

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: P392544

Luminaire Tested: **MWL-2-35-38-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392544  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-2-35-38-UNV-L930-EDD  
Description: MWL 2FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

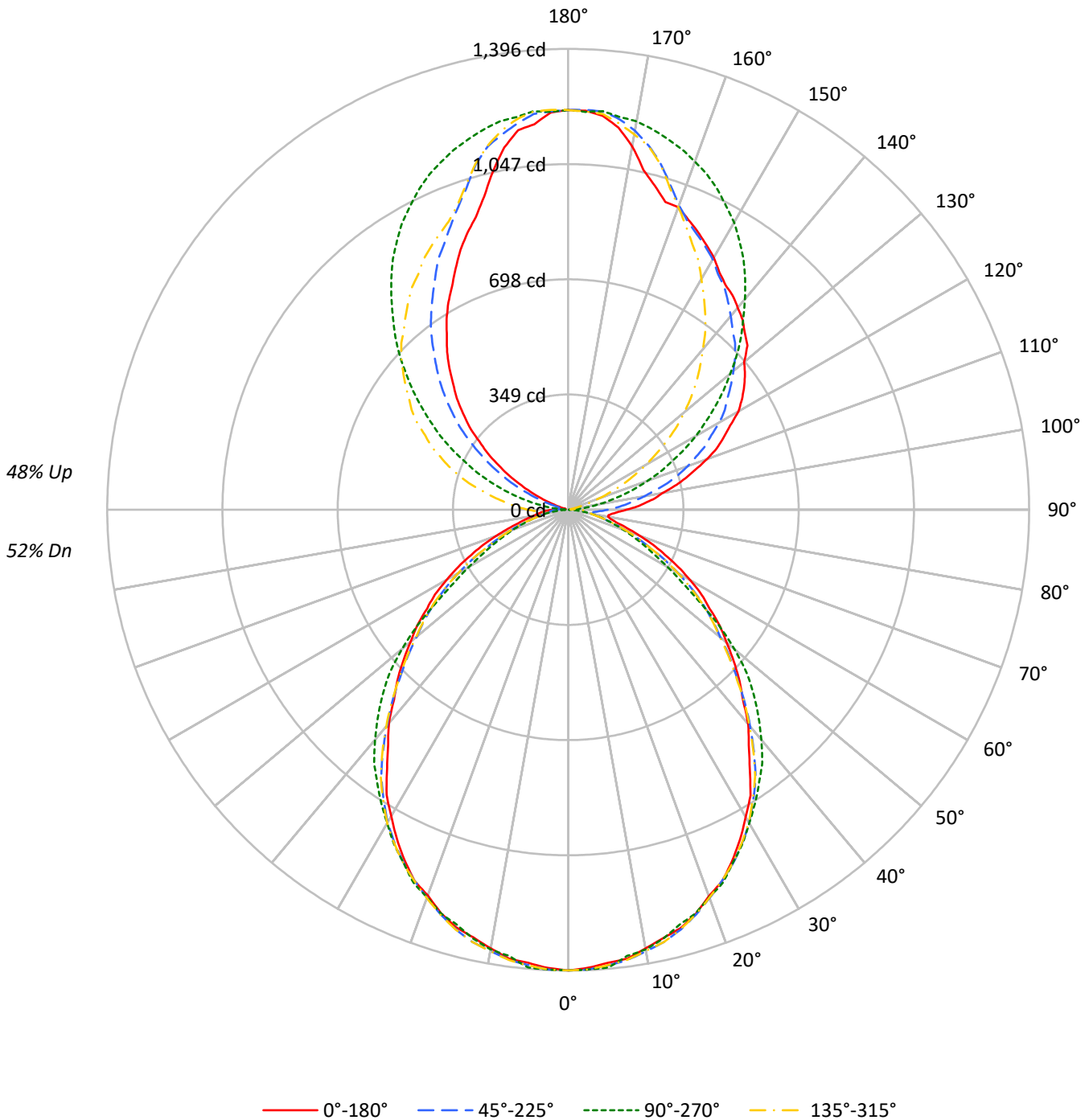
Lumens per Lamp: N/A  
Luminaire Lumens: 6068.4 lumens  
Efficiency: N/A  
Efficacy: 71.1 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.18 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 85.345  
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-2-35-38-UNV-L930-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	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	99	94	91	87	91	87	84	81	75	72	70	63	61	60	52	51	50	45				
2	90	83	77	72	83	77	72	67	66	62	59	56	53	50	46	44	43	38				
3	82	73	66	60	76	68	62	57	58	54	50	50	46	43	41	39	37	33				
4	76	65	57	51	70	61	54	49	52	47	43	44	41	37	37	34	32	28				
5	70	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25				
6	64	52	44	39	59	49	42	37	42	37	33	36	32	29	31	27	25	22				
7	59	47	40	34	55	44	37	32	39	33	29	33	29	26	28	25	22	20				
8	55	43	35	30	51	40	34	29	35	30	26	30	26	23	26	23	20	18				
9	52	39	32	27	48	37	30	26	32	27	23	28	24	21	24	21	18	16				
10	48	36	29	24	45	34	28	23	30	25	21	26	22	19	22	19	17	15				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	18027	18027	18027	18027
5°	17550	16600	17550	16600
10°	17073	15084	17073	15084
15°	16625	13728	16592	13728
20°	15919	12589	15887	12589
25°	15256	11469	15223	11469
30°	14311	10365	14267	10365
35°	13186	9351	13150	9351
40°	12171	8340	12121	8340
45°	11090	7264	11052	7264
50°	10076	6033	10034	6033
55°	9079	4478	9048	4478
60°	8089	3290	8072	3290
65°	6845	2445	6845	2445
70°	5531	1791	5551	1791
75°	4296	1257	4369	1257
80°	4177	797	3625	797
85°	5917	334	3485	334



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.2	2.2
10°-20°	369.1	6.1
20°-30°	541.5	8.9
30°-40°	614.2	10.1
40°-50°	573.3	9.4
50°-60°	450.4	7.4
60°-70°	280.6	4.6
70°-80°	136.3	2.2
80°-90°	76.9	1.3
90°-100°	100.6	1.7
100°-110°	186.8	3.1
110°-120°	321.9	5.3
120°-130°	437.4	7.2
130°-140°	499.1	8.2
140°-150°	497.7	8.2
150°-160°	433.4	7.1
160°-170°	304.7	5.0
170°-180°	113.4	1.9
0°-30°	1041.9	17.2
0°-40°	1656.1	27.3
0°-60°	2679.8	44.2
0°-90°	3173.6	52.3
90°-120°	609.2	10.0
90°-150°	2043.3	33.7
90°-180°	2895.0	47.7
0°-180°	6068.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1396	1396	1396	1396	1396	
5°	1378	1392	1378	1392	1378	131
15°	1313	1302	1310	1302	1313	369
25°	1174	1180	1172	1180	1174	539
35°	958	1008	956	1008	958	601
45°	734	795	731	795	734	566
55°	523	483	521	483	523	471
65°	324	252	324	252	324	323
75°	153	119	156	119	153	172
85°	135	28	80	28	135	108
90°	176	2	48	2	176	98
95°	234	35	31	35	234	203
105°	367	169	8	169	367	388
115°	520	346	120	346	520	516
125°	650	542	296	542	650	581
135°	756	740	476	740	756	584
145°	831	926	640	926	831	524
155°	929	1070	806	1070	929	428
165°	1015	1163	982	1163	1015	288
175°	1198	1212	1172	1212	1198	112
180°	1211	1211	1211	1211	1211	



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CATALOG NUMBER: MWL-2-35-38-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6
2.5°	1388.9	1386.4	1393.9	1389.9	1393.9	1389.0	1393.9	1386.4	1389.8	1386.4	1393.9
5°	1378.2	1382.4	1385.7	1383.3	1392.3	1383.3	1384.9	1382.4	1378.2	1382.4	1384.9
7.5°	1371.6	1375.0	1375.9	1372.5	1363.5	1371.7	1375.0	1374.1	1371.6	1374.1	1375.0
10°	1349.5	1360.2	1357.7	1354.5	1352.8	1353.6	1356.9	1358.5	1349.5	1358.5	1356.9
12.5°	1329.0	1331.5	1341.3	1333.9	1330.5	1333.9	1341.3	1329.7	1327.3	1329.7	1341.3
15°	1312.6	1309.2	1316.6	1308.3	1301.7	1307.5	1315.7	1307.5	1310.0	1307.5	1315.7
17.5°	1283.8	1278.8	1286.1	1285.4	1282.0	1285.4	1285.4	1278.0	1281.2	1278.0	1285.4
20°	1245.9	1253.3	1251.6	1253.2	1249.2	1252.4	1250.8	1251.6	1243.4	1251.6	1250.8
22.5°	1218.0	1216.3	1217.1	1219.6	1223.6	1218.7	1216.2	1214.6	1216.2	1214.6	1216.2
25°	1174.4	1171.9	1181.8	1179.3	1180.0	1178.5	1180.0	1169.4	1171.9	1169.4	1180.0
27.5°	1126.7	1125.1	1139.9	1142.3	1142.3	1141.4	1138.1	1122.5	1124.1	1122.5	1138.1
30°	1074.9	1079.1	1096.3	1097.9	1096.2	1096.2	1093.8	1076.5	1071.6	1076.5	1093.8
32.5°	1027.2	1023.9	1042.9	1056.0	1053.4	1054.3	1040.3	1020.6	1023.8	1020.6	1040.3
35°	958.2	962.3	989.4	1005.9	1008.3	1003.3	986.9	959.7	955.6	959.7	986.9
37.5°	898.1	901.5	923.6	956.5	965.5	953.9	921.1	898.9	895.6	898.9	921.1
40°	848.0	838.1	857.0	895.6	909.6	894.0	853.6	834.6	844.5	834.6	853.6
42.5°	783.8	779.8	791.1	833.9	853.6	832.2	788.6	776.2	780.4	776.2	788.6
45°	733.6	722.1	723.8	767.4	795.3	765.7	720.3	719.5	731.1	719.5	720.3
47.5°	680.2	665.4	663.7	699.0	734.4	698.2	660.4	662.8	677.6	662.8	660.4
50°	625.9	618.5	602.1	627.5	658.0	625.8	598.7	615.1	623.3	615.1	598.7
52.5°	579.0	569.2	550.2	565.9	574.1	564.1	547.7	565.8	576.5	565.8	547.7
55°	523.1	519.0	497.7	498.5	482.8	496.7	495.1	516.4	521.3	516.4	495.1
57.5°	479.5	473.8	441.7	426.9	407.1	425.2	439.2	471.2	477.8	471.2	439.2
60°	426.1	419.5	384.2	357.7	347.9	357.0	382.4	417.8	425.2	417.8	382.4
62.5°	375.9	368.5	330.7	296.9	292.8	296.1	329.0	366.8	375.0	366.8	329.0
65°	324.0	311.7	273.9	245.9	251.6	245.1	273.0	310.9	324.0	310.9	273.0
67.5°	278.0	259.1	230.3	204.0	213.1	204.0	229.5	258.3	278.0	258.3	229.5
70°	230.3	209.7	189.2	167.8	177.7	167.8	189.2	210.6	231.1	210.6	189.2
72.5°	188.3	169.5	152.2	137.4	145.5	136.5	152.2	170.3	190.1	170.3	152.2
75°	153.0	132.4	117.5	108.6	119.2	108.6	118.5	133.3	155.6	133.3	118.5
77.5°	132.7	112.0	88.0	84.7	94.6	84.7	88.8	109.4	129.3	109.4	88.8
80°	122.5	105.9	70.9	63.3	71.5	63.3	69.1	92.3	106.3	92.3	69.1
82.5°	123.4	110.7	69.6	44.4	47.7	44.4	59.3	79.9	90.9	79.9	59.3
85°	135.0	124.9	79.3	36.4	28.0	34.6	54.5	72.7	79.5	72.7	54.5
87.5°	152.5	148.2	96.7	41.6	8.2	29.8	48.0	66.2	64.6	66.2	48.0
90°	175.9	172.4	120.9	51.4	1.7	19.0	36.4	51.9	47.9	51.9	36.4
92.5°	207.8	200.0	145.9	68.0	14.4	9.2	28.9	42.1	40.4	42.1	28.9
95°	233.7	229.4	173.5	89.6	35.0	4.3	19.8	31.3	31.3	31.3	19.8
97.5°	264.7	257.9	201.2	120.4	61.5	11.1	12.5	23.2	25.6	23.2	12.5
100°	288.9	284.0	233.9	157.1	93.9	29.1	7.7	15.8	20.0	15.8	7.7
102.5°	329.4	317.5	268.1	192.0	128.9	53.8	13.6	10.1	11.8	10.1	13.6
105°	367.2	355.1	310.7	228.8	169.1	87.1	35.0	11.9	7.7	11.9	35.0
107.5°	403.8	395.3	348.3	267.2	211.8	126.3	64.0	33.2	21.3	33.2	64.0
110°	446.6	436.3	385.0	304.8	256.9	167.3	97.3	60.6	46.8	60.6	97.3



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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°	487.5	479.9	419.2	344.0	303.1	211.8	138.3	94.7	81.9	94.7	138.3
115°	519.9	514.8	458.5	380.8	345.8	262.0	183.5	134.8	120.3	134.8	183.5
117.5°	553.2	552.3	488.3	418.3	397.0	307.4	226.2	175.8	159.6	175.8	226.2
120°	595.0	588.3	528.5	456.7	446.5	356.0	272.3	221.9	205.7	221.9	272.3
122.5°	624.1	619.8	562.6	492.6	492.6	404.6	316.7	266.4	249.2	266.4	316.7
125°	650.5	648.8	588.3	528.5	542.1	449.9	366.2	315.0	296.2	315.0	366.2
127.5°	674.5	677.0	621.5	567.7	592.5	496.1	414.9	358.5	338.9	358.5	414.9
130°	695.8	703.5	653.1	603.6	640.4	546.4	458.5	402.0	390.1	402.0	458.5
132.5°	735.9	730.8	685.6	641.2	692.4	593.4	504.5	446.5	431.9	446.5	504.5
135°	756.4	758.1	714.6	672.8	740.1	639.4	548.9	490.9	476.4	490.9	548.9
137.5°	781.2	776.1	736.8	711.2	784.6	683.9	591.6	537.8	514.8	537.8	591.6
140°	799.1	798.3	765.9	745.3	832.4	727.5	635.2	580.5	559.2	580.5	635.2
142.5°	817.9	823.1	794.8	782.9	880.2	773.5	682.1	622.3	601.9	622.3	682.1
145°	830.7	841.8	823.9	829.9	925.5	824.7	723.2	662.5	640.3	662.5	723.2
147.5°	852.1	866.6	845.3	863.2	964.9	870.0	764.1	704.3	684.7	704.3	764.1
150°	881.9	888.8	875.9	909.3	1004.9	920.4	806.8	745.3	725.6	745.3	806.8
152.5°	905.0	913.5	899.1	959.7	1036.5	966.4	852.9	784.6	761.5	784.6	852.9
155°	928.8	932.4	921.3	1008.3	1069.8	1011.8	888.8	828.2	805.9	828.2	888.8
157.5°	951.1	957.9	945.1	1045.1	1098.9	1051.0	930.6	871.7	852.0	871.7	930.6
160°	975.0	975.0	981.1	1087.8	1121.9	1085.2	975.0	919.5	892.1	919.5	975.0
162.5°	977.5	992.9	1029.7	1117.6	1145.0	1115.1	1022.9	952.8	929.7	952.8	1022.9
165°	1015.1	1028.8	1084.2	1144.0	1162.9	1141.5	1081.7	1009.2	981.8	1009.2	1081.7
167.5°	1053.6	1084.2	1128.7	1173.2	1180.0	1165.4	1127.0	1076.7	1051.0	1076.7	1127.0
170°	1117.6	1144.0	1165.4	1185.1	1194.5	1185.9	1154.3	1130.4	1114.2	1130.4	1154.3
172.5°	1167.2	1185.1	1192.8	1205.6	1199.6	1196.2	1180.0	1168.9	1159.5	1168.9	1180.0
175°	1197.9	1202.2	1210.7	1206.5	1211.6	1202.2	1203.0	1208.2	1172.4	1208.2	1203.0
177.5°	1209.8	1215.9	1212.4	1205.6	1206.4	1204.7	1207.3	1209.8	1204.7	1209.8	1207.3
180°	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6
2.5°	1389.0	1393.9	1389.9	1393.9	1386.4	1388.9
5°	1383.3	1392.3	1383.3	1385.7	1382.4	1378.2
7.5°	1371.7	1363.5	1372.5	1375.9	1375.0	1371.6
10°	1353.6	1352.8	1354.5	1357.7	1360.2	1349.5
12.5°	1333.9	1330.5	1333.9	1341.3	1331.5	1329.0
15°	1307.5	1301.7	1308.3	1316.6	1309.2	1312.6
17.5°	1285.4	1282.0	1285.4	1286.1	1278.8	1283.8
20°	1252.4	1249.2	1253.2	1251.6	1253.3	1245.9
22.5°	1218.7	1223.6	1219.6	1217.1	1216.3	1218.0
25°	1178.5	1180.0	1179.3	1181.8	1171.9	1174.4
27.5°	1141.4	1142.3	1142.3	1139.9	1125.1	1126.7
30°	1096.2	1096.2	1097.9	1096.3	1079.1	1074.9
32.5°	1054.3	1053.4	1056.0	1042.9	1023.9	1027.2
35°	1003.3	1008.3	1005.9	989.4	962.3	958.2
37.5°	953.9	965.5	956.5	923.6	901.5	898.1
40°	894.0	909.6	895.6	857.0	838.1	848.0
42.5°	832.2	853.6	833.9	791.1	779.8	783.8
45°	765.7	795.3	767.4	723.8	722.1	733.6
47.5°	698.2	734.4	699.0	663.7	665.4	680.2
50°	625.8	658.0	627.5	602.1	618.5	625.9
52.5°	564.1	574.1	565.9	550.2	569.2	579.0
55°	496.7	482.8	498.5	497.7	519.0	523.1
57.5°	425.2	407.1	426.9	441.7	473.8	479.5
60°	357.0	347.9	357.7	384.2	419.5	426.1
62.5°	296.1	292.8	296.9	330.7	368.5	375.9
65°	245.1	251.6	245.9	273.9	311.7	324.0
67.5°	204.0	213.1	204.0	230.3	259.1	278.0
70°	167.8	177.7	167.8	189.2	209.7	230.3
72.5°	136.5	145.5	137.4	152.2	169.5	188.3
75°	108.6	119.2	108.6	117.5	132.4	153.0
77.5°	84.7	94.6	84.7	88.0	112.0	132.7
80°	63.3	71.5	63.3	70.9	105.9	122.5
82.5°	44.4	47.7	44.4	69.6	110.7	123.4
85°	34.6	28.0	36.4	79.3	124.9	135.0
87.5°	29.8	8.2	41.6	96.7	148.2	152.5
90°	19.0	1.7	51.4	120.9	172.4	175.9
92.5°	9.2	14.4	68.0	145.9	200.0	207.8
95°	4.3	35.0	89.6	173.5	229.4	233.7
97.5°	11.1	61.5	120.4	201.2	257.9	264.7
100°	29.1	93.9	157.1	233.9	284.0	288.9
102.5°	53.8	128.9	192.0	268.1	317.5	329.4
105°	87.1	169.1	228.8	310.7	355.1	367.2
107.5°	126.3	211.8	267.2	348.3	395.3	403.8
110°	167.3	256.9	304.8	385.0	436.3	446.6





TEST NUMBER: P392544

CATALOG NUMBER: MWL-2-35-38-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	211.8	303.1	344.0	419.2	479.9	487.5
115°	262.0	345.8	380.8	458.5	514.8	519.9
117.5°	307.4	397.0	418.3	488.3	552.3	553.2
120°	356.0	446.5	456.7	528.5	588.3	595.0
122.5°	404.6	492.6	492.6	562.6	619.8	624.1
125°	449.9	542.1	528.5	588.3	648.8	650.5
127.5°	496.1	592.5	567.7	621.5	677.0	674.5
130°	546.4	640.4	603.6	653.1	703.5	695.8
132.5°	593.4	692.4	641.2	685.6	730.8	735.9
135°	639.4	740.1	672.8	714.6	758.1	756.4
137.5°	683.9	784.6	711.2	736.8	776.1	781.2
140°	727.5	832.4	745.3	765.9	798.3	799.1
142.5°	773.5	880.2	782.9	794.8	823.1	817.9
145°	824.7	925.5	829.9	823.9	841.8	830.7
147.5°	870.0	964.9	863.2	845.3	866.6	852.1
150°	920.4	1004.9	909.3	875.9	888.8	881.9
152.5°	966.4	1036.5	959.7	899.1	913.5	905.0
155°	1011.8	1069.8	1008.3	921.3	932.4	928.8
157.5°	1051.0	1098.9	1045.1	945.1	957.9	951.1
160°	1085.2	1121.9	1087.8	981.1	975.0	975.0
162.5°	1115.1	1145.0	1117.6	1029.7	992.9	977.5
165°	1141.5	1162.9	1144.0	1084.2	1028.8	1015.1
167.5°	1165.4	1180.0	1173.2	1128.7	1084.2	1053.6
170°	1185.9	1194.5	1185.1	1165.4	1144.0	1117.6
172.5°	1196.2	1199.6	1205.6	1192.8	1185.1	1167.2
175°	1202.2	1211.6	1206.5	1210.7	1202.2	1197.9
177.5°	1204.7	1206.4	1205.6	1212.4	1215.9	1209.8
180°	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7

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