

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: P392535

Luminaire Tested: **MWL-2-35-17-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392535
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-2-35-17-UNV-L930-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

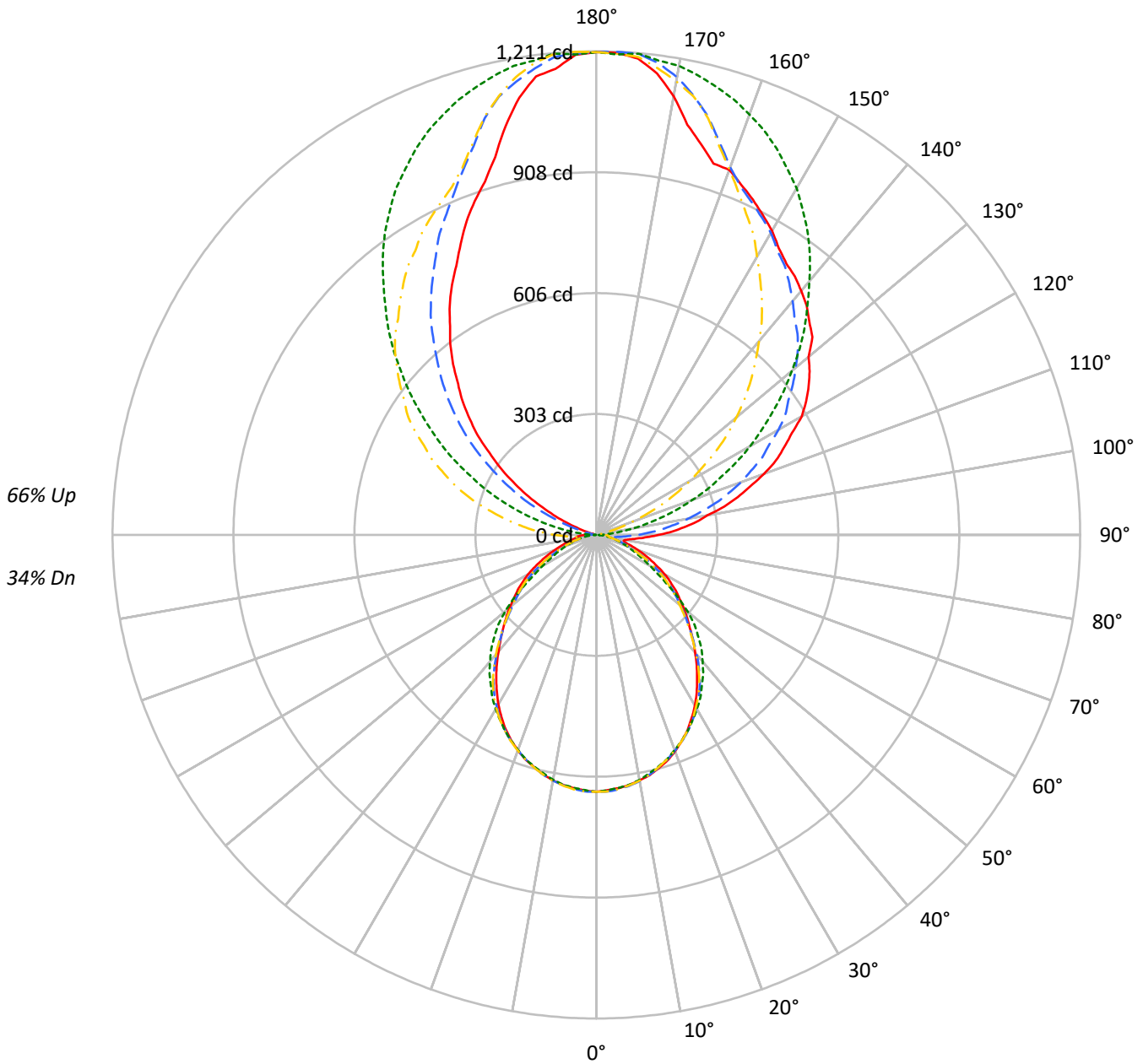
Lumens per Lamp: N/A
Luminaire Lumens: 4347.1 lumens
Efficiency: N/A
Efficacy: 73.2 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 59.388
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: P392535
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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	0
RCR																		
0	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	48	36	36	35	29
2	86	79	73	68	77	71	66	62	57	54	51	44	42	40	32	31	30	24
3	79	69	62	57	71	63	57	52	51	47	43	39	37	34	29	27	26	21
4	72	62	54	48	65	56	49	44	45	41	37	35	32	29	26	24	22	18
5	66	55	47	41	59	50	43	38	40	36	32	32	28	26	24	21	20	16
6	61	49	41	36	55	45	38	33	36	31	28	29	25	22	21	19	17	14
7	56	44	37	31	51	40	34	29	33	28	24	26	23	20	20	17	15	13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11
9	48	37	29	25	44	34	27	23	28	23	19	22	18	16	17	14	13	10
10	45	34	27	22	41	31	25	20	25	21	17	20	17	14	15	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	8308	8308	8308	8308
5°	8105	7581	8105	7581
10°	7897	6942	7897	6942
15°	7657	6331	7625	6331
20°	7367	5777	7335	5777
25°	7009	5260	6976	5260
30°	6570	4760	6526	4760
35°	6045	4272	6009	4272
40°	5516	3793	5464	3793
45°	5011	3298	4974	3298
50°	4596	2730	4554	2730
55°	4198	2021	4169	2021
60°	3764	1470	3747	1470
65°	3198	1088	3198	1088
70°	2628	813	2647	813
75°	2125	572	2198	572
80°	2469	376	1916	376
85°	4510	167	2082	167



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.5	1.4
10°-20°	169.8	3.9
20°-30°	248.4	5.7
30°-40°	280.6	6.5
40°-50°	260.6	6.0
50°-60°	204.9	4.7
60°-70°	129.7	3.0
70°-80°	65.4	1.5
80°-90°	49.4	1.1
90°-100°	91.8	2.1
100°-110°	185.8	4.3
110°-120°	320.8	7.4
120°-130°	435.9	10.0
130°-140°	497.3	11.4
140°-150°	496.4	11.4
150°-160°	432.4	9.9
160°-170°	304.1	7.0
170°-180°	113.3	2.6
0°-30°	478.7	11.0
0°-40°	759.3	17.5
0°-60°	1224.8	28.2
0°-90°	1469.4	33.8
90°-120°	598.4	13.8
90°-150°	2028.0	46.7
90°-180°	2878.0	66.2
0°-180°	4347.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	643	643	643	643	643	
5°	636	636	636	636	636	60
15°	605	600	602	600	605	170
25°	540	541	537	541	540	248
35°	439	461	437	461	439	275
45°	332	361	329	361	332	257
55°	242	218	240	218	242	216
65°	151	112	151	112	151	151
75°	76	54	78	54	76	87
85°	103	14	48	14	103	78
90°	155	1	27	1	155	86
95°	220	34	17	34	220	193
105°	366	169	7	169	366	386
115°	518	345	119	345	518	514
125°	649	540	294	540	649	579
135°	754	738	474	738	754	582
145°	829	923	639	923	829	523
155°	926	1067	804	1067	926	427
165°	1013	1161	979	1161	1013	287
175°	1197	1210	1171	1210	1197	112
180°	1209	1209	1209	1209	1209	



TEST NUMBER: P392535

CATALOG NUMBER: MWL-2-35-17-UNV-L930-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	643.2	643.2	643.2	643.2	643.2	643.2	643.2	643.2	643.2	643.2	643.2
2.5°	639.9	641.4	643.2	641.5	639.9	640.7	643.2	641.4	640.7	641.4	643.2
5°	636.5	638.2	639.9	637.5	635.8	637.5	639.1	638.2	636.5	638.2	639.1
7.5°	631.6	633.3	633.3	632.6	630.9	631.7	632.5	632.5	631.6	632.5	632.5
10°	624.2	625.9	625.9	624.3	622.6	623.4	625.1	624.2	624.2	624.2	625.1
12.5°	616.1	616.1	615.1	613.5	611.9	613.5	615.1	614.3	614.3	614.3	615.1
15°	604.6	603.8	602.8	602.0	600.3	601.2	602.0	602.0	602.0	602.0	602.0
17.5°	592.2	590.6	589.7	589.7	588.9	589.7	588.9	589.7	589.7	589.7	588.9
20°	576.6	576.6	574.9	574.9	573.2	574.1	574.1	574.9	574.1	574.9	574.1
22.5°	558.5	559.3	559.3	558.4	557.6	557.6	558.4	557.6	556.7	557.6	558.4
25°	539.6	540.5	542.0	541.2	541.2	540.4	540.4	537.9	537.0	537.9	540.4
27.5°	516.6	519.8	522.3	523.1	522.2	522.2	520.6	517.3	514.0	517.3	520.6
30°	493.5	496.0	500.9	505.1	503.4	503.4	498.5	493.4	490.2	493.4	498.5
32.5°	467.3	470.5	477.9	483.7	484.5	482.0	475.4	467.2	463.8	467.2	475.4
35°	439.3	441.0	451.6	459.9	460.6	457.3	449.1	438.4	436.7	438.4	449.1
37.5°	412.2	411.4	422.0	436.8	439.2	434.3	419.5	408.8	409.6	408.8	419.5
40°	384.3	382.6	390.8	409.6	413.7	407.9	387.3	379.1	380.7	379.1	387.3
42.5°	357.9	356.3	359.4	381.7	389.9	380.0	357.0	352.8	354.4	352.8	357.0
45°	331.5	329.0	329.8	349.6	361.1	348.0	326.5	326.5	329.0	326.5	326.5
47.5°	308.5	304.4	301.9	315.9	333.2	315.0	298.6	301.8	306.0	301.8	298.6
50°	285.5	281.3	274.8	284.7	297.8	282.9	271.4	278.0	282.9	278.0	271.4
52.5°	262.5	260.0	250.2	255.1	259.1	253.3	247.6	256.6	259.9	256.6	247.6
55°	241.9	238.6	227.1	224.6	217.9	222.9	224.5	236.1	240.2	236.1	224.5
57.5°	219.7	218.0	204.1	194.2	182.6	192.5	201.5	215.5	217.9	215.5	201.5
60°	198.3	194.2	177.8	163.7	155.5	162.9	176.0	192.5	197.4	192.5	176.0
62.5°	173.6	171.2	153.1	135.8	131.6	134.9	151.4	169.5	172.8	169.5	151.4
65°	151.4	146.4	128.4	113.6	111.9	112.7	127.5	145.6	151.4	145.6	127.5
67.5°	130.8	122.6	107.0	93.8	94.7	93.8	106.1	121.8	130.8	121.8	106.1
70°	109.4	100.4	88.0	77.4	80.7	77.4	88.0	101.2	110.2	101.2	88.0
72.5°	92.2	81.4	71.6	63.4	65.8	62.5	71.6	82.3	93.9	82.3	71.6
75°	75.7	65.1	55.9	50.2	54.2	50.2	56.8	65.9	78.3	65.9	56.8
77.5°	69.4	56.9	42.8	40.3	43.6	40.3	43.7	54.3	65.9	54.3	43.7
80°	72.4	59.9	35.5	30.4	33.7	30.4	33.8	46.2	56.2	46.2	33.8
82.5°	83.8	72.8	40.8	21.4	23.0	21.4	30.6	42.1	51.4	42.1	30.6
85°	102.9	92.7	55.5	19.1	14.0	17.3	30.6	40.6	47.5	40.6	30.6
87.5°	127.1	120.2	76.2	28.5	3.3	16.6	27.5	38.2	39.1	38.2	27.5
90°	155.4	149.4	103.6	43.1	0.8	10.7	19.1	29.0	27.4	29.0	19.1
92.5°	188.9	181.1	132.7	64.7	13.6	5.8	15.7	23.2	21.6	23.2	15.7
95°	219.7	215.4	165.3	89.6	34.2	4.3	11.6	17.3	17.3	17.3	11.6
97.5°	253.1	248.9	197.9	119.6	60.6	10.3	9.2	14.2	14.2	14.2	9.2
100°	282.4	280.7	233.1	156.2	93.1	28.2	6.9	12.6	13.4	12.6	6.9
102.5°	327.7	315.9	268.1	191.2	128.1	52.9	13.6	8.5	10.1	8.5	13.6
105°	366.3	354.3	309.8	228.8	169.1	87.1	34.2	11.1	6.9	11.1	34.2
107.5°	402.9	394.4	347.4	266.4	211.7	125.5	63.1	32.4	20.5	32.4	63.1
110°	445.7	435.4	384.3	303.9	256.1	166.5	96.4	59.8	46.1	59.8	96.4



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CATALOG NUMBER: MWL-2-35-17-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	486.7	479.0	418.3	343.2	302.3	210.9	137.4	93.9	81.1	93.9	137.4
115°	518.3	513.9	457.6	379.9	344.9	261.2	182.7	134.0	118.6	134.0	182.7
117.5°	551.5	550.7	486.7	417.5	396.1	306.5	224.5	174.2	158.0	174.2	224.5
120°	593.4	586.6	526.8	455.0	444.8	354.3	270.7	220.3	204.1	220.3	270.7
122.5°	622.4	618.1	561.0	491.0	491.0	402.9	315.0	264.7	247.6	264.7	315.0
125°	648.8	647.2	586.6	526.8	540.5	448.3	364.5	313.4	294.5	313.4	364.5
127.5°	672.8	675.3	619.9	566.1	590.8	494.4	413.2	357.0	337.2	357.0	413.2
130°	693.3	701.8	651.4	601.9	638.7	544.7	456.8	400.4	387.6	400.4	456.8
132.5°	733.4	728.3	683.9	638.7	689.9	590.8	502.9	443.9	429.4	443.9	502.9
135°	754.0	755.6	712.1	670.2	737.7	637.0	546.4	488.4	473.8	488.4	546.4
137.5°	778.7	773.5	734.3	708.6	782.1	681.3	589.1	535.3	512.3	535.3	589.1
140°	797.5	796.5	764.1	742.9	829.9	724.9	633.5	578.8	557.5	578.8	633.5
142.5°	816.2	821.3	793.2	780.4	877.7	771.0	680.5	620.7	600.2	620.7	680.5
145°	829.0	840.1	822.2	828.2	923.0	823.0	721.5	660.8	638.6	660.8	721.5
147.5°	850.4	864.8	843.5	861.5	962.3	868.3	762.4	702.6	683.0	702.6	762.4
150°	879.4	886.2	873.4	907.6	1002.4	918.7	804.2	742.8	723.2	742.8	804.2
152.5°	902.4	911.0	896.5	957.9	1034.0	964.8	850.4	782.1	759.1	782.1	850.4
155°	926.4	929.8	919.5	1006.6	1067.3	1010.0	887.0	825.6	803.5	825.6	887.0
157.5°	948.6	955.3	943.5	1043.4	1096.3	1049.3	928.9	869.1	849.5	869.1	928.9
160°	972.5	972.5	979.3	1085.2	1120.3	1082.7	973.3	917.0	889.6	917.0	973.3
162.5°	975.1	991.3	1028.0	1115.1	1143.2	1112.5	1021.1	951.1	927.2	951.1	1021.1
165°	1012.6	1027.1	1082.6	1141.5	1161.2	1139.0	1080.0	1007.5	979.3	1007.5	1080.0
167.5°	1051.9	1082.6	1126.2	1171.4	1178.3	1163.8	1124.5	1074.9	1049.3	1074.9	1124.5
170°	1115.1	1142.4	1163.8	1183.4	1192.7	1184.2	1152.7	1128.7	1111.7	1128.7	1152.7
172.5°	1165.4	1182.5	1191.1	1203.8	1197.8	1194.5	1178.3	1166.3	1157.8	1166.3	1178.3
175°	1197.0	1200.5	1208.9	1204.8	1209.8	1200.5	1201.3	1206.5	1171.4	1206.5	1201.3
177.5°	1208.1	1214.1	1210.7	1203.0	1203.8	1202.1	1205.6	1208.1	1203.0	1208.1	1205.6
180°	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9



TEST NUMBER: P392535

CATALOG NUMBER: MWL-2-35-17-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	643.2	643.2	643.2	643.2	643.2	643.2
2.5°	640.7	639.9	641.5	643.2	641.4	639.9
5°	637.5	635.8	637.5	639.9	638.2	636.5
7.5°	631.7	630.9	632.6	633.3	633.3	631.6
10°	623.4	622.6	624.3	625.9	625.9	624.2
12.5°	613.5	611.9	613.5	615.1	616.1	616.1
15°	601.2	600.3	602.0	602.8	603.8	604.6
17.5°	589.7	588.9	589.7	589.7	590.6	592.2
20°	574.1	573.2	574.9	574.9	576.6	576.6
22.5°	557.6	557.6	558.4	559.3	559.3	558.5
25°	540.4	541.2	541.2	542.0	540.5	539.6
27.5°	522.2	522.2	523.1	522.3	519.8	516.6
30°	503.4	503.4	505.1	500.9	496.0	493.5
32.5°	482.0	484.5	483.7	477.9	470.5	467.3
35°	457.3	460.6	459.9	451.6	441.0	439.3
37.5°	434.3	439.2	436.8	422.0	411.4	412.2
40°	407.9	413.7	409.6	390.8	382.6	384.3
42.5°	380.0	389.9	381.7	359.4	356.3	357.9
45°	348.0	361.1	349.6	329.8	329.0	331.5
47.5°	315.0	333.2	315.9	301.9	304.4	308.5
50°	282.9	297.8	284.7	274.8	281.3	285.5
52.5°	253.3	259.1	255.1	250.2	260.0	262.5
55°	222.9	217.9	224.6	227.1	238.6	241.9
57.5°	192.5	182.6	194.2	204.1	218.0	219.7
60°	162.9	155.5	163.7	177.8	194.2	198.3
62.5°	134.9	131.6	135.8	153.1	171.2	173.6
65°	112.7	111.9	113.6	128.4	146.4	151.4
67.5°	93.8	94.7	93.8	107.0	122.6	130.8
70°	77.4	80.7	77.4	88.0	100.4	109.4
72.5°	62.5	65.8	63.4	71.6	81.4	92.2
75°	50.2	54.2	50.2	55.9	65.1	75.7
77.5°	40.3	43.6	40.3	42.8	56.9	69.4
80°	30.4	33.7	30.4	35.5	59.9	72.4
82.5°	21.4	23.0	21.4	40.8	72.8	83.8
85°	17.3	14.0	19.1	55.5	92.7	102.9
87.5°	16.6	3.3	28.5	76.2	120.2	127.1
90°	10.7	0.8	43.1	103.6	149.4	155.4
92.5°	5.8	13.6	64.7	132.7	181.1	188.9
95°	4.3	34.2	89.6	165.3	215.4	219.7
97.5°	10.3	60.6	119.6	197.9	248.9	253.1
100°	28.2	93.1	156.2	233.1	280.7	282.4
102.5°	52.9	128.1	191.2	268.1	315.9	327.7
105°	87.1	169.1	228.8	309.8	354.3	366.3
107.5°	125.5	211.7	266.4	347.4	394.4	402.9
110°	166.5	256.1	303.9	384.3	435.4	445.7



TEST NUMBER: P392535

CATALOG NUMBER: MWL-2-35-17-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	210.9	302.3	343.2	418.3	479.0	486.7
115°	261.2	344.9	379.9	457.6	513.9	518.3
117.5°	306.5	396.1	417.5	486.7	550.7	551.5
120°	354.3	444.8	455.0	526.8	586.6	593.4
122.5°	402.9	491.0	491.0	561.0	618.1	622.4
125°	448.3	540.5	526.8	586.6	647.2	648.8
127.5°	494.4	590.8	566.1	619.9	675.3	672.8
130°	544.7	638.7	601.9	651.4	701.8	693.3
132.5°	590.8	689.9	638.7	683.9	728.3	733.4
135°	637.0	737.7	670.2	712.1	755.6	754.0
137.5°	681.3	782.1	708.6	734.3	773.5	778.7
140°	724.9	829.9	742.9	764.1	796.5	797.5
142.5°	771.0	877.7	780.4	793.2	821.3	816.2
145°	823.0	923.0	828.2	822.2	840.1	829.0
147.5°	868.3	962.3	861.5	843.5	864.8	850.4
150°	918.7	1002.4	907.6	873.4	886.2	879.4
152.5°	964.8	1034.0	957.9	896.5	911.0	902.4
155°	1010.0	1067.3	1006.6	919.5	929.8	926.4
157.5°	1049.3	1096.3	1043.4	943.5	955.3	948.6
160°	1082.7	1120.3	1085.2	979.3	972.5	972.5
162.5°	1112.5	1143.2	1115.1	1028.0	991.3	975.1
165°	1139.0	1161.2	1141.5	1082.6	1027.1	1012.6
167.5°	1163.8	1178.3	1171.4	1126.2	1082.6	1051.9
170°	1184.2	1192.7	1183.4	1163.8	1142.4	1115.1
172.5°	1194.5	1197.8	1203.8	1191.1	1182.5	1165.4
175°	1200.5	1209.8	1204.8	1208.9	1200.5	1197.0
177.5°	1202.1	1203.8	1203.0	1210.7	1214.1	1208.1
180°	1208.9	1208.9	1208.9	1208.9	1208.9	1208.9

(END OF REPORT)