

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: P392598

Luminaire Tested: **MWL-3-37-33-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392598
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-L930-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

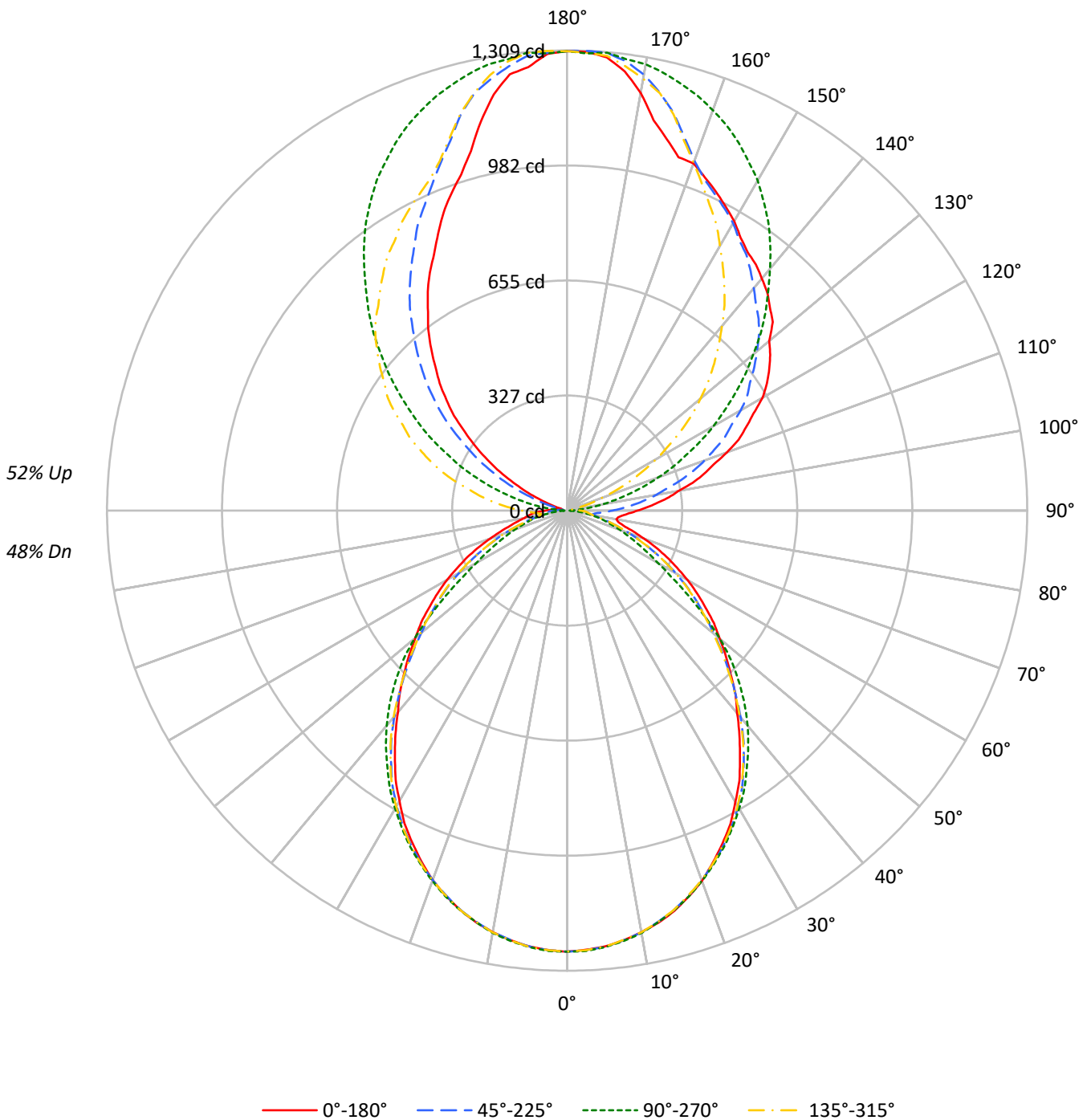
Lumens per Lamp: N/A
Luminaire Lumens: 6005.0 lumens
Efficiency: N/A
Efficacy: 83.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 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				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	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	97	93	89	86	89	86	83	80	72	70	68	60	58	56	48	47	46	41
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	35
3	81	72	65	59	75	67	60	55	56	52	48	47	44	41	38	36	34	30
4	75	64	56	50	68	59	53	47	50	45	41	42	38	35	34	32	29	26
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23
6	63	51	43	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20
7	59	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18
8	54	42	35	29	50	39	33	28	34	28	25	29	25	21	24	21	18	16
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15
10	47	35	28	24	44	33	27	22	29	24	20	24	20	18	21	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10804	10804	10804	10804
5°	10627	9906	10627	9906
10°	10392	9069	10392	9069
15°	10132	8275	10109	8275
20°	9781	7532	9758	7532
25°	9327	6843	9303	6843
30°	8812	6171	8779	6171
35°	8207	5510	8181	5510
40°	7578	4884	7541	4884
45°	7037	4212	7007	4212
50°	6504	3469	6473	3469
55°	6008	2594	5986	2594
60°	5496	1882	5482	1882
65°	4900	1414	4900	1414
70°	4222	1068	4241	1068
75°	3616	773	3675	773
80°	3950	497	3465	497
85°	6052	215	3761	215



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.0	2.0
10°-20°	331.3	5.5
20°-30°	483.4	8.1
30°-40°	546.4	9.1
40°-50°	511.0	8.5
50°-60°	403.5	6.7
60°-70°	263.9	4.4
70°-80°	137.8	2.3
80°-90°	82.3	1.4
90°-100°	111.2	1.9
100°-110°	203.6	3.4
110°-120°	347.3	5.8
120°-130°	471.8	7.9
130°-140°	538.1	9.0
140°-150°	536.7	8.9
150°-160°	467.4	7.8
160°-170°	328.8	5.5
170°-180°	122.5	2.0
0°-30°	932.7	15.5
0°-40°	1479.1	24.6
0°-60°	2393.7	39.9
0°-90°	2877.7	47.9
90°-120°	662.1	11.0
90°-150°	2208.7	36.8
90°-180°	3127.0	52.1
0°-180°	6005.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1255	1255	1255	1255	1255	
5°	1244	1246	1244	1246	1244	118
15°	1179	1177	1176	1177	1179	332
25°	1045	1056	1042	1056	1045	481
35°	857	891	854	891	857	536
45°	658	692	655	692	658	509
55°	480	420	478	420	480	430
65°	312	218	312	218	312	309
75°	165	110	168	110	165	184
85°	158	27	98	27	158	126
90°	200	2	61	2	200	110
95°	259	38	40	38	259	225
105°	403	183	14	183	403	425
115°	562	373	130	373	562	557
125°	702	585	319	585	702	627
135°	816	798	513	798	816	630
145°	896	998	690	998	896	565
155°	1001	1154	868	1154	1001	462
165°	1094	1256	1058	1256	1094	310
175°	1294	1308	1266	1308	1294	121
180°	1307	1307	1307	1307	1307	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7
2.5°	1250.3	1253.0	1251.5	1252.3	1254.0	1251.5	1251.5	1253.0	1251.3	1253.0	1251.5
5°	1244.4	1246.3	1245.6	1245.6	1246.3	1245.6	1244.6	1246.3	1244.4	1246.3	1244.6
7.5°	1232.7	1235.3	1232.8	1234.5	1234.5	1233.6	1231.9	1234.5	1232.7	1234.5	1231.9
10°	1217.6	1220.1	1218.3	1218.3	1220.1	1217.6	1217.6	1218.3	1217.6	1218.3	1217.6
12.5°	1200.7	1200.6	1198.1	1199.8	1198.9	1199.8	1198.1	1198.9	1199.0	1198.9	1198.1
15°	1178.8	1177.0	1176.1	1177.0	1176.9	1176.1	1175.2	1175.2	1176.1	1175.2	1175.2
17.5°	1150.9	1151.6	1148.3	1150.7	1150.7	1150.7	1147.3	1150.8	1148.3	1150.8	1147.3
20°	1121.3	1120.4	1119.5	1121.1	1121.1	1120.2	1118.6	1118.7	1118.7	1118.7	1118.6
22.5°	1083.3	1085.7	1086.5	1089.8	1088.9	1088.9	1085.6	1084.0	1081.4	1084.0	1085.6
25°	1045.2	1049.5	1051.8	1056.9	1056.0	1056.0	1050.1	1046.7	1042.5	1046.7	1050.1
27.5°	1005.5	1006.3	1013.9	1021.5	1017.9	1020.5	1012.0	1003.6	1002.8	1003.6	1012.0
30°	957.3	961.5	972.5	980.9	979.0	979.1	969.8	958.9	953.7	958.9	969.8
32.5°	911.7	913.3	927.7	937.8	938.5	936.1	925.1	909.7	908.1	909.7	925.1
35°	856.6	860.9	876.1	893.9	891.2	891.2	873.4	858.1	853.9	858.1	873.4
37.5°	805.1	807.6	824.5	846.5	846.4	843.8	821.9	805.0	802.4	805.0	821.9
40°	752.7	751.9	767.9	792.4	799.1	790.6	764.3	748.2	749.0	748.2	764.3
42.5°	708.7	698.6	709.6	736.6	747.5	734.8	706.8	695.0	705.1	695.0	706.8
45°	658.1	647.9	653.9	679.1	691.7	677.3	650.1	645.1	655.3	645.1	650.1
47.5°	612.4	599.7	598.9	617.4	635.1	616.4	595.1	597.0	609.7	597.0	595.1
50°	565.9	554.1	545.6	558.2	567.5	556.4	541.9	550.4	563.2	550.4	541.9
52.5°	526.2	510.2	495.7	499.1	492.2	497.2	492.9	506.5	523.4	506.5	492.9
55°	479.6	469.5	449.2	438.1	419.5	436.3	446.4	466.7	477.8	466.7	446.4
57.5°	438.2	428.9	404.4	378.1	351.8	376.2	401.6	426.2	436.4	426.2	401.6
60°	395.9	386.5	357.0	318.9	298.6	317.9	355.1	384.7	394.9	384.7	355.1
62.5°	351.9	346.0	312.2	269.0	257.1	268.1	310.4	344.2	351.0	344.2	310.4
65°	312.1	302.0	267.3	225.9	218.2	225.0	266.4	301.0	312.1	301.0	266.4
67.5°	271.5	258.9	225.9	187.8	186.9	187.8	225.0	258.0	271.5	258.0	225.0
70°	231.7	217.4	186.9	155.7	159.0	155.7	186.9	218.3	232.7	218.3	186.9
72.5°	197.1	177.7	153.1	127.8	131.1	126.9	153.1	178.6	199.0	178.6	153.1
75°	165.0	143.0	121.8	102.3	110.0	102.3	122.7	144.0	167.7	144.0	122.7
77.5°	148.6	120.5	93.9	80.4	88.0	80.4	94.8	117.7	145.0	117.7	94.8
80°	142.4	113.1	76.4	61.8	66.8	61.8	74.6	98.4	124.9	98.4	74.6
82.5°	146.0	117.4	74.0	44.0	47.4	44.0	62.9	84.2	110.9	84.2	62.9
85°	158.5	133.2	84.1	35.8	27.1	34.0	57.3	76.9	98.5	76.9	57.3
87.5°	176.5	157.2	103.3	42.0	7.6	29.1	50.6	68.6	81.4	68.6	50.6
90°	199.8	183.8	128.9	54.7	1.8	19.6	37.5	53.7	61.4	53.7	37.5
92.5°	229.5	215.0	157.1	75.6	15.7	12.0	30.6	44.3	48.6	44.3	30.6
95°	258.7	251.5	190.0	98.5	37.8	6.3	23.9	37.3	40.0	37.3	23.9
97.5°	292.5	285.4	222.2	130.0	66.3	11.9	18.2	31.6	34.2	31.6	18.2
100°	320.9	316.6	256.9	169.7	101.4	31.3	12.3	26.8	30.2	26.8	12.3
102.5°	365.9	351.5	290.6	207.5	139.3	58.0	15.6	19.2	22.5	19.2	15.6
105°	402.7	385.5	335.8	247.3	182.6	94.0	37.7	14.4	14.0	14.4	37.7
107.5°	437.2	427.1	376.4	287.8	228.8	135.6	69.0	35.8	23.8	35.8	69.0
110°	483.3	471.4	416.0	328.5	276.8	180.0	105.0	65.3	51.5	65.3	105.0



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CATALOG NUMBER: MWL-3-37-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	527.7	518.5	453.0	371.0	326.7	227.9	149.3	102.2	89.3	102.2	149.3
115°	561.8	556.4	495.5	410.7	372.8	282.4	198.3	145.7	129.9	145.7	198.3
117.5°	597.0	596.1	526.9	451.3	428.2	331.2	243.5	189.0	171.5	189.0	243.5
120°	642.2	634.8	570.2	491.8	480.8	382.9	293.4	238.9	221.4	238.9	293.4
122.5°	673.6	668.9	607.2	531.5	531.5	436.4	341.4	286.9	268.5	286.9	341.4
125°	702.2	700.3	634.8	570.2	585.0	485.3	394.8	339.5	319.2	339.5	394.8
127.5°	728.0	730.8	670.8	612.7	639.4	535.2	447.5	386.5	365.3	386.5	447.5
130°	750.2	759.3	704.9	651.5	691.1	589.6	494.5	433.6	419.8	433.6	494.5
132.5°	793.5	788.0	740.1	691.1	746.5	639.4	544.3	480.8	465.0	480.8	544.3
135°	815.8	817.5	770.4	725.3	798.2	689.3	591.4	528.7	513.0	528.7	591.4
137.5°	842.5	837.0	794.5	766.8	846.2	737.2	637.6	579.5	554.5	579.5	637.6
140°	861.9	861.0	825.9	803.7	897.8	784.3	684.7	625.6	602.5	625.6	684.7
142.5°	882.2	887.6	857.3	844.3	949.5	834.2	735.5	670.8	648.7	670.8	735.5
145°	896.0	908.1	888.6	895.1	998.5	889.6	779.8	714.2	690.1	714.2	779.8
147.5°	919.2	934.7	911.7	931.1	1040.9	938.4	824.1	759.3	738.1	759.3	824.1
150°	950.5	957.8	944.0	980.9	1084.2	992.9	869.2	802.8	781.6	802.8	869.2
152.5°	975.4	984.6	968.9	1035.4	1118.4	1042.8	919.2	845.3	820.3	845.3	919.2
155°	1001.3	1004.9	993.8	1087.9	1154.4	1091.7	958.8	892.3	868.3	892.3	958.8
157.5°	1025.2	1032.7	1019.7	1127.7	1185.9	1134.1	1003.9	939.4	918.2	939.4	1003.9
160°	1051.1	1051.1	1058.4	1173.9	1211.7	1171.1	1051.9	991.0	961.5	991.0	1051.9
162.5°	1053.9	1071.3	1111.0	1206.1	1236.6	1203.4	1103.7	1028.0	1002.1	1028.0	1103.7
165°	1094.4	1110.1	1170.1	1234.7	1255.9	1232.0	1167.4	1088.9	1058.4	1088.9	1167.4
167.5°	1136.9	1170.1	1218.2	1267.0	1274.4	1258.7	1216.2	1161.8	1134.1	1161.8	1216.2
170°	1206.1	1234.7	1258.7	1279.1	1289.2	1279.9	1246.7	1220.0	1202.4	1220.0	1246.7
172.5°	1259.7	1279.1	1288.3	1301.2	1294.7	1291.0	1274.4	1261.5	1251.5	1261.5	1274.4
175°	1293.9	1298.4	1306.7	1302.2	1307.6	1297.5	1298.4	1304.8	1266.2	1304.8	1298.4
177.5°	1305.9	1313.2	1308.6	1300.3	1301.2	1299.4	1303.0	1306.7	1300.3	1306.7	1303.0
180°	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7



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CATALOG NUMBER: MWL-3-37-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1254.7	1254.7	1254.7	1254.7	1254.7	1254.7
2.5°	1251.5	1254.0	1252.3	1251.5	1253.0	1250.3
5°	1245.6	1246.3	1245.6	1245.6	1246.3	1244.4
7.5°	1233.6	1234.5	1234.5	1232.8	1235.3	1232.7
10°	1217.6	1220.1	1218.3	1218.3	1220.1	1217.6
12.5°	1199.8	1198.9	1199.8	1198.1	1200.6	1200.7
15°	1176.1	1176.9	1177.0	1176.1	1177.0	1178.8
17.5°	1150.7	1150.7	1150.7	1148.3	1151.6	1150.9
20°	1120.2	1121.1	1121.1	1119.5	1120.4	1121.3
22.5°	1088.9	1088.9	1089.8	1086.5	1085.7	1083.3
25°	1056.0	1056.0	1056.9	1051.8	1049.5	1045.2
27.5°	1020.5	1017.9	1021.5	1013.9	1006.3	1005.5
30°	979.1	979.0	980.9	972.5	961.5	957.3
32.5°	936.1	938.5	937.8	927.7	913.3	911.7
35°	891.2	891.2	893.9	876.1	860.9	856.6
37.5°	843.8	846.4	846.5	824.5	807.6	805.1
40°	790.6	799.1	792.4	767.9	751.9	752.7
42.5°	734.8	747.5	736.6	709.6	698.6	708.7
45°	677.3	691.7	679.1	653.9	647.9	658.1
47.5°	616.4	635.1	617.4	598.9	599.7	612.4
50°	556.4	567.5	558.2	545.6	554.1	565.9
52.5°	497.2	492.2	499.1	495.7	510.2	526.2
55°	436.3	419.5	438.1	449.2	469.5	479.6
57.5°	376.2	351.8	378.1	404.4	428.9	438.2
60°	317.9	298.6	318.9	357.0	386.5	395.9
62.5°	268.1	257.1	269.0	312.2	346.0	351.9
65°	225.0	218.2	225.9	267.3	302.0	312.1
67.5°	187.8	186.9	187.8	225.9	258.9	271.5
70°	155.7	159.0	155.7	186.9	217.4	231.7
72.5°	126.9	131.1	127.8	153.1	177.7	197.1
75°	102.3	110.0	102.3	121.8	143.0	165.0
77.5°	80.4	88.0	80.4	93.9	120.5	148.6
80°	61.8	66.8	61.8	76.4	113.1	142.4
82.5°	44.0	47.4	44.0	74.0	117.4	146.0
85°	34.0	27.1	35.8	84.1	133.2	158.5
87.5°	29.1	7.6	42.0	103.3	157.2	176.5
90°	19.6	1.8	54.7	128.9	183.8	199.8
92.5°	12.0	15.7	75.6	157.1	215.0	229.5
95°	6.3	37.8	98.5	190.0	251.5	258.7
97.5°	11.9	66.3	130.0	222.2	285.4	292.5
100°	31.3	101.4	169.7	256.9	316.6	320.9
102.5°	58.0	139.3	207.5	290.6	351.5	365.9
105°	94.0	182.6	247.3	335.8	385.5	402.7
107.5°	135.6	228.8	287.8	376.4	427.1	437.2
110°	180.0	276.8	328.5	416.0	471.4	483.3



TEST NUMBER: P392598

CATALOG NUMBER: MWL-3-37-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	227.9	326.7	371.0	453.0	518.5	527.7
115°	282.4	372.8	410.7	495.5	556.4	561.8
117.5°	331.2	428.2	451.3	526.9	596.1	597.0
120°	382.9	480.8	491.8	570.2	634.8	642.2
122.5°	436.4	531.5	531.5	607.2	668.9	673.6
125°	485.3	585.0	570.2	634.8	700.3	702.2
127.5°	535.2	639.4	612.7	670.8	730.8	728.0
130°	589.6	691.1	651.5	704.9	759.3	750.2
132.5°	639.4	746.5	691.1	740.1	788.0	793.5
135°	689.3	798.2	725.3	770.4	817.5	815.8
137.5°	737.2	846.2	766.8	794.5	837.0	842.5
140°	784.3	897.8	803.7	825.9	861.0	861.9
142.5°	834.2	949.5	844.3	857.3	887.6	882.2
145°	889.6	998.5	895.1	888.6	908.1	896.0
147.5°	938.4	1040.9	931.1	911.7	934.7	919.2
150°	992.9	1084.2	980.9	944.0	957.8	950.5
152.5°	1042.8	1118.4	1035.4	968.9	984.6	975.4
155°	1091.7	1154.4	1087.9	993.8	1004.9	1001.3
157.5°	1134.1	1185.9	1127.7	1019.7	1032.7	1025.2
160°	1171.1	1211.7	1173.9	1058.4	1051.1	1051.1
162.5°	1203.4	1236.6	1206.1	1111.0	1071.3	1053.9
165°	1232.0	1255.9	1234.7	1170.1	1110.1	1094.4
167.5°	1258.7	1274.4	1267.0	1218.2	1170.1	1136.9
170°	1279.9	1289.2	1279.1	1258.7	1234.7	1206.1
172.5°	1291.0	1294.7	1301.2	1288.3	1279.1	1259.7
175°	1297.5	1307.6	1302.2	1306.7	1298.4	1293.9
177.5°	1299.4	1301.2	1300.3	1308.6	1313.2	1305.9
180°	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7

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