

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: P392665

Luminaire Tested: **MWL-4-34-60-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392665
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-4-34-60-UNV-L935-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

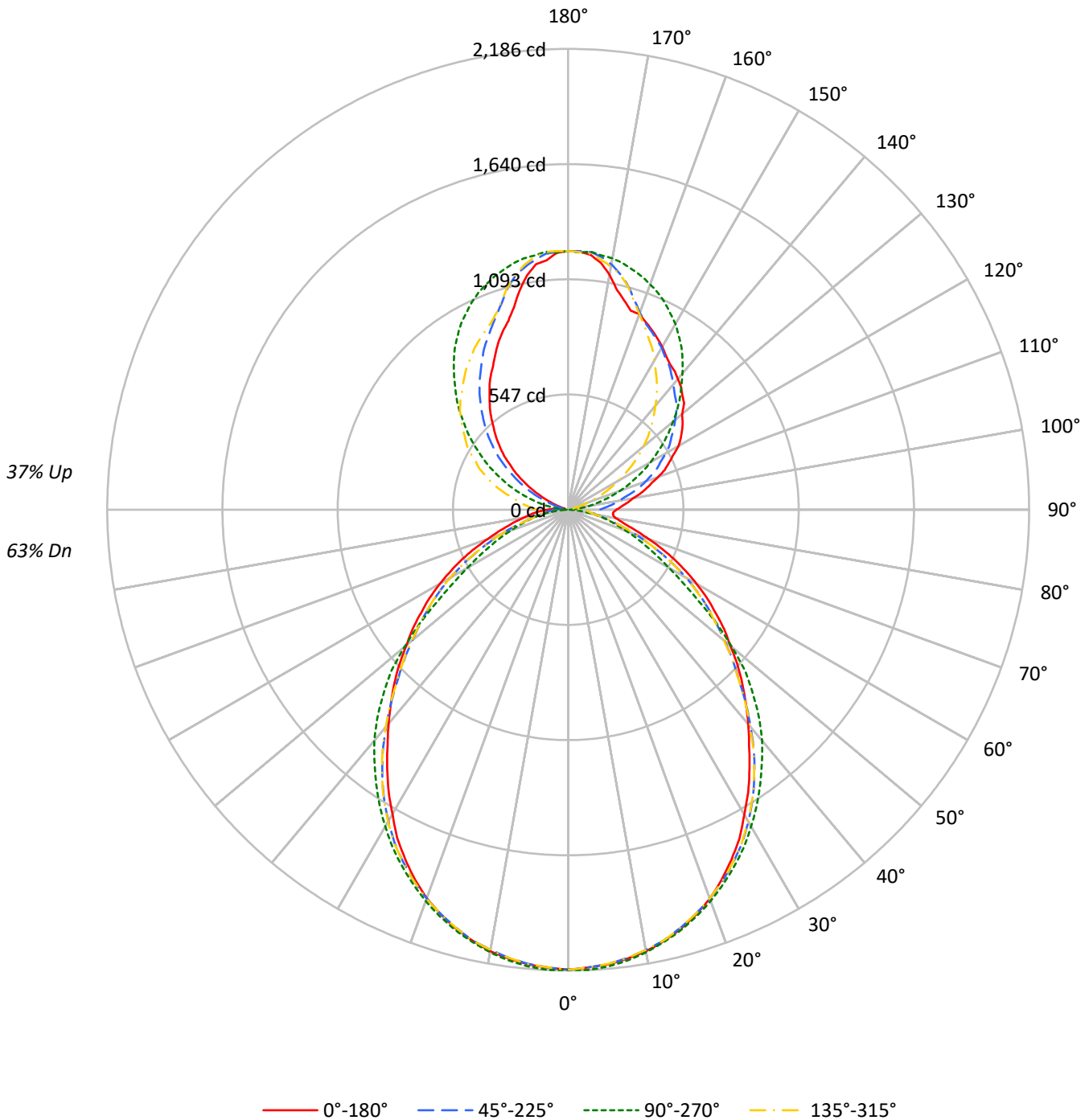
Lumens per Lamp: N/A
Luminaire Lumens: 8032.8 lumens
Efficiency: N/A
Efficacy: 80.7 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 99.485
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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CATALOG NUMBER: MWL-4-34-60-UNV-L935-EDD

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	74	70	71	66	63	62	59	56	54	52	50	46
3	84	75	68	62	79	71	64	59	63	58	53	55	51	48	48	45	43	39
4	78	67	59	53	73	63	56	50	56	50	46	49	45	41	43	40	37	34
5	71	60	52	46	67	56	49	44	50	44	40	45	40	36	39	36	33	30
6	66	54	46	40	62	51	44	38	46	40	35	40	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23
8	57	44	37	31	53	42	35	30	38	32	28	34	29	26	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	27	23	28	24	21	19
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	14093	14093	14093	14093
5°	13910	12964	13910	12964
10°	13697	11886	13697	11886
15°	13394	10890	13377	10890
20°	13001	9957	12984	9957
25°	12445	9064	12426	9064
30°	11747	8204	11723	8204
35°	11012	7362	10994	7362
40°	10298	6559	10271	6559
45°	9660	5666	9639	5666
50°	8967	4646	8945	4646
55°	8355	3501	8337	3501
60°	7685	2599	7676	2599
65°	6908	1970	6908	1970
70°	5939	1457	5953	1457
75°	5211	1060	5259	1060
80°	5324	686	4940	686
85°	7188	309	5287	309



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.7	2.6
10°-20°	580.1	7.2
20°-30°	850.7	10.6
30°-40°	963.1	12.0
40°-50°	907.3	11.3
50°-60°	725.5	9.0
60°-70°	476.4	5.9
70°-80°	243.6	3.0
80°-90°	124.5	1.5
90°-100°	119.9	1.5
100°-110°	193.6	2.4
110°-120°	326.7	4.1
120°-130°	443.5	5.5
130°-140°	505.6	6.3
140°-150°	504.2	6.3
150°-160°	438.8	5.5
160°-170°	308.7	3.8
170°-180°	115.0	1.4
0°-30°	1636.5	20.4
0°-40°	2599.6	32.4
0°-60°	4232.3	52.7
0°-90°	5076.8	63.2
90°-120°	640.2	8.0
90°-150°	2093.5	26.1
90°-180°	2956.0	36.8
0°-180°	8032.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2182	2182	2182	2182	2182	
5°	2165	2175	2165	2175	2165	205
15°	2059	2065	2057	2065	2059	580
25°	1831	1865	1828	1865	1831	842
35°	1499	1588	1496	1588	1499	937
45°	1168	1241	1165	1241	1168	900
55°	852	755	851	755	852	764
65°	553	405	553	405	553	547
75°	290	201	293	201	290	319
85°	212	52	156	52	212	177
90°	228	2	98	2	228	126
95°	265	36	60	36	265	227
105°	381	172	17	172	381	403
115°	528	350	123	350	528	524
125°	660	549	301	549	660	589
135°	766	749	483	749	766	591
145°	842	937	650	937	842	531
155°	940	1084	816	1084	940	434
165°	1028	1179	994	1179	1028	291
175°	1214	1228	1188	1228	1214	113
180°	1226	1226	1226	1226	1226	



TEST NUMBER: P392665

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1
2.5°	2173.6	2179.6	2172.9	2184.8	2185.6	2183.9	2172.9	2179.6	2174.5	2179.6	2172.9
5°	2165.2	2170.3	2163.5	2173.7	2174.6	2173.7	2162.6	2170.3	2165.2	2170.3	2162.6
7.5°	2148.2	2153.3	2144.8	2157.6	2156.8	2156.7	2144.0	2152.4	2148.2	2152.4	2144.0
10°	2127.0	2126.2	2121.1	2132.1	2132.1	2131.3	2120.2	2124.5	2127.0	2124.5	2120.2
12.5°	2095.7	2096.5	2093.1	2101.6	2099.9	2101.6	2093.1	2094.8	2093.9	2094.8	2093.1
15°	2059.2	2056.6	2054.0	2066.0	2065.1	2065.1	2053.3	2054.9	2056.6	2054.9	2053.3
17.5°	2014.3	2014.2	2010.8	2021.9	2022.7	2021.9	2010.0	2013.4	2011.7	2013.4	2010.0
20°	1963.4	1963.4	1963.4	1975.2	1976.0	1974.4	1962.5	1961.6	1960.8	1961.6	1962.5
22.5°	1900.6	1907.4	1909.1	1923.5	1921.8	1922.6	1908.2	1905.6	1898.9	1905.6	1908.2
25°	1831.2	1837.0	1848.8	1865.8	1865.0	1865.0	1847.1	1834.4	1828.5	1834.4	1847.1
27.5°	1758.2	1766.7	1784.4	1805.6	1804.8	1804.8	1782.7	1764.0	1755.6	1764.0	1782.7
30°	1670.0	1681.0	1708.2	1736.1	1735.2	1734.3	1705.5	1678.4	1666.5	1678.4	1705.5
32.5°	1588.6	1597.1	1628.5	1664.8	1663.9	1663.2	1625.8	1593.6	1585.1	1593.6	1625.8
35°	1498.6	1507.1	1539.3	1585.1	1587.6	1582.6	1536.7	1504.6	1496.1	1504.6	1536.7
37.5°	1409.5	1414.6	1446.9	1501.2	1508.8	1498.6	1444.3	1412.1	1407.0	1412.1	1444.3
40°	1328.2	1323.1	1345.1	1407.8	1430.8	1406.2	1341.7	1319.6	1324.7	1319.6	1341.7
42.5°	1246.7	1236.5	1246.7	1310.3	1339.1	1308.7	1244.2	1233.2	1243.4	1233.2	1244.2
45°	1167.8	1145.8	1146.6	1206.9	1240.8	1205.2	1143.2	1143.3	1165.3	1143.3	1143.2
47.5°	1088.1	1067.0	1058.4	1103.4	1140.8	1102.5	1055.0	1064.4	1085.6	1064.4	1055.0
50°	1003.3	989.7	967.7	998.3	1013.5	996.6	964.2	986.3	1000.8	986.3	964.2
52.5°	933.0	916.0	883.8	895.6	888.0	894.0	881.1	912.5	930.4	912.5	881.1
55°	852.4	843.1	806.6	788.8	754.9	787.0	804.0	840.5	850.6	840.5	804.0
57.5°	781.2	773.5	726.9	687.0	642.9	685.2	724.2	770.9	779.5	770.9	724.2
60°	702.3	702.3	646.3	582.7	549.7	581.8	644.5	700.5	701.5	700.5	644.5
62.5°	626.8	624.2	564.9	489.4	474.9	488.5	563.1	622.5	625.9	622.5	563.1
65°	553.0	541.1	483.5	409.7	405.4	408.8	482.5	540.2	553.0	540.2	482.5
67.5°	476.7	462.3	405.5	340.1	347.7	340.1	404.5	461.3	476.7	461.3	404.5
70°	404.5	384.2	337.6	280.7	289.2	280.7	337.6	385.1	405.5	385.1	337.6
72.5°	345.2	312.1	271.4	229.8	242.6	229.0	271.4	313.1	347.0	313.1	271.4
75°	290.0	252.7	210.3	184.1	201.0	184.1	211.2	253.7	292.7	253.7	211.2
77.5°	256.3	210.4	164.6	142.5	161.1	142.5	165.3	207.9	252.8	207.9	165.3
80°	227.7	185.2	133.2	106.0	123.0	106.0	131.4	171.4	211.3	171.4	131.4
82.5°	216.2	176.2	119.0	76.4	84.8	76.4	108.6	145.1	183.5	145.1	108.6
85°	212.5	179.3	121.1	61.2	51.8	59.4	96.0	126.5	156.3	126.5	96.0
87.5°	216.6	192.7	129.2	62.2	17.0	50.1	79.9	109.7	127.5	109.7	79.9
90°	228.2	209.4	147.6	66.8	1.7	33.9	62.0	87.4	98.5	87.4	62.0
92.5°	246.8	232.2	168.6	79.2	14.7	19.5	50.1	72.1	77.2	72.1	50.1
95°	265.3	260.1	193.1	96.0	35.5	9.4	37.4	59.4	60.3	59.4	37.4
97.5°	289.8	285.4	218.4	122.8	62.2	12.1	27.2	47.5	47.5	47.5	27.2
100°	311.7	309.0	245.4	160.1	96.0	30.3	16.2	37.4	39.2	37.4	16.2
102.5°	349.0	336.2	274.1	195.4	131.4	55.3	16.4	24.8	27.3	24.8	16.4
105°	381.3	365.8	315.6	232.6	172.1	89.1	36.3	17.9	17.1	17.9	36.3
107.5°	412.5	402.1	353.7	270.7	215.3	128.0	65.8	35.4	25.0	35.4	65.8
110°	454.1	443.7	391.0	308.7	260.3	169.6	99.4	63.1	49.3	63.1	99.4



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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°	495.6	487.8	425.6	348.5	307.1	214.4	140.9	97.7	84.7	97.7	140.9
115°	527.6	522.4	465.4	385.8	350.3	265.5	186.8	137.5	122.8	137.5	186.8
117.5°	561.3	559.6	494.8	424.6	403.1	312.3	229.2	178.2	162.6	178.2	229.2
120°	603.8	596.8	535.3	462.7	452.3	360.7	275.9	225.6	209.3	225.6	275.9
122.5°	633.1	628.7	569.9	499.1	499.1	410.0	320.9	270.7	253.4	270.7	320.9
125°	659.9	658.1	596.8	535.3	549.2	455.9	371.9	320.0	301.0	320.0	371.9
127.5°	684.1	686.8	630.5	575.1	600.2	502.5	421.3	364.1	344.2	364.1	421.3
130°	704.9	713.5	662.5	611.5	648.6	553.6	465.4	408.2	395.3	408.2	465.4
132.5°	745.5	740.4	695.4	649.5	700.6	601.1	512.0	452.3	437.6	452.3	512.0
135°	766.3	768.1	723.9	681.6	749.0	647.9	556.1	497.3	482.6	497.3	556.1
137.5°	791.4	786.3	746.5	720.5	794.0	692.7	599.4	544.8	521.5	544.8	599.4
140°	809.6	808.7	775.8	755.1	842.4	736.9	643.5	588.2	566.5	588.2	643.5
142.5°	828.6	834.7	805.3	793.1	890.9	783.6	691.1	631.4	609.7	631.4	691.1
145°	842.4	853.7	834.7	840.6	936.8	835.5	732.5	672.0	649.5	672.0	732.5
147.5°	864.1	878.8	856.3	874.5	976.5	881.4	774.1	714.4	694.5	714.4	774.1
150°	892.6	899.6	886.5	921.1	1017.2	932.4	816.5	754.2	734.3	754.2	816.5
152.5°	916.0	924.6	909.8	972.2	1049.2	979.0	863.2	794.0	770.7	794.0	863.2
155°	940.1	943.7	933.3	1021.5	1083.8	1025.0	900.3	838.1	815.7	838.1	900.3
157.5°	962.7	969.6	957.5	1058.7	1113.1	1064.7	942.8	882.2	862.3	882.2	942.8
160°	986.9	986.9	993.8	1101.9	1137.4	1099.3	987.8	930.6	903.0	930.6	987.8
162.5°	989.5	1006.0	1043.1	1132.2	1160.8	1129.6	1036.3	965.2	941.1	965.2	1036.3
165°	1027.6	1042.3	1098.5	1159.0	1179.0	1156.4	1095.9	1022.4	993.8	1022.4	1095.9
167.5°	1067.3	1098.5	1143.4	1190.2	1197.1	1182.3	1141.7	1090.7	1064.7	1090.7	1141.7
170°	1131.4	1159.0	1181.5	1200.6	1210.9	1201.4	1170.4	1145.2	1127.9	1145.2	1170.4
172.5°	1181.6	1200.6	1209.3	1222.1	1216.1	1212.6	1196.2	1184.2	1173.8	1184.2	1196.2
175°	1213.6	1218.8	1226.5	1223.1	1228.3	1218.8	1218.8	1224.8	1187.6	1224.8	1218.8
177.5°	1224.9	1232.6	1228.3	1221.3	1222.1	1220.4	1223.1	1226.5	1219.6	1226.5	1223.1
180°	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5



TEST NUMBER: P392665

CATALOG NUMBER: MWL-4-34-60-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2182.1	2182.1	2182.1	2182.1	2182.1	2182.1
2.5°	2183.9	2185.6	2184.8	2172.9	2179.6	2173.6
5°	2173.7	2174.6	2173.7	2163.5	2170.3	2165.2
7.5°	2156.7	2156.8	2157.6	2144.8	2153.3	2148.2
10°	2131.3	2132.1	2132.1	2121.1	2126.2	2127.0
12.5°	2101.6	2099.9	2101.6	2093.1	2096.5	2095.7
15°	2065.1	2065.1	2066.0	2054.0	2056.6	2059.2
17.5°	2021.9	2022.7	2021.9	2010.8	2014.2	2014.3
20°	1974.4	1976.0	1975.2	1963.4	1963.4	1963.4
22.5°	1922.6	1921.8	1923.5	1909.1	1907.4	1900.6
25°	1865.0	1865.0	1865.8	1848.8	1837.0	1831.2
27.5°	1804.8	1804.8	1805.6	1784.4	1766.7	1758.2
30°	1734.3	1735.2	1736.1	1708.2	1681.0	1670.0
32.5°	1663.2	1663.9	1664.8	1628.5	1597.1	1588.6
35°	1582.6	1587.6	1585.1	1539.3	1507.1	1498.6
37.5°	1498.6	1508.8	1501.2	1446.9	1414.6	1409.5
40°	1406.2	1430.8	1407.8	1345.1	1323.1	1328.2
42.5°	1308.7	1339.1	1310.3	1246.7	1236.5	1246.7
45°	1205.2	1240.8	1206.9	1146.6	1145.8	1167.8
47.5°	1102.5	1140.8	1103.4	1058.4	1067.0	1088.1
50°	996.6	1013.5	998.3	967.7	989.7	1003.3
52.5°	894.0	888.0	895.6	883.8	916.0	933.0
55°	787.0	754.9	788.8	806.6	843.1	852.4
57.5°	685.2	642.9	687.0	726.9	773.5	781.2
60°	581.8	549.7	582.7	646.3	702.3	702.3
62.5°	488.5	474.9	489.4	564.9	624.2	626.8
65°	408.8	405.4	409.7	483.5	541.1	553.0
67.5°	340.1	347.7	340.1	405.5	462.3	476.7
70°	280.7	289.2	280.7	337.6	384.2	404.5
72.5°	229.0	242.6	229.8	271.4	312.1	345.2
75°	184.1	201.0	184.1	210.3	252.7	290.0
77.5°	142.5	161.1	142.5	164.6	210.4	256.3
80°	106.0	123.0	106.0	133.2	185.2	227.7
82.5°	76.4	84.8	76.4	119.0	176.2	216.2
85°	59.4	51.8	61.2	121.1	179.3	212.5
87.5°	50.1	17.0	62.2	129.2	192.7	216.6
90°	33.9	1.7	66.8	147.6	209.4	228.2
92.5°	19.5	14.7	79.2	168.6	232.2	246.8
95°	9.4	35.5	96.0	193.1	260.1	265.3
97.5°	12.1	62.2	122.8	218.4	285.4	289.8
100°	30.3	96.0	160.1	245.4	309.0	311.7
102.5°	55.3	131.4	195.4	274.1	336.2	349.0
105°	89.1	172.1	232.6	315.6	365.8	381.3
107.5°	128.0	215.3	270.7	353.7	402.1	412.5
110°	169.6	260.3	308.7	391.0	443.7	454.1



TEST NUMBER: P392665

CATALOG NUMBER: MWL-4-34-60-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	214.4	307.1	348.5	425.6	487.8	495.6
115°	265.5	350.3	385.8	465.4	522.4	527.6
117.5°	312.3	403.1	424.6	494.8	559.6	561.3
120°	360.7	452.3	462.7	535.3	596.8	603.8
122.5°	410.0	499.1	499.1	569.9	628.7	633.1
125°	455.9	549.2	535.3	596.8	658.1	659.9
127.5°	502.5	600.2	575.1	630.5	686.8	684.1
130°	553.6	648.6	611.5	662.5	713.5	704.9
132.5°	601.1	700.6	649.5	695.4	740.4	745.5
135°	647.9	749.0	681.6	723.9	768.1	766.3
137.5°	692.7	794.0	720.5	746.5	786.3	791.4
140°	736.9	842.4	755.1	775.8	808.7	809.6
142.5°	783.6	890.9	793.1	805.3	834.7	828.6
145°	835.5	936.8	840.6	834.7	853.7	842.4
147.5°	881.4	976.5	874.5	856.3	878.8	864.1
150°	932.4	1017.2	921.1	886.5	899.6	892.6
152.5°	979.0	1049.2	972.2	909.8	924.6	916.0
155°	1025.0	1083.8	1021.5	933.3	943.7	940.1
157.5°	1064.7	1113.1	1058.7	957.5	969.6	962.7
160°	1099.3	1137.4	1101.9	993.8	986.9	986.9
162.5°	1129.6	1160.8	1132.2	1043.1	1006.0	989.5
165°	1156.4	1179.0	1159.0	1098.5	1042.3	1027.6
167.5°	1182.3	1197.1	1190.2	1143.4	1098.5	1067.3
170°	1201.4	1210.9	1200.6	1181.5	1159.0	1131.4
172.5°	1212.6	1216.1	1222.1	1209.3	1200.6	1181.6
175°	1218.8	1228.3	1223.1	1226.5	1218.8	1213.6
177.5°	1220.4	1222.1	1221.3	1228.3	1232.6	1224.9
180°	1226.5	1226.5	1226.5	1226.5	1226.5	1226.5

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