

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: P392673

Luminaire Tested: **MWL-4-42-33-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392673
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-4-42-33-UNV-L930-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

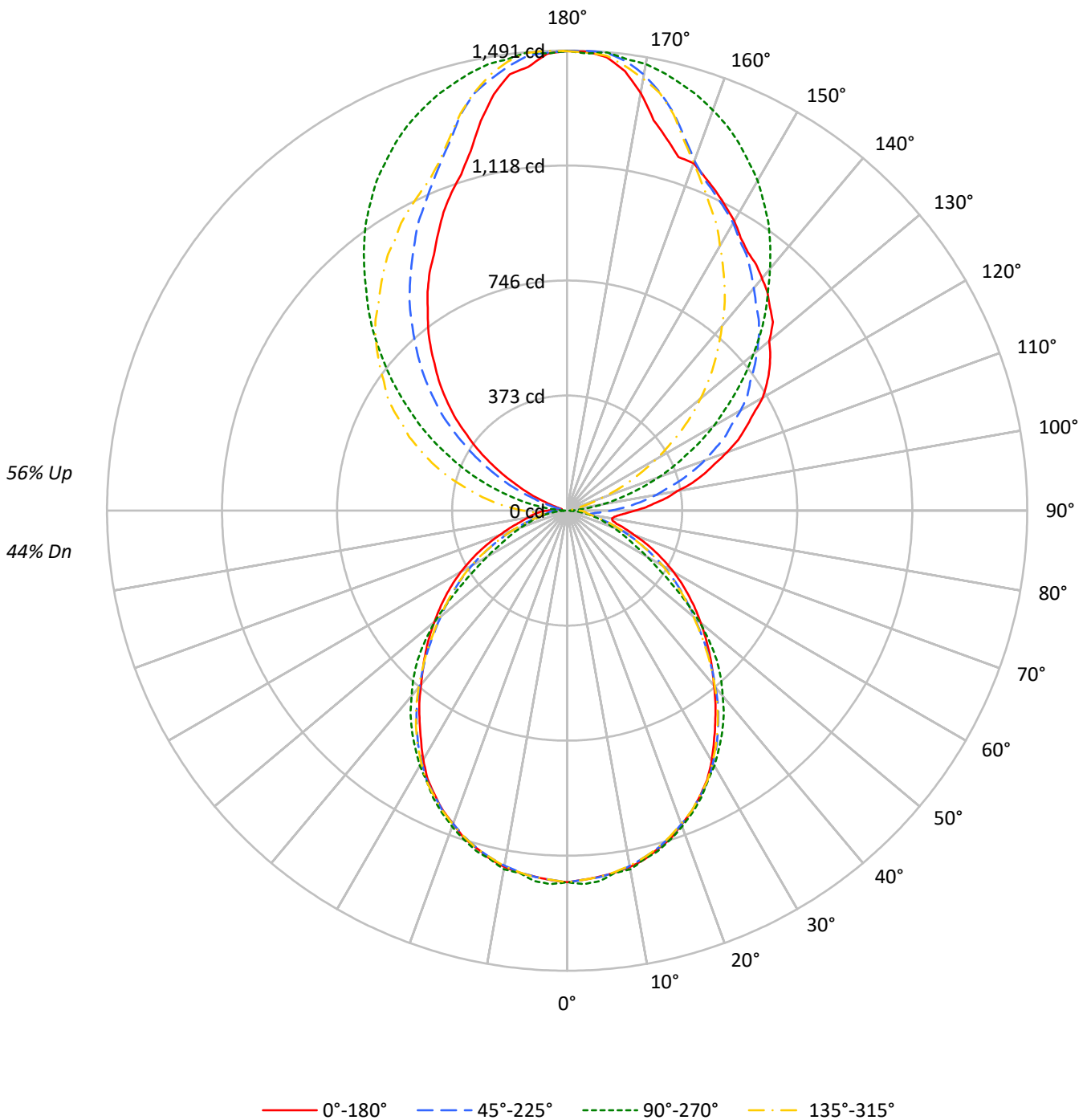
Lumens per Lamp: N/A
Luminaire Lumens: 6394.2 lumens
Efficiency: N/A
Efficacy: 82.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 77.871
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					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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	37				
2	88	81	75	70	80	74	69	65	62	58	55	50	48	46	40	38	37	32				
3	81	71	64	58	73	66	59	54	55	50	46	45	42	39	36	33	31	27				
4	74	63	56	50	67	58	52	46	49	44	40	40	36	34	32	29	27	24				
5	68	56	49	43	62	52	45	40	44	39	34	36	32	29	29	26	24	21				
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	26	23	21	18				
7	58	46	38	33	53	42	35	31	36	31	27	30	26	23	24	21	19	16				
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	21	18	15	13				
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	7776	7776	7776	7776
5°	7651	7184	7651	7184
10°	7551	6581	7551	6581
15°	7384	6017	7364	6017
20°	7170	5489	7150	5489
25°	6926	4990	6905	4990
30°	6586	4511	6557	4511
35°	6147	4060	6123	4060
40°	5738	3596	5706	3596
45°	5387	3131	5360	3131
50°	5042	2561	5014	2561
55°	4716	1915	4695	1915
60°	4356	1417	4344	1417
65°	3935	1054	3935	1054
70°	3393	790	3409	790
75°	2984	581	3040	581
80°	3451	373	2981	373
85°	5720	172	3403	172



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.4	1.8
10°-20°	319.8	5.0
20°-30°	469.9	7.3
30°-40°	534.0	8.4
40°-50°	503.3	7.9
50°-60°	401.7	6.3
60°-70°	265.3	4.1
70°-80°	139.2	2.2
80°-90°	86.5	1.4
90°-100°	124.0	1.9
100°-110°	232.2	3.6
110°-120°	395.7	6.2
120°-130°	537.7	8.4
130°-140°	613.2	9.6
140°-150°	611.6	9.6
150°-160°	532.6	8.3
160°-170°	374.6	5.9
170°-180°	139.5	2.2
0°-30°	903.1	14.1
0°-40°	1437.2	22.5
0°-60°	2342.2	36.6
0°-90°	2833.2	44.3
90°-120°	751.9	11.8
90°-150°	2514.4	39.3
90°-180°	3561.0	55.7
0°-180°	6394.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1204	1204	1204	1204	1204	
5°	1191	1205	1191	1205	1191	113
15°	1135	1141	1132	1141	1135	320
25°	1019	1027	1016	1027	1019	468
35°	836	876	833	876	836	524
45°	651	686	648	686	651	503
55°	481	413	479	413	481	431
65°	315	217	315	217	315	311
75°	166	110	169	110	166	186
85°	169	29	101	29	169	134
90°	220	2	62	2	220	122
95°	288	43	39	43	288	252
105°	460	208	18	208	460	484
115°	640	425	148	425	640	635
125°	800	666	364	666	800	715
135°	930	909	585	909	930	718
145°	1021	1137	787	1137	1021	644
155°	1141	1315	990	1315	1141	526
165°	1247	1431	1206	1431	1247	354
175°	1474	1490	1443	1490	1474	137
180°	1489	1489	1489	1489	1489	



TEST NUMBER: P392673

CATALOG NUMBER: MWL-4-42-33-UNV-L930-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1
2.5°	1197.6	1197.2	1197.5	1204.5	1211.3	1203.5	1197.5	1197.2	1198.6	1197.2	1197.5
5°	1190.9	1193.0	1192.5	1200.0	1205.1	1200.0	1191.4	1193.0	1190.9	1193.0	1191.4
7.5°	1183.4	1187.2	1182.2	1189.9	1184.0	1188.9	1181.1	1186.2	1183.4	1186.2	1181.1
10°	1172.6	1172.8	1169.5	1177.1	1180.4	1176.1	1168.4	1170.7	1172.6	1170.7	1168.4
12.5°	1157.8	1152.6	1151.5	1156.6	1156.4	1156.6	1151.5	1150.5	1155.7	1150.5	1151.5
15°	1135.2	1137.3	1132.9	1138.0	1141.1	1136.9	1131.9	1135.2	1132.1	1135.2	1131.9
17.5°	1115.0	1113.7	1108.5	1111.5	1116.7	1111.5	1107.3	1112.7	1111.8	1112.7	1107.3
20°	1082.8	1084.2	1081.4	1089.6	1089.4	1088.6	1080.3	1082.2	1079.7	1082.2	1080.3
22.5°	1053.9	1055.5	1054.3	1054.0	1059.9	1053.1	1053.3	1053.5	1051.8	1053.5	1053.3
25°	1019.2	1019.2	1019.9	1028.8	1026.8	1027.7	1017.8	1016.1	1016.1	1016.1	1017.8
27.5°	982.8	981.1	987.7	993.5	986.3	992.4	985.6	978.1	979.7	978.1	985.6
30°	936.3	938.1	944.8	959.8	954.2	957.7	941.7	934.9	932.2	934.9	941.7
32.5°	885.6	892.4	901.7	921.8	915.5	919.7	898.6	888.2	881.5	888.2	898.6
35°	836.5	839.0	853.4	877.9	875.6	874.8	850.2	835.9	833.3	835.9	850.2
37.5°	790.0	785.8	803.5	829.7	833.5	826.6	800.4	782.6	786.8	782.6	800.4
40°	740.1	740.9	748.6	779.7	784.5	777.6	744.4	736.7	735.9	736.7	744.4
42.5°	695.3	686.9	693.5	725.5	737.2	723.4	690.2	682.7	691.1	682.7	690.2
45°	651.2	640.2	641.1	668.9	685.6	666.8	636.9	637.0	648.0	637.0	636.9
47.5°	608.1	594.6	587.8	609.6	623.9	608.5	583.6	591.3	604.9	591.3	583.6
50°	564.1	551.5	538.0	551.2	558.7	549.1	533.8	547.2	561.0	547.2	533.8
52.5°	523.5	509.2	492.0	493.8	485.2	491.7	488.9	505.0	520.4	505.0	488.9
55°	481.1	468.4	447.3	433.6	413.0	431.4	444.1	465.3	479.0	465.3	444.1
57.5°	440.5	431.2	404.1	376.9	349.6	374.8	401.1	428.1	438.4	428.1	401.1
60°	398.1	390.5	359.2	320.1	299.8	319.1	357.0	388.4	397.0	388.4	357.0
62.5°	355.8	349.9	313.5	268.6	252.3	267.5	311.4	347.8	354.8	347.8	311.4
65°	315.0	305.7	268.6	226.3	216.8	225.2	267.5	304.7	315.0	304.7	267.5
67.5°	273.6	262.6	227.1	188.1	186.4	188.1	226.1	261.6	273.6	261.6	226.1
70°	231.1	220.1	188.9	155.9	156.8	155.9	188.9	221.2	232.2	221.2	188.9
72.5°	199.0	180.4	155.1	128.9	132.0	127.8	155.1	181.5	201.1	181.5	155.1
75°	166.1	145.8	121.9	102.4	110.1	102.4	123.0	146.8	169.2	146.8	123.0
77.5°	150.7	123.8	94.8	82.2	87.3	82.2	95.9	120.6	146.6	120.6	95.9
80°	147.6	116.6	76.9	61.9	66.9	61.9	74.8	99.8	127.5	99.8	74.8
82.5°	154.2	124.4	76.9	44.1	46.7	44.1	64.3	86.6	114.3	86.6	64.3
85°	169.1	143.3	90.7	37.2	28.9	35.0	60.1	79.2	100.6	79.2	60.1
87.5°	191.7	171.3	111.8	45.3	7.6	30.6	51.9	70.4	83.4	70.4	51.9
90°	220.0	202.7	142.9	60.6	1.8	20.7	38.9	54.5	62.3	54.5	38.9
92.5°	256.0	240.1	174.2	85.6	17.7	13.1	30.2	45.6	50.0	45.6	30.2
95°	287.7	281.4	213.5	112.7	42.9	7.6	24.2	37.6	38.7	37.6	24.2
97.5°	328.1	322.0	253.0	148.0	75.5	13.5	20.7	32.9	33.8	32.9	20.7
100°	362.3	359.6	293.6	193.2	115.4	35.5	15.0	29.5	31.2	29.5	15.0
102.5°	415.5	400.4	331.6	236.3	158.6	66.0	18.3	21.9	24.4	21.9	18.3
105°	460.1	442.8	382.2	281.5	207.9	107.0	42.7	20.2	17.5	20.2	42.7
107.5°	500.2	487.2	428.5	327.7	260.5	154.4	78.5	41.4	29.2	41.4	78.5
110°	550.2	536.8	473.6	374.8	315.1	205.6	119.4	74.2	58.2	74.2	119.4



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CATALOG NUMBER: MWL-4-42-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	600.7	590.4	515.7	423.2	371.8	260.3	169.8	116.3	101.3	116.3	169.8
115°	639.5	633.4	564.0	468.4	425.3	322.3	225.6	165.6	147.6	165.6	225.6
117.5°	680.5	679.5	599.8	514.7	488.3	378.0	277.1	215.9	195.9	215.9	277.1
120°	732.0	723.6	649.2	561.0	548.3	436.9	333.8	272.7	252.7	272.7	333.8
122.5°	767.7	762.5	692.1	605.1	605.1	496.8	389.4	327.4	306.3	327.4	389.4
125°	800.4	798.3	723.6	649.2	666.0	552.5	450.3	387.2	364.1	387.2	450.3
127.5°	829.8	833.0	764.6	697.6	728.0	609.3	510.2	440.9	416.7	440.9	510.2
130°	855.1	865.5	803.5	741.7	786.9	671.3	563.9	494.5	478.7	494.5	563.9
132.5°	904.4	898.2	843.4	787.8	849.9	728.9	620.6	548.1	530.2	548.1	620.6
135°	929.7	931.8	878.1	826.6	908.8	785.7	674.2	602.8	584.8	602.8	674.2
137.5°	960.1	953.8	905.5	874.0	963.5	840.3	726.8	660.6	632.2	660.6	726.8
140°	982.3	981.1	941.3	916.0	1022.4	894.0	780.4	713.1	686.9	713.1	780.4
142.5°	1005.4	1011.7	976.9	962.2	1081.3	950.7	838.2	764.6	739.4	764.6	838.2
145°	1021.1	1034.8	1012.7	1020.1	1136.9	1013.8	888.7	814.0	786.6	814.0	888.7
147.5°	1047.4	1065.2	1039.0	1061.0	1185.2	1069.5	939.1	865.5	841.3	865.5	939.1
150°	1083.2	1091.6	1075.8	1117.8	1234.7	1131.5	990.7	915.0	890.8	915.0	990.7
152.5°	1111.5	1122.0	1104.1	1179.9	1273.6	1188.2	1047.4	963.4	934.9	963.4	1047.4
155°	1141.0	1145.1	1132.5	1239.7	1315.4	1243.9	1092.6	1016.9	989.6	1016.9	1092.6
157.5°	1168.2	1176.7	1161.9	1285.0	1351.1	1292.3	1144.1	1070.5	1046.3	1070.5	1144.1
160°	1197.7	1197.7	1206.1	1337.5	1380.5	1334.3	1198.8	1129.4	1095.8	1129.4	1198.8
162.5°	1200.9	1220.8	1266.1	1374.3	1409.0	1371.1	1257.6	1171.4	1142.0	1171.4	1257.6
165°	1247.1	1264.9	1333.3	1406.9	1431.0	1403.7	1330.1	1240.8	1206.1	1240.8	1330.1
167.5°	1295.5	1333.3	1387.9	1443.7	1452.1	1434.2	1385.9	1323.8	1292.3	1323.8	1385.9
170°	1373.5	1406.0	1434.2	1457.3	1468.9	1458.4	1420.5	1389.2	1369.3	1389.2	1420.5
172.5°	1435.5	1457.3	1467.9	1482.6	1475.3	1471.1	1452.1	1437.3	1426.1	1437.3	1452.1
175°	1474.4	1479.4	1488.8	1483.6	1490.0	1478.4	1479.4	1486.8	1442.9	1486.8	1479.4
177.5°	1488.0	1496.2	1491.0	1481.5	1482.6	1480.5	1484.7	1488.8	1481.7	1488.8	1484.7
180°	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8



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CATALOG NUMBER: MWL-4-42-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1204.1	1204.1	1204.1	1204.1	1204.1	1204.1
2.5°	1203.5	1211.3	1204.5	1197.5	1197.2	1197.6
5°	1200.0	1205.1	1200.0	1192.5	1193.0	1190.9
7.5°	1188.9	1184.0	1189.9	1182.2	1187.2	1183.4
10°	1176.1	1180.4	1177.1	1169.5	1172.8	1172.6
12.5°	1156.6	1156.4	1156.6	1151.5	1152.6	1157.8
15°	1136.9	1141.1	1138.0	1132.9	1137.3	1135.2
17.5°	1111.5	1116.7	1111.5	1108.5	1113.7	1115.0
20°	1088.6	1089.4	1089.6	1081.4	1084.2	1082.8
22.5°	1053.1	1059.9	1054.0	1054.3	1055.5	1053.9
25°	1027.7	1026.8	1028.8	1019.9	1019.2	1019.2
27.5°	992.4	986.3	993.5	987.7	981.1	982.8
30°	957.7	954.2	959.8	944.8	938.1	936.3
32.5°	919.7	915.5	921.8	901.7	892.4	885.6
35°	874.8	875.6	877.9	853.4	839.0	836.5
37.5°	826.6	833.5	829.7	803.5	785.8	790.0
40°	777.6	784.5	779.7	748.6	740.9	740.1
42.5°	723.4	737.2	725.5	693.5	686.9	695.3
45°	666.8	685.6	668.9	641.1	640.2	651.2
47.5°	608.5	623.9	609.6	587.8	594.6	608.1
50°	549.1	558.7	551.2	538.0	551.5	564.1
52.5°	491.7	485.2	493.8	492.0	509.2	523.5
55°	431.4	413.0	433.6	447.3	468.4	481.1
57.5°	374.8	349.6	376.9	404.1	431.2	440.5
60°	319.1	299.8	320.1	359.2	390.5	398.1
62.5°	267.5	252.3	268.6	313.5	349.9	355.8
65°	225.2	216.8	226.3	268.6	305.7	315.0
67.5°	188.1	186.4	188.1	227.1	262.6	273.6
70°	155.9	156.8	155.9	188.9	220.1	231.1
72.5°	127.8	132.0	128.9	155.1	180.4	199.0
75°	102.4	110.1	102.4	121.9	145.8	166.1
77.5°	82.2	87.3	82.2	94.8	123.8	150.7
80°	61.9	66.9	61.9	76.9	116.6	147.6
82.5°	44.1	46.7	44.1	76.9	124.4	154.2
85°	35.0	28.9	37.2	90.7	143.3	169.1
87.5°	30.6	7.6	45.3	111.8	171.3	191.7
90°	20.7	1.8	60.6	142.9	202.7	220.0
92.5°	13.1	17.7	85.6	174.2	240.1	256.0
95°	7.6	42.9	112.7	213.5	281.4	287.7
97.5°	13.5	75.5	148.0	253.0	322.0	328.1
100°	35.5	115.4	193.2	293.6	359.6	362.3
102.5°	66.0	158.6	236.3	331.6	400.4	415.5
105°	107.0	207.9	281.5	382.2	442.8	460.1
107.5°	154.4	260.5	327.7	428.5	487.2	500.2
110°	205.6	315.1	374.8	473.6	536.8	550.2



TEST NUMBER: P392673

CATALOG NUMBER: MWL-4-42-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	260.3	371.8	423.2	515.7	590.4	600.7
115°	322.3	425.3	468.4	564.0	633.4	639.5
117.5°	378.0	488.3	514.7	599.8	679.5	680.5
120°	436.9	548.3	561.0	649.2	723.6	732.0
122.5°	496.8	605.1	605.1	692.1	762.5	767.7
125°	552.5	666.0	649.2	723.6	798.3	800.4
127.5°	609.3	728.0	697.6	764.6	833.0	829.8
130°	671.3	786.9	741.7	803.5	865.5	855.1
132.5°	728.9	849.9	787.8	843.4	898.2	904.4
135°	785.7	908.8	826.6	878.1	931.8	929.7
137.5°	840.3	963.5	874.0	905.5	953.8	960.1
140°	894.0	1022.4	916.0	941.3	981.1	982.3
142.5°	950.7	1081.3	962.2	976.9	1011.7	1005.4
145°	1013.8	1136.9	1020.1	1012.7	1034.8	1021.1
147.5°	1069.5	1185.2	1061.0	1039.0	1065.2	1047.4
150°	1131.5	1234.7	1117.8	1075.8	1091.6	1083.2
152.5°	1188.2	1273.6	1179.9	1104.1	1122.0	1111.5
155°	1243.9	1315.4	1239.7	1132.5	1145.1	1141.0
157.5°	1292.3	1351.1	1285.0	1161.9	1176.7	1168.2
160°	1334.3	1380.5	1337.5	1206.1	1197.7	1197.7
162.5°	1371.1	1409.0	1374.3	1266.1	1220.8	1200.9
165°	1403.7	1431.0	1406.9	1333.3	1264.9	1247.1
167.5°	1434.2	1452.1	1443.7	1387.9	1333.3	1295.5
170°	1458.4	1468.9	1457.3	1434.2	1406.0	1373.5
172.5°	1471.1	1475.3	1482.6	1467.9	1457.3	1435.5
175°	1478.4	1490.0	1483.6	1488.8	1479.4	1474.4
177.5°	1480.5	1482.6	1481.5	1491.0	1496.2	1488.0
180°	1488.8	1488.8	1488.8	1488.8	1488.8	1488.8

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