

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P392492

Luminaire Tested: **MWL-2-18-17-UNV-L940-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392492  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-2-18-17-UNV-L940-EDD  
Description: MWL 2FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3238.2 lumens  
Efficiency: N/A  
Efficacy: 96.6 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')  
CIE Type: General Diffuse

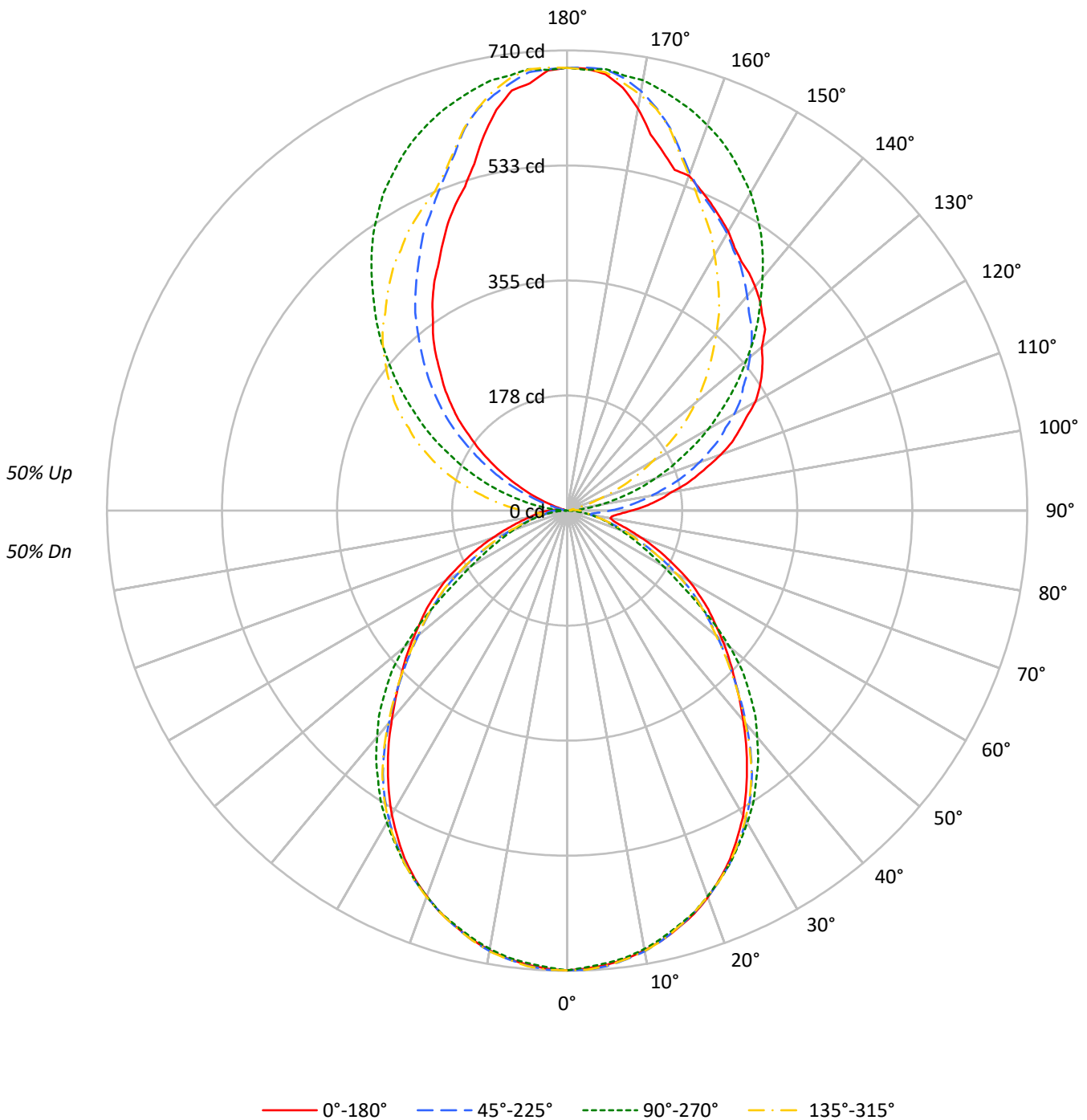
Input Watts (W): 33.532  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	0
RCR																		
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	98	94	90	86	90	87	83	80	73	71	69	61	59	58	50	48	47	42
2	89	82	76	71	82	76	71	67	65	61	57	54	51	49	44	42	41	36
3	82	73	65	60	75	67	61	56	57	53	49	48	45	42	39	37	35	31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	30	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	32	29	27	24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	29	26	24	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	51	40	33	28	35	29	25	29	25	22	25	22	19	17
9	51	39	32	27	47	37	30	25	32	26	23	27	23	20	23	20	17	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	21	18	16	14

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

	0°	90°	180°	270°
0°	9164	9164	9164	9164
5°	8958	8356	8958	8356
10°	8717	7657	8717	7657
15°	8433	6991	8415	6991
20°	8112	6382	8093	6382
25°	7719	5810	7700	5810
30°	7232	5256	7207	5256
35°	6653	4716	6634	4716
40°	6064	4182	6037	4182
45°	5512	3633	5491	3633
50°	5048	3008	5024	3008
55°	4611	2228	4596	2228
60°	4135	1616	4127	1616
65°	3515	1196	3515	1196
70°	2892	892	2901	892
75°	2330	630	2370	630
80°	2308	411	1995	411
85°	3331	179	1955	179



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.7	2.1
10°-20°	187.4	5.8
20°-30°	274.1	8.5
30°-40°	309.3	9.6
40°-50°	287.1	8.9
50°-60°	225.6	7.0
60°-70°	142.6	4.4
70°-80°	71.2	2.2
80°-90°	42.1	1.3
90°-100°	56.8	1.8
100°-110°	105.5	3.3
110°-120°	181.5	5.6
120°-130°	246.4	7.6
130°-140°	281.0	8.7
140°-150°	280.7	8.7
150°-160°	244.4	7.5
160°-170°	171.8	5.3
170°-180°	64.0	2.0
0°-30°	528.1	16.3
0°-40°	837.4	25.9
0°-60°	1350.1	41.7
0°-90°	1606.0	49.6
90°-120°	343.8	10.6
90°-150°	1152.0	35.6
90°-180°	1632.0	50.4
0°-180°	3238.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	710	710	710	710	710	
5°	704	701	704	701	704	67
15°	666	663	664	663	666	188
25°	594	598	593	598	594	273
35°	484	508	482	508	484	302
45°	365	398	363	398	365	283
55°	266	240	265	240	266	237
65°	166	123	166	123	166	166
75°	83	60	84	60	83	92
85°	76	15	45	15	76	60
90°	99	0	27	0	99	55
95°	132	19	18	19	132	114
105°	207	96	4	96	207	219
115°	293	195	67	195	293	291
125°	367	306	167	306	367	327
135°	426	417	268	417	426	329
145°	469	521	361	521	469	296
155°	524	603	454	603	524	242
165°	572	656	554	656	572	162
175°	676	684	662	684	676	63
180°	683	683	683	683	683	



TEST NUMBER: P392492

CATALOG NUMBER: MWL-2-18-17-UNV-L940-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	709.5	709.5	709.5	709.5	709.5	709.5	709.5	709.5	709.5	709.5	709.5
2.5°	707.1	708.1	709.0	706.8	705.0	706.3	709.0	708.1	707.6	708.1	709.0
5°	703.5	704.5	705.4	702.6	700.8	702.6	704.9	704.5	703.5	704.5	704.9
7.5°	697.5	698.5	698.5	697.2	695.4	696.7	698.1	698.1	697.5	698.1	698.1
10°	689.0	690.3	690.3	688.5	686.7	688.1	689.9	689.3	689.0	689.3	689.9
12.5°	679.0	679.4	679.0	677.1	675.7	677.1	679.0	678.4	678.0	678.4	679.0
15°	665.8	665.7	665.3	664.4	662.9	663.8	664.7	664.7	664.4	664.7	664.7
17.5°	652.2	651.2	650.7	651.1	650.2	651.1	650.2	650.7	650.7	650.7	650.2
20°	634.9	635.2	634.3	634.7	633.3	634.2	633.8	634.3	633.4	634.3	633.8
22.5°	615.2	616.1	617.0	616.5	616.0	616.0	616.5	615.2	614.3	615.2	616.5
25°	594.2	595.1	597.4	597.3	597.8	596.9	596.4	593.7	592.8	593.7	596.4
27.5°	568.7	572.4	575.5	576.9	576.8	576.4	574.5	570.9	567.3	570.9	574.5
30°	543.2	545.9	551.4	556.4	555.9	555.4	549.9	544.5	541.3	544.5	549.9
32.5°	514.0	517.7	525.9	532.7	534.5	531.7	524.4	515.8	512.1	515.8	524.4
35°	483.5	485.3	497.2	506.3	508.5	504.8	495.7	483.9	482.1	483.9	495.7
37.5°	453.5	452.5	464.4	480.8	484.3	479.3	462.9	451.1	452.0	451.1	462.9
40°	422.5	420.7	429.8	451.2	456.1	450.2	427.9	418.7	420.6	418.7	427.9
42.5°	393.3	391.5	395.6	420.2	429.7	419.2	394.1	389.6	391.4	389.6	394.1
45°	364.6	361.9	362.8	384.7	397.8	383.7	360.9	360.4	363.2	360.4	360.9
47.5°	339.1	334.6	331.8	347.7	366.8	347.2	329.9	333.1	337.7	333.1	329.9
50°	313.6	309.0	301.8	313.1	328.1	312.1	299.8	307.1	312.1	307.1	299.8
52.5°	288.1	285.4	274.8	280.3	285.3	279.3	273.4	283.4	286.6	283.4	273.4
55°	265.7	262.0	249.3	247.0	240.2	246.1	247.9	260.7	264.8	260.7	247.9
57.5°	241.1	239.3	223.8	213.3	201.0	212.4	222.4	237.9	240.2	237.9	222.4
60°	217.8	213.3	195.1	180.0	170.9	179.6	194.2	212.4	217.4	212.4	194.2
62.5°	190.5	187.8	167.7	149.1	145.0	148.6	166.8	186.9	190.1	186.9	166.8
65°	166.4	160.9	140.9	124.5	123.1	124.0	140.4	160.4	166.4	160.4	140.4
67.5°	143.6	134.5	117.2	103.0	104.0	103.0	116.7	134.0	143.6	134.0	116.7
70°	120.4	110.3	96.7	84.8	88.5	84.8	96.7	110.8	120.8	110.8	96.7
72.5°	101.2	89.4	78.4	69.3	72.4	68.8	78.4	89.8	102.1	89.8	78.4
75°	83.0	71.2	61.5	55.1	59.7	55.1	62.0	71.6	84.4	71.6	62.0
77.5°	72.3	60.3	46.9	44.2	47.8	44.2	47.5	58.9	70.3	58.9	47.5
80°	67.7	57.0	37.4	33.3	36.9	33.3	36.5	49.3	58.5	49.3	36.5
82.5°	69.2	61.2	37.8	23.2	25.1	23.2	32.0	43.9	50.9	43.9	32.0
85°	76.0	69.3	43.8	19.2	15.0	18.3	29.9	39.9	44.6	39.9	29.9
87.5°	86.0	82.6	53.2	22.9	3.6	16.0	25.8	36.4	36.4	36.4	25.8
90°	99.3	97.3	67.0	29.3	0.5	11.0	19.2	29.3	27.1	29.3	19.2
92.5°	116.0	113.0	82.1	38.8	7.7	5.6	16.0	23.8	21.5	23.8	16.0
95°	132.0	130.1	98.2	51.0	19.3	2.8	11.5	18.3	17.9	18.3	11.5
97.5°	148.7	146.3	114.0	67.5	34.3	5.7	7.5	13.8	13.8	13.8	7.5
100°	163.0	161.5	132.0	88.2	52.6	15.9	4.3	10.2	11.1	10.2	4.3
102.5°	186.8	179.2	151.8	108.0	72.3	29.9	8.1	5.6	7.5	5.6	8.1
105°	207.2	200.4	175.4	129.6	95.8	49.6	19.7	6.7	4.3	6.7	19.7
107.5°	227.9	223.0	196.6	150.8	120.0	71.2	36.1	18.8	12.0	18.8	36.1
110°	252.0	246.2	217.3	172.0	145.0	94.4	54.8	34.2	26.4	34.2	54.8



TEST NUMBER: P392492

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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°	275.2	270.8	236.6	194.2	171.0	119.4	78.0	53.5	46.2	53.5	78.0
115°	292.9	290.5	258.8	214.9	195.2	147.9	103.6	76.1	67.4	76.1	103.6
117.5°	311.8	311.2	275.2	236.1	224.0	173.5	127.2	98.8	89.6	98.8	127.2
120°	335.4	331.5	297.7	257.3	251.6	200.4	153.2	124.7	115.6	124.7	153.2
122.5°	351.8	349.3	317.1	277.5	277.5	227.9	178.3	149.8	140.2	149.8	178.3
125°	366.7	365.7	331.5	297.7	305.5	253.5	206.2	177.3	166.7	177.3	206.2
127.5°	380.2	381.7	350.3	320.0	333.9	279.4	233.7	201.9	190.8	201.9	233.7
130°	391.8	396.6	368.2	340.2	360.9	307.9	258.3	226.5	219.2	226.5	258.3
132.5°	414.4	411.5	386.5	360.9	389.9	333.9	284.3	251.0	242.8	251.0	284.3
135°	425.9	426.9	402.3	378.7	416.8	360.0	308.9	276.1	267.9	276.1	308.9
137.5°	440.0	437.1	414.9	400.4	441.9	385.0	332.9	302.6	289.5	302.6	332.9
140°	451.0	450.5	432.2	419.7	468.9	409.6	358.4	327.6	315.5	327.6	358.4
142.5°	461.6	464.5	448.5	440.9	495.8	435.6	384.9	351.2	339.7	351.2	384.9
145°	468.9	475.0	464.9	468.3	521.4	465.5	408.1	373.9	361.3	373.9	408.1
147.5°	480.9	489.1	477.0	487.2	543.6	491.0	431.2	397.5	386.4	397.5	431.2
150°	497.3	501.1	493.9	513.1	566.2	519.4	454.8	420.1	409.1	420.1	454.8
152.5°	510.2	515.0	506.8	541.6	584.0	545.5	480.9	442.3	429.3	442.3	480.9
155°	523.8	525.7	519.9	569.1	602.9	571.0	501.6	466.8	454.4	466.8	501.6
157.5°	536.3	540.1	533.4	589.8	619.2	593.1	525.2	491.4	480.4	491.4	525.2
160°	549.8	549.8	553.7	613.0	632.8	611.5	550.3	518.4	503.0	518.4	550.3
162.5°	551.2	560.4	581.1	629.8	645.7	628.4	577.3	537.7	524.2	537.7	577.3
165°	572.4	580.6	612.0	644.8	655.8	643.3	610.5	569.5	553.7	569.5	610.5
167.5°	594.6	612.0	636.1	661.6	665.5	657.3	635.1	607.6	593.1	607.6	635.1
170°	629.8	645.7	657.3	668.8	674.1	669.3	651.1	638.0	627.9	638.0	651.1
172.5°	658.3	667.9	672.8	680.4	677.0	675.0	665.5	658.7	653.9	658.7	665.5
175°	676.1	678.0	683.2	680.9	683.8	678.5	679.0	681.4	661.6	681.4	679.0
177.5°	682.3	685.7	684.2	679.9	680.4	679.4	681.3	682.3	679.5	682.3	681.3
180°	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2	683.2



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	709.5	709.5	709.5	709.5	709.5	709.5
2.5°	706.3	705.0	706.8	709.0	708.1	707.1
5°	702.6	700.8	702.6	705.4	704.5	703.5
7.5°	696.7	695.4	697.2	698.5	698.5	697.5
10°	688.1	686.7	688.5	690.3	690.3	689.0
12.5°	677.1	675.7	677.1	679.0	679.4	679.0
15°	663.8	662.9	664.4	665.3	665.7	665.8
17.5°	651.1	650.2	651.1	650.7	651.2	652.2
20°	634.2	633.3	634.7	634.3	635.2	634.9
22.5°	616.0	616.0	616.5	617.0	616.1	615.2
25°	596.9	597.8	597.3	597.4	595.1	594.2
27.5°	576.4	576.8	576.9	575.5	572.4	568.7
30°	555.4	555.9	556.4	551.4	545.9	543.2
32.5°	531.7	534.5	532.7	525.9	517.7	514.0
35°	504.8	508.5	506.3	497.2	485.3	483.5
37.5°	479.3	484.3	480.8	464.4	452.5	453.5
40°	450.2	456.1	451.2	429.8	420.7	422.5
42.5°	419.2	429.7	420.2	395.6	391.5	393.3
45°	383.7	397.8	384.7	362.8	361.9	364.6
47.5°	347.2	366.8	347.7	331.8	334.6	339.1
50°	312.1	328.1	313.1	301.8	309.0	313.6
52.5°	279.3	285.3	280.3	274.8	285.4	288.1
55°	246.1	240.2	247.0	249.3	262.0	265.7
57.5°	212.4	201.0	213.3	223.8	239.3	241.1
60°	179.6	170.9	180.0	195.1	213.3	217.8
62.5°	148.6	145.0	149.1	167.7	187.8	190.5
65°	124.0	123.1	124.5	140.9	160.9	166.4
67.5°	103.0	104.0	103.0	117.2	134.5	143.6
70°	84.8	88.5	84.8	96.7	110.3	120.4
72.5°	68.8	72.4	69.3	78.4	89.4	101.2
75°	55.1	59.7	55.1	61.5	71.2	83.0
77.5°	44.2	47.8	44.2	46.9	60.3	72.3
80°	33.3	36.9	33.3	37.4	57.0	67.7
82.5°	23.2	25.1	23.2	37.8	61.2	69.2
85°	18.3	15.0	19.2	43.8	69.3	76.0
87.5°	16.0	3.6	22.9	53.2	82.6	86.0
90°	11.0	0.5	29.3	67.0	97.3	99.3
92.5°	5.6	7.7	38.8	82.1	113.0	116.0
95°	2.8	19.3	51.0	98.2	130.1	132.0
97.5°	5.7	34.3	67.5	114.0	146.3	148.7
100°	15.9	52.6	88.2	132.0	161.5	163.0
102.5°	29.9	72.3	108.0	151.8	179.2	186.8
105°	49.6	95.8	129.6	175.4	200.4	207.2
107.5°	71.2	120.0	150.8	196.6	223.0	227.9
110°	94.4	145.0	172.0	217.3	246.2	252.0





TEST NUMBER: P392492

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	119.4	171.0	194.2	236.6	270.8	275.2
115°	147.9	195.2	214.9	258.8	290.5	292.9
117.5°	173.5	224.0	236.1	275.2	311.2	311.8
120°	200.4	251.6	257.3	297.7	331.5	335.4
122.5°	227.9	277.5	277.5	317.1	349.3	351.8
125°	253.5	305.5	297.7	331.5	365.7	366.7
127.5°	279.4	333.9	320.0	350.3	381.7	380.2
130°	307.9	360.9	340.2	368.2	396.6	391.8
132.5°	333.9	389.9	360.9	386.5	411.5	414.4
135°	360.0	416.8	378.7	402.3	426.9	425.9
137.5°	385.0	441.9	400.4	414.9	437.1	440.0
140°	409.6	468.9	419.7	432.2	450.5	451.0
142.5°	435.6	495.8	440.9	448.5	464.5	461.6
145°	465.5	521.4	468.3	464.9	475.0	468.9
147.5°	491.0	543.6	487.2	477.0	489.1	480.9
150°	519.4	566.2	513.1	493.9	501.1	497.3
152.5°	545.5	584.0	541.6	506.8	515.0	510.2
155°	571.0	602.9	569.1	519.9	525.7	523.8
157.5°	593.1	619.2	589.8	533.4	540.1	536.3
160°	611.5	632.8	613.0	553.7	549.8	549.8
162.5°	628.4	645.7	629.8	581.1	560.4	551.2
165°	643.3	655.8	644.8	612.0	580.6	572.4
167.5°	657.3	665.5	661.6	636.1	612.0	594.6
170°	669.3	674.1	668.8	657.3	645.7	629.8
172.5°	675.0	677.0	680.4	672.8	667.9	658.3
175°	678.5	683.8	680.9	683.2	678.0	676.1
177.5°	679.4	680.4	679.9	684.2	685.7	682.3
180°	683.2	683.2	683.2	683.2	683.2	683.2

(END OF REPORT)