

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: P392543

Luminaire Tested: **MWL-2-35-31-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392543
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-2-35-31-UNV-L940-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

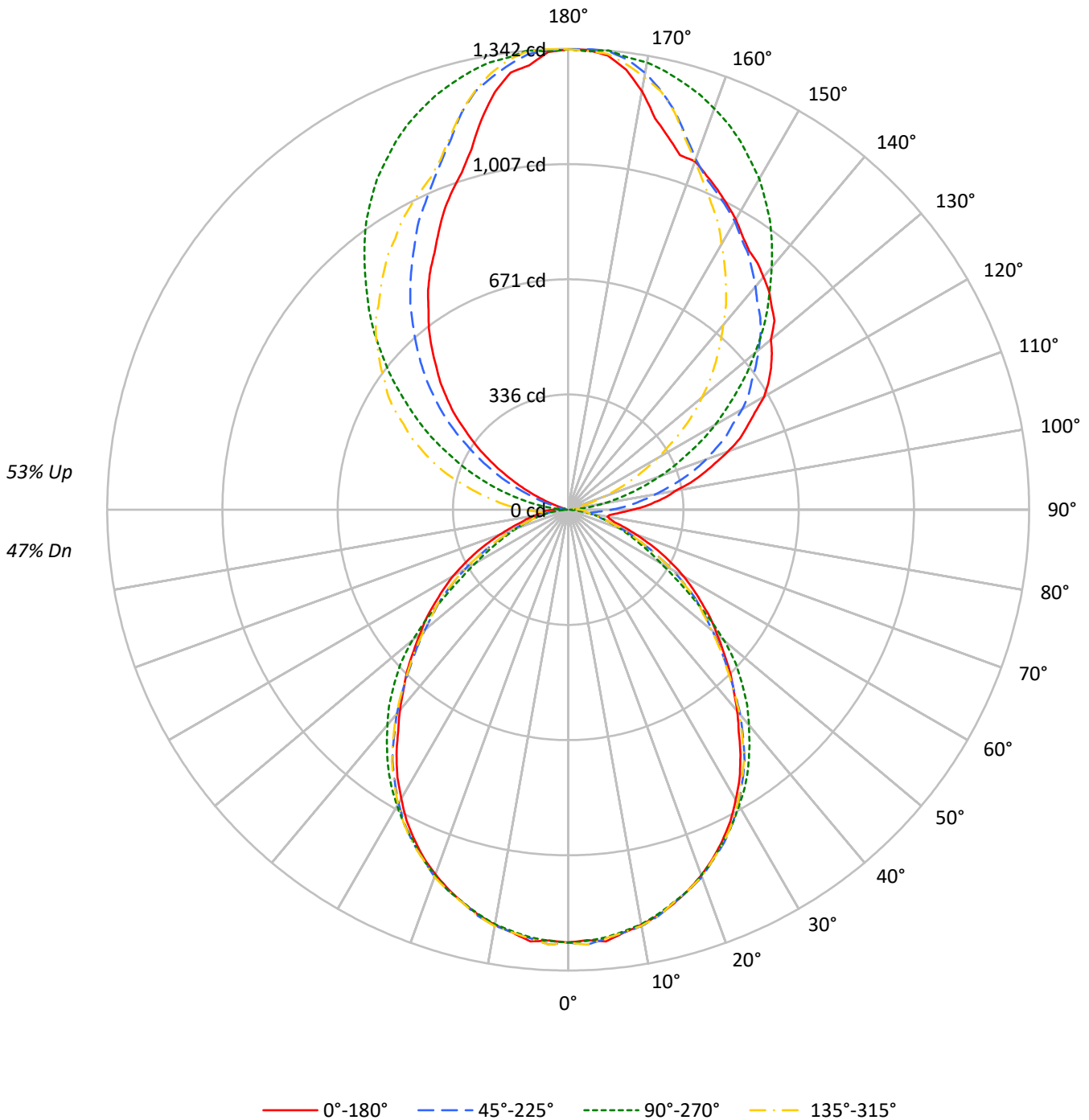
Lumens per Lamp: N/A
Luminaire Lumens: 6080.8 lumens
Efficiency: N/A
Efficacy: 80.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 75.75
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	67	67	67	54	54	54	47																				
1	97	93	89	86	89	86	83	80	72	70	68	59	58	56	48	47	46	40																				
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	34																				
3	81	72	65	59	75	67	61	56	56	52	48	47	44	41	38	36	34	30																				
4	75	64	56	51	68	59	53	47	50	45	41	42	38	35	34	32	29	26																				
5	69	57	49	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23																				
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20																				
7	59	47	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18																				
8	54	42	35	30	50	39	33	28	34	29	25	29	25	22	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	36	28	24	44	33	27	22	29	24	20	24	20	18	20	17	15	13																				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	16279	16279	16279	16279
5°	16071	14907	16071	14907
10°	15528	13666	15528	13666
15°	15039	12484	15003	12484
20°	14474	11415	14437	11415
25°	13803	10363	13767	10363
30°	12983	9409	12933	9409
35°	12027	8477	11989	8477
40°	10988	7503	10934	7503
45°	10058	6534	10015	6534
50°	9111	5431	9066	5431
55°	8242	4032	8209	4032
60°	7371	2947	7352	2947
65°	6276	2188	6276	2188
70°	5034	1627	5058	1627
75°	3891	1134	3970	1134
80°	3945	721	3335	721
85°	5996	304	3300	304



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.9	2.0
10°-20°	334.4	5.5
20°-30°	490.4	8.1
30°-40°	556.4	9.2
40°-50°	519.2	8.5
50°-60°	407.4	6.7
60°-70°	254.5	4.2
70°-80°	123.7	2.0
80°-90°	74.6	1.2
90°-100°	108.0	1.8
100°-110°	206.6	3.4
110°-120°	356.3	5.9
120°-130°	484.3	8.0
130°-140°	552.4	9.1
140°-150°	551.0	9.1
150°-160°	479.8	7.9
160°-170°	337.4	5.5
170°-180°	125.6	2.1
0°-30°	943.6	15.5
0°-40°	1500.0	24.7
0°-60°	2426.6	39.9
0°-90°	2879.3	47.4
90°-120°	670.9	11.0
90°-150°	2258.6	37.1
90°-180°	3201.0	52.6
0°-180°	6080.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1260	1260	1260	1260	1260	
5°	1262	1250	1262	1250	1262	119
15°	1187	1184	1185	1184	1187	335
25°	1063	1066	1060	1066	1063	488
35°	874	914	871	914	874	545
45°	665	715	662	715	665	512
55°	475	435	473	435	475	426
65°	297	225	297	225	297	294
75°	139	108	141	108	139	158
85°	137	26	75	26	137	108
90°	187	2	45	2	187	104
95°	254	39	29	39	254	221
105°	407	187	8	187	407	429
115°	575	383	132	383	575	571
125°	721	600	328	600	721	644
135°	837	819	527	819	837	646
145°	920	1025	709	1025	920	580
155°	1028	1184	892	1184	1028	474
165°	1124	1289	1087	1289	1124	319
175°	1327	1342	1299	1342	1327	124
180°	1341	1341	1341	1341	1341	



TEST NUMBER: P392543

CATALOG NUMBER: MWL-2-35-31-UNV-L940-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3
2.5°	1254.8	1263.0	1267.6	1255.8	1256.7	1254.9	1267.6	1263.0	1255.7	1263.0	1267.6
5°	1262.1	1253.9	1253.9	1253.0	1250.3	1253.0	1253.0	1253.9	1262.1	1253.9	1253.0
7.5°	1242.0	1248.5	1242.1	1241.2	1238.5	1240.3	1241.1	1247.5	1242.0	1247.5	1241.1
10°	1227.4	1232.1	1231.2	1224.8	1225.7	1223.8	1230.2	1230.2	1227.4	1230.2	1230.2
12.5°	1210.2	1212.9	1211.9	1204.7	1206.5	1204.7	1211.9	1211.0	1208.3	1211.0	1211.9
15°	1187.4	1186.5	1185.5	1182.8	1183.7	1181.9	1184.6	1184.6	1184.6	1184.6	1184.6
17.5°	1161.9	1163.7	1162.7	1162.7	1162.7	1162.7	1161.8	1162.7	1159.1	1162.7	1161.8
20°	1132.8	1137.3	1138.1	1132.7	1132.7	1131.8	1137.2	1135.4	1129.9	1135.4	1137.2
22.5°	1100.0	1100.9	1102.6	1095.3	1102.6	1094.4	1101.7	1099.0	1098.1	1099.0	1101.7
25°	1062.6	1063.5	1071.7	1067.1	1066.2	1066.2	1069.8	1060.7	1059.8	1060.7	1069.8
27.5°	1022.5	1022.5	1033.5	1029.7	1033.4	1028.8	1031.5	1019.7	1019.7	1019.7	1031.5
30°	975.2	983.4	989.7	1002.5	995.1	1000.6	986.9	980.5	971.4	980.5	986.9
32.5°	928.7	933.2	942.4	951.5	957.7	949.5	939.5	929.5	924.9	929.5	939.5
35°	874.0	874.0	895.0	912.3	914.0	909.5	892.1	871.2	871.2	871.2	892.1
37.5°	815.7	817.5	835.8	862.2	866.6	859.3	832.9	814.7	812.9	814.7	832.9
40°	765.6	762.0	779.3	812.9	818.4	811.1	775.4	758.1	761.8	758.1	775.4
42.5°	712.8	707.3	715.4	757.3	771.0	755.5	712.6	703.5	708.9	703.5	712.6
45°	665.3	654.4	656.2	695.4	715.4	693.5	652.4	651.5	662.5	651.5	652.4
47.5°	613.4	609.7	602.4	627.9	660.7	627.0	598.7	606.9	610.5	606.9	598.7
50°	566.0	558.7	547.8	568.7	592.4	566.8	544.0	555.0	563.2	555.0	544.0
52.5°	524.1	517.7	496.7	509.5	514.0	507.6	493.9	514.0	521.2	514.0	493.9
55°	474.9	474.0	453.0	446.6	434.7	444.7	450.2	471.1	473.0	471.1	450.2
57.5°	431.1	429.3	399.2	388.3	366.4	386.4	396.4	426.5	429.2	426.5	396.4
60°	388.3	381.9	349.1	322.6	311.7	321.7	347.2	380.0	387.3	380.0	347.2
62.5°	340.9	337.3	297.2	268.9	266.1	268.0	295.3	335.4	339.9	335.4	295.3
65°	297.1	283.4	249.7	224.2	225.1	223.3	248.8	282.5	297.1	282.5	248.8
67.5°	250.6	237.0	207.8	184.1	191.4	184.1	206.9	236.1	250.6	236.1	206.9
70°	209.6	191.4	169.6	150.4	161.4	150.4	169.6	192.3	210.6	192.3	169.6
72.5°	172.3	153.2	136.8	123.1	132.1	122.1	136.8	154.1	174.2	154.1	136.8
75°	138.6	121.3	105.7	98.4	107.5	98.4	106.7	122.2	141.4	122.2	106.7
77.5°	124.3	102.2	80.2	76.5	87.5	76.5	81.2	99.4	120.4	99.4	81.2
80°	115.7	99.1	64.9	57.4	64.7	57.4	63.0	84.0	97.8	84.0	63.0
82.5°	121.2	108.1	66.1	41.0	44.6	41.0	54.8	74.0	85.2	74.0	54.8
85°	136.8	126.5	77.9	33.9	25.5	32.0	50.4	68.7	75.3	68.7	50.4
87.5°	159.0	153.2	98.9	40.7	7.3	27.5	45.0	62.4	61.6	62.4	45.0
90°	186.8	181.9	126.6	53.3	1.8	17.4	33.0	48.5	44.9	48.5	33.0
92.5°	222.9	214.4	156.2	74.4	16.0	9.2	26.5	39.4	37.5	39.4	26.5
95°	253.5	247.8	189.5	99.3	38.7	4.7	19.2	28.3	29.2	28.3	19.2
97.5°	288.7	282.2	221.1	133.4	68.1	12.3	12.0	22.0	23.9	22.0	12.0
100°	317.4	313.8	258.3	174.0	104.0	32.2	7.6	16.7	19.4	16.7	7.6
102.5°	365.0	351.0	297.1	212.8	142.9	59.6	15.1	10.3	13.0	10.3	15.1
105°	406.8	393.5	343.4	253.6	187.3	96.5	37.8	13.2	8.5	13.2	37.8
107.5°	447.4	438.0	385.9	295.2	234.6	139.0	70.9	36.8	23.6	36.8	70.9
110°	494.8	483.4	426.7	336.8	283.8	184.5	107.8	67.1	51.9	67.1	107.8



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CATALOG NUMBER: MWL-2-35-31-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	540.2	531.7	464.5	381.2	334.9	234.6	153.2	105.0	90.7	105.0	153.2
115°	575.2	570.4	508.0	421.9	383.1	290.4	203.4	149.4	132.4	149.4	203.4
117.5°	612.1	611.2	540.2	463.6	439.9	340.6	249.7	193.9	175.9	193.9	249.7
120°	658.5	650.9	584.7	505.2	493.8	393.5	300.8	245.0	227.0	245.0	300.8
122.5°	691.5	685.9	622.6	544.9	544.9	447.4	350.0	294.2	276.2	294.2	350.0
125°	720.9	718.9	651.8	584.7	599.8	497.6	405.8	349.0	328.2	349.0	405.8
127.5°	747.4	750.2	688.7	629.1	656.5	549.7	459.7	397.3	375.6	397.3	459.7
130°	770.1	779.5	723.7	668.8	709.6	605.4	508.0	445.5	431.3	445.5	508.0
132.5°	814.5	808.9	759.7	709.6	766.3	656.5	559.1	493.8	477.7	493.8	559.1
135°	837.3	839.1	790.9	744.6	819.3	707.7	607.3	543.0	526.9	543.0	607.3
137.5°	864.7	859.0	815.5	787.1	868.5	756.9	654.6	595.0	569.5	595.0	654.6
140°	884.6	883.6	847.7	825.0	921.5	805.1	702.9	642.3	618.7	642.3	702.9
142.5°	905.4	911.1	879.8	866.6	974.4	856.2	754.9	688.7	666.0	688.7	754.9
145°	919.6	932.8	912.0	918.7	1024.6	912.9	800.4	734.1	708.6	734.1	800.4
147.5°	944.2	960.2	936.6	955.6	1068.2	963.1	846.7	780.4	758.7	780.4	846.7
150°	976.3	983.9	969.7	1006.7	1112.6	1019.0	893.1	824.9	803.1	824.9	893.1
152.5°	1001.8	1011.3	995.3	1062.4	1147.6	1070.0	944.2	868.5	842.9	868.5	944.2
155°	1028.4	1032.2	1020.8	1116.4	1184.5	1120.2	984.8	916.7	892.1	916.7	984.8
157.5°	1053.0	1060.5	1046.4	1157.1	1216.7	1163.7	1030.3	964.9	943.2	964.9	1030.3
160°	1079.5	1079.5	1086.1	1204.4	1243.2	1201.6	1079.5	1018.0	987.6	1018.0	1079.5
162.5°	1082.3	1100.2	1140.1	1237.5	1268.7	1234.6	1132.5	1055.8	1029.3	1055.8	1132.5
165°	1123.9	1139.1	1200.6	1266.8	1288.6	1264.0	1197.7	1117.4	1087.0	1117.4	1197.7
167.5°	1167.5	1200.6	1249.8	1300.0	1307.5	1291.4	1247.9	1192.1	1164.6	1192.1	1247.9
170°	1237.5	1266.8	1291.4	1312.3	1322.6	1313.2	1279.1	1251.7	1233.7	1251.7	1279.1
172.5°	1292.4	1312.3	1321.7	1334.9	1328.3	1324.6	1307.5	1294.3	1283.9	1294.3	1307.5
175°	1327.4	1332.1	1340.6	1336.9	1342.5	1332.1	1332.1	1338.8	1299.0	1338.8	1332.1
177.5°	1339.7	1346.3	1342.5	1334.9	1335.9	1333.9	1336.9	1339.7	1334.0	1339.7	1336.9
180°	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6



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CATALOG NUMBER: MWL-2-35-31-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1260.3	1260.3	1260.3	1260.3	1260.3	1260.3
2.5°	1254.9	1256.7	1255.8	1267.6	1263.0	1254.8
5°	1253.0	1250.3	1253.0	1253.9	1253.9	1262.1
7.5°	1240.3	1238.5	1241.2	1242.1	1248.5	1242.0
10°	1223.8	1225.7	1224.8	1231.2	1232.1	1227.4
12.5°	1204.7	1206.5	1204.7	1211.9	1212.9	1210.2
15°	1181.9	1183.7	1182.8	1185.5	1186.5	1187.4
17.5°	1162.7	1162.7	1162.7	1162.7	1163.7	1161.9
20°	1131.8	1132.7	1132.7	1138.1	1137.3	1132.8
22.5°	1094.4	1102.6	1095.3	1102.6	1100.9	1100.0
25°	1066.2	1066.2	1067.1	1071.7	1063.5	1062.6
27.5°	1028.8	1033.4	1029.7	1033.5	1022.5	1022.5
30°	1000.6	995.1	1002.5	989.7	983.4	975.2
32.5°	949.5	957.7	951.5	942.4	933.2	928.7
35°	909.5	914.0	912.3	895.0	874.0	874.0
37.5°	859.3	866.6	862.2	835.8	817.5	815.7
40°	811.1	818.4	812.9	779.3	762.0	765.6
42.5°	755.5	771.0	757.3	715.4	707.3	712.8
45°	693.5	715.4	695.4	656.2	654.4	665.3
47.5°	627.0	660.7	627.9	602.4	609.7	613.4
50°	566.8	592.4	568.7	547.8	558.7	566.0
52.5°	507.6	514.0	509.5	496.7	517.7	524.1
55°	444.7	434.7	446.6	453.0	474.0	474.9
57.5°	386.4	366.4	388.3	399.2	429.3	431.1
60°	321.7	311.7	322.6	349.1	381.9	388.3
62.5°	268.0	266.1	268.9	297.2	337.3	340.9
65°	223.3	225.1	224.2	249.7	283.4	297.1
67.5°	184.1	191.4	184.1	207.8	237.0	250.6
70°	150.4	161.4	150.4	169.6	191.4	209.6
72.5°	122.1	132.1	123.1	136.8	153.2	172.3
75°	98.4	107.5	98.4	105.7	121.3	138.6
77.5°	76.5	87.5	76.5	80.2	102.2	124.3
80°	57.4	64.7	57.4	64.9	99.1	115.7
82.5°	41.0	44.6	41.0	66.1	108.1	121.2
85°	32.0	25.5	33.9	77.9	126.5	136.8
87.5°	27.5	7.3	40.7	98.9	153.2	159.0
90°	17.4	1.8	53.3	126.6	181.9	186.8
92.5°	9.2	16.0	74.4	156.2	214.4	222.9
95°	4.7	38.7	99.3	189.5	247.8	253.5
97.5°	12.3	68.1	133.4	221.1	282.2	288.7
100°	32.2	104.0	174.0	258.3	313.8	317.4
102.5°	59.6	142.9	212.8	297.1	351.0	365.0
105°	96.5	187.3	253.6	343.4	393.5	406.8
107.5°	139.0	234.6	295.2	385.9	438.0	447.4
110°	184.5	283.8	336.8	426.7	483.4	494.8



TEST NUMBER: P392543

CATALOG NUMBER: MWL-2-35-31-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	234.6	334.9	381.2	464.5	531.7	540.2
115°	290.4	383.1	421.9	508.0	570.4	575.2
117.5°	340.6	439.9	463.6	540.2	611.2	612.1
120°	393.5	493.8	505.2	584.7	650.9	658.5
122.5°	447.4	544.9	544.9	622.6	685.9	691.5
125°	497.6	599.8	584.7	651.8	718.9	720.9
127.5°	549.7	656.5	629.1	688.7	750.2	747.4
130°	605.4	709.6	668.8	723.7	779.5	770.1
132.5°	656.5	766.3	709.6	759.7	808.9	814.5
135°	707.7	819.3	744.6	790.9	839.1	837.3
137.5°	756.9	868.5	787.1	815.5	859.0	864.7
140°	805.1	921.5	825.0	847.7	883.6	884.6
142.5°	856.2	974.4	866.6	879.8	911.1	905.4
145°	912.9	1024.6	918.7	912.0	932.8	919.6
147.5°	963.1	1068.2	955.6	936.6	960.2	944.2
150°	1019.0	1112.6	1006.7	969.7	983.9	976.3
152.5°	1070.0	1147.6	1062.4	995.3	1011.3	1001.8
155°	1120.2	1184.5	1116.4	1020.8	1032.2	1028.4
157.5°	1163.7	1216.7	1157.1	1046.4	1060.5	1053.0
160°	1201.6	1243.2	1204.4	1086.1	1079.5	1079.5
162.5°	1234.6	1268.7	1237.5	1140.1	1100.2	1082.3
165°	1264.0	1288.6	1266.8	1200.6	1139.1	1123.9
167.5°	1291.4	1307.5	1300.0	1249.8	1200.6	1167.5
170°	1313.2	1322.6	1312.3	1291.4	1266.8	1237.5
172.5°	1324.6	1328.3	1334.9	1321.7	1312.3	1292.4
175°	1332.1	1342.5	1336.9	1340.6	1332.1	1327.4
177.5°	1333.9	1335.9	1334.9	1342.5	1346.3	1339.7
180°	1340.6	1340.6	1340.6	1340.6	1340.6	1340.6

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