

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: P392566

Luminaire Tested: **MWL-3-27-28-UNV-L835-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392566
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 3/12/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-27-28-UNV-L835-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

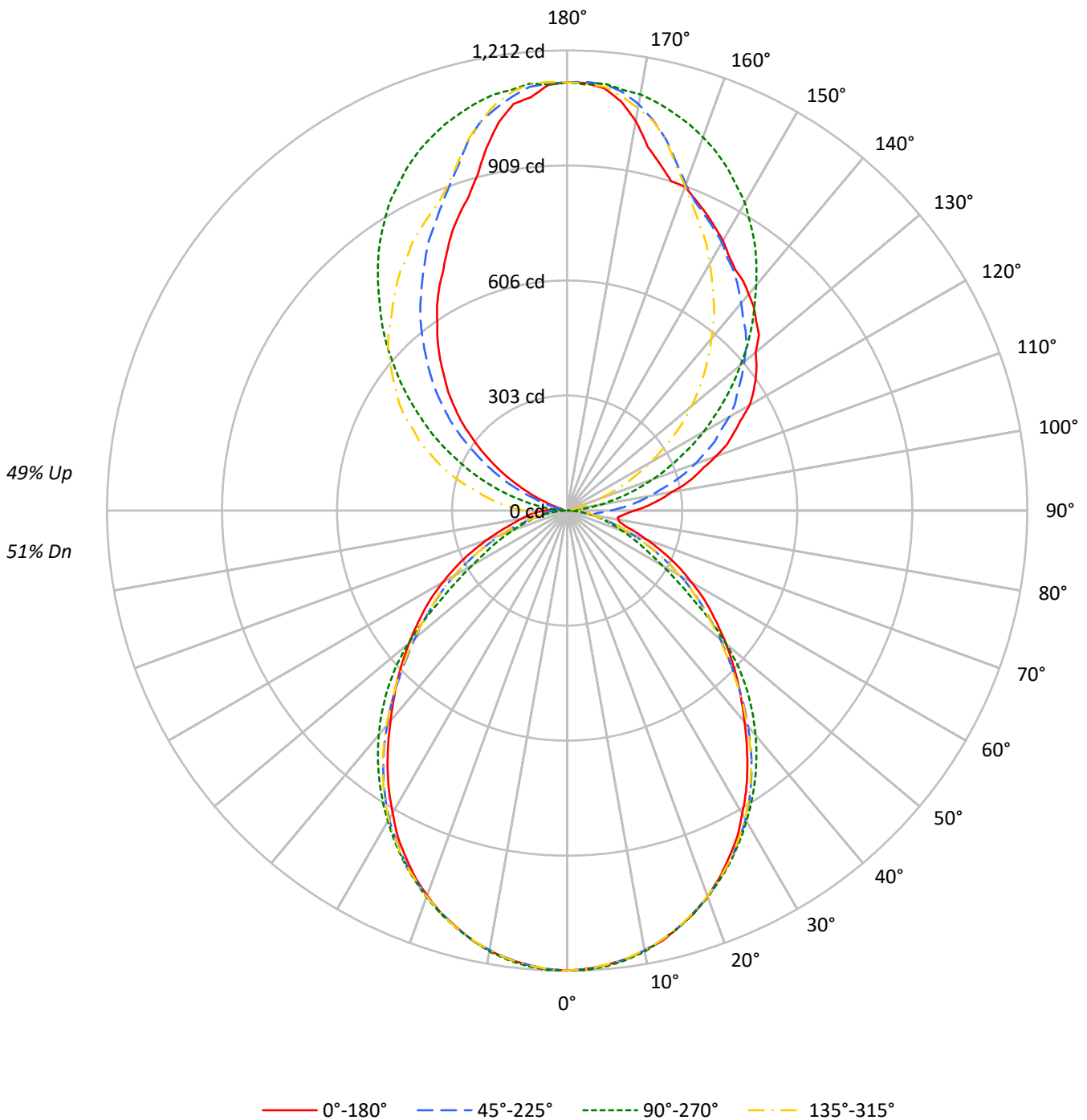
Lumens per Lamp: N/A
Luminaire Lumens: 5476.0 lumens
Efficiency: N/A
Efficacy: 103.5 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 52.9
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	84	84	84	70	70	70	57	57	57	51
1	98	94	90	86	90	87	83	80	74	71	69	61	60	58	50	49	48	43
2	90	82	76	71	82	76	71	67	65	61	58	54	52	49	45	43	41	37
3	82	73	65	60	75	67	61	56	58	53	49	48	45	42	40	38	35	31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	31	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	33	30	27	24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	30	26	24	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	51	40	33	28	35	29	25	30	25	22	25	22	19	17
9	51	39	32	27	47	37	30	25	32	26	23	27	23	20	23	20	18	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	22	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10432	10432	10432	10432
5°	10258	9573	10258	9573
10°	10040	8764	10040	8764
15°	9767	7989	9747	7989
20°	9432	7277	9412	7277
25°	9002	6605	8981	6605
30°	8490	5955	8460	5955
35°	7925	5336	7901	5336
40°	7319	4722	7286	4722
45°	6788	4081	6761	4081
50°	6279	3347	6252	3347
55°	5788	2476	5767	2476
60°	5256	1824	5245	1824
65°	4697	1380	4697	1380
70°	4058	1021	4073	1021
75°	3480	738	3535	738
80°	3786	488	3368	488
85°	5533	202	3559	202



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.0	2.1
10°-20°	320.0	5.8
20°-30°	466.8	8.5
30°-40°	527.4	9.6
40°-50°	493.0	9.0
50°-60°	388.9	7.1
60°-70°	254.3	4.6
70°-80°	132.6	2.4
80°-90°	76.9	1.4
90°-100°	98.2	1.8
100°-110°	175.9	3.2
110°-120°	300.0	5.5
120°-130°	407.3	7.4
130°-140°	464.5	8.5
140°-150°	463.3	8.5
150°-160°	403.5	7.4
160°-170°	283.8	5.2
170°-180°	105.7	1.9
0°-30°	900.8	16.4
0°-40°	1428.2	26.1
0°-60°	2310.0	42.2
0°-90°	2773.8	50.7
90°-120°	574.0	10.5
90°-150°	1909.2	34.9
90°-180°	2702.0	49.3
0°-180°	5476.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1212	1212	1212	1212	1212	
5°	1201	1204	1201	1204	1201	114
15°	1136	1136	1134	1136	1136	320
25°	1009	1019	1006	1019	1009	464
35°	827	863	825	863	827	517
45°	635	670	632	670	635	490
55°	462	400	460	400	462	414
65°	299	213	299	213	299	296
75°	159	105	161	105	159	177
85°	145	25	93	25	145	116
90°	177	2	58	2	177	98
95°	228	33	39	33	228	197
105°	348	158	12	158	348	367
115°	485	322	112	322	485	481
125°	606	504	276	504	606	542
135°	704	688	443	688	704	544
145°	774	861	596	861	774	488
155°	864	997	750	997	864	399
165°	945	1084	914	1084	945	268
175°	1117	1129	1093	1129	1117	104
180°	1128	1128	1128	1128	1128	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5
2.5°	1208.0	1209.7	1208.3	1210.1	1211.1	1209.3	1208.3	1209.7	1208.9	1209.7	1208.3
5°	1201.1	1202.8	1201.4	1202.4	1204.4	1202.4	1200.6	1202.8	1201.1	1202.8	1200.6
7.5°	1191.2	1192.8	1190.8	1192.6	1193.6	1191.8	1190.0	1192.0	1191.2	1192.0	1190.0
10°	1176.3	1177.1	1176.1	1177.1	1179.0	1176.3	1175.3	1175.5	1176.3	1175.5	1175.3
12.5°	1160.2	1159.4	1157.6	1158.6	1157.8	1158.6	1157.6	1157.8	1158.6	1157.8	1157.6
15°	1136.4	1136.8	1136.0	1137.9	1136.2	1137.2	1135.2	1135.2	1134.0	1135.2	1135.2
17.5°	1111.8	1111.2	1109.4	1111.6	1111.6	1111.6	1108.7	1110.4	1109.4	1110.4	1108.7
20°	1081.3	1082.5	1081.9	1084.1	1083.2	1083.2	1081.1	1080.9	1079.0	1080.9	1081.1
22.5°	1047.1	1049.1	1049.5	1053.6	1051.8	1052.7	1048.7	1047.5	1045.6	1047.5	1048.7
25°	1008.8	1011.8	1017.9	1020.2	1019.3	1019.3	1016.3	1009.4	1006.5	1009.4	1016.3
27.5°	969.5	972.4	978.5	983.7	983.0	982.9	977.0	970.1	967.1	970.1	977.0
30°	922.3	928.2	940.0	946.1	944.6	944.5	937.7	925.9	919.1	925.9	937.7
32.5°	877.1	882.0	894.8	905.8	905.2	904.2	892.5	878.8	873.9	878.8	892.5
35°	827.2	830.1	846.9	861.6	863.1	859.1	844.4	827.7	824.7	827.7	844.4
37.5°	777.1	778.1	795.7	816.4	818.7	813.9	793.3	775.6	774.6	775.6	793.3
40°	727.0	725.0	740.7	765.5	772.6	763.8	737.5	721.7	723.7	721.7	737.5
42.5°	679.8	672.9	685.9	713.4	722.4	711.7	683.4	669.7	676.5	669.7	683.4
45°	634.8	623.0	629.9	654.4	670.3	652.8	626.6	620.5	632.3	620.5	626.6
47.5°	589.6	578.8	575.8	595.7	613.3	594.8	572.6	576.3	587.1	576.3	572.6
50°	546.3	534.5	525.7	537.7	547.6	536.0	522.4	531.3	543.9	531.3	522.4
52.5°	503.1	492.3	477.7	479.7	475.9	478.0	475.3	489.0	500.6	489.0	475.3
55°	462.0	452.2	432.5	422.8	400.4	421.2	430.1	449.7	460.3	449.7	430.1
57.5°	422.7	413.8	389.3	364.8	340.4	363.2	386.8	411.4	421.0	411.4	386.8
60°	378.6	373.6	345.1	308.0	289.3	307.2	343.6	372.1	377.8	372.1	343.6
62.5°	339.3	333.4	300.9	259.8	245.3	259.1	299.4	331.8	338.5	331.8	299.4
65°	299.2	290.3	256.9	216.6	212.9	215.8	256.1	289.5	299.2	289.5	256.1
67.5°	258.9	250.0	218.6	182.4	179.5	182.4	217.8	249.2	258.9	249.2	217.8
70°	222.7	208.9	181.4	150.0	151.9	150.0	181.4	209.7	223.5	209.7	181.4
72.5°	189.3	169.6	149.0	123.4	127.6	122.6	149.0	170.4	190.9	170.4	149.0
75°	158.8	137.2	115.8	99.1	105.0	99.1	116.6	138.0	161.3	138.0	116.6
77.5°	142.6	114.9	90.2	78.4	86.3	78.4	91.0	112.4	139.5	112.4	91.0
80°	136.5	106.3	72.9	59.8	65.6	59.8	71.3	93.6	121.4	93.6	71.3
82.5°	134.9	109.1	70.8	42.1	45.0	42.1	61.1	80.5	104.7	80.5	61.1
85°	144.9	121.2	78.4	34.6	25.4	33.0	55.3	72.6	93.2	72.6	55.3
87.5°	158.8	141.8	93.7	38.7	6.9	27.6	48.3	65.4	76.9	65.4	48.3
90°	177.1	164.2	114.5	48.5	1.8	18.3	35.6	52.0	57.7	52.0	35.6
92.5°	203.3	189.9	138.0	66.3	13.8	11.4	28.9	42.5	47.3	42.5	28.9
95°	227.5	220.7	165.4	85.8	32.8	6.1	22.0	36.0	38.7	36.0	22.0
97.5°	254.6	248.7	193.5	112.4	57.5	10.5	17.6	29.7	31.6	29.7	17.6
100°	278.8	275.1	221.5	146.7	87.8	27.2	10.5	25.1	28.0	25.1	10.5
102.5°	317.3	303.9	250.2	179.4	120.5	50.3	13.0	17.2	21.1	17.2	13.0
105°	347.7	332.7	289.2	213.7	157.8	81.4	32.0	12.5	12.5	12.5	32.0
107.5°	377.1	369.1	324.3	248.6	197.7	117.2	59.2	31.4	20.2	31.4	59.2
110°	416.9	407.4	358.5	283.7	239.1	155.5	90.2	56.9	44.1	56.9	90.2



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CATALOG NUMBER: MWL-3-27-28-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	455.1	447.9	390.5	320.3	282.1	196.8	128.4	88.7	76.9	88.7	128.4
115°	484.6	480.6	428.0	354.6	322.0	243.9	171.6	126.2	111.8	126.2	171.6
117.5°	515.7	514.9	455.1	389.6	369.7	286.1	210.6	163.6	148.5	163.6	210.6
120°	554.7	548.3	492.6	424.7	415.1	330.7	253.7	206.7	191.5	206.7	253.7
122.5°	581.7	577.8	524.4	458.1	458.1	376.1	295.0	248.1	232.1	248.1	295.0
125°	606.4	604.8	548.3	491.6	504.3	418.3	341.2	293.5	276.0	293.5	341.2
127.5°	628.7	631.1	579.3	528.1	551.2	461.3	386.6	334.0	315.8	334.0	386.6
130°	647.8	655.8	608.8	561.7	595.9	508.3	427.2	374.6	362.7	374.6	427.2
132.5°	685.3	680.5	639.1	595.9	643.6	551.2	470.3	415.3	401.8	415.3	470.3
135°	704.3	705.9	665.3	626.3	688.2	595.3	510.8	456.7	443.1	456.7	510.8
137.5°	727.4	722.7	686.1	662.2	729.7	636.6	550.6	500.5	479.0	500.5	550.6
140°	744.2	743.4	713.1	694.0	774.2	677.3	591.3	540.3	520.4	540.3	591.3
142.5°	761.7	766.5	740.2	729.0	818.8	720.3	635.1	579.3	560.2	579.3	635.1
145°	773.6	784.1	767.2	772.8	861.1	768.0	673.3	616.8	596.0	616.8	673.3
147.5°	793.6	807.1	787.2	803.9	897.7	810.3	711.5	655.8	637.4	655.8	711.5
150°	820.6	827.0	815.1	846.9	936.1	857.3	750.5	693.2	674.9	693.2	750.5
152.5°	842.1	850.1	836.5	893.9	965.6	900.3	793.6	729.8	708.4	729.8	793.6
155°	864.4	867.6	858.1	939.3	996.6	942.5	827.8	770.5	749.8	770.5	827.8
157.5°	885.2	891.5	880.4	973.5	1023.7	979.1	866.8	811.1	792.8	811.1	866.8
160°	907.5	907.5	913.8	1013.3	1046.1	1011.0	908.3	855.7	830.2	855.7	908.3
162.5°	909.8	925.0	959.2	1041.2	1067.5	1038.9	952.8	887.5	865.2	887.5	952.8
165°	944.8	958.4	1010.2	1065.9	1084.2	1063.6	1007.8	940.1	913.8	940.1	1007.8
167.5°	981.5	1010.2	1051.6	1093.8	1100.2	1086.6	1050.0	1003.0	979.1	1003.0	1050.0
170°	1041.2	1065.9	1086.6	1104.1	1112.9	1104.9	1076.2	1053.1	1038.0	1053.1	1076.2
172.5°	1087.2	1104.1	1112.1	1123.3	1117.7	1114.5	1100.2	1089.0	1080.1	1089.0	1100.2
175°	1116.7	1120.8	1128.0	1124.1	1128.8	1120.1	1120.8	1126.4	1092.8	1126.4	1120.8
177.5°	1127.0	1133.6	1129.6	1122.4	1123.3	1121.6	1124.9	1128.0	1122.3	1128.0	1124.9
180°	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0



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CATALOG NUMBER: MWL-3-27-28-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1211.5	1211.5	1211.5	1211.5	1211.5	1211.5
2.5°	1209.3	1211.1	1210.1	1208.3	1209.7	1208.0
5°	1202.4	1204.4	1202.4	1201.4	1202.8	1201.1
7.5°	1191.8	1193.6	1192.6	1190.8	1192.8	1191.2
10°	1176.3	1179.0	1177.1	1176.1	1177.1	1176.3
12.5°	1158.6	1157.8	1158.6	1157.6	1159.4	1160.2
15°	1137.2	1136.2	1137.9	1136.0	1136.8	1136.4
17.5°	1111.6	1111.6	1111.6	1109.4	1111.2	1111.8
20°	1083.2	1083.2	1084.1	1081.9	1082.5	1081.3
22.5°	1052.7	1051.8	1053.6	1049.5	1049.1	1047.1
25°	1019.3	1019.3	1020.2	1017.9	1011.8	1008.8
27.5°	982.9	983.0	983.7	978.5	972.4	969.5
30°	944.5	944.6	946.1	940.0	928.2	922.3
32.5°	904.2	905.2	905.8	894.8	882.0	877.1
35°	859.1	863.1	861.6	846.9	830.1	827.2
37.5°	813.9	818.7	816.4	795.7	778.1	777.1
40°	763.8	772.6	765.5	740.7	725.0	727.0
42.5°	711.7	722.4	713.4	685.9	672.9	679.8
45°	652.8	670.3	654.4	629.9	623.0	634.8
47.5°	594.8	613.3	595.7	575.8	578.8	589.6
50°	536.0	547.6	537.7	525.7	534.5	546.3
52.5°	478.0	475.9	479.7	477.7	492.3	503.1
55°	421.2	400.4	422.8	432.5	452.2	462.0
57.5°	363.2	340.4	364.8	389.3	413.8	422.7
60°	307.2	289.3	308.0	345.1	373.6	378.6
62.5°	259.1	245.3	259.8	300.9	333.4	339.3
65°	215.8	212.9	216.6	256.9	290.3	299.2
67.5°	182.4	179.5	182.4	218.6	250.0	258.9
70°	150.0	151.9	150.0	181.4	208.9	222.7
72.5°	122.6	127.6	123.4	149.0	169.6	189.3
75°	99.1	105.0	99.1	115.8	137.2	158.8
77.5°	78.4	86.3	78.4	90.2	114.9	142.6
80°	59.8	65.6	59.8	72.9	106.3	136.5
82.5°	42.1	45.0	42.1	70.8	109.1	134.9
85°	33.0	25.4	34.6	78.4	121.2	144.9
87.5°	27.6	6.9	38.7	93.7	141.8	158.8
90°	18.3	1.8	48.5	114.5	164.2	177.1
92.5°	11.4	13.8	66.3	138.0	189.9	203.3
95°	6.1	32.8	85.8	165.4	220.7	227.5
97.5°	10.5	57.5	112.4	193.5	248.7	254.6
100°	27.2	87.8	146.7	221.5	275.1	278.8
102.5°	50.3	120.5	179.4	250.2	303.9	317.3
105°	81.4	157.8	213.7	289.2	332.7	347.7
107.5°	117.2	197.7	248.6	324.3	369.1	377.1
110°	155.5	239.1	283.7	358.5	407.4	416.9



TEST NUMBER: P392566

CATALOG NUMBER: MWL-3-27-28-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	196.8	282.1	320.3	390.5	447.9	455.1
115°	243.9	322.0	354.6	428.0	480.6	484.6
117.5°	286.1	369.7	389.6	455.1	514.9	515.7
120°	330.7	415.1	424.7	492.6	548.3	554.7
122.5°	376.1	458.1	458.1	524.4	577.8	581.7
125°	418.3	504.3	491.6	548.3	604.8	606.4
127.5°	461.3	551.2	528.1	579.3	631.1	628.7
130°	508.3	595.9	561.7	608.8	655.8	647.8
132.5°	551.2	643.6	595.9	639.1	680.5	685.3
135°	595.3	688.2	626.3	665.3	705.9	704.3
137.5°	636.6	729.7	662.2	686.1	722.7	727.4
140°	677.3	774.2	694.0	713.1	743.4	744.2
142.5°	720.3	818.8	729.0	740.2	766.5	761.7
145°	768.0	861.1	772.8	767.2	784.1	773.6
147.5°	810.3	897.7	803.9	787.2	807.1	793.6
150°	857.3	936.1	846.9	815.1	827.0	820.6
152.5°	900.3	965.6	893.9	836.5	850.1	842.1
155°	942.5	996.6	939.3	858.1	867.6	864.4
157.5°	979.1	1023.7	973.5	880.4	891.5	885.2
160°	1011.0	1046.1	1013.3	913.8	907.5	907.5
162.5°	1038.9	1067.5	1041.2	959.2	925.0	909.8
165°	1063.6	1084.2	1065.9	1010.2	958.4	944.8
167.5°	1086.6	1100.2	1093.8	1051.6	1010.2	981.5
170°	1104.9	1112.9	1104.1	1086.6	1065.9	1041.2
172.5°	1114.5	1117.7	1123.3	1112.1	1104.1	1087.2
175°	1120.1	1128.8	1124.1	1128.0	1120.8	1116.7
177.5°	1121.6	1123.3	1122.4	1129.6	1133.6	1127.0
180°	1128.0	1128.0	1128.0	1128.0	1128.0	1128.0

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