

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: P392505

Luminaire Tested: **MWL-2-22-17-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392505
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-2-22-17-UNV-L930-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

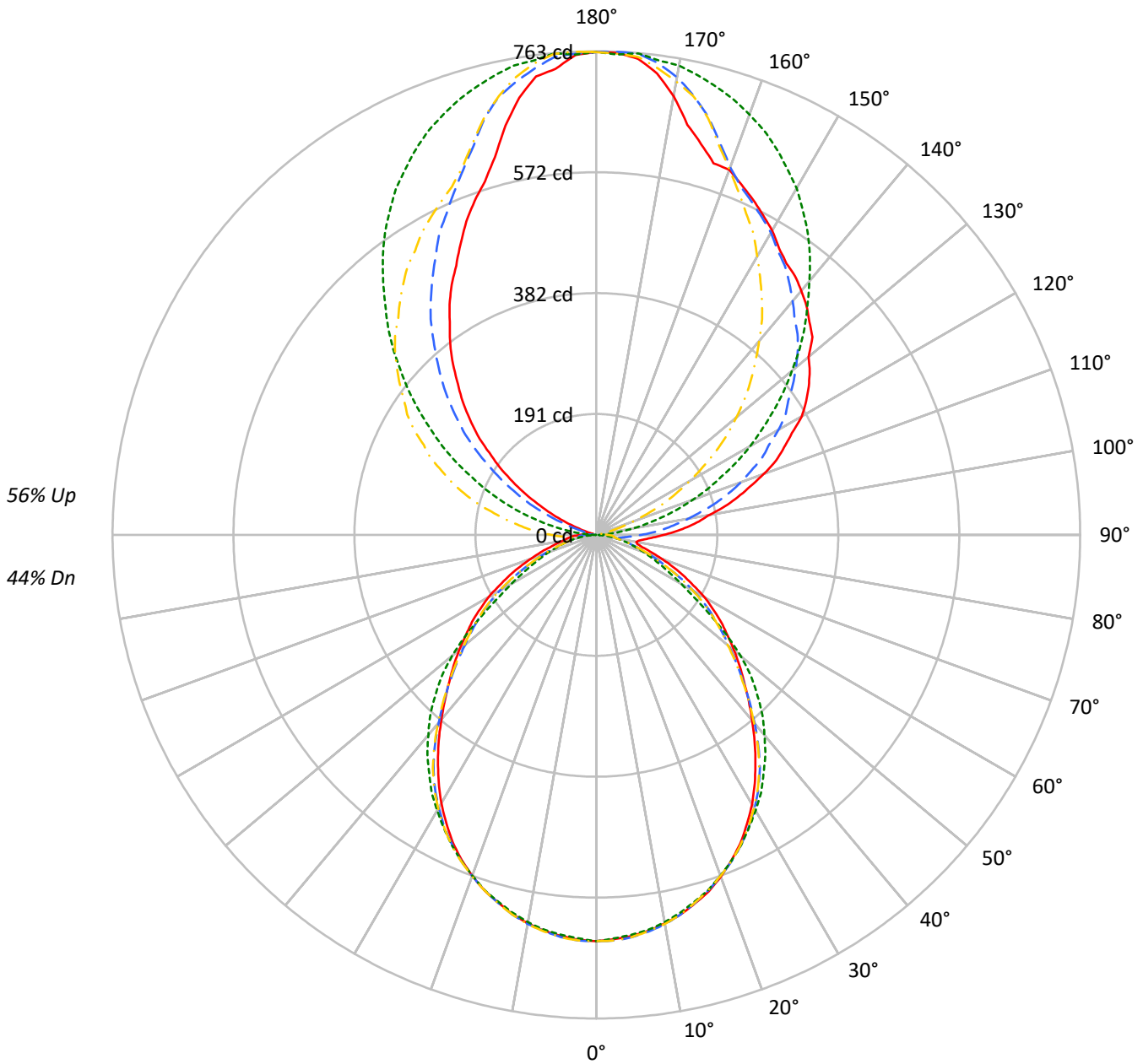
Lumens per Lamp: N/A
Luminaire Lumens: 3271.9 lumens
Efficiency: N/A
Efficacy: 84.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 38.582
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



— 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	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				
1	97	92	89	85	88	85	82	79	71	68	66	57	56	54	45	44	43	38				
2	88	81	75	70	81	75	69	65	62	59	55	51	48	46	40	39	37	32				
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32	28				
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	32	30	28	24				
5	68	57	49	43	62	52	45	40	44	39	35	37	33	30	29	27	24	21				
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19				
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17				
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	17	15				
9	50	38	31	26	46	36	29	25	30	25	22	25	22	19	21	18	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	8280	8280	8280	8280
5°	8090	7551	8090	7551
10°	7873	6919	7873	6919
15°	7622	6315	7600	6315
20°	7331	5764	7311	5764
25°	6977	5248	6956	5248
30°	6538	4748	6509	4748
35°	6015	4261	5993	4261
40°	5483	3779	5451	3779
45°	4984	3284	4960	3284
50°	4565	2719	4540	2719
55°	4172	2013	4153	2013
60°	3742	1462	3730	1462
65°	3179	1082	3179	1082
70°	2611	806	2628	806
75°	2109	571	2153	571
80°	2179	374	1828	374
85°	3375	163	1841	163



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.3	1.8
10°-20°	169.3	5.2
20°-30°	247.6	7.6
30°-40°	279.5	8.5
40°-50°	259.5	7.9
50°-60°	203.9	6.2
60°-70°	128.9	3.9
70°-80°	64.5	2.0
80°-90°	40.8	1.2
90°-100°	61.2	1.9
100°-110°	117.4	3.6
110°-120°	202.3	6.2
120°-130°	274.8	8.4
130°-140°	313.4	9.6
140°-150°	313.0	9.6
150°-160°	272.5	8.3
160°-170°	191.6	5.9
170°-180°	71.4	2.2
0°-30°	477.2	14.6
0°-40°	756.7	23.1
0°-60°	1220.1	37.3
0°-90°	1454.4	44.4
90°-120°	380.9	11.6
90°-150°	1282.0	39.2
90°-180°	1818.0	55.6
0°-180°	3271.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	641	641	641	641	641	
5°	635	633	635	633	635	60
15°	602	599	600	599	602	170
25°	537	540	536	540	537	246
35°	437	459	436	459	437	273
45°	330	360	328	360	330	255
55°	240	217	239	217	240	214
65°	150	111	150	111	150	150
75°	75	54	77	54	75	84
85°	77	14	42	14	77	60
90°	106	1	25	1	106	58
95°	144	22	16	22	144	125
105°	231	107	5	107	231	244
115°	327	218	75	218	327	324
125°	409	341	186	341	409	365
135°	475	465	299	465	475	367
145°	523	582	403	582	523	330
155°	584	672	507	672	584	269
165°	638	732	617	732	638	181
175°	754	762	738	762	754	70
180°	762	762	762	762	762	



TEST NUMBER: P392505

CATALOG NUMBER: MWL-2-22-17-UNV-L930-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	641.0	641.0	641.0	641.0	641.0	641.0	641.0	641.0	641.0	641.0	641.0
2.5°	638.5	639.7	640.7	638.8	637.1	638.3	640.7	639.7	639.2	639.7	640.7
5°	635.3	636.3	637.4	634.9	633.3	634.9	637.0	636.3	635.3	636.3	637.0
7.5°	630.1	631.1	631.1	630.0	628.4	629.6	630.6	630.6	630.1	630.6	630.6
10°	622.3	623.7	623.7	622.2	620.5	621.5	623.2	622.7	622.3	622.7	623.2
12.5°	613.5	613.9	613.4	611.7	610.4	611.7	613.4	612.8	612.5	612.8	613.4
15°	601.8	601.6	601.0	600.1	598.8	599.7	600.5	600.5	600.1	600.5	600.5
17.5°	589.5	588.4	587.8	588.2	587.4	588.2	587.4	587.8	587.8	587.8	587.4
20°	573.8	574.1	573.0	573.4	572.0	572.8	572.5	573.0	572.2	573.0	572.5
22.5°	556.0	556.8	557.4	556.9	556.4	556.4	556.9	555.8	555.0	555.8	556.9
25°	537.1	537.9	539.9	539.7	539.9	539.0	538.9	536.4	535.5	536.4	538.9
27.5°	514.1	517.4	520.2	521.3	521.0	520.7	519.1	515.8	512.5	515.8	519.1
30°	491.1	493.5	498.5	502.9	502.1	501.8	496.9	491.9	488.9	491.9	496.9
32.5°	464.7	468.1	475.5	481.5	483.0	480.5	473.9	465.9	462.6	465.9	473.9
35°	437.1	438.8	449.4	457.7	459.4	456.0	447.8	437.1	435.5	437.1	447.8
37.5°	410.0	409.2	419.8	434.6	437.7	433.0	418.2	407.5	408.4	407.5	418.2
40°	382.0	380.4	388.6	407.8	412.2	406.7	386.5	378.3	379.8	378.3	386.5
42.5°	355.7	354.0	357.6	379.8	388.4	378.7	356.1	351.9	353.6	351.9	356.1
45°	329.7	327.2	328.0	347.7	359.6	346.7	325.9	325.6	328.1	325.6	325.9
47.5°	306.6	302.5	300.1	314.3	331.6	313.8	297.9	301.0	305.1	301.0	297.9
50°	283.6	279.5	272.9	283.1	296.6	282.0	270.8	277.4	282.0	277.4	270.8
52.5°	260.5	258.1	248.6	253.5	257.9	252.4	246.9	256.0	259.0	256.0	246.9
55°	240.4	237.0	225.6	223.3	217.0	222.2	223.9	235.4	239.3	235.4	223.9
57.5°	218.2	216.5	202.5	192.9	181.7	191.9	200.8	214.8	217.0	214.8	200.8
60°	197.1	192.9	176.5	162.8	154.6	162.3	175.4	191.9	196.5	191.9	175.4
62.5°	172.3	169.8	151.8	134.9	131.0	134.3	150.7	168.8	171.9	168.8	150.7
65°	150.5	145.5	127.4	112.6	111.3	112.1	126.9	144.9	150.5	144.9	126.9
67.5°	130.0	121.7	106.1	93.2	93.9	93.2	105.5	121.2	130.0	121.2	105.5
70°	108.7	99.8	87.4	76.7	80.0	76.7	87.4	100.3	109.4	100.3	87.4
72.5°	91.5	80.8	71.0	62.8	65.5	62.3	71.0	81.4	92.6	81.4	71.0
75°	75.1	64.4	55.6	49.9	54.1	49.9	56.2	65.0	76.7	65.0	56.2
77.5°	66.2	55.0	42.5	40.1	43.3	40.1	43.0	53.4	64.0	53.4	43.0
80°	63.9	53.5	34.2	30.2	33.5	30.2	33.1	44.9	53.6	44.9	33.1
82.5°	67.7	59.6	35.7	21.1	22.8	21.1	29.2	40.2	47.3	40.2	29.2
85°	77.0	70.0	43.4	17.8	13.7	16.7	27.9	37.2	42.0	37.2	27.9
87.5°	89.8	85.8	54.9	22.5	3.3	15.1	24.2	34.2	34.3	34.2	24.2
90°	105.8	102.8	71.1	30.6	0.6	10.1	17.8	27.0	25.2	27.0	17.8
92.5°	125.3	121.3	88.4	42.3	8.6	5.2	14.8	21.8	20.0	21.8	14.8
95°	143.8	141.4	107.5	56.7	21.6	3.0	10.7	16.7	16.5	16.7	10.7
97.5°	163.4	160.7	126.2	75.2	38.1	6.4	7.3	12.9	12.9	12.9	7.3
100°	180.2	178.9	147.1	98.4	58.6	17.8	4.6	10.0	10.8	10.0	4.6
102.5°	207.6	199.5	169.1	120.5	80.7	33.3	8.9	5.9	7.6	5.9	8.9
105°	231.0	223.4	195.5	144.4	106.7	55.1	21.7	7.2	4.6	7.2	21.7
107.5°	254.1	248.7	219.2	168.1	133.7	79.3	40.1	20.7	13.1	20.7	40.1
110°	281.0	274.5	242.2	191.7	161.6	105.1	61.0	37.9	29.3	37.9	61.0



TEST NUMBER: P392505

CATALOG NUMBER: MWL-2-22-17-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	306.8	301.9	263.8	216.4	190.6	133.1	86.8	59.4	51.4	59.4	86.8
115°	326.7	323.9	288.5	239.5	217.5	164.7	115.3	84.7	75.0	84.7	115.3
117.5°	347.6	347.1	306.8	263.2	249.8	193.4	141.7	110.0	99.8	110.0	141.7
120°	373.9	369.7	332.0	286.9	280.4	223.4	170.7	139.0	128.7	139.0	170.7
122.5°	392.3	389.6	353.6	309.4	309.4	254.1	198.6	167.0	156.2	167.0	198.6
125°	408.9	407.8	369.7	332.0	340.7	282.6	229.9	197.6	185.8	197.6	229.9
127.5°	424.0	425.6	390.7	356.8	372.4	311.6	260.5	225.1	212.6	225.1	260.5
130°	436.9	442.3	410.6	379.4	402.5	343.3	287.9	252.4	244.3	252.4	287.9
132.5°	462.2	458.9	430.9	402.5	434.7	372.4	317.0	279.9	270.8	279.9	317.0
135°	475.1	476.2	448.7	422.4	464.8	401.4	344.5	307.8	298.8	307.8	344.5
137.5°	490.6	487.4	462.7	446.6	492.8	429.4	371.2	337.5	322.9	337.5	371.2
140°	502.8	502.2	481.7	468.1	522.9	456.8	399.6	365.1	351.7	365.1	399.6
142.5°	514.6	517.8	500.1	491.7	553.0	485.8	429.2	391.5	378.5	391.5	429.2
145°	522.7	529.6	518.4	522.1	581.5	519.0	455.0	416.7	402.7	416.7	455.0
147.5°	536.1	545.2	531.8	543.1	606.2	547.4	480.7	443.2	430.7	443.2	480.7
150°	554.4	558.8	550.6	572.1	631.5	579.1	507.1	468.3	456.0	468.3	507.1
152.5°	568.9	574.3	565.1	603.8	651.4	608.2	536.1	493.1	478.6	493.1	536.1
155°	583.9	586.1	579.7	634.6	672.3	636.7	559.2	520.5	506.6	520.5	559.2
157.5°	597.9	602.3	594.8	657.6	690.7	661.4	585.6	547.9	535.5	547.9	585.6
160°	613.0	613.0	617.2	683.7	705.7	682.0	613.5	578.0	560.9	578.0	613.5
162.5°	614.7	624.8	648.0	702.6	720.2	700.9	643.6	599.6	584.5	599.6	643.6
165°	638.3	647.4	682.4	719.2	731.6	717.6	680.7	635.0	617.2	635.0	680.7
167.5°	663.0	682.4	709.5	737.9	742.3	733.1	708.5	677.5	661.4	677.5	708.5
170°	702.6	720.0	733.1	745.8	751.7	746.4	726.1	711.4	700.3	711.4	726.1
172.5°	734.2	745.0	750.4	758.7	754.9	752.8	742.3	734.8	729.4	734.8	742.3
175°	754.1	756.3	761.9	759.3	762.5	756.5	757.1	760.0	737.9	760.0	757.1
177.5°	761.1	764.9	763.0	758.2	758.7	757.7	759.8	761.1	757.8	761.1	759.8
180°	761.9	761.9	761.9	761.9	761.9	761.9	761.9	761.9	761.9	761.9	761.9



TEST NUMBER: P392505

CATALOG NUMBER: MWL-2-22-17-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	641.0	641.0	641.0	641.0	641.0	641.0
2.5°	638.3	637.1	638.8	640.7	639.7	638.5
5°	634.9	633.3	634.9	637.4	636.3	635.3
7.5°	629.6	628.4	630.0	631.1	631.1	630.1
10°	621.5	620.5	622.2	623.7	623.7	622.3
12.5°	611.7	610.4	611.7	613.4	613.9	613.5
15°	599.7	598.8	600.1	601.0	601.6	601.8
17.5°	588.2	587.4	588.2	587.8	588.4	589.5
20°	572.8	572.0	573.4	573.0	574.1	573.8
22.5°	556.4	556.4	556.9	557.4	556.8	556.0
25°	539.0	539.9	539.7	539.9	537.9	537.1
27.5°	520.7	521.0	521.3	520.2	517.4	514.1
30°	501.8	502.1	502.9	498.5	493.5	491.1
32.5°	480.5	483.0	481.5	475.5	468.1	464.7
35°	456.0	459.4	457.7	449.4	438.8	437.1
37.5°	433.0	437.7	434.6	419.8	409.2	410.0
40°	406.7	412.2	407.8	388.6	380.4	382.0
42.5°	378.7	388.4	379.8	357.6	354.0	355.7
45°	346.7	359.6	347.7	328.0	327.2	329.7
47.5°	313.8	331.6	314.3	300.1	302.5	306.6
50°	282.0	296.6	283.1	272.9	279.5	283.6
52.5°	252.4	257.9	253.5	248.6	258.1	260.5
55°	222.2	217.0	223.3	225.6	237.0	240.4
57.5°	191.9	181.7	192.9	202.5	216.5	218.2
60°	162.3	154.6	162.8	176.5	192.9	197.1
62.5°	134.3	131.0	134.9	151.8	169.8	172.3
65°	112.1	111.3	112.6	127.4	145.5	150.5
67.5°	93.2	93.9	93.2	106.1	121.7	130.0
70°	76.7	80.0	76.7	87.4	99.8	108.7
72.5°	62.3	65.5	62.8	71.0	80.8	91.5
75°	49.9	54.1	49.9	55.6	64.4	75.1
77.5°	40.1	43.3	40.1	42.5	55.0	66.2
80°	30.2	33.5	30.2	34.2	53.5	63.9
82.5°	21.1	22.8	21.1	35.7	59.6	67.7
85°	16.7	13.7	17.8	43.4	70.0	77.0
87.5°	15.1	3.3	22.5	54.9	85.8	89.8
90°	10.1	0.6	30.6	71.1	102.8	105.8
92.5°	5.2	8.6	42.3	88.4	121.3	125.3
95°	3.0	21.6	56.7	107.5	141.4	143.8
97.5°	6.4	38.1	75.2	126.2	160.7	163.4
100°	17.8	58.6	98.4	147.1	178.9	180.2
102.5°	33.3	80.7	120.5	169.1	199.5	207.6
105°	55.1	106.7	144.4	195.5	223.4	231.0
107.5°	79.3	133.7	168.1	219.2	248.7	254.1
110°	105.1	161.6	191.7	242.2	274.5	281.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	133.1	190.6	216.4	263.8	301.9	306.8
115°	164.7	217.5	239.5	288.5	323.9	326.7
117.5°	193.4	249.8	263.2	306.8	347.1	347.6
120°	223.4	280.4	286.9	332.0	369.7	373.9
122.5°	254.1	309.4	309.4	353.6	389.6	392.3
125°	282.6	340.7	332.0	369.7	407.8	408.9
127.5°	311.6	372.4	356.8	390.7	425.6	424.0
130°	343.3	402.5	379.4	410.6	442.3	436.9
132.5°	372.4	434.7	402.5	430.9	458.9	462.2
135°	401.4	464.8	422.4	448.7	476.2	475.1
137.5°	429.4	492.8	446.6	462.7	487.4	490.6
140°	456.8	522.9	468.1	481.7	502.2	502.8
142.5°	485.8	553.0	491.7	500.1	517.8	514.6
145°	519.0	581.5	522.1	518.4	529.6	522.7
147.5°	547.4	606.2	543.1	531.8	545.2	536.1
150°	579.1	631.5	572.1	550.6	558.8	554.4
152.5°	608.2	651.4	603.8	565.1	574.3	568.9
155°	636.7	672.3	634.6	579.7	586.1	583.9
157.5°	661.4	690.7	657.6	594.8	602.3	597.9
160°	682.0	705.7	683.7	617.2	613.0	613.0
162.5°	700.9	720.2	702.6	648.0	624.8	614.7
165°	717.6	731.6	719.2	682.4	647.4	638.3
167.5°	733.1	742.3	737.9	709.5	682.4	663.0
170°	746.4	751.7	745.8	733.1	720.0	702.6
172.5°	752.8	754.9	758.7	750.4	745.0	734.2
175°	756.5	762.5	759.3	761.9	756.3	754.1
177.5°	757.7	758.7	758.2	763.0	764.9	761.1
180°	761.9	761.9	761.9	761.9	761.9	761.9

(END OF REPORT)