

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: P392569

Luminaire Tested: **MWL-3-27-33-UNV-L835-EDD**

Issue Date: 3/12/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P392569  
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-3-27-33-UNV-L835-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

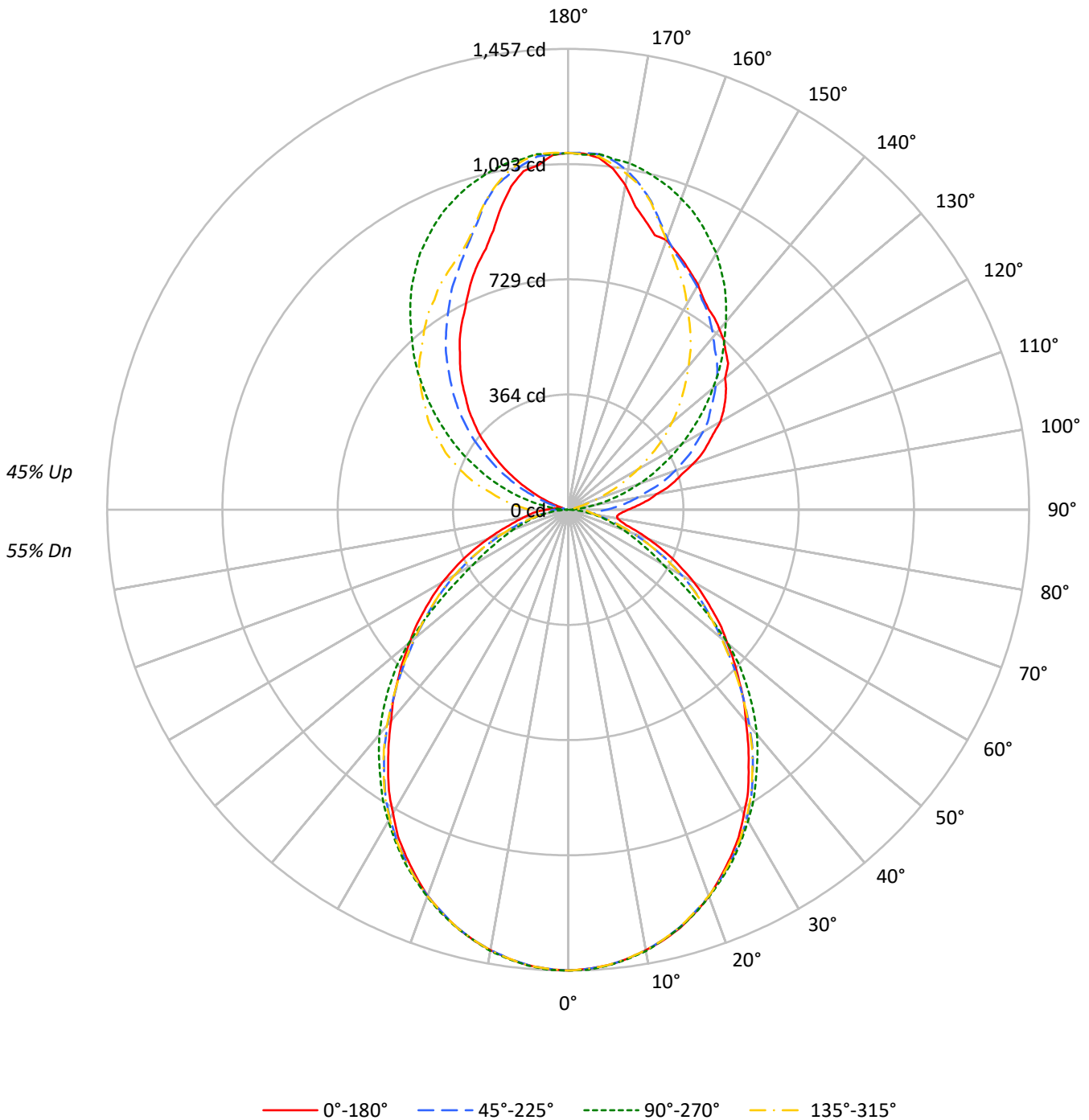
Lumens per Lamp: N/A  
Luminaire Lumens: 6041.0 lumens  
Efficiency: N/A  
Efficacy: 100.0 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 60.4  
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



TEST NUMBER: P392569  
CATALOG NUMBER: MWL-3-27-33-UNV-L835-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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	91	83	77	72	84	78	72	68	67	63	60	57	54	52	48	46	44	40
3	83	74	66	61	77	69	62	57	59	55	51	51	47	44	43	40	38	34
4	76	65	58	52	70	61	54	49	53	48	43	46	42	38	39	36	33	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	33	35	32	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	32	28	26	23
7	60	48	40	34	56	45	38	33	39	34	29	34	30	26	29	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	23	27	23	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	21	19	17
10	48	36	29	25	45	34	28	23	30	25	21	27	22	19	23	20	17	15

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

	0°	90°	180°	270°
0°	12547	12547	12547	12547
5°	12347	11502	12347	11502
10°	12069	10531	12069	10531
15°	11761	9612	11740	9612
20°	11353	8749	11332	8749
25°	10826	7949	10804	7949
30°	10227	7169	10197	7169
35°	9525	6399	9502	6399
40°	8793	5671	8760	5671
45°	8164	4889	8137	4889
50°	7545	4026	7516	4026
55°	6969	3010	6949	3010
60°	6374	2183	6364	2183
65°	5683	1641	5683	1641
70°	4900	1239	4915	1239
75°	4190	897	4244	897
80°	4386	575	3967	575
85°	6171	249	4196	249



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.1	2.3
10°-20°	384.7	6.4
20°-30°	561.4	9.3
30°-40°	634.4	10.5
40°-50°	593.2	9.8
50°-60°	468.3	7.8
60°-70°	306.1	5.1
70°-80°	159.4	2.6
80°-90°	88.2	1.5
90°-100°	102.5	1.7
100°-110°	176.9	2.9
110°-120°	300.1	5.0
120°-130°	407.6	6.7
130°-140°	464.7	7.7
140°-150°	463.4	7.7
150°-160°	403.5	6.7
160°-170°	283.8	4.7
170°-180°	105.7	1.7
0°-30°	1083.2	17.9
0°-40°	1717.6	28.4
0°-60°	2779.1	46.0
0°-90°	3332.8	55.2
90°-120°	579.5	9.6
90°-150°	1915.1	31.7
90°-180°	2708.0	44.8
0°-180°	6041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1457	1457	1457	1457	1457	
5°	1446	1447	1446	1447	1446	137
15°	1368	1367	1366	1367	1368	385
25°	1213	1227	1211	1227	1213	558
35°	994	1035	992	1035	994	622
45°	764	803	761	803	764	590
55°	556	487	555	487	556	499
65°	362	253	362	253	362	358
75°	191	128	194	128	191	212
85°	162	31	110	31	162	131
90°	189	2	70	2	189	104
95°	234	33	46	33	234	202
105°	350	158	14	158	350	369
115°	486	322	113	322	486	481
125°	606	505	276	505	606	542
135°	704	689	443	689	704	544
145°	774	862	596	862	774	488
155°	864	997	750	997	864	399
165°	945	1084	914	1084	945	268
175°	1117	1129	1093	1129	1117	104
180°	1128	1128	1128	1128	1128	



TEST NUMBER: P392569

CATALOG NUMBER: MWL-3-27-33-UNV-L835-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1
2.5°	1452.7	1455.4	1453.0	1453.8	1455.7	1453.0	1453.0	1455.4	1453.6	1455.4	1453.0
5°	1445.8	1447.5	1446.1	1446.1	1447.1	1446.1	1445.3	1447.5	1445.8	1447.5	1445.3
7.5°	1432.0	1434.5	1431.6	1433.3	1433.3	1432.6	1430.8	1433.7	1432.0	1433.7	1430.8
10°	1414.1	1416.8	1414.9	1414.9	1416.8	1414.1	1414.1	1415.3	1414.1	1415.3	1414.1
12.5°	1394.0	1394.2	1391.5	1393.4	1392.7	1393.4	1391.5	1392.7	1392.5	1392.7	1391.5
15°	1368.3	1366.7	1365.9	1366.9	1367.1	1366.1	1365.1	1365.1	1365.9	1365.1	1365.1
17.5°	1335.9	1337.2	1333.5	1336.6	1336.6	1336.6	1332.7	1336.4	1333.5	1336.4	1332.7
20°	1301.5	1300.7	1300.1	1302.2	1302.3	1301.4	1299.3	1299.1	1299.1	1299.1	1299.3
22.5°	1257.4	1260.4	1261.8	1265.9	1265.0	1265.0	1261.0	1258.8	1255.9	1258.8	1261.0
25°	1213.2	1218.1	1221.3	1227.6	1226.7	1226.7	1219.7	1215.8	1210.8	1215.8	1219.7
27.5°	1167.0	1168.0	1177.0	1186.1	1182.4	1185.3	1175.5	1165.6	1164.7	1165.6	1175.5
30°	1111.0	1115.9	1128.7	1138.7	1137.2	1137.1	1126.3	1113.6	1107.8	1113.6	1126.3
32.5°	1057.9	1059.9	1076.6	1088.6	1090.0	1087.0	1074.2	1056.7	1054.7	1056.7	1074.2
35°	994.2	999.2	1016.9	1037.5	1035.0	1035.0	1014.4	996.7	991.8	996.7	1014.4
37.5°	934.3	937.3	956.9	982.5	982.8	980.0	954.4	934.8	931.8	934.8	954.4
40°	873.4	872.4	891.1	919.8	927.8	918.1	887.8	869.1	870.1	869.1	887.8
42.5°	822.3	810.5	823.4	854.9	867.9	853.2	821.0	807.2	819.0	807.2	821.0
45°	763.5	751.7	758.6	788.1	803.0	786.4	755.3	749.2	761.0	749.2	755.3
47.5°	710.4	695.7	694.7	716.5	737.2	715.6	691.5	693.2	708.0	693.2	691.5
50°	656.4	642.6	632.8	647.7	658.6	646.1	629.6	639.4	653.9	639.4	629.6
52.5°	610.2	591.5	575.0	578.9	571.2	577.3	572.6	588.3	607.7	588.3	572.6
55°	556.3	544.5	521.0	508.3	486.9	506.7	518.5	542.1	554.7	542.1	518.5
57.5°	508.2	497.4	468.9	438.5	408.2	436.9	466.4	494.9	506.5	494.9	466.4
60°	459.1	448.3	413.9	369.9	346.3	369.1	412.4	446.8	458.4	446.8	412.4
62.5°	408.0	401.2	361.8	311.9	298.4	311.1	360.3	399.6	407.3	399.6	360.3
65°	362.0	350.3	310.0	261.8	253.2	261.0	309.2	349.5	362.0	349.5	309.2
67.5°	314.9	300.1	261.8	217.8	216.8	217.8	261.0	299.3	314.9	299.3	261.0
70°	268.9	252.2	216.8	180.4	184.4	180.4	216.8	253.0	269.7	253.0	216.8
72.5°	228.6	206.0	177.5	148.0	152.1	147.2	177.5	206.8	230.2	206.8	177.5
75°	191.2	165.7	141.3	118.7	127.6	118.7	142.1	166.5	193.7	166.5	142.1
77.5°	170.1	138.5	108.9	93.2	102.0	93.2	109.7	136.0	167.0	136.0	109.7
80°	158.1	126.0	87.7	71.5	77.4	71.5	86.1	113.2	143.0	113.2	86.1
82.5°	155.6	124.8	81.6	50.9	54.8	50.9	71.9	96.2	125.3	96.2	71.9
85°	161.6	134.9	87.3	40.5	31.3	38.9	64.2	86.4	109.9	86.4	64.2
87.5°	172.6	152.6	101.5	43.6	8.8	32.5	56.1	76.2	90.6	76.2	56.1
90°	188.9	173.1	121.4	52.5	1.8	22.2	42.5	60.8	69.5	60.8	42.5
92.5°	211.2	197.7	143.9	68.3	13.8	13.4	34.8	50.3	55.1	50.3	34.8
95°	234.4	227.6	170.3	85.8	32.8	6.1	26.9	42.8	45.6	42.8	26.9
97.5°	261.5	254.6	195.5	112.4	57.5	10.5	19.6	35.6	38.5	35.6	19.6
100°	283.7	279.0	223.5	146.7	87.8	27.2	12.5	29.0	32.9	29.0	12.5
102.5°	320.3	306.8	251.2	179.4	120.5	50.3	14.0	20.1	24.1	20.1	14.0
105°	349.7	333.6	290.2	213.7	157.8	81.4	33.0	13.5	14.4	13.5	33.0
107.5°	378.1	369.1	325.3	248.6	197.7	117.2	60.1	31.4	21.2	31.4	60.1
110°	417.9	407.4	359.5	283.7	239.1	155.5	91.2	56.9	45.1	56.9	91.2



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CATALOG NUMBER: MWL-3-27-33-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	456.1	447.9	391.4	320.3	282.0	196.8	129.4	88.7	77.8	88.7	129.4
115°	485.6	480.6	428.0	354.6	321.9	243.9	171.6	126.2	112.8	126.2	171.6
117.5°	515.6	514.9	455.1	389.6	369.7	286.1	210.6	163.6	148.5	163.6	210.6
120°	554.7	548.3	492.6	424.6	415.1	330.7	253.6	206.7	191.5	206.7	253.6
122.5°	581.7	577.8	524.4	459.0	459.0	377.1	295.0	248.0	232.1	248.0	295.0
125°	606.4	604.8	548.3	492.6	505.2	419.2	341.2	293.4	276.0	293.4	341.2
127.5°	628.7	631.1	579.3	529.1	552.2	462.3	386.6	334.0	315.8	334.0	386.6
130°	647.8	655.8	608.8	562.6	596.8	509.3	427.2	374.6	362.7	374.6	427.2
132.5°	685.3	680.5	639.1	596.8	644.6	552.2	470.2	415.3	401.7	415.3	470.2
135°	704.3	705.9	665.3	626.3	689.2	595.3	510.8	456.7	443.1	456.7	510.8
137.5°	727.4	722.7	686.1	662.2	730.7	636.6	550.6	500.5	479.0	500.5	550.6
140°	744.1	743.4	713.1	694.0	775.2	677.3	591.3	540.3	520.4	540.3	591.3
142.5°	761.7	766.4	740.2	729.0	819.8	720.3	635.1	579.3	560.2	579.3	635.1
145°	773.6	784.0	767.2	772.8	862.1	768.0	673.3	616.8	596.0	616.8	673.3
147.5°	793.6	807.1	787.2	803.9	898.6	810.3	711.5	655.8	637.4	655.8	711.5
150°	820.6	827.0	815.1	846.9	936.1	857.3	750.5	693.2	674.9	693.2	750.5
152.5°	842.1	850.1	836.5	893.9	965.6	900.3	793.6	729.8	708.4	729.8	793.6
155°	864.4	867.6	858.0	939.3	996.6	942.5	827.8	770.5	749.7	770.5	827.8
157.5°	885.2	891.5	880.3	973.5	1023.7	979.1	866.8	811.1	792.8	811.1	866.8
160°	907.5	907.5	913.8	1013.3	1046.0	1011.0	908.3	855.7	830.2	855.7	908.3
162.5°	909.8	925.0	959.2	1041.2	1067.5	1038.9	952.8	887.5	865.2	887.5	952.8
165°	944.8	958.4	1010.2	1065.9	1084.2	1063.5	1007.8	940.1	913.8	940.1	1007.8
167.5°	981.5	1010.2	1051.5	1093.8	1100.2	1086.6	1050.0	1003.0	979.1	1003.0	1050.0
170°	1041.2	1065.9	1086.6	1104.1	1112.9	1104.9	1076.2	1053.1	1038.0	1053.1	1076.2
172.5°	1087.2	1104.1	1112.1	1123.3	1117.7	1114.4	1100.2	1089.0	1080.0	1089.0	1100.2
175°	1116.7	1120.8	1128.0	1124.1	1128.8	1120.0	1120.8	1126.4	1092.8	1126.4	1120.8
177.5°	1127.0	1133.6	1129.6	1122.4	1123.3	1121.6	1124.9	1128.0	1122.3	1128.0	1124.9
180°	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0



TEST NUMBER: P392569

CATALOG NUMBER: MWL-3-27-33-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1457.1	1457.1	1457.1	1457.1	1457.1	1457.1
2.5°	1453.0	1455.7	1453.8	1453.0	1455.4	1452.7
5°	1446.1	1447.1	1446.1	1446.1	1447.5	1445.8
7.5°	1432.6	1433.3	1433.3	1431.6	1434.5	1432.0
10°	1414.1	1416.8	1414.9	1414.9	1416.8	1414.1
12.5°	1393.4	1392.7	1393.4	1391.5	1394.2	1394.0
15°	1366.1	1367.1	1366.9	1365.9	1366.7	1368.3
17.5°	1336.6	1336.6	1336.6	1333.5	1337.2	1335.9
20°	1301.4	1302.3	1302.2	1300.1	1300.7	1301.5
22.5°	1265.0	1265.0	1265.9	1261.8	1260.4	1257.4
25°	1226.7	1226.7	1227.6	1221.3	1218.1	1213.2
27.5°	1185.3	1182.4	1186.1	1177.0	1168.0	1167.0
30°	1137.1	1137.2	1138.7	1128.7	1115.9	1111.0
32.5°	1087.0	1090.0	1088.6	1076.6	1059.9	1057.9
35°	1035.0	1035.0	1037.5	1016.9	999.2	994.2
37.5°	980.0	982.8	982.5	956.9	937.3	934.3
40°	918.1	927.8	919.8	891.1	872.4	873.4
42.5°	853.2	867.9	854.9	823.4	810.5	822.3
45°	786.4	803.0	788.1	758.6	751.7	763.5
47.5°	715.6	737.2	716.5	694.7	695.7	710.4
50°	646.1	658.6	647.7	632.8	642.6	656.4
52.5°	577.3	571.2	578.9	575.0	591.5	610.2
55°	506.7	486.9	508.3	521.0	544.5	556.3
57.5°	436.9	408.2	438.5	468.9	497.4	508.2
60°	369.1	346.3	369.9	413.9	448.3	459.1
62.5°	311.1	298.4	311.9	361.8	401.2	408.0
65°	261.0	253.2	261.8	310.0	350.3	362.0
67.5°	217.8	216.8	217.8	261.8	300.1	314.9
70°	180.4	184.4	180.4	216.8	252.2	268.9
72.5°	147.2	152.1	148.0	177.5	206.0	228.6
75°	118.7	127.6	118.7	141.3	165.7	191.2
77.5°	93.2	102.0	93.2	108.9	138.5	170.1
80°	71.5	77.4	71.5	87.7	126.0	158.1
82.5°	50.9	54.8	50.9	81.6	124.8	155.6
85°	38.9	31.3	40.5	87.3	134.9	161.6
87.5°	32.5	8.8	43.6	101.5	152.6	172.6
90°	22.2	1.8	52.5	121.4	173.1	188.9
92.5°	13.4	13.8	68.3	143.9	197.7	211.2
95°	6.1	32.8	85.8	170.3	227.6	234.4
97.5°	10.5	57.5	112.4	195.5	254.6	261.5
100°	27.2	87.8	146.7	223.5	279.0	283.7
102.5°	50.3	120.5	179.4	251.2	306.8	320.3
105°	81.4	157.8	213.7	290.2	333.6	349.7
107.5°	117.2	197.7	248.6	325.3	369.1	378.1
110°	155.5	239.1	283.7	359.5	407.4	417.9





TEST NUMBER: P392569

CATALOG NUMBER: MWL-3-27-33-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	196.8	282.0	320.3	391.4	447.9	456.1
115°	243.9	321.9	354.6	428.0	480.6	485.6
117.5°	286.1	369.7	389.6	455.1	514.9	515.6
120°	330.7	415.1	424.6	492.6	548.3	554.7
122.5°	377.1	459.0	459.0	524.4	577.8	581.7
125°	419.2	505.2	492.6	548.3	604.8	606.4
127.5°	462.3	552.2	529.1	579.3	631.1	628.7
130°	509.3	596.8	562.6	608.8	655.8	647.8
132.5°	552.2	644.6	596.8	639.1	680.5	685.3
135°	595.3	689.2	626.3	665.3	705.9	704.3
137.5°	636.6	730.7	662.2	686.1	722.7	727.4
140°	677.3	775.2	694.0	713.1	743.4	744.1
142.5°	720.3	819.8	729.0	740.2	766.4	761.7
145°	768.0	862.1	772.8	767.2	784.0	773.6
147.5°	810.3	898.6	803.9	787.2	807.1	793.6
150°	857.3	936.1	846.9	815.1	827.0	820.6
152.5°	900.3	965.6	893.9	836.5	850.1	842.1
155°	942.5	996.6	939.3	858.0	867.6	864.4
157.5°	979.1	1023.7	973.5	880.3	891.5	885.2
160°	1011.0	1046.0	1013.3	913.8	907.5	907.5
162.5°	1038.9	1067.5	1041.2	959.2	925.0	909.8
165°	1063.5	1084.2	1065.9	1010.2	958.4	944.8
167.5°	1086.6	1100.2	1093.8	1051.5	1010.2	981.5
170°	1104.9	1112.9	1104.1	1086.6	1065.9	1041.2
172.5°	1114.4	1117.7	1123.3	1112.1	1104.1	1087.2
175°	1120.0	1128.8	1124.1	1128.0	1120.8	1116.7
177.5°	1121.6	1123.3	1122.4	1129.6	1133.6	1127.0
180°	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0

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