

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: P392667

Luminaire Tested: **MWL-4-34-73-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392667
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-4-34-73-UNV-L930-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

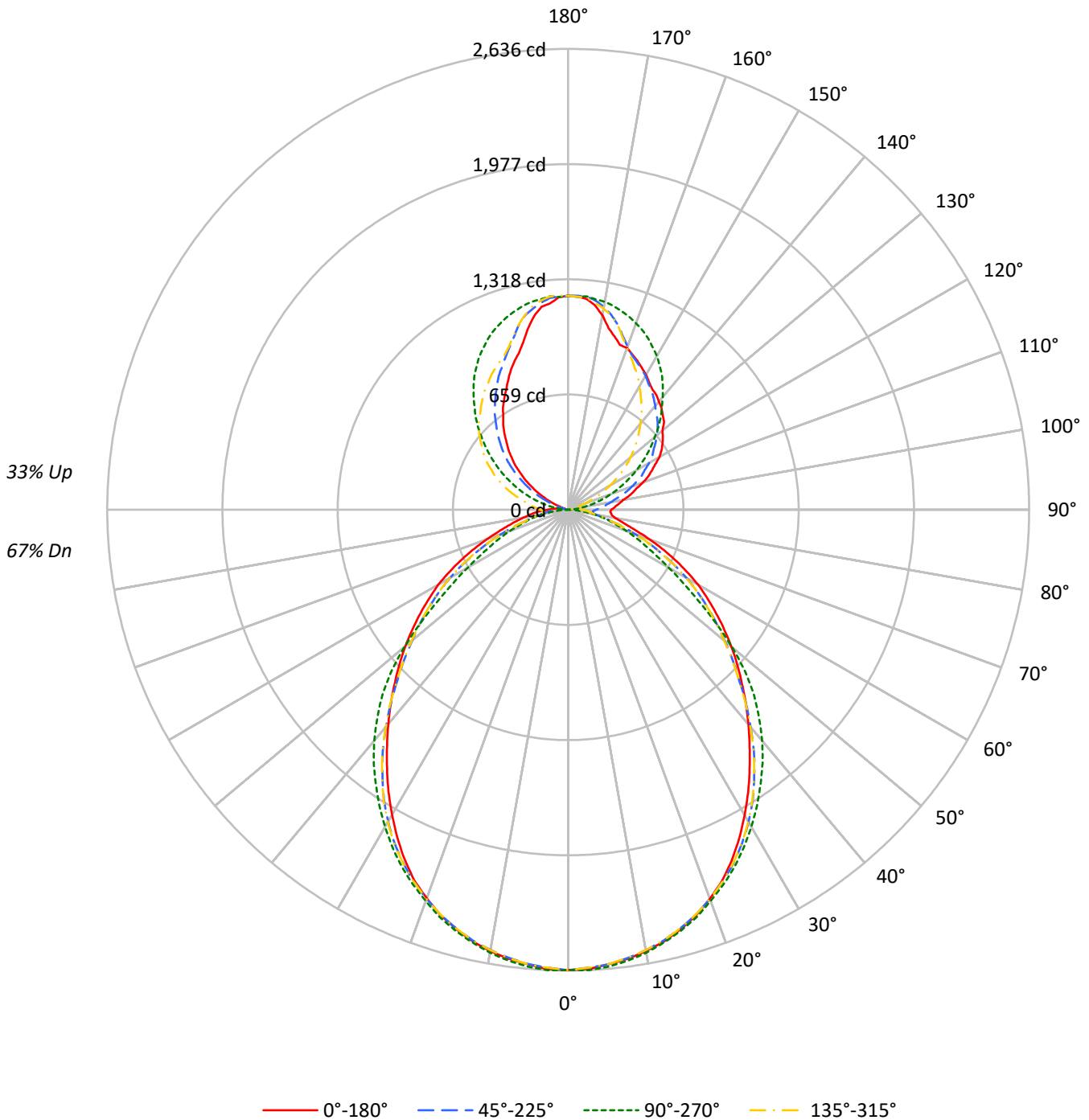
Lumens per Lamp: N/A
Luminaire Lumens: 9085.9 lumens
Efficiency: N/A
Efficacy: 75.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 119.887
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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67				
1	102	98	94	90	96	92	89	86	82	79	77	73	71	69	64	63	61	57				
2	93	86	80	74	88	81	76	71	72	68	65	64	61	58	57	55	52	49				
3	85	76	68	63	80	72	65	60	64	59	55	57	53	50	51	48	45	42				
4	78	67	60	53	74	64	57	51	58	52	47	51	47	43	46	42	39	36				
5	72	60	52	46	68	57	50	44	52	46	41	46	42	38	42	38	35	32				
6	67	54	46	40	63	52	44	39	47	41	36	42	37	33	38	34	31	28				
7	62	49	41	36	58	47	40	35	43	37	32	39	33	30	35	31	27	25				
8	58	45	37	32	54	43	36	31	39	33	29	35	30	27	32	28	25	22				
9	54	41	34	29	51	39	32	28	36	30	26	33	28	24	30	25	22	20				
10	50	38	31	26	48	36	30	25	33	27	23	30	25	22	27	23	20	19				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17005	17005	17005	17005
5°	16774	15641	16774	15641
10°	16509	14344	16509	14344
15°	16159	13144	16142	13144
20°	15678	12002	15660	12002
25°	15039	10943	15021	10943
30°	14193	9899	14169	9899
35°	13286	8889	13267	8889
40°	12432	7909	12405	7909
45°	11620	6867	11600	6867
50°	10879	5611	10856	5611
55°	10124	4221	10107	4221
60°	9389	3141	9380	3141
65°	8353	2366	8353	2366
70°	7260	1780	7273	1780
75°	6334	1275	6380	1275
80°	6392	820	6011	820
85°	8338	368	6444	368



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	248.2	2.7
10°-20°	700.2	7.7
20°-30°	1026.8	11.3
30°-40°	1162.3	12.8
40°-50°	1095.1	12.1
50°-60°	876.4	9.6
60°-70°	577.1	6.4
70°-80°	294.9	3.2
80°-90°	146.4	1.6
90°-100°	127.5	1.4
100°-110°	194.3	2.1
110°-120°	326.2	3.6
120°-130°	442.6	4.9
130°-140°	504.5	5.6
140°-150°	503.0	5.5
150°-160°	437.8	4.8
160°-170°	307.9	3.4
170°-180°	114.7	1.3
0°-30°	1975.3	21.7
0°-40°	3137.5	34.5
0°-60°	5109.0	56.2
0°-90°	6127.4	67.4
90°-120°	648.1	7.1
90°-150°	2098.2	23.1
90°-180°	2958.0	32.6
0°-180°	9085.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2633	2633	2633	2633	2633	
5°	2611	2624	2611	2624	2611	248
15°	2484	2493	2482	2493	2484	700
25°	2213	2252	2210	2252	2213	1016
35°	1808	1917	1806	1917	1808	1132
45°	1405	1504	1402	1504	1405	1086
55°	1033	910	1031	910	1033	925
65°	669	487	669	487	669	664
75°	352	242	355	242	352	385
85°	246	62	190	62	246	206
90°	247	2	118	2	247	137
95°	277	36	73	36	277	236
105°	383	172	20	172	383	405
115°	527	350	123	350	527	523
125°	659	547	301	547	659	588
135°	764	747	482	747	764	590
145°	840	934	647	934	840	530
155°	938	1081	814	1081	938	433
165°	1025	1177	991	1177	1025	291
175°	1210	1225	1184	1225	1210	113
180°	1223	1223	1223	1223	1223	



TEST NUMBER: P392667

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0
2.5°	2629.5	2629.5	2622.8	2637.3	2636.4	2636.4	2622.8	2629.5	2630.4	2629.5	2622.8
5°	2610.9	2616.1	2610.2	2624.6	2623.7	2624.6	2609.3	2616.1	2610.9	2616.1	2609.3
7.5°	2591.5	2598.3	2587.3	2604.3	2602.6	2603.4	2586.5	2597.4	2591.5	2597.4	2586.5
10°	2563.6	2566.1	2558.6	2573.8	2572.9	2572.9	2557.7	2564.5	2563.6	2564.5	2557.7
12.5°	2529.9	2529.0	2523.1	2536.5	2534.9	2536.5	2523.1	2527.3	2528.1	2527.3	2523.1
15°	2484.2	2483.3	2479.0	2492.6	2492.6	2491.7	2478.3	2481.6	2481.6	2481.6	2478.3
17.5°	2432.6	2430.9	2428.4	2442.8	2442.8	2442.8	2427.5	2430.1	2430.1	2430.1	2427.5
20°	2367.6	2370.1	2368.4	2382.7	2381.9	2381.9	2367.5	2368.4	2365.0	2368.4	2367.5
22.5°	2298.3	2300.8	2305.0	2323.6	2320.2	2322.8	2304.1	2299.1	2296.5	2299.1	2304.1
25°	2213.0	2218.0	2233.1	2252.6	2251.7	2251.7	2231.5	2215.4	2210.3	2215.4	2231.5
27.5°	2118.3	2131.8	2152.0	2176.5	2176.5	2175.6	2150.3	2129.1	2115.7	2129.1	2150.3
30°	2017.7	2032.0	2062.5	2097.1	2093.7	2095.3	2059.8	2029.5	2014.2	2029.5	2059.8
32.5°	1915.4	1929.8	1964.5	2005.8	2009.1	2004.1	1961.8	1926.4	1911.9	1926.4	1961.8
35°	1808.0	1814.7	1854.5	1917.0	1917.0	1914.5	1852.0	1812.2	1805.5	1812.2	1852.0
37.5°	1704.0	1705.7	1745.4	1811.4	1825.7	1808.8	1742.9	1703.2	1701.5	1703.2	1742.9
40°	1603.5	1595.0	1622.8	1696.5	1725.2	1694.7	1619.5	1591.6	1600.0	1591.6	1619.5
42.5°	1503.7	1493.6	1505.4	1578.1	1616.2	1576.4	1502.8	1490.2	1500.4	1490.2	1502.8
45°	1404.8	1386.3	1383.7	1456.3	1503.7	1454.7	1380.3	1383.7	1402.3	1383.7	1380.3
47.5°	1311.0	1289.1	1276.4	1332.1	1374.4	1331.3	1272.9	1286.5	1308.5	1286.5	1272.9
50°	1217.2	1196.1	1166.5	1205.3	1224.0	1203.6	1163.1	1192.6	1214.6	1192.6	1163.1
52.5°	1124.2	1108.2	1070.2	1083.6	1062.5	1082.0	1067.5	1104.7	1121.7	1104.7	1067.5
55°	1032.9	1018.6	972.1	954.3	910.3	952.5	969.4	1015.9	1031.2	1015.9	969.4
57.5°	943.4	934.9	877.4	825.0	777.7	823.3	874.8	932.3	941.6	932.3	874.8
60°	858.0	848.7	781.9	700.8	664.4	699.8	780.1	846.9	857.2	846.9	780.1
62.5°	761.6	757.4	682.2	590.9	567.1	589.9	680.4	755.6	760.8	755.6	680.4
65°	668.7	656.0	585.8	496.2	486.8	495.3	584.9	655.0	668.7	655.0	584.9
67.5°	579.0	560.4	495.4	414.2	416.7	414.2	494.5	559.6	579.0	559.6	494.5
70°	494.5	465.7	407.4	342.3	353.3	342.3	407.4	466.7	495.4	466.7	407.4
72.5°	415.9	380.4	327.1	278.9	292.4	278.1	327.1	381.3	417.6	381.3	327.1
75°	352.5	307.6	254.4	222.3	241.7	222.3	255.3	308.6	355.1	308.6	255.3
77.5°	307.8	256.2	198.6	171.6	195.2	171.6	199.4	253.7	304.4	253.7	199.4
80°	273.4	223.5	159.8	126.8	147.0	126.8	158.0	209.7	257.1	209.7	158.0
82.5°	252.7	207.7	143.1	91.3	103.1	91.3	132.8	176.7	220.0	176.7	132.8
85°	246.5	206.6	140.2	73.6	61.7	71.8	115.1	154.0	190.5	154.0	115.1
87.5°	240.4	212.3	144.8	71.3	22.8	59.3	95.7	129.6	151.5	129.6	95.7
90°	246.9	226.5	159.8	73.3	1.7	40.6	74.5	104.9	117.5	104.9	74.5
92.5°	262.8	247.5	178.2	84.0	15.5	24.5	60.1	88.0	93.9	88.0	60.1
95°	277.1	270.2	200.9	97.3	36.2	11.1	45.7	70.2	72.7	70.2	45.7
97.5°	298.9	294.6	221.9	122.4	62.9	12.0	31.3	57.6	57.6	57.6	31.3
100°	318.2	314.8	247.2	159.5	95.7	30.2	18.7	44.1	46.7	44.1	18.7
102.5°	353.0	339.3	274.1	194.9	131.0	55.1	17.2	28.9	32.3	28.9	17.2
105°	382.6	366.2	314.6	231.8	171.5	88.8	36.2	19.6	19.5	19.6	36.2
107.5°	412.0	401.7	352.6	270.7	214.6	128.4	65.5	36.1	25.8	36.1	65.5
110°	453.4	443.1	389.6	308.6	260.4	169.8	99.1	63.7	49.9	63.7	99.1



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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°	494.8	487.0	424.1	348.2	306.9	214.6	140.4	98.2	85.3	98.2	140.4
115°	526.6	521.5	464.6	385.3	350.0	265.5	187.0	137.9	123.3	137.9	187.0
117.5°	560.3	558.6	494.0	423.2	401.8	311.2	229.2	178.4	162.9	178.4	229.2
120°	602.5	594.8	534.5	461.1	450.8	359.5	275.8	224.9	209.5	224.9	275.8
122.5°	631.8	627.4	568.9	498.3	497.4	409.4	320.7	270.7	253.4	270.7	320.7
125°	658.6	656.9	594.8	534.5	547.3	455.1	370.6	319.7	300.8	319.7	370.6
127.5°	682.7	685.3	629.3	574.1	599.1	501.6	420.7	363.7	343.9	363.7	420.7
130°	703.3	712.0	661.2	610.4	647.3	552.5	464.6	407.8	394.8	407.8	464.6
132.5°	743.8	738.7	693.9	647.3	699.1	599.1	511.1	451.7	437.0	451.7	511.1
135°	764.5	766.4	722.3	679.3	747.4	645.7	555.2	496.5	481.9	496.5	555.2
137.5°	789.6	784.4	744.8	718.9	792.2	691.3	598.2	543.9	520.6	543.9	598.2
140°	807.7	806.8	774.0	753.4	840.4	735.2	642.1	587.0	565.5	587.0	642.1
142.5°	827.6	832.7	803.4	791.3	888.8	781.8	689.6	630.1	609.4	630.1	689.6
145°	839.6	851.6	832.7	838.7	934.5	833.6	730.9	670.6	647.3	670.6	730.9
147.5°	862.0	875.8	854.3	872.3	974.1	879.3	772.4	712.0	693.0	712.0	772.4
150°	890.4	897.3	884.5	918.9	1014.6	930.2	814.6	752.5	732.8	752.5	814.6
152.5°	913.8	922.4	907.7	969.8	1046.6	976.7	861.2	792.2	768.9	792.2	861.2
155°	937.8	941.3	931.0	1018.9	1081.0	1022.3	898.2	836.2	813.8	836.2	898.2
157.5°	960.4	967.1	955.1	1056.0	1110.3	1062.0	940.5	880.1	860.2	880.1	940.5
160°	984.4	984.4	991.4	1099.1	1134.4	1096.5	985.3	928.4	900.8	928.4	985.3
162.5°	987.0	1003.4	1040.5	1129.3	1157.7	1126.7	1033.6	962.8	938.8	962.8	1033.6
165°	1025.0	1039.6	1095.6	1156.0	1176.7	1153.4	1093.1	1019.7	991.4	1019.7	1093.1
167.5°	1063.8	1094.8	1140.4	1187.0	1194.0	1179.3	1138.8	1087.1	1061.2	1087.1	1138.8
170°	1127.6	1156.0	1178.4	1198.3	1207.7	1199.1	1167.3	1142.2	1124.1	1142.2	1167.3
172.5°	1178.5	1197.4	1206.0	1218.9	1212.9	1209.5	1193.1	1181.0	1170.7	1181.0	1193.1
175°	1210.3	1215.5	1223.3	1219.8	1225.0	1215.5	1215.5	1221.5	1184.4	1221.5	1215.5
177.5°	1221.6	1229.3	1225.0	1218.0	1218.9	1217.2	1219.8	1223.3	1216.3	1223.3	1219.8
180°	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2633.0	2633.0	2633.0	2633.0	2633.0	2633.0
2.5°	2636.4	2636.4	2637.3	2622.8	2629.5	2629.5
5°	2624.6	2623.7	2624.6	2610.2	2616.1	2610.9
7.5°	2603.4	2602.6	2604.3	2587.3	2598.3	2591.5
10°	2572.9	2572.9	2573.8	2558.6	2566.1	2563.6
12.5°	2536.5	2534.9	2536.5	2523.1	2529.0	2529.9
15°	2491.7	2492.6	2492.6	2479.0	2483.3	2484.2
17.5°	2442.8	2442.8	2442.8	2428.4	2430.9	2432.6
20°	2381.9	2381.9	2382.7	2368.4	2370.1	2367.6
22.5°	2322.8	2320.2	2323.6	2305.0	2300.8	2298.3
25°	2251.7	2251.7	2252.6	2233.1	2218.0	2213.0
27.5°	2175.6	2176.5	2176.5	2152.0	2131.8	2118.3
30°	2095.3	2093.7	2097.1	2062.5	2032.0	2017.7
32.5°	2004.1	2009.1	2005.8	1964.5	1929.8	1915.4
35°	1914.5	1917.0	1917.0	1854.5	1814.7	1808.0
37.5°	1808.8	1825.7	1811.4	1745.4	1705.7	1704.0
40°	1694.7	1725.2	1696.5	1622.8	1595.0	1603.5
42.5°	1576.4	1616.2	1578.1	1505.4	1493.6	1503.7
45°	1454.7	1503.7	1456.3	1383.7	1386.3	1404.8
47.5°	1331.3	1374.4	1332.1	1276.4	1289.1	1311.0
50°	1203.6	1224.0	1205.3	1166.5	1196.1	1217.2
52.5°	1082.0	1062.5	1083.6	1070.2	1108.2	1124.2
55°	952.5	910.3	954.3	972.1	1018.6	1032.9
57.5°	823.3	777.7	825.0	877.4	934.9	943.4
60°	699.8	664.4	700.8	781.9	848.7	858.0
62.5°	589.9	567.1	590.9	682.2	757.4	761.6
65°	495.3	486.8	496.2	585.8	656.0	668.7
67.5°	414.2	416.7	414.2	495.4	560.4	579.0
70°	342.3	353.3	342.3	407.4	465.7	494.5
72.5°	278.1	292.4	278.9	327.1	380.4	415.9
75°	222.3	241.7	222.3	254.4	307.6	352.5
77.5°	171.6	195.2	171.6	198.6	256.2	307.8
80°	126.8	147.0	126.8	159.8	223.5	273.4
82.5°	91.3	103.1	91.3	143.1	207.7	252.7
85°	71.8	61.7	73.6	140.2	206.6	246.5
87.5°	59.3	22.8	71.3	144.8	212.3	240.4
90°	40.6	1.7	73.3	159.8	226.5	246.9
92.5°	24.5	15.5	84.0	178.2	247.5	262.8
95°	11.1	36.2	97.3	200.9	270.2	277.1
97.5°	12.0	62.9	122.4	221.9	294.6	298.9
100°	30.2	95.7	159.5	247.2	314.8	318.2
102.5°	55.1	131.0	194.9	274.1	339.3	353.0
105°	88.8	171.5	231.8	314.6	366.2	382.6
107.5°	128.4	214.6	270.7	352.6	401.7	412.0
110°	169.8	260.4	308.6	389.6	443.1	453.4



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CATALOG NUMBER: MWL-4-34-73-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	214.6	306.9	348.2	424.1	487.0	494.8
115°	265.5	350.0	385.3	464.6	521.5	526.6
117.5°	311.2	401.8	423.2	494.0	558.6	560.3
120°	359.5	450.8	461.1	534.5	594.8	602.5
122.5°	409.4	497.4	498.3	568.9	627.4	631.8
125°	455.1	547.3	534.5	594.8	656.9	658.6
127.5°	501.6	599.1	574.1	629.3	685.3	682.7
130°	552.5	647.3	610.4	661.2	712.0	703.3
132.5°	599.1	699.1	647.3	693.9	738.7	743.8
135°	645.7	747.4	679.3	722.3	766.4	764.5
137.5°	691.3	792.2	718.9	744.8	784.4	789.6
140°	735.2	840.4	753.4	774.0	806.8	807.7
142.5°	781.8	888.8	791.3	803.4	832.7	827.6
145°	833.6	934.5	838.7	832.7	851.6	839.6
147.5°	879.3	974.1	872.3	854.3	875.8	862.0
150°	930.2	1014.6	918.9	884.5	897.3	890.4
152.5°	976.7	1046.6	969.8	907.7	922.4	913.8
155°	1022.3	1081.0	1018.9	931.0	941.3	937.8
157.5°	1062.0	1110.3	1056.0	955.1	967.1	960.4
160°	1096.5	1134.4	1099.1	991.4	984.4	984.4
162.5°	1126.7	1157.7	1129.3	1040.5	1003.4	987.0
165°	1153.4	1176.7	1156.0	1095.6	1039.6	1025.0
167.5°	1179.3	1194.0	1187.0	1140.4	1094.8	1063.8
170°	1199.1	1207.7	1198.3	1178.4	1156.0	1127.6
172.5°	1209.5	1212.9	1218.9	1206.0	1197.4	1178.5
175°	1215.5	1225.0	1219.8	1223.3	1215.5	1210.3
177.5°	1217.2	1218.9	1218.0	1225.0	1229.3	1221.6
180°	1223.3	1223.3	1223.3	1223.3	1223.3	1223.3

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