

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: P392573

Luminaire Tested: **MWL-3-27-47-UNV-L940-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392573
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 3/12/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-27-47-UNV-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

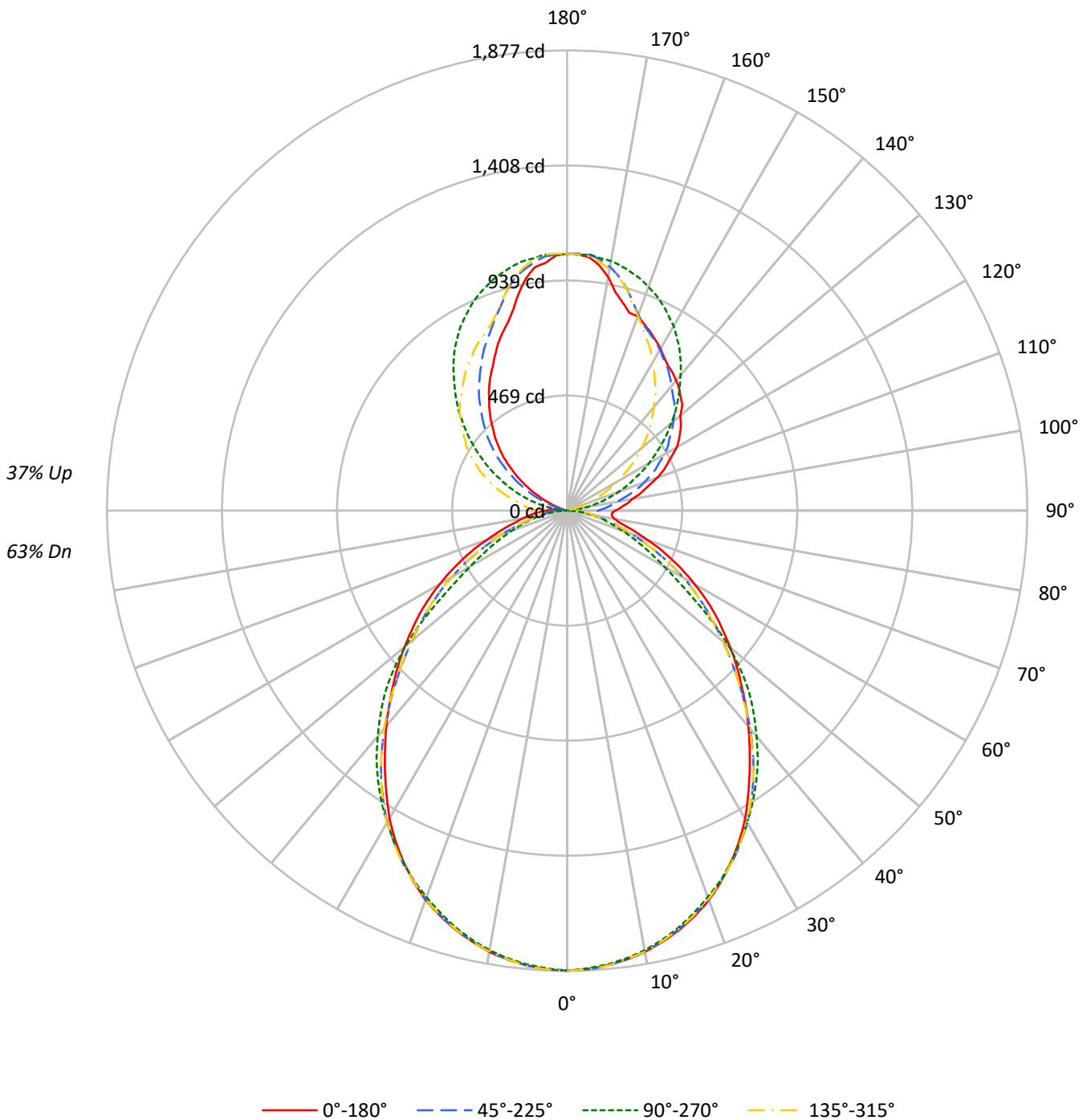
Lumens per Lamp: N/A
Luminaire Lumens: 6859.8 lumens
Efficiency: N/A
Efficacy: 85.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 79.992
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	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	75	70	71	66	63	62	59	56	54	52	50	46
3	85	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	51	56	50	46	49	45	42	43	40	37	34
5	71	60	52	46	67	57	49	44	50	44	40	45	40	36	39	36	33	30
6	66	54	46	40	62	51	44	38	46	40	35	41	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	42	36	31	37	32	29	33	29	26	24
8	57	45	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	38	30	25	47	36	29	25	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	16160	16160	16160	16160
5°	15906	14777	15906	14777
10°	15606	13536	15606	13536
15°	15217	12377	15199	12377
20°	14753	11270	14734	11270
25°	14118	10250	14098	10250
30°	13364	9254	13336	9254
35°	12436	8316	12414	8316
40°	11582	7346	11552	7346
45°	10745	6397	10721	6397
50°	9979	5264	9953	5264
55°	9224	3929	9204	3929
60°	8338	2880	8328	2880
65°	7401	2176	7401	2176
70°	6303	1614	6316	1614
75°	5443	1164	5491	1164
80°	5481	737	5093	737
85°	6972	310	5143	310



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.6	2.6
10°-20°	497.3	7.2
20°-30°	728.7	10.6
30°-40°	825.9	12.0
40°-50°	776.7	11.3
50°-60°	616.6	9.0
60°-70°	401.3	5.9
70°-80°	204.7	3.0
80°-90°	105.4	1.5
90°-100°	103.5	1.5
100°-110°	165.5	2.4
110°-120°	279.3	4.1
120°-130°	379.0	5.5
130°-140°	432.0	6.3
140°-150°	430.7	6.3
150°-160°	374.8	5.5
160°-170°	263.6	3.8
170°-180°	98.1	1.4
0°-30°	1402.7	20.4
0°-40°	2228.6	32.5
0°-60°	3621.9	52.8
0°-90°	4333.2	63.2
90°-120°	548.2	8.0
90°-150°	1789.9	26.1
90°-180°	2527.0	36.8
0°-180°	6859.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1877	1877	1877	1877	1877	
5°	1862	1859	1862	1859	1862	177
15°	1770	1760	1768	1760	1770	499
25°	1582	1582	1580	1582	1582	727
35°	1298	1345	1296	1345	1298	812
45°	1005	1051	1003	1051	1005	777
55°	736	635	735	635	736	657
65°	471	336	471	336	471	468
75°	248	166	251	166	248	272
85°	183	39	135	39	183	152
90°	196	2	85	2	196	108
95°	231	30	56	30	231	198
105°	326	147	15	147	326	345
115°	451	299	106	299	451	448
125°	564	469	258	469	564	504
135°	655	640	413	640	655	505
145°	719	800	554	800	719	453
155°	803	925	697	925	803	370
165°	878	1007	849	1007	878	249
175°	1036	1048	1014	1048	1036	97
180°	1048	1048	1048	1048	1048	



TEST NUMBER: P392573

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6
2.5°	1872.5	1875.0	1873.7	1870.8	1868.9	1870.0	1873.7	1875.0	1873.3	1875.0	1873.7
5°	1862.5	1864.9	1864.6	1860.9	1859.1	1860.9	1863.8	1864.9	1862.5	1864.9	1863.8
7.5°	1847.8	1851.1	1846.5	1845.4	1842.7	1844.7	1845.8	1850.4	1847.8	1850.4	1845.8
10°	1828.5	1830.1	1827.4	1822.8	1821.0	1822.1	1826.7	1828.7	1828.5	1828.7	1826.7
12.5°	1800.8	1801.0	1798.4	1794.8	1793.1	1794.8	1798.4	1799.5	1799.3	1799.5	1798.4
15°	1770.5	1768.2	1766.5	1763.8	1760.3	1763.1	1765.8	1766.7	1768.4	1766.7	1765.8
17.5°	1733.2	1731.7	1728.3	1725.7	1720.2	1725.7	1727.5	1731.0	1731.0	1731.0	1727.5
20°	1691.3	1688.7	1687.3	1682.9	1677.5	1682.1	1686.5	1687.3	1689.1	1687.3	1686.5
22.5°	1639.5	1639.5	1637.2	1636.4	1633.8	1635.6	1636.4	1638.1	1638.1	1638.1	1636.4
25°	1582.1	1583.9	1587.8	1586.3	1581.9	1585.5	1586.3	1581.8	1579.9	1581.8	1586.3
27.5°	1520.2	1522.9	1529.5	1533.3	1526.3	1532.6	1528.0	1520.7	1518.0	1520.7	1528.0
30°	1451.8	1456.4	1471.0	1476.6	1468.0	1475.2	1468.8	1454.2	1448.8	1454.2	1468.8
32.5°	1374.4	1381.7	1399.0	1411.9	1409.6	1410.5	1396.8	1378.7	1371.4	1378.7	1396.8
35°	1298.0	1304.4	1325.4	1345.4	1345.0	1343.1	1323.1	1302.1	1295.8	1302.1	1323.1
37.5°	1222.4	1223.3	1245.2	1272.5	1277.5	1270.3	1242.9	1221.1	1220.1	1221.1	1242.9
40°	1150.4	1147.7	1162.3	1194.4	1201.8	1192.8	1159.3	1144.7	1147.4	1144.7	1159.3
42.5°	1077.6	1067.5	1074.1	1113.3	1127.1	1111.7	1071.8	1064.5	1074.6	1064.5	1071.8
45°	1004.9	991.2	989.4	1024.0	1050.6	1022.4	986.4	988.9	1002.6	988.9	986.4
47.5°	937.4	920.1	907.4	933.1	959.5	932.2	904.4	917.8	935.2	917.8	904.4
50°	868.2	849.1	829.9	845.6	861.2	844.0	826.9	846.0	865.9	846.0	826.9
52.5°	799.9	784.4	756.3	755.4	749.1	753.8	754.0	781.4	797.6	781.4	754.0
55°	736.3	720.8	685.2	668.9	635.4	667.5	683.0	718.5	734.7	718.5	683.0
57.5°	669.7	657.9	616.9	576.9	535.2	575.5	614.6	655.6	668.2	655.6	614.6
60°	600.6	594.2	546.8	484.2	456.8	483.4	545.4	592.8	599.9	592.8	545.4
62.5°	535.0	529.5	475.8	408.5	391.4	407.8	474.3	528.1	534.3	528.1	474.3
65°	471.4	458.6	404.9	341.1	335.8	340.4	404.2	457.9	471.4	457.9	404.2
67.5°	411.3	394.9	339.3	285.7	285.7	285.7	338.6	394.1	411.3	394.1	338.6
70°	345.9	325.8	282.1	236.5	240.2	236.5	282.1	326.5	346.6	326.5	282.1
72.5°	295.7	262.9	229.2	191.9	199.3	191.1	229.2	263.7	297.2	263.7	229.2
75°	248.4	213.7	178.4	152.0	165.6	152.0	179.1	214.5	250.6	214.5	179.1
77.5°	214.2	175.8	137.4	119.2	132.8	119.2	138.1	173.5	211.3	173.5	138.1
80°	197.6	156.9	111.3	89.1	99.1	89.1	109.9	145.0	183.6	145.0	109.9
82.5°	185.2	149.4	100.2	64.5	70.9	64.5	91.3	122.9	157.2	122.9	91.3
85°	182.6	151.5	101.9	51.2	39.0	49.7	80.5	106.5	134.7	106.5	80.5
87.5°	184.6	165.2	110.5	51.4	11.8	41.1	68.4	94.3	108.6	94.3	68.4
90°	196.1	181.4	127.1	55.9	1.6	27.9	53.9	77.4	85.4	77.4	53.9
92.5°	214.9	201.5	145.2	67.9	12.8	16.9	44.1	64.9	70.2	64.9	44.1
95°	231.0	223.8	166.1	80.5	30.4	6.6	33.2	52.5	55.9	52.5	33.2
97.5°	253.4	247.0	184.9	105.1	53.3	10.7	21.8	43.9	46.6	43.9	21.8
100°	268.5	263.2	208.1	136.9	81.4	26.1	12.5	31.4	36.0	31.4	12.5
102.5°	298.7	285.4	233.8	167.2	111.7	47.6	13.8	19.6	24.1	19.6	13.8
105°	326.0	312.1	270.0	199.0	147.2	76.4	31.5	15.2	15.2	15.2	31.5
107.5°	353.2	344.0	302.5	231.4	184.2	109.6	56.7	31.0	22.4	31.0	56.7
110°	389.2	379.5	334.2	263.9	222.6	145.0	85.5	54.6	43.6	54.6	85.5



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CATALOG NUMBER: MWL-3-27-47-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	423.8	416.2	363.8	297.8	262.4	183.4	120.9	83.2	73.1	83.2	120.9
115°	451.1	446.4	397.7	329.6	299.4	227.0	160.0	117.9	105.5	117.9	160.0
117.5°	479.9	478.2	422.8	362.1	343.7	266.1	196.2	152.6	139.5	152.6	196.2
120°	516.0	510.1	457.6	394.6	385.8	307.5	236.1	193.4	179.4	193.4	236.1
122.5°	541.1	537.5	487.1	426.5	426.5	350.5	274.4	231.8	217.0	231.8	274.4
125°	564.0	562.5	509.2	457.6	469.3	389.6	317.2	273.9	257.7	273.9	317.2
127.5°	584.7	586.9	538.0	491.4	512.9	429.5	359.3	311.5	294.6	311.5	359.3
130°	602.4	609.8	566.2	522.5	554.2	473.0	397.9	349.1	338.1	349.1	397.9
132.5°	637.1	632.7	594.3	554.2	598.5	512.9	437.8	386.9	374.3	386.9	437.8
135°	654.8	656.3	618.6	581.6	639.9	552.8	475.4	425.2	412.6	425.2	475.4
137.5°	676.2	671.8	637.9	615.7	678.3	592.0	512.3	465.8	445.9	465.8	512.3
140°	691.7	691.0	662.9	645.2	719.6	629.8	550.0	502.7	484.2	502.7	550.0
142.5°	708.0	712.4	688.1	677.7	761.0	669.6	590.6	538.9	521.1	538.9	590.6
145°	719.0	728.7	713.1	718.3	800.1	713.8	626.0	573.6	554.4	573.6	626.0
147.5°	737.5	750.1	731.6	747.1	834.0	753.0	661.5	609.8	592.8	609.8	661.5
150°	762.6	768.5	757.5	787.0	868.7	796.6	697.6	644.5	627.5	644.5	697.6
152.5°	782.5	789.9	777.4	830.6	896.1	836.5	737.5	678.4	658.5	678.4	737.5
155°	803.2	806.1	797.3	872.7	924.9	875.6	769.2	716.1	696.9	716.1	769.2
157.5°	822.4	828.3	818.0	903.4	950.0	908.6	805.4	753.8	736.8	753.8	805.4
160°	843.1	843.1	849.0	941.3	970.7	939.1	843.9	795.1	771.5	795.1	843.9
162.5°	845.3	859.3	891.1	967.1	991.5	964.9	885.1	824.6	804.0	824.6	885.1
165°	877.8	890.3	938.3	990.0	1006.9	987.8	936.2	873.4	849.0	873.4	936.2
167.5°	911.7	938.3	976.7	1015.9	1021.8	1009.2	975.2	931.7	909.6	931.7	975.2
170°	966.2	989.1	1009.2	1025.4	1033.6	1026.2	999.6	977.2	963.2	977.2	999.6
172.5°	1008.9	1024.5	1032.8	1043.2	1038.0	1035.0	1021.8	1010.5	1002.2	1010.5	1021.8
175°	1036.2	1040.0	1047.6	1043.9	1048.3	1040.2	1040.9	1045.2	1014.1	1045.2	1040.9
177.5°	1045.8	1051.9	1049.0	1042.4	1043.2	1041.7	1044.7	1046.7	1041.4	1046.7	1044.7
180°	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6



TEST NUMBER: P392573

CATALOG NUMBER: MWL-3-27-47-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1876.6	1876.6	1876.6	1876.6	1876.6	1876.6
2.5°	1870.0	1868.9	1870.8	1873.7	1875.0	1872.5
5°	1860.9	1859.1	1860.9	1864.6	1864.9	1862.5
7.5°	1844.7	1842.7	1845.4	1846.5	1851.1	1847.8
10°	1822.1	1821.0	1822.8	1827.4	1830.1	1828.5
12.5°	1794.8	1793.1	1794.8	1798.4	1801.0	1800.8
15°	1763.1	1760.3	1763.8	1766.5	1768.2	1770.5
17.5°	1725.7	1720.2	1725.7	1728.3	1731.7	1733.2
20°	1682.1	1677.5	1682.9	1687.3	1688.7	1691.3
22.5°	1635.6	1633.8	1636.4	1637.2	1639.5	1639.5
25°	1585.5	1581.9	1586.3	1587.8	1583.9	1582.1
27.5°	1532.6	1526.3	1533.3	1529.5	1522.9	1520.2
30°	1475.2	1468.0	1476.6	1471.0	1456.4	1451.8
32.5°	1410.5	1409.6	1411.9	1399.0	1381.7	1374.4
35°	1343.1	1345.0	1345.4	1325.4	1304.4	1298.0
37.5°	1270.3	1277.5	1272.5	1245.2	1223.3	1222.4
40°	1192.8	1201.8	1194.4	1162.3	1147.7	1150.4
42.5°	1111.7	1127.1	1113.3	1074.1	1067.5	1077.6
45°	1022.4	1050.6	1024.0	989.4	991.2	1004.9
47.5°	932.2	959.5	933.1	907.4	920.1	937.4
50°	844.0	861.2	845.6	829.9	849.1	868.2
52.5°	753.8	749.1	755.4	756.3	784.4	799.9
55°	667.5	635.4	668.9	685.2	720.8	736.3
57.5°	575.5	535.2	576.9	616.9	657.9	669.7
60°	483.4	456.8	484.2	546.8	594.2	600.6
62.5°	407.8	391.4	408.5	475.8	529.5	535.0
65°	340.4	335.8	341.1	404.9	458.6	471.4
67.5°	285.7	285.7	285.7	339.3	394.9	411.3
70°	236.5	240.2	236.5	282.1	325.8	345.9
72.5°	191.1	199.3	191.9	229.2	262.9	295.7
75°	152.0	165.6	152.0	178.4	213.7	248.4
77.5°	119.2	132.8	119.2	137.4	175.8	214.2
80°	89.1	99.1	89.1	111.3	156.9	197.6
82.5°	64.5	70.9	64.5	100.2	149.4	185.2
85°	49.7	39.0	51.2	101.9	151.5	182.6
87.5°	41.1	11.8	51.4	110.5	165.2	184.6
90°	27.9	1.6	55.9	127.1	181.4	196.1
92.5°	16.9	12.8	67.9	145.2	201.5	214.9
95°	6.6	30.4	80.5	166.1	223.8	231.0
97.5°	10.7	53.3	105.1	184.9	247.0	253.4
100°	26.1	81.4	136.9	208.1	263.2	268.5
102.5°	47.6	111.7	167.2	233.8	285.4	298.7
105°	76.4	147.2	199.0	270.0	312.1	326.0
107.5°	109.6	184.2	231.4	302.5	344.0	353.2
110°	145.0	222.6	263.9	334.2	379.5	389.2



TEST NUMBER: P392573

CATALOG NUMBER: MWL-3-27-47-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	183.4	262.4	297.8	363.8	416.2	423.8
115°	227.0	299.4	329.6	397.7	446.4	451.1
117.5°	266.1	343.7	362.1	422.8	478.2	479.9
120°	307.5	385.8	394.6	457.6	510.1	516.0
122.5°	350.5	426.5	426.5	487.1	537.5	541.1
125°	389.6	469.3	457.6	509.2	562.5	564.0
127.5°	429.5	512.9	491.4	538.0	586.9	584.7
130°	473.0	554.2	522.5	566.2	609.8	602.4
132.5°	512.9	598.5	554.2	594.3	632.7	637.1
135°	552.8	639.9	581.6	618.6	656.3	654.8
137.5°	592.0	678.3	615.7	637.9	671.8	676.2
140°	629.8	719.6	645.2	662.9	691.0	691.7
142.5°	669.6	761.0	677.7	688.1	712.4	708.0
145°	713.8	800.1	718.3	713.1	728.7	719.0
147.5°	753.0	834.0	747.1	731.6	750.1	737.5
150°	796.6	868.7	787.0	757.5	768.5	762.6
152.5°	836.5	896.1	830.6	777.4	789.9	782.5
155°	875.6	924.9	872.7	797.3	806.1	803.2
157.5°	908.6	950.0	903.4	818.0	828.3	822.4
160°	939.1	970.7	941.3	849.0	843.1	843.1
162.5°	964.9	991.5	967.1	891.1	859.3	845.3
165°	987.8	1006.9	990.0	938.3	890.3	877.8
167.5°	1009.2	1021.8	1015.9	976.7	938.3	911.7
170°	1026.2	1033.6	1025.4	1009.2	989.1	966.2
172.5°	1035.0	1038.0	1043.2	1032.8	1024.5	1008.9
175°	1040.2	1048.3	1043.9	1047.6	1040.0	1036.2
177.5°	1041.7	1043.2	1042.4	1049.0	1051.9	1045.8
180°	1047.6	1047.6	1047.6	1047.6	1047.6	1047.6

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