

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: P392659

Luminaire Tested: **MWL-4-34-33-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392659  
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-4-34-33-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

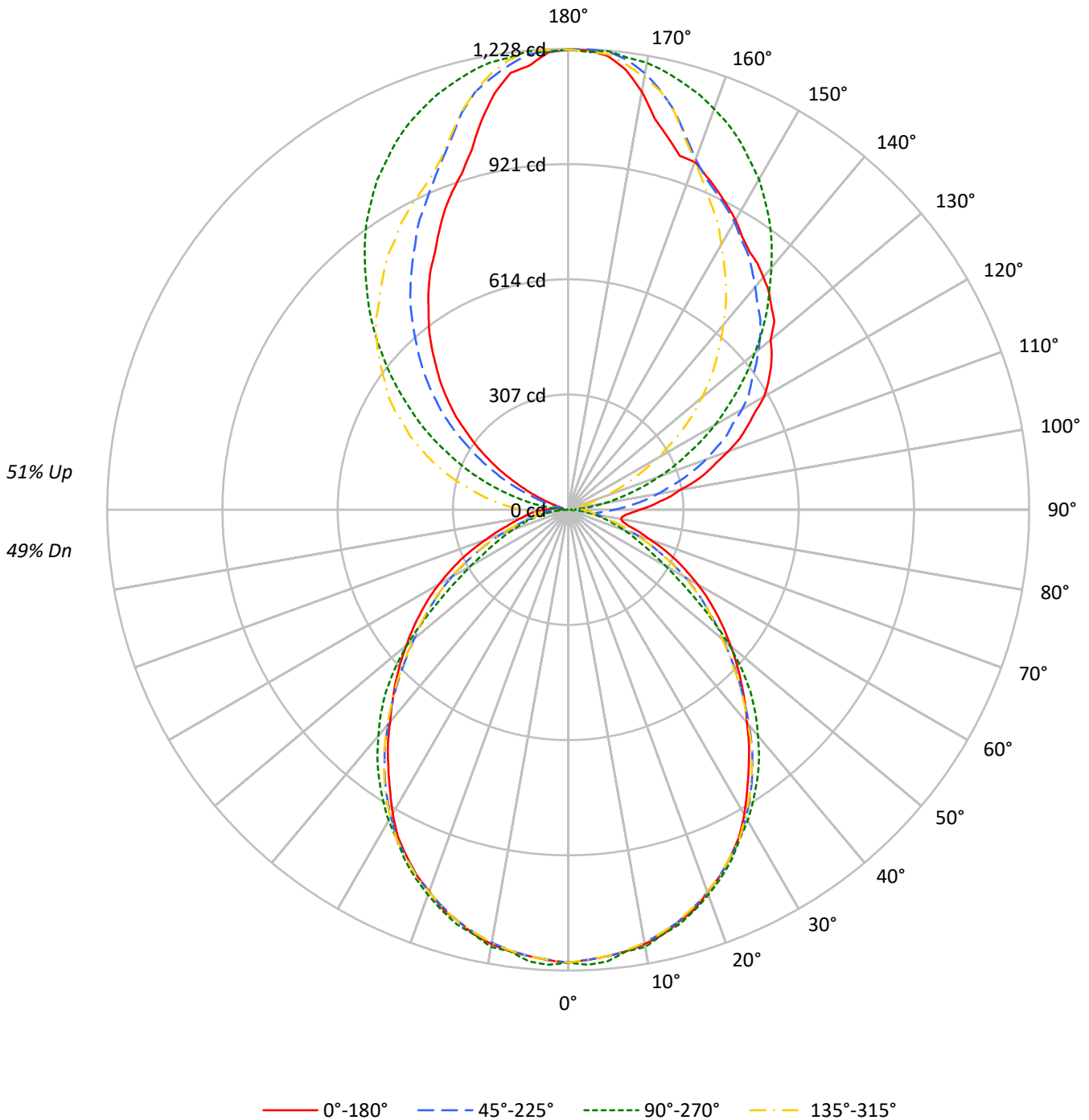
Lumens per Lamp: N/A  
Luminaire Lumens: 5771.1 lumens  
Efficiency: N/A  
Efficacy: 84.5 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 68.276  
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: P392659  
CATALOG NUMBER: MWL-4-34-33-UNV-L935-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49
1	98	93	90	86	90	86	83	80	73	70	68	60	59	57	49	48	47	42
2	89	82	76	71	82	76	70	66	64	60	57	53	51	48	43	42	40	35
3	82	72	65	59	75	67	61	56	57	52	48	47	44	41	39	36	34	30
4	75	64	56	50	69	59	53	47	51	45	41	42	39	35	35	32	30	26
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	32	29	26	23
6	63	51	43	38	58	48	41	36	41	36	31	35	30	27	29	26	23	20
7	59	47	39	33	54	43	36	31	37	32	28	32	27	24	26	23	21	18
8	54	42	35	29	50	39	33	28	34	29	25	29	25	22	24	21	19	16
9	51	39	31	26	47	36	29	25	31	26	22	27	23	20	22	19	17	15
10	47	35	28	24	44	33	27	22	29	24	20	25	21	18	21	18	15	13

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

	0°	90°	180°	270°
0°	7795	7795	7795	7795
5°	7673	7201	7673	7201
10°	7570	6596	7570	6596
15°	7399	6034	7382	6034
20°	7184	5504	7166	5504
25°	6941	5004	6923	5004
30°	6599	4524	6575	4524
35°	6158	4071	6139	4071
40°	5747	3605	5722	3605
45°	5396	3137	5375	3137
50°	5049	2566	5027	2566
55°	4722	1919	4706	1919
60°	4363	1420	4354	1420
65°	3942	1055	3942	1055
70°	3399	791	3413	791
75°	2986	582	3035	582
80°	3341	374	2958	374
85°	5209	172	3308	172



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	113.7	2.0
10°-20°	320.6	5.6
20°-30°	471.1	8.2
30°-40°	535.2	9.3
40°-50°	504.3	8.7
50°-60°	402.5	7.0
60°-70°	265.7	4.6
70°-80°	139.2	2.4
80°-90°	81.6	1.4
90°-100°	106.1	1.8
100°-110°	191.9	3.3
110°-120°	326.0	5.6
120°-130°	442.8	7.7
130°-140°	505.0	8.8
140°-150°	503.6	8.7
150°-160°	438.5	7.6
160°-170°	308.4	5.3
170°-180°	114.9	2.0
0°-30°	905.4	15.7
0°-40°	1440.6	25.0
0°-60°	2347.4	40.7
0°-90°	2833.9	49.1
90°-120°	624.0	10.8
90°-150°	2075.4	36.0
90°-180°	2937.0	50.9
0°-180°	5771.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1207	1207	1207	1207	1207	
5°	1194	1208	1194	1208	1194	113
15°	1138	1144	1135	1144	1138	321
25°	1021	1030	1019	1030	1021	469
35°	838	878	836	878	838	525
45°	652	687	650	687	652	504
55°	482	414	480	414	482	431
65°	316	217	316	217	316	312
75°	166	110	169	110	166	185
85°	154	29	98	29	154	124
90°	191	2	61	2	191	106
95°	243	36	38	36	243	212
105°	380	171	16	171	380	400
115°	527	350	122	350	527	523
125°	659	548	300	548	659	589
135°	766	748	482	748	766	591
145°	841	936	648	936	841	530
155°	939	1083	815	1083	939	433
165°	1027	1178	993	1178	1027	291
175°	1214	1227	1188	1227	1214	113
180°	1226	1226	1226	1226	1226	



TEST NUMBER: P392659

CATALOG NUMBER: MWL-4-34-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9
2.5°	1201.0	1200.1	1200.2	1207.0	1213.8	1206.2	1200.2	1200.1	1201.8	1200.1	1200.2
5°	1194.3	1195.9	1195.1	1202.8	1207.9	1202.8	1194.3	1195.9	1194.3	1195.9	1194.3
7.5°	1186.6	1189.9	1184.9	1192.6	1186.7	1191.7	1184.1	1189.2	1186.6	1189.2	1184.1
10°	1175.5	1175.5	1172.2	1179.8	1183.2	1179.0	1171.3	1173.9	1175.5	1173.9	1171.3
12.5°	1160.3	1155.3	1154.4	1159.5	1159.5	1159.5	1154.4	1153.5	1158.6	1153.5	1154.4
15°	1137.5	1140.0	1135.7	1140.8	1144.2	1140.0	1134.9	1138.3	1134.9	1138.3	1134.9
17.5°	1117.1	1116.2	1111.1	1114.5	1119.6	1114.5	1110.3	1115.4	1114.5	1115.4	1110.3
20°	1084.9	1086.6	1084.0	1092.4	1092.4	1091.6	1083.1	1084.8	1082.2	1084.8	1083.1
22.5°	1056.1	1057.7	1056.8	1056.8	1062.7	1056.0	1056.0	1056.0	1054.3	1056.0	1056.0
25°	1021.3	1021.3	1022.0	1031.4	1029.7	1030.6	1020.4	1018.7	1018.7	1018.7	1020.4
27.5°	984.8	983.1	989.8	995.8	989.0	994.9	988.1	980.5	982.2	980.5	988.1
30°	938.1	939.9	946.7	961.9	956.8	960.1	944.0	937.3	934.7	937.3	944.0
32.5°	887.3	894.1	903.4	923.6	917.8	922.0	900.8	890.6	883.8	890.6	900.8
35°	838.0	840.6	855.0	879.6	877.9	877.1	852.5	838.0	835.5	838.0	852.5
37.5°	791.4	787.1	804.9	831.2	835.5	828.7	802.4	784.5	788.9	784.5	802.4
40°	741.3	742.2	749.8	781.2	786.3	779.5	746.4	738.8	738.0	738.8	746.4
42.5°	696.4	687.9	694.7	726.9	738.8	725.2	692.1	684.5	693.0	684.5	692.1
45°	652.3	641.2	642.1	670.1	687.0	668.4	638.6	638.7	649.8	638.7	638.6
47.5°	609.0	595.5	588.7	610.8	625.2	609.9	585.2	592.9	606.4	592.9	585.2
50°	564.9	552.2	538.6	552.2	559.8	550.5	535.2	548.7	562.4	548.7	535.2
52.5°	524.2	509.8	492.8	494.5	486.1	492.8	490.2	506.3	521.7	506.3	490.2
55°	481.8	469.1	447.8	434.3	413.9	432.6	445.3	466.5	480.1	466.5	445.3
57.5°	441.1	431.8	404.6	377.5	350.3	375.7	402.0	429.1	439.4	429.1	402.0
60°	398.7	391.1	359.7	320.7	300.3	319.7	357.9	389.3	397.9	389.3	357.9
62.5°	356.3	350.3	313.9	269.0	252.7	268.0	312.1	348.6	355.4	348.6	312.1
65°	315.6	306.2	269.0	226.5	217.1	225.6	268.0	305.3	315.6	305.3	268.0
67.5°	274.1	263.0	227.4	188.3	186.6	188.3	226.4	262.1	274.1	262.1	226.4
70°	231.5	220.5	189.1	156.0	156.9	156.0	189.1	221.4	232.5	221.4	189.1
72.5°	199.3	180.6	155.2	128.9	132.3	128.1	155.2	181.6	201.1	181.6	155.2
75°	166.2	145.9	122.1	102.6	110.3	102.6	123.0	146.8	168.9	146.8	123.0
77.5°	149.5	123.0	95.0	82.2	87.3	82.2	95.9	120.5	146.0	120.5	95.9
80°	142.9	113.1	76.5	61.9	67.0	61.9	74.6	99.3	126.5	99.3	74.6
82.5°	145.1	116.8	74.0	44.1	46.7	44.1	63.7	85.8	112.2	85.8	63.7
85°	154.0	130.1	83.8	36.6	28.8	34.8	58.7	77.3	97.8	77.3	58.7
87.5°	170.0	151.1	99.5	41.9	7.6	29.8	50.2	68.1	80.9	68.1	50.2
90°	190.9	175.5	123.9	53.2	1.7	20.4	38.2	53.5	61.2	53.5	38.2
92.5°	218.8	205.1	148.2	72.4	14.7	12.7	29.8	45.0	49.3	45.0	29.8
95°	243.3	238.1	179.6	93.4	35.5	6.9	23.8	37.3	38.2	37.3	23.8
97.5°	275.4	270.2	210.7	121.9	62.2	11.2	19.6	32.3	33.1	32.3	19.6
100°	302.4	299.7	242.9	159.2	95.2	29.4	13.6	28.1	29.9	28.1	13.6
102.5°	344.8	332.0	273.4	194.7	130.6	54.4	15.5	20.5	23.0	20.5	15.5
105°	380.5	365.8	314.8	231.8	171.2	88.2	35.5	17.9	16.2	17.9	35.5
107.5°	412.6	401.3	352.9	269.8	214.5	127.1	64.9	34.5	25.0	34.5	64.9
110°	453.2	442.1	390.1	308.8	259.6	169.6	98.5	61.4	48.4	61.4	98.5



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CATALOG NUMBER: MWL-4-34-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	494.8	486.2	424.7	348.6	306.2	214.5	140.1	96.0	83.9	96.0	140.1
115°	526.8	521.6	464.5	385.8	350.3	265.5	186.0	136.6	121.9	136.6	186.0
117.5°	560.5	559.7	493.9	423.8	402.3	311.4	228.3	178.2	161.7	178.2	228.3
120°	602.9	596.0	534.6	461.9	451.6	359.8	275.0	224.9	208.5	224.9	275.0
122.5°	632.2	627.9	570.0	498.2	498.2	409.1	320.9	269.8	252.6	269.8	320.9
125°	659.2	657.4	596.0	534.6	548.4	455.0	371.0	319.1	300.1	319.1	371.0
127.5°	683.3	685.9	629.7	574.3	599.5	501.7	420.4	363.3	343.4	363.3	420.4
130°	704.1	712.8	661.7	610.8	647.9	552.7	464.5	407.5	394.4	407.5	464.5
132.5°	744.7	739.6	694.6	648.7	699.8	600.3	511.2	451.6	436.8	451.6	511.2
135°	765.5	767.3	723.1	680.7	748.2	647.0	555.4	496.5	481.8	496.5	555.4
137.5°	790.6	785.4	745.6	719.7	793.3	692.0	598.6	544.1	520.8	544.1	598.6
140°	808.8	807.9	775.0	754.3	841.7	736.1	642.7	587.3	565.7	587.3	642.7
142.5°	827.9	833.0	804.4	792.3	890.1	782.8	690.2	629.7	608.9	629.7	690.2
145°	840.8	852.0	833.8	839.9	936.0	834.7	731.7	670.4	647.9	670.4	731.7
147.5°	862.5	877.1	855.5	873.6	975.8	880.6	773.3	712.8	692.8	712.8	773.3
150°	891.8	898.7	885.8	920.4	1016.4	931.7	815.7	753.4	733.6	753.4	815.7
152.5°	915.2	923.8	909.1	971.5	1048.4	978.3	862.5	793.3	769.8	793.3	862.5
155°	939.4	942.8	932.5	1020.7	1083.0	1024.2	899.6	837.4	814.8	837.4	899.6
157.5°	962.0	968.8	956.7	1057.9	1112.4	1064.0	942.0	881.5	861.5	881.5	942.0
160°	986.1	986.1	993.0	1101.1	1136.6	1098.6	987.0	929.9	902.2	929.9	987.0
162.5°	988.7	1005.2	1042.3	1131.4	1160.0	1128.8	1035.5	964.5	940.3	964.5	1035.5
165°	1026.8	1041.5	1097.7	1158.3	1178.2	1155.6	1095.1	1021.6	993.0	1021.6	1095.1
167.5°	1066.5	1097.7	1142.7	1188.6	1195.5	1180.7	1140.9	1089.9	1064.0	1089.9	1140.9
170°	1130.6	1157.4	1180.7	1199.9	1209.4	1200.6	1169.6	1143.6	1127.1	1143.6	1169.6
172.5°	1181.7	1199.9	1208.5	1220.5	1214.5	1211.0	1195.5	1183.4	1173.9	1183.4	1195.5
175°	1213.7	1218.0	1225.7	1221.4	1226.6	1217.1	1218.0	1224.0	1187.7	1224.0	1218.0
177.5°	1224.9	1231.8	1227.5	1219.6	1220.5	1218.8	1222.3	1225.7	1219.6	1225.7	1222.3
180°	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7



TEST NUMBER: P392659

CATALOG NUMBER: MWL-4-34-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1206.9	1206.9	1206.9	1206.9	1206.9	1206.9
2.5°	1206.2	1213.8	1207.0	1200.2	1200.1	1201.0
5°	1202.8	1207.9	1202.8	1195.1	1195.9	1194.3
7.5°	1191.7	1186.7	1192.6	1184.9	1189.9	1186.6
10°	1179.0	1183.2	1179.8	1172.2	1175.5	1175.5
12.5°	1159.5	1159.5	1159.5	1154.4	1155.3	1160.3
15°	1140.0	1144.2	1140.8	1135.7	1140.0	1137.5
17.5°	1114.5	1119.6	1114.5	1111.1	1116.2	1117.1
20°	1091.6	1092.4	1092.4	1084.0	1086.6	1084.9
22.5°	1056.0	1062.7	1056.8	1056.8	1057.7	1056.1
25°	1030.6	1029.7	1031.4	1022.0	1021.3	1021.3
27.5°	994.9	989.0	995.8	989.8	983.1	984.8
30°	960.1	956.8	961.9	946.7	939.9	938.1
32.5°	922.0	917.8	923.6	903.4	894.1	887.3
35°	877.1	877.9	879.6	855.0	840.6	838.0
37.5°	828.7	835.5	831.2	804.9	787.1	791.4
40°	779.5	786.3	781.2	749.8	742.2	741.3
42.5°	725.2	738.8	726.9	694.7	687.9	696.4
45°	668.4	687.0	670.1	642.1	641.2	652.3
47.5°	609.9	625.2	610.8	588.7	595.5	609.0
50°	550.5	559.8	552.2	538.6	552.2	564.9
52.5°	492.8	486.1	494.5	492.8	509.8	524.2
55°	432.6	413.9	434.3	447.8	469.1	481.8
57.5°	375.7	350.3	377.5	404.6	431.8	441.1
60°	319.7	300.3	320.7	359.7	391.1	398.7
62.5°	268.0	252.7	269.0	313.9	350.3	356.3
65°	225.6	217.1	226.5	269.0	306.2	315.6
67.5°	188.3	186.6	188.3	227.4	263.0	274.1
70°	156.0	156.9	156.0	189.1	220.5	231.5
72.5°	128.1	132.3	128.9	155.2	180.6	199.3
75°	102.6	110.3	102.6	122.1	145.9	166.2
77.5°	82.2	87.3	82.2	95.0	123.0	149.5
80°	61.9	67.0	61.9	76.5	113.1	142.9
82.5°	44.1	46.7	44.1	74.0	116.8	145.1
85°	34.8	28.8	36.6	83.8	130.1	154.0
87.5°	29.8	7.6	41.9	99.5	151.1	170.0
90°	20.4	1.7	53.2	123.9	175.5	190.9
92.5°	12.7	14.7	72.4	148.2	205.1	218.8
95°	6.9	35.5	93.4	179.6	238.1	243.3
97.5°	11.2	62.2	121.9	210.7	270.2	275.4
100°	29.4	95.2	159.2	242.9	299.7	302.4
102.5°	54.4	130.6	194.7	273.4	332.0	344.8
105°	88.2	171.2	231.8	314.8	365.8	380.5
107.5°	127.1	214.5	269.8	352.9	401.3	412.6
110°	169.6	259.6	308.8	390.1	442.1	453.2





TEST NUMBER: P392659

CATALOG NUMBER: MWL-4-34-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	214.5	306.2	348.6	424.7	486.2	494.8
115°	265.5	350.3	385.8	464.5	521.6	526.8
117.5°	311.4	402.3	423.8	493.9	559.7	560.5
120°	359.8	451.6	461.9	534.6	596.0	602.9
122.5°	409.1	498.2	498.2	570.0	627.9	632.2
125°	455.0	548.4	534.6	596.0	657.4	659.2
127.5°	501.7	599.5	574.3	629.7	685.9	683.3
130°	552.7	647.9	610.8	661.7	712.8	704.1
132.5°	600.3	699.8	648.7	694.6	739.6	744.7
135°	647.0	748.2	680.7	723.1	767.3	765.5
137.5°	692.0	793.3	719.7	745.6	785.4	790.6
140°	736.1	841.7	754.3	775.0	807.9	808.8
142.5°	782.8	890.1	792.3	804.4	833.0	827.9
145°	834.7	936.0	839.9	833.8	852.0	840.8
147.5°	880.6	975.8	873.6	855.5	877.1	862.5
150°	931.7	1016.4	920.4	885.8	898.7	891.8
152.5°	978.3	1048.4	971.5	909.1	923.8	915.2
155°	1024.2	1083.0	1020.7	932.5	942.8	939.4
157.5°	1064.0	1112.4	1057.9	956.7	968.8	962.0
160°	1098.6	1136.6	1101.1	993.0	986.1	986.1
162.5°	1128.8	1160.0	1131.4	1042.3	1005.2	988.7
165°	1155.6	1178.2	1158.3	1097.7	1041.5	1026.8
167.5°	1180.7	1195.5	1188.6	1142.7	1097.7	1066.5
170°	1200.6	1209.4	1199.9	1180.7	1157.4	1130.6
172.5°	1211.0	1214.5	1220.5	1208.5	1199.9	1181.7
175°	1217.1	1226.6	1221.4	1225.7	1218.0	1213.7
177.5°	1218.8	1220.5	1219.6	1227.5	1231.8	1224.9
180°	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7

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