

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: P392696

Luminaire Tested: **MWL-4-55-60-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392696
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-4-55-60-UNV-L940-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10458.5 lumens
Efficiency: N/A
Efficacy: 80.1 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: General Diffuse

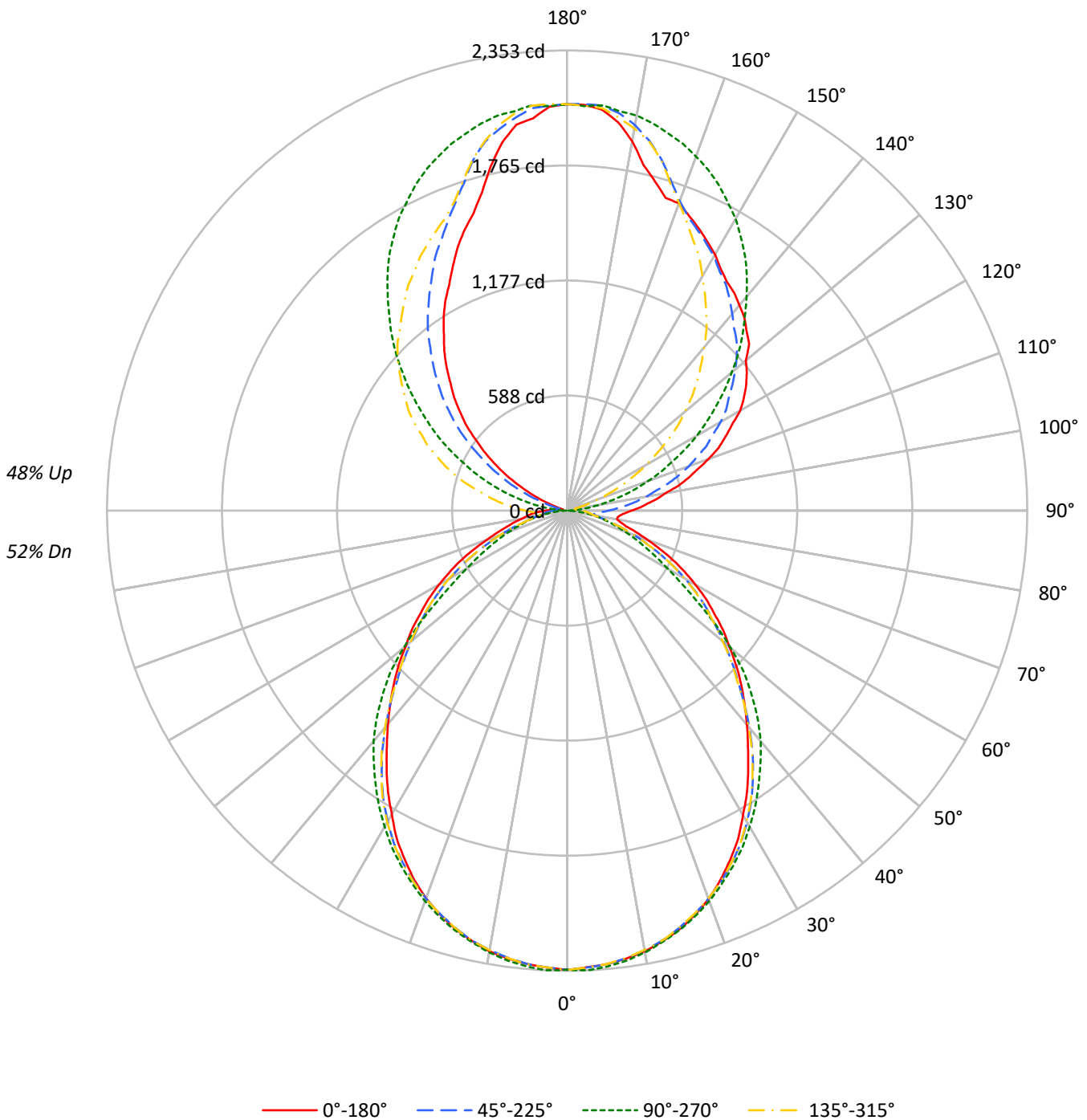
Input Watts (W): 130.492
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	44
2	90	83	77	71	83	77	71	67	66	62	58	55	53	50	46	44	42	38
3	82	73	66	60	76	68	61	56	58	53	49	49	46	43	41	38	36	32
4	75	65	57	51	70	60	53	48	52	47	42	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	33	30	28	25
6	64	52	44	38	59	49	41	36	42	36	32	36	32	28	30	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	19
8	55	43	35	30	51	40	33	28	35	29	25	30	26	23	26	22	20	17
9	51	39	32	27	48	37	30	25	32	27	23	28	23	20	24	20	18	16
10	48	36	29	24	44	34	27	23	30	24	21	26	21	18	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	15165	15165	15165	15165
5°	14957	13953	14957	13953
10°	14737	12791	14737	12791
15°	14422	11714	14393	11714
20°	14000	10708	13971	10708
25°	13398	9747	13369	9747
30°	12651	8824	12609	8824
35°	11859	7919	11826	7919
40°	11092	7059	11047	7059
45°	10406	6100	10369	6100
50°	9664	5001	9623	5001
55°	9003	3768	8973	3768
60°	8279	2799	8263	2799
65°	7441	2122	7441	2122
70°	6397	1571	6417	1571
75°	5619	1142	5699	1142
80°	6060	740	5408	740
85°	9214	334	5991	334



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.4	2.1
10°-20°	624.2	6.0
20°-30°	915.3	8.8
30°-40°	1036.5	9.9
40°-50°	976.6	9.3
50°-60°	781.1	7.5
60°-70°	513.2	4.9
70°-80°	263.2	2.5
80°-90°	148.4	1.4
90°-100°	180.9	1.7
100°-110°	324.2	3.1
110°-120°	552.5	5.3
120°-130°	750.5	7.2
130°-140°	855.9	8.2
140°-150°	853.7	8.2
150°-160°	743.3	7.1
160°-170°	522.9	5.0
170°-180°	194.7	1.9
0°-30°	1760.9	16.8
0°-40°	2797.4	26.7
0°-60°	4555.1	43.6
0°-90°	5479.9	52.4
90°-120°	1057.6	10.1
90°-150°	3517.7	33.6
90°-180°	4979.0	47.6
0°-180°	10458.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2348	2348	2348	2348	2348	
5°	2328	2340	2328	2340	2328	221
15°	2217	2221	2213	2221	2217	624
25°	1972	2006	1967	2006	1972	906
35°	1614	1708	1609	1708	1614	1010
45°	1258	1336	1254	1336	1258	970
55°	918	812	916	812	918	824
65°	596	437	596	437	596	589
75°	313	216	317	216	313	346
85°	272	56	177	56	272	221
90°	330	2	110	2	330	182
95°	414	60	66	60	414	359
105°	640	291	22	291	640	674
115°	893	593	206	593	893	886
125°	1117	930	508	930	1117	998
135°	1298	1269	816	1269	1298	1001
145°	1426	1587	1099	1587	1426	899
155°	1592	1836	1381	1836	1592	734
165°	1740	1997	1683	1997	1740	494
175°	2057	2080	2013	2080	2057	192
180°	2078	2078	2078	2078	2078	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2
2.5°	2337.3	2344.9	2338.7	2352.0	2352.9	2350.5	2338.7	2344.9	2338.9	2344.9	2338.7
5°	2328.2	2334.9	2328.7	2339.6	2340.5	2339.6	2327.2	2334.9	2328.2	2334.9	2327.2
7.5°	2310.6	2317.2	2308.1	2322.3	2321.4	2320.8	2306.6	2315.7	2310.6	2315.7	2306.6
10°	2288.4	2288.0	2282.6	2294.4	2294.4	2293.0	2281.1	2285.1	2288.4	2285.1	2281.1
12.5°	2255.8	2256.2	2252.0	2261.1	2258.7	2261.1	2252.0	2253.2	2252.9	2253.2	2252.0
15°	2217.2	2213.3	2210.1	2222.8	2221.4	2221.4	2208.6	2210.4	2212.8	2210.4	2208.6
17.5°	2168.9	2167.8	2163.6	2174.9	2175.8	2174.9	2162.1	2166.3	2164.5	2166.3	2162.1
20°	2114.2	2113.7	2112.6	2124.8	2125.0	2123.2	2111.1	2110.7	2109.8	2110.7	2111.1
22.5°	2046.2	2053.5	2054.3	2069.2	2066.7	2067.7	2052.8	2050.6	2043.3	2050.6	2052.8
25°	1971.5	1977.9	1990.1	2007.2	2005.7	2005.7	1987.2	1973.5	1967.2	1973.5	1987.2
27.5°	1893.2	1902.3	1920.9	1943.1	1941.0	1941.6	1918.0	1897.9	1888.8	1897.9	1918.0
30°	1798.4	1810.3	1839.4	1868.9	1866.3	1866.0	1835.0	1805.9	1792.5	1805.9	1835.0
32.5°	1711.0	1720.1	1753.8	1792.4	1790.4	1789.5	1749.4	1714.1	1705.0	1714.1	1749.4
35°	1613.8	1622.9	1657.6	1706.8	1707.8	1702.3	1653.1	1618.5	1609.4	1618.5	1653.1
37.5°	1518.2	1523.6	1558.3	1616.6	1623.7	1612.1	1553.8	1519.2	1513.7	1519.2	1553.8
40°	1430.7	1425.2	1448.9	1515.8	1539.9	1512.8	1443.0	1419.3	1424.8	1419.3	1443.0
42.5°	1343.2	1332.3	1342.7	1411.0	1441.5	1408.0	1338.2	1326.4	1337.3	1326.4	1338.2
45°	1258.0	1234.3	1235.2	1299.9	1335.8	1296.9	1229.3	1229.8	1253.5	1229.8	1229.3
47.5°	1172.3	1149.5	1140.4	1188.2	1228.3	1186.6	1134.5	1145.1	1167.8	1145.1	1134.5
50°	1081.2	1066.6	1042.9	1075.2	1091.0	1072.2	1037.0	1060.7	1076.7	1060.7	1037.0
52.5°	1005.6	987.4	952.2	964.9	956.1	961.9	947.7	981.4	1001.1	981.4	947.7
55°	918.5	908.5	869.3	849.5	812.5	846.6	864.8	904.0	915.5	904.0	864.8
57.5°	841.9	833.7	783.6	740.2	692.3	737.3	779.2	829.3	838.9	829.3	779.2
60°	756.6	756.6	696.4	627.6	592.0	626.1	693.5	753.7	755.1	753.7	693.5
62.5°	675.5	672.8	609.0	527.3	511.3	525.9	606.1	669.8	674.0	669.8	606.1
65°	595.7	582.9	521.0	441.7	436.6	440.2	519.5	581.5	595.7	581.5	519.5
67.5°	513.7	498.2	437.1	366.4	374.6	366.4	435.7	496.7	513.7	496.7	435.7
70°	435.7	413.8	363.7	302.7	311.8	302.7	363.7	415.3	437.1	415.3	363.7
72.5°	371.9	336.4	292.6	248.0	261.1	246.5	292.6	337.8	374.8	337.8	292.6
75°	312.7	272.6	226.5	198.3	216.5	198.3	228.0	274.1	317.2	274.1	228.0
77.5°	280.7	229.3	177.3	153.6	173.7	153.6	178.8	224.9	274.9	224.9	178.8
80°	259.2	209.7	145.2	114.4	132.7	114.4	142.3	186.2	231.3	186.2	142.3
82.5°	259.8	211.9	136.5	82.5	91.7	82.5	118.8	159.2	204.0	159.2	118.8
85°	272.4	231.3	150.5	67.8	56.1	64.9	108.0	141.9	177.1	141.9	108.0
87.5°	296.1	265.6	174.8	77.1	18.2	56.6	91.2	124.7	145.0	124.7	91.2
90°	329.6	304.0	213.9	93.3	2.4	37.5	68.7	97.2	109.6	97.2	68.7
92.5°	373.2	351.0	256.4	123.3	24.4	22.0	55.4	79.6	85.7	79.6	55.4
95°	414.0	405.3	305.8	158.9	59.6	12.2	41.7	64.9	66.3	64.9	41.7
97.5°	464.0	456.6	356.7	207.2	105.0	19.4	32.5	53.2	53.2	53.2	32.5
100°	508.5	505.1	409.9	270.2	161.7	50.2	21.2	44.6	46.4	44.6	21.2
102.5°	579.3	559.0	462.8	330.5	221.9	92.7	25.7	30.9	33.6	30.9	25.7
105°	639.7	615.5	533.8	393.5	290.8	150.0	60.0	25.8	22.1	25.8	60.0
107.5°	696.4	680.0	598.3	458.0	364.2	216.0	109.8	57.9	39.2	57.9	109.8
110°	768.0	750.3	661.4	522.6	440.4	286.4	167.0	104.9	81.4	104.9	167.0



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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°	838.3	825.2	720.0	590.0	519.7	362.7	237.4	163.5	141.5	163.5	237.4
115°	892.6	884.4	787.6	653.2	593.0	449.3	315.1	231.6	206.1	231.6	315.1
117.5°	949.8	947.5	837.4	718.6	682.0	527.9	387.0	300.5	273.6	300.5	387.0
120°	1021.7	1010.0	906.4	783.2	765.5	610.1	466.3	380.7	352.8	380.7	466.3
122.5°	1071.5	1064.3	965.0	844.8	844.8	693.7	542.6	456.9	427.6	456.9	542.6
125°	1117.1	1114.1	1010.0	906.4	929.9	771.4	628.6	540.6	508.3	540.6	628.6
127.5°	1158.1	1162.6	1067.2	973.9	1016.4	850.6	712.2	615.4	581.6	615.4	712.2
130°	1193.4	1208.0	1121.5	1035.5	1098.5	937.2	787.0	690.2	668.2	690.2	787.0
132.5°	1262.3	1253.5	1177.2	1099.4	1186.5	1017.3	866.2	765.0	740.1	765.0	866.2
135°	1297.5	1300.4	1225.6	1153.7	1268.7	1096.5	941.0	841.3	816.3	841.3	941.0
137.5°	1340.0	1331.2	1263.8	1219.8	1345.0	1172.8	1014.4	921.9	882.3	921.9	1014.4
140°	1370.8	1369.4	1313.6	1278.5	1427.1	1247.7	1089.2	995.3	958.7	995.3	1089.2
142.5°	1403.1	1412.8	1363.6	1343.0	1509.3	1326.8	1169.9	1068.1	1032.0	1068.1	1169.9
145°	1426.1	1445.1	1413.4	1423.7	1587.0	1414.8	1240.3	1137.1	1098.9	1137.1	1240.3
147.5°	1462.7	1487.6	1450.1	1480.9	1654.6	1492.6	1310.7	1208.9	1175.2	1208.9	1310.7
150°	1511.7	1523.5	1501.4	1560.1	1723.4	1579.1	1382.6	1277.0	1243.2	1277.0	1382.6
152.5°	1551.2	1565.9	1541.0	1646.6	1777.7	1658.4	1461.8	1344.4	1304.9	1344.4	1461.8
155°	1592.3	1598.3	1580.6	1730.3	1835.9	1736.1	1524.9	1419.2	1381.1	1419.2	1524.9
157.5°	1630.5	1642.3	1621.7	1793.3	1885.7	1803.6	1596.8	1494.1	1460.3	1494.1	1596.8
160°	1671.6	1671.6	1683.3	1866.7	1926.8	1862.3	1673.1	1576.2	1529.3	1576.2	1673.1
162.5°	1676.0	1703.8	1766.9	1918.0	1966.4	1913.6	1755.1	1634.9	1593.8	1634.9	1755.1
165°	1740.5	1765.4	1860.8	1963.5	1997.2	1959.1	1856.4	1731.7	1683.3	1731.7	1856.4
167.5°	1808.0	1860.8	1937.1	2015.7	2027.5	2002.5	1934.2	1847.6	1803.6	1847.6	1934.2
170°	1917.1	1963.5	2001.6	2033.9	2051.0	2035.4	1982.6	1940.0	1911.2	1940.0	1982.6
172.5°	2002.8	2033.9	2048.6	2070.0	2059.7	2053.9	2026.6	2006.1	1989.6	2006.1	2026.6
175°	2057.0	2064.7	2077.9	2071.5	2080.3	2064.2	2064.7	2074.9	2013.0	2074.9	2064.7
177.5°	2076.1	2088.2	2080.9	2068.6	2070.0	2067.1	2072.0	2077.9	2067.3	2077.9	2072.0
180°	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9



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CATALOG NUMBER: MWL-4-55-60-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2348.2	2348.2	2348.2	2348.2	2348.2	2348.2
2.5°	2350.5	2352.9	2352.0	2338.7	2344.9	2337.3
5°	2339.6	2340.5	2339.6	2328.7	2334.9	2328.2
7.5°	2320.8	2321.4	2322.3	2308.1	2317.2	2310.6
10°	2293.0	2294.4	2294.4	2282.6	2288.0	2288.4
12.5°	2261.1	2258.7	2261.1	2252.0	2256.2	2255.8
15°	2221.4	2221.4	2222.8	2210.1	2213.3	2217.2
17.5°	2174.9	2175.8	2174.9	2163.6	2167.8	2168.9
20°	2123.2	2125.0	2124.8	2112.6	2113.7	2114.2
22.5°	2067.7	2066.7	2069.2	2054.3	2053.5	2046.2
25°	2005.7	2005.7	2007.2	1990.1	1977.9	1971.5
27.5°	1941.6	1941.0	1943.1	1920.9	1902.3	1893.2
30°	1866.0	1866.3	1868.9	1839.4	1810.3	1798.4
32.5°	1789.5	1790.4	1792.4	1753.8	1720.1	1711.0
35°	1702.3	1707.8	1706.8	1657.6	1622.9	1613.8
37.5°	1612.1	1623.7	1616.6	1558.3	1523.6	1518.2
40°	1512.8	1539.9	1515.8	1448.9	1425.2	1430.7
42.5°	1408.0	1441.5	1411.0	1342.7	1332.3	1343.2
45°	1296.9	1335.8	1299.9	1235.2	1234.3	1258.0
47.5°	1186.6	1228.3	1188.2	1140.4	1149.5	1172.3
50°	1072.2	1091.0	1075.2	1042.9	1066.6	1081.2
52.5°	961.9	956.1	964.9	952.2	987.4	1005.6
55°	846.6	812.5	849.5	869.3	908.5	918.5
57.5°	737.3	692.3	740.2	783.6	833.7	841.9
60°	626.1	592.0	627.6	696.4	756.6	756.6
62.5°	525.9	511.3	527.3	609.0	672.8	675.5
65°	440.2	436.6	441.7	521.0	582.9	595.7
67.5°	366.4	374.6	366.4	437.1	498.2	513.7
70°	302.7	311.8	302.7	363.7	413.8	435.7
72.5°	246.5	261.1	248.0	292.6	336.4	371.9
75°	198.3	216.5	198.3	226.5	272.6	312.7
77.5°	153.6	173.7	153.6	177.3	229.3	280.7
80°	114.4	132.7	114.4	145.2	209.7	259.2
82.5°	82.5	91.7	82.5	136.5	211.9	259.8
85°	64.9	56.1	67.8	150.5	231.3	272.4
87.5°	56.6	18.2	77.1	174.8	265.6	296.1
90°	37.5	2.4	93.3	213.9	304.0	329.6
92.5°	22.0	24.4	123.3	256.4	351.0	373.2
95°	12.2	59.6	158.9	305.8	405.3	414.0
97.5°	19.4	105.0	207.2	356.7	456.6	464.0
100°	50.2	161.7	270.2	409.9	505.1	508.5
102.5°	92.7	221.9	330.5	462.8	559.0	579.3
105°	150.0	290.8	393.5	533.8	615.5	639.7
107.5°	216.0	364.2	458.0	598.3	680.0	696.4
110°	286.4	440.4	522.6	661.4	750.3	768.0



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CATALOG NUMBER: MWL-4-55-60-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	362.7	519.7	590.0	720.0	825.2	838.3
115°	449.3	593.0	653.2	787.6	884.4	892.6
117.5°	527.9	682.0	718.6	837.4	947.5	949.8
120°	610.1	765.5	783.2	906.4	1010.0	1021.7
122.5°	693.7	844.8	844.8	965.0	1064.3	1071.5
125°	771.4	929.9	906.4	1010.0	1114.1	1117.1
127.5°	850.6	1016.4	973.9	1067.2	1162.6	1158.1
130°	937.2	1098.5	1035.5	1121.5	1208.0	1193.4
132.5°	1017.3	1186.5	1099.4	1177.2	1253.5	1262.3
135°	1096.5	1268.7	1153.7	1225.6	1300.4	1297.5
137.5°	1172.8	1345.0	1219.8	1263.8	1331.2	1340.0
140°	1247.7	1427.1	1278.5	1313.6	1369.4	1370.8
142.5°	1326.8	1509.3	1343.0	1363.6	1412.8	1403.1
145°	1414.8	1587.0	1423.7	1413.4	1445.1	1426.1
147.5°	1492.6	1654.6	1480.9	1450.1	1487.6	1462.7
150°	1579.1	1723.4	1560.1	1501.4	1523.5	1511.7
152.5°	1658.4	1777.7	1646.6	1541.0	1565.9	1551.2
155°	1736.1	1835.9	1730.3	1580.6	1598.3	1592.3
157.5°	1803.6	1885.7	1793.3	1621.7	1642.3	1630.5
160°	1862.3	1926.8	1866.7	1683.3	1671.6	1671.6
162.5°	1913.6	1966.4	1918.0	1766.9	1703.8	1676.0
165°	1959.1	1997.2	1963.5	1860.8	1765.4	1740.5
167.5°	2002.5	2027.5	2015.7	1937.1	1860.8	1808.0
170°	2035.4	2051.0	2033.9	2001.6	1963.5	1917.1
172.5°	2053.9	2059.7	2070.0	2048.6	2033.9	2002.8
175°	2064.2	2080.3	2071.5	2077.9	2064.7	2057.0
177.5°	2067.1	2070.0	2068.6	2080.9	2088.2	2076.1
180°	2077.9	2077.9	2077.9	2077.9	2077.9	2077.9

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