

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: P392580

Luminaire Tested: **MWL-3-30-28-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392580
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-3-30-28-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

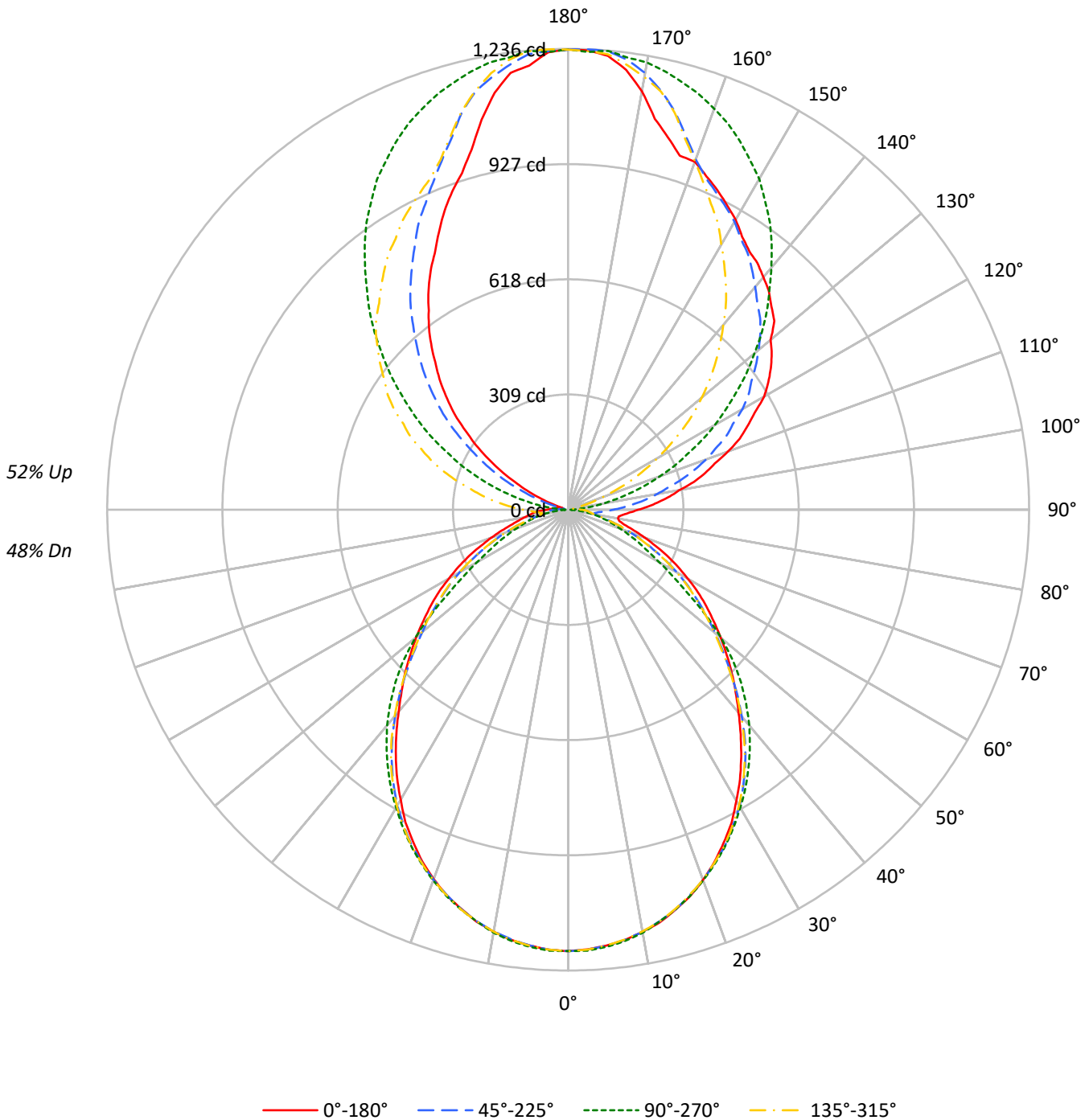
Lumens per Lamp: N/A
Luminaire Lumens: 5667.0 lumens
Efficiency: N/A
Efficacy: 100.3 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 56.5
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°	10195	10195	10195	10195
5°	10022	9356	10022	9356
10°	9809	8565	9809	8565
15°	9547	7805	9524	7805
20°	9220	7111	9196	7111
25°	8799	6454	8775	6454
30°	8299	5818	8267	5818
35°	7747	5214	7721	5214
40°	7155	4614	7119	4614
45°	6635	3989	6607	3989
50°	6139	3271	6109	3271
55°	5658	2419	5636	2419
60°	5138	1783	5127	1783
65°	4592	1348	4592	1348
70°	3967	998	3984	998
75°	3403	721	3460	721
80°	3767	477	3309	477
85°	5701	198	3532	198



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.4	2.0
10°-20°	312.7	5.5
20°-30°	456.2	8.0
30°-40°	515.4	9.1
40°-50°	481.8	8.5
50°-60°	380.1	6.7
60°-70°	248.7	4.4
70°-80°	129.8	2.3
80°-90°	77.7	1.4
90°-100°	105.0	1.9
100°-110°	192.1	3.4
110°-120°	328.1	5.8
120°-130°	445.5	7.9
130°-140°	508.2	9.0
140°-150°	506.9	8.9
150°-160°	441.5	7.8
160°-170°	310.6	5.5
170°-180°	115.7	2.0
0°-30°	880.2	15.5
0°-40°	1395.6	24.6
0°-60°	2257.5	39.8
0°-90°	2713.6	47.9
90°-120°	625.1	11.0
90°-150°	2085.8	36.8
90°-180°	2953.0	52.1
0°-180°	5667.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1184	1184	1184	1184	1184	
5°	1174	1177	1174	1177	1174	111
15°	1111	1110	1108	1110	1111	313
25°	986	996	983	996	986	453
35°	809	843	806	843	809	505
45°	620	655	618	655	620	479
55°	452	391	450	391	452	404
65°	292	208	292	208	292	290
75°	155	103	158	103	155	174
85°	149	25	92	25	149	119
90°	188	2	57	2	188	104
95°	245	36	38	36	245	212
105°	380	173	13	173	380	401
115°	530	352	122	352	530	526
125°	663	552	302	552	663	592
135°	771	753	485	753	771	595
145°	846	942	652	942	846	534
155°	946	1090	820	1090	946	436
165°	1034	1186	1000	1186	1034	293
175°	1222	1235	1196	1235	1222	114
180°	1234	1234	1234	1234	1234	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9
2.5°	1180.3	1182.0	1180.9	1182.7	1183.7	1181.9	1180.9	1182.0	1181.1	1182.0	1180.9
5°	1173.5	1175.3	1174.2	1175.2	1177.1	1175.2	1173.3	1175.3	1173.5	1175.3	1173.3
7.5°	1163.8	1165.7	1163.7	1165.6	1166.5	1164.7	1162.8	1164.7	1163.8	1164.7	1162.8
10°	1149.3	1150.3	1149.3	1150.3	1152.2	1149.3	1148.4	1148.5	1149.3	1148.5	1148.4
12.5°	1133.9	1133.0	1131.1	1132.1	1131.2	1132.1	1131.1	1131.2	1132.1	1131.2	1131.1
15°	1110.8	1111.0	1110.0	1111.9	1110.1	1111.0	1109.1	1109.1	1108.1	1109.1	1109.1
17.5°	1086.8	1086.0	1084.1	1086.1	1086.1	1086.1	1083.2	1085.0	1084.1	1085.0	1083.2
20°	1057.0	1058.1	1057.2	1059.2	1058.4	1058.4	1056.3	1056.2	1054.3	1056.2	1056.3
22.5°	1023.5	1025.4	1025.5	1029.5	1027.6	1028.6	1024.7	1023.6	1021.7	1023.6	1024.7
25°	986.1	989.0	994.8	996.8	996.0	996.0	993.0	986.3	983.4	986.3	993.0
27.5°	947.7	950.6	956.4	961.2	960.4	960.3	954.6	947.9	945.0	947.9	954.6
30°	901.6	907.4	918.9	924.7	923.0	922.9	916.2	904.7	898.1	904.7	916.2
32.5°	857.4	862.2	874.7	885.4	884.5	883.6	872.0	858.7	853.9	858.7	872.0
35°	808.6	811.5	827.8	842.2	843.3	839.5	825.1	808.8	805.9	808.8	825.1
37.5°	759.6	760.6	777.9	798.0	800.0	795.3	775.2	757.9	757.0	757.9	775.2
40°	710.7	708.8	724.1	748.1	754.9	746.4	720.6	705.2	707.1	705.2	720.6
42.5°	664.6	657.9	670.4	697.2	706.0	695.5	667.8	654.3	661.1	654.3	667.8
45°	620.5	608.9	615.7	639.7	655.1	637.9	612.2	606.3	617.9	606.3	612.2
47.5°	576.3	565.7	562.9	582.2	599.4	581.3	559.4	563.2	573.7	563.2	559.4
50°	534.1	522.6	513.9	525.5	535.2	523.8	510.5	519.1	531.5	519.1	510.5
52.5°	491.8	481.3	467.0	468.9	465.2	467.2	464.4	477.8	489.2	477.8	464.4
55°	451.6	442.0	422.8	413.3	391.3	411.6	420.2	439.4	449.9	439.4	420.2
57.5°	413.2	404.6	380.6	356.7	332.8	355.0	378.0	402.0	411.5	402.0	378.0
60°	370.1	365.3	337.5	301.1	282.9	300.2	335.8	363.6	369.3	363.6	335.8
62.5°	331.7	326.0	294.3	254.1	239.8	253.2	292.6	324.2	330.9	324.2	292.6
65°	292.5	283.8	251.2	211.8	208.1	211.0	250.3	283.0	292.5	283.0	250.3
67.5°	253.1	244.5	213.8	178.3	175.5	178.3	212.9	243.6	253.1	243.6	212.9
70°	217.7	204.3	177.4	146.7	148.6	146.7	177.4	205.1	218.6	205.1	177.4
72.5°	185.1	165.9	145.7	120.8	124.7	119.9	145.7	166.7	186.8	166.7	145.7
75°	155.3	134.2	113.2	96.9	102.6	96.9	114.0	135.1	157.9	135.1	114.0
77.5°	140.2	112.7	88.2	76.7	84.4	76.7	89.1	110.1	136.7	110.1	89.1
80°	135.8	105.8	71.6	58.5	64.2	58.5	69.9	91.8	119.3	91.8	69.9
82.5°	136.6	110.5	70.6	41.2	44.1	41.2	60.1	79.1	103.5	79.1	60.1
85°	149.3	125.2	80.1	34.2	24.9	32.4	54.9	72.0	92.5	72.0	54.9
87.5°	166.2	148.8	97.7	39.6	6.7	27.4	48.1	65.1	76.4	65.1	48.1
90°	187.7	174.2	121.4	51.2	1.8	18.0	35.1	51.3	57.0	51.3	35.1
92.5°	217.4	203.1	147.9	71.5	14.9	11.3	28.5	41.9	46.6	41.9	28.5
95°	244.7	237.6	178.7	93.5	35.8	6.3	21.8	35.3	38.1	35.3	21.8
97.5°	275.4	269.1	210.3	123.0	62.9	11.4	17.7	29.4	31.3	29.4	17.7
100°	302.6	298.9	241.9	160.5	96.0	29.8	10.9	25.2	28.1	25.2	10.9
102.5°	345.6	331.3	273.8	196.2	131.7	55.0	14.0	17.6	21.4	17.6	14.0
105°	379.7	363.7	316.5	233.6	172.7	89.0	34.9	13.3	12.9	13.3	34.9
107.5°	412.4	403.7	354.8	272.0	216.3	128.2	64.6	34.2	22.0	34.2	64.6
110°	455.9	445.5	392.3	310.3	261.6	170.0	98.6	62.0	48.1	62.0	98.6



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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°	497.8	490.0	427.1	350.4	308.6	215.4	140.4	96.9	83.8	96.9	140.4
115°	530.0	525.7	468.2	387.9	352.2	266.7	187.6	137.8	122.2	137.8	187.6
117.5°	564.0	563.2	497.8	426.3	404.5	312.9	230.3	178.8	162.3	178.8	230.3
120°	606.7	599.8	538.8	464.6	454.1	361.8	277.3	225.9	209.3	225.9	277.3
122.5°	636.4	632.1	573.6	501.2	501.2	411.4	322.6	271.3	253.8	271.3	322.6
125°	663.4	661.6	599.8	537.8	551.7	457.7	373.2	320.9	301.7	320.9	373.2
127.5°	687.8	690.4	633.8	577.9	603.2	504.7	422.8	365.3	345.3	365.3	422.8
130°	708.8	717.4	666.1	614.5	651.9	556.1	467.3	409.8	396.7	409.8	467.3
132.5°	749.7	744.5	699.2	651.9	704.3	603.2	514.4	454.2	439.4	454.2	514.4
135°	770.6	772.3	727.9	685.2	753.1	651.2	558.8	499.5	484.7	499.5	558.8
137.5°	795.8	790.6	750.5	724.4	798.4	696.5	602.4	547.5	524.0	547.5	602.4
140°	814.2	813.3	780.2	759.3	847.2	740.9	646.9	591.1	569.3	591.1	646.9
142.5°	833.4	838.5	809.8	797.7	896.0	788.1	694.8	633.8	612.9	633.8	694.8
145°	846.4	857.7	839.4	845.5	942.2	840.4	736.6	674.7	652.0	674.7	736.6
147.5°	868.2	883.0	861.2	879.5	982.3	886.5	778.5	717.4	697.3	717.4	778.5
150°	897.9	904.8	891.7	926.6	1024.2	937.9	821.2	758.4	738.3	758.4	821.2
152.5°	921.4	930.1	915.2	978.0	1056.4	985.0	868.2	798.5	775.0	798.5	868.2
155°	945.8	949.2	938.8	1027.7	1090.4	1031.2	905.6	843.0	820.3	843.0	905.6
157.5°	968.4	975.4	963.2	1065.2	1120.1	1071.3	948.3	887.4	867.3	887.4	948.3
160°	992.8	992.8	999.8	1108.7	1144.5	1106.2	993.8	936.2	908.3	936.2	993.8
162.5°	995.5	1012.0	1049.5	1139.3	1168.0	1136.7	1042.5	971.0	946.6	971.0	1042.5
165°	1033.8	1048.7	1105.3	1166.2	1186.3	1163.6	1102.6	1028.6	999.8	1028.6	1102.6
167.5°	1073.9	1105.3	1150.6	1196.8	1203.8	1188.9	1148.9	1097.4	1071.3	1097.4	1148.9
170°	1139.3	1166.2	1188.9	1208.1	1217.7	1209.0	1177.6	1152.3	1135.7	1152.3	1177.6
172.5°	1189.8	1208.1	1216.8	1229.0	1222.9	1219.4	1203.8	1191.6	1181.9	1191.6	1203.8
175°	1221.9	1226.4	1234.2	1229.9	1235.2	1225.6	1226.4	1232.5	1195.8	1232.5	1226.4
177.5°	1233.2	1240.3	1236.0	1228.2	1229.0	1227.3	1230.7	1234.2	1228.1	1234.2	1230.7
180°	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1183.9	1183.9	1183.9	1183.9	1183.9	1183.9
2.5°	1181.9	1183.7	1182.7	1180.9	1182.0	1180.3
5°	1175.2	1177.1	1175.2	1174.2	1175.3	1173.5
7.5°	1164.7	1166.5	1165.6	1163.7	1165.7	1163.8
10°	1149.3	1152.2	1150.3	1149.3	1150.3	1149.3
12.5°	1132.1	1131.2	1132.1	1131.1	1133.0	1133.9
15°	1111.0	1110.1	1111.9	1110.0	1111.0	1110.8
17.5°	1086.1	1086.1	1086.1	1084.1	1086.0	1086.8
20°	1058.4	1058.4	1059.2	1057.2	1058.1	1057.0
22.5°	1028.6	1027.6	1029.5	1025.5	1025.4	1023.5
25°	996.0	996.0	996.8	994.8	989.0	986.1
27.5°	960.3	960.4	961.2	956.4	950.6	947.7
30°	922.9	923.0	924.7	918.9	907.4	901.6
32.5°	883.6	884.5	885.4	874.7	862.2	857.4
35°	839.5	843.3	842.2	827.8	811.5	808.6
37.5°	795.3	800.0	798.0	777.9	760.6	759.6
40°	746.4	754.9	748.1	724.1	708.8	710.7
42.5°	695.5	706.0	697.2	670.4	657.9	664.6
45°	637.9	655.1	639.7	615.7	608.9	620.5
47.5°	581.3	599.4	582.2	562.9	565.7	576.3
50°	523.8	535.2	525.5	513.9	522.6	534.1
52.5°	467.2	465.2	468.9	467.0	481.3	491.8
55°	411.6	391.3	413.3	422.8	442.0	451.6
57.5°	355.0	332.8	356.7	380.6	404.6	413.2
60°	300.2	282.9	301.1	337.5	365.3	370.1
62.5°	253.2	239.8	254.1	294.3	326.0	331.7
65°	211.0	208.1	211.8	251.2	283.8	292.5
67.5°	178.3	175.5	178.3	213.8	244.5	253.1
70°	146.7	148.6	146.7	177.4	204.3	217.7
72.5°	119.9	124.7	120.8	145.7	165.9	185.1
75°	96.9	102.6	96.9	113.2	134.2	155.3
77.5°	76.7	84.4	76.7	88.2	112.7	140.2
80°	58.5	64.2	58.5	71.6	105.8	135.8
82.5°	41.2	44.1	41.2	70.6	110.5	136.6
85°	32.4	24.9	34.2	80.1	125.2	149.3
87.5°	27.4	6.7	39.6	97.7	148.8	166.2
90°	18.0	1.8	51.2	121.4	174.2	187.7
92.5°	11.3	14.9	71.5	147.9	203.1	217.4
95°	6.3	35.8	93.5	178.7	237.6	244.7
97.5°	11.4	62.9	123.0	210.3	269.1	275.4
100°	29.8	96.0	160.5	241.9	298.9	302.6
102.5°	55.0	131.7	196.2	273.8	331.3	345.6
105°	89.0	172.7	233.6	316.5	363.7	379.7
107.5°	128.2	216.3	272.0	354.8	403.7	412.4
110°	170.0	261.6	310.3	392.3	445.5	455.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	215.4	308.6	350.4	427.1	490.0	497.8
115°	266.7	352.2	387.9	468.2	525.7	530.0
117.5°	312.9	404.5	426.3	497.8	563.2	564.0
120°	361.8	454.1	464.6	538.8	599.8	606.7
122.5°	411.4	501.2	501.2	573.6	632.1	636.4
125°	457.7	551.7	537.8	599.8	661.6	663.4
127.5°	504.7	603.2	577.9	633.8	690.4	687.8
130°	556.1	651.9	614.5	666.1	717.4	708.8
132.5°	603.2	704.3	651.9	699.2	744.5	749.7
135°	651.2	753.1	685.2	727.9	772.3	770.6
137.5°	696.5	798.4	724.4	750.5	790.6	795.8
140°	740.9	847.2	759.3	780.2	813.3	814.2
142.5°	788.1	896.0	797.7	809.8	838.5	833.4
145°	840.4	942.2	845.5	839.4	857.7	846.4
147.5°	886.5	982.3	879.5	861.2	883.0	868.2
150°	937.9	1024.2	926.6	891.7	904.8	897.9
152.5°	985.0	1056.4	978.0	915.2	930.1	921.4
155°	1031.2	1090.4	1027.7	938.8	949.2	945.8
157.5°	1071.3	1120.1	1065.2	963.2	975.4	968.4
160°	1106.2	1144.5	1108.7	999.8	992.8	992.8
162.5°	1136.7	1168.0	1139.3	1049.5	1012.0	995.5
165°	1163.6	1186.3	1166.2	1105.3	1048.7	1033.8
167.5°	1188.9	1203.8	1196.8	1150.6	1105.3	1073.9
170°	1209.0	1217.7	1208.1	1188.9	1166.2	1139.3
172.5°	1219.4	1222.9	1229.0	1216.8	1208.1	1189.8
175°	1225.6	1235.2	1229.9	1234.2	1226.4	1221.9
177.5°	1227.3	1229.0	1228.2	1236.0	1240.3	1233.2
180°	1234.2	1234.2	1234.2	1234.2	1234.2	1234.2

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