

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: P392570

Luminaire Tested: **MWL-3-27-33-UNV-L840-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392570
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-3-27-33-UNV-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

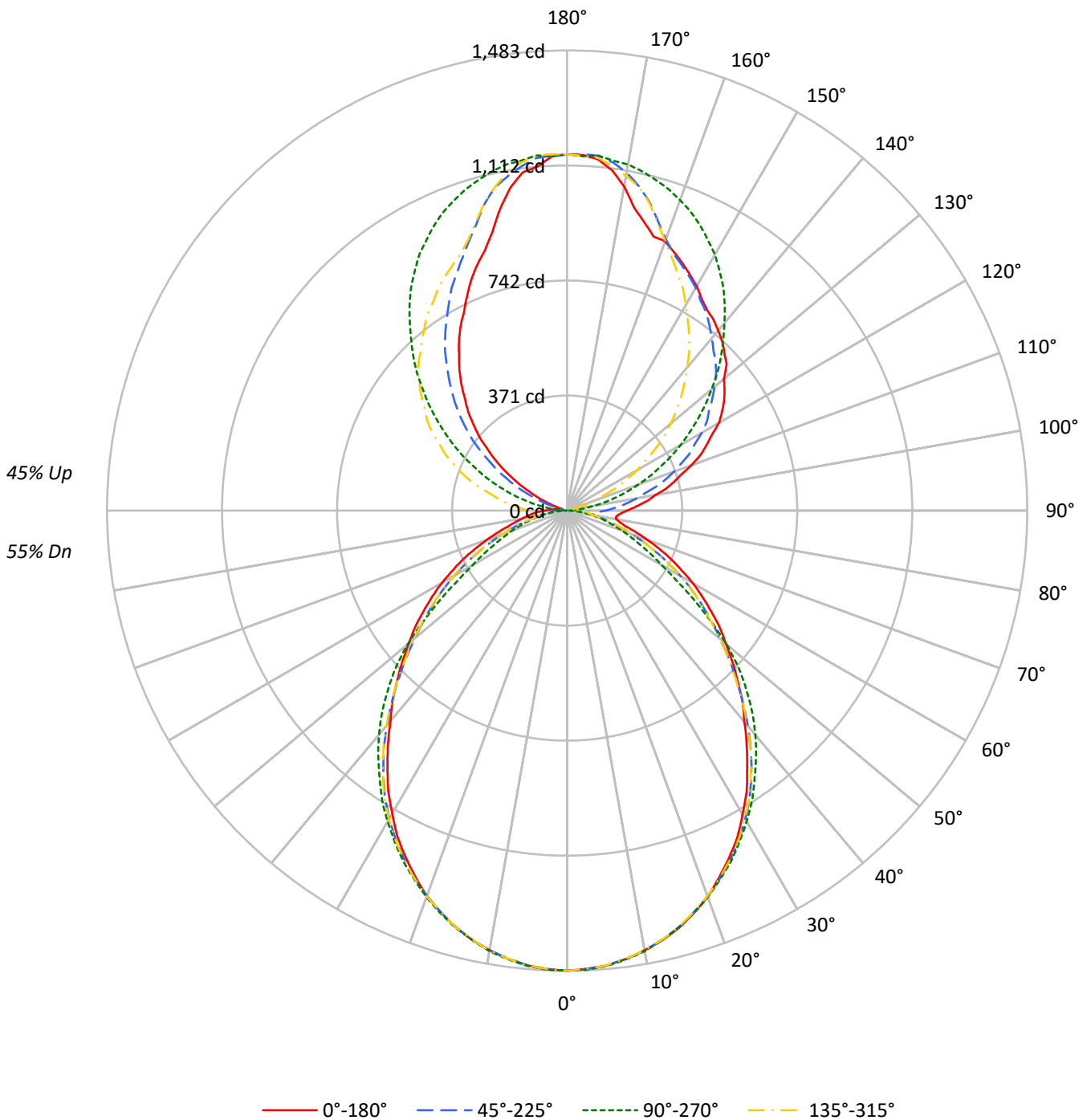
Lumens per Lamp: N/A
Luminaire Lumens: 6147.0 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 60.4
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			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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	91	83	77	72	84	78	72	68	67	63	60	57	54	52	48	46	44	40
3	83	74	66	61	77	69	62	57	59	55	51	51	47	44	43	40	38	34
4	76	65	58	52	70	61	54	49	53	48	43	46	42	38	39	36	33	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	33	35	32	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	32	28	26	23
7	60	48	40	34	56	45	38	33	39	34	29	34	30	26	29	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	23	27	23	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	21	19	17
10	48	36	29	25	45	34	28	23	30	25	21	27	22	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12768	12768	12768	12768
5°	12564	11704	12564	11704
10°	12281	10717	12281	10717
15°	11967	9781	11946	9781
20°	11552	8903	11531	8903
25°	11016	8088	10995	8088
30°	10406	7295	10376	7295
35°	9693	6512	9669	6512
40°	8947	5771	8914	5771
45°	8307	4975	8281	4975
50°	7677	4096	7648	4096
55°	7092	3063	7071	3063
60°	6486	2221	6475	2221
65°	5784	1669	5784	1669
70°	4986	1260	5000	1260
75°	4264	913	4319	913
80°	4463	586	4036	586
85°	6277	253	4269	253



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.5	2.3
10°-20°	391.5	6.4
20°-30°	571.2	9.3
30°-40°	645.6	10.5
40°-50°	603.6	9.8
50°-60°	476.5	7.8
60°-70°	311.5	5.1
70°-80°	162.2	2.6
80°-90°	89.7	1.5
90°-100°	104.3	1.7
100°-110°	180.0	2.9
110°-120°	305.4	5.0
120°-130°	414.7	6.7
130°-140°	472.8	7.7
140°-150°	471.5	7.7
150°-160°	410.6	6.7
160°-170°	288.8	4.7
170°-180°	107.6	1.7
0°-30°	1102.2	17.9
0°-40°	1747.8	28.4
0°-60°	2827.9	46.0
0°-90°	3391.3	55.2
90°-120°	589.6	9.6
90°-150°	1948.7	31.7
90°-180°	2756.0	44.8
0°-180°	6147.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1483	1483	1483	1483	1483	
5°	1471	1472	1471	1472	1471	139
15°	1392	1391	1390	1391	1392	392
25°	1234	1248	1232	1248	1234	568
35°	1012	1053	1009	1053	1012	633
45°	777	817	774	817	777	601
55°	566	495	564	495	566	508
65°	368	258	368	258	368	365
75°	195	130	197	130	195	216
85°	164	32	112	32	164	134
90°	192	2	71	2	192	106
95°	238	33	46	33	238	206
105°	356	161	15	161	356	376
115°	494	328	115	328	494	490
125°	617	514	281	514	617	551
135°	717	701	451	701	717	553
145°	787	877	606	877	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°	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7
2.5°	1478.2	1480.9	1478.5	1479.3	1481.3	1478.5	1478.5	1480.9	1479.1	1480.9	1478.5
5°	1471.2	1472.9	1471.5	1471.5	1472.5	1471.5	1470.7	1472.9	1471.2	1472.9	1470.7
7.5°	1457.1	1459.7	1456.7	1458.5	1458.5	1457.7	1455.9	1458.9	1457.1	1458.9	1455.9
10°	1438.9	1441.7	1439.7	1439.7	1441.7	1438.9	1438.9	1440.1	1438.9	1440.1	1438.9
12.5°	1418.5	1418.7	1415.9	1417.9	1417.1	1417.9	1415.9	1417.1	1416.9	1417.1	1415.9
15°	1392.3	1390.7	1389.9	1390.9	1391.1	1390.1	1389.1	1389.1	1389.9	1389.1	1389.1
17.5°	1359.3	1360.7	1356.9	1360.1	1360.1	1360.1	1356.1	1359.9	1356.9	1359.9	1356.1
20°	1324.3	1323.5	1322.9	1325.1	1325.2	1324.2	1322.1	1321.9	1321.9	1321.9	1322.1
22.5°	1279.5	1282.5	1283.9	1288.1	1287.2	1287.2	1283.1	1280.9	1277.9	1280.9	1283.1
25°	1234.5	1239.5	1242.7	1249.1	1248.2	1248.2	1241.1	1237.1	1232.1	1237.1	1241.1
27.5°	1187.5	1188.5	1197.7	1206.9	1203.2	1206.1	1196.1	1186.1	1185.1	1186.1	1196.1
30°	1130.5	1135.5	1148.5	1158.7	1157.2	1157.1	1146.1	1133.1	1127.2	1133.1	1146.1
32.5°	1076.5	1078.5	1095.5	1107.7	1109.1	1106.1	1093.1	1075.2	1073.2	1075.2	1093.1
35°	1011.7	1016.7	1034.7	1055.7	1053.2	1053.2	1032.2	1014.2	1009.2	1014.2	1032.2
37.5°	950.7	953.7	973.7	999.7	1000.1	997.2	971.2	951.2	948.2	951.2	971.2
40°	888.7	887.7	906.7	935.9	944.1	934.2	903.4	884.4	885.4	884.4	903.4
42.5°	836.7	824.7	837.9	869.9	883.1	868.2	835.4	821.4	833.4	821.4	835.4
45°	776.9	764.9	771.9	801.9	817.1	800.2	768.6	762.4	774.4	762.4	768.6
47.5°	722.9	707.9	706.9	729.1	750.1	728.2	703.6	705.4	720.4	705.4	703.6
50°	667.9	653.9	643.9	659.1	670.2	657.4	640.6	650.6	665.4	650.6	640.6
52.5°	620.9	601.9	585.1	589.1	581.2	587.4	582.6	598.6	618.4	598.6	582.6
55°	566.1	554.1	530.1	517.2	495.4	515.6	527.6	551.6	564.4	551.6	527.6
57.5°	517.1	506.1	477.1	446.2	415.4	444.6	474.6	503.6	515.4	503.6	474.6
60°	467.2	456.2	421.2	376.4	352.4	375.6	419.6	454.6	466.4	454.6	419.6
62.5°	415.2	408.2	368.2	317.4	303.6	316.6	366.6	406.6	414.4	406.6	366.6
65°	368.4	356.4	315.4	266.4	257.6	265.6	314.6	355.6	368.4	355.6	314.6
67.5°	320.4	305.4	266.4	221.6	220.6	221.6	265.6	304.6	320.4	304.6	265.6
70°	273.6	256.6	220.6	183.6	187.6	183.6	220.6	257.4	274.4	257.4	220.6
72.5°	232.6	209.6	180.6	150.6	154.8	149.8	180.6	210.4	234.2	210.4	180.6
75°	194.6	168.6	143.8	120.8	129.8	120.8	144.6	169.4	197.1	169.4	144.6
77.5°	173.1	140.9	110.8	94.8	103.8	94.8	111.6	138.4	169.9	138.4	111.6
80°	160.9	128.2	89.2	72.8	78.8	72.8	87.6	115.2	145.5	115.2	87.6
82.5°	158.3	127.0	83.0	51.8	55.8	51.8	73.2	97.9	127.5	97.9	73.2
85°	164.4	137.3	88.8	41.2	31.8	39.6	65.3	87.9	111.8	87.9	65.3
87.5°	175.6	155.3	103.3	44.4	9.0	33.1	57.1	77.5	92.2	77.5	57.1
90°	192.2	176.1	123.5	53.4	1.8	22.6	43.2	61.9	70.7	61.9	43.2
92.5°	214.9	201.2	146.4	69.5	14.0	13.6	35.4	51.2	56.1	51.2	35.4
95°	238.5	231.6	173.3	87.3	33.4	6.2	27.4	43.6	46.4	43.6	27.4
97.5°	266.1	259.1	198.9	114.4	58.5	10.7	19.9	36.2	39.2	36.2	19.9
100°	288.7	283.9	227.4	149.3	89.3	27.7	12.7	29.5	33.5	29.5	12.7
102.5°	325.9	312.2	255.6	182.5	122.6	51.2	14.2	20.5	24.5	20.5	14.2
105°	355.8	339.5	295.3	217.4	160.6	82.8	33.6	13.7	14.7	13.7	33.6
107.5°	384.7	375.6	331.0	253.0	201.2	119.3	61.2	32.0	21.6	32.0	61.2
110°	425.2	414.5	365.8	288.7	243.3	158.2	92.8	57.9	45.9	57.9	92.8



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CATALOG NUMBER: MWL-3-27-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	464.1	455.8	398.3	325.9	287.0	200.3	131.7	90.3	79.2	90.3	131.7
115°	494.1	489.0	435.5	360.8	327.6	248.2	174.6	128.4	114.8	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	467.1	467.1	383.7	300.2	252.4	236.2	252.4	300.2
125°	617.0	615.4	557.9	501.2	514.1	426.6	347.2	298.6	280.8	298.6	347.2
127.5°	639.7	642.2	589.5	538.4	561.9	470.4	393.4	339.9	321.3	339.9	393.4
130°	659.2	667.3	619.5	572.5	607.3	518.2	434.7	381.2	369.1	381.2	434.7
132.5°	697.3	692.4	650.3	607.3	655.9	561.9	478.5	422.6	408.8	422.6	478.5
135°	716.7	718.3	677.0	637.3	701.3	605.7	519.8	464.7	450.9	464.7	519.8
137.5°	740.2	735.4	698.1	673.8	743.5	647.8	560.3	509.3	487.4	509.3	560.3
140°	757.2	756.4	725.6	706.2	788.8	689.2	601.7	549.8	529.5	549.8	601.7
142.5°	775.1	779.9	753.2	741.8	834.2	732.9	646.2	589.5	570.0	589.5	646.2
145°	787.2	797.8	780.7	786.4	877.2	781.5	685.1	627.6	606.5	627.6	685.1
147.5°	807.5	821.3	801.0	818.0	914.4	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-3-27-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1482.7	1482.7	1482.7	1482.7	1482.7	1482.7
2.5°	1478.5	1481.3	1479.3	1478.5	1480.9	1478.2
5°	1471.5	1472.5	1471.5	1471.5	1472.9	1471.2
7.5°	1457.7	1458.5	1458.5	1456.7	1459.7	1457.1
10°	1438.9	1441.7	1439.7	1439.7	1441.7	1438.9
12.5°	1417.9	1417.1	1417.9	1415.9	1418.7	1418.5
15°	1390.1	1391.1	1390.9	1389.9	1390.7	1392.3
17.5°	1360.1	1360.1	1360.1	1356.9	1360.7	1359.3
20°	1324.2	1325.2	1325.1	1322.9	1323.5	1324.3
22.5°	1287.2	1287.2	1288.1	1283.9	1282.5	1279.5
25°	1248.2	1248.2	1249.1	1242.7	1239.5	1234.5
27.5°	1206.1	1203.2	1206.9	1197.7	1188.5	1187.5
30°	1157.1	1157.2	1158.7	1148.5	1135.5	1130.5
32.5°	1106.1	1109.1	1107.7	1095.5	1078.5	1076.5
35°	1053.2	1053.2	1055.7	1034.7	1016.7	1011.7
37.5°	997.2	1000.1	999.7	973.7	953.7	950.7
40°	934.2	944.1	935.9	906.7	887.7	888.7
42.5°	868.2	883.1	869.9	837.9	824.7	836.7
45°	800.2	817.1	801.9	771.9	764.9	776.9
47.5°	728.2	750.1	729.1	706.9	707.9	722.9
50°	657.4	670.2	659.1	643.9	653.9	667.9
52.5°	587.4	581.2	589.1	585.1	601.9	620.9
55°	515.6	495.4	517.2	530.1	554.1	566.1
57.5°	444.6	415.4	446.2	477.1	506.1	517.1
60°	375.6	352.4	376.4	421.2	456.2	467.2
62.5°	316.6	303.6	317.4	368.2	408.2	415.2
65°	265.6	257.6	266.4	315.4	356.4	368.4
67.5°	221.6	220.6	221.6	266.4	305.4	320.4
70°	183.6	187.6	183.6	220.6	256.6	273.6
72.5°	149.8	154.8	150.6	180.6	209.6	232.6
75°	120.8	129.8	120.8	143.8	168.6	194.6
77.5°	94.8	103.8	94.8	110.8	140.9	173.1
80°	72.8	78.8	72.8	89.2	128.2	160.9
82.5°	51.8	55.8	51.8	83.0	127.0	158.3
85°	39.6	31.8	41.2	88.8	137.3	164.4
87.5°	33.1	9.0	44.4	103.3	155.3	175.6
90°	22.6	1.8	53.4	123.5	176.1	192.2
92.5°	13.6	14.0	69.5	146.4	201.2	214.9
95°	6.2	33.4	87.3	173.3	231.6	238.5
97.5°	10.7	58.5	114.4	198.9	259.1	266.1
100°	27.7	89.3	149.3	227.4	283.9	288.7
102.5°	51.2	122.6	182.5	255.6	312.2	325.9
105°	82.8	160.6	217.4	295.3	339.5	355.8
107.5°	119.3	201.2	253.0	331.0	375.6	384.7
110°	158.2	243.3	288.7	365.8	414.5	425.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	200.3	287.0	325.9	398.3	455.8	464.1
115°	248.2	327.6	360.8	435.5	489.0	494.1
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°	383.7	467.1	467.1	533.6	587.9	591.9
125°	426.6	514.1	501.2	557.9	615.4	617.0
127.5°	470.4	561.9	538.4	589.5	642.2	639.7
130°	518.2	607.3	572.5	619.5	667.3	659.2
132.5°	561.9	655.9	607.3	650.3	692.4	697.3
135°	605.7	701.3	637.3	677.0	718.3	716.7
137.5°	647.8	743.5	673.8	698.1	735.4	740.2
140°	689.2	788.8	706.2	725.6	756.4	757.2
142.5°	732.9	834.2	741.8	753.2	779.9	775.1
145°	781.5	877.2	786.4	780.7	797.8	787.2
147.5°	824.5	914.4	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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