

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: P392620

Luminaire Tested: **MWL-3-53-28-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392620
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-53-28-UNV-L935-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

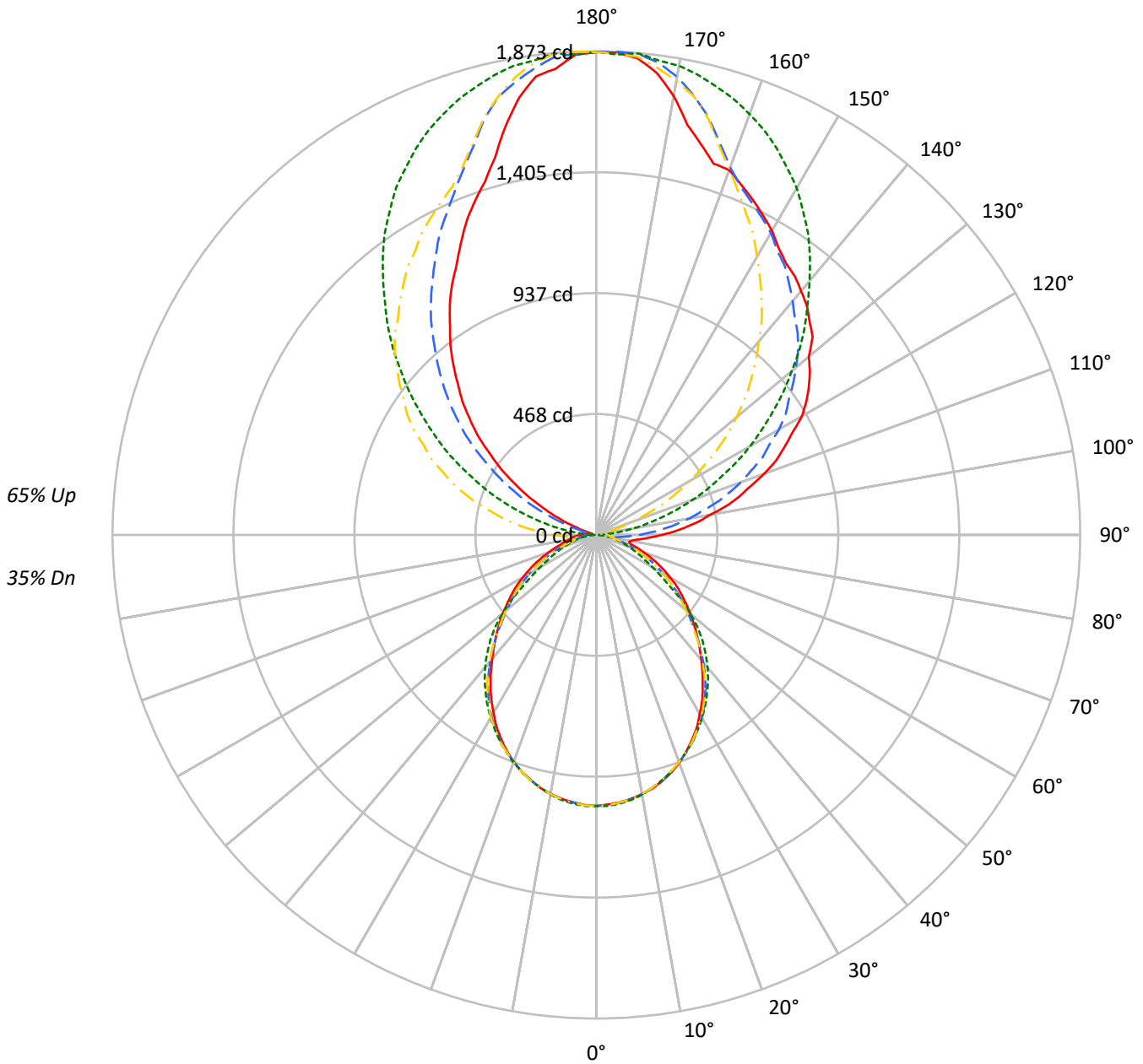
Lumens per Lamp: N/A
Luminaire Lumens: 6881.7 lumens
Efficiency: N/A
Efficacy: 70.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 98.273
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: P392620
CATALOG NUMBER: MWL-3-53-28-UNV-L935-EDD

Luminous Intensity Polar Plot



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



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L935-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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	35
1	94	90	86	83	85	82	79	76	66	64	62	51	50	48	38	37	36	30
2	86	79	73	68	78	72	67	62	58	54	51	45	43	41	33	32	31	25
3	79	70	63	57	71	63	57	52	51	47	43	40	37	35	30	28	26	22
4	72	62	54	48	65	56	50	45	46	41	37	36	33	30	27	25	23	19
5	66	55	47	41	60	50	43	38	41	36	32	32	29	26	24	22	20	16
6	61	49	42	36	55	45	38	33	37	32	28	29	26	23	22	20	18	15
7	56	44	37	31	51	41	34	29	33	28	25	27	23	20	20	18	16	13
8	52	40	33	28	47	37	30	26	30	25	22	24	21	18	19	16	14	12
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	15	13	11
10	45	34	27	22	41	31	25	21	26	21	18	21	17	15	16	13	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9039	9039	9039	9039
5°	8873	8301	8873	8301
10°	8695	7595	8695	7595
15°	8476	6915	8442	6915
20°	8188	6297	8154	6297
25°	7813	5716	7778	5716
30°	7372	5155	7324	5155
35°	6881	4620	6842	4620
40°	6359	4094	6307	4094
45°	5897	3541	5855	3541
50°	5461	2903	5416	2903
55°	5034	2148	5001	2148
60°	4570	1586	4552	1586
65°	4083	1198	4083	1198
70°	3526	890	3550	890
75°	3031	641	3118	641
80°	3745	426	3046	426
85°	6762	179	3479	179



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L935-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.7	1.4
10°-20°	277.2	4.0
20°-30°	404.5	5.9
30°-40°	457.3	6.6
40°-50°	427.6	6.2
50°-60°	337.6	4.9
60°-70°	221.1	3.2
70°-80°	116.3	1.7
80°-90°	83.6	1.2
90°-100°	146.1	2.1
100°-110°	288.9	4.2
110°-120°	496.5	7.2
120°-130°	674.6	9.8
130°-140°	769.6	11.2
140°-150°	767.8	11.2
150°-160°	668.7	9.7
160°-170°	470.5	6.8
170°-180°	175.2	2.5
0°-30°	780.4	11.3
0°-40°	1237.7	18.0
0°-60°	2002.8	29.1
0°-90°	2423.8	35.2
90°-120°	931.5	13.5
90°-150°	3143.5	45.7
90°-180°	4458.0	64.8
0°-180°	6881.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1050	1050	1050	1050	1050	
5°	1039	1044	1039	1044	1039	99
15°	986	984	982	984	986	278
25°	876	882	872	882	876	403
35°	718	747	714	747	718	449
45°	552	582	548	582	552	426
55°	402	347	399	347	402	360
65°	260	185	260	185	260	258
75°	138	91	142	91	138	158
85°	177	22	91	22	177	136
90°	252	2	54	2	252	140
95°	348	54	35	54	348	306
105°	571	261	15	261	571	602
115°	802	533	184	533	802	796
125°	1005	836	456	836	1005	897
135°	1167	1141	734	1141	1167	901
145°	1282	1428	987	1428	1282	808
155°	1433	1652	1242	1652	1433	661
165°	1566	1797	1515	1797	1566	444
175°	1852	1871	1812	1871	1852	173
180°	1870	1870	1870	1870	1870	



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L935-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7
2.5°	1044.9	1047.6	1047.7	1049.8	1050.7	1048.6	1047.7	1047.6	1046.3	1047.6	1047.7
5°	1039.0	1041.6	1041.8	1042.6	1044.3	1042.6	1040.4	1041.6	1039.0	1041.6	1040.4
7.5°	1031.0	1033.7	1031.9	1034.2	1035.0	1032.8	1030.6	1032.3	1031.0	1032.3	1030.6
10°	1018.7	1020.0	1019.3	1020.0	1021.8	1018.7	1017.9	1017.4	1018.7	1017.4	1017.9
12.5°	1006.1	1004.8	1002.6	1003.5	1002.2	1003.5	1002.6	1002.2	1003.5	1002.2	1002.6
15°	986.2	985.3	984.0	985.6	983.5	984.4	982.7	982.7	982.2	982.7	982.7
17.5°	965.1	963.3	961.0	962.3	962.3	962.3	959.8	961.9	961.0	961.9	959.8
20°	938.7	939.2	937.3	938.6	937.2	937.2	936.1	936.4	934.8	936.4	936.1
22.5°	908.6	910.4	909.3	912.3	910.1	911.0	908.0	907.6	906.0	907.6	908.0
25°	875.6	878.1	882.7	883.4	882.1	882.1	880.1	874.1	871.6	874.1	880.1
27.5°	841.7	844.2	848.7	852.5	850.7	851.3	846.2	840.2	837.7	840.2	846.2
30°	800.9	806.0	816.2	820.8	817.7	818.2	812.2	802.1	795.6	802.1	812.2
32.5°	761.9	766.2	777.2	786.0	784.2	783.4	773.2	760.8	756.6	760.8	773.2
35°	718.2	720.7	735.1	747.9	747.3	743.9	731.1	716.7	714.2	716.7	731.1
37.5°	675.0	675.7	691.0	708.9	709.6	704.9	687.0	671.8	670.9	671.8	687.0
40°	631.6	630.0	643.6	664.3	669.8	661.6	638.3	624.7	626.5	624.7	638.3
42.5°	591.0	585.0	595.6	619.3	626.6	616.7	591.7	579.8	585.7	579.8	591.7
45°	551.5	541.3	547.3	568.4	581.6	565.8	542.0	537.4	547.6	537.4	542.0
47.5°	512.5	503.2	500.6	517.1	532.4	515.8	495.3	499.2	508.6	499.2	495.3
50°	475.1	464.9	457.3	467.1	475.0	464.4	452.1	459.7	471.2	459.7	452.1
52.5°	437.8	428.5	415.3	417.0	413.2	414.5	411.3	423.3	434.0	423.3	411.3
55°	401.8	393.3	376.3	367.3	347.4	364.7	372.3	389.3	399.2	389.3	372.3
57.5°	367.9	360.3	339.0	317.3	295.7	314.7	335.1	356.3	365.3	356.3	335.1
60°	329.2	325.0	300.4	267.8	251.6	266.4	297.7	322.3	327.9	322.3	297.7
62.5°	295.3	290.2	262.2	226.2	213.0	224.8	259.6	287.5	294.0	287.5	259.6
65°	260.1	252.5	223.6	188.9	184.9	187.5	222.3	251.1	260.1	251.1	222.3
67.5°	225.3	217.7	190.5	158.7	156.1	158.7	189.2	216.3	225.3	216.3	189.2
70°	193.5	181.6	157.8	130.6	132.4	130.6	157.8	182.9	194.8	182.9	157.8
72.5°	164.6	147.6	129.9	107.8	110.7	106.5	129.9	149.0	167.2	149.0	129.9
75°	138.3	119.7	100.6	86.1	91.2	86.1	101.8	121.0	142.3	121.0	101.8
77.5°	129.4	102.9	78.5	68.3	75.2	68.3	79.8	99.0	124.1	99.0	79.8
80°	135.0	104.5	65.5	52.2	57.3	52.2	62.8	83.3	109.8	83.3	62.8
82.5°	148.9	120.7	71.2	36.9	39.5	36.9	55.3	73.2	98.6	73.2	55.3
85°	177.1	150.2	91.7	32.4	22.5	29.8	53.4	69.6	91.1	69.6	53.4
87.5°	211.8	191.5	123.3	45.5	6.0	27.0	48.0	64.7	75.8	64.7	48.0
90°	252.4	234.9	164.1	67.2	2.2	17.1	33.2	48.6	54.2	48.6	33.2
92.5°	302.9	283.6	207.9	102.3	22.0	11.1	26.9	39.2	43.9	39.2	26.9
95°	348.4	338.9	258.7	140.0	53.7	7.8	21.0	32.3	35.4	32.3	21.0
97.5°	399.9	391.5	311.0	185.8	94.7	16.7	18.9	28.1	29.9	28.1	18.9
100°	445.3	441.5	363.6	242.6	144.9	44.4	13.5	26.7	29.3	26.7	13.5
102.5°	514.8	495.6	414.5	296.8	199.1	82.8	20.7	19.9	23.3	19.9	20.7
105°	571.4	549.5	479.2	353.6	261.1	134.4	52.4	18.4	15.2	18.4	52.4
107.5°	624.0	610.8	537.3	411.8	327.1	193.8	97.2	50.6	32.0	50.6	97.2
110°	690.1	674.2	594.1	469.8	395.9	257.2	148.9	92.8	71.7	92.8	148.9



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	753.5	741.6	646.9	530.7	467.3	325.9	212.3	145.7	125.9	145.7	212.3
115°	802.4	795.8	708.6	587.5	533.3	403.8	283.1	207.9	184.1	207.9	283.1
117.5°	853.8	852.6	753.5	645.6	612.6	473.9	347.8	269.9	244.8	269.9	347.8
120°	918.6	908.0	815.6	703.8	687.9	547.9	419.2	341.3	316.2	341.3	419.2
122.5°	963.6	957.0	868.4	759.3	759.3	623.1	488.0	410.0	383.6	410.0	488.0
125°	1004.6	1001.8	908.0	814.8	835.9	693.2	564.5	485.2	456.2	485.2	564.5
127.5°	1041.5	1045.5	959.6	875.5	913.8	764.5	639.8	552.7	522.3	552.7	639.8
130°	1073.3	1086.5	1008.5	931.1	987.8	842.5	707.2	620.1	600.2	620.1	707.2
132.5°	1135.3	1127.5	1058.7	987.8	1067.1	913.8	778.6	687.4	665.0	687.4	778.6
135°	1167.1	1169.7	1102.4	1037.6	1141.1	985.9	846.0	756.1	733.7	756.1	846.0
137.5°	1205.4	1197.4	1136.7	1097.0	1209.8	1054.7	912.0	828.7	793.2	828.7	912.0
140°	1233.1	1231.7	1181.6	1149.8	1283.8	1122.1	979.5	894.8	861.9	894.8	979.5
142.5°	1262.2	1270.1	1226.4	1208.0	1357.8	1193.5	1052.0	959.6	927.9	959.6	1052.0
145°	1281.9	1299.2	1271.4	1280.6	1427.8	1272.7	1115.5	1021.7	987.3	1021.7	1115.5
147.5°	1315.0	1337.5	1304.4	1332.2	1488.6	1342.8	1178.9	1086.5	1056.0	1086.5	1178.9
150°	1359.9	1370.5	1350.7	1403.5	1551.5	1420.7	1243.7	1148.5	1118.1	1148.5	1243.7
152.5°	1395.6	1408.8	1386.3	1481.5	1600.3	1492.0	1315.0	1209.4	1173.6	1209.4	1315.0
155°	1432.6	1437.9	1422.1	1556.8	1651.9	1562.1	1371.8	1276.7	1242.3	1276.7	1371.8
157.5°	1466.9	1477.5	1459.0	1613.6	1696.9	1622.9	1436.6	1344.1	1313.7	1344.1	1436.6
160°	1503.9	1503.9	1514.6	1679.6	1733.8	1675.7	1505.3	1418.0	1375.8	1418.0	1505.3
162.5°	1507.9	1533.0	1589.8	1726.0	1769.5	1722.0	1579.3	1471.0	1433.9	1471.0	1579.3
165°	1566.0	1588.5	1674.4	1766.9	1797.2	1762.9	1670.4	1558.1	1514.6	1558.1	1670.4
167.5°	1626.8	1674.4	1743.1	1813.1	1823.7	1801.2	1740.5	1662.5	1622.9	1662.5	1740.5
170°	1726.0	1766.9	1801.2	1830.3	1844.9	1831.6	1784.0	1745.7	1720.6	1745.7	1784.0
172.5°	1803.0	1830.3	1843.5	1862.0	1852.7	1847.5	1823.7	1805.2	1791.2	1805.2	1823.7
175°	1851.9	1858.1	1869.9	1863.3	1871.2	1856.7	1858.1	1867.3	1812.3	1867.3	1858.1
177.5°	1869.1	1879.2	1872.6	1860.7	1862.0	1859.4	1864.6	1869.9	1861.1	1869.9	1864.6
180°	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1049.7	1049.7	1049.7	1049.7	1049.7	1049.7
2.5°	1048.6	1050.7	1049.8	1047.7	1047.6	1044.9
5°	1042.6	1044.3	1042.6	1041.8	1041.6	1039.0
7.5°	1032.8	1035.0	1034.2	1031.9	1033.7	1031.0
10°	1018.7	1021.8	1020.0	1019.3	1020.0	1018.7
12.5°	1003.5	1002.2	1003.5	1002.6	1004.8	1006.1
15°	984.4	983.5	985.6	984.0	985.3	986.2
17.5°	962.3	962.3	962.3	961.0	963.3	965.1
20°	937.2	937.2	938.6	937.3	939.2	938.7
22.5°	911.0	910.1	912.3	909.3	910.4	908.6
25°	882.1	882.1	883.4	882.7	878.1	875.6
27.5°	851.3	850.7	852.5	848.7	844.2	841.7
30°	818.2	817.7	820.8	816.2	806.0	800.9
32.5°	783.4	784.2	786.0	777.2	766.2	761.9
35°	743.9	747.3	747.9	735.1	720.7	718.2
37.5°	704.9	709.6	708.9	691.0	675.7	675.0
40°	661.6	669.8	664.3	643.6	630.0	631.6
42.5°	616.7	626.6	619.3	595.6	585.0	591.0
45°	565.8	581.6	568.4	547.3	541.3	551.5
47.5°	515.8	532.4	517.1	500.6	503.2	512.5
50°	464.4	475.0	467.1	457.3	464.9	475.1
52.5°	414.5	413.2	417.0	415.3	428.5	437.8
55°	364.7	347.4	367.3	376.3	393.3	401.8
57.5°	314.7	295.7	317.3	339.0	360.3	367.9
60°	266.4	251.6	267.8	300.4	325.0	329.2
62.5°	224.8	213.0	226.2	262.2	290.2	295.3
65°	187.5	184.9	188.9	223.6	252.5	260.1
67.5°	158.7	156.1	158.7	190.5	217.7	225.3
70°	130.6	132.4	130.6	157.8	181.6	193.5
72.5°	106.5	110.7	107.8	129.9	147.6	164.6
75°	86.1	91.2	86.1	100.6	119.7	138.3
77.5°	68.3	75.2	68.3	78.5	102.9	129.4
80°	52.2	57.3	52.2	65.5	104.5	135.0
82.5°	36.9	39.5	36.9	71.2	120.7	148.9
85°	29.8	22.5	32.4	91.7	150.2	177.1
87.5°	27.0	6.0	45.5	123.3	191.5	211.8
90°	17.1	2.2	67.2	164.1	234.9	252.4
92.5°	11.1	22.0	102.3	207.9	283.6	302.9
95°	7.8	53.7	140.0	258.7	338.9	348.4
97.5°	16.7	94.7	185.8	311.0	391.5	399.9
100°	44.4	144.9	242.6	363.6	441.5	445.3
102.5°	82.8	199.1	296.8	414.5	495.6	514.8
105°	134.4	261.1	353.6	479.2	549.5	571.4
107.5°	193.8	327.1	411.8	537.3	610.8	624.0
110°	257.2	395.9	469.8	594.1	674.2	690.1



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	325.9	467.3	530.7	646.9	741.6	753.5
115°	403.8	533.3	587.5	708.6	795.8	802.4
117.5°	473.9	612.6	645.6	753.5	852.6	853.8
120°	547.9	687.9	703.8	815.6	908.0	918.6
122.5°	623.1	759.3	759.3	868.4	957.0	963.6
125°	693.2	835.9	814.8	908.0	1001.8	1004.6
127.5°	764.5	913.8	875.5	959.6	1045.5	1041.5
130°	842.5	987.8	931.1	1008.5	1086.5	1073.3
132.5°	913.8	1067.1	987.8	1058.7	1127.5	1135.3
135°	985.9	1141.1	1037.6	1102.4	1169.7	1167.1
137.5°	1054.7	1209.8	1097.0	1136.7	1197.4	1205.4
140°	1122.1	1283.8	1149.8	1181.6	1231.7	1233.1
142.5°	1193.5	1357.8	1208.0	1226.4	1270.1	1262.2
145°	1272.7	1427.8	1280.6	1271.4	1299.2	1281.9
147.5°	1342.8	1488.6	1332.2	1304.4	1337.5	1315.0
150°	1420.7	1551.5	1403.5	1350.7	1370.5	1359.9
152.5°	1492.0	1600.3	1481.5	1386.3	1408.8	1395.6
155°	1562.1	1651.9	1556.8	1422.1	1437.9	1432.6
157.5°	1622.9	1696.9	1613.6	1459.0	1477.5	1466.9
160°	1675.7	1733.8	1679.6	1514.6	1503.9	1503.9
162.5°	1722.0	1769.5	1726.0	1589.8	1533.0	1507.9
165°	1762.9	1797.2	1766.9	1674.4	1588.5	1566.0
167.5°	1801.2	1823.7	1813.1	1743.1	1674.4	1626.8
170°	1831.6	1844.9	1830.3	1801.2	1766.9	1726.0
172.5°	1847.5	1852.7	1862.0	1843.5	1830.3	1803.0
175°	1856.7	1871.2	1863.3	1869.9	1858.1	1851.9
177.5°	1859.4	1862.0	1860.7	1872.6	1879.2	1869.1
180°	1869.9	1869.9	1869.9	1869.9	1869.9	1869.9

(END OF REPORT)