

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: P392683

Luminaire Tested: **MWL-4-42-73-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392683
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-4-42-73-UNV-L835-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

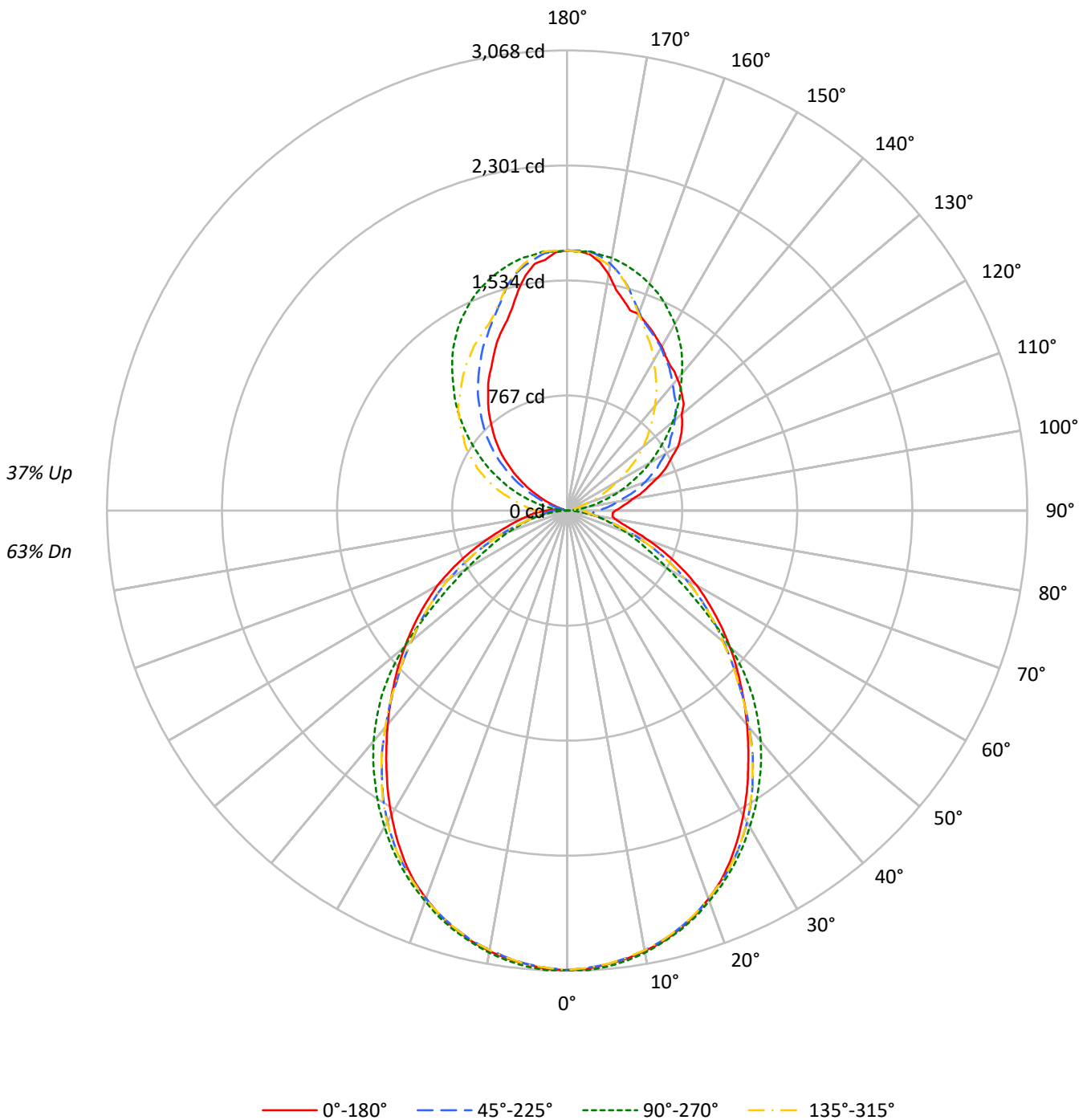
Lumens per Lamp: N/A
Luminaire Lumens: 11313.0 lumens
Efficiency: N/A
Efficacy: 88.2 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 128.2
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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	74	70	70	66	63	62	59	56	54	52	49	46
3	84	75	68	62	79	71	64	59	63	57	53	55	51	48	48	45	43	39
4	78	67	59	53	72	63	56	50	56	50	46	49	45	41	43	40	37	34
5	71	60	52	46	67	56	49	44	50	44	40	45	40	36	39	35	33	30
6	66	54	46	40	62	51	44	38	45	39	35	40	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23
8	57	44	37	31	53	42	35	30	38	32	28	34	29	25	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	26	23	28	24	21	19
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	19783	19783	19783	19783
5°	19510	18197	19510	18197
10°	19206	16688	19206	16688
15°	18803	15290	18779	15290
20°	18243	13961	18219	13961
25°	17499	12729	17474	12729
30°	16515	11514	16482	11514
35°	15460	10341	15433	10341
40°	14468	9201	14430	9201
45°	13524	7990	13493	7990
50°	12662	6528	12629	6528
55°	11784	4912	11759	4912
60°	10926	3656	10913	3656
65°	9720	2754	9720	2754
70°	8448	2072	8465	2072
75°	7372	1483	7439	1483
80°	7573	954	7028	954
85°	10307	429	7618	429



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	288.8	2.6
10°-20°	814.6	7.2
20°-30°	1194.6	10.6
30°-40°	1352.3	12.0
40°-50°	1274.2	11.3
50°-60°	1019.7	9.0
60°-70°	671.6	5.9
70°-80°	343.6	3.0
80°-90°	176.2	1.6
90°-100°	169.6	1.5
100°-110°	273.5	2.4
110°-120°	461.8	4.1
120°-130°	626.7	5.5
130°-140°	714.5	6.3
140°-150°	712.5	6.3
150°-160°	620.2	5.5
160°-170°	436.2	3.9
170°-180°	162.5	1.4
0°-30°	2297.9	20.3
0°-40°	3650.2	32.3
0°-60°	5944.1	52.5
0°-90°	7135.5	63.1
90°-120°	904.8	8.0
90°-150°	2958.6	26.2
90°-180°	4177.0	36.9
0°-180°	11313.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3063	3063	3063	3063	3063	
5°	3037	3052	3037	3052	3037	288
15°	2891	2900	2887	2900	2891	814
25°	2575	2619	2571	2619	2575	1182
35°	2104	2230	2100	2230	2104	1317
45°	1635	1750	1631	1750	1635	1264
55°	1202	1059	1200	1059	1202	1077
65°	778	567	778	567	778	773
75°	410	281	414	281	410	450
85°	305	72	225	72	305	252
90°	322	2	138	2	322	178
95°	375	51	85	51	375	321
105°	539	243	24	243	539	570
115°	746	496	174	496	746	740
125°	933	775	425	775	933	833
135°	1083	1059	682	1059	1083	836
145°	1189	1324	917	1324	1189	750
155°	1329	1532	1153	1532	1329	613
165°	1452	1667	1404	1667	1452	412
175°	1716	1736	1679	1736	1716	160
180°	1733	1733	1733	1733	1733	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1
2.5°	3058.5	3059.0	3051.5	3068.5	3067.6	3067.3	3051.5	3059.0	3059.7	3059.0	3051.5
5°	3036.9	3043.3	3036.8	3053.5	3052.5	3053.5	3035.6	3043.3	3036.9	3043.3	3035.6
7.5°	3014.5	3022.8	3010.1	3029.9	3028.0	3028.7	3008.9	3021.7	3014.5	3021.7	3008.9
10°	2982.4	2985.5	2976.7	2994.3	2993.4	2993.2	2975.5	2983.0	2982.4	2983.0	2975.5
12.5°	2943.4	2942.3	2935.2	2950.9	2948.6	2950.9	2935.2	2939.8	2941.1	2939.8	2935.2
15°	2890.7	2889.2	2884.1	2899.8	2899.5	2898.5	2882.8	2886.7	2887.0	2886.7	2882.8
17.5°	2830.7	2828.2	2825.1	2841.5	2841.5	2841.5	2823.8	2827.1	2827.1	2827.1	2823.8
20°	2755.0	2757.7	2755.3	2771.7	2770.6	2770.6	2754.0	2755.3	2751.4	2755.3	2754.0
22.5°	2674.1	2677.1	2681.6	2702.9	2698.8	2701.8	2680.3	2674.7	2671.8	2674.7	2680.3
25°	2574.9	2580.8	2598.3	2620.4	2619.2	2619.2	2595.8	2577.1	2571.2	2577.1	2595.8
27.5°	2464.8	2480.5	2503.9	2532.2	2531.7	2530.9	2501.5	2476.9	2461.2	2476.9	2501.5
30°	2347.8	2364.6	2399.9	2440.0	2435.4	2437.6	2396.3	2360.9	2343.0	2360.9	2396.3
32.5°	2228.9	2245.6	2285.9	2333.9	2337.3	2331.4	2282.3	2240.8	2224.1	2240.8	2282.3
35°	2103.9	2111.8	2158.0	2230.7	2230.0	2227.1	2154.3	2108.1	2100.3	2108.1	2154.3
37.5°	1983.0	1985.0	2031.2	2107.8	2124.1	2104.2	2027.5	1981.4	1979.4	1981.4	2027.5
40°	1866.1	1856.2	1888.7	1974.0	2007.1	1971.5	1883.8	1851.3	1861.2	1851.3	1883.8
42.5°	1750.1	1738.3	1751.9	1836.4	1880.3	1833.9	1748.1	1733.4	1745.2	1733.4	1748.1
45°	1634.9	1613.3	1610.3	1694.9	1749.6	1692.4	1605.4	1609.6	1631.2	1609.6	1605.4
47.5°	1525.8	1500.3	1485.5	1550.1	1599.2	1548.9	1480.6	1496.5	1522.1	1496.5	1480.6
50°	1416.7	1392.2	1357.8	1402.7	1424.1	1400.2	1352.8	1387.2	1413.0	1387.2	1352.8
52.5°	1308.6	1289.9	1245.4	1261.1	1236.4	1258.7	1241.8	1285.0	1304.9	1285.0	1241.8
55°	1202.2	1185.5	1131.4	1110.6	1059.2	1108.1	1127.8	1181.8	1199.7	1181.8	1127.8
57.5°	1098.0	1088.2	1021.3	960.2	904.9	957.8	1017.7	1084.5	1095.5	1084.5	1017.7
60°	998.5	987.7	910.1	815.4	773.2	814.3	907.6	985.3	997.3	985.3	907.6
62.5°	886.5	881.6	794.1	687.7	660.0	686.5	791.7	879.1	885.2	879.1	791.7
65°	778.1	763.4	681.8	577.6	566.6	576.4	680.6	762.2	778.1	762.2	680.6
67.5°	673.9	652.3	576.6	482.1	485.0	482.1	575.4	651.1	673.9	651.1	575.4
70°	575.4	542.0	474.2	398.5	411.3	398.5	474.2	543.2	576.6	543.2	474.2
72.5°	484.0	442.8	380.8	324.8	340.3	323.5	380.8	443.9	486.5	443.9	380.8
75°	410.3	358.2	296.0	258.7	281.3	258.7	297.3	359.4	414.0	359.4	297.3
77.5°	360.1	299.3	231.2	199.7	227.2	199.7	232.4	295.5	355.3	295.5	232.4
80°	323.9	264.3	186.7	147.6	171.2	147.6	184.3	244.7	300.6	244.7	184.3
82.5°	305.1	250.8	169.9	106.3	120.1	106.3	155.3	206.9	258.7	206.9	155.3
85°	304.7	256.0	171.3	86.5	71.9	84.0	135.8	181.5	225.2	181.5	135.8
87.5°	305.5	270.9	183.1	87.1	26.5	70.0	113.4	153.5	179.6	153.5	113.4
90°	321.7	295.6	208.5	94.1	2.2	47.7	87.5	123.3	138.3	123.3	87.5
92.5°	349.9	329.3	237.9	113.3	21.5	29.0	70.5	103.2	110.3	103.2	70.5
95°	374.9	365.6	273.8	135.9	50.8	13.8	53.8	82.1	85.2	82.1	53.8
97.5°	410.0	403.9	307.9	173.1	88.7	16.6	37.8	67.8	67.8	67.8	37.8
100°	441.0	436.9	347.2	225.7	135.2	42.3	23.3	53.0	55.9	53.0	23.3
102.5°	494.0	475.4	387.5	275.8	185.4	77.7	23.3	35.3	39.2	35.3	23.3
105°	538.9	516.9	445.4	328.4	242.8	125.4	50.6	25.5	24.3	25.5	50.6
107.5°	582.6	568.5	499.3	383.1	303.9	181.4	92.2	50.1	35.0	50.1	92.2
110°	641.8	627.1	551.8	436.9	368.5	240.1	139.9	89.2	69.7	89.2	139.9



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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°	700.5	689.4	600.7	493.1	434.4	303.7	198.5	138.2	119.8	138.2	198.5
115°	745.7	738.6	657.9	545.7	495.5	375.7	264.3	194.6	173.6	194.6	264.3
117.5°	793.3	791.2	699.5	599.4	568.9	440.6	324.2	252.1	229.8	252.1	324.2
120°	853.3	842.5	756.9	653.3	638.5	509.0	390.2	318.0	295.8	318.0	390.2
122.5°	894.8	888.7	805.8	705.6	704.6	579.7	453.8	382.6	358.1	382.6	453.8
125°	932.7	930.2	842.5	756.9	775.4	644.4	524.6	452.3	425.4	452.3	524.6
127.5°	966.9	970.5	891.1	813.2	848.6	710.5	595.3	514.6	486.5	514.6	595.3
130°	996.3	1008.5	936.3	864.5	917.1	782.6	657.7	577.0	558.6	577.0	657.7
132.5°	1053.7	1046.4	982.8	917.1	990.4	848.6	723.6	639.3	618.6	639.3	723.6
135°	1083.1	1085.5	1023.1	962.3	1058.8	914.6	786.0	702.9	682.1	702.9	786.0
137.5°	1118.4	1111.2	1055.0	1018.3	1122.4	979.2	847.1	770.1	737.1	770.1	847.1
140°	1144.2	1142.9	1096.5	1067.1	1190.9	1041.5	909.5	831.3	800.7	831.3	909.5
142.5°	1172.0	1179.4	1138.0	1120.9	1259.3	1107.4	976.7	892.1	862.8	892.1	976.7
145°	1189.4	1206.2	1179.6	1188.1	1324.0	1180.9	1035.4	949.6	916.8	949.6	1035.4
147.5°	1221.0	1240.7	1210.1	1235.8	1380.3	1245.6	1094.1	1008.5	981.3	1008.5	1094.1
150°	1261.5	1271.3	1253.0	1301.8	1437.8	1317.8	1153.9	1066.0	1037.9	1066.0	1153.9
152.5°	1294.5	1306.8	1285.9	1374.0	1483.0	1383.7	1220.0	1122.2	1089.2	1122.2	1220.0
155°	1328.8	1333.6	1318.9	1443.7	1531.6	1448.5	1272.5	1184.5	1152.7	1184.5	1272.5
157.5°	1360.5	1370.3	1353.1	1496.2	1573.2	1504.8	1332.4	1246.8	1218.7	1246.8	1332.4
160°	1394.7	1394.7	1404.5	1557.3	1607.4	1553.6	1396.0	1315.3	1276.2	1315.3	1396.0
162.5°	1398.4	1421.6	1474.2	1600.1	1640.4	1596.4	1464.4	1364.1	1329.9	1364.1	1464.4
165°	1452.2	1472.9	1552.5	1638.0	1667.1	1634.3	1548.7	1444.8	1404.5	1444.8	1548.7
167.5°	1507.4	1551.5	1615.9	1681.8	1691.5	1670.8	1613.6	1540.5	1503.8	1540.5	1613.6
170°	1598.2	1638.0	1669.8	1697.6	1711.1	1698.9	1653.9	1618.4	1593.2	1618.4	1653.9
172.5°	1670.3	1696.6	1708.9	1727.0	1718.5	1713.5	1690.5	1673.4	1659.3	1673.4	1690.5
175°	1715.5	1722.3	1733.3	1728.2	1735.6	1722.1	1722.3	1730.9	1678.8	1730.9	1722.3
177.5°	1731.3	1741.8	1735.8	1725.7	1727.0	1724.5	1728.5	1733.3	1724.1	1733.3	1728.5
180°	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3063.1	3063.1	3063.1	3063.1	3063.1	3063.1
2.5°	3067.3	3067.6	3068.5	3051.5	3059.0	3058.5
5°	3053.5	3052.5	3053.5	3036.8	3043.3	3036.9
7.5°	3028.7	3028.0	3029.9	3010.1	3022.8	3014.5
10°	2993.2	2993.4	2994.3	2976.7	2985.5	2982.4
12.5°	2950.9	2948.6	2950.9	2935.2	2942.3	2943.4
15°	2898.5	2899.5	2899.8	2884.1	2889.2	2890.7
17.5°	2841.5	2841.5	2841.5	2825.1	2828.2	2830.7
20°	2770.6	2770.6	2771.7	2755.3	2757.7	2755.0
22.5°	2701.8	2698.8	2702.9	2681.6	2677.1	2674.1
25°	2619.2	2619.2	2620.4	2598.3	2580.8	2574.9
27.5°	2530.9	2531.7	2532.2	2503.9	2480.5	2464.8
30°	2437.6	2435.4	2440.0	2399.9	2364.6	2347.8
32.5°	2331.4	2337.3	2333.9	2285.9	2245.6	2228.9
35°	2227.1	2230.0	2230.7	2158.0	2111.8	2103.9
37.5°	2104.2	2124.1	2107.8	2031.2	1985.0	1983.0
40°	1971.5	2007.1	1974.0	1888.7	1856.2	1866.1
42.5°	1833.9	1880.3	1836.4	1751.9	1738.3	1750.1
45°	1692.4	1749.6	1694.9	1610.3	1613.3	1634.9
47.5°	1548.9	1599.2	1550.1	1485.5	1500.3	1525.8
50°	1400.2	1424.1	1402.7	1357.8	1392.2	1416.7
52.5°	1258.7	1236.4	1261.1	1245.4	1289.9	1308.6
55°	1108.1	1059.2	1110.6	1131.4	1185.5	1202.2
57.5°	957.8	904.9	960.2	1021.3	1088.2	1098.0
60°	814.3	773.2	815.4	910.1	987.7	998.5
62.5°	686.5	660.0	687.7	794.1	881.6	886.5
65°	576.4	566.6	577.6	681.8	763.4	778.1
67.5°	482.1	485.0	482.1	576.6	652.3	673.9
70°	398.5	411.3	398.5	474.2	542.0	575.4
72.5°	323.5	340.3	324.8	380.8	442.8	484.0
75°	258.7	281.3	258.7	296.0	358.2	410.3
77.5°	199.7	227.2	199.7	231.2	299.3	360.1
80°	147.6	171.2	147.6	186.7	264.3	323.9
82.5°	106.3	120.1	106.3	169.9	250.8	305.1
85°	84.0	71.9	86.5	171.3	256.0	304.7
87.5°	70.0	26.5	87.1	183.1	270.9	305.5
90°	47.7	2.2	94.1	208.5	295.6	321.7
92.5°	29.0	21.5	113.3	237.9	329.3	349.9
95°	13.8	50.8	135.9	273.8	365.6	374.9
97.5°	16.6	88.7	173.1	307.9	403.9	410.0
100°	42.3	135.2	225.7	347.2	436.9	441.0
102.5°	77.7	185.4	275.8	387.5	475.4	494.0
105°	125.4	242.8	328.4	445.4	516.9	538.9
107.5°	181.4	303.9	383.1	499.3	568.5	582.6
110°	240.1	368.5	436.9	551.8	627.1	641.8



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CATALOG NUMBER: MWL-4-42-73-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	303.7	434.4	493.1	600.7	689.4	700.5
115°	375.7	495.5	545.7	657.9	738.6	745.7
117.5°	440.6	568.9	599.4	699.5	791.2	793.3
120°	509.0	638.5	653.3	756.9	842.5	853.3
122.5°	579.7	704.6	705.6	805.8	888.7	894.8
125°	644.4	775.4	756.9	842.5	930.2	932.7
127.5°	710.5	848.6	813.2	891.1	970.5	966.9
130°	782.6	917.1	864.5	936.3	1008.5	996.3
132.5°	848.6	990.4	917.1	982.8	1046.4	1053.7
135°	914.6	1058.8	962.3	1023.1	1085.5	1083.1
137.5°	979.2	1122.4	1018.3	1055.0	1111.2	1118.4
140°	1041.5	1190.9	1067.1	1096.5	1142.9	1144.2
142.5°	1107.4	1259.3	1120.9	1138.0	1179.4	1172.0
145°	1180.9	1324.0	1188.1	1179.6	1206.2	1189.4
147.5°	1245.6	1380.3	1235.8	1210.1	1240.7	1221.0
150°	1317.8	1437.8	1301.8	1253.0	1271.3	1261.5
152.5°	1383.7	1483.0	1374.0	1285.9	1306.8	1294.5
155°	1448.5	1531.6	1443.7	1318.9	1333.6	1328.8
157.5°	1504.8	1573.2	1496.2	1353.1	1370.3	1360.5
160°	1553.6	1607.4	1557.3	1404.5	1394.7	1394.7
162.5°	1596.4	1640.4	1600.1	1474.2	1421.6	1398.4
165°	1634.3	1667.1	1638.0	1552.5	1472.9	1452.2
167.5°	1670.8	1691.5	1681.8	1615.9	1551.5	1507.4
170°	1698.9	1711.1	1697.6	1669.8	1638.0	1598.2
172.5°	1713.5	1718.5	1727.0	1708.9	1696.6	1670.3
175°	1722.1	1735.6	1728.2	1733.3	1722.3	1715.5
177.5°	1724.5	1727.0	1725.7	1735.8	1741.8	1731.3
180°	1733.3	1733.3	1733.3	1733.3	1733.3	1733.3

(END OF REPORT)