

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: P392699

Luminaire Tested: **MWL-4-55-73-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392699
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-L940-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

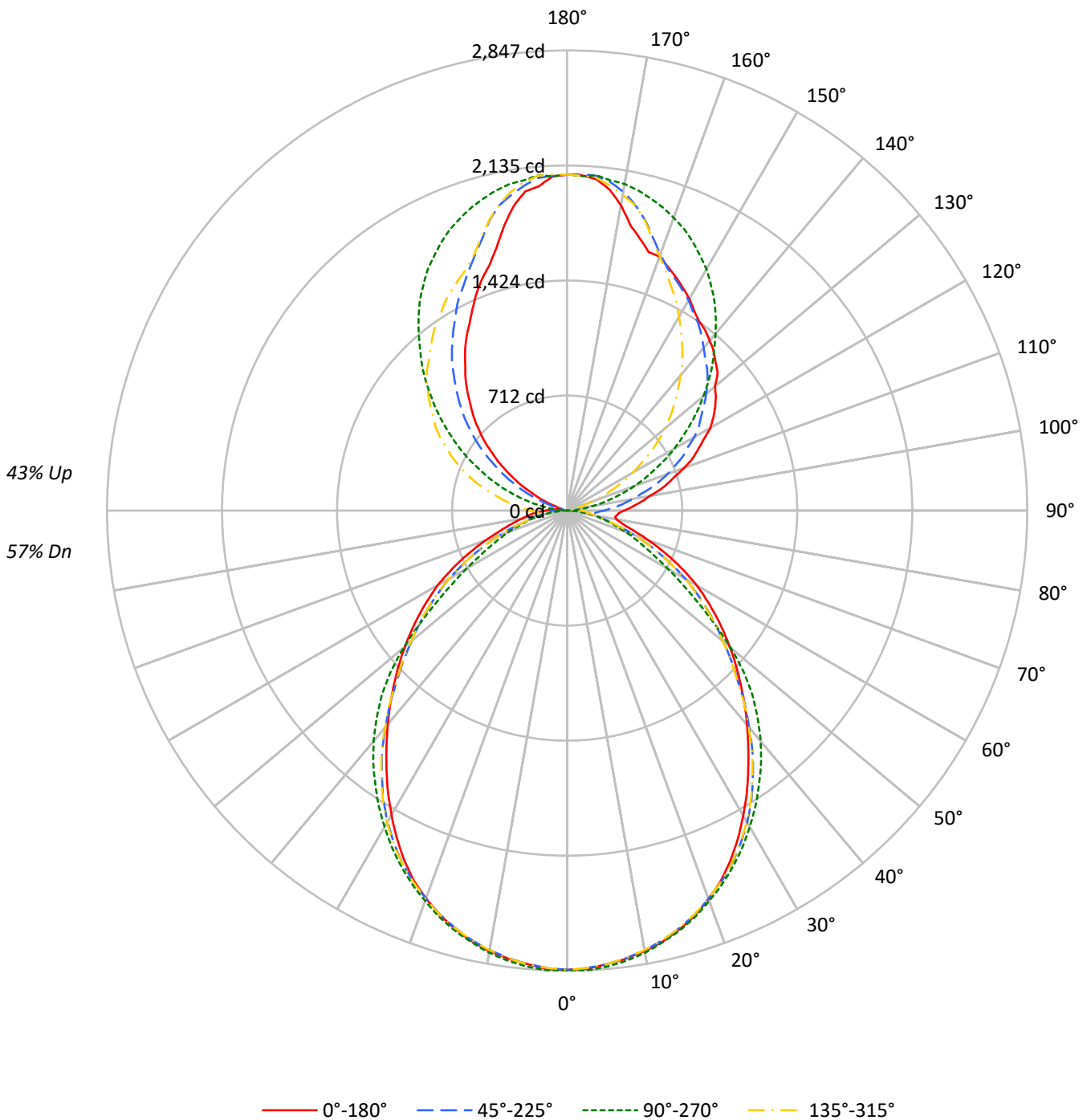
Lumens per Lamp: N/A
Luminaire Lumens: 11622.7 lumens
Efficiency: N/A
Efficacy: 77.0 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

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°	18355	18355	18355	18355
5°	18095	16886	18095	16886
10°	17817	15483	17817	15483
15°	17450	14183	17422	14183
20°	16932	12948	16903	12948
25°	16240	11806	16211	11806
30°	15330	10680	15288	10680
35°	14350	9592	14317	9592
40°	13431	8538	13385	8538
45°	12553	7415	12517	7415
50°	11757	6058	11717	6058
55°	10941	4558	10911	4558
60°	10144	3394	10127	3394
65°	9023	2556	9023	2556
70°	7841	1924	7862	1924
75°	6846	1377	6927	1377
80°	7231	887	6579	887
85°	10479	400	7256	400



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	267.9	2.3
10°-20°	755.7	6.5
20°-30°	1108.3	9.5
30°-40°	1254.8	10.8
40°-50°	1182.4	10.2
50°-60°	946.4	8.1
60°-70°	623.4	5.4
70°-80°	319.5	2.7
80°-90°	172.4	1.5
90°-100°	189.5	1.6
100°-110°	325.7	2.8
110°-120°	553.2	4.8
120°-130°	751.1	6.5
130°-140°	856.5	7.4
140°-150°	854.2	7.3
150°-160°	743.7	6.4
160°-170°	523.1	4.5
170°-180°	194.8	1.7
0°-30°	2131.9	18.3
0°-40°	3386.7	29.1
0°-60°	5515.5	47.5
0°-90°	6630.8	57.1
90°-120°	1068.4	9.2
90°-150°	3530.3	30.4
90°-180°	4992.0	43.0
0°-180°	11622.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2842	2842	2842	2842	2842	
5°	2817	2832	2817	2832	2817	267
15°	2683	2690	2678	2690	2683	755
25°	2390	2429	2385	2429	2390	1097
35°	1953	2069	1948	2069	1953	1222
45°	1518	1624	1513	1624	1518	1173
55°	1116	983	1113	983	1116	1000
65°	722	526	722	526	722	718
75°	381	261	386	261	381	419
85°	310	67	214	67	310	252
90°	351	2	131	2	351	194
95°	428	60	80	60	428	369
105°	642	291	25	291	642	678
115°	894	594	207	594	894	887
125°	1118	930	509	930	1118	998
135°	1298	1270	817	1270	1298	1002
145°	1426	1588	1099	1588	1426	899
155°	1593	1837	1382	1837	1593	735
165°	1741	1999	1684	1999	1741	494
175°	2058	2081	2014	2081	2058	192
180°	2079	2079	2079	2079	2079	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0
2.5°	2836.6	2837.8	2831.6	2847.6	2846.7	2846.2	2831.6	2837.8	2838.2	2837.8	2831.6
5°	2816.6	2823.2	2817.9	2833.4	2832.5	2833.4	2816.5	2823.2	2816.6	2823.2	2816.5
7.5°	2796.3	2804.6	2792.8	2811.6	2809.7	2810.1	2791.3	2803.2	2796.3	2803.2	2791.3
10°	2766.7	2770.0	2761.8	2778.2	2777.3	2776.8	2760.4	2767.1	2766.7	2767.1	2760.4
12.5°	2731.4	2729.9	2723.0	2737.6	2735.2	2737.6	2723.0	2727.0	2728.5	2727.0	2723.0
15°	2682.7	2680.7	2675.6	2690.2	2689.7	2688.7	2674.2	2677.8	2678.4	2677.8	2674.2
17.5°	2627.2	2624.2	2621.0	2635.9	2635.9	2635.9	2619.5	2622.8	2622.8	2622.8	2619.5
20°	2557.0	2559.2	2556.3	2571.2	2569.7	2569.7	2554.8	2556.3	2552.6	2556.3	2554.8
22.5°	2481.7	2484.5	2487.9	2507.4	2503.2	2505.9	2486.5	2481.6	2478.8	2481.6	2486.5
25°	2389.7	2395.2	2411.0	2430.9	2429.4	2429.4	2408.1	2390.8	2385.4	2390.8	2408.1
27.5°	2287.7	2302.3	2323.6	2349.5	2348.3	2348.0	2320.7	2297.9	2283.3	2297.9	2320.7
30°	2179.3	2194.7	2227.5	2264.4	2259.0	2261.4	2223.2	2190.4	2173.3	2190.4	2223.2
32.5°	2069.0	2084.5	2121.9	2166.0	2168.5	2163.0	2117.5	2078.6	2063.1	2078.6	2117.5
35°	1952.8	1960.0	2002.9	2070.3	2068.6	2065.8	1998.4	1955.6	1948.3	1955.6	1998.4
37.5°	1840.7	1842.5	1885.3	1956.4	1970.8	1951.9	1880.9	1838.1	1836.2	1838.1	1880.9
40°	1732.3	1723.2	1753.2	1831.9	1862.4	1828.9	1747.3	1717.2	1726.4	1717.2	1747.3
42.5°	1624.8	1613.8	1626.0	1704.4	1744.8	1701.4	1621.6	1607.9	1618.8	1607.9	1621.6
45°	1517.6	1497.6	1494.8	1573.2	1623.7	1570.2	1488.9	1493.1	1513.2	1493.1	1488.9
47.5°	1416.5	1392.8	1379.1	1438.7	1484.3	1437.2	1373.2	1388.3	1412.0	1388.3	1373.2
50°	1315.4	1292.6	1260.7	1302.1	1321.5	1299.0	1254.8	1286.7	1310.9	1286.7	1254.8
52.5°	1215.1	1197.8	1156.3	1170.9	1147.4	1167.8	1151.8	1191.9	1210.7	1191.9	1151.8
55°	1116.2	1100.7	1050.6	1030.8	982.9	1027.9	1046.1	1096.2	1113.2	1096.2	1046.1
57.5°	1019.6	1010.5	948.5	891.4	839.9	888.5	944.1	1006.0	1016.6	1006.0	944.1
60°	927.0	916.9	845.0	756.9	717.8	755.5	842.0	914.0	925.5	914.0	842.0
62.5°	823.1	818.5	737.4	638.5	612.4	637.0	734.5	815.6	821.6	815.6	734.5
65°	722.3	708.7	633.0	536.5	525.9	535.0	631.6	707.2	722.3	707.2	631.6
67.5°	625.7	605.7	535.5	447.5	450.3	447.5	534.1	604.2	625.7	604.2	534.1
70°	534.1	503.1	440.2	370.1	381.9	370.1	440.2	504.6	535.5	504.6	440.2
72.5°	449.4	411.1	353.7	301.8	315.8	300.3	353.7	412.5	452.3	412.5	353.7
75°	381.0	332.7	274.8	240.2	261.1	240.2	276.2	334.2	385.5	334.2	276.2
77.5°	337.2	279.4	214.7	185.5	211.0	185.5	216.1	275.0	331.4	275.0	216.1
80°	309.3	251.6	174.4	137.2	159.1	137.2	171.5	228.1	281.4	228.1	171.5
82.5°	299.8	246.5	162.9	98.9	111.7	98.9	145.2	193.8	244.1	193.8	145.2
85°	309.8	261.4	171.5	81.5	67.1	78.5	128.9	171.9	214.5	171.9	128.9
87.5°	322.5	287.5	192.2	87.1	24.6	66.6	108.5	146.6	171.5	146.6	108.5
90°	350.6	323.2	227.6	100.6	2.4	44.8	82.4	116.3	130.6	116.3	82.4
92.5°	391.4	368.4	267.3	128.7	25.3	27.5	66.3	96.9	104.0	96.9	66.3
95°	427.7	417.1	314.9	160.7	60.5	14.0	50.8	76.7	80.0	76.7	50.8
97.5°	475.0	467.6	361.3	207.2	106.0	19.4	37.1	64.1	64.1	64.1	37.1
100°	516.7	512.4	412.6	270.2	161.7	50.2	24.0	51.8	54.6	51.8	24.0
102.5°	584.7	563.5	463.7	330.5	221.9	92.7	26.6	35.4	39.1	35.4	26.6
105°	642.4	617.4	533.8	393.5	290.8	150.0	60.0	27.6	24.9	27.6	60.0
107.5°	697.4	680.9	598.3	458.9	364.2	216.9	109.8	58.9	40.1	58.9	109.8
110°	768.9	751.2	661.4	523.5	441.3	287.4	167.0	105.8	82.3	105.8	167.0



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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°	839.2	826.1	720.0	590.9	520.6	363.6	237.4	164.5	142.4	164.5	237.4
115°	893.5	885.3	788.5	654.1	593.9	450.2	316.1	232.5	207.0	232.5	316.1
117.5°	950.7	948.4	838.3	718.6	682.0	527.9	387.9	301.4	274.5	301.4	387.9
120°	1022.6	1010.0	907.3	783.2	765.5	610.1	467.2	380.7	353.7	380.7	467.2
122.5°	1072.5	1065.2	965.9	845.7	844.8	694.6	543.5	457.8	428.5	457.8	543.5
125°	1118.0	1115.0	1010.0	907.3	929.9	772.3	628.6	541.5	509.2	541.5	628.6
127.5°	1159.0	1163.5	1068.1	974.8	1017.3	851.5	713.1	616.3	582.6	616.3	713.1
130°	1194.3	1208.9	1122.4	1036.4	1099.4	938.1	787.9	691.1	669.1	691.1	787.9
132.5°	1263.2	1254.4	1178.1	1099.4	1187.4	1017.3	867.1	765.9	741.0	765.9	867.1
135°	1298.4	1301.3	1226.5	1153.7	1269.6	1096.5	941.9	842.2	817.3	842.2	941.9
137.5°	1341.0	1332.1	1264.7	1220.7	1345.9	1173.7	1015.3	922.9	883.2	922.9	1015.3
140°	1371.8	1370.3	1314.5	1279.4	1428.1	1248.6	1090.1	996.2	959.6	996.2	1090.1
142.5°	1404.9	1413.8	1364.5	1343.9	1510.2	1327.7	1170.8	1069.0	1033.8	1069.0	1170.8
145°	1426.1	1446.0	1414.3	1424.6	1588.0	1415.8	1241.2	1138.0	1098.9	1138.0	1241.2
147.5°	1463.6	1487.6	1451.0	1481.8	1655.5	1493.5	1311.6	1208.9	1176.1	1208.9	1311.6
150°	1512.6	1524.4	1502.3	1561.0	1724.3	1580.0	1383.5	1277.9	1244.1	1277.9	1383.5
152.5°	1552.1	1566.8	1541.9	1647.5	1778.6	1659.3	1462.7	1345.3	1305.8	1345.3	1462.7
155°	1593.2	1599.2	1581.5	1731.2	1836.8	1737.0	1525.8	1420.1	1382.0	1420.1	1525.8
157.5°	1631.4	1643.2	1622.6	1794.2	1886.6	1804.5	1597.7	1495.0	1461.2	1495.0	1597.7
160°	1672.5	1672.5	1684.3	1867.6	1927.7	1863.2	1674.0	1577.1	1530.2	1577.1	1674.0
162.5°	1676.9	1704.8	1767.8	1919.0	1967.3	1914.5	1756.1	1635.8	1594.7	1635.8	1756.1
165°	1741.4	1766.3	1861.7	1964.4	1999.0	1960.0	1857.3	1732.6	1684.3	1732.6	1857.3
167.5°	1808.0	1860.8	1938.0	2016.6	2028.4	2003.4	1935.1	1847.6	1803.6	1847.6	1935.1
170°	1917.1	1964.4	2002.5	2035.8	2051.9	2037.2	1983.5	1940.9	1911.2	1940.9	1983.5
172.5°	2003.7	2034.9	2049.5	2070.9	2060.6	2054.8	2027.5	2007.0	1990.5	2007.0	2027.5
175°	2057.9	2065.6	2078.9	2072.4	2081.2	2065.1	2065.6	2075.9	2013.9	2075.9	2065.6
177.5°	2077.0	2089.1	2081.8	2069.5	2070.9	2068.0	2072.9	2078.9	2068.2	2078.9	2072.9
180°	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2842.0	2842.0	2842.0	2842.0	2842.0	2842.0
2.5°	2846.2	2846.7	2847.6	2831.6	2837.8	2836.6
5°	2833.4	2832.5	2833.4	2817.9	2823.2	2816.6
7.5°	2810.1	2809.7	2811.6	2792.8	2804.6	2796.3
10°	2776.8	2777.3	2778.2	2761.8	2770.0	2766.7
12.5°	2737.6	2735.2	2737.6	2723.0	2729.9	2731.4
15°	2688.7	2689.7	2690.2	2675.6	2680.7	2682.7
17.5°	2635.9	2635.9	2635.9	2621.0	2624.2	2627.2
20°	2569.7	2569.7	2571.2	2556.3	2559.2	2557.0
22.5°	2505.9	2503.2	2507.4	2487.9	2484.5	2481.7
25°	2429.4	2429.4	2430.9	2411.0	2395.2	2389.7
27.5°	2348.0	2348.3	2349.5	2323.6	2302.3	2287.7
30°	2261.4	2259.0	2264.4	2227.5	2194.7	2179.3
32.5°	2163.0	2168.5	2166.0	2121.9	2084.5	2069.0
35°	2065.8	2068.6	2070.3	2002.9	1960.0	1952.8
37.5°	1951.9	1970.8	1956.4	1885.3	1842.5	1840.7
40°	1828.9	1862.4	1831.9	1753.2	1723.2	1732.3
42.5°	1701.4	1744.8	1704.4	1626.0	1613.8	1624.8
45°	1570.2	1623.7	1573.2	1494.8	1497.6	1517.6
47.5°	1437.2	1484.3	1438.7	1379.1	1392.8	1416.5
50°	1299.0	1321.5	1302.1	1260.7	1292.6	1315.4
52.5°	1167.8	1147.4	1170.9	1156.3	1197.8	1215.1
55°	1027.9	982.9	1030.8	1050.6	1100.7	1116.2
57.5°	888.5	839.9	891.4	948.5	1010.5	1019.6
60°	755.5	717.8	756.9	845.0	916.9	927.0
62.5°	637.0	612.4	638.5	737.4	818.5	823.1
65°	535.0	525.9	536.5	633.0	708.7	722.3
67.5°	447.5	450.3	447.5	535.5	605.7	625.7
70°	370.1	381.9	370.1	440.2	503.1	534.1
72.5°	300.3	315.8	301.8	353.7	411.1	449.4
75°	240.2	261.1	240.2	274.8	332.7	381.0
77.5°	185.5	211.0	185.5	214.7	279.4	337.2
80°	137.2	159.1	137.2	174.4	251.6	309.3
82.5°	98.9	111.7	98.9	162.9	246.5	299.8
85°	78.5	67.1	81.5	171.5	261.4	309.8
87.5°	66.6	24.6	87.1	192.2	287.5	322.5
90°	44.8	2.4	100.6	227.6	323.2	350.6
92.5°	27.5	25.3	128.7	267.3	368.4	391.4
95°	14.0	60.5	160.7	314.9	417.1	427.7
97.5°	19.4	106.0	207.2	361.3	467.6	475.0
100°	50.2	161.7	270.2	412.6	512.4	516.7
102.5°	92.7	221.9	330.5	463.7	563.5	584.7
105°	150.0	290.8	393.5	533.8	617.4	642.4
107.5°	216.9	364.2	458.9	598.3	680.9	697.4
110°	287.4	441.3	523.5	661.4	751.2	768.9



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CATALOG NUMBER: MWL-4-55-73-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	363.6	520.6	590.9	720.0	826.1	839.2
115°	450.2	593.9	654.1	788.5	885.3	893.5
117.5°	527.9	682.0	718.6	838.3	948.4	950.7
120°	610.1	765.5	783.2	907.3	1010.0	1022.6
122.5°	694.6	844.8	845.7	965.9	1065.2	1072.5
125°	772.3	929.9	907.3	1010.0	1115.0	1118.0
127.5°	851.5	1017.3	974.8	1068.1	1163.5	1159.0
130°	938.1	1099.4	1036.4	1122.4	1208.9	1194.3
132.5°	1017.3	1187.4	1099.4	1178.1	1254.4	1263.2
135°	1096.5	1269.6	1153.7	1226.5	1301.3	1298.4
137.5°	1173.7	1345.9	1220.7	1264.7	1332.1	1341.0
140°	1248.6	1428.1	1279.4	1314.5	1370.3	1371.8
142.5°	1327.7	1510.2	1343.9	1364.5	1413.8	1404.9
145°	1415.8	1588.0	1424.6	1414.3	1446.0	1426.1
147.5°	1493.5	1655.5	1481.8	1451.0	1487.6	1463.6
150°	1580.0	1724.3	1561.0	1502.3	1524.4	1512.6
152.5°	1659.3	1778.6	1647.5	1541.9	1566.8	1552.1
155°	1737.0	1836.8	1731.2	1581.5	1599.2	1593.2
157.5°	1804.5	1886.6	1794.2	1622.6	1643.2	1631.4
160°	1863.2	1927.7	1867.6	1684.3	1672.5	1672.5
162.5°	1914.5	1967.3	1919.0	1767.8	1704.8	1676.9
165°	1960.0	1999.0	1964.4	1861.7	1766.3	1741.4
167.5°	2003.4	2028.4	2016.6	1938.0	1860.8	1808.0
170°	2037.2	2051.9	2035.8	2002.5	1964.4	1917.1
172.5°	2054.8	2060.6	2070.9	2049.5	2034.9	2003.7
175°	2065.1	2081.2	2072.4	2078.9	2065.6	2057.9
177.5°	2068.0	2070.9	2069.5	2081.8	2089.1	2077.0
180°	2078.9	2078.9	2078.9	2078.9	2078.9	2078.9

(END OF REPORT)