

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: P392615

Luminaire Tested: **MWL-3-44-33-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392615
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-3-44-33-UNV-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

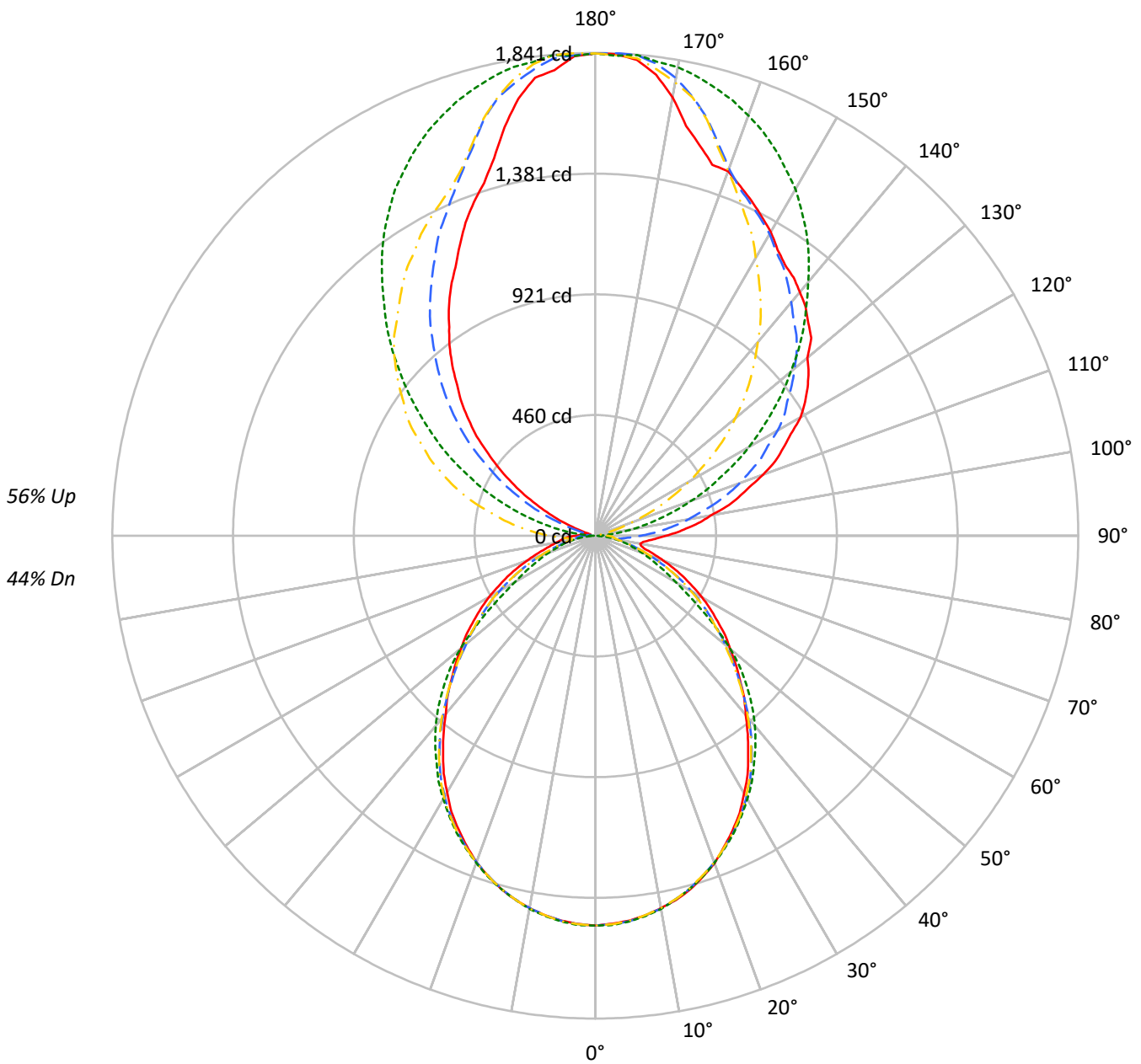
Lumens per Lamp: N/A
Luminaire Lumens: 7809.1 lumens
Efficiency: N/A
Efficacy: 86.7 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 90.1
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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44				
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43	37				
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	40	38	36	31				
3	81	71	64	58	73	66	59	54	55	50	46	45	41	39	35	33	31	27				
4	74	63	56	50	67	58	52	46	49	44	40	40	36	33	32	29	27	23				
5	68	56	49	43	62	52	45	40	44	39	34	36	32	29	29	26	24	21				
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	26	23	21	18				
7	58	46	38	33	53	42	36	31	36	31	27	30	26	23	24	21	19	16				
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	18	15	13				
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12797	12797	12797	12797
5°	12581	11735	12581	11735
10°	12306	10742	12306	10742
15°	12005	9798	11971	9798
20°	11590	8917	11556	8917
25°	11051	8101	11016	8101
30°	10442	7307	10394	7307
35°	9725	6524	9688	6524
40°	8981	5785	8929	5785
45°	8338	4990	8297	4990
50°	7710	4109	7665	4109
55°	7122	3072	7090	3072
60°	6514	2231	6496	2231
65°	5807	1676	5807	1676
70°	5004	1267	5028	1267
75°	4286	916	4372	916
80°	4829	589	4144	589
85°	7809	257	4586	257



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.8
10°-20°	392.3	5.0
20°-30°	572.5	7.3
30°-40°	647.3	8.3
40°-50°	605.4	7.8
50°-60°	478.0	6.1
60°-70°	312.8	4.0
70°-80°	163.6	2.1
80°-90°	103.1	1.3
90°-100°	151.6	1.9
100°-110°	285.7	3.7
110°-120°	488.5	6.3
120°-130°	663.7	8.5
130°-140°	757.1	9.7
140°-150°	755.1	9.7
150°-160°	657.6	8.4
160°-170°	462.6	5.9
170°-180°	172.3	2.2
0°-30°	1104.6	14.1
0°-40°	1751.9	22.4
0°-60°	2835.3	36.3
0°-90°	3414.8	43.7
90°-120°	925.8	11.9
90°-150°	3101.7	39.7
90°-180°	4394.0	56.3
0°-180°	7809.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1486	1486	1486	1486	1486	
5°	1473	1476	1473	1476	1473	140
15°	1397	1394	1393	1394	1397	393
25°	1238	1250	1234	1250	1238	570
35°	1015	1055	1011	1055	1015	635
45°	780	820	776	820	780	603
55°	568	497	566	497	568	510
65°	370	259	370	259	370	366
75°	196	130	200	130	196	220
85°	204	32	120	32	204	161
90°	269	2	74	2	269	149
95°	356	53	48	53	356	310
105°	565	257	18	257	565	595
115°	790	524	182	524	790	784
125°	988	823	449	823	988	882
135°	1148	1123	722	1123	1148	886
145°	1261	1405	971	1405	1261	795
155°	1409	1624	1222	1624	1409	650
165°	1540	1767	1489	1767	1540	437
175°	1821	1840	1782	1840	1821	170
180°	1839	1839	1839	1839	1839	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1
2.5°	1480.2	1483.8	1482.4	1483.7	1485.7	1482.4	1482.4	1483.8	1481.5	1483.8	1482.4
5°	1473.2	1475.8	1475.4	1475.4	1476.4	1475.4	1474.1	1475.8	1473.2	1475.8	1474.1
7.5°	1459.5	1463.1	1460.1	1462.4	1462.4	1461.1	1458.8	1461.8	1459.5	1461.8	1458.8
10°	1441.8	1445.1	1443.1	1443.1	1445.1	1441.8	1441.8	1442.5	1441.8	1442.5	1441.8
12.5°	1422.4	1422.1	1418.8	1420.8	1419.5	1420.8	1418.8	1419.5	1419.8	1419.5	1418.8
15°	1396.7	1394.1	1392.8	1393.8	1393.5	1392.5	1391.5	1391.5	1392.8	1391.5	1391.5
17.5°	1363.7	1364.1	1359.8	1362.5	1362.5	1362.5	1358.5	1362.8	1359.8	1362.8	1358.5
20°	1328.7	1327.4	1325.8	1327.5	1327.2	1326.2	1324.5	1324.8	1324.8	1324.8	1324.5
22.5°	1283.4	1286.4	1286.8	1290.5	1289.2	1289.2	1285.5	1283.8	1280.8	1283.8	1285.5
25°	1238.4	1243.4	1246.1	1251.5	1250.2	1250.2	1243.5	1239.5	1234.5	1239.5	1243.5
27.5°	1191.4	1192.4	1201.1	1209.8	1205.2	1208.5	1198.5	1188.5	1187.5	1188.5	1198.5
30°	1134.4	1139.4	1152.4	1162.1	1159.2	1159.5	1148.5	1135.5	1129.2	1135.5	1148.5
32.5°	1080.4	1082.4	1099.4	1111.1	1111.5	1108.5	1095.5	1077.2	1075.2	1077.2	1095.5
35°	1015.1	1020.1	1038.1	1059.1	1055.2	1055.2	1034.2	1016.2	1011.2	1016.2	1034.2
37.5°	954.1	957.1	977.1	1003.1	1002.5	999.2	973.2	953.2	950.2	953.2	973.2
40°	892.1	891.1	910.1	938.8	946.5	936.2	904.9	885.9	886.9	885.9	904.9
42.5°	840.1	828.1	840.8	872.8	885.5	870.2	836.9	822.9	834.9	822.9	836.9
45°	779.8	767.8	774.8	804.8	819.5	802.2	769.6	763.9	775.9	763.9	769.6
47.5°	725.8	710.8	709.8	731.5	752.5	730.2	704.6	706.9	721.9	706.9	704.6
50°	670.8	656.8	646.8	661.5	672.2	658.9	641.6	651.6	666.9	651.6	641.6
52.5°	623.8	604.8	587.5	591.5	583.2	588.9	583.6	599.6	619.9	599.6	583.6
55°	568.5	556.5	532.5	519.2	496.9	516.6	528.6	552.6	565.9	552.6	528.6
57.5°	519.5	508.5	479.5	448.2	416.9	445.6	475.6	504.6	516.9	504.6	475.6
60°	469.2	458.2	423.2	377.9	353.9	376.6	420.6	455.6	467.9	455.6	420.6
62.5°	417.2	410.2	370.2	318.9	304.6	317.6	367.6	407.6	415.9	407.6	367.6
65°	369.9	357.9	316.9	267.9	258.6	266.6	315.6	356.6	369.9	356.6	315.6
67.5°	321.9	306.9	267.9	222.6	221.6	222.6	266.6	305.6	321.9	305.6	266.6
70°	274.6	257.6	221.6	184.6	188.6	184.6	221.6	258.9	275.9	258.9	221.6
72.5°	233.6	210.6	181.6	151.6	155.3	150.3	181.6	211.9	236.2	211.9	181.6
75°	195.6	169.6	144.3	121.3	130.3	121.3	145.6	170.9	199.5	170.9	145.6
77.5°	178.0	143.8	111.3	95.3	104.3	95.3	112.6	139.9	172.8	139.9	112.6
80°	174.1	138.0	91.2	73.3	79.3	73.3	88.6	117.2	149.4	117.2	88.6
82.5°	183.2	147.6	90.8	52.3	56.3	52.3	75.2	100.8	133.9	100.8	75.2
85°	204.5	172.5	107.4	43.2	32.3	40.6	69.7	93.3	120.1	93.3	69.7
87.5°	233.3	208.6	136.0	53.7	9.0	35.5	62.0	83.9	99.5	83.9	62.0
90°	268.9	248.0	173.8	73.0	2.3	23.6	45.2	64.8	74.1	64.8	45.2
92.5°	313.1	293.5	214.9	104.2	21.8	14.6	36.9	53.2	58.5	53.2	36.9
95°	355.8	346.0	262.7	138.1	53.0	8.2	28.9	44.6	47.9	44.6	28.9
97.5°	404.9	395.4	309.9	182.9	93.2	16.6	22.8	38.2	41.2	38.2	22.8
100°	446.6	441.3	360.3	238.7	142.6	43.9	16.1	33.4	37.4	33.4	16.1
102.5°	511.6	492.0	408.6	292.0	195.9	81.5	21.5	24.4	28.4	24.4	21.5
105°	565.0	541.8	472.2	347.8	256.9	132.2	52.7	19.6	18.1	19.6	52.7
107.5°	614.8	600.8	529.4	405.0	321.9	190.7	96.8	50.1	32.9	50.1	96.8
110°	679.8	663.2	585.3	462.1	389.4	253.0	147.5	91.6	71.8	91.6	147.5



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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°	742.1	729.4	637.2	521.9	459.6	320.6	209.8	143.6	125.1	143.6	209.8
115°	790.2	782.7	697.0	577.8	524.5	397.2	278.7	204.6	182.3	204.6	278.7
117.5°	839.9	838.6	741.1	634.9	602.4	466.0	342.3	265.7	241.0	265.7	342.3
120°	903.5	893.1	802.2	692.1	676.5	538.8	412.5	335.8	311.2	335.8	412.5
122.5°	947.7	941.2	854.2	747.6	747.6	613.8	480.0	403.4	377.4	403.4	480.0
125°	987.9	985.4	893.1	802.2	823.0	682.7	555.4	477.4	448.9	477.4	555.4
127.5°	1024.3	1028.2	943.8	861.9	899.6	752.8	629.4	543.7	513.8	543.7	629.4
130°	1055.5	1068.5	991.8	916.5	972.4	829.5	695.7	609.9	590.5	609.9	695.7
132.5°	1116.6	1108.8	1041.2	972.4	1050.3	899.6	765.8	676.2	654.1	676.2	765.8
135°	1147.7	1150.3	1084.1	1020.4	1123.0	969.8	832.1	743.7	721.7	743.7	832.1
137.5°	1185.4	1177.6	1117.9	1078.9	1190.6	1037.3	897.0	815.2	780.1	815.2	897.0
140°	1212.7	1211.4	1162.0	1130.8	1263.3	1103.6	963.3	880.1	847.7	880.1	963.3
142.5°	1241.3	1249.1	1206.2	1188.0	1336.1	1173.7	1034.7	943.8	912.6	943.8	1034.7
145°	1260.7	1277.6	1250.3	1259.4	1404.9	1251.6	1097.1	1004.8	971.1	1004.8	1097.1
147.5°	1293.2	1315.3	1282.8	1310.1	1464.7	1320.5	1159.4	1068.5	1038.6	1068.5	1159.4
150°	1337.4	1347.8	1328.3	1380.3	1525.7	1397.1	1223.1	1129.5	1099.7	1129.5	1223.1
152.5°	1372.5	1385.4	1363.4	1456.9	1573.8	1467.3	1293.2	1189.3	1154.2	1189.3	1293.2
155°	1408.8	1414.0	1398.4	1530.9	1624.5	1536.1	1349.1	1255.5	1221.8	1255.5	1349.1
157.5°	1442.6	1453.0	1434.8	1586.8	1668.6	1595.9	1412.7	1321.8	1291.9	1321.8	1412.7
160°	1479.0	1479.0	1489.4	1651.7	1705.0	1647.8	1480.3	1394.5	1353.0	1394.5	1480.3
162.5°	1482.9	1507.6	1563.4	1697.2	1740.1	1693.3	1553.0	1446.5	1410.1	1446.5	1553.0
165°	1540.0	1562.1	1646.5	1737.5	1767.4	1733.6	1642.7	1532.2	1489.4	1532.2	1642.7
167.5°	1599.8	1646.5	1714.1	1782.9	1793.3	1771.3	1711.5	1634.9	1595.9	1634.9	1711.5
170°	1697.2	1737.5	1771.3	1799.8	1814.1	1801.1	1754.4	1716.7	1692.0	1716.7	1754.4
172.5°	1772.9	1799.8	1812.8	1831.0	1821.9	1816.7	1793.3	1775.1	1761.2	1775.1	1793.3
175°	1820.9	1827.1	1838.8	1832.3	1840.1	1825.8	1827.1	1836.2	1781.9	1836.2	1827.1
177.5°	1837.8	1847.9	1841.4	1829.7	1831.0	1828.4	1833.6	1838.8	1830.0	1838.8	1833.6
180°	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1486.1	1486.1	1486.1	1486.1	1486.1	1486.1
2.5°	1482.4	1485.7	1483.7	1482.4	1483.8	1480.2
5°	1475.4	1476.4	1475.4	1475.4	1475.8	1473.2
7.5°	1461.1	1462.4	1462.4	1460.1	1463.1	1459.5
10°	1441.8	1445.1	1443.1	1443.1	1445.1	1441.8
12.5°	1420.8	1419.5	1420.8	1418.8	1422.1	1422.4
15°	1392.5	1393.5	1393.8	1392.8	1394.1	1396.7
17.5°	1362.5	1362.5	1362.5	1359.8	1364.1	1363.7
20°	1326.2	1327.2	1327.5	1325.8	1327.4	1328.7
22.5°	1289.2	1289.2	1290.5	1286.8	1286.4	1283.4
25°	1250.2	1250.2	1251.5	1246.1	1243.4	1238.4
27.5°	1208.5	1205.2	1209.8	1201.1	1192.4	1191.4
30°	1159.5	1159.2	1162.1	1152.4	1139.4	1134.4
32.5°	1108.5	1111.5	1111.1	1099.4	1082.4	1080.4
35°	1055.2	1055.2	1059.1	1038.1	1020.1	1015.1
37.5°	999.2	1002.5	1003.1	977.1	957.1	954.1
40°	936.2	946.5	938.8	910.1	891.1	892.1
42.5°	870.2	885.5	872.8	840.8	828.1	840.1
45°	802.2	819.5	804.8	774.8	767.8	779.8
47.5°	730.2	752.5	731.5	709.8	710.8	725.8
50°	658.9	672.2	661.5	646.8	656.8	670.8
52.5°	588.9	583.2	591.5	587.5	604.8	623.8
55°	516.6	496.9	519.2	532.5	556.5	568.5
57.5°	445.6	416.9	448.2	479.5	508.5	519.5
60°	376.6	353.9	377.9	423.2	458.2	469.2
62.5°	317.6	304.6	318.9	370.2	410.2	417.2
65°	266.6	258.6	267.9	316.9	357.9	369.9
67.5°	222.6	221.6	222.6	267.9	306.9	321.9
70°	184.6	188.6	184.6	221.6	257.6	274.6
72.5°	150.3	155.3	151.6	181.6	210.6	233.6
75°	121.3	130.3	121.3	144.3	169.6	195.6
77.5°	95.3	104.3	95.3	111.3	143.8	178.0
80°	73.3	79.3	73.3	91.2	138.0	174.1
82.5°	52.3	56.3	52.3	90.8	147.6	183.2
85°	40.6	32.3	43.2	107.4	172.5	204.5
87.5°	35.5	9.0	53.7	136.0	208.6	233.3
90°	23.6	2.3	73.0	173.8	248.0	268.9
92.5°	14.6	21.8	104.2	214.9	293.5	313.1
95°	8.2	53.0	138.1	262.7	346.0	355.8
97.5°	16.6	93.2	182.9	309.9	395.4	404.9
100°	43.9	142.6	238.7	360.3	441.3	446.6
102.5°	81.5	195.9	292.0	408.6	492.0	511.6
105°	132.2	256.9	347.8	472.2	541.8	565.0
107.5°	190.7	321.9	405.0	529.4	600.8	614.8
110°	253.0	389.4	462.1	585.3	663.2	679.8



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CATALOG NUMBER: MWL-3-44-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	320.6	459.6	521.9	637.2	729.4	742.1
115°	397.2	524.5	577.8	697.0	782.7	790.2
117.5°	466.0	602.4	634.9	741.1	838.6	839.9
120°	538.8	676.5	692.1	802.2	893.1	903.5
122.5°	613.8	747.6	747.6	854.2	941.2	947.7
125°	682.7	823.0	802.2	893.1	985.4	987.9
127.5°	752.8	899.6	861.9	943.8	1028.2	1024.3
130°	829.5	972.4	916.5	991.8	1068.5	1055.5
132.5°	899.6	1050.3	972.4	1041.2	1108.8	1116.6
135°	969.8	1123.0	1020.4	1084.1	1150.3	1147.7
137.5°	1037.3	1190.6	1078.9	1117.9	1177.6	1185.4
140°	1103.6	1263.3	1130.8	1162.0	1211.4	1212.7
142.5°	1173.7	1336.1	1188.0	1206.2	1249.1	1241.3
145°	1251.6	1404.9	1259.4	1250.3	1277.6	1260.7
147.5°	1320.5	1464.7	1310.1	1282.8	1315.3	1293.2
150°	1397.1	1525.7	1380.3	1328.3	1347.8	1337.4
152.5°	1467.3	1573.8	1456.9	1363.4	1385.4	1372.5
155°	1536.1	1624.5	1530.9	1398.4	1414.0	1408.8
157.5°	1595.9	1668.6	1586.8	1434.8	1453.0	1442.6
160°	1647.8	1705.0	1651.7	1489.4	1479.0	1479.0
162.5°	1693.3	1740.1	1697.2	1563.4	1507.6	1482.9
165°	1733.6	1767.4	1737.5	1646.5	1562.1	1540.0
167.5°	1771.3	1793.3	1782.9	1714.1	1646.5	1599.8
170°	1801.1	1814.1	1799.8	1771.3	1737.5	1697.2
172.5°	1816.7	1821.9	1831.0	1812.8	1799.8	1772.9
175°	1825.8	1840.1	1832.3	1838.8	1827.1	1820.9
177.5°	1828.4	1831.0	1829.7	1841.4	1847.9	1837.8
180°	1838.8	1838.8	1838.8	1838.8	1838.8	1838.8

(END OF REPORT)