

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: P392595

Luminaire Tested: **MWL-3-37-28-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392595
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-3-37-28-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

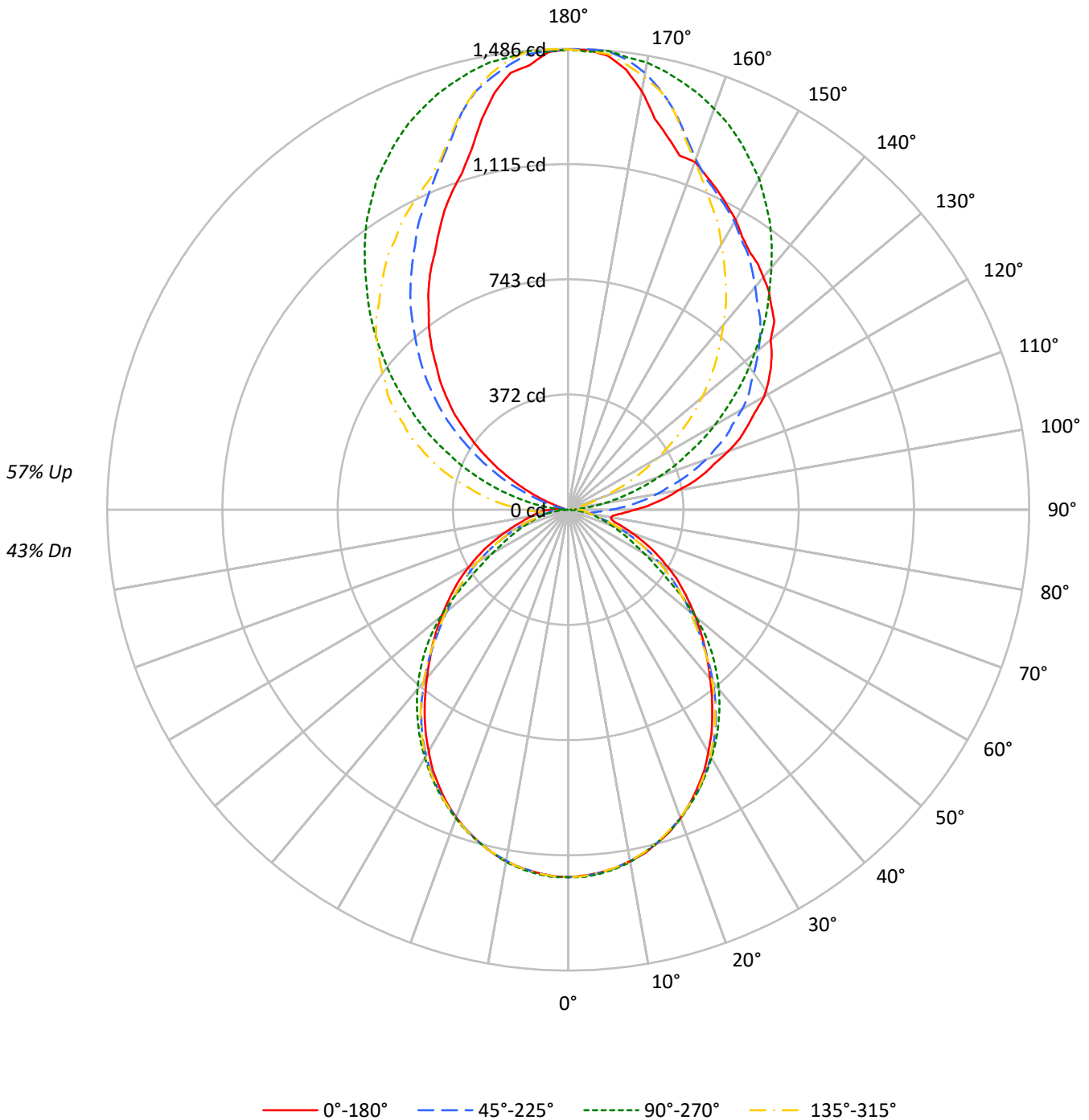
Lumens per Lamp: N/A
Luminaire Lumens: 6268.0 lumens
Efficiency: N/A
Efficacy: 97.8 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 64.1
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	106	106	106	106	97	97	97	97	80	80	80		64	64	64		50	50	50	43
1	96	92	88	85	88	84	81	78	70	68	66		57	55	54		44	43	42	37
2	88	81	75	70	80	74	69	65	62	58	55		50	47	45		39	38	36	31
3	80	71	64	58	73	65	59	54	55	50	46		45	41	39		35	33	31	27
4	74	63	56	50	67	58	51	46	49	44	40		40	36	33		32	29	27	23
5	68	56	49	43	62	52	45	40	44	38	34		36	32	29		29	26	24	20
6	62	51	43	37	57	47	40	35	39	34	30		33	29	26		26	23	21	18
7	58	46	38	33	53	42	35	31	36	30	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		20	17	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°	10204	10204	10204	10204
5°	10029	9367	10029	9367
10°	9819	8574	9819	8574
15°	9560	7811	9534	7811
20°	9233	7116	9207	7116
25°	8811	6458	8783	6458
30°	8311	5823	8274	5823
35°	7757	5219	7729	5219
40°	7166	4620	7125	4620
45°	6647	3995	6612	3995
50°	6152	3276	6115	3276
55°	5670	2423	5644	2423
60°	5149	1786	5134	1786
65°	4600	1351	4600	1351
70°	3975	1001	3993	1001
75°	3412	723	3482	723
80°	3900	479	3348	479
85°	6251	200	3650	200



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	1.8
10°-20°	313.0	5.0
20°-30°	456.6	7.3
30°-40°	516.0	8.2
40°-50°	482.4	7.7
50°-60°	380.7	6.1
60°-70°	249.1	4.0
70°-80°	130.3	2.1
80°-90°	82.5	1.3
90°-100°	122.1	1.9
100°-110°	230.3	3.7
110°-120°	394.3	6.3
120°-130°	535.6	8.5
130°-140°	610.9	9.7
140°-150°	609.4	9.7
150°-160°	530.8	8.5
160°-170°	373.4	6.0
170°-180°	139.1	2.2
0°-30°	881.1	14.1
0°-40°	1397.1	22.3
0°-60°	2260.3	36.1
0°-90°	2722.2	43.4
90°-120°	746.6	11.9
90°-150°	2502.6	39.9
90°-180°	3546.0	56.6
0°-180°	6268.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1185	1185	1185	1185	1185	
5°	1174	1178	1174	1178	1174	111
15°	1112	1111	1109	1111	1112	313
25°	987	997	984	997	987	454
35°	810	844	807	844	810	506
45°	622	656	618	656	622	480
55°	453	392	450	392	453	405
65°	293	208	293	208	293	290
75°	156	103	159	103	156	175
85°	164	25	96	25	164	129
90°	215	2	58	2	215	119
95°	287	43	39	43	287	250
105°	455	207	14	207	455	480
115°	637	423	147	423	637	632
125°	797	664	362	664	797	712
135°	926	906	583	906	926	715
145°	1018	1133	784	1133	1018	642
155°	1137	1311	986	1311	1137	524
165°	1243	1426	1202	1426	1243	353
175°	1469	1485	1438	1485	1469	137
180°	1484	1484	1484	1484	1484	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0
2.5°	1181.0	1183.1	1182.3	1184.3	1185.2	1183.2	1182.3	1183.1	1182.1	1183.1	1182.3
5°	1174.3	1176.4	1175.5	1176.5	1178.4	1176.5	1174.5	1176.4	1174.3	1176.4	1174.5
7.5°	1164.8	1166.8	1164.9	1166.9	1167.9	1165.8	1163.9	1165.8	1164.8	1165.8	1163.9
10°	1150.5	1151.4	1150.5	1151.4	1153.4	1150.5	1149.5	1149.4	1150.5	1149.4	1149.5
12.5°	1135.2	1134.2	1132.2	1133.2	1132.1	1133.2	1132.2	1132.1	1133.2	1132.1	1132.2
15°	1112.3	1112.1	1111.1	1113.0	1111.0	1112.0	1110.1	1110.1	1109.2	1110.1	1110.1
17.5°	1088.3	1087.1	1085.2	1087.0	1087.0	1087.0	1084.2	1086.2	1085.2	1086.2	1084.2
20°	1058.5	1059.4	1058.3	1060.2	1059.1	1059.1	1057.3	1057.4	1055.5	1057.4	1057.3
22.5°	1024.8	1026.8	1026.7	1030.4	1028.4	1029.3	1025.6	1024.7	1022.8	1024.7	1025.6
25°	987.4	990.3	995.9	997.8	996.7	996.7	993.9	987.2	984.3	987.2	993.9
27.5°	949.0	951.9	957.6	962.4	961.2	961.3	955.5	948.8	945.9	948.8	955.5
30°	902.9	908.7	920.2	925.9	923.8	923.9	917.1	905.6	898.8	905.6	917.1
32.5°	858.8	863.6	876.1	886.5	885.5	884.5	873.0	859.5	854.7	859.5	873.0
35°	809.7	812.6	828.9	843.3	844.1	840.3	825.9	809.5	806.7	809.5	825.9
37.5°	760.8	761.7	779.0	799.2	801.0	796.1	775.9	758.7	757.7	758.7	775.9
40°	711.8	709.9	725.3	749.3	755.9	747.2	721.1	705.8	707.7	705.8	721.1
42.5°	665.8	659.0	671.5	698.4	706.9	696.3	668.3	654.9	661.6	654.9	668.3
45°	621.6	610.1	616.8	640.8	656.1	638.7	612.6	606.9	618.4	606.9	612.6
47.5°	577.4	566.9	564.0	583.1	600.4	582.1	559.8	563.7	574.3	563.7	559.8
50°	535.2	523.7	515.1	526.5	536.0	524.4	510.8	519.5	532.0	519.5	510.8
52.5°	493.0	482.4	467.9	469.8	465.9	467.7	464.8	478.2	489.8	478.2	464.8
55°	452.6	443.0	423.8	414.1	391.9	412.0	420.6	439.8	450.5	439.8	420.6
57.5°	414.2	405.5	381.5	357.4	333.4	355.3	378.4	402.4	412.1	402.4	378.4
60°	370.9	366.1	338.3	301.7	283.4	300.6	336.1	364.0	369.8	364.0	336.1
62.5°	332.5	326.7	295.1	254.6	240.2	253.6	292.9	324.6	331.4	324.6	292.9
65°	293.0	284.4	251.8	212.4	208.5	211.4	250.7	283.3	293.0	283.3	250.7
67.5°	253.7	245.1	214.3	178.7	175.8	178.7	213.3	244.0	253.7	244.0	213.3
70°	218.1	204.6	177.8	147.0	149.0	147.0	177.8	205.7	219.1	205.7	177.8
72.5°	185.4	166.2	146.1	121.1	124.9	120.1	146.1	167.3	187.6	167.3	146.1
75°	155.7	134.6	113.4	97.0	102.8	97.0	114.4	135.6	158.9	135.6	114.4
77.5°	142.0	113.8	88.4	76.9	84.6	76.9	89.5	110.7	137.8	110.7	89.5
80°	140.6	109.2	72.4	58.6	64.4	58.6	70.3	92.5	120.7	92.5	70.3
82.5°	145.6	118.0	73.4	41.4	44.2	41.4	60.9	80.2	105.8	80.2	60.9
85°	163.7	137.8	86.9	34.9	25.1	32.8	56.4	73.9	95.6	73.9	56.4
87.5°	187.1	168.0	109.6	42.9	6.7	28.3	49.8	67.4	79.1	67.4	49.8
90°	215.4	200.1	139.7	58.3	2.0	18.4	35.9	52.4	58.2	52.4	35.9
92.5°	252.9	236.5	172.7	84.0	17.8	11.7	29.1	42.6	47.5	42.6	29.1
95°	287.1	278.8	211.0	111.9	42.9	7.1	22.4	35.7	38.7	35.7	22.4
97.5°	325.5	318.4	250.4	147.7	75.3	13.5	18.8	30.1	32.1	30.1	18.8
100°	359.7	355.7	289.9	192.7	115.2	35.5	12.1	26.6	29.5	26.6	12.1
102.5°	412.7	396.3	329.0	235.7	158.2	65.9	16.7	18.9	22.7	18.9	16.7
105°	455.4	436.8	380.4	280.9	207.4	106.8	41.8	15.5	14.0	15.5	41.8
107.5°	495.6	485.1	426.6	326.9	259.8	154.0	77.5	40.7	26.0	40.7	77.5
110°	548.0	535.4	471.6	373.1	314.4	204.4	118.4	74.2	57.5	74.2	118.4



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CATALOG NUMBER: MWL-3-37-28-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	598.4	588.9	513.5	421.3	371.0	258.8	168.6	116.1	100.4	116.1	168.6
115°	637.2	631.9	562.7	466.4	423.4	320.7	225.2	165.5	146.6	165.5	225.2
117.5°	678.0	677.0	598.4	512.5	486.3	376.2	276.5	214.7	194.8	214.7	276.5
120°	729.4	720.9	647.6	558.6	546.0	434.9	333.2	271.3	251.4	271.3	333.2
122.5°	765.0	759.7	689.6	602.6	602.6	494.6	387.7	325.8	304.8	325.8	387.7
125°	797.4	795.4	720.9	646.7	663.5	550.2	448.4	385.6	362.5	385.6	448.4
127.5°	826.8	830.0	761.8	694.8	725.3	606.8	508.1	439.0	414.9	439.0	508.1
130°	852.0	862.4	800.6	738.9	783.9	668.6	561.6	492.5	476.8	492.5	561.6
132.5°	901.2	895.0	840.4	783.9	846.9	725.3	618.2	546.0	528.1	546.0	618.2
135°	926.5	928.5	875.0	823.7	905.5	782.9	671.7	600.4	582.6	600.4	671.7
137.5°	956.8	950.5	902.3	870.9	960.0	837.3	724.1	658.1	629.8	658.1	724.1
140°	978.9	977.8	938.0	912.8	1018.7	890.7	777.6	710.5	684.3	710.5	777.6
142.5°	1001.9	1008.1	973.6	958.9	1077.4	947.4	835.3	761.8	736.7	761.8	835.3
145°	1017.6	1031.3	1009.2	1016.6	1133.0	1010.2	885.6	811.1	783.8	811.1	885.6
147.5°	1043.8	1061.6	1035.4	1057.5	1181.2	1065.8	935.9	862.4	838.3	862.4	935.9
150°	1079.5	1087.8	1072.1	1114.0	1231.4	1127.6	987.2	911.8	887.7	911.8	987.2
152.5°	1107.8	1118.2	1100.4	1175.9	1270.2	1184.3	1043.8	960.0	931.6	960.0	1043.8
155°	1137.1	1141.3	1128.7	1235.6	1311.1	1239.8	1088.9	1013.4	986.2	1013.4	1088.9
157.5°	1164.3	1172.8	1158.1	1280.7	1346.8	1288.0	1140.2	1066.9	1042.8	1066.9	1140.2
160°	1193.7	1193.7	1202.1	1333.1	1376.0	1330.0	1194.7	1125.5	1092.0	1125.5	1194.7
162.5°	1196.8	1216.7	1261.8	1369.8	1404.4	1366.6	1253.5	1167.5	1138.1	1167.5	1253.5
165°	1242.9	1260.8	1328.9	1402.3	1426.3	1399.2	1325.8	1236.7	1202.1	1236.7	1325.8
167.5°	1291.2	1328.9	1383.4	1439.0	1447.4	1429.5	1381.3	1319.5	1288.0	1319.5	1381.3
170°	1369.8	1402.3	1429.5	1452.6	1464.2	1453.6	1415.9	1385.6	1365.6	1385.6	1415.9
172.5°	1430.7	1452.6	1463.1	1477.8	1470.4	1466.2	1447.4	1432.7	1421.3	1432.7	1447.4
175°	1469.4	1474.6	1484.0	1478.8	1485.1	1473.6	1474.6	1481.9	1438.1	1481.9	1474.6
177.5°	1483.1	1491.4	1486.1	1476.7	1477.8	1475.7	1479.8	1484.0	1476.8	1484.0	1479.8
180°	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0



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CATALOG NUMBER: MWL-3-37-28-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1185.0	1185.0	1185.0	1185.0	1185.0	1185.0
2.5°	1183.2	1185.2	1184.3	1182.3	1183.1	1181.0
5°	1176.5	1178.4	1176.5	1175.5	1176.4	1174.3
7.5°	1165.8	1167.9	1166.9	1164.9	1166.8	1164.8
10°	1150.5	1153.4	1151.4	1150.5	1151.4	1150.5
12.5°	1133.2	1132.1	1133.2	1132.2	1134.2	1135.2
15°	1112.0	1111.0	1113.0	1111.1	1112.1	1112.3
17.5°	1087.0	1087.0	1087.0	1085.2	1087.1	1088.3
20°	1059.1	1059.1	1060.2	1058.3	1059.4	1058.5
22.5°	1029.3	1028.4	1030.4	1026.7	1026.8	1024.8
25°	996.7	996.7	997.8	995.9	990.3	987.4
27.5°	961.3	961.2	962.4	957.6	951.9	949.0
30°	923.9	923.8	925.9	920.2	908.7	902.9
32.5°	884.5	885.5	886.5	876.1	863.6	858.8
35°	840.3	844.1	843.3	828.9	812.6	809.7
37.5°	796.1	801.0	799.2	779.0	761.7	760.8
40°	747.2	755.9	749.3	725.3	709.9	711.8
42.5°	696.3	706.9	698.4	671.5	659.0	665.8
45°	638.7	656.1	640.8	616.8	610.1	621.6
47.5°	582.1	600.4	583.1	564.0	566.9	577.4
50°	524.4	536.0	526.5	515.1	523.7	535.2
52.5°	467.7	465.9	469.8	467.9	482.4	493.0
55°	412.0	391.9	414.1	423.8	443.0	452.6
57.5°	355.3	333.4	357.4	381.5	405.5	414.2
60°	300.6	283.4	301.7	338.3	366.1	370.9
62.5°	253.6	240.2	254.6	295.1	326.7	332.5
65°	211.4	208.5	212.4	251.8	284.4	293.0
67.5°	178.7	175.8	178.7	214.3	245.1	253.7
70°	147.0	149.0	147.0	177.8	204.6	218.1
72.5°	120.1	124.9	121.1	146.1	166.2	185.4
75°	97.0	102.8	97.0	113.4	134.6	155.7
77.5°	76.9	84.6	76.9	88.4	113.8	142.0
80°	58.6	64.4	58.6	72.4	109.2	140.6
82.5°	41.4	44.2	41.4	73.4	118.0	145.6
85°	32.8	25.1	34.9	86.9	137.8	163.7
87.5°	28.3	6.7	42.9	109.6	168.0	187.1
90°	18.4	2.0	58.3	139.7	200.1	215.4
92.5°	11.7	17.8	84.0	172.7	236.5	252.9
95°	7.1	42.9	111.9	211.0	278.8	287.1
97.5°	13.5	75.3	147.7	250.4	318.4	325.5
100°	35.5	115.2	192.7	289.9	355.7	359.7
102.5°	65.9	158.2	235.7	329.0	396.3	412.7
105°	106.8	207.4	280.9	380.4	436.8	455.4
107.5°	154.0	259.8	326.9	426.6	485.1	495.6
110°	204.4	314.4	373.1	471.6	535.4	548.0



TEST NUMBER: P392595

CATALOG NUMBER: MWL-3-37-28-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	258.8	371.0	421.3	513.5	588.9	598.4
115°	320.7	423.4	466.4	562.7	631.9	637.2
117.5°	376.2	486.3	512.5	598.4	677.0	678.0
120°	434.9	546.0	558.6	647.6	720.9	729.4
122.5°	494.6	602.6	602.6	689.6	759.7	765.0
125°	550.2	663.5	646.7	720.9	795.4	797.4
127.5°	606.8	725.3	694.8	761.8	830.0	826.8
130°	668.6	783.9	738.9	800.6	862.4	852.0
132.5°	725.3	846.9	783.9	840.4	895.0	901.2
135°	782.9	905.5	823.7	875.0	928.5	926.5
137.5°	837.3	960.0	870.9	902.3	950.5	956.8
140°	890.7	1018.7	912.8	938.0	977.8	978.9
142.5°	947.4	1077.4	958.9	973.6	1008.1	1001.9
145°	1010.2	1133.0	1016.6	1009.2	1031.3	1017.6
147.5°	1065.8	1181.2	1057.5	1035.4	1061.6	1043.8
150°	1127.6	1231.4	1114.0	1072.1	1087.8	1079.5
152.5°	1184.3	1270.2	1175.9	1100.4	1118.2	1107.8
155°	1239.8	1311.1	1235.6	1128.7	1141.3	1137.1
157.5°	1288.0	1346.8	1280.7	1158.1	1172.8	1164.3
160°	1330.0	1376.0	1333.1	1202.1	1193.7	1193.7
162.5°	1366.6	1404.4	1369.8	1261.8	1216.7	1196.8
165°	1399.2	1426.3	1402.3	1328.9	1260.8	1242.9
167.5°	1429.5	1447.4	1439.0	1383.4	1328.9	1291.2
170°	1453.6	1464.2	1452.6	1429.5	1402.3	1369.8
172.5°	1466.2	1470.4	1477.8	1463.1	1452.6	1430.7
175°	1473.6	1485.1	1478.8	1484.0	1474.6	1469.4
177.5°	1475.7	1477.8	1476.7	1486.1	1491.4	1483.1
180°	1484.0	1484.0	1484.0	1484.0	1484.0	1484.0

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