

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: P392660

Luminaire Tested: **MWL-4-34-33-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392660
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-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

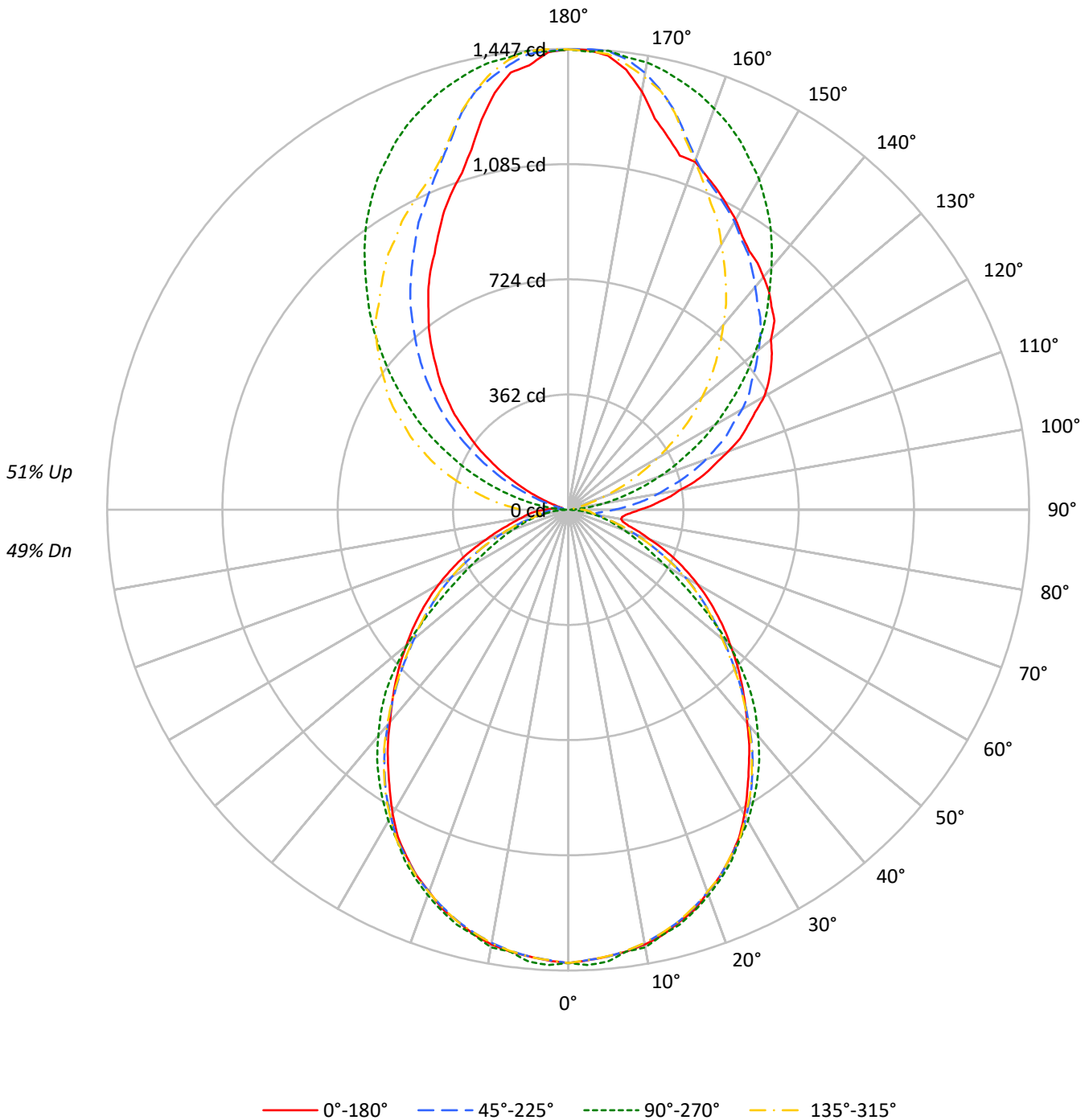
Lumens per Lamp: N/A
Luminaire Lumens: 6804.9 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 67.6
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	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°	9192	9192	9192	9192
5°	9047	8491	9047	8491
10°	8927	7778	8927	7778
15°	8725	7115	8704	7115
20°	8471	6491	8451	6491
25°	8184	5901	8163	5901
30°	7782	5334	7753	5334
35°	7262	4800	7239	4800
40°	6777	4250	6746	4250
45°	6362	3700	6337	3700
50°	5953	3026	5927	3026
55°	5568	2263	5549	2263
60°	5144	1674	5133	1674
65°	4648	1244	4648	1244
70°	4008	932	4024	932
75°	3522	686	3577	686
80°	3940	440	3488	440
85°	6143	203	3900	203



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.0	2.0
10°-20°	378.1	5.6
20°-30°	555.5	8.2
30°-40°	631.1	9.3
40°-50°	594.7	8.7
50°-60°	474.6	7.0
60°-70°	313.3	4.6
70°-80°	164.1	2.4
80°-90°	96.2	1.4
90°-100°	125.1	1.8
100°-110°	226.3	3.3
110°-120°	384.4	5.6
120°-130°	522.1	7.7
130°-140°	595.4	8.8
140°-150°	593.8	8.7
150°-160°	517.0	7.6
160°-170°	363.7	5.3
170°-180°	135.4	2.0
0°-30°	1067.6	15.7
0°-40°	1698.7	25.0
0°-60°	2768.0	40.7
0°-90°	3341.6	49.1
90°-120°	735.8	10.8
90°-150°	2447.1	36.0
90°-180°	3463.0	50.9
0°-180°	6804.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1423	1423	1423	1423	1423	
5°	1408	1424	1408	1424	1408	134
15°	1341	1349	1338	1349	1341	378
25°	1204	1214	1201	1214	1204	554
35°	988	1035	985	1035	988	619
45°	769	810	766	810	769	594
55°	568	488	566	488	568	508
65°	372	256	372	256	372	368
75°	196	130	199	130	196	219
85°	182	34	115	34	182	146
90°	225	2	72	2	225	125
95°	287	42	45	42	287	250
105°	449	202	19	202	449	472
115°	621	413	144	413	621	616
125°	777	647	354	647	777	694
135°	903	882	568	882	903	697
145°	992	1104	764	1104	992	625
155°	1108	1277	961	1277	1108	511
165°	1211	1389	1171	1389	1211	343
175°	1431	1446	1400	1446	1431	133
180°	1445	1445	1445	1445	1445	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2
2.5°	1416.2	1415.2	1415.3	1423.3	1431.3	1422.3	1415.3	1415.2	1417.2	1415.2	1415.3
5°	1408.2	1410.2	1409.3	1418.3	1424.3	1418.3	1408.2	1410.2	1408.2	1410.2	1408.2
7.5°	1399.2	1403.2	1397.2	1406.3	1399.3	1405.2	1396.2	1402.2	1399.2	1402.2	1396.2
10°	1386.2	1386.2	1382.2	1391.2	1395.2	1390.2	1381.2	1384.2	1386.2	1384.2	1381.2
12.5°	1368.3	1362.2	1361.2	1367.2	1367.2	1367.2	1361.2	1360.2	1366.2	1360.2	1361.2
15°	1341.3	1344.2	1339.2	1345.2	1349.2	1344.2	1338.2	1342.2	1338.2	1342.2	1338.2
17.5°	1317.3	1316.2	1310.2	1314.2	1320.2	1314.2	1309.2	1315.2	1314.2	1315.2	1309.2
20°	1279.3	1281.3	1278.2	1288.2	1288.2	1287.2	1277.2	1279.2	1276.2	1279.2	1277.2
22.5°	1245.3	1247.3	1246.2	1246.2	1253.2	1245.2	1245.2	1245.2	1243.2	1245.2	1245.2
25°	1204.3	1204.3	1205.2	1216.2	1214.2	1215.2	1203.2	1201.2	1201.2	1201.2	1203.2
27.5°	1161.3	1159.3	1167.2	1174.2	1166.2	1173.2	1165.2	1156.2	1158.2	1156.2	1165.2
30°	1106.3	1108.3	1116.3	1134.2	1128.2	1132.2	1113.2	1105.2	1102.2	1105.2	1113.2
32.5°	1046.3	1054.3	1065.3	1089.2	1082.2	1087.2	1062.2	1050.2	1042.2	1050.2	1062.2
35°	988.2	991.2	1008.2	1037.2	1035.2	1034.2	1005.2	988.2	985.2	988.2	1005.2
37.5°	933.1	928.1	949.2	980.2	985.2	977.2	946.2	925.1	930.1	925.1	946.2
40°	874.1	875.1	884.1	921.1	927.1	919.1	880.1	871.1	870.1	871.1	880.1
42.5°	821.1	811.1	819.1	857.1	871.1	855.1	816.1	807.1	817.1	807.1	816.1
45°	769.1	756.1	757.1	790.1	810.1	788.1	753.0	753.1	766.1	753.1	753.0
47.5°	718.1	702.1	694.1	720.1	737.1	719.1	690.0	699.1	715.1	699.1	690.0
50°	666.1	651.1	635.1	651.1	660.1	649.1	631.0	647.0	663.1	647.0	631.0
52.5°	618.1	601.1	581.1	583.1	573.1	581.1	578.0	597.0	615.1	597.0	578.0
55°	568.1	553.1	528.1	512.1	488.1	510.0	525.0	550.0	566.1	550.0	525.0
57.5°	520.1	509.1	477.1	445.1	413.1	443.0	474.0	506.0	518.1	506.0	474.0
60°	470.1	461.1	424.1	378.1	354.1	377.0	422.0	459.0	469.1	459.0	422.0
62.5°	420.1	413.1	370.1	317.1	298.0	316.0	368.0	411.0	419.1	411.0	368.0
65°	372.1	361.1	317.1	267.1	256.0	266.0	316.0	360.0	372.1	360.0	316.0
67.5°	323.1	310.1	268.1	222.0	220.0	222.0	267.0	309.0	323.1	309.0	267.0
70°	273.0	260.0	223.0	184.0	185.0	184.0	223.0	261.1	274.1	261.1	223.0
72.5°	235.0	213.0	183.0	152.0	156.0	151.0	183.0	214.1	237.1	214.1	183.0
75°	196.0	172.0	144.0	121.0	130.0	121.0	145.0	173.1	199.1	173.1	145.0
77.5°	176.2	145.1	112.0	97.0	103.0	97.0	113.0	142.1	172.1	142.1	113.0
80°	168.5	133.4	90.1	73.0	79.0	73.0	88.0	117.1	149.2	117.1	88.0
82.5°	171.0	137.8	87.3	52.0	55.0	52.0	75.1	101.1	132.3	101.1	75.1
85°	181.6	153.4	98.8	43.1	34.0	41.0	69.2	91.2	115.3	91.2	69.2
87.5°	200.4	178.2	117.3	49.4	9.0	35.1	59.2	80.3	95.3	80.3	59.2
90°	225.1	206.9	146.1	62.8	2.0	24.0	45.1	63.1	72.1	63.1	45.1
92.5°	258.0	241.8	174.8	85.4	17.3	15.0	35.1	53.1	58.1	53.1	35.1
95°	286.8	280.7	211.7	110.1	41.8	8.1	28.1	44.0	45.1	44.0	28.1
97.5°	324.7	318.6	248.5	143.8	73.4	13.2	23.1	38.1	39.1	38.1	23.1
100°	356.5	353.4	286.4	187.7	112.2	34.7	16.1	33.2	35.2	33.2	16.1
102.5°	406.6	391.4	322.3	229.5	154.0	64.2	18.3	24.2	27.2	24.2	18.3
105°	448.6	431.3	371.2	273.3	201.9	104.0	41.8	21.2	19.1	21.2	41.8
107.5°	486.4	473.2	416.1	318.2	252.9	149.9	76.5	40.7	29.5	40.7	76.5
110°	534.4	521.2	460.0	364.1	306.0	199.9	116.2	72.4	57.1	72.4	116.2



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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°	583.4	573.2	500.8	411.0	361.1	252.9	165.2	113.2	98.9	113.2	165.2
115°	621.1	615.0	547.7	454.9	413.1	313.1	219.3	161.1	143.8	161.1	219.3
117.5°	660.9	659.9	582.4	499.7	474.3	367.2	269.2	210.1	190.7	210.1	269.2
120°	710.9	702.7	630.3	544.6	532.4	424.3	324.3	265.1	245.8	265.1	324.3
122.5°	745.5	740.4	672.1	587.5	587.5	482.4	378.4	318.2	297.8	318.2	378.4
125°	777.2	775.1	702.7	630.3	646.6	536.5	437.5	376.3	353.9	376.3	437.5
127.5°	805.7	808.8	742.5	677.2	706.8	591.5	495.7	428.3	404.9	428.3	495.7
130°	830.2	840.4	780.2	720.1	763.9	651.7	547.7	480.4	465.1	480.4	547.7
132.5°	878.1	872.0	819.0	764.9	825.1	707.8	602.7	532.4	515.0	532.4	602.7
135°	902.6	904.7	852.6	802.7	882.2	762.9	654.8	585.4	568.1	585.4	654.8
137.5°	932.2	926.1	879.2	848.6	935.4	815.9	705.8	641.5	614.0	641.5	705.8
140°	953.7	952.7	913.8	889.4	992.5	867.9	757.8	692.5	667.0	692.5	757.8
142.5°	976.2	982.3	948.6	934.2	1049.6	923.0	813.9	742.5	718.0	742.5	813.9
145°	991.5	1004.7	983.3	990.4	1103.7	984.3	862.8	790.4	763.9	790.4	862.8
147.5°	1017.0	1034.3	1008.8	1030.2	1150.6	1038.4	911.8	840.4	816.9	840.4	911.8
150°	1051.6	1059.8	1044.5	1085.3	1198.5	1098.6	961.9	888.3	864.9	888.3	961.9
152.5°	1079.2	1089.4	1072.0	1145.5	1236.3	1153.6	1017.0	935.4	907.7	935.4	1017.0
155°	1107.7	1111.8	1099.6	1203.6	1277.1	1207.7	1060.8	987.4	960.9	987.4	1060.8
157.5°	1134.3	1142.4	1128.1	1247.5	1311.7	1254.6	1110.8	1039.4	1015.9	1039.4	1110.8
160°	1162.8	1162.8	1171.0	1298.5	1340.3	1295.4	1163.8	1096.5	1063.9	1096.5	1163.8
162.5°	1165.9	1185.3	1229.1	1334.2	1367.8	1331.1	1221.0	1137.3	1108.8	1137.3	1221.0
165°	1210.8	1228.1	1294.4	1365.8	1389.3	1362.7	1291.3	1204.6	1171.0	1204.6	1291.3
167.5°	1257.7	1294.4	1347.4	1401.5	1409.7	1392.3	1345.4	1285.2	1254.6	1285.2	1345.4
170°	1333.2	1364.8	1392.3	1414.8	1426.0	1415.8	1379.1	1348.5	1329.1	1348.5	1379.1
172.5°	1393.4	1414.8	1425.0	1439.2	1432.1	1428.0	1409.7	1395.4	1384.2	1395.4	1409.7
175°	1431.1	1436.2	1445.4	1440.3	1446.4	1435.2	1436.2	1443.3	1400.5	1443.3	1436.2
177.5°	1444.4	1452.5	1447.4	1438.2	1439.2	1437.2	1441.3	1445.4	1438.2	1445.4	1441.3
180°	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1423.2	1423.2	1423.2	1423.2	1423.2	1423.2
2.5°	1422.3	1431.3	1423.3	1415.3	1415.2	1416.2
5°	1418.3	1424.3	1418.3	1409.3	1410.2	1408.2
7.5°	1405.2	1399.3	1406.3	1397.2	1403.2	1399.2
10°	1390.2	1395.2	1391.2	1382.2	1386.2	1386.2
12.5°	1367.2	1367.2	1367.2	1361.2	1362.2	1368.3
15°	1344.2	1349.2	1345.2	1339.2	1344.2	1341.3
17.5°	1314.2	1320.2	1314.2	1310.2	1316.2	1317.3
20°	1287.2	1288.2	1288.2	1278.2	1281.3	1279.3
22.5°	1245.2	1253.2	1246.2	1246.2	1247.3	1245.3
25°	1215.2	1214.2	1216.2	1205.2	1204.3	1204.3
27.5°	1173.2	1166.2	1174.2	1167.2	1159.3	1161.3
30°	1132.2	1128.2	1134.2	1116.3	1108.3	1106.3
32.5°	1087.2	1082.2	1089.2	1065.3	1054.3	1046.3
35°	1034.2	1035.2	1037.2	1008.2	991.2	988.2
37.5°	977.2	985.2	980.2	949.2	928.1	933.1
40°	919.1	927.1	921.1	884.1	875.1	874.1
42.5°	855.1	871.1	857.1	819.1	811.1	821.1
45°	788.1	810.1	790.1	757.1	756.1	769.1
47.5°	719.1	737.1	720.1	694.1	702.1	718.1
50°	649.1	660.1	651.1	635.1	651.1	666.1
52.5°	581.1	573.1	583.1	581.1	601.1	618.1
55°	510.0	488.1	512.1	528.1	553.1	568.1
57.5°	443.0	413.1	445.1	477.1	509.1	520.1
60°	377.0	354.1	378.1	424.1	461.1	470.1
62.5°	316.0	298.0	317.1	370.1	413.1	420.1
65°	266.0	256.0	267.1	317.1	361.1	372.1
67.5°	222.0	220.0	222.0	268.1	310.1	323.1
70°	184.0	185.0	184.0	223.0	260.0	273.0
72.5°	151.0	156.0	152.0	183.0	213.0	235.0
75°	121.0	130.0	121.0	144.0	172.0	196.0
77.5°	97.0	103.0	97.0	112.0	145.1	176.2
80°	73.0	79.0	73.0	90.1	133.4	168.5
82.5°	52.0	55.0	52.0	87.3	137.8	171.0
85°	41.0	34.0	43.1	98.8	153.4	181.6
87.5°	35.1	9.0	49.4	117.3	178.2	200.4
90°	24.0	2.0	62.8	146.1	206.9	225.1
92.5°	15.0	17.3	85.4	174.8	241.8	258.0
95°	8.1	41.8	110.1	211.7	280.7	286.8
97.5°	13.2	73.4	143.8	248.5	318.6	324.7
100°	34.7	112.2	187.7	286.4	353.4	356.5
102.5°	64.2	154.0	229.5	322.3	391.4	406.6
105°	104.0	201.9	273.3	371.2	431.3	448.6
107.5°	149.9	252.9	318.2	416.1	473.2	486.4
110°	199.9	306.0	364.1	460.0	521.2	534.4



TEST NUMBER: P392660

CATALOG NUMBER: MWL-4-34-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	252.9	361.1	411.0	500.8	573.2	583.4
115°	313.1	413.1	454.9	547.7	615.0	621.1
117.5°	367.2	474.3	499.7	582.4	659.9	660.9
120°	424.3	532.4	544.6	630.3	702.7	710.9
122.5°	482.4	587.5	587.5	672.1	740.4	745.5
125°	536.5	646.6	630.3	702.7	775.1	777.2
127.5°	591.5	706.8	677.2	742.5	808.8	805.7
130°	651.7	763.9	720.1	780.2	840.4	830.2
132.5°	707.8	825.1	764.9	819.0	872.0	878.1
135°	762.9	882.2	802.7	852.6	904.7	902.6
137.5°	815.9	935.4	848.6	879.2	926.1	932.2
140°	867.9	992.5	889.4	913.8	952.7	953.7
142.5°	923.0	1049.6	934.2	948.6	982.3	976.2
145°	984.3	1103.7	990.4	983.3	1004.7	991.5
147.5°	1038.4	1150.6	1030.2	1008.8	1034.3	1017.0
150°	1098.6	1198.5	1085.3	1044.5	1059.8	1051.6
152.5°	1153.6	1236.3	1145.5	1072.0	1089.4	1079.2
155°	1207.7	1277.1	1203.6	1099.6	1111.8	1107.7
157.5°	1254.6	1311.7	1247.5	1128.1	1142.4	1134.3
160°	1295.4	1340.3	1298.5	1171.0	1162.8	1162.8
162.5°	1331.1	1367.8	1334.2	1229.1	1185.3	1165.9
165°	1362.7	1389.3	1365.8	1294.4	1228.1	1210.8
167.5°	1392.3	1409.7	1401.5	1347.4	1294.4	1257.7
170°	1415.8	1426.0	1414.8	1392.3	1364.8	1333.2
172.5°	1428.0	1432.1	1439.2	1425.0	1414.8	1393.4
175°	1435.2	1446.4	1440.3	1445.4	1436.2	1431.1
177.5°	1437.2	1439.2	1438.2	1447.4	1452.5	1444.4
180°	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4

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