

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: P392689

Luminaire Tested: **MWL-4-55-33-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392689  
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-4-55-33-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

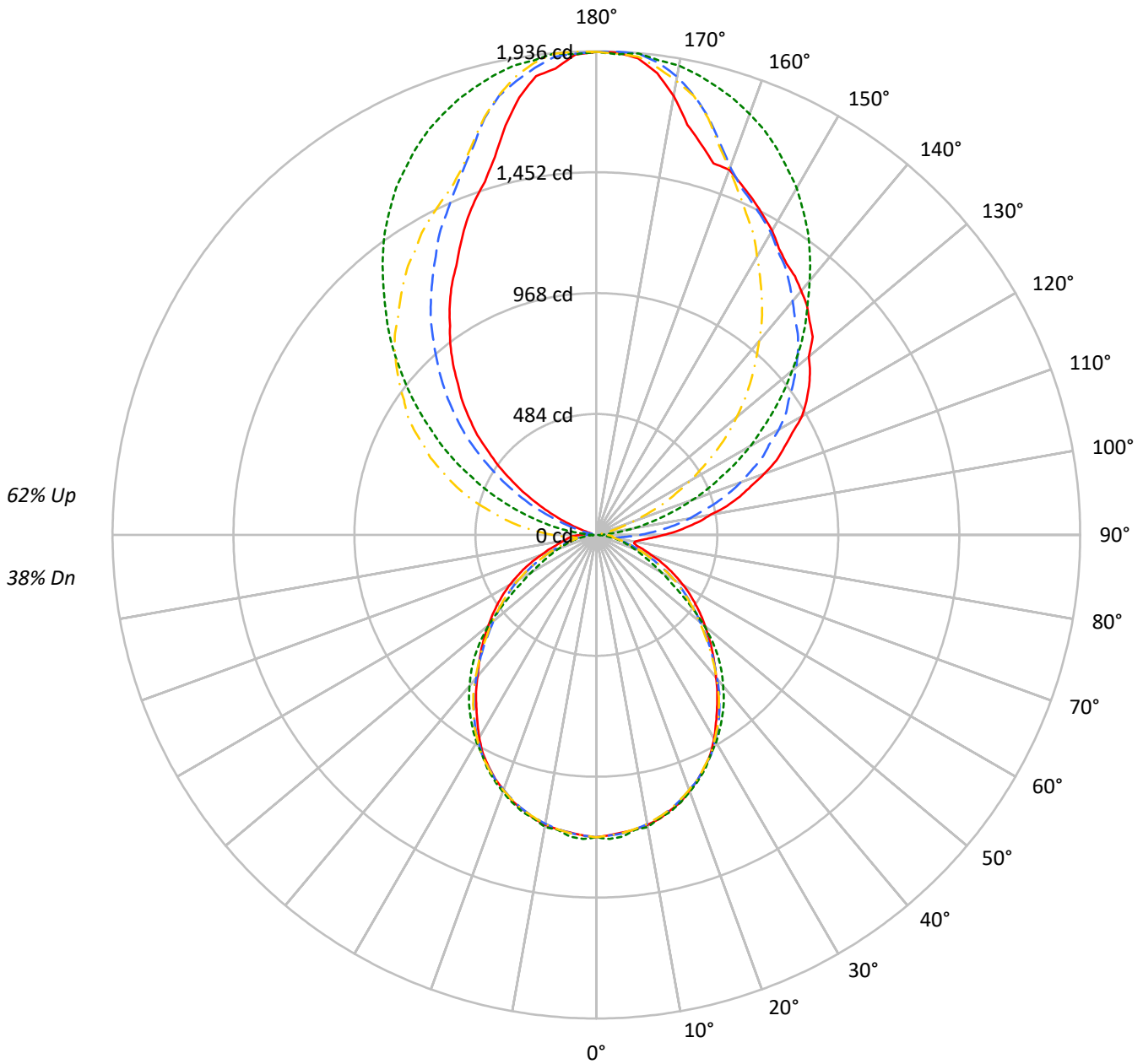
Lumens per Lamp: N/A  
Luminaire Lumens: 7473.6 lumens  
Efficiency: N/A  
Efficacy: 75.3 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Indirect

Input Watts (W): 99.283  
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



TEST NUMBER: P392689  
CATALOG NUMBER: MWL-4-55-33-UNV-L935-EDD

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - · - 90°-270°    - · - 135°-315°



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38				
1	95	91	87	84	86	83	79	76	67	65	63	53	52	50	40	39	38	32				
2	87	80	74	69	79	72	67	63	59	56	52	47	44	42	35	34	33	27				
3	79	70	63	57	72	64	58	53	52	48	44	42	39	36	32	30	28	23				
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	28	26	24	20				
5	67	55	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18				
6	61	50	42	36	56	46	39	34	38	32	29	30	27	24	23	21	19	16				
7	57	45	37	32	51	41	34	30	34	29	25	28	24	21	21	19	17	14				
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	20	17	15	13				
9	49	37	30	25	45	34	28	23	29	24	20	23	19	17	18	16	14	11				
10	46	34	27	22	42	31	25	21	26	21	18	21	18	15	17	14	12	10				

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

	0°	90°	180°	270°
0°	7818	7818	7818	7818
5°	7685	7225	7685	7225
10°	7590	6616	7590	6616
15°	7428	6047	7402	6047
20°	7214	5515	7187	5515
25°	6968	5014	6940	5014
30°	6628	4533	6589	4533
35°	6184	4080	6153	4080
40°	5775	3616	5733	3616
45°	5421	3149	5387	3149
50°	5077	2575	5039	2575
55°	4747	1926	4720	1926
60°	4384	1427	4370	1427
65°	3960	1060	3960	1060
70°	3415	796	3434	796
75°	3004	584	3080	584
80°	3657	376	3053	376
85°	6600	175	3599	175



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	114.0	1.5
10°-20°	321.5	4.3
20°-30°	472.4	6.3
30°-40°	537.0	7.2
40°-50°	506.2	6.8
50°-60°	404.1	5.4
60°-70°	267.0	3.6
70°-80°	140.6	1.9
80°-90°	95.2	1.3
90°-100°	154.6	2.1
100°-110°	300.2	4.0
110°-120°	513.6	6.9
120°-130°	697.9	9.3
130°-140°	796.1	10.7
140°-150°	794.0	10.6
150°-160°	691.5	9.3
160°-170°	486.5	6.5
170°-180°	181.2	2.4
0°-30°	907.9	12.1
0°-40°	1444.9	19.3
0°-60°	2355.2	31.5
0°-90°	2858.0	38.2
90°-120°	968.4	13.0
90°-150°	3256.4	43.6
90°-180°	4616.0	61.8
0°-180°	7473.6	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1211	1211	1211	1211	1211	
5°	1196	1212	1196	1212	1196	114
15°	1142	1147	1138	1147	1142	322
25°	1025	1032	1021	1032	1025	471
35°	842	880	837	880	842	527
45°	655	690	651	690	655	506
55°	484	415	482	415	484	434
65°	317	218	317	218	317	313
75°	167	111	171	111	167	189
85°	195	29	106	29	195	152
90°	270	2	65	2	270	149
95°	363	56	40	56	363	319
105°	595	270	20	270	595	625
115°	830	552	191	552	830	824
125°	1039	865	472	865	1039	928
135°	1207	1180	759	1180	1207	932
145°	1326	1476	1021	1476	1326	836
155°	1481	1708	1285	1708	1481	683
165°	1619	1858	1566	1858	1619	459
175°	1915	1935	1874	1935	1915	179
180°	1934	1934	1934	1934	1934	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6
2.5°	1203.1	1203.2	1204.3	1211.6	1218.3	1210.2	1204.3	1203.2	1204.4	1203.2	1204.3
5°	1196.2	1199.0	1199.2	1206.9	1211.9	1206.9	1197.9	1199.0	1196.2	1199.0	1197.9
7.5°	1189.2	1193.6	1188.5	1196.7	1190.7	1195.3	1187.2	1192.3	1189.2	1192.3	1187.2
10°	1178.6	1179.2	1175.8	1183.4	1186.8	1182.1	1174.4	1176.5	1178.6	1176.5	1174.4
12.5°	1164.4	1158.8	1157.5	1162.6	1162.1	1162.6	1157.5	1156.1	1161.7	1156.1	1157.5
15°	1142.0	1143.6	1138.8	1143.9	1146.8	1142.6	1137.5	1140.8	1138.0	1140.8	1137.5
17.5°	1121.7	1119.8	1114.2	1117.1	1122.2	1117.1	1112.9	1118.5	1117.6	1118.5	1112.9
20°	1089.4	1090.6	1087.1	1095.0	1094.4	1093.6	1085.7	1087.9	1085.4	1087.9	1085.7
22.5°	1060.1	1061.8	1059.9	1059.4	1064.7	1058.0	1058.6	1059.1	1057.4	1059.1	1058.6
25°	1025.3	1025.3	1025.6	1034.0	1031.7	1032.5	1023.0	1021.2	1021.2	1021.2	1023.0
27.5°	988.9	987.2	993.5	998.9	991.0	997.5	990.7	983.1	984.8	983.1	990.7
30°	942.2	943.9	950.7	965.4	958.8	962.7	946.6	939.9	936.7	939.9	946.6
32.5°	891.3	898.1	907.4	927.3	920.4	924.6	903.4	892.6	885.8	892.6	903.4
35°	841.6	844.2	858.6	883.2	879.9	879.0	854.4	840.0	837.4	840.0	854.4
37.5°	795.0	790.8	808.5	834.9	838.0	830.7	804.4	786.5	790.8	786.5	804.4
40°	744.9	745.8	753.4	784.3	788.9	781.4	747.9	740.3	739.4	740.3	747.9
42.5°	700.0	691.5	697.7	730.0	741.4	727.2	693.6	686.0	694.5	686.0	693.6
45°	655.4	644.3	645.2	673.1	689.6	670.4	639.7	640.2	651.2	640.2	639.7
47.5°	612.1	598.5	591.8	613.3	627.7	611.9	586.3	594.4	607.9	594.4	586.3
50°	568.0	555.3	541.7	554.8	561.8	552.0	536.2	549.8	563.8	549.8	536.2
52.5°	527.3	512.9	495.4	497.1	488.1	494.3	491.2	507.4	523.2	507.4	491.2
55°	484.3	471.7	450.4	436.3	415.4	433.6	446.3	467.5	481.6	467.5	446.3
57.5°	443.7	434.3	407.2	379.5	351.8	376.7	403.1	430.2	440.9	430.2	403.1
60°	400.6	393.1	361.6	322.1	301.8	320.7	359.0	390.3	399.4	390.3	359.0
62.5°	358.3	352.3	315.8	270.4	253.8	269.1	313.1	349.6	356.9	349.6	313.1
65°	317.0	307.7	270.4	228.0	218.1	226.6	269.1	306.3	317.0	306.3	269.1
67.5°	275.4	264.5	228.8	189.3	187.6	189.3	227.5	263.1	275.4	263.1	227.5
70°	232.6	221.5	190.2	157.0	157.9	157.0	190.2	222.9	233.9	222.9	190.2
72.5°	200.4	181.6	156.3	130.0	132.8	128.6	156.3	183.0	203.0	183.0	156.3
75°	167.2	146.9	122.6	103.1	110.8	103.1	124.0	148.2	171.4	148.2	124.0
77.5°	154.5	126.2	95.5	82.8	87.8	82.8	96.8	121.9	149.0	121.9	96.8
80°	156.4	123.1	78.4	62.4	67.5	62.4	75.7	101.3	130.6	101.3	75.7
82.5°	170.6	137.9	82.1	44.6	47.1	44.6	65.7	88.8	118.6	88.8	65.7
85°	195.1	166.2	102.8	38.5	29.3	35.8	63.2	82.8	106.4	82.8	63.2
87.5°	229.0	205.7	133.1	51.4	7.6	32.3	55.2	74.6	88.4	74.6	55.2
90°	269.6	249.1	175.4	73.3	2.2	21.4	40.2	56.6	64.7	56.6	40.2
92.5°	319.4	299.7	218.3	107.9	22.7	13.7	31.2	47.0	51.9	47.0	31.2
95°	363.4	355.2	271.0	145.4	55.5	8.8	25.3	38.3	39.7	38.3	25.3
97.5°	417.6	409.8	324.5	192.0	97.8	17.3	22.6	34.3	35.1	34.3	22.6
100°	464.0	460.9	379.1	250.7	149.7	45.9	17.3	32.2	33.8	32.2	17.3
102.5°	535.0	516.1	430.0	306.8	205.7	85.5	23.0	24.5	27.1	24.5	23.0
105°	594.6	573.1	496.1	365.4	269.9	138.8	55.0	24.0	19.8	24.0	55.0
107.5°	648.3	632.2	556.1	425.5	338.2	200.3	101.4	53.1	36.5	53.1	101.4
110°	714.0	696.8	614.8	486.5	409.2	266.6	154.6	96.0	74.9	96.0	154.6



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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°	779.5	766.5	669.4	549.2	483.0	337.7	220.2	150.6	130.9	150.6	220.2
115°	830.1	822.4	732.3	608.0	552.1	418.2	292.5	214.8	191.0	214.8	292.5
117.5°	883.4	882.0	778.7	668.1	634.0	490.6	359.5	279.8	253.9	279.8	359.5
120°	950.2	939.4	842.9	728.2	711.8	567.1	433.3	353.5	327.6	353.5	433.3
122.5°	996.6	989.8	898.4	785.6	785.6	644.9	505.1	424.5	397.2	424.5	505.1
125°	1039.1	1036.3	939.4	842.9	864.8	717.2	584.3	502.4	472.4	502.4	584.3
127.5°	1077.2	1081.4	992.6	905.7	945.3	791.0	662.2	572.0	540.6	572.0	662.2
130°	1110.0	1123.8	1043.2	963.1	1021.8	871.5	731.8	641.7	621.2	641.7	731.8
132.5°	1174.2	1166.0	1095.0	1022.6	1103.7	946.2	805.5	711.3	688.1	711.3	805.5
135°	1207.0	1209.7	1140.1	1073.2	1180.2	1019.9	875.2	782.3	759.1	782.3	875.2
137.5°	1246.6	1238.3	1175.6	1134.6	1251.2	1090.9	943.5	857.4	820.5	857.4	943.5
140°	1275.3	1273.9	1222.0	1189.2	1327.7	1160.6	1013.1	925.6	891.5	925.6	1013.1
142.5°	1305.3	1313.5	1268.5	1249.3	1404.2	1234.3	1088.2	992.6	959.9	992.6	1088.2
145°	1325.8	1343.5	1314.9	1324.5	1476.5	1316.3	1153.7	1056.8	1021.2	1056.8	1153.7
147.5°	1359.9	1383.1	1349.1	1377.7	1539.4	1388.6	1219.3	1123.8	1092.3	1123.8	1219.3
150°	1406.4	1417.3	1396.8	1451.4	1603.5	1469.2	1286.2	1188.0	1156.5	1188.0	1286.2
152.5°	1443.2	1456.8	1433.7	1532.0	1654.1	1543.0	1359.9	1250.7	1213.8	1250.7	1359.9
155°	1481.4	1486.9	1470.6	1609.9	1708.2	1615.3	1418.7	1320.3	1284.9	1320.3	1418.7
157.5°	1517.0	1527.9	1508.8	1668.6	1754.5	1678.2	1485.7	1390.0	1358.5	1390.0	1485.7
160°	1555.3	1555.3	1566.2	1736.8	1792.8	1732.8	1556.6	1466.4	1422.7	1466.4	1556.6
162.5°	1559.3	1585.3	1644.0	1784.6	1829.7	1780.5	1633.0	1521.0	1482.8	1521.0	1633.0
165°	1619.4	1642.6	1731.4	1827.0	1858.3	1823.0	1727.3	1611.2	1566.2	1611.2	1727.3
167.5°	1682.2	1731.4	1802.4	1874.7	1885.7	1862.5	1799.7	1719.2	1678.2	1719.2	1799.7
170°	1783.8	1826.2	1862.5	1892.6	1907.6	1893.9	1844.7	1804.2	1778.4	1804.2	1844.7
172.5°	1864.4	1892.6	1906.2	1925.3	1915.7	1910.3	1885.7	1866.6	1852.1	1866.6	1885.7
175°	1914.9	1921.2	1933.5	1926.7	1934.9	1919.9	1921.2	1930.7	1873.9	1930.7	1921.2
177.5°	1932.6	1943.0	1936.3	1923.9	1925.3	1922.6	1928.0	1933.5	1924.4	1933.5	1928.0
180°	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1210.6	1210.6	1210.6	1210.6	1210.6	1210.6
2.5°	1210.2	1218.3	1211.6	1204.3	1203.2	1203.1
5°	1206.9	1211.9	1206.9	1199.2	1199.0	1196.2
7.5°	1195.3	1190.7	1196.7	1188.5	1193.6	1189.2
10°	1182.1	1186.8	1183.4	1175.8	1179.2	1178.6
12.5°	1162.6	1162.1	1162.6	1157.5	1158.8	1164.4
15°	1142.6	1146.8	1143.9	1138.8	1143.6	1142.0
17.5°	1117.1	1122.2	1117.1	1114.2	1119.8	1121.7
20°	1093.6	1094.4	1095.0	1087.1	1090.6	1089.4
22.5°	1058.0	1064.7	1059.4	1059.9	1061.8	1060.1
25°	1032.5	1031.7	1034.0	1025.6	1025.3	1025.3
27.5°	997.5	991.0	998.9	993.5	987.2	988.9
30°	962.7	958.8	965.4	950.7	943.9	942.2
32.5°	924.6	920.4	927.3	907.4	898.1	891.3
35°	879.0	879.9	883.2	858.6	844.2	841.6
37.5°	830.7	838.0	834.9	808.5	790.8	795.0
40°	781.4	788.9	784.3	753.4	745.8	744.9
42.5°	727.2	741.4	730.0	697.7	691.5	700.0
45°	670.4	689.6	673.1	645.2	644.3	655.4
47.5°	611.9	627.7	613.3	591.8	598.5	612.1
50°	552.0	561.8	554.8	541.7	555.3	568.0
52.5°	494.3	488.1	497.1	495.4	512.9	527.3
55°	433.6	415.4	436.3	450.4	471.7	484.3
57.5°	376.7	351.8	379.5	407.2	434.3	443.7
60°	320.7	301.8	322.1	361.6	393.1	400.6
62.5°	269.1	253.8	270.4	315.8	352.3	358.3
65°	226.6	218.1	228.0	270.4	307.7	317.0
67.5°	189.3	187.6	189.3	228.8	264.5	275.4
70°	157.0	157.9	157.0	190.2	221.5	232.6
72.5°	128.6	132.8	130.0	156.3	181.6	200.4
75°	103.1	110.8	103.1	122.6	146.9	167.2
77.5°	82.8	87.8	82.8	95.5	126.2	154.5
80°	62.4	67.5	62.4	78.4	123.1	156.4
82.5°	44.6	47.1	44.6	82.1	137.9	170.6
85°	35.8	29.3	38.5	102.8	166.2	195.1
87.5°	32.3	7.6	51.4	133.1	205.7	229.0
90°	21.4	2.2	73.3	175.4	249.1	269.6
92.5°	13.7	22.7	107.9	218.3	299.7	319.4
95°	8.8	55.5	145.4	271.0	355.2	363.4
97.5°	17.3	97.8	192.0	324.5	409.8	417.6
100°	45.9	149.7	250.7	379.1	460.9	464.0
102.5°	85.5	205.7	306.8	430.0	516.1	535.0
105°	138.8	269.9	365.4	496.1	573.1	594.6
107.5°	200.3	338.2	425.5	556.1	632.2	648.3
110°	266.6	409.2	486.5	614.8	696.8	714.0





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CATALOG NUMBER: MWL-4-55-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	337.7	483.0	549.2	669.4	766.5	779.5
115°	418.2	552.1	608.0	732.3	822.4	830.1
117.5°	490.6	634.0	668.1	778.7	882.0	883.4
120°	567.1	711.8	728.2	842.9	939.4	950.2
122.5°	644.9	785.6	785.6	898.4	989.8	996.6
125°	717.2	864.8	842.9	939.4	1036.3	1039.1
127.5°	791.0	945.3	905.7	992.6	1081.4	1077.2
130°	871.5	1021.8	963.1	1043.2	1123.8	1110.0
132.5°	946.2	1103.7	1022.6	1095.0	1166.0	1174.2
135°	1019.9	1180.2	1073.2	1140.1	1209.7	1207.0
137.5°	1090.9	1251.2	1134.6	1175.6	1238.3	1246.6
140°	1160.6	1327.7	1189.2	1222.0	1273.9	1275.3
142.5°	1234.3	1404.2	1249.3	1268.5	1313.5	1305.3
145°	1316.3	1476.5	1324.5	1314.9	1343.5	1325.8
147.5°	1388.6	1539.4	1377.7	1349.1	1383.1	1359.9
150°	1469.2	1603.5	1451.4	1396.8	1417.3	1406.4
152.5°	1543.0	1654.1	1532.0	1433.7	1456.8	1443.2
155°	1615.3	1708.2	1609.9	1470.6	1486.9	1481.4
157.5°	1678.2	1754.5	1668.6	1508.8	1527.9	1517.0
160°	1732.8	1792.8	1736.8	1566.2	1555.3	1555.3
162.5°	1780.5	1829.7	1784.6	1644.0	1585.3	1559.3
165°	1823.0	1858.3	1827.0	1731.4	1642.6	1619.4
167.5°	1862.5	1885.7	1874.7	1802.4	1731.4	1682.2
170°	1893.9	1907.6	1892.6	1862.5	1826.2	1783.8
172.5°	1910.3	1915.7	1925.3	1906.2	1892.6	1864.4
175°	1919.9	1934.9	1926.7	1933.5	1921.2	1914.9
177.5°	1922.6	1925.3	1923.9	1936.3	1943.0	1932.6
180°	1933.5	1933.5	1933.5	1933.5	1933.5	1933.5

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