

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: P392564

Luminaire Tested: **MWL-3-27-25-UNV-L840-EDD**

Issue Date: 3/12/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P392564  
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-3-27-25-UNV-L840-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

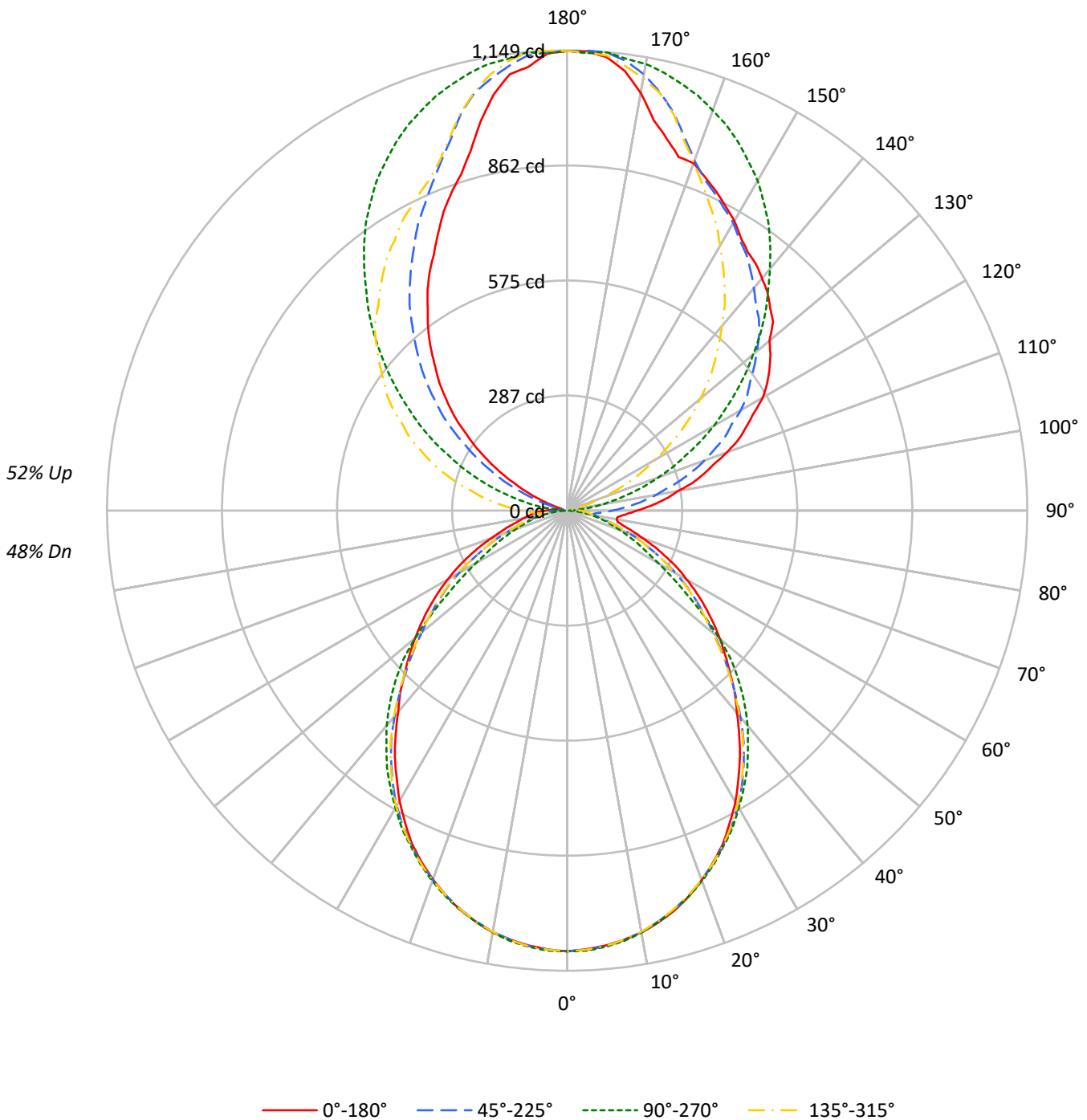
Lumens per Lamp: N/A  
Luminaire Lumens: 5269.1 lumens  
Efficiency: N/A  
Efficacy: 107.1 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 49.2  
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										
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	50	30	10	0														
RCR																																						
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48																				
1	97	93	89	86	89	86	83	80	72	70	68	60	58	56	48	47	46	41																				
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	34																				
3	81	72	65	59	75	67	60	55	56	52	48	47	44	41	38	36	34	30																				
4	75	64	56	50	68	59	53	47	50	45	41	42	38	35	34	32	29	26																				
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23																				
6	63	51	43	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20																				
7	59	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18																				
8	54	42	35	29	50	39	33	28	34	28	25	29	25	21	24	21	18	16																				
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15																				
10	47	35	28	24	44	33	27	22	29	24	20	24	20	18	21	17	15	13																				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	9477	9477	9477	9477
5°	9310	8691	9310	8691
10°	9131	7951	9131	7951
15°	8889	7256	8868	7256
20°	8568	6612	8547	6612
25°	8204	5988	8183	5988
30°	7736	5403	7706	5403
35°	7210	4848	7186	4848
40°	6642	4285	6608	4285
45°	6158	3703	6131	3703
50°	5723	3033	5694	3033
55°	5276	2259	5254	2259
60°	4792	1654	4781	1654
65°	4261	1254	4261	1254
70°	3637	924	3652	924
75°	3169	674	3223	674
80°	3492	437	3065	437
85°	5285	189	3276	189



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.5	2.0
10°-20°	290.6	5.5
20°-30°	424.1	8.0
30°-40°	479.0	9.1
40°-50°	448.2	8.5
50°-60°	353.8	6.7
60°-70°	231.3	4.4
70°-80°	120.5	2.3
80°-90°	72.1	1.4
90°-100°	97.5	1.9
100°-110°	178.7	3.4
110°-120°	305.1	5.8
120°-130°	414.2	7.9
130°-140°	472.5	9.0
140°-150°	471.4	8.9
150°-160°	410.4	7.8
160°-170°	288.7	5.5
170°-180°	107.5	2.0
0°-30°	818.2	15.5
0°-40°	1297.2	24.6
0°-60°	2099.3	39.8
0°-90°	2523.2	47.9
90°-120°	581.3	11.0
90°-150°	1939.3	36.8
90°-180°	2746.0	52.1
0°-180°	5269.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1101	1101	1101	1101	1101	
5°	1090	1093	1090	1093	1090	103
15°	1034	1032	1032	1032	1034	291
25°	919	924	917	924	919	422
35°	753	784	750	784	753	470
45°	576	608	573	608	576	446
55°	421	365	419	365	421	377
65°	271	194	271	194	271	270
75°	145	96	147	96	145	160
85°	138	24	86	24	138	110
90°	174	1	53	1	174	96
95°	228	33	35	33	228	197
105°	353	161	12	161	353	372
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	1013	763	1013	880	406
165°	961	1103	930	1103	961	273
175°	1136	1148	1112	1148	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°	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6
2.5°	1096.1	1099.8	1097.4	1099.2	1100.2	1098.4	1097.4	1099.8	1097.0	1099.8	1097.4
5°	1090.1	1093.8	1092.4	1092.4	1093.4	1092.4	1091.6	1093.8	1090.1	1093.8	1091.6
7.5°	1081.0	1083.6	1081.6	1083.4	1084.4	1082.6	1080.8	1082.8	1081.0	1082.8	1080.8
10°	1069.8	1069.6	1068.6	1069.6	1069.6	1068.8	1067.8	1068.0	1069.8	1068.0	1067.8
12.5°	1053.4	1051.6	1050.8	1052.8	1052.0	1052.8	1050.8	1050.0	1051.8	1050.0	1050.8
15°	1034.2	1032.6	1030.8	1032.8	1032.0	1032.0	1030.0	1031.0	1031.8	1031.0	1030.0
17.5°	1010.2	1008.6	1007.8	1010.0	1010.0	1010.0	1007.0	1007.8	1007.8	1007.8	1007.0
20°	982.2	983.4	981.8	985.0	984.1	984.1	981.0	981.8	979.8	981.8	981.0
22.5°	951.4	953.4	953.8	956.0	956.1	955.1	953.0	951.8	949.8	951.8	953.0
25°	919.4	918.4	922.6	927.0	924.1	926.1	921.0	916.0	917.0	916.0	921.0
27.5°	879.4	885.4	889.6	894.8	894.1	894.0	888.0	883.0	877.0	883.0	888.0
30°	840.4	843.4	853.4	859.6	857.1	858.0	851.0	841.0	837.1	841.0	851.0
32.5°	795.4	801.4	812.4	822.6	821.0	821.0	810.0	798.1	792.1	798.1	810.0
35°	752.6	754.6	768.6	782.6	784.1	780.1	766.1	752.1	750.1	752.1	766.1
37.5°	705.7	707.7	723.7	740.6	741.0	738.1	721.2	705.2	703.2	705.2	721.2
40°	659.7	660.7	673.7	695.9	701.1	694.2	670.4	657.4	656.4	657.4	670.4
42.5°	619.7	612.7	621.9	647.9	656.1	646.2	619.4	609.4	616.4	609.4	619.4
45°	575.9	567.9	572.9	596.9	608.1	595.2	569.6	565.4	573.4	565.4	569.6
47.5°	535.9	525.9	524.9	542.1	558.1	541.2	521.6	523.4	533.4	523.4	521.6
50°	497.9	485.9	476.9	489.1	496.2	487.4	473.6	482.6	495.4	482.6	473.6
52.5°	459.9	447.9	434.1	437.1	429.2	435.4	431.6	444.6	457.4	444.6	431.6
55°	421.1	411.1	394.1	384.2	365.4	382.6	391.6	408.6	419.4	408.6	391.6
57.5°	384.1	376.1	355.1	333.2	310.4	331.6	352.6	373.6	382.4	373.6	352.6
60°	345.2	341.2	313.2	281.4	262.4	280.6	311.6	339.6	344.4	339.6	311.6
62.5°	310.2	303.2	273.2	236.4	223.6	235.6	271.6	301.6	309.4	301.6	271.6
65°	271.4	266.4	232.4	199.4	193.6	198.6	231.6	265.6	271.4	265.6	231.6
67.5°	236.4	226.4	198.4	163.6	163.6	163.6	197.6	225.6	236.4	225.6	197.6
70°	199.6	189.6	163.6	136.6	137.6	136.6	163.6	190.4	200.4	190.4	163.6
72.5°	170.6	155.6	133.6	111.6	114.8	110.8	133.6	156.4	172.2	156.4	133.6
75°	144.6	126.6	105.8	90.8	95.8	90.8	106.6	127.4	147.1	127.4	106.6
77.5°	129.1	104.9	82.8	70.8	76.8	70.8	83.6	102.4	125.9	102.4	83.6
80°	125.9	98.2	67.2	53.8	58.8	53.8	65.6	85.2	110.5	85.2	65.6
82.5°	126.3	103.0	65.0	38.8	40.8	38.8	55.2	73.9	95.5	73.9	55.2
85°	138.4	116.3	73.8	31.2	23.8	29.6	50.3	66.9	85.8	66.9	50.3
87.5°	154.6	138.3	90.3	37.4	7.0	26.1	44.1	60.5	71.2	60.5	44.1
90°	174.2	162.1	113.5	47.4	0.8	16.6	33.2	47.9	52.7	47.9	33.2
92.5°	200.9	189.2	137.4	66.5	14.0	10.6	26.4	39.2	42.1	39.2	26.4
95°	227.5	220.6	166.3	86.3	33.4	5.2	20.4	32.6	35.4	32.6	20.4
97.5°	256.1	250.1	194.9	114.4	58.5	10.7	15.9	27.2	29.2	27.2	15.9
100°	280.7	277.9	225.4	149.3	89.3	27.7	10.7	23.5	25.5	23.5	10.7
102.5°	320.9	308.2	254.6	182.5	122.6	51.2	13.2	16.5	19.5	16.5	13.2
105°	352.8	338.5	294.3	217.4	160.6	82.8	32.6	12.7	11.7	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	434.5	360.8	327.6	248.2	173.6	128.4	113.8	128.4	173.6
117.5°	524.7	523.9	462.1	396.4	376.2	291.1	213.3	166.5	151.1	166.5	213.3
120°	564.4	557.9	500.2	432.1	422.4	336.5	257.1	210.3	194.9	210.3	257.1
122.5°	591.9	587.9	532.6	466.1	466.1	382.7	299.2	252.4	236.2	252.4	299.2
125°	617.0	615.4	556.9	500.2	513.1	425.6	346.2	298.6	280.8	298.6	346.2
127.5°	639.7	642.2	588.5	537.4	560.9	469.4	392.4	339.9	321.3	339.9	392.4
130°	659.2	667.3	618.5	571.5	606.3	517.2	433.7	381.2	369.1	381.2	433.7
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	636.3	700.3	604.7	519.8	464.7	450.9	464.7	519.8
137.5°	740.1	735.3	697.1	672.8	742.4	646.8	559.3	509.3	487.4	509.3	559.3
140°	757.1	756.3	725.6	706.2	787.7	689.2	601.7	549.8	529.5	549.8	601.7
142.5°	775.0	779.8	753.1	740.7	833.1	731.8	646.2	589.5	570.0	589.5	646.2
145°	787.1	797.7	780.6	786.3	876.1	781.4	685.1	627.6	606.5	627.6	685.1
147.5°	807.4	821.2	800.9	817.9	913.3	824.4	724.0	667.3	648.6	667.3	724.0
150°	834.9	841.4	829.3	861.7	951.4	872.2	763.6	705.4	686.7	705.4	763.6
152.5°	856.8	864.9	850.1	908.5	981.4	915.0	806.4	742.5	720.8	742.5	806.4
155°	879.5	882.7	873.0	954.7	1013.0	957.9	842.2	783.9	762.8	783.9	842.2
157.5°	900.6	907.0	895.7	989.5	1040.6	995.2	881.9	825.2	806.6	825.2	881.9
160°	923.3	923.3	929.7	1031.0	1063.3	1028.6	924.1	870.6	844.7	870.6	924.1
162.5°	925.7	940.1	975.9	1059.4	1086.1	1057.0	969.4	902.0	880.3	902.0	969.4
165°	961.3	974.1	1027.8	1084.5	1103.1	1082.1	1025.4	955.5	929.7	955.5	1025.4
167.5°	998.6	1026.8	1069.9	1112.9	1119.4	1105.6	1068.3	1019.5	996.2	1019.5	1068.3
170°	1058.4	1083.5	1105.6	1123.4	1132.3	1124.2	1095.0	1070.5	1055.1	1070.5	1095.0
172.5°	1106.2	1122.4	1131.5	1142.9	1137.2	1133.9	1119.4	1107.0	1098.9	1107.0	1119.4
175°	1136.2	1139.4	1147.7	1143.7	1148.5	1139.6	1140.4	1145.1	1111.9	1145.1	1140.4
177.5°	1146.7	1152.4	1149.3	1142.0	1142.9	1141.2	1144.5	1146.7	1141.9	1146.7	1144.5
180°	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1100.6	1100.6	1100.6	1100.6	1100.6	1100.6
2.5°	1098.4	1100.2	1099.2	1097.4	1099.8	1096.1
5°	1092.4	1093.4	1092.4	1092.4	1093.8	1090.1
7.5°	1082.6	1084.4	1083.4	1081.6	1083.6	1081.0
10°	1068.8	1069.6	1069.6	1068.6	1069.6	1069.8
12.5°	1052.8	1052.0	1052.8	1050.8	1051.6	1053.4
15°	1032.0	1032.0	1032.8	1030.8	1032.6	1034.2
17.5°	1010.0	1010.0	1010.0	1007.8	1008.6	1010.2
20°	984.1	984.1	985.0	981.8	983.4	982.2
22.5°	955.1	956.1	956.0	953.8	953.4	951.4
25°	926.1	924.1	927.0	922.6	918.4	919.4
27.5°	894.0	894.1	894.8	889.6	885.4	879.4
30°	858.0	857.1	859.6	853.4	843.4	840.4
32.5°	821.0	821.0	822.6	812.4	801.4	795.4
35°	780.1	784.1	782.6	768.6	754.6	752.6
37.5°	738.1	741.0	740.6	723.7	707.7	705.7
40°	694.2	701.1	695.9	673.7	660.7	659.7
42.5°	646.2	656.1	647.9	621.9	612.7	619.7
45°	595.2	608.1	596.9	572.9	567.9	575.9
47.5°	541.2	558.1	542.1	524.9	525.9	535.9
50°	487.4	496.2	489.1	476.9	485.9	497.9
52.5°	435.4	429.2	437.1	434.1	447.9	459.9
55°	382.6	365.4	384.2	394.1	411.1	421.1
57.5°	331.6	310.4	333.2	355.1	376.1	384.1
60°	280.6	262.4	281.4	313.2	341.2	345.2
62.5°	235.6	223.6	236.4	273.2	303.2	310.2
65°	198.6	193.6	199.4	232.4	266.4	271.4
67.5°	163.6	163.6	163.6	198.4	226.4	236.4
70°	136.6	137.6	136.6	163.6	189.6	199.6
72.5°	110.8	114.8	111.6	133.6	155.6	170.6
75°	90.8	95.8	90.8	105.8	126.6	144.6
77.5°	70.8	76.8	70.8	82.8	104.9	129.1
80°	53.8	58.8	53.8	67.2	98.2	125.9
82.5°	38.8	40.8	38.8	65.0	103.0	126.3
85°	29.6	23.8	31.2	73.8	116.3	138.4
87.5°	26.1	7.0	37.4	90.3	138.3	154.6
90°	16.6	0.8	47.4	113.5	162.1	174.2
92.5°	10.6	14.0	66.5	137.4	189.2	200.9
95°	5.2	33.4	86.3	166.3	220.6	227.5
97.5°	10.7	58.5	114.4	194.9	250.1	256.1
100°	27.7	89.3	149.3	225.4	277.9	280.7
102.5°	51.2	122.6	182.5	254.6	308.2	320.9
105°	82.8	160.6	217.4	294.3	338.5	352.8
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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**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	434.5	489.0	493.1
117.5°	291.1	376.2	396.4	462.1	523.9	524.7
120°	336.5	422.4	432.1	500.2	557.9	564.4
122.5°	382.7	466.1	466.1	532.6	587.9	591.9
125°	425.6	513.1	500.2	556.9	615.4	617.0
127.5°	469.4	560.9	537.4	588.5	642.2	639.7
130°	517.2	606.3	571.5	618.5	667.3	659.2
132.5°	560.9	654.9	606.3	650.3	692.4	697.3
135°	604.7	700.3	636.3	677.0	718.3	716.7
137.5°	646.8	742.4	672.8	697.1	735.3	740.1
140°	689.2	787.7	706.2	725.6	756.3	757.1
142.5°	731.8	833.1	740.7	753.1	779.8	775.0
145°	781.4	876.1	786.3	780.6	797.7	787.1
147.5°	824.4	913.3	817.9	800.9	821.2	807.4
150°	872.2	951.4	861.7	829.3	841.4	834.9
152.5°	915.0	981.4	908.5	850.1	864.9	856.8
155°	957.9	1013.0	954.7	873.0	882.7	879.5
157.5°	995.2	1040.6	989.5	895.7	907.0	900.6
160°	1028.6	1063.3	1031.0	929.7	923.3	923.3
162.5°	1057.0	1086.1	1059.4	975.9	940.1	925.7
165°	1082.1	1103.1	1084.5	1027.8	974.1	961.3
167.5°	1105.6	1119.4	1112.9	1069.9	1026.8	998.6
170°	1124.2	1132.3	1123.4	1105.6	1083.5	1058.4
172.5°	1133.9	1137.2	1142.9	1131.5	1122.4	1106.2
175°	1139.6	1148.5	1143.7	1147.7	1139.4	1136.2
177.5°	1141.2	1142.9	1142.0	1149.3	1152.4	1146.7
180°	1147.7	1147.7	1147.7	1147.7	1147.7	1147.7

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