

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: P392565

Luminaire Tested: **MWL-3-27-28-UNV-L930-EDD**

Issue Date: 3/12/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P392565  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &  
Test Lab: INNOVATION CENTER  
Issue Date: 3/12/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-3-27-28-UNV-L930-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

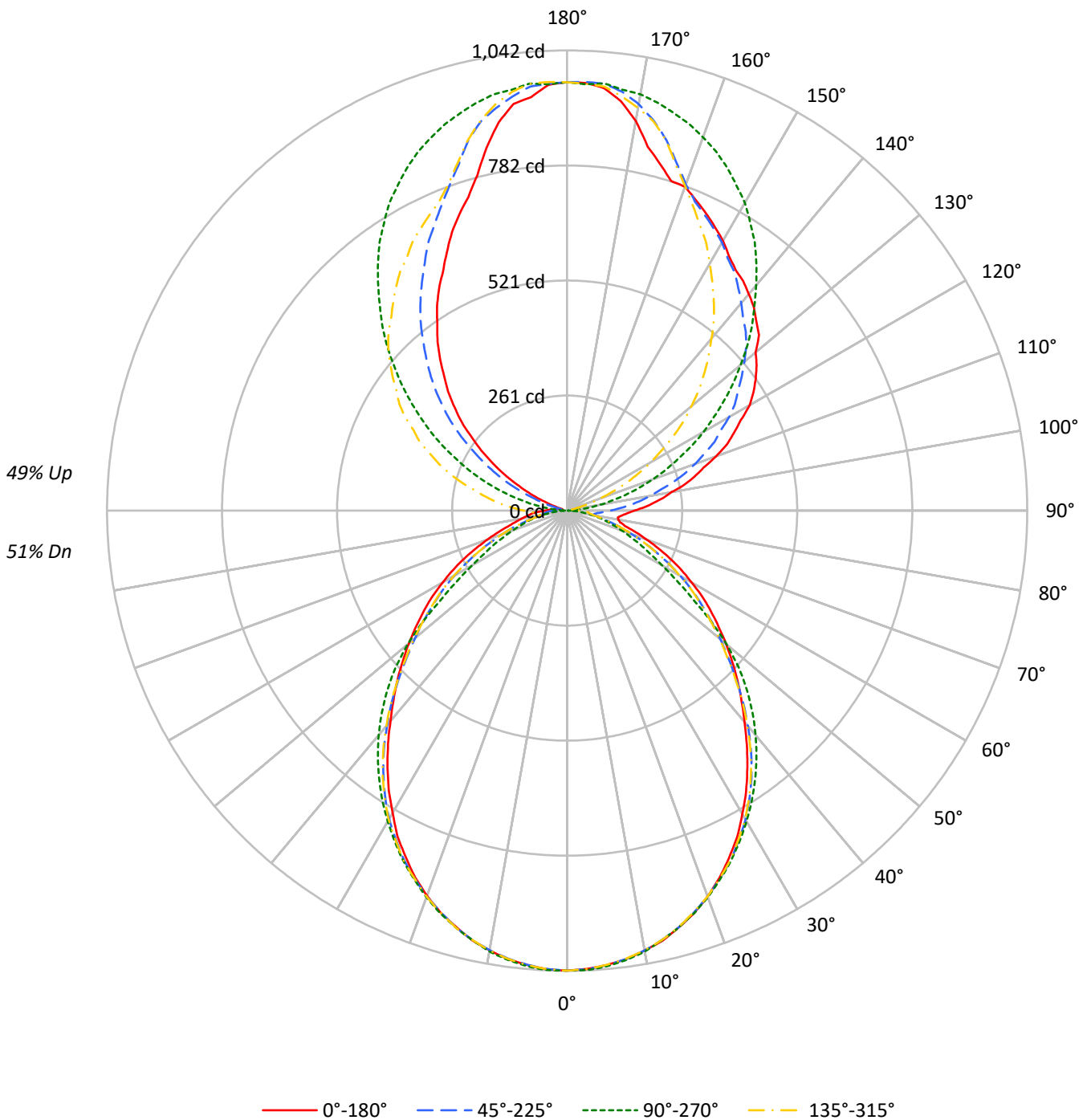
Lumens per Lamp: N/A  
Luminaire Lumens: 4708.9 lumens  
Efficiency: N/A  
Efficacy: 88.1 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 53.429  
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: P392565  
CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

**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	84	84	84	70	70	70	57	57	57	51
1	98	94	90	86	90	87	83	80	74	71	69	61	60	58	50	49	48	43
2	90	82	76	71	82	76	71	67	65	61	58	54	52	49	45	43	41	37
3	82	73	65	60	75	67	61	56	58	53	49	48	45	42	40	38	35	31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	31	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	33	30	27	24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	30	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	30	25	22	25	22	19	17
9	51	39	32	27	47	37	30	25	32	26	23	27	23	20	23	20	18	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	22	18	16	14

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

	0°	90°	180°	270°
0°	8970	8970	8970	8970
5°	8821	8232	8821	8232
10°	8633	7537	8633	7537
15°	8399	6869	8382	6869
20°	8111	6258	8094	6258
25°	7741	5680	7722	5680
30°	7302	5121	7275	5121
35°	6816	4589	6795	4589
40°	6294	4060	6265	4060
45°	5836	3510	5814	3510
50°	5400	2878	5376	2878
55°	4977	2129	4960	2129
60°	4519	1568	4509	1568
65°	4039	1186	4039	1186
70°	3490	878	3503	878
75°	2993	635	3039	635
80°	3257	419	2893	419
85°	4758	173	3059	173



TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.0	2.1
10°-20°	275.2	5.8
20°-30°	401.4	8.5
30°-40°	453.5	9.6
40°-50°	423.9	9.0
50°-60°	334.4	7.1
60°-70°	218.7	4.6
70°-80°	114.0	2.4
80°-90°	66.1	1.4
90°-100°	84.4	1.8
100°-110°	151.3	3.2
110°-120°	257.9	5.5
120°-130°	350.2	7.4
130°-140°	399.5	8.5
140°-150°	398.4	8.5
150°-160°	347.0	7.4
160°-170°	244.1	5.2
170°-180°	90.9	1.9
0°-30°	774.6	16.4
0°-40°	1228.1	26.1
0°-60°	1986.4	42.2
0°-90°	2385.2	50.7
90°-120°	493.6	10.5
90°-150°	1641.7	34.9
90°-180°	2324.0	49.4
0°-180°	4708.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1042	1042	1042	1042	1042	
5°	1033	1036	1033	1036	1033	98
15°	977	977	975	977	977	275
25°	868	876	865	876	868	399
35°	711	742	709	742	711	444
45°	546	576	544	576	546	421
55°	397	344	396	344	397	356
65°	257	183	257	183	257	255
75°	137	90	139	90	137	152
85°	125	22	80	22	125	100
90°	152	2	50	2	152	84
95°	196	28	33	28	196	169
105°	299	136	11	136	299	316
115°	417	277	96	277	417	414
125°	521	434	237	434	521	466
135°	606	592	381	592	606	468
145°	665	740	512	740	665	419
155°	743	857	645	857	743	343
165°	812	932	786	932	812	231
175°	960	971	940	971	960	90
180°	970	970	970	970	970	



TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7
2.5°	1038.8	1040.2	1039.1	1040.6	1041.5	1039.9	1039.1	1040.2	1039.5	1040.2	1039.1
5°	1032.9	1034.3	1033.2	1034.0	1035.6	1034.0	1032.5	1034.3	1032.9	1034.3	1032.5
7.5°	1024.4	1025.7	1024.0	1025.5	1026.4	1024.8	1023.3	1025.0	1024.4	1025.0	1023.3
10°	1011.5	1012.1	1011.3	1012.1	1013.9	1011.5	1010.6	1010.8	1011.5	1010.8	1010.6
12.5°	997.6	997.0	995.4	996.3	995.6	996.3	995.4	995.6	996.3	995.6	995.4
15°	977.2	977.5	976.8	978.5	977.0	977.9	976.2	976.2	975.2	976.2	976.2
17.5°	956.0	955.5	954.0	955.9	955.9	955.9	953.3	954.9	954.0	954.9	953.3
20°	929.9	930.9	930.3	932.3	931.5	931.5	929.7	929.5	927.9	929.5	929.7
22.5°	900.5	902.2	902.5	906.0	904.4	905.2	901.8	900.8	899.1	900.8	901.8
25°	867.5	870.0	875.3	877.3	876.5	876.5	873.9	868.0	865.4	868.0	873.9
27.5°	833.7	836.2	841.5	845.9	845.3	845.2	840.1	834.2	831.6	834.2	840.1
30°	793.2	798.2	808.3	813.6	812.3	812.3	806.3	796.1	790.3	796.1	806.3
32.5°	754.2	758.5	769.5	778.9	778.5	777.6	767.4	755.6	751.5	755.6	767.4
35°	711.4	713.8	728.3	740.9	742.2	738.8	726.1	711.7	709.2	711.7	726.1
37.5°	668.2	669.1	684.2	702.0	704.0	699.9	682.1	667.0	666.1	667.0	682.1
40°	625.2	623.4	637.0	658.3	664.3	656.9	634.1	620.7	622.3	620.7	634.1
42.5°	584.6	578.7	589.8	613.4	621.2	612.0	587.6	575.8	581.7	575.8	587.6
45°	545.8	535.7	541.6	562.7	576.5	561.3	538.9	533.6	543.7	533.6	538.9
47.5°	507.0	497.7	495.1	512.2	527.4	511.5	492.4	495.5	504.9	495.5	492.4
50°	469.8	459.6	452.0	462.4	470.9	460.9	449.2	456.9	467.7	456.9	449.2
52.5°	432.6	423.3	410.8	412.5	409.2	411.0	408.7	420.5	430.5	420.5	408.7
55°	397.3	388.8	371.9	363.6	344.3	362.2	369.8	386.7	395.9	386.7	369.8
57.5°	363.5	355.9	334.8	313.7	292.8	312.3	332.7	353.8	362.1	353.8	332.7
60°	325.5	321.3	296.8	264.9	248.8	264.2	295.4	320.0	324.8	320.0	295.4
62.5°	291.7	286.7	258.8	223.5	211.0	222.8	257.5	285.3	291.1	285.3	257.5
65°	257.3	249.6	220.9	186.2	183.1	185.6	220.2	249.0	257.3	249.0	220.2
67.5°	222.6	215.0	188.0	156.8	154.4	156.8	187.3	214.3	222.6	214.3	187.3
70°	191.5	179.7	156.0	129.0	130.7	129.0	156.0	180.3	192.2	180.3	156.0
72.5°	162.8	145.9	128.1	106.2	109.7	105.5	128.1	146.5	164.1	146.5	128.1
75°	136.6	118.0	99.6	85.1	90.3	85.1	100.2	118.7	138.7	118.7	100.2
77.5°	122.7	98.8	77.6	67.4	74.2	67.4	78.3	96.7	119.9	96.7	78.3
80°	117.4	91.4	62.7	51.4	56.4	51.4	61.4	80.5	104.3	80.5	61.4
82.5°	116.0	93.8	60.8	36.2	38.7	36.2	52.6	69.2	90.0	69.2	52.6
85°	124.6	104.2	67.4	29.8	21.8	28.4	47.5	62.4	80.1	62.4	47.5
87.5°	136.6	121.9	80.6	33.3	5.9	23.8	41.5	56.2	66.1	56.2	41.5
90°	152.3	141.2	98.4	41.7	1.5	15.8	30.6	44.7	49.6	44.7	30.6
92.5°	174.9	163.2	118.7	57.1	11.8	9.8	24.8	36.5	40.7	36.5	24.8
95°	195.6	189.8	142.2	73.8	28.3	5.3	18.9	30.9	33.3	30.9	18.9
97.5°	219.0	213.9	166.4	96.7	49.4	9.1	15.1	25.5	27.2	25.5	15.1
100°	239.8	236.5	190.5	126.2	75.5	23.4	9.1	21.6	24.1	21.6	9.1
102.5°	272.9	261.3	215.2	154.3	103.6	43.2	11.2	14.8	18.1	14.8	11.2
105°	299.0	286.1	248.7	183.8	135.7	70.0	27.6	10.7	10.7	10.7	27.6
107.5°	324.3	317.4	278.9	213.8	170.0	100.8	50.9	27.0	17.4	27.0	50.9
110°	358.5	350.3	308.3	244.0	205.6	133.7	77.6	49.0	37.9	49.0	77.6



TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	391.4	385.2	335.7	275.4	242.6	169.2	110.4	76.3	66.1	76.3	110.4
115°	416.7	413.2	368.0	304.9	276.8	209.7	147.6	108.5	96.2	108.5	147.6
117.5°	443.4	442.7	391.4	335.0	317.9	246.0	181.1	140.7	127.7	140.7	181.1
120°	477.0	471.5	423.5	365.1	357.0	284.4	218.1	177.7	164.7	177.7	218.1
122.5°	500.2	496.9	450.9	393.9	393.9	323.4	253.7	213.3	199.6	213.3	253.7
125°	521.4	520.1	471.5	422.7	433.6	359.7	293.4	252.4	237.3	252.4	293.4
127.5°	540.6	542.7	498.2	454.2	474.0	396.7	332.5	287.2	271.5	287.2	332.5
130°	557.1	564.0	523.5	483.0	512.4	437.1	367.3	322.2	312.0	322.2	367.3
132.5°	589.3	585.2	549.6	512.4	553.5	474.0	404.4	357.1	345.5	357.1	404.4
135°	605.7	607.0	572.1	538.6	591.8	511.8	439.3	392.7	381.1	392.7	439.3
137.5°	625.5	621.5	589.9	569.4	627.4	547.5	473.5	430.4	411.9	430.4	473.5
140°	639.9	639.2	613.2	596.8	665.7	582.5	508.5	464.6	447.5	464.6	508.5
142.5°	655.0	659.1	636.5	626.9	704.1	619.3	546.1	498.2	481.7	498.2	546.1
145°	665.3	674.2	659.8	664.6	740.5	660.5	579.0	530.4	512.5	530.4	579.0
147.5°	682.4	694.1	676.9	691.3	771.9	696.8	611.9	564.0	548.1	564.0	611.9
150°	705.6	711.2	701.0	728.3	805.0	737.2	645.4	596.1	580.3	596.1	645.4
152.5°	724.1	731.0	719.4	768.7	830.3	774.2	682.4	627.5	609.1	627.5	682.4
155°	743.3	746.0	737.9	807.8	857.0	810.4	711.8	662.6	644.7	662.6	711.8
157.5°	761.2	766.6	757.1	837.2	880.3	841.9	745.3	697.4	681.8	697.4	745.3
160°	780.4	780.4	785.8	871.3	899.5	869.3	781.0	735.8	713.9	735.8	781.0
162.5°	782.4	795.4	824.9	895.4	917.9	893.4	819.3	763.2	744.0	763.2	819.3
165°	812.4	824.1	868.7	916.6	932.3	914.6	866.7	808.4	785.8	808.4	866.7
167.5°	844.0	868.7	904.3	940.6	946.1	934.4	902.9	862.5	841.9	862.5	902.9
170°	895.4	916.6	934.4	949.4	957.0	950.1	925.5	905.6	892.6	905.6	925.5
172.5°	934.9	949.4	956.3	965.9	961.2	958.3	946.1	936.5	928.8	936.5	946.1
175°	960.3	963.8	970.0	966.6	970.7	963.2	963.8	968.6	939.8	968.6	963.8
177.5°	969.2	974.8	971.4	965.2	965.9	964.5	967.3	970.0	965.1	970.0	967.3
180°	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0



TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1041.7	1041.7	1041.7	1041.7	1041.7	1041.7
2.5°	1039.9	1041.5	1040.6	1039.1	1040.2	1038.8
5°	1034.0	1035.6	1034.0	1033.2	1034.3	1032.9
7.5°	1024.8	1026.4	1025.5	1024.0	1025.7	1024.4
10°	1011.5	1013.9	1012.1	1011.3	1012.1	1011.5
12.5°	996.3	995.6	996.3	995.4	997.0	997.6
15°	977.9	977.0	978.5	976.8	977.5	977.2
17.5°	955.9	955.9	955.9	954.0	955.5	956.0
20°	931.5	931.5	932.3	930.3	930.9	929.9
22.5°	905.2	904.4	906.0	902.5	902.2	900.5
25°	876.5	876.5	877.3	875.3	870.0	867.5
27.5°	845.2	845.3	845.9	841.5	836.2	833.7
30°	812.3	812.3	813.6	808.3	798.2	793.2
32.5°	777.6	778.5	778.9	769.5	758.5	754.2
35°	738.8	742.2	740.9	728.3	713.8	711.4
37.5°	699.9	704.0	702.0	684.2	669.1	668.2
40°	656.9	664.3	658.3	637.0	623.4	625.2
42.5°	612.0	621.2	613.4	589.8	578.7	584.6
45°	561.3	576.5	562.7	541.6	535.7	545.8
47.5°	511.5	527.4	512.2	495.1	497.7	507.0
50°	460.9	470.9	462.4	452.0	459.6	469.8
52.5°	411.0	409.2	412.5	410.8	423.3	432.6
55°	362.2	344.3	363.6	371.9	388.8	397.3
57.5°	312.3	292.8	313.7	334.8	355.9	363.5
60°	264.2	248.8	264.9	296.8	321.3	325.5
62.5°	222.8	211.0	223.5	258.8	286.7	291.7
65°	185.6	183.1	186.2	220.9	249.6	257.3
67.5°	156.8	154.4	156.8	188.0	215.0	222.6
70°	129.0	130.7	129.0	156.0	179.7	191.5
72.5°	105.5	109.7	106.2	128.1	145.9	162.8
75°	85.1	90.3	85.1	99.6	118.0	136.6
77.5°	67.4	74.2	67.4	77.6	98.8	122.7
80°	51.4	56.4	51.4	62.7	91.4	117.4
82.5°	36.2	38.7	36.2	60.8	93.8	116.0
85°	28.4	21.8	29.8	67.4	104.2	124.6
87.5°	23.8	5.9	33.3	80.6	121.9	136.6
90°	15.8	1.5	41.7	98.4	141.2	152.3
92.5°	9.8	11.8	57.1	118.7	163.2	174.9
95°	5.3	28.3	73.8	142.2	189.8	195.6
97.5°	9.1	49.4	96.7	166.4	213.9	219.0
100°	23.4	75.5	126.2	190.5	236.5	239.8
102.5°	43.2	103.6	154.3	215.2	261.3	272.9
105°	70.0	135.7	183.8	248.7	286.1	299.0
107.5°	100.8	170.0	213.8	278.9	317.4	324.3
110°	133.7	205.6	244.0	308.3	350.3	358.5





TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	169.2	242.6	275.4	335.7	385.2	391.4
115°	209.7	276.8	304.9	368.0	413.2	416.7
117.5°	246.0	317.9	335.0	391.4	442.7	443.4
120°	284.4	357.0	365.1	423.5	471.5	477.0
122.5°	323.4	393.9	393.9	450.9	496.9	500.2
125°	359.7	433.6	422.7	471.5	520.1	521.4
127.5°	396.7	474.0	454.2	498.2	542.7	540.6
130°	437.1	512.4	483.0	523.5	564.0	557.1
132.5°	474.0	553.5	512.4	549.6	585.2	589.3
135°	511.8	591.8	538.6	572.1	607.0	605.7
137.5°	547.5	627.4	569.4	589.9	621.5	625.5
140°	582.5	665.7	596.8	613.2	639.2	639.9
142.5°	619.3	704.1	626.9	636.5	659.1	655.0
145°	660.5	740.5	664.6	659.8	674.2	665.3
147.5°	696.8	771.9	691.3	676.9	694.1	682.4
150°	737.2	805.0	728.3	701.0	711.2	705.6
152.5°	774.2	830.3	768.7	719.4	731.0	724.1
155°	810.4	857.0	807.8	737.9	746.0	743.3
157.5°	841.9	880.3	837.2	757.1	766.6	761.2
160°	869.3	899.5	871.3	785.8	780.4	780.4
162.5°	893.4	917.9	895.4	824.9	795.4	782.4
165°	914.6	932.3	916.6	868.7	824.1	812.4
167.5°	934.4	946.1	940.6	904.3	868.7	844.0
170°	950.1	957.0	949.4	934.4	916.6	895.4
172.5°	958.3	961.2	965.9	956.3	949.4	934.9
175°	963.2	970.7	966.6	970.0	963.8	960.3
177.5°	964.5	965.9	965.2	971.4	974.8	969.2
180°	970.0	970.0	970.0	970.0	970.0	970.0

(END OF REPORT)