

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: P392585

Luminaire Tested: **MWL-3-30-33-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392585
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-3-30-33-UNV-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

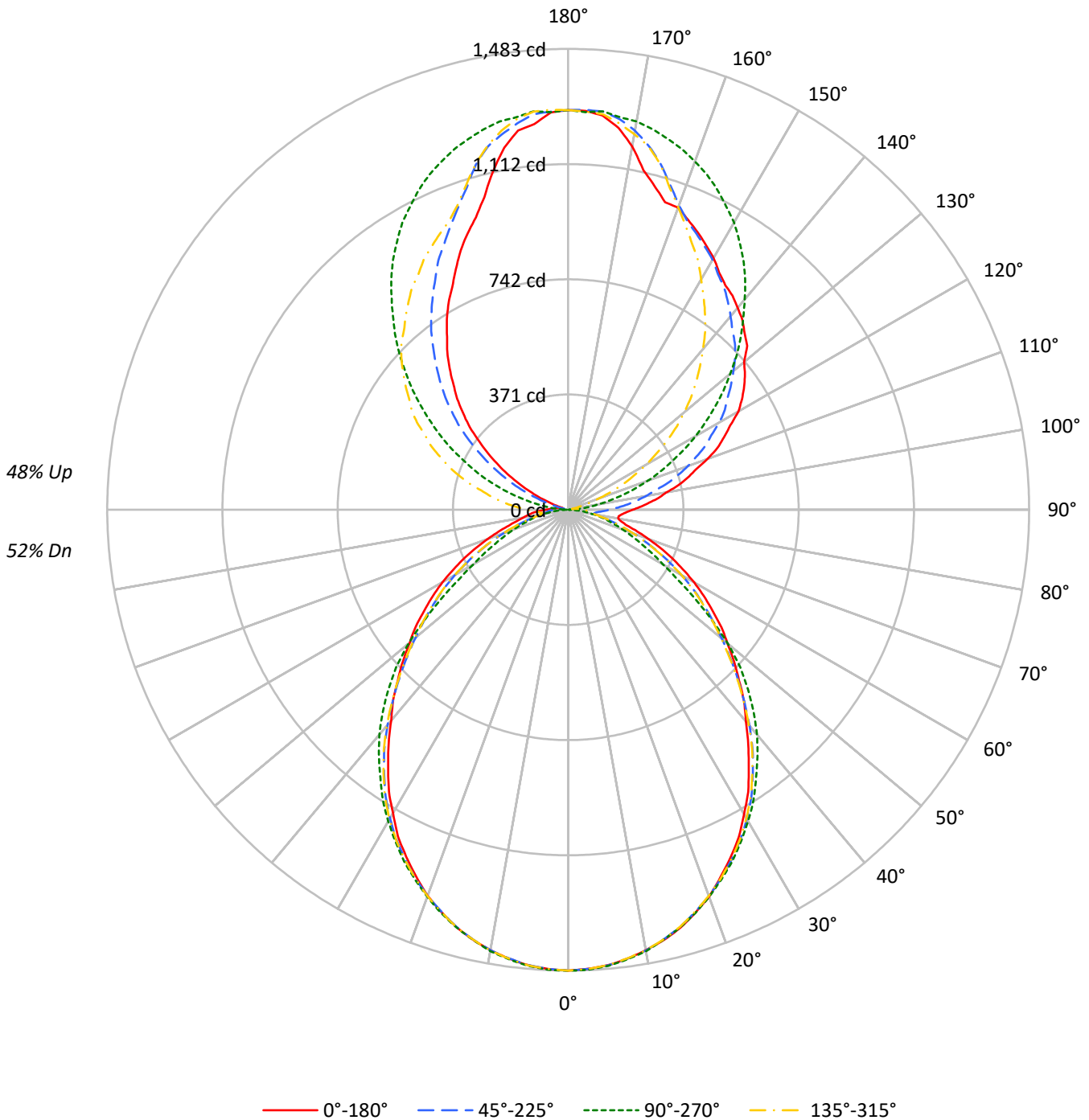
Lumens per Lamp: N/A
Luminaire Lumens: 6478.9 lumens
Efficiency: N/A
Efficacy: 101.2 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 64
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



TEST NUMBER: P392585
CATALOG NUMBER: MWL-3-30-33-UNV-L840-EDD

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52				
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	44				
2	90	83	77	72	83	77	72	67	66	62	58	55	53	50	46	44	42	38				
3	82	73	66	60	76	68	62	56	58	53	50	49	46	43	41	39	36	32				
4	75	65	57	51	70	60	54	48	52	47	43	44	40	37	37	34	32	28				
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	34	30	28	25				
6	64	52	44	38	59	49	42	36	42	37	32	36	32	29	31	27	25	22				
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	20				
8	55	43	35	30	51	40	33	29	35	30	26	30	26	23	26	22	20	18				
9	51	39	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18	16				
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	15				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12774	12774	12774	12774
5°	12568	11711	12568	11711
10°	12285	10722	12285	10722
15°	11975	9784	11951	9784
20°	11559	8906	11535	8906
25°	11023	8091	10998	8091
30°	10414	7297	10380	7297
35°	9699	6514	9672	6514
40°	8954	5773	8917	5773
45°	8313	4978	8284	4978
50°	7683	4099	7652	4099
55°	7097	3065	7075	3065
60°	6492	2223	6479	2223
65°	5788	1670	5788	1670
70°	4990	1262	5006	1262
75°	4269	913	4328	913
80°	4535	586	4058	586
85°	6587	254	4330	254



TEST NUMBER: P392585

CATALOG NUMBER: MWL-3-30-33-UNV-L840-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.5	2.2
10°-20°	391.7	6.0
20°-30°	571.5	8.8
30°-40°	645.9	10.0
40°-50°	604.0	9.3
50°-60°	476.8	7.4
60°-70°	311.8	4.8
70°-80°	162.5	2.5
80°-90°	92.4	1.4
90°-100°	113.7	1.8
100°-110°	201.1	3.1
110°-120°	342.0	5.3
120°-130°	464.5	7.2
130°-140°	529.6	8.2
140°-150°	528.2	8.2
150°-160°	459.9	7.1
160°-170°	323.5	5.0
170°-180°	120.5	1.9
0°-30°	1102.7	17.0
0°-40°	1748.5	27.0
0°-60°	2829.3	43.7
0°-90°	3395.9	52.4
90°-120°	656.8	10.1
90°-150°	2179.1	33.6
90°-180°	3083.0	47.6
0°-180°	6478.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1483	1483	1483	1483	1483	
5°	1472	1473	1472	1473	1472	139
15°	1393	1392	1390	1392	1393	392
25°	1235	1249	1232	1249	1235	568
35°	1012	1054	1010	1054	1012	633
45°	777	818	775	818	777	601
55°	566	496	565	496	566	508
65°	369	258	369	258	369	365
75°	195	130	198	130	195	217
85°	172	32	113	32	172	139
90°	208	2	71	2	208	115
95°	262	37	47	37	262	227
105°	398	180	15	180	398	420
115°	553	367	128	367	553	549
125°	691	576	314	576	691	617
135°	803	786	505	786	803	620
145°	882	983	679	983	882	556
155°	985	1136	855	1136	985	454
165°	1077	1236	1042	1236	1077	306
175°	1273	1287	1246	1287	1273	119
180°	1286	1286	1286	1286	1286	



TEST NUMBER: P392585

CATALOG NUMBER: MWL-3-30-33-UNV-L840-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4
2.5°	1478.6	1481.4	1479.3	1480.2	1482.2	1479.3	1479.3	1481.4	1479.5	1481.4	1479.3
5°	1471.6	1473.4	1472.3	1472.3	1473.3	1472.3	1471.4	1473.4	1471.6	1473.4	1471.4
7.5°	1457.5	1460.4	1457.4	1459.3	1459.3	1458.4	1456.4	1459.4	1457.5	1459.4	1456.4
10°	1439.4	1442.4	1440.4	1440.4	1442.4	1439.4	1439.4	1440.5	1439.4	1440.5	1439.4
12.5°	1419.3	1419.4	1416.4	1418.4	1417.5	1418.4	1416.4	1417.5	1417.4	1417.5	1416.4
15°	1393.2	1391.4	1390.4	1391.4	1391.5	1390.5	1389.5	1389.5	1390.4	1389.5	1389.5
17.5°	1360.2	1361.4	1357.4	1360.5	1360.5	1360.5	1356.5	1360.4	1357.4	1360.4	1356.5
20°	1325.2	1324.3	1323.4	1325.5	1325.6	1324.6	1322.5	1322.4	1322.4	1322.4	1322.5
22.5°	1280.3	1283.3	1284.4	1288.5	1287.6	1287.6	1283.5	1281.4	1278.4	1281.4	1283.5
25°	1235.3	1240.3	1243.4	1249.5	1248.6	1248.6	1241.5	1237.5	1232.5	1237.5	1241.5
27.5°	1188.3	1189.3	1198.4	1207.4	1203.6	1206.5	1196.5	1186.5	1185.5	1186.5	1196.5
30°	1131.3	1136.3	1149.3	1159.4	1157.6	1157.5	1146.5	1133.5	1127.6	1133.5	1146.5
32.5°	1077.3	1079.3	1096.3	1108.4	1109.5	1106.5	1093.5	1075.6	1073.6	1075.6	1093.5
35°	1012.4	1017.4	1035.4	1056.4	1053.6	1053.6	1032.6	1014.6	1009.6	1014.6	1032.6
37.5°	951.4	954.4	974.4	1000.4	1000.5	997.6	971.6	951.6	948.6	951.6	971.6
40°	889.4	888.4	907.4	936.4	944.5	934.6	903.7	884.7	885.7	884.7	903.7
42.5°	837.4	825.4	838.4	870.4	883.5	868.6	835.7	821.7	833.7	821.7	835.7
45°	777.4	765.4	772.4	802.4	817.5	800.6	768.8	762.7	774.7	762.7	768.8
47.5°	723.4	708.4	707.4	729.5	750.5	728.6	703.8	705.7	720.7	705.7	703.8
50°	668.4	654.4	644.4	659.5	670.6	657.7	640.8	650.8	665.7	650.8	640.8
52.5°	621.4	602.4	585.5	589.5	581.6	587.7	582.8	598.8	618.7	598.8	582.8
55°	566.5	554.5	530.5	517.6	495.7	515.8	527.8	551.8	564.7	551.8	527.8
57.5°	517.5	506.5	477.5	446.6	415.7	444.8	474.8	503.8	515.7	503.8	474.8
60°	467.6	456.6	421.6	376.7	352.7	375.8	419.8	454.8	466.7	454.8	419.8
62.5°	415.6	408.6	368.6	317.7	303.8	316.8	366.8	406.8	414.7	406.8	366.8
65°	368.7	356.7	315.7	266.7	257.8	265.8	314.8	355.8	368.7	355.8	314.8
67.5°	320.7	305.7	266.7	221.8	220.8	221.8	265.8	304.8	320.7	304.8	265.8
70°	273.8	256.8	220.8	183.8	187.8	183.8	220.8	257.7	274.7	257.7	220.8
72.5°	232.8	209.8	180.8	150.8	154.9	149.9	180.8	210.7	234.6	210.7	180.8
75°	194.8	168.8	143.9	120.9	129.9	120.9	144.8	169.7	197.5	169.7	144.8
77.5°	174.1	141.4	110.9	94.9	103.9	94.9	111.8	138.7	170.4	138.7	111.8
80°	163.5	130.2	89.6	72.9	78.9	72.9	87.8	115.6	146.3	115.6	87.8
82.5°	163.3	131.1	84.5	51.9	55.9	51.9	73.6	98.4	128.8	98.4	73.6
85°	172.5	144.4	92.5	41.6	31.9	39.8	66.2	89.0	113.4	89.0	66.2
87.5°	187.1	166.0	109.8	46.3	9.0	33.5	58.1	78.8	93.6	78.8	58.1
90°	207.5	190.5	133.5	57.3	1.9	22.8	43.6	62.4	71.4	62.4	43.6
92.5°	234.5	219.6	160.1	76.5	15.5	13.8	35.7	51.6	56.5	51.6	35.7
95°	261.9	254.5	191.2	97.4	37.3	6.6	27.7	43.8	46.7	43.8	27.7
97.5°	293.9	286.3	221.1	128.1	65.5	11.9	20.4	36.6	39.6	36.6	20.4
100°	320.3	315.4	254.0	167.2	100.0	31.0	13.4	30.3	34.3	30.3	13.4
102.5°	363.0	348.1	286.2	204.4	137.2	57.3	15.6	21.3	25.3	21.3	15.6
105°	397.6	379.9	330.7	243.4	179.9	92.7	37.4	14.9	15.4	14.9	37.4
107.5°	430.6	420.6	370.6	283.4	225.3	133.6	68.3	35.6	23.9	35.6	68.3
110°	476.0	464.1	409.7	323.3	272.5	177.1	103.7	64.6	51.1	64.6	103.7



TEST NUMBER: P392585

CATALOG NUMBER: MWL-3-30-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	519.6	510.5	446.0	365.1	321.5	224.4	147.3	101.0	88.3	101.0	147.3
115°	553.2	547.7	487.8	404.1	366.9	277.9	195.4	143.6	128.3	143.6	195.4
117.5°	587.6	586.7	518.6	444.1	421.4	326.0	239.9	186.3	169.1	186.3	239.9
120°	632.1	624.9	561.3	484.0	473.1	376.9	288.9	235.3	218.1	235.3	288.9
122.5°	663.0	658.5	597.6	523.2	523.2	429.6	336.1	282.6	264.4	282.6	336.1
125°	691.1	689.3	624.9	561.3	575.8	477.8	388.8	334.3	314.3	334.3	388.8
127.5°	716.6	719.3	660.3	603.1	629.4	526.8	440.5	380.6	359.7	380.6	440.5
130°	738.4	747.4	693.9	641.2	680.2	580.4	486.8	426.9	413.3	426.9	486.8
132.5°	781.0	775.6	728.4	680.2	734.7	629.4	535.9	473.2	457.8	473.2	535.9
135°	802.8	804.6	758.3	713.8	785.6	678.4	582.2	520.4	505.0	520.4	582.2
137.5°	829.1	823.7	781.9	754.7	832.8	725.6	627.6	570.4	545.9	570.4	627.6
140°	848.2	847.3	812.8	791.0	883.6	771.9	673.9	615.8	593.1	615.8	673.9
142.5°	868.2	873.6	843.7	831.0	934.5	821.0	723.8	660.3	638.5	660.3	723.8
145°	881.8	893.6	874.5	880.9	982.6	875.5	767.4	702.9	679.3	702.9	767.4
147.5°	904.5	919.9	897.2	916.3	1024.4	923.6	811.0	747.4	726.5	747.4	811.0
150°	935.4	942.6	929.0	965.3	1067.0	977.1	855.5	790.1	769.2	790.1	855.5
152.5°	959.9	969.0	953.5	1018.9	1100.6	1026.2	904.5	831.9	807.4	831.9	904.5
155°	985.3	988.9	978.1	1070.7	1136.0	1074.3	943.5	878.2	854.6	878.2	943.5
157.5°	1008.9	1016.2	1003.5	1109.7	1166.9	1116.1	988.0	924.5	903.6	924.5	988.0
160°	1034.3	1034.3	1041.6	1155.1	1192.3	1152.4	1035.3	975.3	946.3	975.3	1035.3
162.5°	1037.1	1054.3	1093.4	1186.9	1216.8	1184.2	1086.1	1011.6	986.2	1011.6	1086.1
165°	1077.0	1092.5	1151.5	1215.0	1235.9	1212.3	1148.7	1071.6	1041.6	1071.6	1148.7
167.5°	1118.8	1151.5	1198.7	1246.8	1254.1	1238.6	1196.9	1143.3	1116.1	1143.3	1196.9
170°	1186.9	1215.0	1238.6	1258.6	1268.6	1259.5	1226.8	1200.5	1183.2	1200.5	1226.8
172.5°	1239.5	1258.6	1267.7	1280.4	1274.0	1270.4	1254.1	1241.4	1231.3	1241.4	1254.1
175°	1273.0	1277.7	1285.8	1281.3	1286.8	1276.8	1277.7	1284.0	1245.8	1284.0	1277.7
177.5°	1284.8	1292.2	1287.7	1279.5	1280.4	1278.6	1282.2	1285.8	1279.4	1285.8	1282.2
180°	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8



TEST NUMBER: P392585

CATALOG NUMBER: MWL-3-30-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1483.4	1483.4	1483.4	1483.4	1483.4	1483.4
2.5°	1479.3	1482.2	1480.2	1479.3	1481.4	1478.6
5°	1472.3	1473.3	1472.3	1472.3	1473.4	1471.6
7.5°	1458.4	1459.3	1459.3	1457.4	1460.4	1457.5
10°	1439.4	1442.4	1440.4	1440.4	1442.4	1439.4
12.5°	1418.4	1417.5	1418.4	1416.4	1419.4	1419.3
15°	1390.5	1391.5	1391.4	1390.4	1391.4	1393.2
17.5°	1360.5	1360.5	1360.5	1357.4	1361.4	1360.2
20°	1324.6	1325.6	1325.5	1323.4	1324.3	1325.2
22.5°	1287.6	1287.6	1288.5	1284.4	1283.3	1280.3
25°	1248.6	1248.6	1249.5	1243.4	1240.3	1235.3
27.5°	1206.5	1203.6	1207.4	1198.4	1189.3	1188.3
30°	1157.5	1157.6	1159.4	1149.3	1136.3	1131.3
32.5°	1106.5	1109.5	1108.4	1096.3	1079.3	1077.3
35°	1053.6	1053.6	1056.4	1035.4	1017.4	1012.4
37.5°	997.6	1000.5	1000.4	974.4	954.4	951.4
40°	934.6	944.5	936.4	907.4	888.4	889.4
42.5°	868.6	883.5	870.4	838.4	825.4	837.4
45°	800.6	817.5	802.4	772.4	765.4	777.4
47.5°	728.6	750.5	729.5	707.4	708.4	723.4
50°	657.7	670.6	659.5	644.4	654.4	668.4
52.5°	587.7	581.6	589.5	585.5	602.4	621.4
55°	515.8	495.7	517.6	530.5	554.5	566.5
57.5°	444.8	415.7	446.6	477.5	506.5	517.5
60°	375.8	352.7	376.7	421.6	456.6	467.6
62.5°	316.8	303.8	317.7	368.6	408.6	415.6
65°	265.8	257.8	266.7	315.7	356.7	368.7
67.5°	221.8	220.8	221.8	266.7	305.7	320.7
70°	183.8	187.8	183.8	220.8	256.8	273.8
72.5°	149.9	154.9	150.8	180.8	209.8	232.8
75°	120.9	129.9	120.9	143.9	168.8	194.8
77.5°	94.9	103.9	94.9	110.9	141.4	174.1
80°	72.9	78.9	72.9	89.6	130.2	163.5
82.5°	51.9	55.9	51.9	84.5	131.1	163.3
85°	39.8	31.9	41.6	92.5	144.4	172.5
87.5°	33.5	9.0	46.3	109.8	166.0	187.1
90°	22.8	1.9	57.3	133.5	190.5	207.5
92.5°	13.8	15.5	76.5	160.1	219.6	234.5
95°	6.6	37.3	97.4	191.2	254.5	261.9
97.5°	11.9	65.5	128.1	221.1	286.3	293.9
100°	31.0	100.0	167.2	254.0	315.4	320.3
102.5°	57.3	137.2	204.4	286.2	348.1	363.0
105°	92.7	179.9	243.4	330.7	379.9	397.6
107.5°	133.6	225.3	283.4	370.6	420.6	430.6
110°	177.1	272.5	323.3	409.7	464.1	476.0



TEST NUMBER: P392585

CATALOG NUMBER: MWL-3-30-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	224.4	321.5	365.1	446.0	510.5	519.6
115°	277.9	366.9	404.1	487.8	547.7	553.2
117.5°	326.0	421.4	444.1	518.6	586.7	587.6
120°	376.9	473.1	484.0	561.3	624.9	632.1
122.5°	429.6	523.2	523.2	597.6	658.5	663.0
125°	477.8	575.8	561.3	624.9	689.3	691.1
127.5°	526.8	629.4	603.1	660.3	719.3	716.6
130°	580.4	680.2	641.2	693.9	747.4	738.4
132.5°	629.4	734.7	680.2	728.4	775.6	781.0
135°	678.4	785.6	713.8	758.3	804.6	802.8
137.5°	725.6	832.8	754.7	781.9	823.7	829.1
140°	771.9	883.6	791.0	812.8	847.3	848.2
142.5°	821.0	934.5	831.0	843.7	873.6	868.2
145°	875.5	982.6	880.9	874.5	893.6	881.8
147.5°	923.6	1024.4	916.3	897.2	919.9	904.5
150°	977.1	1067.0	965.3	929.0	942.6	935.4
152.5°	1026.2	1100.6	1018.9	953.5	969.0	959.9
155°	1074.3	1136.0	1070.7	978.1	988.9	985.3
157.5°	1116.1	1166.9	1109.7	1003.5	1016.2	1008.9
160°	1152.4	1192.3	1155.1	1041.6	1034.3	1034.3
162.5°	1184.2	1216.8	1186.9	1093.4	1054.3	1037.1
165°	1212.3	1235.9	1215.0	1151.5	1092.5	1077.0
167.5°	1238.6	1254.1	1246.8	1198.7	1151.5	1118.8
170°	1259.5	1268.6	1258.6	1238.6	1215.0	1186.9
172.5°	1270.4	1274.0	1280.4	1267.7	1258.6	1239.5
175°	1276.8	1286.8	1281.3	1285.8	1277.7	1273.0
177.5°	1278.6	1280.4	1279.5	1287.7	1292.2	1284.8
180°	1285.8	1285.8	1285.8	1285.8	1285.8	1285.8

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