

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: P392652

Luminaire Tested: **MWL-4-26-73-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392652
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-4-26-73-UNV-L830-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9482.0 lumens
Efficiency: N/A
Efficacy: 87.7 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

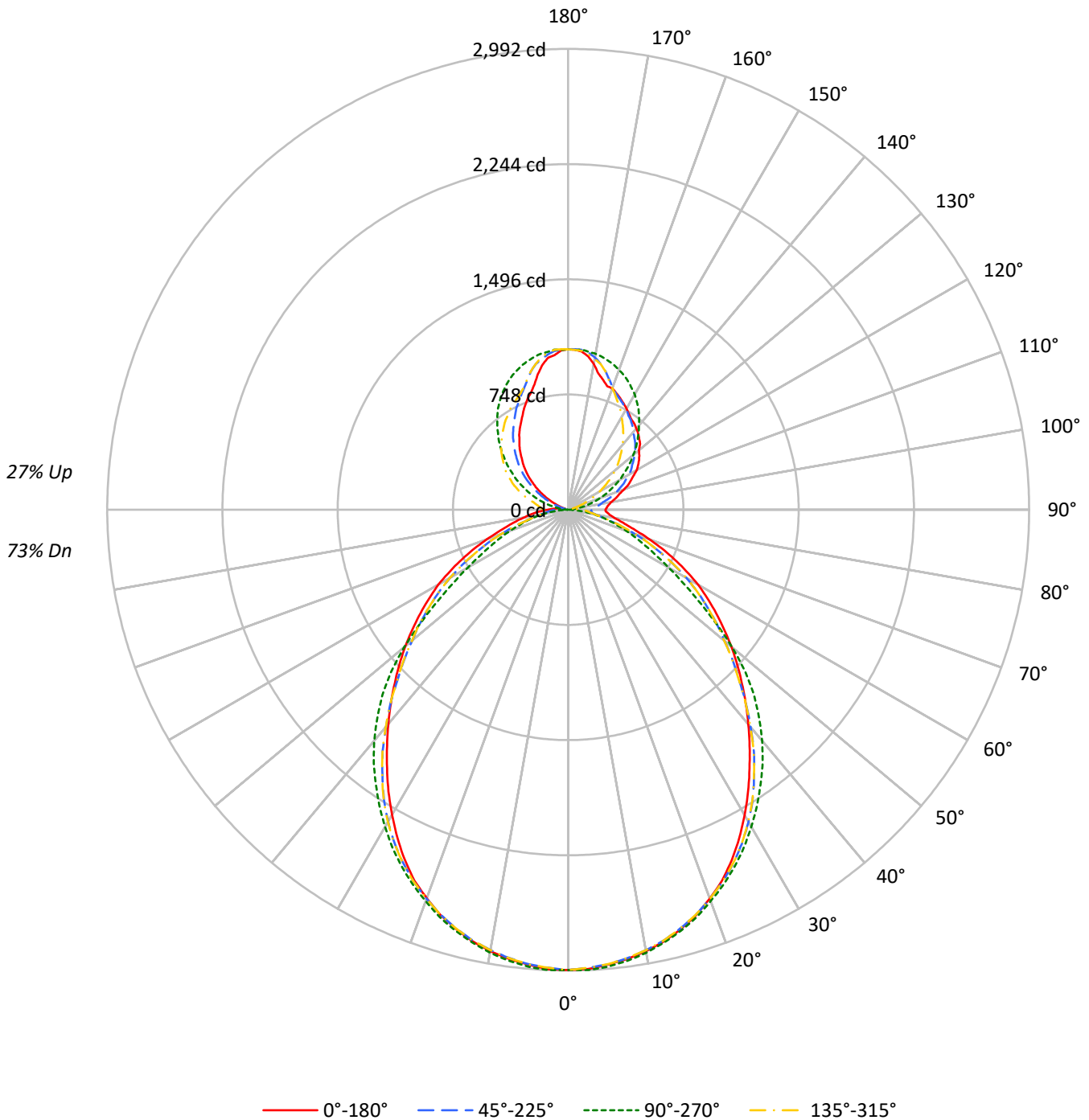
Input Watts (W): 108.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	73				
1	103	99	95	91	98	94	91	87	85	82	80	77	75	73	69	67	66	62				
2	94	87	81	76	89	83	77	73	75	71	67	68	65	62	61	59	56	53				
3	87	77	70	64	82	73	67	61	67	61	57	61	56	53	55	51	49	45				
4	79	69	61	54	75	65	58	53	60	54	49	54	50	46	49	45	42	39				
5	73	61	53	47	69	59	51	46	54	48	43	49	44	40	45	41	37	34				
6	68	55	47	41	64	53	46	40	49	42	38	45	39	35	41	36	33	31				
7	63	50	42	37	60	48	41	35	44	38	33	41	35	31	37	33	29	27				
8	59	46	38	33	56	44	37	32	41	34	30	37	32	28	34	30	27	24				
9	55	42	34	29	52	41	33	29	37	31	27	35	29	26	32	27	24	22				
10	51	39	31	27	49	37	31	26	35	29	25	32	27	23	30	25	22	20				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	19301	19301	19301	19301
5°	19045	17752	19045	17752
10°	18740	16281	18740	16281
15°	18338	14922	18324	14922
20°	17791	13626	17776	13626
25°	17067	12424	17052	12424
30°	16105	11238	16085	11238
35°	15076	10092	15060	10092
40°	14105	8976	14084	8976
45°	13186	7794	13167	7794
50°	12343	6368	12323	6368
55°	11487	4791	11472	4791
60°	10652	3564	10644	3564
65°	9476	2685	9476	2685
70°	8238	2020	8248	2020
75°	7184	1446	7223	1446
80°	7105	930	6780	930
85°	8788	417	7175	417



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	281.7	3.0
10°-20°	794.8	8.4
20°-30°	1165.6	12.3
30°-40°	1319.2	13.9
40°-50°	1242.9	13.1
50°-60°	994.5	10.5
60°-70°	654.8	6.9
70°-80°	334.3	3.5
80°-90°	159.6	1.7
90°-100°	121.0	1.3
100°-110°	167.4	1.8
110°-120°	278.3	2.9
120°-130°	377.3	4.0
130°-140°	429.8	4.5
140°-150°	428.4	4.5
150°-160°	372.8	3.9
160°-170°	262.1	2.8
170°-180°	97.6	1.0
0°-30°	2242.1	23.6
0°-40°	3561.3	37.6
0°-60°	5798.7	61.2
0°-90°	6947.3	73.3
90°-120°	566.7	6.0
90°-150°	1802.2	19.0
90°-180°	2535.0	26.7
0°-180°	9482.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2988	2988	2988	2988	2988	
5°	2964	2978	2964	2978	2964	281
15°	2819	2830	2817	2830	2819	794
25°	2511	2556	2509	2556	2511	1153
35°	2052	2176	2050	2176	2052	1284
45°	1594	1707	1592	1707	1594	1232
55°	1172	1033	1170	1033	1172	1049
65°	759	552	759	552	759	753
75°	400	274	402	274	400	436
85°	260	70	212	70	260	220
90°	242	2	132	2	242	134
95°	256	31	82	31	256	215
105°	329	146	20	146	329	349
115°	449	298	106	298	449	446
125°	561	466	257	466	561	501
135°	651	636	411	636	651	503
145°	715	796	552	796	715	451
155°	799	920	693	920	799	368
165°	873	1002	844	1002	873	247
175°	1030	1043	1008	1043	1030	96
180°	1041	1041	1041	1041	1041	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5
2.5°	2985.5	2985.0	2976.8	2993.0	2992.0	2992.2	2976.8	2985.0	2986.1	2985.0	2976.8
5°	2964.4	2969.6	2962.4	2978.7	2977.8	2978.7	2961.7	2969.6	2964.4	2969.6	2961.7
7.5°	2942.0	2949.2	2936.7	2955.7	2953.8	2954.9	2936.0	2948.5	2942.0	2948.5	2936.0
10°	2910.1	2912.7	2904.1	2921.3	2920.4	2920.7	2903.4	2911.3	2910.1	2911.3	2903.4
12.5°	2871.2	2870.5	2864.0	2879.4	2877.7	2879.4	2864.0	2869.0	2869.8	2869.0	2864.0
15°	2819.2	2818.6	2814.1	2829.5	2829.7	2828.7	2813.4	2817.2	2817.0	2817.2	2813.4
17.5°	2760.7	2759.1	2756.5	2773.0	2773.0	2773.0	2755.8	2758.4	2758.4	2758.4	2755.8
20°	2686.7	2689.8	2688.4	2704.9	2704.2	2704.2	2687.6	2688.4	2684.5	2688.4	2687.6
22.5°	2608.2	2611.1	2616.4	2637.7	2634.1	2637.0	2615.6	2609.7	2606.8	2609.7	2615.6
25°	2511.3	2517.0	2534.5	2557.1	2556.4	2556.4	2533.1	2514.8	2509.1	2514.8	2533.1
27.5°	2403.8	2419.1	2442.3	2470.5	2470.9	2469.7	2440.9	2416.9	2401.5	2416.9	2440.9
30°	2289.5	2305.8	2340.4	2379.9	2376.9	2378.5	2338.2	2303.6	2286.6	2303.6	2338.2
32.5°	2173.4	2189.7	2229.0	2276.3	2280.6	2274.8	2226.8	2186.8	2170.5	2186.8	2226.8
35°	2051.7	2059.3	2104.4	2175.5	2176.3	2173.4	2102.3	2057.2	2049.5	2057.2	2102.3
37.5°	1933.6	1935.5	1980.6	2055.5	2072.3	2053.4	1978.5	1933.4	1931.5	1933.4	1978.5
40°	1819.3	1809.8	1841.4	1925.2	1958.1	1923.8	1838.5	1806.9	1816.5	1806.9	1838.5
42.5°	1706.1	1694.6	1708.3	1790.8	1834.2	1789.4	1706.1	1691.7	1703.2	1691.7	1706.1
45°	1594.1	1572.9	1570.1	1652.6	1706.6	1651.2	1567.1	1570.7	1591.8	1570.7	1567.1
47.5°	1487.5	1462.5	1448.1	1511.7	1559.7	1511.0	1445.2	1460.3	1485.3	1460.3	1445.2
50°	1381.0	1357.0	1323.4	1367.7	1389.1	1366.3	1320.4	1354.0	1378.7	1354.0	1320.4
52.5°	1275.4	1257.1	1214.1	1229.5	1205.8	1228.0	1211.9	1254.1	1273.2	1254.1	1211.9
55°	1171.9	1155.6	1102.8	1082.9	1033.2	1081.4	1100.6	1153.4	1170.4	1153.4	1100.6
57.5°	1070.1	1060.5	995.3	936.0	882.5	934.5	993.0	1058.3	1068.7	1058.3	993.0
60°	973.5	962.9	887.1	795.1	753.8	794.3	885.5	961.4	972.7	961.4	885.5
62.5°	864.0	859.2	773.8	670.3	643.6	669.5	772.3	857.7	863.3	857.7	772.3
65°	758.6	744.2	664.6	562.8	552.4	562.0	663.8	743.5	758.6	743.5	663.8
67.5°	656.9	635.8	561.8	469.9	472.8	469.9	561.1	635.0	656.9	635.0	561.1
70°	561.1	528.4	462.2	388.3	400.8	388.3	462.2	529.2	561.8	529.2	462.2
72.5°	471.8	431.5	371.0	316.3	331.9	315.6	371.0	432.3	473.3	432.3	371.0
75°	399.8	348.9	288.7	252.3	274.3	252.3	289.4	349.7	402.0	349.7	289.4
77.5°	347.1	289.5	225.4	194.7	221.6	194.7	226.1	287.3	344.2	287.3	226.1
80°	303.9	248.9	180.6	143.8	166.8	143.8	179.0	237.2	290.0	237.2	179.0
82.5°	274.4	225.7	158.6	103.5	116.9	103.5	149.8	199.3	246.6	199.3	149.8
85°	259.8	216.9	149.7	82.6	69.9	81.1	128.5	172.2	212.1	172.2	128.5
87.5°	243.9	214.3	148.0	76.3	25.9	66.0	106.2	143.9	168.5	143.9	106.2
90°	241.8	221.0	156.1	73.4	1.7	45.6	83.6	117.7	131.8	117.7	83.6
92.5°	249.1	234.5	167.9	77.9	13.6	27.4	67.5	99.0	105.4	99.0	67.5
95°	255.6	249.3	183.1	84.9	31.2	11.6	51.2	79.2	81.9	79.2	51.2
97.5°	269.6	265.9	196.1	104.5	53.9	10.8	34.2	64.4	64.4	64.4	34.2
100°	281.8	278.3	213.8	136.0	81.8	26.1	19.5	48.1	51.0	48.1	19.5
102.5°	307.4	294.7	234.2	166.1	111.8	47.3	15.8	30.8	34.7	30.8	15.8
105°	329.1	314.0	268.2	197.6	146.3	75.9	31.5	19.4	20.4	19.4	31.5
107.5°	351.9	342.7	300.5	230.9	183.0	109.9	56.3	32.0	23.6	32.0	56.3
110°	386.7	377.9	332.0	263.1	222.0	145.0	85.0	55.4	43.7	55.4	85.0



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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°	421.9	415.3	361.3	296.8	261.6	183.2	120.2	84.7	73.7	84.7	120.2
115°	449.0	444.4	396.0	328.3	298.2	226.4	159.9	118.2	106.0	118.2	159.9
117.5°	477.6	475.9	420.9	360.5	342.2	265.3	195.9	152.6	139.7	152.6	195.9
120°	513.5	506.6	455.4	392.8	384.1	306.3	235.5	192.2	179.2	192.2	235.5
122.5°	538.4	534.8	484.7	424.6	423.6	349.0	273.6	231.2	216.7	231.2	273.6
125°	561.2	559.6	506.6	455.4	466.1	387.9	316.1	273.1	257.0	273.1	316.1
127.5°	581.6	583.8	536.2	489.1	510.3	427.6	358.8	310.4	293.6	310.4	358.8
130°	599.3	606.6	563.4	519.9	551.4	470.7	396.3	347.9	336.8	347.9	396.3
132.5°	633.7	629.3	591.2	551.4	595.3	510.3	435.8	385.2	372.7	385.2	435.8
135°	651.3	652.8	615.4	578.5	636.4	549.9	473.1	423.3	410.8	423.3	473.1
137.5°	672.5	668.1	634.4	612.4	674.5	589.0	509.8	463.6	443.9	463.6	509.8
140°	688.0	687.2	659.4	641.8	715.5	626.4	547.3	500.3	482.0	500.3	547.3
142.5°	705.1	709.4	684.2	674.1	756.6	666.0	587.6	537.2	519.6	537.2	587.6
145°	715.0	725.5	709.2	714.4	795.5	710.0	622.7	571.6	551.6	571.6	622.7
147.5°	734.3	745.9	727.5	742.9	829.2	748.7	657.9	606.6	590.6	606.6	657.9
150°	758.3	764.2	753.2	782.5	863.6	792.0	693.8	641.0	624.1	641.0	693.8
152.5°	778.1	785.4	772.9	825.7	890.7	831.6	733.4	674.7	655.0	674.7	733.4
155°	798.7	801.5	792.8	867.5	920.3	870.5	764.9	712.2	693.1	712.2	764.9
157.5°	817.7	823.5	813.3	899.1	945.2	904.2	800.9	749.5	732.6	749.5	800.9
160°	838.2	838.2	844.1	935.7	965.8	933.5	839.0	790.6	767.1	790.6	839.0
162.5°	840.4	854.3	885.8	961.4	985.6	959.2	880.0	819.9	799.3	819.9	880.0
165°	872.7	885.1	932.8	984.1	1001.9	981.9	930.6	868.3	844.1	868.3	930.6
167.5°	905.4	931.8	970.9	1010.7	1016.6	1004.1	969.4	925.2	903.2	925.2	969.4
170°	959.4	984.1	1003.1	1020.2	1028.3	1021.0	993.6	972.3	956.5	972.3	993.6
172.5°	1002.6	1019.3	1026.5	1037.8	1032.7	1029.7	1015.6	1005.3	996.1	1005.3	1015.6
175°	1029.8	1034.6	1041.2	1038.5	1043.0	1034.9	1034.6	1039.8	1007.8	1039.8	1034.6
177.5°	1039.3	1046.4	1042.7	1037.1	1037.8	1036.3	1038.4	1041.2	1034.9	1041.2	1038.4
180°	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2988.5	2988.5	2988.5	2988.5	2988.5	2988.5
2.5°	2992.2	2992.0	2993.0	2976.8	2985.0	2985.5
5°	2978.7	2977.8	2978.7	2962.4	2969.6	2964.4
7.5°	2954.9	2953.8	2955.7	2936.7	2949.2	2942.0
10°	2920.7	2920.4	2921.3	2904.1	2912.7	2910.1
12.5°	2879.4	2877.7	2879.4	2864.0	2870.5	2871.2
15°	2828.7	2829.7	2829.5	2814.1	2818.6	2819.2
17.5°	2773.0	2773.0	2773.0	2756.5	2759.1	2760.7
20°	2704.2	2704.2	2704.9	2688.4	2689.8	2686.7
22.5°	2637.0	2634.1	2637.7	2616.4	2611.1	2608.2
25°	2556.4	2556.4	2557.1	2534.5	2517.0	2511.3
27.5°	2469.7	2470.9	2470.5	2442.3	2419.1	2403.8
30°	2378.5	2376.9	2379.9	2340.4	2305.8	2289.5
32.5°	2274.8	2280.6	2276.3	2229.0	2189.7	2173.4
35°	2173.4	2176.3	2175.5	2104.4	2059.3	2051.7
37.5°	2053.4	2072.3	2055.5	1980.6	1935.5	1933.6
40°	1923.8	1958.1	1925.2	1841.4	1809.8	1819.3
42.5°	1789.4	1834.2	1790.8	1708.3	1694.6	1706.1
45°	1651.2	1706.6	1652.6	1570.1	1572.9	1594.1
47.5°	1511.0	1559.7	1511.7	1448.1	1462.5	1487.5
50°	1366.3	1389.1	1367.7	1323.4	1357.0	1381.0
52.5°	1228.0	1205.8	1229.5	1214.1	1257.1	1275.4
55°	1081.4	1033.2	1082.9	1102.8	1155.6	1171.9
57.5°	934.5	882.5	936.0	995.3	1060.5	1070.1
60°	794.3	753.8	795.1	887.1	962.9	973.5
62.5°	669.5	643.6	670.3	773.8	859.2	864.0
65°	562.0	552.4	562.8	664.6	744.2	758.6
67.5°	469.9	472.8	469.9	561.8	635.8	656.9
70°	388.3	400.8	388.3	462.2	528.4	561.1
72.5°	315.6	331.9	316.3	371.0	431.5	471.8
75°	252.3	274.3	252.3	288.7	348.9	399.8
77.5°	194.7	221.6	194.7	225.4	289.5	347.1
80°	143.8	166.8	143.8	180.6	248.9	303.9
82.5°	103.5	116.9	103.5	158.6	225.7	274.4
85°	81.1	69.9	82.6	149.7	216.9	259.8
87.5°	66.0	25.9	76.3	148.0	214.3	243.9
90°	45.6	1.7	73.4	156.1	221.0	241.8
92.5°	27.4	13.6	77.9	167.9	234.5	249.1
95°	11.6	31.2	84.9	183.1	249.3	255.6
97.5°	10.8	53.9	104.5	196.1	265.9	269.6
100°	26.1	81.8	136.0	213.8	278.3	281.8
102.5°	47.3	111.8	166.1	234.2	294.7	307.4
105°	75.9	146.3	197.6	268.2	314.0	329.1
107.5°	109.9	183.0	230.9	300.5	342.7	351.9
110°	145.0	222.0	263.1	332.0	377.9	386.7



TEST NUMBER: P392652

CATALOG NUMBER: MWL-4-26-73-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	183.2	261.6	296.8	361.3	415.3	421.9
115°	226.4	298.2	328.3	396.0	444.4	449.0
117.5°	265.3	342.2	360.5	420.9	475.9	477.6
120°	306.3	384.1	392.8	455.4	506.6	513.5
122.5°	349.0	423.6	424.6	484.7	534.8	538.4
125°	387.9	466.1	455.4	506.6	559.6	561.2
127.5°	427.6	510.3	489.1	536.2	583.8	581.6
130°	470.7	551.4	519.9	563.4	606.6	599.3
132.5°	510.3	595.3	551.4	591.2	629.3	633.7
135°	549.9	636.4	578.5	615.4	652.8	651.3
137.5°	589.0	674.5	612.4	634.4	668.1	672.5
140°	626.4	715.5	641.8	659.4	687.2	688.0
142.5°	666.0	756.6	674.1	684.2	709.4	705.1
145°	710.0	795.5	714.4	709.2	725.5	715.0
147.5°	748.7	829.2	742.9	727.5	745.9	734.3
150°	792.0	863.6	782.5	753.2	764.2	758.3
152.5°	831.6	890.7	825.7	772.9	785.4	778.1
155°	870.5	920.3	867.5	792.8	801.5	798.7
157.5°	904.2	945.2	899.1	813.3	823.5	817.7
160°	933.5	965.8	935.7	844.1	838.2	838.2
162.5°	959.2	985.6	961.4	885.8	854.3	840.4
165°	981.9	1001.9	984.1	932.8	885.1	872.7
167.5°	1004.1	1016.6	1010.7	970.9	931.8	905.4
170°	1021.0	1028.3	1020.2	1003.1	984.1	959.4
172.5°	1029.7	1032.7	1037.8	1026.5	1019.3	1002.6
175°	1034.9	1043.0	1038.5	1041.2	1034.6	1029.8
177.5°	1036.3	1037.8	1037.1	1042.7	1046.4	1039.3
180°	1041.2	1041.2	1041.2	1041.2	1041.2	1041.2

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