	349.8	349.6
177.5°	354.0	361.7	366.1	370.2	374.3	370.2	366.1	361.7	354.0	352.3	351.1
180°	357.0	357.0	357.0	357.0	357.0	357.0	357.0	357.0	357.0	357.0	357.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	195.0	195.0	195.0	195.0	195.0	195.0
2.5°	190.8	191.0	190.8	192.5	195.1	197.8
5°	188.3	188.1	188.3	189.4	192.9	197.0
7.5°	185.2	185.5	185.2	187.1	190.8	195.9
10°	183.0	183.6	183.0	183.8	187.9	194.1
12.5°	180.1	180.9	180.1	181.1	184.8	192.2
15°	178.1	178.7	178.1	177.8	181.4	190.4
17.5°	175.4	176.0	175.4	174.8	177.5	187.5
20°	172.3	174.1	172.3	171.5	173.1	183.8
22.5°	169.4	172.7	169.4	167.6	169.7	180.8
25°	168.8	171.7	168.8	163.9	165.5	176.7
27.5°	165.3	167.8	165.3	159.6	160.2	172.1
30°	160.6	161.8	160.6	157.1	155.7	167.6
32.5°	153.6	153.2	153.6	153.8	151.0	162.8
35°	144.6	143.6	144.6	149.5	145.6	157.2
37.5°	134.9	133.1	134.9	142.5	139.0	151.7
40°	125.6	123.2	125.6	134.3	133.3	145.6
42.5°	116.1	112.5	116.1	125.5	127.9	139.4
45°	107.0	102.8	107.0	116.2	123.2	132.8
47.5°	98.0	92.8	98.0	106.8	118.2	126.2
50°	87.4	82.1	87.4	97.3	112.3	119.5
52.5°	77.6	72.5	77.6	88.3	105.7	112.4
55°	68.3	62.8	68.3	79.0	97.1	105.4
57.5°	58.7	53.5	58.7	69.8	88.1	98.0
60°	49.5	44.3	49.5	61.2	79.3	90.4
62.5°	40.4	35.8	40.4	52.3	70.0	83.2
65°	31.6	26.7	31.6	43.7	61.8	75.5
67.5°	24.1	20.4	24.1	35.3	53.5	68.0
70°	17.4	14.5	17.4	27.0	45.1	61.3
72.5°	11.2	9.0	11.2	19.7	37.3	54.8
75°	6.9	5.3	6.9	13.3	30.0	47.9
77.5°	3.4	2.2	3.4	8.2	23.3	41.1
80°	1.6	1.2	1.6	4.9	17.6	35.0
82.5°	1.8	1.2	1.8	3.4	13.3	28.9
85°	1.3	0.8	1.3	3.2	10.6	24.1
87.5°	2.2	1.8	2.2	2.8	8.6	19.1
90°	4.5	4.0	4.5	5.0	9.3	16.0
92.5°	9.8	9.6	9.8	10.4	13.9	24.7
95°	19.0	16.6	19.0	24.1	33.4	51.9
97.5°	33.0	27.7	33.0	43.3	64.6	80.9
100°	50.7	42.7	50.7	66.7	103.3	108.4
102.5°	69.3	58.9	69.3	97.3	136.6	127.8
105°	96.5	80.5	96.5	132.5	166.5	144.5
107.5°	127.3	107.2	127.3	162.7	196.8	159.7
110°	159.6	138.4	159.6	192.5	229.7	175.3



TEST NUMBER: 19147
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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	188.1	168.4	188.1	221.3	260.2	189.3
115°	218.6	198.6	218.6	252.6	287.8	202.6
117.5°	249.4	229.2	249.4	286.1	312.1	217.0
120°	281.6	260.5	281.6	319.5	330.7	230.0
122.5°	315.5	293.7	315.5	352.5	345.9	241.9
125°	348.2	326.8	348.2	380.5	358.7	253.5
127.5°	380.5	359.7	380.5	404.7	368.1	263.8
130°	408.0	388.5	408.0	422.8	375.5	273.7
132.5°	431.7	413.7	431.7	436.4	379.6	282.9
135°	448.5	433.7	448.5	445.4	382.5	291.2
137.5°	461.0	448.5	461.0	449.7	383.9	298.6
140°	467.2	456.9	467.2	450.1	384.4	306.5
142.5°	468.6	460.8	468.6	448.9	384.5	313.8
145°	467.2	460.6	467.2	444.4	383.8	320.4
147.5°	461.8	457.1	461.8	438.6	384.2	326.4
150°	453.2	451.1	453.2	431.8	383.3	332.3
152.5°	443.3	442.5	443.3	423.4	382.1	337.3
155°	432.7	433.1	432.7	414.3	378.4	341.1
157.5°	421.6	422.1	421.6	405.9	374.7	343.5
160°	409.6	411.0	409.6	396.7	369.1	345.4
162.5°	397.9	400.0	397.9	387.2	364.7	347.9
165°	386.4	388.2	386.4	378.0	359.9	349.3
167.5°	374.7	377.5	374.7	369.0	355.4	351.1
170°	363.8	366.7	363.8	360.3	351.3	352.4
172.5°	354.0	358.1	354.0	352.9	349.6	353.4
175°	349.0	354.0	349.0	349.6	349.8	354.2
177.5°	349.4	354.4	349.4	351.1	352.3	354.0
180°	357.0	357.0	357.0	357.0	357.0	357.0

(END OF REPORT)