

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: P392684

Luminaire Tested: **MWL-4-42-73-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392684
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-L940-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

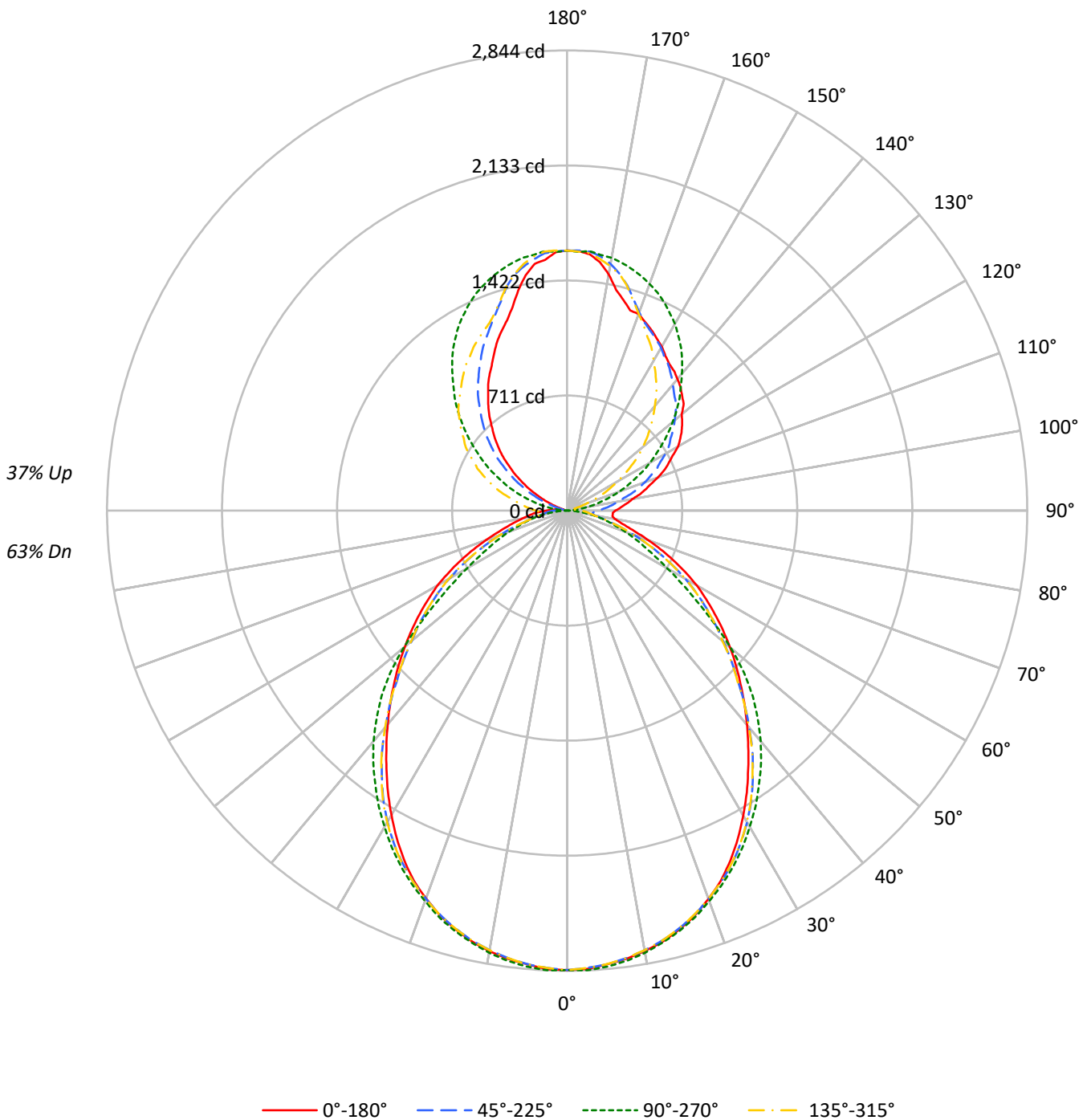
Lumens per Lamp: N/A
Luminaire Lumens: 10487.5 lumens
Efficiency: N/A
Efficacy: 81.0 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 129.482
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	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°	18340	18340	18340	18340
5°	18087	16870	18087	16870
10°	17804	15471	17804	15471
15°	17430	14174	17409	14174
20°	16912	12942	16889	12942
25°	16222	11800	16199	11800
30°	15310	10674	15279	10674
35°	14332	9586	14307	9586
40°	13412	8529	13377	8529
45°	12537	7407	12509	7407
50°	11739	6052	11708	6052
55°	10924	4553	10901	4553
60°	10129	3389	10116	3389
65°	9010	2552	9010	2552
70°	7831	1921	7847	1921
75°	6835	1375	6896	1375
80°	7021	885	6516	885
85°	9553	398	7060	398



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	267.7	2.6
10°-20°	755.1	7.2
20°-30°	1107.4	10.6
30°-40°	1253.6	12.0
40°-50°	1181.2	11.3
50°-60°	945.3	9.0
60°-70°	622.6	5.9
70°-80°	318.5	3.0
80°-90°	163.3	1.6
90°-100°	157.2	1.5
100°-110°	253.5	2.4
110°-120°	428.1	4.1
120°-130°	581.0	5.5
130°-140°	662.4	6.3
140°-150°	660.5	6.3
150°-160°	574.9	5.5
160°-170°	404.4	3.9
170°-180°	150.6	1.4
0°-30°	2130.3	20.3
0°-40°	3383.9	32.3
0°-60°	5510.4	52.5
0°-90°	6614.9	63.1
90°-120°	838.8	8.0
90°-150°	2742.7	26.2
90°-180°	3873.0	36.9
0°-180°	10487.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2840	2840	2840	2840	2840	
5°	2815	2830	2815	2830	2815	267
15°	2680	2688	2676	2688	2680	755
25°	2387	2428	2384	2428	2387	1096
35°	1950	2067	1947	2067	1950	1221
45°	1516	1622	1512	1622	1516	1172
55°	1114	982	1112	982	1114	998
65°	721	525	721	525	721	717
75°	380	261	384	261	380	417
85°	282	67	209	67	282	233
90°	298	2	128	2	298	165
95°	348	47	79	47	348	298
105°	500	225	22	225	500	528
115°	691	459	161	459	691	686
125°	865	719	394	719	865	772
135°	1004	982	632	982	1004	775
145°	1103	1227	850	1227	1103	695
155°	1232	1420	1069	1420	1232	568
165°	1346	1545	1302	1545	1346	382
175°	1590	1609	1556	1609	1590	148
180°	1607	1607	1607	1607	1607	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7
2.5°	2835.4	2835.9	2829.0	2844.7	2843.8	2843.5	2829.0	2835.9	2836.5	2835.9	2829.0
5°	2815.4	2821.3	2815.3	2830.8	2829.9	2830.8	2814.2	2821.3	2815.4	2821.3	2814.2
7.5°	2794.6	2802.4	2790.5	2808.9	2807.1	2807.8	2789.4	2801.3	2794.6	2801.3	2789.4
10°	2764.8	2767.7	2759.5	2775.9	2775.0	2774.8	2758.4	2765.5	2764.8	2765.5	2758.4
12.5°	2728.7	2727.6	2721.0	2735.6	2733.5	2735.6	2721.0	2725.3	2726.5	2725.3	2721.0
15°	2679.7	2678.4	2673.6	2688.2	2687.9	2687.0	2672.4	2676.1	2676.4	2676.1	2672.4
17.5°	2624.2	2621.9	2619.0	2634.2	2634.2	2634.2	2617.8	2620.8	2620.8	2620.8	2617.8
20°	2554.0	2556.5	2554.3	2569.5	2568.4	2568.4	2553.1	2554.3	2550.6	2554.3	2553.1
22.5°	2479.0	2481.7	2485.9	2505.7	2501.9	2504.6	2484.8	2479.6	2476.8	2479.6	2484.8
25°	2387.0	2392.5	2408.7	2429.2	2428.1	2428.1	2406.4	2389.1	2383.6	2389.1	2406.4
27.5°	2284.9	2299.5	2321.2	2347.4	2347.0	2346.3	2318.9	2296.2	2281.6	2296.2	2318.9
30°	2176.5	2192.0	2224.8	2262.0	2257.7	2259.7	2221.4	2188.6	2172.1	2188.6	2221.4
32.5°	2066.3	2081.8	2119.1	2163.6	2166.8	2161.3	2115.8	2077.3	2061.8	2077.3	2115.8
35°	1950.4	1957.7	2000.5	2067.9	2067.3	2064.6	1997.1	1954.3	1947.0	1954.3	1997.1
37.5°	1838.3	1840.1	1883.0	1954.0	1969.1	1950.7	1879.6	1836.8	1835.0	1836.8	1879.6
40°	1729.9	1720.8	1750.9	1829.9	1860.6	1827.7	1746.3	1716.2	1725.4	1716.2	1746.3
42.5°	1622.4	1611.5	1624.0	1702.4	1743.1	1700.1	1620.6	1606.9	1617.8	1606.9	1620.6
45°	1515.6	1495.6	1492.8	1571.2	1621.9	1568.9	1488.3	1492.1	1512.2	1492.1	1488.3
47.5°	1414.5	1390.8	1377.1	1437.0	1482.5	1435.9	1372.6	1387.3	1411.0	1387.3	1372.6
50°	1313.4	1290.6	1258.7	1300.3	1320.2	1298.0	1254.1	1286.0	1309.9	1286.0	1254.1
52.5°	1213.1	1195.8	1154.5	1169.1	1146.2	1166.8	1151.2	1191.3	1209.7	1191.3	1151.2
55°	1114.5	1099.0	1048.9	1029.5	981.9	1027.3	1045.5	1095.6	1112.2	1095.6	1045.5
57.5°	1017.9	1008.8	946.8	890.1	838.8	887.9	943.4	1005.4	1015.6	1005.4	943.4
60°	925.7	915.7	843.7	755.9	716.8	754.8	841.4	913.4	924.5	913.4	841.4
62.5°	821.8	817.3	736.2	637.5	611.8	636.4	733.9	815.0	820.6	815.0	733.9
65°	721.3	707.7	632.0	535.5	525.2	534.4	630.9	706.6	721.3	706.6	630.9
67.5°	624.7	604.7	534.5	446.9	449.6	446.9	533.4	603.6	624.7	603.6	533.4
70°	533.4	502.5	439.6	369.5	381.3	369.5	439.6	503.6	534.5	503.6	439.6
72.5°	448.7	410.5	353.1	301.1	315.4	299.9	353.1	411.5	451.0	411.5	353.1
75°	380.4	332.1	274.4	239.8	260.8	239.8	275.6	333.2	383.8	333.2	275.6
77.5°	333.8	277.4	214.3	185.1	210.6	185.1	215.5	274.0	329.4	274.0	215.5
80°	300.3	245.0	173.1	136.8	158.7	136.8	170.8	226.9	278.7	226.9	170.8
82.5°	282.8	232.5	157.5	98.6	111.3	98.6	144.0	191.8	239.8	191.8	144.0
85°	282.4	237.3	158.8	80.2	66.7	77.9	125.9	168.3	208.7	168.3	125.9
87.5°	283.2	251.1	169.7	80.7	24.6	64.9	105.1	142.3	166.5	142.3	105.1
90°	298.2	274.1	193.2	87.2	2.0	44.2	81.1	114.3	128.2	114.3	81.1
92.5°	324.4	305.3	220.6	105.0	20.0	26.9	65.3	95.7	102.2	95.7	65.3
95°	347.6	338.9	253.8	126.0	47.1	12.8	49.8	76.1	79.0	76.1	49.8
97.5°	380.1	374.5	285.4	160.4	82.3	15.4	35.1	62.9	62.9	62.9	35.1
100°	408.8	405.0	321.9	209.2	125.4	39.2	21.6	49.1	51.8	49.1	21.6
102.5°	457.9	440.7	359.2	255.7	171.8	72.1	21.6	32.7	36.4	32.7	21.6
105°	499.6	479.1	412.9	304.4	225.0	116.3	46.9	23.6	22.5	23.6	46.9
107.5°	540.1	527.0	462.8	355.1	281.7	168.2	85.5	46.5	32.4	46.5	85.5
110°	594.9	581.4	511.5	405.0	341.6	222.6	129.6	82.7	64.6	82.7	129.6



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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°	649.3	639.1	556.9	457.1	402.7	281.5	184.0	128.1	111.1	128.1	184.0
115°	691.3	684.7	609.9	505.8	459.4	348.3	245.0	180.4	160.9	180.4	245.0
117.5°	735.4	733.4	648.4	555.7	527.3	408.4	300.6	233.7	213.0	233.7	300.6
120°	791.0	781.0	701.6	605.6	591.9	471.9	361.7	294.8	274.2	294.8	361.7
122.5°	829.5	823.8	747.0	654.1	653.2	537.4	420.7	354.7	332.0	354.7	420.7
125°	864.6	862.4	781.0	701.6	718.9	597.4	486.3	419.3	394.3	419.3	486.3
127.5°	896.3	899.7	826.1	753.8	786.6	658.6	551.9	477.1	451.0	477.1	551.9
130°	923.6	934.9	868.0	801.4	850.1	725.5	609.7	534.9	517.9	534.9	609.7
132.5°	976.8	970.0	911.1	850.1	918.1	786.6	670.8	592.7	573.4	592.7	670.8
135°	1004.0	1006.3	948.5	892.1	981.5	847.9	728.6	651.6	632.3	651.6	728.6
137.5°	1036.8	1030.1	978.0	944.0	1040.5	907.7	785.3	713.9	683.3	713.9	785.3
140°	1060.7	1059.5	1016.5	989.3	1104.0	965.5	843.1	770.6	742.3	770.6	843.1
142.5°	1086.5	1093.3	1055.0	1039.1	1167.4	1026.6	905.5	827.0	799.9	827.0	905.5
145°	1102.6	1118.2	1093.5	1101.4	1227.4	1094.7	959.8	880.3	849.9	880.3	959.8
147.5°	1131.9	1150.2	1121.8	1145.6	1279.5	1154.7	1014.2	934.9	909.7	934.9	1014.2
150°	1169.5	1178.5	1161.6	1206.8	1332.8	1221.6	1069.7	988.2	962.1	988.2	1069.7
152.5°	1200.0	1211.4	1192.1	1273.7	1374.8	1282.7	1130.9	1040.3	1009.7	1040.3	1130.9
155°	1231.8	1236.3	1222.7	1338.3	1419.9	1342.8	1179.7	1098.1	1068.6	1098.1	1179.7
157.5°	1261.2	1270.3	1254.4	1387.1	1458.4	1395.0	1235.2	1155.8	1129.8	1155.8	1235.2
160°	1292.9	1292.9	1302.1	1443.6	1490.1	1440.3	1294.1	1219.3	1183.1	1219.3	1294.1
162.5°	1296.4	1317.9	1366.6	1483.4	1520.7	1479.9	1357.5	1264.6	1232.9	1264.6	1357.5
165°	1346.2	1365.5	1439.2	1518.4	1545.4	1515.1	1435.7	1339.4	1302.1	1339.4	1435.7
167.5°	1397.4	1438.3	1498.0	1559.1	1568.1	1548.9	1495.8	1428.1	1394.1	1428.1	1495.8
170°	1481.5	1518.4	1548.0	1573.7	1586.2	1574.9	1533.2	1500.3	1477.0	1500.3	1533.2
172.5°	1548.4	1572.8	1584.2	1601.0	1593.1	1588.5	1567.2	1551.3	1538.2	1551.3	1567.2
175°	1590.3	1596.6	1606.8	1602.1	1608.9	1596.4	1596.6	1604.6	1556.3	1604.6	1596.6
177.5°	1605.0	1614.7	1609.1	1599.8	1601.0	1598.7	1602.4	1606.8	1598.3	1606.8	1602.4
180°	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2839.7	2839.7	2839.7	2839.7	2839.7	2839.7
2.5°	2843.5	2843.8	2844.7	2829.0	2835.9	2835.4
5°	2830.8	2829.9	2830.8	2815.3	2821.3	2815.4
7.5°	2807.8	2807.1	2808.9	2790.5	2802.4	2794.6
10°	2774.8	2775.0	2775.9	2759.5	2767.7	2764.8
12.5°	2735.6	2733.5	2735.6	2721.0	2727.6	2728.7
15°	2687.0	2687.9	2688.2	2673.6	2678.4	2679.7
17.5°	2634.2	2634.2	2634.2	2619.0	2621.9	2624.2
20°	2568.4	2568.4	2569.5	2554.3	2556.5	2554.0
22.5°	2504.6	2501.9	2505.7	2485.9	2481.7	2479.0
25°	2428.1	2428.1	2429.2	2408.7	2392.5	2387.0
27.5°	2346.3	2347.0	2347.4	2321.2	2299.5	2284.9
30°	2259.7	2257.7	2262.0	2224.8	2192.0	2176.5
32.5°	2161.3	2166.8	2163.6	2119.1	2081.8	2066.3
35°	2064.6	2067.3	2067.9	2000.5	1957.7	1950.4
37.5°	1950.7	1969.1	1954.0	1883.0	1840.1	1838.3
40°	1827.7	1860.6	1829.9	1750.9	1720.8	1729.9
42.5°	1700.1	1743.1	1702.4	1624.0	1611.5	1622.4
45°	1568.9	1621.9	1571.2	1492.8	1495.6	1515.6
47.5°	1435.9	1482.5	1437.0	1377.1	1390.8	1414.5
50°	1298.0	1320.2	1300.3	1258.7	1290.6	1313.4
52.5°	1166.8	1146.2	1169.1	1154.5	1195.8	1213.1
55°	1027.3	981.9	1029.5	1048.9	1099.0	1114.5
57.5°	887.9	838.8	890.1	946.8	1008.8	1017.9
60°	754.8	716.8	755.9	843.7	915.7	925.7
62.5°	636.4	611.8	637.5	736.2	817.3	821.8
65°	534.4	525.2	535.5	632.0	707.7	721.3
67.5°	446.9	449.6	446.9	534.5	604.7	624.7
70°	369.5	381.3	369.5	439.6	502.5	533.4
72.5°	299.9	315.4	301.1	353.1	410.5	448.7
75°	239.8	260.8	239.8	274.4	332.1	380.4
77.5°	185.1	210.6	185.1	214.3	277.4	333.8
80°	136.8	158.7	136.8	173.1	245.0	300.3
82.5°	98.6	111.3	98.6	157.5	232.5	282.8
85°	77.9	66.7	80.2	158.8	237.3	282.4
87.5°	64.9	24.6	80.7	169.7	251.1	283.2
90°	44.2	2.0	87.2	193.2	274.1	298.2
92.5°	26.9	20.0	105.0	220.6	305.3	324.4
95°	12.8	47.1	126.0	253.8	338.9	347.6
97.5°	15.4	82.3	160.4	285.4	374.5	380.1
100°	39.2	125.4	209.2	321.9	405.0	408.8
102.5°	72.1	171.8	255.7	359.2	440.7	457.9
105°	116.3	225.0	304.4	412.9	479.1	499.6
107.5°	168.2	281.7	355.1	462.8	527.0	540.1
110°	222.6	341.6	405.0	511.5	581.4	594.9



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CATALOG NUMBER: MWL-4-42-73-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	281.5	402.7	457.1	556.9	639.1	649.3
115°	348.3	459.4	505.8	609.9	684.7	691.3
117.5°	408.4	527.3	555.7	648.4	733.4	735.4
120°	471.9	591.9	605.6	701.6	781.0	791.0
122.5°	537.4	653.2	654.1	747.0	823.8	829.5
125°	597.4	718.9	701.6	781.0	862.4	864.6
127.5°	658.6	786.6	753.8	826.1	899.7	896.3
130°	725.5	850.1	801.4	868.0	934.9	923.6
132.5°	786.6	918.1	850.1	911.1	970.0	976.8
135°	847.9	981.5	892.1	948.5	1006.3	1004.0
137.5°	907.7	1040.5	944.0	978.0	1030.1	1036.8
140°	965.5	1104.0	989.3	1016.5	1059.5	1060.7
142.5°	1026.6	1167.4	1039.1	1055.0	1093.3	1086.5
145°	1094.7	1227.4	1101.4	1093.5	1118.2	1102.6
147.5°	1154.7	1279.5	1145.6	1121.8	1150.2	1131.9
150°	1221.6	1332.8	1206.8	1161.6	1178.5	1169.5
152.5°	1282.7	1374.8	1273.7	1192.1	1211.4	1200.0
155°	1342.8	1419.9	1338.3	1222.7	1236.3	1231.8
157.5°	1395.0	1458.4	1387.1	1254.4	1270.3	1261.2
160°	1440.3	1490.1	1443.6	1302.1	1292.9	1292.9
162.5°	1479.9	1520.7	1483.4	1366.6	1317.9	1296.4
165°	1515.1	1545.4	1518.4	1439.2	1365.5	1346.2
167.5°	1548.9	1568.1	1559.1	1498.0	1438.3	1397.4
170°	1574.9	1586.2	1573.7	1548.0	1518.4	1481.5
172.5°	1588.5	1593.1	1601.0	1584.2	1572.8	1548.4
175°	1596.4	1608.9	1602.1	1606.8	1596.6	1590.3
177.5°	1598.7	1601.0	1599.8	1609.1	1614.7	1605.0
180°	1606.8	1606.8	1606.8	1606.8	1606.8	1606.8

(END OF REPORT)