

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-L835-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-L835-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8661.0 lumens
Efficiency: N/A
Efficacy: 88.1 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

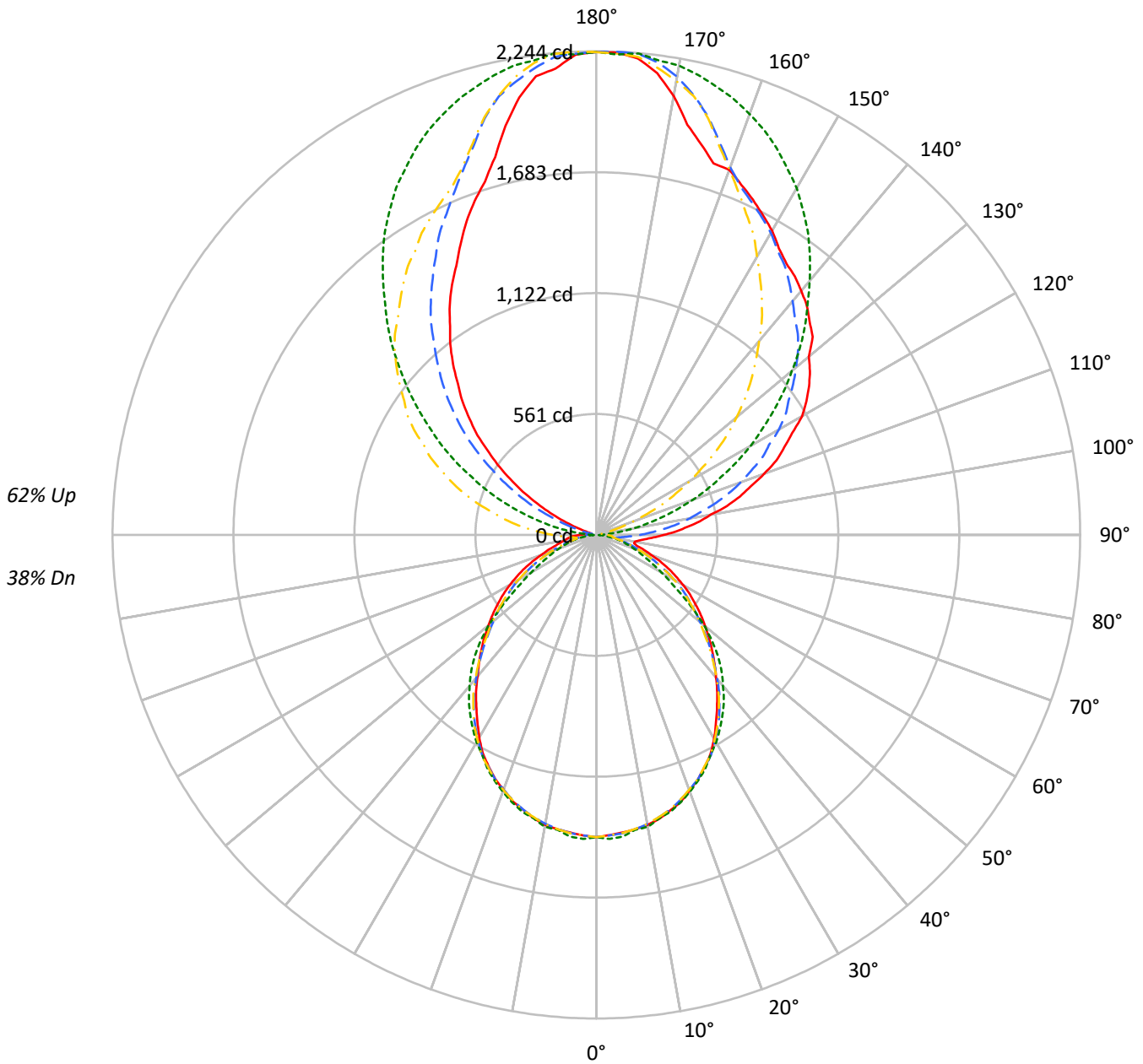
Input Watts (W): 98.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 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	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°	9060	9060	9060	9060
5°	8906	8373	8906	8373
10°	8796	7668	8796	7668
15°	8609	7008	8578	7008
20°	8360	6391	8329	6391
25°	8075	5810	8043	5810
30°	7681	5253	7636	5253
35°	7167	4729	7131	4729
40°	6693	4191	6644	4191
45°	6282	3650	6243	3650
50°	5884	2985	5840	2985
55°	5502	2232	5470	2232
60°	5081	1653	5064	1653
65°	4589	1229	4589	1229
70°	3957	922	3980	922
75°	3482	677	3568	677
80°	4239	436	3537	436
85°	7648	203	4171	203



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.1	1.5
10°-20°	372.6	4.3
20°-30°	547.5	6.3
30°-40°	622.3	7.2
40°-50°	586.6	6.8
50°-60°	468.3	5.4
60°-70°	309.4	3.6
70°-80°	163.0	1.9
80°-90°	110.4	1.3
90°-100°	179.1	2.1
100°-110°	347.9	4.0
110°-120°	595.2	6.9
120°-130°	808.8	9.3
130°-140°	922.6	10.7
140°-150°	920.2	10.6
150°-160°	801.4	9.3
160°-170°	563.8	6.5
170°-180°	210.0	2.4
0°-30°	1052.1	12.1
0°-40°	1674.5	19.3
0°-60°	2729.4	31.5
0°-90°	3312.1	38.2
90°-120°	1122.2	13.0
90°-150°	3773.8	43.6
90°-180°	5349.0	61.8
0°-180°	8661.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1403	1403	1403	1403	1403	
5°	1386	1404	1386	1404	1386	132
15°	1324	1329	1319	1329	1324	373
25°	1188	1196	1184	1196	1188	546
35°	975	1020	970	1020	975	611
45°	760	799	755	799	760	587
55°	561	481	558	481	561	503
65°	367	253	367	253	367	363
75°	194	128	199	128	194	219
85°	226	34	123	34	226	176
90°	312	3	75	3	312	173
95°	421	64	46	64	421	370
105°	689	313	23	313	689	724
115°	962	640	221	640	962	955
125°	1204	1002	547	1002	1204	1075
135°	1399	1368	880	1368	1399	1080
145°	1536	1711	1184	1711	1536	969
155°	1717	1980	1489	1980	1717	792
165°	1877	2154	1815	2154	1877	532
175°	2219	2242	2172	2242	2219	207
180°	2241	2241	2241	2241	2241	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9
2.5°	1394.2	1394.4	1395.6	1404.1	1411.9	1402.5	1395.6	1394.4	1395.8	1394.4	1395.6
5°	1386.3	1389.5	1389.7	1398.6	1404.5	1398.6	1388.2	1389.5	1386.3	1389.5	1388.2
7.5°	1378.1	1383.2	1377.3	1386.8	1379.9	1385.2	1375.8	1381.7	1378.1	1381.7	1375.8
10°	1365.9	1366.5	1362.6	1371.4	1375.4	1369.9	1361.0	1363.4	1365.9	1363.4	1361.0
12.5°	1349.4	1342.9	1341.4	1347.3	1346.7	1347.3	1341.4	1339.8	1346.3	1339.8	1341.4
15°	1323.5	1325.3	1319.7	1325.6	1329.0	1324.1	1318.2	1322.1	1318.8	1322.1	1318.2
17.5°	1299.9	1297.7	1291.2	1294.6	1300.5	1294.6	1289.7	1296.2	1295.2	1296.2	1289.7
20°	1262.5	1263.9	1259.8	1269.0	1268.3	1267.4	1258.2	1260.8	1257.8	1260.8	1258.2
22.5°	1228.5	1230.5	1228.3	1227.7	1233.9	1226.1	1226.8	1227.4	1225.4	1227.4	1226.8
25°	1188.2	1188.2	1188.6	1198.3	1195.6	1196.6	1185.5	1183.5	1183.5	1183.5	1185.5
27.5°	1146.0	1144.0	1151.3	1157.6	1148.4	1156.0	1148.1	1139.3	1141.3	1139.3	1148.1
30°	1091.9	1093.9	1101.7	1118.8	1111.1	1115.7	1097.0	1089.2	1085.5	1089.2	1097.0
32.5°	1032.9	1040.8	1051.6	1074.6	1066.6	1071.5	1046.9	1034.4	1026.5	1034.4	1046.9
35°	975.3	978.3	995.0	1023.5	1019.7	1018.7	990.2	973.5	970.5	973.5	990.2
37.5°	921.3	916.4	937.0	967.5	971.2	962.7	932.2	911.5	916.5	911.5	932.2
40°	863.3	864.3	873.1	908.9	914.2	905.6	866.7	857.9	856.9	857.9	866.7
42.5°	811.2	801.4	808.6	846.0	859.2	842.7	803.8	795.0	804.8	795.0	803.8
45°	759.5	746.7	747.7	780.1	799.2	776.9	741.3	741.9	754.7	741.9	741.3
47.5°	709.4	693.6	685.8	710.7	727.4	709.1	679.4	688.8	704.5	688.8	679.4
50°	658.3	643.5	627.8	642.9	651.1	639.7	621.4	637.1	653.4	637.1	621.4
52.5°	611.1	594.4	574.1	576.1	565.6	572.8	569.3	588.0	606.3	588.0	569.3
55°	561.3	546.6	522.0	505.6	481.4	502.5	517.2	541.8	558.1	541.8	517.2
57.5°	514.2	503.3	471.9	439.8	407.7	436.6	467.1	498.5	510.9	498.5	467.1
60°	464.3	455.5	419.1	373.3	349.7	371.7	416.0	452.3	462.8	452.3	416.0
62.5°	415.2	408.3	366.0	313.4	294.1	311.8	362.9	405.2	413.6	405.2	362.9
65°	367.4	356.6	313.4	264.2	252.8	262.6	311.8	355.0	367.4	355.0	311.8
67.5°	319.2	306.5	265.2	219.4	217.4	219.4	263.6	304.9	319.2	304.9	263.6
70°	269.5	256.7	220.4	182.0	183.0	182.0	220.4	258.3	271.1	258.3	220.4
72.5°	232.2	210.5	181.1	150.6	153.9	149.0	181.1	212.1	235.3	212.1	181.1
75°	193.8	170.2	142.1	119.5	128.4	119.5	143.7	171.8	198.6	171.8	143.7
77.5°	179.0	146.2	110.7	95.9	101.8	95.9	112.2	141.3	172.7	141.3	112.2
80°	181.3	142.7	90.8	72.3	78.2	72.3	87.7	117.4	151.3	117.4	87.7
82.5°	197.7	159.8	95.1	51.7	54.6	51.7	76.1	102.9	137.5	102.9	76.1
85°	226.1	192.6	119.1	44.6	34.0	41.5	73.2	96.0	123.3	96.0	73.2
87.5°	265.4	238.4	154.2	59.6	8.8	37.4	64.0	86.4	102.4	86.4	64.0
90°	312.4	288.7	203.3	84.9	2.6	24.8	46.6	65.6	75.0	65.6	46.6
92.5°	370.2	347.3	253.0	125.1	26.3	15.9	36.2	54.5	60.1	54.5	36.2
95°	421.1	411.6	314.1	168.5	64.3	10.2	29.3	44.4	46.0	44.4	29.3
97.5°	483.9	474.9	376.0	222.5	113.3	20.0	26.2	39.7	40.7	39.7	26.2
100°	537.7	534.1	439.3	290.5	173.5	53.2	20.0	37.3	39.2	37.3	20.0
102.5°	620.0	598.1	498.3	355.5	238.4	99.1	26.7	28.4	31.4	28.4	26.7
105°	689.1	664.1	574.9	423.5	312.8	160.8	63.7	27.8	22.9	27.8	63.7
107.5°	751.3	732.6	644.5	493.1	391.9	232.1	117.5	61.5	42.3	61.5	117.5
110°	827.5	807.5	712.5	563.8	474.2	309.0	179.2	111.2	86.8	111.2	179.2



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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°	903.4	888.3	775.8	636.5	559.7	391.3	255.2	174.5	151.7	174.5	255.2
115°	962.0	953.1	848.6	704.6	639.8	484.7	339.0	248.9	221.4	248.9	339.0
117.5°	1023.7	1022.1	902.4	774.2	734.7	568.5	416.6	324.2	294.2	324.2	416.6
120°	1101.2	1088.6	976.8	843.9	824.9	657.2	502.1	409.7	379.6	409.7	502.1
122.5°	1155.0	1147.1	1041.1	910.4	910.4	747.4	585.3	491.9	460.3	491.9	585.3
125°	1204.2	1200.9	1088.6	976.8	1002.2	831.2	677.1	582.2	547.4	582.2	677.1
127.5°	1248.4	1253.2	1150.3	1049.6	1095.5	916.7	767.4	662.9	626.5	662.9	767.4
130°	1286.4	1302.3	1208.9	1116.1	1184.1	1010.0	848.1	743.6	719.9	743.6	848.1
132.5°	1360.8	1351.3	1269.0	1185.1	1279.1	1096.5	933.5	824.3	797.4	824.3	933.5
135°	1398.8	1401.9	1321.2	1243.7	1367.7	1181.9	1014.2	906.6	879.7	906.6	1014.2
137.5°	1444.7	1435.1	1362.4	1314.9	1450.0	1264.2	1093.4	993.6	950.9	993.6	1093.4
140°	1477.9	1476.3	1416.2	1378.2	1538.6	1345.0	1174.1	1072.7	1033.2	1072.7	1174.1
142.5°	1512.7	1522.2	1470.0	1447.8	1627.3	1430.4	1261.1	1150.3	1112.4	1150.3	1261.1
145°	1536.5	1557.0	1523.8	1534.9	1711.1	1525.4	1337.0	1224.7	1183.5	1224.7	1337.0
147.5°	1576.0	1602.9	1563.4	1596.6	1784.0	1609.2	1413.0	1302.3	1265.9	1302.3	1413.0
150°	1629.9	1642.5	1618.7	1682.0	1858.3	1702.6	1490.6	1376.7	1340.2	1376.7	1490.6
152.5°	1672.5	1688.3	1661.5	1775.4	1916.9	1788.1	1576.0	1449.4	1406.7	1449.4	1576.0
155°	1716.8	1723.2	1704.2	1865.7	1979.6	1871.9	1644.1	1530.1	1489.0	1530.1	1644.1
157.5°	1758.0	1770.7	1748.5	1933.7	2033.3	1944.8	1721.7	1610.9	1574.4	1610.9	1721.7
160°	1802.4	1802.4	1815.0	2012.8	2077.7	2008.1	1803.9	1699.4	1648.8	1699.4	1803.9
162.5°	1807.1	1837.2	1905.2	2068.2	2120.4	2063.4	1892.5	1762.7	1718.4	1762.7	1892.5
165°	1876.7	1903.6	2006.5	2117.3	2153.6	2112.6	2001.7	1867.2	1815.0	1867.2	2001.7
167.5°	1949.5	2006.5	2088.8	2172.6	2185.3	2158.4	2085.6	1992.3	1944.8	1992.3	2085.6
170°	2067.2	2116.3	2158.4	2193.3	2210.7	2194.8	2137.8	2090.9	2060.9	2090.9	2137.8
172.5°	2160.6	2193.3	2209.1	2231.2	2220.1	2213.8	2185.3	2163.2	2146.4	2163.2	2185.3
175°	2219.1	2226.5	2240.7	2232.8	2242.3	2224.9	2226.5	2237.5	2171.6	2237.5	2226.5
177.5°	2239.7	2251.7	2243.9	2229.6	2231.2	2228.1	2234.3	2240.7	2230.2	2240.7	2234.3
180°	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7



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CATALOG NUMBER: MWL-4-55-33-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1402.9	1402.9	1402.9	1402.9	1402.9	1402.9
2.5°	1402.5	1411.9	1404.1	1395.6	1394.4	1394.2
5°	1398.6	1404.5	1398.6	1389.7	1389.5	1386.3
7.5°	1385.2	1379.9	1386.8	1377.3	1383.2	1378.1
10°	1369.9	1375.4	1371.4	1362.6	1366.5	1365.9
12.5°	1347.3	1346.7	1347.3	1341.4	1342.9	1349.4
15°	1324.1	1329.0	1325.6	1319.7	1325.3	1323.5
17.5°	1294.6	1300.5	1294.6	1291.2	1297.7	1299.9
20°	1267.4	1268.3	1269.0	1259.8	1263.9	1262.5
22.5°	1226.1	1233.9	1227.7	1228.3	1230.5	1228.5
25°	1196.6	1195.6	1198.3	1188.6	1188.2	1188.2
27.5°	1156.0	1148.4	1157.6	1151.3	1144.0	1146.0
30°	1115.7	1111.1	1118.8	1101.7	1093.9	1091.9
32.5°	1071.5	1066.6	1074.6	1051.6	1040.8	1032.9
35°	1018.7	1019.7	1023.5	995.0	978.3	975.3
37.5°	962.7	971.2	967.5	937.0	916.4	921.3
40°	905.6	914.2	908.9	873.1	864.3	863.3
42.5°	842.7	859.2	846.0	808.6	801.4	811.2
45°	776.9	799.2	780.1	747.7	746.7	759.5
47.5°	709.1	727.4	710.7	685.8	693.6	709.4
50°	639.7	651.1	642.9	627.8	643.5	658.3
52.5°	572.8	565.6	576.1	574.1	594.4	611.1
55°	502.5	481.4	505.6	522.0	546.6	561.3
57.5°	436.6	407.7	439.8	471.9	503.3	514.2
60°	371.7	349.7	373.3	419.1	455.5	464.3
62.5°	311.8	294.1	313.4	366.0	408.3	415.2
65°	262.6	252.8	264.2	313.4	356.6	367.4
67.5°	219.4	217.4	219.4	265.2	306.5	319.2
70°	182.0	183.0	182.0	220.4	256.7	269.5
72.5°	149.0	153.9	150.6	181.1	210.5	232.2
75°	119.5	128.4	119.5	142.1	170.2	193.8
77.5°	95.9	101.8	95.9	110.7	146.2	179.0
80°	72.3	78.2	72.3	90.8	142.7	181.3
82.5°	51.7	54.6	51.7	95.1	159.8	197.7
85°	41.5	34.0	44.6	119.1	192.6	226.1
87.5°	37.4	8.8	59.6	154.2	238.4	265.4
90°	24.8	2.6	84.9	203.3	288.7	312.4
92.5°	15.9	26.3	125.1	253.0	347.3	370.2
95°	10.2	64.3	168.5	314.1	411.6	421.1
97.5°	20.0	113.3	222.5	376.0	474.9	483.9
100°	53.2	173.5	290.5	439.3	534.1	537.7
102.5°	99.1	238.4	355.5	498.3	598.1	620.0
105°	160.8	312.8	423.5	574.9	664.1	689.1
107.5°	232.1	391.9	493.1	644.5	732.6	751.3
110°	309.0	474.2	563.8	712.5	807.5	827.5



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CATALOG NUMBER: MWL-4-55-33-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	391.3	559.7	636.5	775.8	888.3	903.4
115°	484.7	639.8	704.6	848.6	953.1	962.0
117.5°	568.5	734.7	774.2	902.4	1022.1	1023.7
120°	657.2	824.9	843.9	976.8	1088.6	1101.2
122.5°	747.4	910.4	910.4	1041.1	1147.1	1155.0
125°	831.2	1002.2	976.8	1088.6	1200.9	1204.2
127.5°	916.7	1095.5	1049.6	1150.3	1253.2	1248.4
130°	1010.0	1184.1	1116.1	1208.9	1302.3	1286.4
132.5°	1096.5	1279.1	1185.1	1269.0	1351.3	1360.8
135°	1181.9	1367.7	1243.7	1321.2	1401.9	1398.8
137.5°	1264.2	1450.0	1314.9	1362.4	1435.1	1444.7
140°	1345.0	1538.6	1378.2	1416.2	1476.3	1477.9
142.5°	1430.4	1627.3	1447.8	1470.0	1522.2	1512.7
145°	1525.4	1711.1	1534.9	1523.8	1557.0	1536.5
147.5°	1609.2	1784.0	1596.6	1563.4	1602.9	1576.0
150°	1702.6	1858.3	1682.0	1618.7	1642.5	1629.9
152.5°	1788.1	1916.9	1775.4	1661.5	1688.3	1672.5
155°	1871.9	1979.6	1865.7	1704.2	1723.2	1716.8
157.5°	1944.8	2033.3	1933.7	1748.5	1770.7	1758.0
160°	2008.1	2077.7	2012.8	1815.0	1802.4	1802.4
162.5°	2063.4	2120.4	2068.2	1905.2	1837.2	1807.1
165°	2112.6	2153.6	2117.3	2006.5	1903.6	1876.7
167.5°	2158.4	2185.3	2172.6	2088.8	2006.5	1949.5
170°	2194.8	2210.7	2193.3	2158.4	2116.3	2067.2
172.5°	2213.8	2220.1	2231.2	2209.1	2193.3	2160.6
175°	2224.9	2242.3	2232.8	2240.7	2226.5	2219.1
177.5°	2228.1	2231.2	2229.6	2243.9	2251.7	2239.7
180°	2240.7	2240.7	2240.7	2240.7	2240.7	2240.7

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