

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: P392599

Luminaire Tested: **MWL-3-37-33-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392599
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-3-37-33-UNV-L935-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6025.6 lumens
Efficiency: N/A
Efficacy: 83.3 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

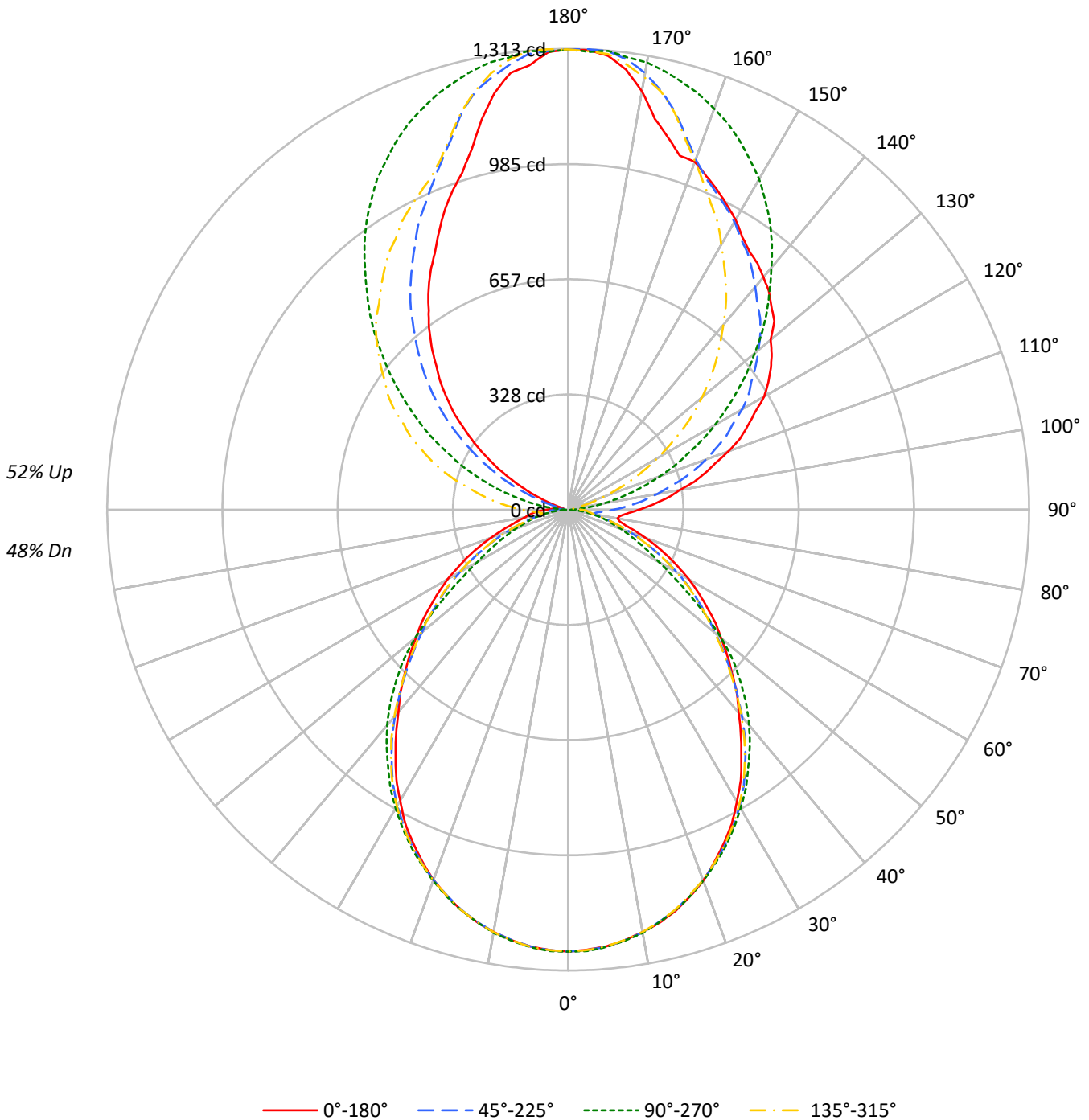
Input Watts (W): 72.316
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	35	35	35	35	35	35	35														
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°	10842	10842	10842	10842
5°	10664	9941	10664	9941
10°	10427	9101	10427	9101
15°	10167	8304	10144	8304
20°	9815	7558	9791	7558
25°	9359	6866	9335	6866
30°	8842	6193	8809	6193
35°	8235	5529	8210	5529
40°	7604	4901	7568	4901
45°	7060	4226	7031	4226
50°	6527	3480	6494	3480
55°	6028	2602	6006	2602
60°	5514	1889	5502	1889
65°	4917	1419	4917	1419
70°	4239	1072	4255	1072
75°	3627	776	3690	776
80°	3964	498	3476	498
85°	6071	216	3776	216



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.4	2.0
10°-20°	332.4	5.5
20°-30°	485.1	8.1
30°-40°	548.3	9.1
40°-50°	512.8	8.5
50°-60°	404.9	6.7
60°-70°	264.8	4.4
70°-80°	138.3	2.3
80°-90°	82.6	1.4
90°-100°	111.6	1.9
100°-110°	204.3	3.4
110°-120°	348.5	5.8
120°-130°	473.4	7.9
130°-140°	539.9	9.0
140°-150°	538.5	8.9
150°-160°	469.0	7.8
160°-170°	329.9	5.5
170°-180°	122.9	2.0
0°-30°	935.9	15.5
0°-40°	1484.2	24.6
0°-60°	2401.9	39.9
0°-90°	2887.6	47.9
90°-120°	664.4	11.0
90°-150°	2216.3	36.8
90°-180°	3138.0	52.1
0°-180°	6025.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1259	1259	1259	1259	1259	
5°	1249	1251	1249	1251	1249	118
15°	1183	1181	1180	1181	1183	333
25°	1049	1060	1046	1060	1049	482
35°	860	894	857	894	860	538
45°	660	694	658	694	660	511
55°	481	421	479	421	481	432
65°	313	219	313	219	313	310
75°	166	110	168	110	166	185
85°	159	27	99	27	159	127
90°	200	2	62	2	200	111
95°	260	38	40	38	260	226
105°	404	183	14	183	404	426
115°	564	374	130	374	564	559
125°	705	587	320	587	705	629
135°	818	801	515	801	818	632
145°	899	1002	693	1002	899	567
155°	1005	1158	871	1158	1005	463
165°	1098	1260	1062	1260	1098	312
175°	1298	1312	1270	1312	1298	121
180°	1311	1311	1311	1311	1311	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1
2.5°	1254.7	1257.3	1255.7	1256.6	1258.4	1255.7	1255.7	1257.3	1255.5	1257.3	1255.7
5°	1248.7	1250.5	1249.8	1249.8	1250.6	1249.8	1248.9	1250.5	1248.7	1250.5	1248.9
7.5°	1236.9	1239.6	1237.0	1238.8	1238.8	1237.8	1236.1	1238.7	1236.9	1238.7	1236.1
10°	1221.7	1224.3	1222.6	1222.6	1224.3	1221.7	1221.7	1222.5	1221.7	1222.5	1221.7
12.5°	1204.9	1204.8	1202.2	1203.9	1203.0	1203.9	1202.2	1203.0	1203.1	1203.0	1202.2
15°	1182.9	1181.1	1180.2	1181.1	1181.0	1180.1	1179.2	1179.2	1180.2	1179.2	1179.2
17.5°	1154.9	1155.6	1152.1	1154.6	1154.6	1154.6	1151.3	1154.7	1152.1	1154.7	1151.3
20°	1125.2	1124.3	1123.3	1125.0	1124.9	1124.0	1122.4	1122.5	1122.5	1122.5	1122.4
22.5°	1087.0	1089.5	1090.3	1093.6	1092.6	1092.6	1089.3	1087.7	1085.2	1087.7	1089.3
25°	1048.8	1053.1	1055.5	1060.5	1059.6	1059.6	1053.7	1050.3	1046.1	1050.3	1053.7
27.5°	1008.9	1009.8	1017.4	1025.0	1021.4	1024.0	1015.5	1007.1	1006.2	1007.1	1015.5
30°	960.6	964.8	975.9	984.2	982.4	982.5	973.2	962.1	957.0	962.1	973.2
32.5°	914.8	916.5	930.9	941.0	941.8	939.3	928.2	912.9	911.1	912.9	928.2
35°	859.6	863.8	879.1	896.9	894.2	894.2	876.4	861.1	856.9	861.1	876.4
37.5°	807.8	810.4	827.3	849.4	849.4	846.7	824.7	807.7	805.2	807.7	824.7
40°	755.3	754.4	770.6	795.2	801.8	793.3	766.9	750.8	751.7	750.8	766.9
42.5°	711.2	701.0	712.1	739.2	750.1	737.3	709.2	697.4	707.6	697.4	709.2
45°	660.3	650.1	656.1	681.5	694.1	679.6	652.4	647.3	657.5	647.3	652.4
47.5°	614.5	601.8	600.9	619.5	637.3	618.6	597.2	599.0	611.7	599.0	597.2
50°	567.9	556.0	547.5	560.1	569.4	558.3	543.8	552.3	565.0	552.3	543.8
52.5°	528.0	511.9	497.4	500.7	493.9	498.9	494.6	508.2	525.2	508.2	494.6
55°	481.2	471.1	450.8	439.6	420.9	437.7	447.9	468.3	479.4	468.3	447.9
57.5°	439.7	430.4	405.8	379.4	353.0	377.5	403.0	427.6	437.8	427.6	403.0
60°	397.2	387.9	358.2	320.0	299.6	319.0	356.4	386.1	396.3	386.1	356.4
62.5°	353.1	347.2	313.2	269.9	258.0	269.0	311.4	345.3	352.2	345.3	311.4
65°	313.2	303.1	268.3	226.7	219.0	225.7	267.3	302.1	313.2	302.1	267.3
67.5°	272.5	259.7	226.7	188.5	187.6	188.5	225.7	258.9	272.5	258.9	225.7
70°	232.6	218.1	187.6	156.2	159.6	156.2	187.6	219.1	233.5	219.1	187.6
72.5°	197.8	178.3	153.7	128.2	131.5	127.3	153.7	179.2	199.7	179.2	153.7
75°	165.5	143.5	122.2	102.7	110.4	102.7	123.1	144.4	168.4	144.4	123.1
77.5°	149.2	120.9	94.2	80.7	88.3	80.7	95.2	118.1	145.5	118.1	95.2
80°	142.9	113.5	76.6	62.0	67.0	62.0	74.8	98.7	125.3	98.7	74.8
82.5°	146.4	117.8	74.2	44.2	47.5	44.2	63.1	84.5	111.2	84.5	63.1
85°	159.0	133.7	84.4	36.0	27.2	34.1	57.5	77.1	98.9	77.1	57.5
87.5°	177.2	157.7	103.6	42.1	7.6	29.3	50.8	68.9	81.7	68.9	50.8
90°	200.5	184.5	129.3	54.9	1.8	19.7	37.6	53.9	61.6	53.9	37.6
92.5°	230.2	215.7	157.7	75.9	15.7	12.1	30.8	44.4	48.8	44.4	30.8
95°	259.6	252.3	190.6	98.9	37.9	6.3	24.0	37.4	40.1	37.4	24.0
97.5°	293.5	286.4	223.0	130.6	66.6	12.0	18.3	31.8	34.3	31.8	18.3
100°	322.0	317.7	257.8	170.3	101.7	31.4	12.3	26.9	30.3	26.9	12.3
102.5°	367.3	352.7	291.6	208.3	139.8	58.2	15.6	19.2	22.6	19.2	15.6
105°	404.0	386.8	337.0	248.2	183.3	94.4	37.8	14.5	14.1	14.5	37.8
107.5°	438.7	428.6	377.7	288.8	229.5	136.0	69.3	36.0	23.8	36.0	69.3
110°	485.0	473.0	417.5	329.6	277.8	180.5	105.4	65.6	51.7	65.6	105.4



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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°	529.6	520.3	454.6	372.3	327.8	228.7	149.9	102.6	89.6	102.6	149.9
115°	563.8	558.3	497.1	412.0	374.1	283.4	199.0	146.2	130.4	146.2	199.0
117.5°	599.1	598.2	528.7	452.8	429.6	332.4	244.3	189.8	172.1	189.8	244.3
120°	644.4	637.0	572.2	493.6	482.4	384.2	294.3	239.6	222.1	239.6	294.3
122.5°	675.9	671.2	609.2	533.3	533.3	437.8	342.6	287.9	269.3	287.9	342.6
125°	704.6	702.8	637.0	572.2	587.0	486.9	396.2	340.7	320.3	340.7	396.2
127.5°	730.5	733.3	673.1	614.7	641.7	537.0	449.0	387.9	366.6	387.9	449.0
130°	752.7	762.0	707.4	653.6	693.4	591.6	496.2	435.2	421.3	435.2	496.2
132.5°	796.3	790.8	742.5	693.4	749.1	641.7	546.2	482.4	466.6	482.4	546.2
135°	818.5	820.4	773.1	727.7	800.9	691.7	593.5	530.4	514.8	530.4	593.5
137.5°	845.4	839.9	797.1	769.4	849.1	739.8	639.8	581.4	556.4	581.4	639.8
140°	864.9	863.9	828.7	806.5	900.9	787.0	687.0	627.8	604.5	627.8	687.0
142.5°	885.2	890.7	860.2	847.2	952.8	837.0	738.0	673.1	650.9	673.1	738.0
145°	899.1	911.1	891.6	898.2	1001.9	892.6	782.4	716.6	692.6	716.6	782.4
147.5°	922.3	938.0	914.8	934.3	1044.5	941.7	826.8	762.0	740.7	762.0	826.8
150°	953.8	961.1	947.2	984.2	1087.9	996.3	872.2	805.6	784.3	805.6	872.2
152.5°	978.8	988.0	972.2	1038.9	1122.2	1046.4	922.3	848.1	823.1	848.1	922.3
155°	1004.7	1008.4	997.3	1091.7	1158.4	1095.5	962.0	895.3	871.3	895.3	962.0
157.5°	1028.7	1036.2	1023.2	1131.6	1189.9	1138.0	1007.4	942.6	921.3	942.6	1007.4
160°	1054.6	1054.6	1062.1	1177.9	1215.8	1175.1	1055.6	994.4	964.8	994.4	1055.6
162.5°	1057.5	1075.0	1114.9	1210.3	1240.8	1207.5	1107.4	1031.5	1005.5	1031.5	1107.4
165°	1098.1	1113.9	1174.1	1239.0	1260.2	1236.2	1171.4	1092.6	1062.1	1092.6	1171.4
167.5°	1140.8	1174.1	1222.3	1271.4	1278.8	1263.0	1220.5	1165.9	1138.0	1165.9	1220.5
170°	1210.3	1239.0	1263.0	1283.5	1293.7	1284.3	1250.9	1224.2	1206.5	1224.2	1250.9
172.5°	1264.1	1283.5	1292.7	1305.7	1299.2	1295.4	1278.8	1265.8	1255.7	1265.8	1278.8
175°	1298.3	1302.9	1311.2	1306.6	1312.1	1301.9	1302.9	1309.4	1270.5	1309.4	1302.9
177.5°	1310.3	1317.7	1313.1	1304.7	1305.7	1303.8	1307.5	1311.2	1304.8	1311.2	1307.5
180°	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2



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CATALOG NUMBER: MWL-3-37-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1259.1	1259.1	1259.1	1259.1	1259.1	1259.1
2.5°	1255.7	1258.4	1256.6	1255.7	1257.3	1254.7
5°	1249.8	1250.6	1249.8	1249.8	1250.5	1248.7
7.5°	1237.8	1238.8	1238.8	1237.0	1239.6	1236.9
10°	1221.7	1224.3	1222.6	1222.6	1224.3	1221.7
12.5°	1203.9	1203.0	1203.9	1202.2	1204.8	1204.9
15°	1180.1	1181.0	1181.1	1180.2	1181.1	1182.9
17.5°	1154.6	1154.6	1154.6	1152.1	1155.6	1154.9
20°	1124.0	1124.9	1125.0	1123.3	1124.3	1125.2
22.5°	1092.6	1092.6	1093.6	1090.3	1089.5	1087.0
25°	1059.6	1059.6	1060.5	1055.5	1053.1	1048.8
27.5°	1024.0	1021.4	1025.0	1017.4	1009.8	1008.9
30°	982.5	982.4	984.2	975.9	964.8	960.6
32.5°	939.3	941.8	941.0	930.9	916.5	914.8
35°	894.2	894.2	896.9	879.1	863.8	859.6
37.5°	846.7	849.4	849.4	827.3	810.4	807.8
40°	793.3	801.8	795.2	770.6	754.4	755.3
42.5°	737.3	750.1	739.2	712.1	701.0	711.2
45°	679.6	694.1	681.5	656.1	650.1	660.3
47.5°	618.6	637.3	619.5	600.9	601.8	614.5
50°	558.3	569.4	560.1	547.5	556.0	567.9
52.5°	498.9	493.9	500.7	497.4	511.9	528.0
55°	437.7	420.9	439.6	450.8	471.1	481.2
57.5°	377.5	353.0	379.4	405.8	430.4	439.7
60°	319.0	299.6	320.0	358.2	387.9	397.2
62.5°	269.0	258.0	269.9	313.2	347.2	353.1
65°	225.7	219.0	226.7	268.3	303.1	313.2
67.5°	188.5	187.6	188.5	226.7	259.7	272.5
70°	156.2	159.6	156.2	187.6	218.1	232.6
72.5°	127.3	131.5	128.2	153.7	178.3	197.8
75°	102.7	110.4	102.7	122.2	143.5	165.5
77.5°	80.7	88.3	80.7	94.2	120.9	149.2
80°	62.0	67.0	62.0	76.6	113.5	142.9
82.5°	44.2	47.5	44.2	74.2	117.8	146.4
85°	34.1	27.2	36.0	84.4	133.7	159.0
87.5°	29.3	7.6	42.1	103.6	157.7	177.2
90°	19.7	1.8	54.9	129.3	184.5	200.5
92.5°	12.1	15.7	75.9	157.7	215.7	230.2
95°	6.3	37.9	98.9	190.6	252.3	259.6
97.5°	12.0	66.6	130.6	223.0	286.4	293.5
100°	31.4	101.7	170.3	257.8	317.7	322.0
102.5°	58.2	139.8	208.3	291.6	352.7	367.3
105°	94.4	183.3	248.2	337.0	386.8	404.0
107.5°	136.0	229.5	288.8	377.7	428.6	438.7
110°	180.5	277.8	329.6	417.5	473.0	485.0



TEST NUMBER: P392599

CATALOG NUMBER: MWL-3-37-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	228.7	327.8	372.3	454.6	520.3	529.6
115°	283.4	374.1	412.0	497.1	558.3	563.8
117.5°	332.4	429.6	452.8	528.7	598.2	599.1
120°	384.2	482.4	493.6	572.2	637.0	644.4
122.5°	437.8	533.3	533.3	609.2	671.2	675.9
125°	486.9	587.0	572.2	637.0	702.8	704.6
127.5°	537.0	641.7	614.7	673.1	733.3	730.5
130°	591.6	693.4	653.6	707.4	762.0	752.7
132.5°	641.7	749.1	693.4	742.5	790.8	796.3
135°	691.7	800.9	727.7	773.1	820.4	818.5
137.5°	739.8	849.1	769.4	797.1	839.9	845.4
140°	787.0	900.9	806.5	828.7	863.9	864.9
142.5°	837.0	952.8	847.2	860.2	890.7	885.2
145°	892.6	1001.9	898.2	891.6	911.1	899.1
147.5°	941.7	1044.5	934.3	914.8	938.0	922.3
150°	996.3	1087.9	984.2	947.2	961.1	953.8
152.5°	1046.4	1122.2	1038.9	972.2	988.0	978.8
155°	1095.5	1158.4	1091.7	997.3	1008.4	1004.7
157.5°	1138.0	1189.9	1131.6	1023.2	1036.2	1028.7
160°	1175.1	1215.8	1177.9	1062.1	1054.6	1054.6
162.5°	1207.5	1240.8	1210.3	1114.9	1075.0	1057.5
165°	1236.2	1260.2	1239.0	1174.1	1113.9	1098.1
167.5°	1263.0	1278.8	1271.4	1222.3	1174.1	1140.8
170°	1284.3	1293.7	1283.5	1263.0	1239.0	1210.3
172.5°	1295.4	1299.2	1305.7	1292.7	1283.5	1264.1
175°	1301.9	1312.1	1306.6	1311.2	1302.9	1298.3
177.5°	1303.8	1305.7	1304.7	1313.1	1317.7	1310.3
180°	1311.2	1311.2	1311.2	1311.2	1311.2	1311.2

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