

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: P392606

Luminaire Tested: **MWL-3-37-57-UNV-L840-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392606  
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-3-37-57-UNV-L840-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

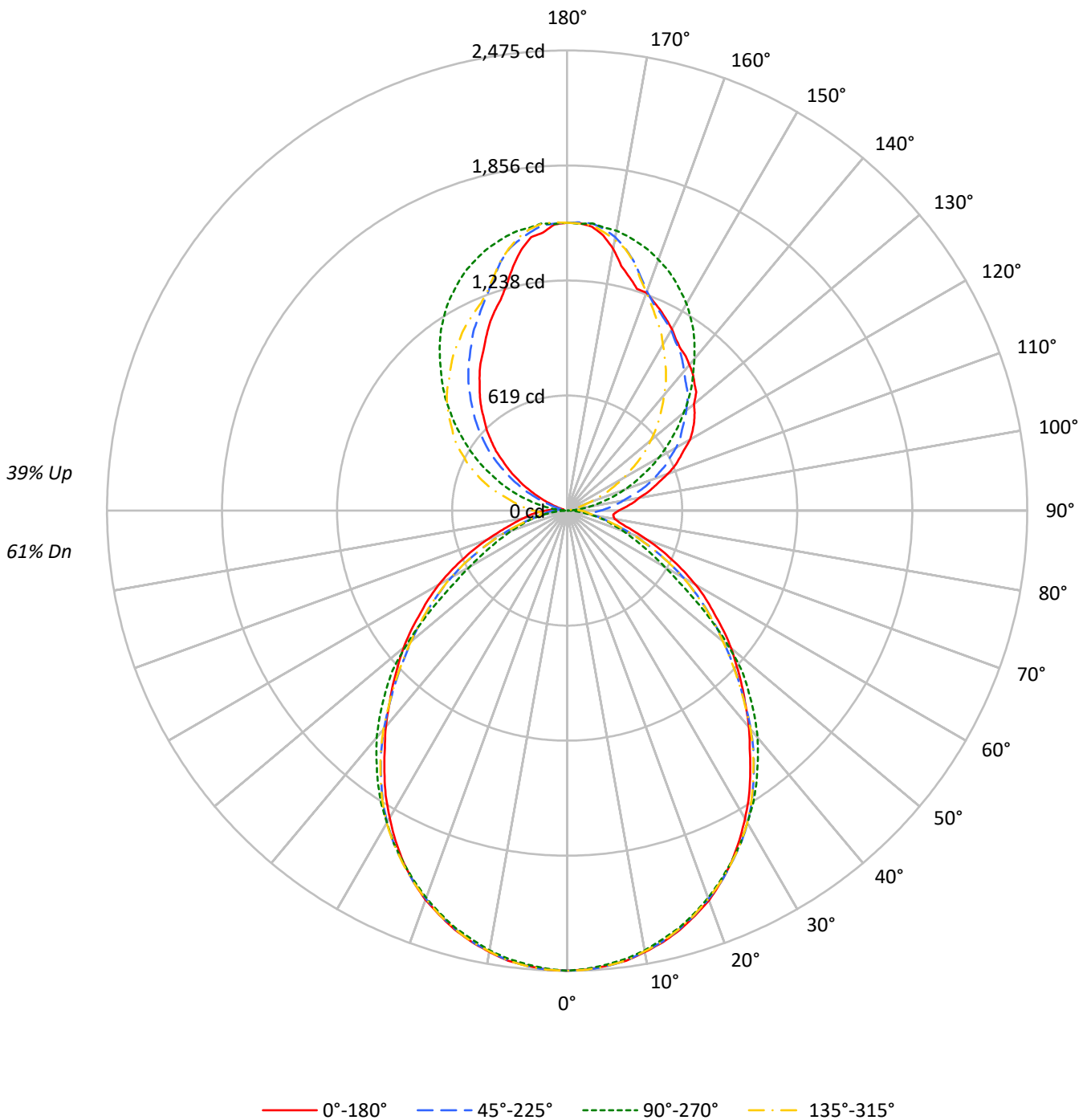
Lumens per Lamp: N/A  
Luminaire Lumens: 9449.9 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 105.2  
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	89	89	89	77	77	77	66	66	66	61
1	100	96	92	89	94	90	87	84	79	76	74	68	66	65	59	57	56	51
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	52	54	50	47	46	44	41	38
4	77	66	58	52	72	62	55	50	55	50	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	32	29
6	66	53	45	40	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	39	33	41	35	31	36	31	28	32	28	25	23
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	23	20
9	53	40	33	28	49	38	31	27	34	29	25	31	26	22	27	23	20	18
10	49	37	30	25	46	35	29	24	32	26	22	28	24	20	25	21	19	17

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	21310	21310	21310	21310
5°	20988	19480	20988	19480
10°	20575	17853	20575	17853
15°	20086	16337	20058	16337
20°	19460	14891	19432	14891
25°	18639	13520	18611	13520
30°	17608	12220	17568	12220
35°	16447	10984	16416	10984
40°	15320	9740	15277	9740
45°	14208	8413	14172	8413
50°	13237	6922	13199	6922
55°	12096	5196	12068	5196
60°	11070	3816	11055	3816
65°	9707	2872	9707	2872
70°	8332	2151	8352	2151
75°	7104	1548	7176	1548
80°	7226	989	6649	989
85°	9489	406	6781	406



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	233.0	2.5
10°-20°	656.0	6.9
20°-30°	961.5	10.2
30°-40°	1090.5	11.5
40°-50°	1025.3	10.9
50°-60°	813.9	8.6
60°-70°	529.4	5.6
70°-80°	270.4	2.9
80°-90°	142.0	1.5
90°-100°	147.7	1.6
100°-110°	243.5	2.6
110°-120°	412.7	4.4
120°-130°	560.0	5.9
130°-140°	638.5	6.8
140°-150°	636.6	6.7
150°-160°	554.1	5.9
160°-170°	389.8	4.1
170°-180°	145.1	1.5
0°-30°	1850.5	19.6
0°-40°	2941.0	31.1
0°-60°	4780.2	50.6
0°-90°	5721.9	60.6
90°-120°	803.9	8.5
90°-150°	2639.0	27.9
90°-180°	3728.0	39.5
0°-180°	9449.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2475	2475	2475	2475	2475	
5°	2458	2451	2458	2451	2458	233
15°	2337	2324	2334	2324	2337	658
25°	2089	2086	2086	2086	2089	959
35°	1717	1776	1714	1776	1717	1074
45°	1329	1382	1325	1382	1329	1026
55°	966	840	963	840	966	868
65°	618	443	618	443	618	616
75°	324	220	328	220	324	357
85°	248	51	178	51	248	207
90°	277	2	114	2	277	154
95°	333	45	74	45	333	286
105°	480	217	21	217	480	508
115°	667	442	156	442	667	662
125°	834	693	381	693	834	745
135°	968	946	610	946	968	747
145°	1063	1184	820	1184	1063	670
155°	1188	1368	1030	1368	1188	548
165°	1298	1489	1256	1489	1298	368
175°	1533	1550	1500	1550	1533	143
180°	1548	1548	1548	1548	1548	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7
2.5°	2470.5	2471.7	2471.8	2468.9	2466.9	2467.8	2471.8	2471.7	2471.6	2471.7	2471.8
5°	2457.5	2460.7	2459.8	2454.8	2450.8	2454.8	2458.7	2460.7	2457.5	2460.7	2458.7
7.5°	2441.6	2440.7	2440.7	2433.8	2430.8	2432.7	2439.7	2439.7	2441.6	2439.7	2439.7
10°	2410.7	2411.7	2407.7	2404.7	2401.7	2403.7	2406.7	2409.6	2410.7	2409.6	2406.7
12.5°	2377.8	2375.7	2373.7	2368.7	2362.6	2368.7	2373.7	2373.6	2375.7	2373.6	2373.7
15°	2336.9	2329.7	2330.7	2327.7	2323.6	2326.6	2329.6	2327.6	2333.7	2327.6	2329.6
17.5°	2284.9	2281.7	2279.7	2277.6	2271.6	2277.6	2278.6	2280.7	2281.7	2280.7	2278.6
20°	2230.9	2226.8	2222.7	2222.6	2216.5	2221.5	2221.6	2224.7	2227.7	2224.7	2221.6
22.5°	2162.8	2162.8	2161.7	2159.6	2153.5	2158.5	2160.6	2160.7	2160.7	2160.7	2160.6
25°	2088.8	2089.8	2092.7	2093.6	2086.5	2092.5	2090.6	2086.6	2085.6	2086.6	2090.6
27.5°	2003.8	2010.8	2020.7	2022.7	2018.5	2021.6	2018.6	2007.6	2000.6	2007.6	2018.6
30°	1912.8	1918.8	1940.8	1950.7	1938.5	1948.6	1937.6	1915.6	1908.5	1915.6	1937.6
32.5°	1820.8	1822.8	1849.8	1864.7	1862.6	1862.6	1846.6	1818.5	1816.5	1818.5	1846.6
35°	1716.7	1718.7	1748.7	1776.7	1776.5	1773.5	1745.5	1715.5	1713.5	1715.5	1745.5
37.5°	1613.7	1615.7	1647.7	1678.7	1684.6	1675.5	1644.5	1612.5	1610.5	1612.5	1644.5
40°	1521.7	1510.7	1537.7	1574.7	1593.6	1572.5	1533.4	1506.4	1517.4	1506.4	1533.4
42.5°	1419.7	1405.7	1418.7	1466.7	1489.6	1464.5	1415.4	1401.4	1415.4	1401.4	1415.4
45°	1328.7	1304.7	1308.7	1351.7	1381.6	1349.5	1304.3	1301.4	1325.4	1301.4	1304.3
47.5°	1236.7	1211.7	1199.7	1237.6	1275.6	1236.5	1195.3	1208.4	1233.4	1208.4	1195.3
50°	1151.6	1121.6	1097.6	1113.5	1132.4	1111.3	1093.2	1117.2	1148.3	1117.2	1093.2
52.5°	1060.6	1035.6	999.5	1001.5	987.4	999.3	996.2	1031.2	1057.3	1031.2	996.2
55°	965.5	950.5	904.5	880.4	840.3	878.2	901.2	947.2	963.3	947.2	901.2
57.5°	884.5	867.5	812.5	760.4	709.3	758.2	809.2	864.2	882.3	864.2	809.2
60°	797.4	783.4	721.4	641.3	605.3	640.2	719.2	781.2	796.3	781.2	719.2
62.5°	707.4	697.4	629.4	538.3	518.2	537.2	627.2	695.2	706.3	695.2	627.2
65°	618.3	605.3	534.3	451.3	443.2	450.2	533.2	604.2	618.3	604.2	533.2
67.5°	537.3	517.3	451.3	376.2	375.2	376.2	450.2	516.2	537.3	516.2	450.2
70°	457.2	429.2	369.2	313.2	320.2	313.2	369.2	430.3	458.3	430.3	369.2
72.5°	384.2	351.2	298.2	255.2	264.1	254.1	298.2	352.3	386.4	352.3	298.2
75°	324.2	279.2	235.1	204.1	220.1	204.1	236.2	280.3	327.5	280.3	236.2
77.5°	284.9	233.6	182.1	157.1	176.1	157.1	183.2	230.3	280.6	230.3	183.2
80°	260.5	207.8	147.4	119.1	133.1	119.1	145.2	190.4	239.7	190.4	145.2
82.5°	251.7	199.9	133.5	86.1	92.1	86.1	120.4	160.6	210.2	160.6	120.4
85°	248.5	209.6	138.5	67.4	51.1	65.2	106.8	143.0	177.6	143.0	106.8
87.5°	259.9	230.0	154.2	69.7	15.0	54.5	91.9	125.2	147.4	125.2	91.9
90°	277.4	255.5	179.5	78.7	2.1	37.2	71.4	101.6	113.6	101.6	71.4
92.5°	305.5	287.4	207.9	97.5	18.5	22.2	58.3	85.4	91.5	85.4	58.3
95°	333.1	322.5	240.8	118.6	44.7	9.4	44.3	69.2	74.3	69.2	44.3
97.5°	367.1	357.7	270.9	154.9	78.5	15.1	29.6	57.4	61.4	57.4	29.6
100°	391.7	383.6	307.0	201.8	121.0	38.0	17.6	40.7	47.7	40.7	17.6
102.5°	439.0	420.9	344.8	246.6	165.8	69.7	19.4	27.7	32.7	27.7	19.4
105°	480.4	460.1	398.3	293.6	217.1	112.3	45.6	21.1	20.6	21.1	45.6
107.5°	521.3	508.4	446.4	341.6	271.7	161.4	82.7	45.4	32.1	45.4	82.7
110°	574.9	559.8	493.3	389.7	328.5	213.9	125.3	79.3	63.9	79.3	125.3



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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°	626.4	615.5	537.0	439.9	387.5	270.6	177.7	123.0	107.6	123.0	177.7
115°	666.8	660.3	588.2	487.9	442.1	336.1	236.6	174.4	155.7	174.4	236.6
117.5°	709.4	707.3	625.4	535.9	508.6	393.9	290.1	225.7	205.9	225.7	290.1
120°	762.9	753.1	676.7	584.0	570.8	455.1	349.1	284.6	264.9	284.6	349.1
122.5°	800.0	793.5	720.4	629.8	629.8	517.3	405.9	341.4	320.6	341.4	405.9
125°	833.8	830.7	753.1	675.7	693.2	575.2	469.2	403.7	380.7	403.7	469.2
127.5°	864.4	867.7	795.7	725.9	757.6	634.2	531.4	460.4	435.3	460.4	531.4
130°	890.6	901.5	836.1	772.8	818.7	699.6	587.1	516.1	499.7	516.1	587.1
132.5°	941.9	935.4	877.6	819.7	885.3	758.6	646.1	571.8	553.2	571.8	646.1
135°	968.2	970.3	913.6	860.1	946.4	817.6	701.8	628.5	610.0	628.5	701.8
137.5°	999.8	993.3	942.0	909.3	1003.2	874.3	756.4	688.6	659.1	688.6	756.4
140°	1022.8	1021.7	979.2	953.0	1064.3	930.0	812.1	743.2	715.9	743.2	812.1
142.5°	1046.8	1053.3	1017.3	1001.0	1125.5	989.0	873.2	796.7	770.5	796.7	873.2
145°	1063.2	1077.4	1054.4	1061.1	1183.5	1054.5	925.6	848.0	819.6	848.0	925.6
147.5°	1090.5	1109.0	1080.7	1103.7	1233.7	1112.4	977.0	901.5	876.4	901.5	977.0
150°	1127.6	1136.3	1118.9	1163.6	1285.0	1177.9	1030.5	952.9	927.8	952.9	1030.5
152.5°	1157.1	1168.1	1148.4	1227.2	1325.4	1235.9	1089.5	1003.1	973.6	1003.1	1089.5
155°	1187.8	1192.1	1178.0	1289.4	1368.0	1293.8	1136.4	1058.8	1030.4	1058.8	1136.4
157.5°	1216.1	1224.9	1208.6	1336.4	1405.2	1344.0	1190.0	1114.5	1089.4	1114.5	1190.0
160°	1246.7	1245.7	1254.5	1391.0	1435.7	1387.7	1246.8	1174.7	1140.7	1174.7	1246.8
162.5°	1250.0	1269.7	1316.7	1430.2	1466.2	1426.9	1308.0	1218.4	1188.8	1218.4	1308.0
165°	1298.0	1315.6	1387.6	1464.0	1489.1	1460.8	1384.3	1290.5	1255.5	1290.5	1384.3
167.5°	1347.3	1386.6	1444.4	1502.3	1511.0	1492.4	1442.2	1376.8	1344.0	1376.8	1442.2
170°	1428.2	1463.0	1492.4	1516.5	1528.5	1517.5	1478.2	1445.6	1423.8	1445.6	1478.2
172.5°	1492.6	1515.5	1527.4	1542.7	1535.0	1530.6	1511.0	1494.7	1482.8	1494.7	1511.0
175°	1533.0	1538.4	1549.2	1543.8	1550.3	1538.3	1539.4	1546.0	1500.3	1546.0	1539.4
177.5°	1547.2	1555.9	1551.4	1541.6	1542.7	1540.5	1544.8	1548.2	1540.7	1548.2	1544.8
180°	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2474.7	2474.7	2474.7	2474.7	2474.7	2474.7
2.5°	2467.8	2466.9	2468.9	2471.8	2471.7	2470.5
5°	2454.8	2450.8	2454.8	2459.8	2460.7	2457.5
7.5°	2432.7	2430.8	2433.8	2440.7	2440.7	2441.6
10°	2403.7	2401.7	2404.7	2407.7	2411.7	2410.7
12.5°	2368.7	2362.6	2368.7	2373.7	2375.7	2377.8
15°	2326.6	2323.6	2327.7	2330.7	2329.7	2336.9
17.5°	2277.6	2271.6	2277.6	2279.7	2281.7	2284.9
20°	2221.5	2216.5	2222.6	2222.7	2226.8	2230.9
22.5°	2158.5	2153.5	2159.6	2161.7	2162.8	2162.8
25°	2092.5	2086.5	2093.6	2092.7	2089.8	2088.8
27.5°	2021.6	2018.5	2022.7	2020.7	2010.8	2003.8
30°	1948.6	1938.5	1950.7	1940.8	1918.8	1912.8
32.5°	1862.6	1862.6	1864.7	1849.8	1822.8	1820.8
35°	1773.5	1776.5	1776.7	1748.7	1718.7	1716.7
37.5°	1675.5	1684.6	1678.7	1647.7	1615.7	1613.7
40°	1572.5	1593.6	1574.7	1537.7	1510.7	1521.7
42.5°	1464.5	1489.6	1466.7	1418.7	1405.7	1419.7
45°	1349.5	1381.6	1351.7	1308.7	1304.7	1328.7
47.5°	1236.5	1275.6	1237.6	1199.7	1211.7	1236.7
50°	1111.3	1132.4	1113.5	1097.6	1121.6	1151.6
52.5°	999.3	987.4	1001.5	999.5	1035.6	1060.6
55°	878.2	840.3	880.4	904.5	950.5	965.5
57.5°	758.2	709.3	760.4	812.5	867.5	884.5
60°	640.2	605.3	641.3	721.4	783.4	797.4
62.5°	537.2	518.2	538.3	629.4	697.4	707.4
65°	450.2	443.2	451.3	534.3	605.3	618.3
67.5°	376.2	375.2	376.2	451.3	517.3	537.3
70°	313.2	320.2	313.2	369.2	429.2	457.2
72.5°	254.1	264.1	255.2	298.2	351.2	384.2
75°	204.1	220.1	204.1	235.1	279.2	324.2
77.5°	157.1	176.1	157.1	182.1	233.6	284.9
80°	119.1	133.1	119.1	147.4	207.8	260.5
82.5°	86.1	92.1	86.1	133.5	199.9	251.7
85°	65.2	51.1	67.4	138.5	209.6	248.5
87.5°	54.5	15.0	69.7	154.2	230.0	259.9
90°	37.2	2.1	78.7	179.5	255.5	277.4
92.5°	22.2	18.5	97.5	207.9	287.4	305.5
95°	9.4	44.7	118.6	240.8	322.5	333.1
97.5°	15.1	78.5	154.9	270.9	357.7	367.1
100°	38.0	121.0	201.8	307.0	383.6	391.7
102.5°	69.7	165.8	246.6	344.8	420.9	439.0
105°	112.3	217.1	293.6	398.3	460.1	480.4
107.5°	161.4	271.7	341.6	446.4	508.4	521.3
110°	213.9	328.5	389.7	493.3	559.8	574.9





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CATALOG NUMBER: MWL-3-37-57-UNV-L840-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	270.6	387.5	439.9	537.0	615.5	626.4
115°	336.1	442.1	487.9	588.2	660.3	666.8
117.5°	393.9	508.6	535.9	625.4	707.3	709.4
120°	455.1	570.8	584.0	676.7	753.1	762.9
122.5°	517.3	629.8	629.8	720.4	793.5	800.0
125°	575.2	693.2	675.7	753.1	830.7	833.8
127.5°	634.2	757.6	725.9	795.7	867.7	864.4
130°	699.6	818.7	772.8	836.1	901.5	890.6
132.5°	758.6	885.3	819.7	877.6	935.4	941.9
135°	817.6	946.4	860.1	913.6	970.3	968.2
137.5°	874.3	1003.2	909.3	942.0	993.3	999.8
140°	930.0	1064.3	953.0	979.2	1021.7	1022.8
142.5°	989.0	1125.5	1001.0	1017.3	1053.3	1046.8
145°	1054.5	1183.5	1061.1	1054.4	1077.4	1063.2
147.5°	1112.4	1233.7	1103.7	1080.7	1109.0	1090.5
150°	1177.9	1285.0	1163.6	1118.9	1136.3	1127.6
152.5°	1235.9	1325.4	1227.2	1148.4	1168.1	1157.1
155°	1293.8	1368.0	1289.4	1178.0	1192.1	1187.8
157.5°	1344.0	1405.2	1336.4	1208.6	1224.9	1216.1
160°	1387.7	1435.7	1391.0	1254.5	1245.7	1246.7
162.5°	1426.9	1466.2	1430.2	1316.7	1269.7	1250.0
165°	1460.8	1489.1	1464.0	1387.6	1315.6	1298.0
167.5°	1492.4	1511.0	1502.3	1444.4	1386.6	1347.3
170°	1517.5	1528.5	1516.5	1492.4	1463.0	1428.2
172.5°	1530.6	1535.0	1542.7	1527.4	1515.5	1492.6
175°	1538.3	1550.3	1543.8	1549.2	1538.4	1533.0
177.5°	1540.5	1542.7	1541.6	1551.4	1555.9	1547.2
180°	1548.2	1548.2	1548.2	1548.2	1548.2	1548.2

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