

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: P392567

Luminaire Tested: **MWL-3-27-28-UNV-L840-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392567
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-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

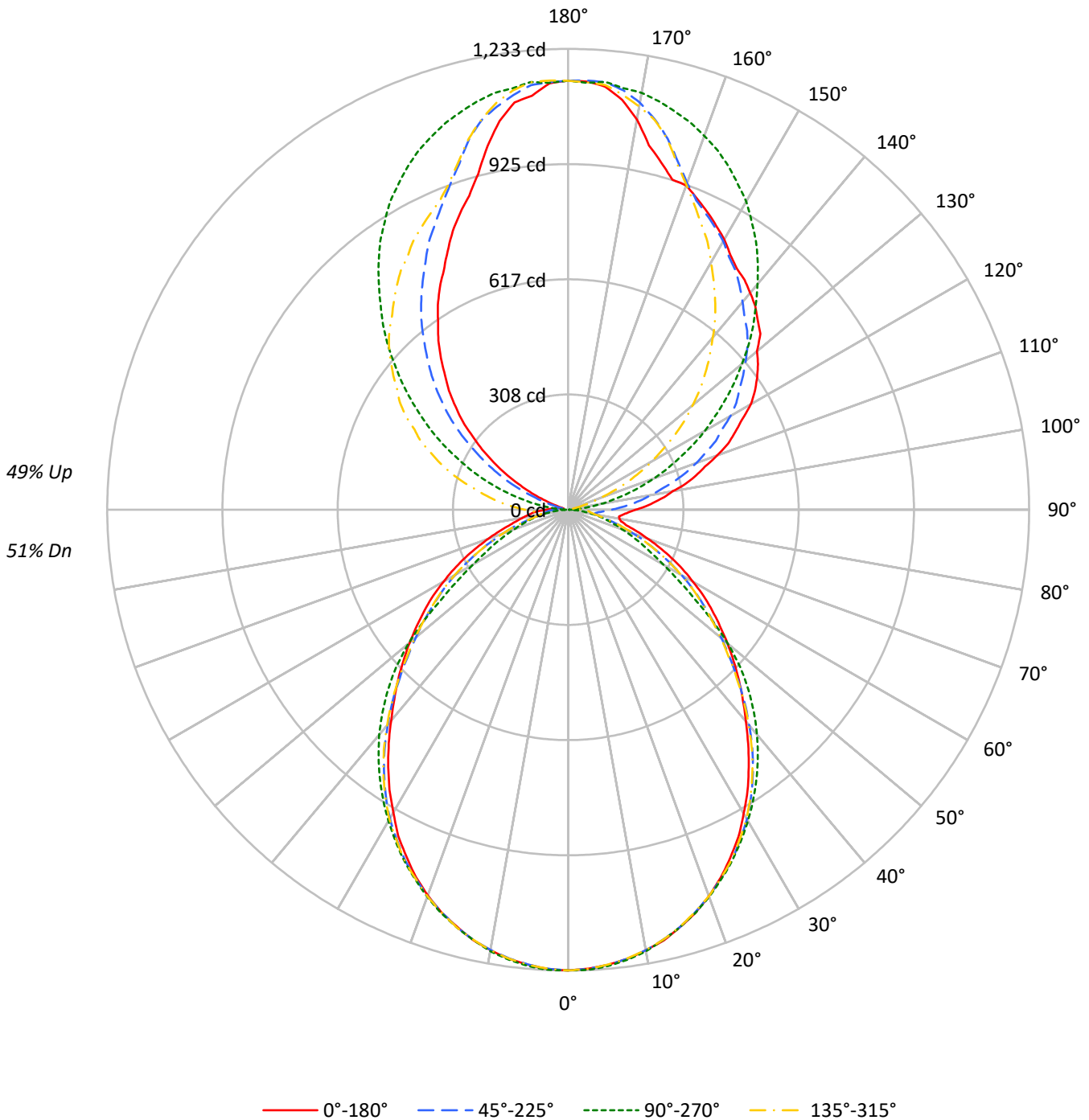
Lumens per Lamp: N/A
Luminaire Lumens: 5572.0 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

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°	10615	10615	10615	10615
5°	10438	9741	10438	9741
10°	10215	8918	10215	8918
15°	9938	8128	9918	8128
20°	9598	7405	9577	7405
25°	9160	6721	9138	6721
30°	8639	6059	8609	6059
35°	8064	5430	8040	5430
40°	7447	4805	7414	4805
45°	6907	4153	6880	4153
50°	6390	3406	6361	3406
55°	5889	2519	5868	2519
60°	5348	1856	5336	1856
65°	4779	1404	4779	1404
70°	4129	1039	4144	1039
75°	3541	751	3596	751
80°	3853	497	3426	497
85°	5628	205	3620	205



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	2.1
10°-20°	325.6	5.8
20°-30°	475.0	8.5
30°-40°	536.6	9.6
40°-50°	501.6	9.0
50°-60°	395.7	7.1
60°-70°	258.8	4.6
70°-80°	134.9	2.4
80°-90°	78.2	1.4
90°-100°	99.9	1.8
100°-110°	179.0	3.2
110°-120°	305.2	5.5
120°-130°	414.4	7.4
130°-140°	472.7	8.5
140°-150°	471.5	8.5
150°-160°	410.6	7.4
160°-170°	288.8	5.2
170°-180°	107.6	1.9
0°-30°	916.6	16.4
0°-40°	1453.2	26.1
0°-60°	2350.5	42.2
0°-90°	2822.4	50.7
90°-120°	584.1	10.5
90°-150°	1942.6	34.9
90°-180°	2750.0	49.4
0°-180°	5572.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1233	1233	1233	1233	1233	
5°	1222	1226	1222	1226	1222	116
15°	1156	1156	1154	1156	1156	326
25°	1026	1037	1024	1037	1026	472
35°	842	878	839	878	842	526
45°	646	682	643	682	646	499
55°	470	407	468	407	470	421
65°	304	217	304	217	304	301
75°	162	107	164	107	162	180
85°	147	26	95	26	147	118
90°	180	2	59	2	180	100
95°	232	33	39	33	232	200
105°	354	161	13	161	354	374
115°	493	328	114	328	493	489
125°	617	513	281	513	617	551
135°	717	700	451	700	717	553
145°	787	876	606	876	787	496
155°	880	1014	763	1014	880	406
165°	961	1103	930	1103	961	273
175°	1136	1149	1112	1149	1136	106
180°	1148	1148	1148	1148	1148	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7
2.5°	1229.2	1230.9	1229.5	1231.3	1232.3	1230.5	1229.5	1230.9	1230.1	1230.9	1229.5
5°	1222.2	1223.9	1222.5	1223.5	1225.5	1223.5	1221.7	1223.9	1222.2	1223.9	1221.7
7.5°	1212.1	1213.7	1211.7	1213.5	1214.5	1212.7	1210.9	1212.9	1212.1	1212.9	1210.9
10°	1196.9	1197.7	1196.7	1197.7	1199.7	1196.9	1195.9	1196.1	1196.9	1196.1	1195.9
12.5°	1180.5	1179.7	1177.9	1178.9	1178.1	1178.9	1177.9	1178.1	1178.9	1178.1	1177.9
15°	1156.3	1156.7	1155.9	1157.9	1156.1	1157.1	1155.1	1155.1	1153.9	1155.1	1155.1
17.5°	1131.3	1130.7	1128.9	1131.1	1131.1	1131.1	1128.1	1129.9	1128.9	1129.9	1128.1
20°	1100.3	1101.5	1100.9	1103.1	1102.2	1102.2	1100.1	1099.9	1097.9	1099.9	1100.1
22.5°	1065.5	1067.5	1067.9	1072.1	1070.2	1071.2	1067.1	1065.9	1063.9	1065.9	1067.1
25°	1026.5	1029.5	1035.7	1038.1	1037.2	1037.2	1034.1	1027.1	1024.1	1027.1	1034.1
27.5°	986.5	989.5	995.7	1000.9	1000.2	1000.1	994.1	987.1	984.1	987.1	994.1
30°	938.5	944.5	956.5	962.7	961.2	961.1	954.1	942.1	935.2	942.1	954.1
32.5°	892.5	897.5	910.5	921.7	921.1	920.1	908.1	894.2	889.2	894.2	908.1
35°	841.7	844.7	861.7	876.7	878.2	874.2	859.2	842.2	839.2	842.2	859.2
37.5°	790.7	791.7	809.7	830.7	833.1	828.2	807.2	789.2	788.2	789.2	807.2
40°	739.7	737.7	753.7	778.9	786.1	777.2	750.4	734.4	736.4	734.4	750.4
42.5°	691.7	684.7	697.9	725.9	735.1	724.2	695.4	681.4	688.4	681.4	695.4
45°	645.9	633.9	640.9	665.9	682.1	664.2	637.6	631.4	643.4	631.4	637.6
47.5°	599.9	588.9	585.9	606.1	624.1	605.2	582.6	586.4	597.4	586.4	582.6
50°	555.9	543.9	534.9	547.1	557.2	545.4	531.6	540.6	553.4	540.6	531.6
52.5°	511.9	500.9	486.1	488.1	484.2	486.4	483.6	497.6	509.4	497.6	483.6
55°	470.1	460.1	440.1	430.2	407.4	428.6	437.6	457.6	468.4	457.6	437.6
57.5°	430.1	421.1	396.1	371.2	346.4	369.6	393.6	418.6	428.4	418.6	393.6
60°	385.2	380.2	351.2	313.4	294.4	312.6	349.6	378.6	384.4	378.6	349.6
62.5°	345.2	339.2	306.2	264.4	249.6	263.6	304.6	337.6	344.4	337.6	304.6
65°	304.4	295.4	261.4	220.4	216.6	219.6	260.6	294.6	304.4	294.6	260.6
67.5°	263.4	254.4	222.4	185.6	182.6	185.6	221.6	253.6	263.4	253.6	221.6
70°	226.6	212.6	184.6	152.6	154.6	152.6	184.6	213.4	227.4	213.4	184.6
72.5°	192.6	172.6	151.6	125.6	129.8	124.8	151.6	173.4	194.2	173.4	151.6
75°	161.6	139.6	117.8	100.8	106.8	100.8	118.6	140.4	164.1	140.4	118.6
77.5°	145.1	116.9	91.8	79.8	87.8	79.8	92.6	114.4	141.9	114.4	92.6
80°	138.9	108.2	74.2	60.8	66.8	60.8	72.6	95.2	123.5	95.2	72.6
82.5°	137.3	111.0	72.0	42.8	45.8	42.8	62.2	81.9	106.5	81.9	62.2
85°	147.4	123.3	79.8	35.2	25.8	33.6	56.3	73.9	94.8	73.9	56.3
87.5°	161.6	144.3	95.3	39.4	7.0	28.1	49.1	66.5	78.2	66.5	49.1
90°	180.2	167.1	116.5	49.4	1.8	18.6	36.2	52.9	58.7	52.9	36.2
92.5°	206.9	193.2	140.4	67.5	14.0	11.6	29.4	43.2	48.1	43.2	29.4
95°	231.5	224.6	168.3	87.3	33.4	6.2	22.4	36.6	39.4	36.6	22.4
97.5°	259.1	253.1	196.9	114.4	58.5	10.7	17.9	30.2	32.2	30.2	17.9
100°	283.7	279.9	225.4	149.3	89.3	27.7	10.7	25.5	28.5	25.5	10.7
102.5°	322.9	309.2	254.6	182.5	122.6	51.2	13.2	17.5	21.5	17.5	13.2
105°	353.8	338.5	294.3	217.4	160.6	82.8	32.6	12.7	12.7	12.7	32.6
107.5°	383.7	375.6	330.0	253.0	201.2	119.3	60.2	32.0	20.6	32.0	60.2
110°	424.2	414.5	364.8	288.7	243.3	158.2	91.8	57.9	44.9	57.9	91.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	463.1	455.8	397.3	325.9	287.0	200.3	130.7	90.3	78.2	90.3	130.7
115°	493.1	489.0	435.5	360.8	327.6	248.2	174.6	128.4	113.8	128.4	174.6
117.5°	524.7	523.9	463.1	396.4	376.2	291.1	214.3	166.5	151.1	166.5	214.3
120°	564.4	557.9	501.2	432.1	422.4	336.5	258.1	210.3	194.9	210.3	258.1
122.5°	591.9	587.9	533.6	466.1	466.1	382.7	300.2	252.4	236.2	252.4	300.2
125°	617.0	615.4	557.9	500.2	513.1	425.6	347.2	298.6	280.8	298.6	347.2
127.5°	639.7	642.2	589.5	537.4	560.9	469.4	393.4	339.9	321.3	339.9	393.4
130°	659.2	667.3	619.5	571.5	606.3	517.2	434.7	381.2	369.1	381.2	434.7
132.5°	697.3	692.4	650.3	606.3	654.9	560.9	478.5	422.6	408.8	422.6	478.5
135°	716.7	718.3	677.0	637.3	700.3	605.7	519.8	464.7	450.9	464.7	519.8
137.5°	740.2	735.4	698.1	673.8	742.5	647.8	560.3	509.3	487.4	509.3	560.3
140°	757.2	756.4	725.6	706.2	787.8	689.2	601.7	549.8	529.5	549.8	601.7
142.5°	775.1	779.9	753.2	741.8	833.2	732.9	646.2	589.5	570.0	589.5	646.2
145°	787.2	797.8	780.7	786.4	876.2	781.5	685.1	627.6	606.5	627.6	685.1
147.5°	807.5	821.3	801.0	818.0	913.4	824.5	724.0	667.3	648.6	667.3	724.0
150°	835.0	841.5	829.4	861.8	952.5	872.3	763.7	705.4	686.7	705.4	763.7
152.5°	856.9	865.0	851.2	909.6	982.5	916.1	807.5	742.6	720.8	742.6	807.5
155°	879.6	882.8	873.1	955.8	1014.1	959.0	842.3	784.0	762.9	784.0	842.3
157.5°	900.7	907.1	895.8	990.6	1041.7	996.3	882.0	825.3	806.7	825.3	882.0
160°	923.4	923.4	929.8	1031.1	1064.4	1028.7	924.2	870.7	844.8	870.7	924.2
162.5°	925.8	941.2	976.0	1059.5	1086.2	1057.1	969.5	903.1	880.4	903.1	969.5
165°	961.4	975.2	1027.9	1084.6	1103.2	1082.2	1025.5	956.6	929.8	956.6	1025.5
167.5°	998.7	1027.9	1070.0	1113.0	1119.5	1105.7	1068.4	1020.6	996.3	1020.6	1068.4
170°	1059.5	1084.6	1105.7	1123.5	1132.4	1124.3	1095.1	1071.6	1056.2	1071.6	1095.1
172.5°	1106.3	1123.5	1131.6	1143.0	1137.3	1134.0	1119.5	1108.1	1099.0	1108.1	1119.5
175°	1136.3	1140.5	1147.8	1143.8	1148.6	1139.7	1140.5	1146.2	1112.0	1146.2	1140.5
177.5°	1146.8	1153.5	1149.4	1142.1	1143.0	1141.3	1144.6	1147.8	1142.0	1147.8	1144.6
180°	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8



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CATALOG NUMBER: MWL-3-27-28-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1232.7	1232.7	1232.7	1232.7	1232.7	1232.7
2.5°	1230.5	1232.3	1231.3	1229.5	1230.9	1229.2
5°	1223.5	1225.5	1223.5	1222.5	1223.9	1222.2
7.5°	1212.7	1214.5	1213.5	1211.7	1213.7	1212.1
10°	1196.9	1199.7	1197.7	1196.7	1197.7	1196.9
12.5°	1178.9	1178.1	1178.9	1177.9	1179.7	1180.5
15°	1157.1	1156.1	1157.9	1155.9	1156.7	1156.3
17.5°	1131.1	1131.1	1131.1	1128.9	1130.7	1131.3
20°	1102.2	1102.2	1103.1	1100.9	1101.5	1100.3
22.5°	1071.2	1070.2	1072.1	1067.9	1067.5	1065.5
25°	1037.2	1037.2	1038.1	1035.7	1029.5	1026.5
27.5°	1000.1	1000.2	1000.9	995.7	989.5	986.5
30°	961.1	961.2	962.7	956.5	944.5	938.5
32.5°	920.1	921.1	921.7	910.5	897.5	892.5
35°	874.2	878.2	876.7	861.7	844.7	841.7
37.5°	828.2	833.1	830.7	809.7	791.7	790.7
40°	777.2	786.1	778.9	753.7	737.7	739.7
42.5°	724.2	735.1	725.9	697.9	684.7	691.7
45°	664.2	682.1	665.9	640.9	633.9	645.9
47.5°	605.2	624.1	606.1	585.9	588.9	599.9
50°	545.4	557.2	547.1	534.9	543.9	555.9
52.5°	486.4	484.2	488.1	486.1	500.9	511.9
55°	428.6	407.4	430.2	440.1	460.1	470.1
57.5°	369.6	346.4	371.2	396.1	421.1	430.1
60°	312.6	294.4	313.4	351.2	380.2	385.2
62.5°	263.6	249.6	264.4	306.2	339.2	345.2
65°	219.6	216.6	220.4	261.4	295.4	304.4
67.5°	185.6	182.6	185.6	222.4	254.4	263.4
70°	152.6	154.6	152.6	184.6	212.6	226.6
72.5°	124.8	129.8	125.6	151.6	172.6	192.6
75°	100.8	106.8	100.8	117.8	139.6	161.6
77.5°	79.8	87.8	79.8	91.8	116.9	145.1
80°	60.8	66.8	60.8	74.2	108.2	138.9
82.5°	42.8	45.8	42.8	72.0	111.0	137.3
85°	33.6	25.8	35.2	79.8	123.3	147.4
87.5°	28.1	7.0	39.4	95.3	144.3	161.6
90°	18.6	1.8	49.4	116.5	167.1	180.2
92.5°	11.6	14.0	67.5	140.4	193.2	206.9
95°	6.2	33.4	87.3	168.3	224.6	231.5
97.5°	10.7	58.5	114.4	196.9	253.1	259.1
100°	27.7	89.3	149.3	225.4	279.9	283.7
102.5°	51.2	122.6	182.5	254.6	309.2	322.9
105°	82.8	160.6	217.4	294.3	338.5	353.8
107.5°	119.3	201.2	253.0	330.0	375.6	383.7
110°	158.2	243.3	288.7	364.8	414.5	424.2



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CATALOG NUMBER: MWL-3-27-28-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	200.3	287.0	325.9	397.3	455.8	463.1
115°	248.2	327.6	360.8	435.5	489.0	493.1
117.5°	291.1	376.2	396.4	463.1	523.9	524.7
120°	336.5	422.4	432.1	501.2	557.9	564.4
122.5°	382.7	466.1	466.1	533.6	587.9	591.9
125°	425.6	513.1	500.2	557.9	615.4	617.0
127.5°	469.4	560.9	537.4	589.5	642.2	639.7
130°	517.2	606.3	571.5	619.5	667.3	659.2
132.5°	560.9	654.9	606.3	650.3	692.4	697.3
135°	605.7	700.3	637.3	677.0	718.3	716.7
137.5°	647.8	742.5	673.8	698.1	735.4	740.2
140°	689.2	787.8	706.2	725.6	756.4	757.2
142.5°	732.9	833.2	741.8	753.2	779.9	775.1
145°	781.5	876.2	786.4	780.7	797.8	787.2
147.5°	824.5	913.4	818.0	801.0	821.3	807.5
150°	872.3	952.5	861.8	829.4	841.5	835.0
152.5°	916.1	982.5	909.6	851.2	865.0	856.9
155°	959.0	1014.1	955.8	873.1	882.8	879.6
157.5°	996.3	1041.7	990.6	895.8	907.1	900.7
160°	1028.7	1064.4	1031.1	929.8	923.4	923.4
162.5°	1057.1	1086.2	1059.5	976.0	941.2	925.8
165°	1082.2	1103.2	1084.6	1027.9	975.2	961.4
167.5°	1105.7	1119.5	1113.0	1070.0	1027.9	998.7
170°	1124.3	1132.4	1123.5	1105.7	1084.6	1059.5
172.5°	1134.0	1137.3	1143.0	1131.6	1123.5	1106.3
175°	1139.7	1148.6	1143.8	1147.8	1140.5	1136.3
177.5°	1141.3	1143.0	1142.1	1149.4	1153.5	1146.8
180°	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8

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