

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: P392698

Luminaire Tested: **MWL-4-55-73-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392698
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-4-55-73-UNV-L935-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

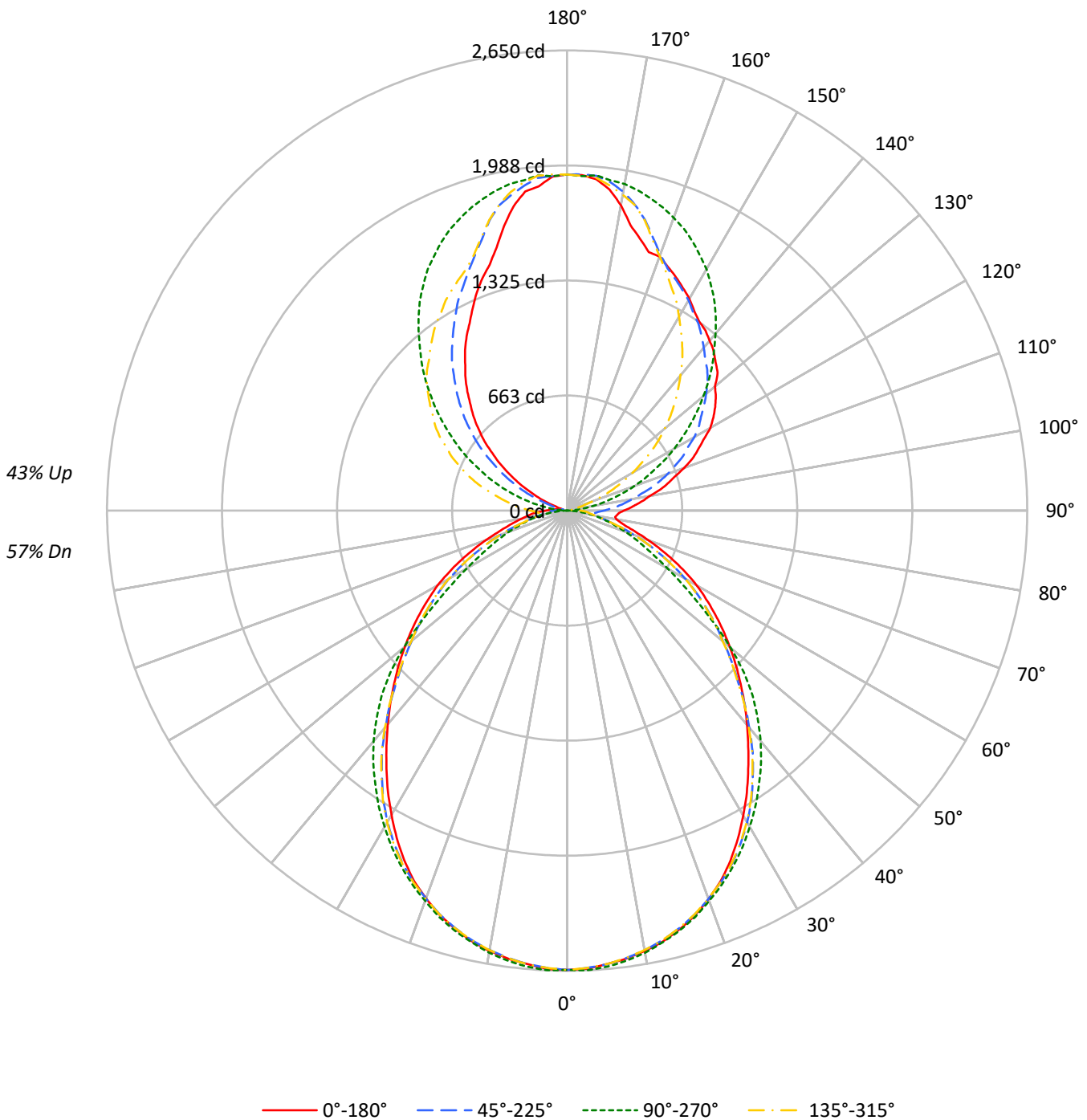
Lumens per Lamp: N/A
Luminaire Lumens: 10819.0 lumens
Efficiency: N/A
Efficacy: 71.7 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 150.894
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	100	95	91	88	93	89	85	82	77	74	72	66	64	62	56	54	53	48
2	91	84	77	72	84	78	73	68	68	64	60	58	55	53	49	47	45	41
3	83	74	67	61	77	69	63	57	60	55	51	52	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	54	48	44	46	42	39	40	37	34	31
5	70	59	51	45	65	55	48	42	48	43	38	42	37	34	36	33	30	27
6	65	53	45	39	60	50	42	37	44	38	33	38	33	30	33	29	26	24
7	60	48	40	34	56	45	38	33	40	34	30	35	30	27	30	26	24	21
8	56	44	36	30	52	41	34	29	36	31	26	32	27	24	28	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	22	26	22	19	17
10	49	37	29	25	45	35	28	24	31	25	22	27	23	20	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17086	17086	17086	17086
5°	16844	15719	16844	15719
10°	16585	14412	16585	14412
15°	16243	13203	16217	13203
20°	15761	12053	15734	12053
25°	15117	10990	15090	10990
30°	14270	9942	14231	9942
35°	13357	8929	13327	8929
40°	12502	7947	12459	7947
45°	11686	6902	11651	6902
50°	10943	5639	10906	5639
55°	10184	4243	10156	4243
60°	9441	3159	9427	3159
65°	8399	2379	8399	2379
70°	7298	1791	7319	1791
75°	6373	1282	6447	1282
80°	6731	826	6126	826
85°	9756	372	6755	372



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.4	2.3
10°-20°	703.4	6.5
20°-30°	1031.7	9.5
30°-40°	1168.0	10.8
40°-50°	1100.7	10.2
50°-60°	880.9	8.1
60°-70°	580.3	5.4
70°-80°	297.4	2.7
80°-90°	160.5	1.5
90°-100°	176.4	1.6
100°-110°	303.2	2.8
110°-120°	514.9	4.8
120°-130°	699.2	6.5
130°-140°	797.3	7.4
140°-150°	795.2	7.3
150°-160°	692.3	6.4
160°-170°	486.9	4.5
170°-180°	181.4	1.7
0°-30°	1984.5	18.3
0°-40°	3152.5	29.1
0°-60°	5134.1	47.5
0°-90°	6172.3	57.1
90°-120°	994.5	9.2
90°-150°	3286.1	30.4
90°-180°	4647.0	43.0
0°-180°	10819.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2646	2646	2646	2646	2646	
5°	2622	2637	2622	2637	2622	249
15°	2497	2504	2493	2504	2497	703
25°	2224	2261	2220	2261	2224	1021
35°	1818	1926	1814	1926	1818	1138
45°	1413	1511	1408	1511	1413	1092
55°	1039	915	1036	915	1039	931
65°	672	490	672	490	672	668
75°	355	243	359	243	355	390
85°	288	62	200	62	288	235
90°	326	2	122	2	326	180
95°	398	56	74	56	398	344
105°	598	271	23	271	598	631
115°	832	553	193	553	832	825
125°	1041	866	474	866	1041	929
135°	1209	1182	761	1182	1209	933
145°	1328	1478	1023	1478	1328	837
155°	1483	1710	1286	1710	1483	684
165°	1621	1861	1568	1861	1621	460
175°	1916	1937	1875	1937	1916	179
180°	1935	1935	1935	1935	1935	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5
2.5°	2640.5	2641.6	2635.8	2650.7	2649.9	2649.4	2635.8	2641.6	2641.9	2641.6	2635.8
5°	2621.8	2628.0	2623.0	2637.5	2636.7	2637.5	2621.7	2628.0	2621.8	2628.0	2621.7
7.5°	2602.9	2610.7	2599.7	2617.2	2615.4	2615.8	2598.3	2609.3	2602.9	2609.3	2598.3
10°	2575.4	2578.5	2570.8	2586.1	2585.2	2584.7	2569.5	2575.8	2575.4	2575.8	2569.5
12.5°	2542.5	2541.2	2534.7	2548.3	2546.1	2548.3	2534.7	2538.5	2539.8	2538.5	2534.7
15°	2497.2	2495.3	2490.6	2504.2	2503.7	2502.8	2489.3	2492.7	2493.2	2492.7	2489.3
17.5°	2445.5	2442.8	2439.8	2453.7	2453.7	2453.7	2438.4	2441.4	2441.4	2441.4	2438.4
20°	2380.2	2382.2	2379.5	2393.4	2392.0	2392.0	2378.2	2379.5	2376.1	2379.5	2378.2
22.5°	2310.2	2312.7	2315.9	2334.1	2330.1	2332.6	2314.6	2310.0	2307.4	2310.0	2314.6
25°	2224.5	2229.6	2244.3	2262.8	2261.4	2261.4	2241.6	2225.5	2220.4	2225.5	2241.6
27.5°	2129.5	2143.1	2162.9	2187.0	2185.9	2185.6	2160.2	2139.0	2125.4	2139.0	2160.2
30°	2028.6	2043.0	2073.5	2107.8	2102.8	2105.0	2069.4	2038.9	2023.1	2038.9	2069.4
32.5°	1925.9	1940.4	1975.2	2016.2	2018.6	2013.5	1971.0	1934.9	1920.5	1934.9	1971.0
35°	1817.7	1824.5	1864.4	1927.1	1925.6	1923.0	1860.2	1820.4	1813.6	1820.4	1860.2
37.5°	1713.4	1715.1	1755.0	1821.2	1834.5	1817.0	1750.8	1711.0	1709.2	1711.0	1750.8
40°	1612.5	1604.0	1632.0	1705.3	1733.6	1702.5	1626.5	1598.5	1607.0	1598.5	1626.5
42.5°	1512.4	1502.2	1513.6	1586.5	1624.2	1583.8	1509.5	1496.7	1506.9	1496.7	1509.5
45°	1412.7	1394.0	1391.5	1464.4	1511.4	1461.6	1386.0	1389.9	1408.5	1389.9	1386.0
47.5°	1318.5	1296.5	1283.7	1339.2	1381.7	1337.8	1278.2	1292.4	1314.4	1292.4	1278.2
50°	1224.4	1203.2	1173.5	1212.0	1230.1	1209.2	1168.0	1197.7	1220.2	1197.7	1168.0
52.5°	1131.1	1115.0	1076.3	1089.9	1068.1	1087.1	1072.2	1109.5	1126.9	1109.5	1072.2
55°	1039.0	1024.6	977.9	959.5	914.9	956.8	973.8	1020.5	1036.2	1020.5	973.8
57.5°	949.1	940.6	882.9	829.8	781.8	827.1	878.8	936.5	946.3	936.5	878.8
60°	862.8	853.5	786.5	704.6	668.1	703.3	783.8	850.8	861.5	850.8	783.8
62.5°	766.2	761.9	686.4	594.4	570.1	593.0	683.8	759.2	764.8	759.2	683.8
65°	672.4	659.7	589.3	499.4	489.5	498.0	587.9	658.3	672.4	658.3	587.9
67.5°	582.5	563.8	498.5	416.6	419.1	416.6	497.1	562.4	582.5	562.4	497.1
70°	497.1	468.3	409.8	344.5	355.5	344.5	409.8	469.7	498.5	469.7	409.8
72.5°	418.2	382.7	329.2	280.9	294.0	279.5	329.2	384.0	421.0	384.0	329.2
75°	354.7	309.7	255.8	223.6	243.1	223.6	257.1	311.1	358.8	311.1	257.1
77.5°	313.9	260.1	199.8	172.7	196.4	172.7	201.1	255.9	308.5	255.9	201.1
80°	287.9	234.3	162.3	127.7	148.1	127.7	159.6	212.4	262.0	212.4	159.6
82.5°	279.1	229.5	151.6	92.1	104.0	92.1	135.2	180.4	227.2	180.4	135.2
85°	288.4	243.3	159.6	75.8	62.4	73.1	120.0	160.1	199.7	160.1	120.0
87.5°	300.2	267.6	178.9	81.1	22.9	62.0	101.0	136.4	159.6	136.4	101.0
90°	326.3	300.8	211.8	93.6	2.2	41.8	76.6	108.3	121.5	108.3	76.6
92.5°	364.3	342.9	248.9	119.9	23.6	25.6	61.8	90.3	96.7	90.3	61.8
95°	398.1	388.2	293.1	149.6	56.3	13.0	47.3	71.4	74.5	71.4	47.3
97.5°	442.1	435.2	336.3	192.9	98.6	18.0	34.5	59.7	59.7	59.7	34.5
100°	481.0	477.0	384.1	251.5	150.6	46.8	22.3	48.2	50.8	48.2	22.3
102.5°	544.3	524.6	431.7	307.6	206.5	86.4	24.8	33.0	36.4	33.0	24.8
105°	598.0	574.7	496.9	366.3	270.7	139.6	55.8	25.7	23.1	25.7	55.8
107.5°	649.2	633.8	556.9	427.2	338.9	201.9	102.2	54.8	37.3	54.8	102.2
110°	715.7	699.3	615.6	487.3	410.8	267.5	155.5	98.5	76.6	98.5	155.5



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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°	781.2	768.9	670.2	550.1	484.6	338.5	221.0	153.1	132.5	153.1	221.0
115°	831.7	824.1	734.0	608.9	552.9	419.0	294.2	216.4	192.7	216.4	294.2
117.5°	885.0	882.7	780.3	668.9	634.8	491.4	361.1	280.5	255.5	280.5	361.1
120°	951.9	940.1	844.5	729.1	712.6	567.9	434.9	354.3	329.2	354.3	434.9
122.5°	998.3	991.5	899.1	787.2	786.4	646.6	505.9	426.2	398.8	426.2	505.9
125°	1040.7	1037.9	940.1	844.5	865.6	719.0	585.1	504.0	474.0	504.0	585.1
127.5°	1078.9	1083.0	994.2	907.3	946.9	792.7	663.8	573.7	542.2	573.7	663.8
130°	1111.7	1125.3	1044.8	964.7	1023.4	873.2	733.5	643.3	622.8	643.3	733.5
132.5°	1175.9	1167.7	1096.7	1023.4	1105.3	946.9	807.2	712.9	689.7	712.9	807.2
135°	1208.7	1211.3	1141.7	1074.0	1181.8	1020.7	876.8	783.9	760.7	783.9	876.8
137.5°	1248.3	1240.0	1177.3	1136.3	1252.8	1092.5	945.1	859.0	822.2	859.0	945.1
140°	1276.9	1275.5	1223.7	1190.9	1329.3	1162.2	1014.8	927.3	893.2	927.3	1014.8
142.5°	1307.8	1316.0	1270.1	1250.9	1405.8	1235.9	1089.8	995.1	962.3	995.1	1089.8
145°	1327.5	1346.0	1316.5	1326.1	1478.1	1317.8	1155.3	1059.3	1022.9	1059.3	1155.3
147.5°	1362.3	1384.8	1350.7	1379.3	1541.0	1390.2	1220.9	1125.3	1094.8	1125.3	1220.9
150°	1408.0	1419.0	1398.4	1453.0	1605.1	1470.8	1287.9	1189.5	1158.1	1189.5	1287.9
152.5°	1444.8	1458.5	1435.3	1533.6	1655.6	1544.6	1361.6	1252.3	1215.5	1252.3	1361.6
155°	1483.1	1488.6	1472.1	1611.5	1709.8	1616.9	1420.3	1322.0	1286.5	1322.0	1420.3
157.5°	1518.6	1529.6	1510.4	1670.1	1756.2	1679.7	1487.2	1391.7	1360.2	1391.7	1487.2
160°	1556.8	1556.8	1567.8	1738.4	1794.4	1734.3	1558.2	1468.1	1424.4	1468.1	1558.2
162.5°	1560.9	1586.9	1645.6	1786.3	1831.3	1782.1	1634.6	1522.7	1484.4	1522.7	1634.6
165°	1621.0	1644.2	1733.0	1828.6	1860.8	1824.5	1728.8	1612.8	1567.8	1612.8	1728.8
167.5°	1683.0	1732.2	1804.0	1877.2	1888.1	1864.9	1801.3	1719.8	1678.9	1719.8	1801.3
170°	1784.6	1828.6	1864.0	1895.0	1910.0	1896.3	1846.3	1806.7	1779.0	1806.7	1846.3
172.5°	1865.2	1894.2	1907.8	1927.7	1918.1	1912.7	1887.2	1868.2	1852.8	1868.2	1887.2
175°	1915.6	1922.8	1935.1	1929.1	1937.3	1922.3	1922.8	1932.3	1874.7	1932.3	1922.8
177.5°	1933.4	1944.6	1937.8	1926.3	1927.7	1925.0	1929.6	1935.1	1925.2	1935.1	1929.6
180°	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2645.5	2645.5	2645.5	2645.5	2645.5	2645.5
2.5°	2649.4	2649.9	2650.7	2635.8	2641.6	2640.5
5°	2637.5	2636.7	2637.5	2623.0	2628.0	2621.8
7.5°	2615.8	2615.4	2617.2	2599.7	2610.7	2602.9
10°	2584.7	2585.2	2586.1	2570.8	2578.5	2575.4
12.5°	2548.3	2546.1	2548.3	2534.7	2541.2	2542.5
15°	2502.8	2503.7	2504.2	2490.6	2495.3	2497.2
17.5°	2453.7	2453.7	2453.7	2439.8	2442.8	2445.5
20°	2392.0	2392.0	2393.4	2379.5	2382.2	2380.2
22.5°	2332.6	2330.1	2334.1	2315.9	2312.7	2310.2
25°	2261.4	2261.4	2262.8	2244.3	2229.6	2224.5
27.5°	2185.6	2185.9	2187.0	2162.9	2143.1	2129.5
30°	2105.0	2102.8	2107.8	2073.5	2043.0	2028.6
32.5°	2013.5	2018.6	2016.2	1975.2	1940.4	1925.9
35°	1923.0	1925.6	1927.1	1864.4	1824.5	1817.7
37.5°	1817.0	1834.5	1821.2	1755.0	1715.1	1713.4
40°	1702.5	1733.6	1705.3	1632.0	1604.0	1612.5
42.5°	1583.8	1624.2	1586.5	1513.6	1502.2	1512.4
45°	1461.6	1511.4	1464.4	1391.5	1394.0	1412.7
47.5°	1337.8	1381.7	1339.2	1283.7	1296.5	1318.5
50°	1209.2	1230.1	1212.0	1173.5	1203.2	1224.4
52.5°	1087.1	1068.1	1089.9	1076.3	1115.0	1131.1
55°	956.8	914.9	959.5	977.9	1024.6	1039.0
57.5°	827.1	781.8	829.8	882.9	940.6	949.1
60°	703.3	668.1	704.6	786.5	853.5	862.8
62.5°	593.0	570.1	594.4	686.4	761.9	766.2
65°	498.0	489.5	499.4	589.3	659.7	672.4
67.5°	416.6	419.1	416.6	498.5	563.8	582.5
70°	344.5	355.5	344.5	409.8	468.3	497.1
72.5°	279.5	294.0	280.9	329.2	382.7	418.2
75°	223.6	243.1	223.6	255.8	309.7	354.7
77.5°	172.7	196.4	172.7	199.8	260.1	313.9
80°	127.7	148.1	127.7	162.3	234.3	287.9
82.5°	92.1	104.0	92.1	151.6	229.5	279.1
85°	73.1	62.4	75.8	159.6	243.3	288.4
87.5°	62.0	22.9	81.1	178.9	267.6	300.2
90°	41.8	2.2	93.6	211.8	300.8	326.3
92.5°	25.6	23.6	119.9	248.9	342.9	364.3
95°	13.0	56.3	149.6	293.1	388.2	398.1
97.5°	18.0	98.6	192.9	336.3	435.2	442.1
100°	46.8	150.6	251.5	384.1	477.0	481.0
102.5°	86.4	206.5	307.6	431.7	524.6	544.3
105°	139.6	270.7	366.3	496.9	574.7	598.0
107.5°	201.9	338.9	427.2	556.9	633.8	649.2
110°	267.5	410.8	487.3	615.6	699.3	715.7



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CATALOG NUMBER: MWL-4-55-73-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	338.5	484.6	550.1	670.2	768.9	781.2
115°	419.0	552.9	608.9	734.0	824.1	831.7
117.5°	491.4	634.8	668.9	780.3	882.7	885.0
120°	567.9	712.6	729.1	844.5	940.1	951.9
122.5°	646.6	786.4	787.2	899.1	991.5	998.3
125°	719.0	865.6	844.5	940.1	1037.9	1040.7
127.5°	792.7	946.9	907.3	994.2	1083.0	1078.9
130°	873.2	1023.4	964.7	1044.8	1125.3	1111.7
132.5°	946.9	1105.3	1023.4	1096.7	1167.7	1175.9
135°	1020.7	1181.8	1074.0	1141.7	1211.3	1208.7
137.5°	1092.5	1252.8	1136.3	1177.3	1240.0	1248.3
140°	1162.2	1329.3	1190.9	1223.7	1275.5	1276.9
142.5°	1235.9	1405.8	1250.9	1270.1	1316.0	1307.8
145°	1317.8	1478.1	1326.1	1316.5	1346.0	1327.5
147.5°	1390.2	1541.0	1379.3	1350.7	1384.8	1362.3
150°	1470.8	1605.1	1453.0	1398.4	1419.0	1408.0
152.5°	1544.6	1655.6	1533.6	1435.3	1458.5	1444.8
155°	1616.9	1709.8	1611.5	1472.1	1488.6	1483.1
157.5°	1679.7	1756.2	1670.1	1510.4	1529.6	1518.6
160°	1734.3	1794.4	1738.4	1567.8	1556.8	1556.8
162.5°	1782.1	1831.3	1786.3	1645.6	1586.9	1560.9
165°	1824.5	1860.8	1828.6	1733.0	1644.2	1621.0
167.5°	1864.9	1888.1	1877.2	1804.0	1732.2	1683.0
170°	1896.3	1910.0	1895.0	1864.0	1828.6	1784.6
172.5°	1912.7	1918.1	1927.7	1907.8	1894.2	1865.2
175°	1922.3	1937.3	1929.1	1935.1	1922.8	1915.6
177.5°	1925.0	1927.7	1926.3	1937.8	1944.6	1933.4
180°	1935.1	1935.1	1935.1	1935.1	1935.1	1935.1

(END OF REPORT)