

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: P392582

Luminaire Tested: **MWL-3-30-28-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392582
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-3-30-28-UNV-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5903.9 lumens
Efficiency: N/A
Efficacy: 104.5 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

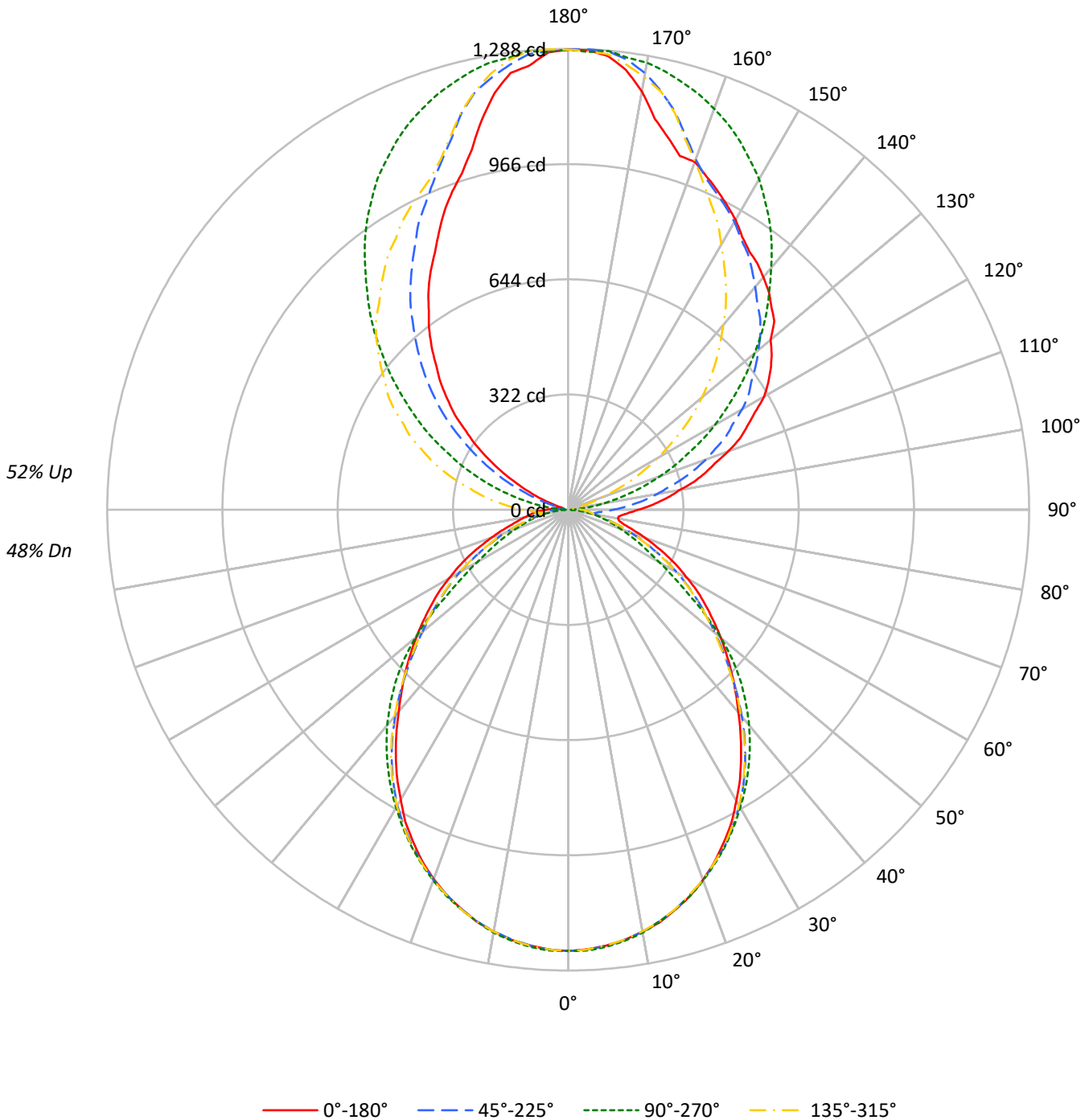
Input Watts (W): 56.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20										
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	50	30	10	0														
RCR																																						
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48	48	48	48	48	48	48														
1	97	93	89	86	89	86	83	80	72	70	68	60	58	56	48	47	46	41	41	41	41	41	41	41														
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	34	34	34	34	34	34	34														
3	81	72	65	59	75	67	60	55	56	52	48	47	44	41	38	36	34	30	30	30	30	30	30	30														
4	75	64	56	50	68	59	53	47	50	45	41	42	38	35	34	32	29	26	26	26	26	26	26	26														
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23	23	23	23	23	23	23														
6	63	51	43	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20	20	20	20	20	20	20														
7	59	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18	18	18	18	18	18	18														
8	54	42	35	29	50	39	33	28	34	28	25	29	25	21	24	21	18	16	16	16	16	16	16	16														
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15	15	15	15	15	15	15														
10	47	35	28	24	44	33	27	22	29	24	20	24	20	18	21	17	15	13	13	13	13	13	13	13														

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10621	10621	10621	10621
5°	10441	9747	10441	9747
10°	10220	8923	10220	8923
15°	9946	8131	9922	8131
20°	9606	7408	9581	7408
25°	9167	6723	9142	6723
30°	8646	6062	8612	6062
35°	8071	5432	8044	5432
40°	7454	4807	7417	4807
45°	6912	4156	6883	4156
50°	6395	3408	6364	3408
55°	5894	2521	5872	2521
60°	5353	1858	5341	1858
65°	4784	1405	4784	1405
70°	4133	1040	4149	1040
75°	3545	752	3605	752
80°	3925	497	3448	497
85°	5938	206	3681	206



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	2.0
10°-20°	325.7	5.5
20°-30°	475.2	8.0
30°-40°	537.0	9.1
40°-50°	501.9	8.5
50°-60°	396.0	6.7
60°-70°	259.0	4.4
70°-80°	135.2	2.3
80°-90°	80.9	1.4
90°-100°	109.3	1.9
100°-110°	200.1	3.4
110°-120°	341.8	5.8
120°-130°	464.2	7.9
130°-140°	529.4	9.0
140°-150°	528.1	8.9
150°-160°	459.9	7.8
160°-170°	323.5	5.5
170°-180°	120.5	2.0
0°-30°	917.0	15.5
0°-40°	1454.0	24.6
0°-60°	2351.9	39.8
0°-90°	2827.0	47.9
90°-120°	651.2	11.0
90°-150°	2173.0	36.8
90°-180°	3077.0	52.1
0°-180°	5903.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1233	1233	1233	1233	1233	
5°	1223	1226	1223	1226	1223	116
15°	1157	1156	1154	1156	1157	326
25°	1027	1038	1024	1038	1027	472
35°	842	879	840	879	842	526
45°	646	682	644	682	646	499
55°	470	408	469	408	470	421
65°	305	217	305	217	305	302
75°	162	107	164	107	162	181
85°	156	26	96	26	156	124
90°	196	2	59	2	196	108
95°	255	37	40	37	255	221
105°	396	180	13	180	396	417
115°	552	367	127	367	552	548
125°	691	575	314	575	691	617
135°	803	785	505	785	803	620
145°	882	982	679	982	882	556
155°	985	1136	855	1136	985	454
165°	1077	1236	1042	1236	1077	306
175°	1273	1287	1246	1287	1273	119
180°	1286	1286	1286	1286	1286	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4
2.5°	1229.6	1231.4	1230.3	1232.2	1233.2	1231.3	1230.3	1231.4	1230.5	1231.4	1230.3
5°	1222.6	1224.4	1223.3	1224.3	1226.3	1224.3	1222.4	1224.4	1222.6	1224.4	1222.4
7.5°	1212.5	1214.4	1212.4	1214.3	1215.3	1213.4	1211.4	1213.4	1212.5	1213.4	1211.4
10°	1197.4	1198.4	1197.4	1198.4	1200.4	1197.4	1196.4	1196.5	1197.4	1196.5	1196.4
12.5°	1181.3	1180.4	1178.4	1179.4	1178.5	1179.4	1178.4	1178.5	1179.4	1178.5	1178.4
15°	1157.2	1157.4	1156.4	1158.4	1156.5	1157.5	1155.5	1155.5	1154.4	1155.5	1155.5
17.5°	1132.2	1131.4	1129.4	1131.5	1131.5	1131.5	1128.5	1130.4	1129.4	1130.4	1128.5
20°	1101.2	1102.3	1101.4	1103.5	1102.6	1102.6	1100.5	1100.4	1098.4	1100.4	1100.5
22.5°	1066.3	1068.3	1068.4	1072.5	1070.6	1071.6	1067.5	1066.4	1064.4	1066.4	1067.5
25°	1027.3	1030.3	1036.4	1038.5	1037.6	1037.6	1034.5	1027.5	1024.5	1027.5	1034.5
27.5°	987.3	990.3	996.4	1001.4	1000.6	1000.5	994.5	987.5	984.5	987.5	994.5
30°	939.3	945.3	957.3	963.4	961.6	961.5	954.5	942.5	935.6	942.5	954.5
32.5°	893.3	898.3	911.3	922.4	921.5	920.5	908.5	894.6	889.6	894.6	908.5
35°	842.4	845.4	862.4	877.4	878.6	874.6	859.6	842.6	839.6	842.6	859.6
37.5°	791.4	792.4	810.4	831.4	833.5	828.6	807.6	789.6	788.6	789.6	807.6
40°	740.4	738.4	754.4	779.4	786.5	777.6	750.7	734.7	736.7	734.7	750.7
42.5°	692.4	685.4	698.4	726.4	735.5	724.6	695.7	681.7	688.7	681.7	695.7
45°	646.4	634.4	641.4	666.4	682.5	664.6	637.8	631.7	643.7	631.7	637.8
47.5°	600.4	589.4	586.4	606.5	624.5	605.6	582.8	586.7	597.7	586.7	582.8
50°	556.4	544.4	535.4	547.5	557.6	545.7	531.8	540.8	553.7	540.8	531.8
52.5°	512.4	501.4	486.5	488.5	484.6	486.7	483.8	497.8	509.7	497.8	483.8
55°	470.5	460.5	440.5	430.6	407.7	428.8	437.8	457.8	468.7	457.8	437.8
57.5°	430.5	421.5	396.5	371.6	346.7	369.8	393.8	418.8	428.7	418.8	393.8
60°	385.6	380.6	351.6	313.7	294.7	312.8	349.8	378.8	384.7	378.8	349.8
62.5°	345.6	339.6	306.6	264.7	249.8	263.8	304.8	337.8	344.7	337.8	304.8
65°	304.7	295.7	261.7	220.7	216.8	219.8	260.8	294.8	304.7	294.8	260.8
67.5°	263.7	254.7	222.7	185.8	182.8	185.8	221.8	253.8	263.7	253.8	221.8
70°	226.8	212.8	184.8	152.8	154.8	152.8	184.8	213.7	227.7	213.7	184.8
72.5°	192.8	172.8	151.8	125.8	129.9	124.9	151.8	173.7	194.6	173.7	151.8
75°	161.8	139.8	117.9	100.9	106.9	100.9	118.8	140.7	164.5	140.7	118.8
77.5°	146.1	117.4	91.9	79.9	87.9	79.9	92.8	114.7	142.4	114.7	92.8
80°	141.5	110.2	74.6	60.9	66.9	60.9	72.8	95.6	124.3	95.6	72.8
82.5°	142.3	115.1	73.5	42.9	45.9	42.9	62.6	82.4	107.8	82.4	62.6
85°	155.5	130.4	83.5	35.6	25.9	33.8	57.2	75.0	96.4	75.0	57.2
87.5°	173.1	155.0	101.8	41.3	7.0	28.5	50.1	67.8	79.6	67.8	50.1
90°	195.5	181.5	126.5	53.3	1.9	18.8	36.6	53.4	59.4	53.4	36.6
92.5°	226.5	211.6	154.1	74.5	15.5	11.8	29.7	43.6	48.5	43.6	29.7
95°	254.9	247.5	186.2	97.4	37.3	6.6	22.7	36.8	39.7	36.8	22.7
97.5°	286.9	280.3	219.1	128.1	65.5	11.9	18.4	30.6	32.6	30.6	18.4
100°	315.3	311.4	252.0	167.2	100.0	31.0	11.4	26.3	29.3	26.3	11.4
102.5°	360.0	345.1	285.2	204.4	137.2	57.3	14.6	18.3	22.3	18.3	14.6
105°	395.6	378.9	329.7	243.4	179.9	92.7	36.4	13.9	13.4	13.9	36.4
107.5°	429.6	420.6	369.6	283.4	225.3	133.6	67.3	35.6	22.9	35.6	67.3
110°	475.0	464.1	408.7	323.3	272.5	177.1	102.7	64.6	50.1	64.6	102.7



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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°	518.6	510.5	445.0	365.1	321.5	224.4	146.3	101.0	87.3	101.0	146.3
115°	552.2	547.7	487.8	404.1	366.9	277.9	195.4	143.6	127.3	143.6	195.4
117.5°	587.6	586.7	518.6	444.1	421.4	326.0	239.9	186.3	169.1	186.3	239.9
120°	632.1	624.9	561.3	484.0	473.1	376.9	288.9	235.3	218.1	235.3	288.9
122.5°	663.0	658.5	597.6	522.2	522.2	428.6	336.1	282.6	264.4	282.6	336.1
125°	691.1	689.3	624.9	560.3	574.8	476.8	388.8	334.3	314.3	334.3	388.8
127.5°	716.6	719.3	660.3	602.1	628.4	525.8	440.5	380.6	359.7	380.6	440.5
130°	738.4	747.4	693.9	640.2	679.2	579.4	486.8	426.9	413.3	426.9	486.8
132.5°	781.0	775.6	728.4	679.2	733.7	628.4	535.9	473.2	457.8	473.2	535.9
135°	802.8	804.6	758.3	713.8	784.6	678.4	582.2	520.4	505.0	520.4	582.2
137.5°	829.1	823.7	781.9	754.7	831.8	725.6	627.6	570.4	545.9	570.4	627.6
140°	848.2	847.3	812.8	791.0	882.6	771.9	673.9	615.8	593.1	615.8	673.9
142.5°	868.2	873.6	843.7	831.0	933.5	821.0	723.8	660.3	638.5	660.3	723.8
145°	881.8	893.6	874.5	880.9	981.6	875.5	767.4	702.9	679.3	702.9	767.4
147.5°	904.5	919.9	897.2	916.3	1023.4	923.6	811.0	747.4	726.5	747.4	811.0
150°	935.4	942.6	929.0	965.3	1067.0	977.1	855.5	790.1	769.2	790.1	855.5
152.5°	959.9	969.0	953.5	1018.9	1100.6	1026.2	904.5	831.9	807.4	831.9	904.5
155°	985.3	988.9	978.1	1070.7	1136.0	1074.3	943.5	878.2	854.6	878.2	943.5
157.5°	1008.9	1016.2	1003.5	1109.7	1166.9	1116.1	988.0	924.5	903.6	924.5	988.0
160°	1034.3	1034.3	1041.6	1155.1	1192.3	1152.4	1035.3	975.3	946.3	975.3	1035.3
162.5°	1037.1	1054.3	1093.4	1186.9	1216.8	1184.2	1086.1	1011.6	986.2	1011.6	1086.1
165°	1077.0	1092.5	1151.5	1215.0	1235.9	1212.3	1148.7	1071.6	1041.6	1071.6	1148.7
167.5°	1118.8	1151.5	1198.7	1246.8	1254.1	1238.6	1196.9	1143.3	1116.1	1143.3	1196.9
170°	1186.9	1215.0	1238.6	1258.6	1268.6	1259.5	1226.8	1200.5	1183.2	1200.5	1226.8
172.5°	1239.5	1258.6	1267.7	1280.4	1274.0	1270.4	1254.1	1241.4	1231.3	1241.4	1254.1
175°	1273.0	1277.7	1285.8	1281.3	1286.8	1276.8	1277.7	1284.0	1245.8	1284.0	1277.7
177.5°	1284.8	1292.2	1287.7	1279.5	1280.4	1278.6	1282.2	1285.8	1279.4	1285.8	1282.2
180°	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1233.4	1233.4	1233.4	1233.4	1233.4	1233.4
2.5°	1231.3	1233.2	1232.2	1230.3	1231.4	1229.6
5°	1224.3	1226.3	1224.3	1223.3	1224.4	1222.6
7.5°	1213.4	1215.3	1214.3	1212.4	1214.4	1212.5
10°	1197.4	1200.4	1198.4	1197.4	1198.4	1197.4
12.5°	1179.4	1178.5	1179.4	1178.4	1180.4	1181.3
15°	1157.5	1156.5	1158.4	1156.4	1157.4	1157.2
17.5°	1131.5	1131.5	1131.5	1129.4	1131.4	1132.2
20°	1102.6	1102.6	1103.5	1101.4	1102.3	1101.2
22.5°	1071.6	1070.6	1072.5	1068.4	1068.3	1066.3
25°	1037.6	1037.6	1038.5	1036.4	1030.3	1027.3
27.5°	1000.5	1000.6	1001.4	996.4	990.3	987.3
30°	961.5	961.6	963.4	957.3	945.3	939.3
32.5°	920.5	921.5	922.4	911.3	898.3	893.3
35°	874.6	878.6	877.4	862.4	845.4	842.4
37.5°	828.6	833.5	831.4	810.4	792.4	791.4
40°	777.6	786.5	779.4	754.4	738.4	740.4
42.5°	724.6	735.5	726.4	698.4	685.4	692.4
45°	664.6	682.5	666.4	641.4	634.4	646.4
47.5°	605.6	624.5	606.5	586.4	589.4	600.4
50°	545.7	557.6	547.5	535.4	544.4	556.4
52.5°	486.7	484.6	488.5	486.5	501.4	512.4
55°	428.8	407.7	430.6	440.5	460.5	470.5
57.5°	369.8	346.7	371.6	396.5	421.5	430.5
60°	312.8	294.7	313.7	351.6	380.6	385.6
62.5°	263.8	249.8	264.7	306.6	339.6	345.6
65°	219.8	216.8	220.7	261.7	295.7	304.7
67.5°	185.8	182.8	185.8	222.7	254.7	263.7
70°	152.8	154.8	152.8	184.8	212.8	226.8
72.5°	124.9	129.9	125.8	151.8	172.8	192.8
75°	100.9	106.9	100.9	117.9	139.8	161.8
77.5°	79.9	87.9	79.9	91.9	117.4	146.1
80°	60.9	66.9	60.9	74.6	110.2	141.5
82.5°	42.9	45.9	42.9	73.5	115.1	142.3
85°	33.8	25.9	35.6	83.5	130.4	155.5
87.5°	28.5	7.0	41.3	101.8	155.0	173.1
90°	18.8	1.9	53.3	126.5	181.5	195.5
92.5°	11.8	15.5	74.5	154.1	211.6	226.5
95°	6.6	37.3	97.4	186.2	247.5	254.9
97.5°	11.9	65.5	128.1	219.1	280.3	286.9
100°	31.0	100.0	167.2	252.0	311.4	315.3
102.5°	57.3	137.2	204.4	285.2	345.1	360.0
105°	92.7	179.9	243.4	329.7	378.9	395.6
107.5°	133.6	225.3	283.4	369.6	420.6	429.6
110°	177.1	272.5	323.3	408.7	464.1	475.0



TEST NUMBER: P392582

CATALOG NUMBER: MWL-3-30-28-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	224.4	321.5	365.1	445.0	510.5	518.6
115°	277.9	366.9	404.1	487.8	547.7	552.2
117.5°	326.0	421.4	444.1	518.6	586.7	587.6
120°	376.9	473.1	484.0	561.3	624.9	632.1
122.5°	428.6	522.2	522.2	597.6	658.5	663.0
125°	476.8	574.8	560.3	624.9	689.3	691.1
127.5°	525.8	628.4	602.1	660.3	719.3	716.6
130°	579.4	679.2	640.2	693.9	747.4	738.4
132.5°	628.4	733.7	679.2	728.4	775.6	781.0
135°	678.4	784.6	713.8	758.3	804.6	802.8
137.5°	725.6	831.8	754.7	781.9	823.7	829.1
140°	771.9	882.6	791.0	812.8	847.3	848.2
142.5°	821.0	933.5	831.0	843.7	873.6	868.2
145°	875.5	981.6	880.9	874.5	893.6	881.8
147.5°	923.6	1023.4	916.3	897.2	919.9	904.5
150°	977.1	1067.0	965.3	929.0	942.6	935.4
152.5°	1026.2	1100.6	1018.9	953.5	969.0	959.9
155°	1074.3	1136.0	1070.7	978.1	988.9	985.3
157.5°	1116.1	1166.9	1109.7	1003.5	1016.2	1008.9
160°	1152.4	1192.3	1155.1	1041.6	1034.3	1034.3
162.5°	1184.2	1216.8	1186.9	1093.4	1054.3	1037.1
165°	1212.3	1235.9	1215.0	1151.5	1092.5	1077.0
167.5°	1238.6	1254.1	1246.8	1198.7	1151.5	1118.8
170°	1259.5	1268.6	1258.6	1238.6	1215.0	1186.9
172.5°	1270.4	1274.0	1280.4	1267.7	1258.6	1239.5
175°	1276.8	1286.8	1281.3	1285.8	1277.7	1273.0
177.5°	1278.6	1280.4	1279.5	1287.7	1292.2	1284.8
180°	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8

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