

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: P392565

Luminaire Tested: **MWL-3-27-28-UNV-L830-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392565
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-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

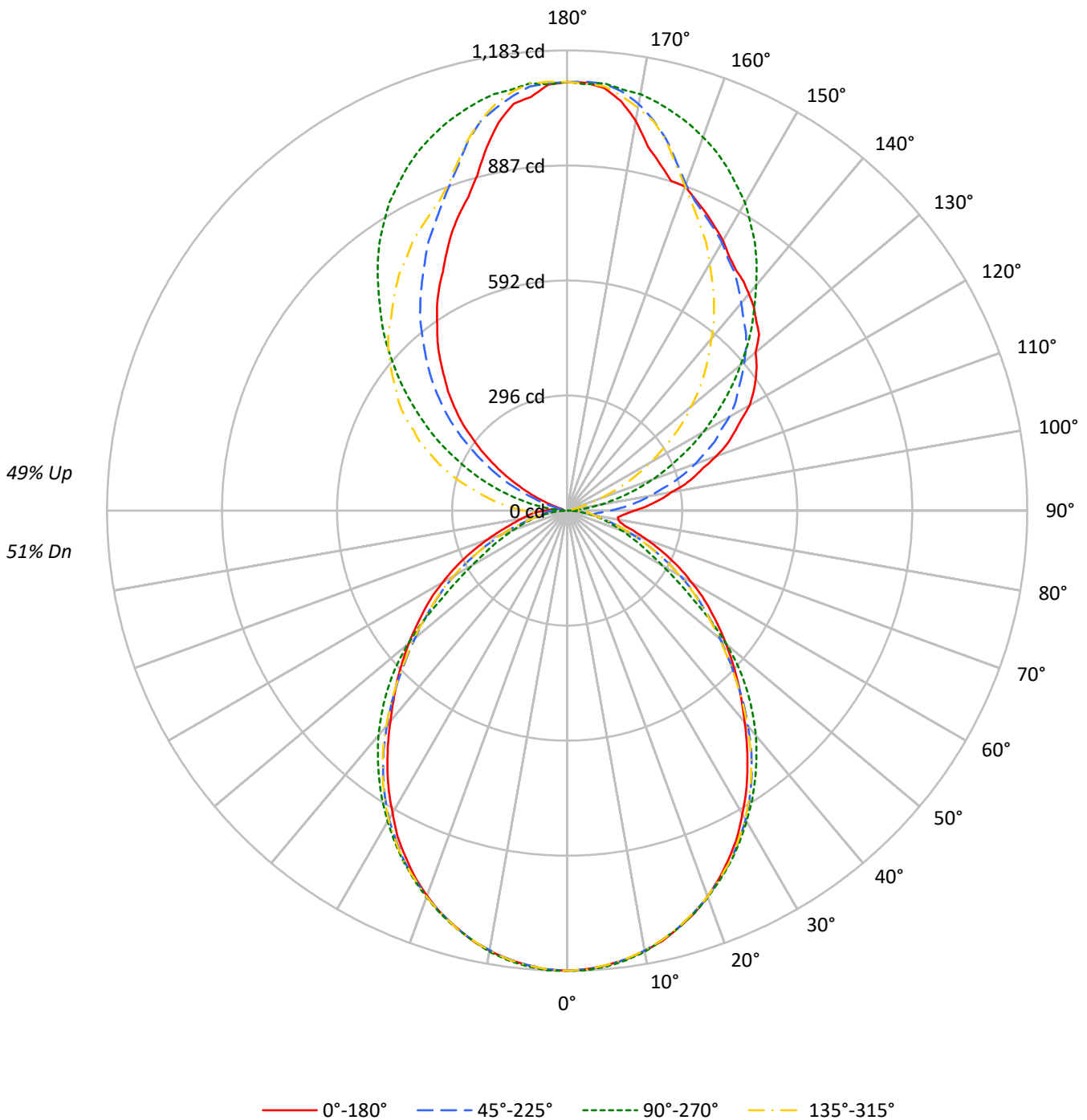
Lumens per Lamp: N/A
Luminaire Lumens: 5348.0 lumens
Efficiency: N/A
Efficacy: 101.1 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

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°	10188	10188	10188	10188
5°	10019	9349	10019	9349
10°	9805	8559	9805	8559
15°	9539	7802	9519	7802
20°	9212	7107	9192	7107
25°	8791	6451	8771	6451
30°	8292	5816	8263	5816
35°	7740	5212	7717	5212
40°	7148	4612	7116	4612
45°	6628	3986	6603	3986
50°	6133	3269	6106	3269
55°	5653	2418	5633	2418
60°	5132	1781	5121	1781
65°	4587	1347	4587	1347
70°	3964	997	3978	997
75°	3399	721	3451	721
80°	3698	476	3287	476
85°	5403	197	3475	197



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.3	2.1
10°-20°	312.5	5.8
20°-30°	455.9	8.5
30°-40°	515.1	9.6
40°-50°	481.4	9.0
50°-60°	379.8	7.1
60°-70°	248.4	4.6
70°-80°	129.5	2.4
80°-90°	75.1	1.4
90°-100°	95.9	1.8
100°-110°	171.8	3.2
110°-120°	292.9	5.5
120°-130°	397.8	7.4
130°-140°	453.7	8.5
140°-150°	452.5	8.5
150°-160°	394.1	7.4
160°-170°	277.2	5.2
170°-180°	103.2	1.9
0°-30°	879.7	16.4
0°-40°	1394.8	26.1
0°-60°	2256.0	42.2
0°-90°	2709.0	50.7
90°-120°	560.6	10.5
90°-150°	1864.5	34.9
90°-180°	2639.0	49.3
0°-180°	5348.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1183	1183	1183	1183	1183	
5°	1173	1176	1173	1176	1173	111
15°	1110	1110	1108	1110	1110	313
25°	985	996	983	996	985	453
35°	808	843	806	843	808	505
45°	620	655	618	655	620	479
55°	451	391	450	391	451	404
65°	292	208	292	208	292	289
75°	155	102	158	102	155	173
85°	142	25	91	25	142	114
90°	173	2	56	2	173	96
95°	222	32	38	32	222	192
105°	340	154	12	154	340	359
115°	473	314	109	314	473	470
125°	592	492	270	492	592	529
135°	688	672	433	672	688	531
145°	756	841	582	841	756	476
155°	844	973	732	973	844	389
165°	923	1059	892	1059	923	262
175°	1091	1102	1067	1102	1091	102
180°	1102	1102	1102	1102	1102	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1
2.5°	1179.8	1181.4	1180.1	1181.8	1182.8	1181.0	1180.1	1181.4	1180.6	1181.4	1180.1
5°	1173.1	1174.7	1173.4	1174.3	1176.2	1174.3	1172.6	1174.7	1173.1	1174.7	1172.6
7.5°	1163.4	1164.9	1163.0	1164.7	1165.7	1163.9	1162.2	1164.1	1163.4	1164.1	1162.2
10°	1148.8	1149.5	1148.6	1149.5	1151.5	1148.8	1147.8	1148.0	1148.8	1148.0	1147.8
12.5°	1133.0	1132.3	1130.5	1131.5	1130.7	1131.5	1130.5	1130.7	1131.5	1130.7	1130.5
15°	1109.8	1110.2	1109.4	1111.3	1109.6	1110.6	1108.7	1108.7	1107.5	1108.7	1108.7
17.5°	1085.8	1085.2	1083.5	1085.6	1085.6	1085.6	1082.7	1084.5	1083.5	1084.5	1082.7
20°	1056.1	1057.2	1056.6	1058.8	1057.9	1057.9	1055.9	1055.7	1053.8	1055.7	1055.9
22.5°	1022.7	1024.6	1025.0	1029.0	1027.2	1028.1	1024.2	1023.0	1021.1	1023.0	1024.2
25°	985.2	988.1	994.1	996.4	995.5	995.5	992.5	985.8	982.9	985.8	992.5
27.5°	946.8	949.7	955.7	960.7	960.0	959.9	954.1	947.4	944.5	947.4	954.1
30°	900.8	906.5	918.0	924.0	922.6	922.5	915.7	904.2	897.6	904.2	915.7
32.5°	856.6	861.4	873.9	884.6	884.1	883.1	871.6	858.2	853.5	858.2	871.6
35°	807.9	810.7	827.1	841.5	842.9	839.1	824.7	808.3	805.5	808.3	824.7
37.5°	758.9	759.9	777.1	797.3	799.6	794.9	774.7	757.5	756.5	757.5	774.7
40°	710.0	708.0	723.4	747.6	754.5	746.0	720.2	704.9	706.8	704.9	720.2
42.5°	663.9	657.2	669.8	696.7	705.5	695.1	667.4	654.0	660.7	654.0	667.4
45°	619.9	608.4	615.1	639.1	654.7	637.5	612.0	606.0	617.5	606.0	612.0
47.5°	575.8	565.2	562.3	581.7	599.0	580.9	559.2	562.8	573.4	562.8	559.2
50°	533.6	522.0	513.4	525.1	534.8	523.5	510.2	518.9	531.2	518.9	510.2
52.5°	491.3	480.8	466.6	468.5	464.7	466.8	464.2	477.6	488.9	477.6	464.2
55°	451.2	441.6	422.4	412.9	391.0	411.4	420.0	439.2	449.6	439.2	420.0
57.5°	412.8	404.2	380.2	356.3	332.5	354.7	377.8	401.8	411.2	401.8	377.8
60°	369.7	364.9	337.1	300.8	282.6	300.0	335.5	363.4	368.9	363.4	335.5
62.5°	331.3	325.6	293.9	253.8	239.6	253.0	292.4	324.0	330.6	324.0	292.4
65°	292.2	283.5	250.9	211.5	207.9	210.8	250.1	282.8	292.2	282.8	250.1
67.5°	252.8	244.2	213.5	178.1	175.3	178.1	212.7	243.4	252.8	243.4	212.7
70°	217.5	204.1	177.2	146.5	148.4	146.5	177.2	204.8	218.3	204.8	177.2
72.5°	184.9	165.7	145.5	120.6	124.6	119.8	145.5	166.4	186.4	166.4	145.5
75°	155.1	134.0	113.1	96.7	102.5	96.7	113.8	134.8	157.5	134.8	113.8
77.5°	139.3	112.2	88.1	76.6	84.3	76.6	88.9	109.8	136.2	109.8	88.9
80°	133.3	103.8	71.2	58.4	64.1	58.4	69.7	91.4	118.5	91.4	69.7
82.5°	131.8	106.5	69.1	41.1	44.0	41.1	59.7	78.6	102.2	78.6	59.7
85°	141.5	118.3	76.6	33.8	24.8	32.2	54.0	70.9	91.0	70.9	54.0
87.5°	155.1	138.5	91.5	37.8	6.7	27.0	47.1	63.8	75.1	63.8	47.1
90°	173.0	160.4	111.8	47.4	1.7	17.9	34.7	50.8	56.3	50.8	34.7
92.5°	198.6	185.4	134.8	64.8	13.4	11.1	28.2	41.5	46.2	41.5	28.2
95°	222.2	215.6	161.5	83.8	32.1	6.0	21.5	35.1	37.8	35.1	21.5
97.5°	248.7	242.9	189.0	109.8	56.1	10.3	17.2	29.0	30.9	29.0	17.2
100°	272.3	268.6	216.3	143.3	85.7	26.6	10.3	24.5	27.4	24.5	10.3
102.5°	309.9	296.8	244.4	175.2	117.7	49.1	12.7	16.8	20.6	16.8	12.7
105°	339.6	324.9	282.5	208.7	154.1	79.5	31.3	12.2	12.2	12.2	31.3
107.5°	368.3	360.5	316.7	242.8	193.1	114.5	57.8	30.7	19.8	30.7	57.8
110°	407.1	397.8	350.1	277.1	233.5	151.8	88.1	55.6	43.1	55.6	88.1



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CATALOG NUMBER: MWL-3-27-28-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	444.5	437.5	381.3	312.8	275.5	192.2	125.4	86.7	75.1	86.7	125.4
115°	473.3	469.3	418.0	346.3	314.4	238.2	167.6	123.2	109.2	123.2	167.6
117.5°	503.6	502.8	444.5	380.5	361.1	279.4	205.7	159.8	145.0	159.8	205.7
120°	541.7	535.5	481.0	414.7	405.4	323.0	247.7	201.8	187.1	201.8	247.7
122.5°	568.1	564.3	512.1	447.4	447.4	367.3	288.1	242.3	226.7	242.3	288.1
125°	592.2	590.7	535.5	480.1	492.5	408.5	333.2	286.6	269.5	286.6	333.2
127.5°	614.0	616.4	565.8	515.8	538.3	450.5	377.6	326.2	308.4	326.2	377.6
130°	632.7	640.5	594.6	548.5	581.9	496.4	417.2	365.9	354.3	365.9	417.2
132.5°	669.3	664.6	624.2	581.9	628.6	538.3	459.3	405.6	392.4	405.6	459.3
135°	687.9	689.4	649.8	611.7	672.1	581.3	498.9	446.0	432.8	446.0	498.9
137.5°	710.4	705.8	670.0	646.7	712.6	621.8	537.8	488.8	467.8	488.8	537.8
140°	726.8	726.0	696.4	677.8	756.1	661.5	577.5	527.7	508.2	527.7	577.5
142.5°	743.9	748.5	722.9	712.0	799.7	703.4	620.2	565.8	547.1	565.8	620.2
145°	755.6	765.7	749.3	754.8	841.0	750.1	657.6	602.4	582.1	602.4	657.6
147.5°	775.0	788.3	768.8	785.1	876.7	791.4	694.9	640.5	622.5	640.5	694.9
150°	801.4	807.7	796.1	827.2	914.2	837.2	733.0	677.0	659.1	677.0	733.0
152.5°	822.4	830.2	817.0	873.0	943.0	879.3	775.0	712.7	691.8	712.7	775.0
155°	844.2	847.3	838.0	917.4	973.3	920.4	808.4	752.5	732.2	752.5	808.4
157.5°	864.5	870.6	859.8	950.8	999.8	956.2	846.5	792.1	774.3	792.1	846.5
160°	886.3	886.3	892.4	989.6	1021.6	987.3	887.0	835.7	810.8	835.7	887.0
162.5°	888.6	903.4	936.8	1016.9	1042.5	1014.6	930.5	866.8	845.0	866.8	930.5
165°	922.7	936.0	986.6	1041.0	1058.8	1038.7	984.3	918.1	892.4	918.1	984.3
167.5°	958.5	986.6	1027.0	1068.3	1074.5	1061.2	1025.4	979.6	956.2	979.6	1025.4
170°	1016.9	1041.0	1061.2	1078.3	1086.9	1079.1	1051.1	1028.5	1013.7	1028.5	1051.1
172.5°	1061.8	1078.3	1086.1	1097.0	1091.6	1088.4	1074.5	1063.6	1054.8	1063.6	1074.5
175°	1090.6	1094.6	1101.7	1097.8	1102.4	1093.9	1094.6	1100.1	1067.3	1100.1	1094.6
177.5°	1100.7	1107.1	1103.2	1096.2	1097.0	1095.4	1098.6	1101.7	1096.1	1101.7	1098.6
180°	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7



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CATALOG NUMBER: MWL-3-27-28-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1183.1	1183.1	1183.1	1183.1	1183.1	1183.1
2.5°	1181.0	1182.8	1181.8	1180.1	1181.4	1179.8
5°	1174.3	1176.2	1174.3	1173.4	1174.7	1173.1
7.5°	1163.9	1165.7	1164.7	1163.0	1164.9	1163.4
10°	1148.8	1151.5	1149.5	1148.6	1149.5	1148.8
12.5°	1131.5	1130.7	1131.5	1130.5	1132.3	1133.0
15°	1110.6	1109.6	1111.3	1109.4	1110.2	1109.8
17.5°	1085.6	1085.6	1085.6	1083.5	1085.2	1085.8
20°	1057.9	1057.9	1058.8	1056.6	1057.2	1056.1
22.5°	1028.1	1027.2	1029.0	1025.0	1024.6	1022.7
25°	995.5	995.5	996.4	994.1	988.1	985.2
27.5°	959.9	960.0	960.7	955.7	949.7	946.8
30°	922.5	922.6	924.0	918.0	906.5	900.8
32.5°	883.1	884.1	884.6	873.9	861.4	856.6
35°	839.1	842.9	841.5	827.1	810.7	807.9
37.5°	794.9	799.6	797.3	777.1	759.9	758.9
40°	746.0	754.5	747.6	723.4	708.0	710.0
42.5°	695.1	705.5	696.7	669.8	657.2	663.9
45°	637.5	654.7	639.1	615.1	608.4	619.9
47.5°	580.9	599.0	581.7	562.3	565.2	575.8
50°	523.5	534.8	525.1	513.4	522.0	533.6
52.5°	466.8	464.7	468.5	466.6	480.8	491.3
55°	411.4	391.0	412.9	422.4	441.6	451.2
57.5°	354.7	332.5	356.3	380.2	404.2	412.8
60°	300.0	282.6	300.8	337.1	364.9	369.7
62.5°	253.0	239.6	253.8	293.9	325.6	331.3
65°	210.8	207.9	211.5	250.9	283.5	292.2
67.5°	178.1	175.3	178.1	213.5	244.2	252.8
70°	146.5	148.4	146.5	177.2	204.1	217.5
72.5°	119.8	124.6	120.6	145.5	165.7	184.9
75°	96.7	102.5	96.7	113.1	134.0	155.1
77.5°	76.6	84.3	76.6	88.1	112.2	139.3
80°	58.4	64.1	58.4	71.2	103.8	133.3
82.5°	41.1	44.0	41.1	69.1	106.5	131.8
85°	32.2	24.8	33.8	76.6	118.3	141.5
87.5°	27.0	6.7	37.8	91.5	138.5	155.1
90°	17.9	1.7	47.4	111.8	160.4	173.0
92.5°	11.1	13.4	64.8	134.8	185.4	198.6
95°	6.0	32.1	83.8	161.5	215.6	222.2
97.5°	10.3	56.1	109.8	189.0	242.9	248.7
100°	26.6	85.7	143.3	216.3	268.6	272.3
102.5°	49.1	117.7	175.2	244.4	296.8	309.9
105°	79.5	154.1	208.7	282.5	324.9	339.6
107.5°	114.5	193.1	242.8	316.7	360.5	368.3
110°	151.8	233.5	277.1	350.1	397.8	407.1



TEST NUMBER: P392565

CATALOG NUMBER: MWL-3-27-28-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	192.2	275.5	312.8	381.3	437.5	444.5
115°	238.2	314.4	346.3	418.0	469.3	473.3
117.5°	279.4	361.1	380.5	444.5	502.8	503.6
120°	323.0	405.4	414.7	481.0	535.5	541.7
122.5°	367.3	447.4	447.4	512.1	564.3	568.1
125°	408.5	492.5	480.1	535.5	590.7	592.2
127.5°	450.5	538.3	515.8	565.8	616.4	614.0
130°	496.4	581.9	548.5	594.6	640.5	632.7
132.5°	538.3	628.6	581.9	624.2	664.6	669.3
135°	581.3	672.1	611.7	649.8	689.4	687.9
137.5°	621.8	712.6	646.7	670.0	705.8	710.4
140°	661.5	756.1	677.8	696.4	726.0	726.8
142.5°	703.4	799.7	712.0	722.9	748.5	743.9
145°	750.1	841.0	754.8	749.3	765.7	755.6
147.5°	791.4	876.7	785.1	768.8	788.3	775.0
150°	837.2	914.2	827.2	796.1	807.7	801.4
152.5°	879.3	943.0	873.0	817.0	830.2	822.4
155°	920.4	973.3	917.4	838.0	847.3	844.2
157.5°	956.2	999.8	950.8	859.8	870.6	864.5
160°	987.3	1021.6	989.6	892.4	886.3	886.3
162.5°	1014.6	1042.5	1016.9	936.8	903.4	888.6
165°	1038.7	1058.8	1041.0	986.6	936.0	922.7
167.5°	1061.2	1074.5	1068.3	1027.0	986.6	958.5
170°	1079.1	1086.9	1078.3	1061.2	1041.0	1016.9
172.5°	1088.4	1091.6	1097.0	1086.1	1078.3	1061.8
175°	1093.9	1102.4	1097.8	1101.7	1094.6	1090.6
177.5°	1095.4	1097.0	1096.2	1103.2	1107.1	1100.7
180°	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7

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