

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: METALUX

Report Number: P192504

Luminaire Tested: **4WSL-LD2-50-UPL15-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192504
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28105)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WSL-LD2-50-UPL15-UNV-L850-CD1-U
Description: 4FT Linear Wavestream System, 15% Uplight, L850
Light Source: (238) 5000K CCT, 80 CRI LEDS
EL236N0119D850
Ballast/Driver: OSRAM
OT50W

Summary

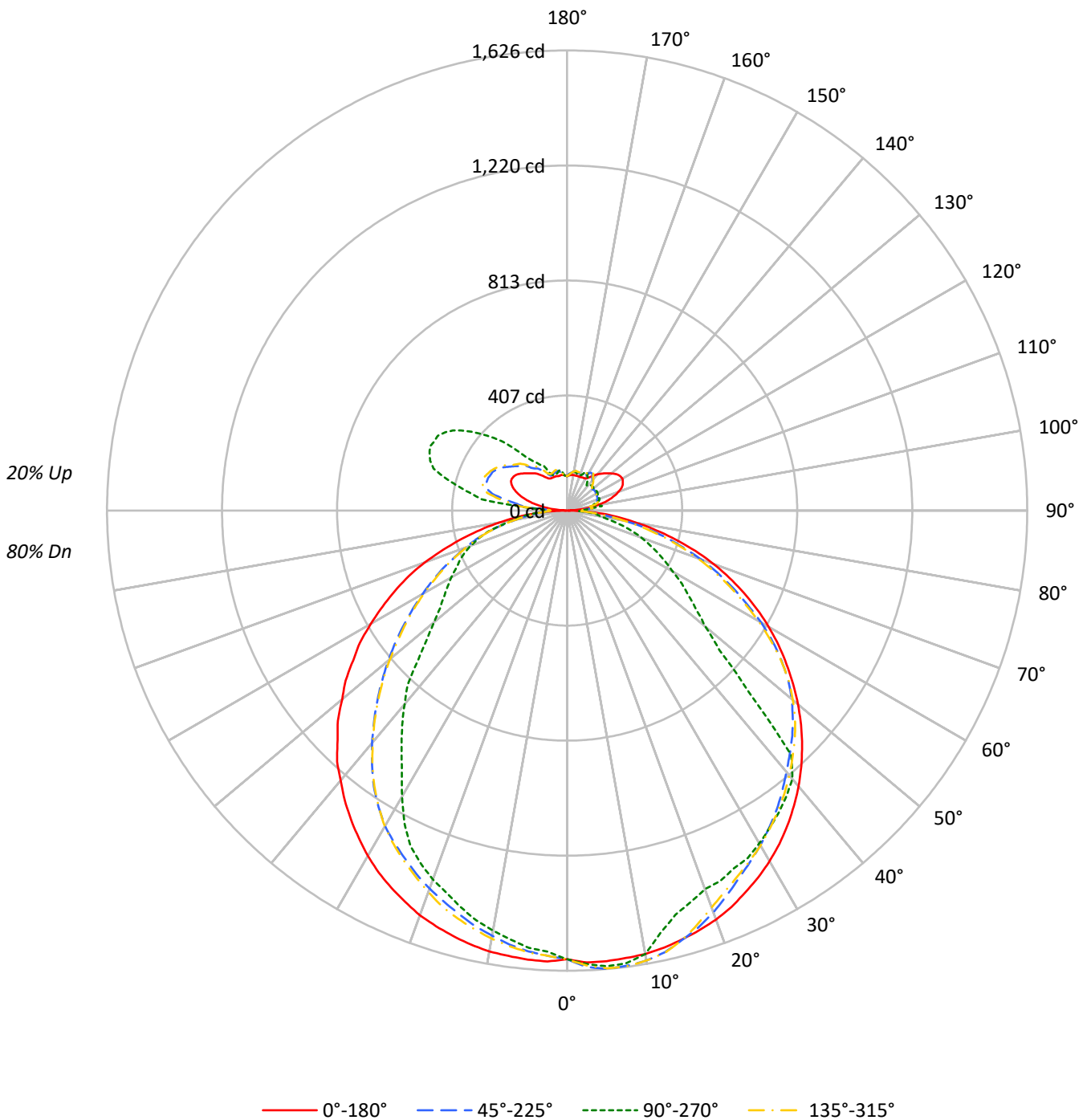
Lumens per Lamp: N/A
Luminaire Lumens: 5611.0 lumens
Efficiency: N/A
Efficacy: 125.2 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 44.8
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





TEST NUMBER: P192504

CATALOG NUMBER: 4WSL-LD2-50-UPL15-UNV-L850-CD1-U

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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80
1	104	99	95	91	99	95	91	88	87	84	81	80	77	75	73	71	70	66
2	94	86	80	74	90	83	77	72	76	71	67	70	66	62	64	61	58	55
3	86	76	68	62	82	73	66	60	67	61	56	61	57	53	56	53	49	46
4	79	67	59	52	75	64	57	51	59	53	48	55	49	45	50	46	42	40
5	72	60	51	45	69	58	50	44	53	46	41	49	43	39	45	41	37	34
6	67	54	45	39	64	52	44	38	48	41	36	44	39	34	41	36	32	30
7	62	49	40	34	59	47	39	33	44	37	32	40	35	30	38	33	29	26
8	58	44	36	30	55	43	35	30	40	33	28	37	31	27	34	29	26	24
9	54	41	33	27	51	39	32	27	37	30	26	34	28	24	32	27	23	21
10	50	37	30	25	48	36	29	24	34	27	23	32	26	22	30	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	8982	8982	8982	8982
5°	9089	9192	9057	8820
10°	9152	9152	9099	8670
15°	9203	8669	9128	8509
20°	9273	8582	9174	8362
25°	9308	8716	9194	8181
30°	9359	8883	9217	7633
35°	9391	9014	9215	7050
40°	9410	9154	9208	6610
45°	9407	7277	9188	5950
50°	9386	5615	9145	5406
55°	9349	5178	9115	5250
60°	9323	4888	9075	5363
65°	9248	4733	9004	5613
70°	9105	4613	8865	5999
75°	8685	4382	8407	6374
80°	8137	3980	7898	6355
85°	8164	5207	7573	7573



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.9	2.7
10°-20°	428.2	7.6
20°-30°	647.1	11.5
30°-40°	778.7	13.9
40°-50°	792.0	14.1
50°-60°	689.3	12.3
60°-70°	537.7	9.6
70°-80°	332.4	5.9
80°-90°	117.0	2.1
90°-100°	110.1	2.0
100°-110°	213.2	3.8
110°-120°	233.3	4.2
120°-130°	204.5	3.6
130°-140°	153.2	2.7
140°-150°	104.9	1.9
150°-160°	66.8	1.2
160°-170°	39.1	0.7
170°-180°	12.6	0.2
0°-30°	1226.1	21.9
0°-40°	2004.9	35.7
0°-60°	3486.2	62.1
0°-90°	4473.3	79.7
90°-120°	556.6	9.9
90°-150°	1019.3	18.2
90°-180°	1138.0	20.3
0°-180°	5611.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1586	1586	1586	1586	1586	
5°	1598	1616	1593	1551	1598	152
15°	1569	1478	1556	1451	1569	444
25°	1489	1394	1471	1309	1489	687
35°	1358	1303	1332	1019	1358	850
45°	1174	908	1147	743	1174	906
55°	946	524	923	532	946	847
65°	690	353	672	419	690	682
75°	397	200	384	291	397	420
85°	126	80	116	116	126	125
90°	2	51	2	80	2	9
95°	49	84	38	168	49	51
105°	156	104	151	446	156	163
115°	217	118	217	535	217	212
125°	220	124	220	493	220	196
135°	186	124	186	360	186	144
145°	146	124	149	215	146	93
155°	129	149	127	147	129	60
165°	127	135	126	136	127	36
175°	126	131	126	127	126	12
180°	122	122	122	122	122	



TEST NUMBER: P192504

CATALOG NUMBER: 4WSL-LD2-50-UPL15-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5
2.5°	1598.2	1590.9	1614.6	1616.4	1603.7	1609.1	1609.1	1589.1	1594.6	1570.9	1574.5
5°	1598.2	1600.0	1625.5	1623.7	1616.4	1618.2	1623.7	1598.2	1592.7	1560.0	1563.6
7.5°	1594.6	1603.7	1621.9	1620.0	1612.8	1614.6	1623.7	1601.8	1587.3	1549.0	1547.2
10°	1590.9	1600.0	1614.6	1605.5	1590.9	1596.4	1614.6	1600.0	1581.8	1536.3	1525.4
12.5°	1581.8	1590.9	1598.2	1552.7	1527.2	1549.0	1600.0	1590.9	1570.9	1518.1	1503.5
15°	1569.1	1580.0	1570.9	1507.2	1478.1	1498.1	1570.9	1578.2	1556.3	1494.4	1476.2
17.5°	1554.5	1567.3	1543.6	1472.6	1450.8	1459.9	1532.7	1561.8	1539.9	1470.8	1448.9
20°	1538.1	1552.7	1510.8	1436.2	1423.5	1430.7	1492.6	1543.6	1521.7	1445.3	1421.6
22.5°	1516.3	1532.7	1472.6	1410.7	1416.2	1410.7	1456.2	1519.9	1496.3	1418.0	1390.7
25°	1489.0	1507.2	1434.4	1388.9	1394.3	1392.5	1425.3	1489.0	1470.8	1385.2	1356.1
27.5°	1461.7	1479.9	1399.8	1374.3	1383.4	1372.5	1396.1	1456.2	1441.7	1350.6	1323.3
30°	1430.7	1450.8	1365.2	1348.8	1357.9	1350.6	1367.0	1423.5	1408.9	1314.2	1286.9
32.5°	1396.1	1416.2	1328.8	1317.9	1330.6	1321.5	1332.4	1387.0	1370.7	1274.2	1241.4
35°	1357.9	1377.9	1290.6	1290.6	1303.3	1292.4	1297.9	1350.6	1332.4	1234.1	1190.5
37.5°	1316.1	1337.9	1248.7	1257.8	1272.4	1261.4	1261.4	1312.4	1290.6	1190.5	1132.2
40°	1272.4	1296.0	1205.0	1225.0	1237.8	1225.0	1221.4	1272.4	1245.1	1146.8	1072.1
42.5°	1225.0	1250.5	1165.0	1188.6	1172.3	1188.6	1179.5	1230.5	1203.2	1099.4	1010.2
45°	1174.1	1206.8	1124.9	1110.4	908.3	1099.4	1137.7	1186.8	1146.8	1053.9	948.4
47.5°	1121.3	1155.9	1081.2	975.7	729.9	964.7	1092.2	1139.5	1099.4	1004.8	886.5
50°	1064.9	1104.9	1035.7	859.2	637.1	848.2	1041.2	1090.3	1037.6	952.0	824.6
52.5°	1006.6	1050.3	984.8	759.1	575.2	748.1	986.6	1037.6	986.6	895.6	764.5
55°	946.5	992.0	924.7	666.2	524.2	664.4	922.9	981.1	922.9	839.1	704.4
57.5°	886.5	937.4	861.0	598.9	480.6	589.8	851.9	922.9	868.3	780.9	646.2
60°	822.8	870.1	791.8	526.1	431.4	524.2	780.9	862.8	800.9	720.8	589.8
62.5°	757.2	810.0	717.2	462.3	391.4	460.5	704.4	795.5	735.4	658.9	535.2
65°	689.9	740.8	646.2	411.4	353.1	407.7	633.5	726.3	671.7	597.0	484.2
67.5°	620.7	668.0	575.2	362.2	314.9	358.6	560.6	653.5	606.1	533.3	429.6
70°	549.7	593.4	502.4	314.9	278.5	313.1	489.7	578.8	535.2	467.8	380.4
72.5°	475.1	515.1	425.9	269.4	240.3	267.6	415.0	502.4	456.9	398.6	336.7
75°	396.8	435.0	355.0	223.9	200.2	222.1	344.0	420.5	384.1	334.9	285.8
77.5°	322.2	360.4	282.1	172.9	152.9	169.3	269.4	344.0	313.1	271.2	233.0
80°	249.4	280.3	207.5	129.2	122.0	129.2	202.0	263.9	242.1	213.0	182.0
82.5°	183.8	202.0	140.2	105.6	105.6	105.6	136.5	187.5	178.4	158.4	138.3
85°	125.6	125.6	94.7	80.1	80.1	80.1	92.8	111.0	116.5	105.6	105.6
87.5°	52.8	54.6	49.1	43.7	41.9	43.7	47.3	45.5	45.5	51.0	63.7
90°	1.8	23.7	40.0	49.1	51.0	47.3	36.4	21.8	1.8	30.9	56.4
92.5°	12.7	51.0	47.3	61.9	63.7	58.2	49.1	40.0	7.3	56.4	60.1
95°	49.1	60.1	92.8	94.7	83.7	80.1	91.0	56.4	38.2	76.5	152.9
97.5°	78.3	91.0	83.7	109.2	123.8	109.2	87.4	87.4	72.8	118.3	178.4
100°	107.4	96.5	85.6	94.7	109.2	96.5	81.9	96.5	101.9	138.3	218.4
102.5°	134.7	107.4	107.4	92.8	94.7	91.0	103.8	105.6	127.4	156.5	269.4
105°	156.5	111.0	112.9	105.6	103.8	105.6	112.9	112.9	151.1	172.9	293.1
107.5°	176.6	114.7	111.0	116.5	118.3	116.5	111.0	114.7	172.9	183.8	298.5
110°	192.9	116.5	112.9	116.5	122.0	116.5	112.9	118.3	191.1	194.8	302.2



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CATALOG NUMBER: 4WSL-LD2-50-UPL15-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	207.5	118.3	116.5	114.7	120.1	114.7	116.5	122.0	205.7	200.2	302.2
115°	216.6	120.1	116.5	116.5	118.3	116.5	118.3	123.8	216.6	202.0	298.5
117.5°	222.1	123.8	118.3	120.1	122.0	120.1	118.3	127.4	223.9	209.3	296.7
120°	225.7	136.5	118.3	122.0	123.8	122.0	118.3	138.3	225.7	213.0	289.4
122.5°	223.9	142.0	120.1	122.0	125.6	122.0	120.1	143.8	223.9	211.2	280.3
125°	220.3	147.4	120.1	120.1	123.8	122.0	122.0	147.4	220.3	207.5	267.6
127.5°	213.0	160.2	120.1	122.0	122.0	122.0	122.0	158.4	213.0	209.3	254.8
130°	203.9	169.3	116.5	123.8	122.0	125.6	120.1	169.3	203.9	203.9	243.9
132.5°	194.8	172.9	116.5	123.8	123.8	125.6	118.3	172.9	194.8	196.6	233.0
135°	185.7	176.6	123.8	122.0	123.8	123.8	125.6	176.6	185.7	189.3	225.7
137.5°	176.6	178.4	132.9	116.5	122.0	118.3	136.5	178.4	178.4	178.4	214.8
140°	167.5	176.6	140.2	112.9	114.7	116.5	143.8	178.4	171.1	172.9	196.6
142.5°	156.5	171.1	145.6	122.0	112.9	125.6	149.3	176.6	160.2	167.5	187.5
145°	145.6	165.6	156.5	134.7	123.8	140.2	162.0	171.1	149.3	163.8	182.0
147.5°	136.5	156.5	158.4	142.0	136.5	147.4	163.8	163.8	138.3	156.5	169.3
150°	131.1	147.4	152.9	147.4	142.0	154.7	160.2	151.1	131.1	151.1	158.4
152.5°	129.2	140.2	140.2	154.7	152.9	162.0	147.4	143.8	127.4	145.6	143.8
155°	129.2	138.3	134.7	142.0	149.3	149.3	140.2	140.2	127.4	145.6	136.5
157.5°	127.4	140.2	134.7	132.9	136.5	140.2	140.2	142.0	127.4	142.0	136.5
160°	127.4	142.0	136.5	131.1	132.9	138.3	142.0	142.0	127.4	142.0	138.3
162.5°	127.4	138.3	138.3	132.9	132.9	140.2	142.0	140.2	127.4	138.3	142.0
165°	127.4	138.3	140.2	136.5	134.7	143.8	142.0	136.5	125.6	136.5	143.8
167.5°	127.4	134.7	142.0	138.3	138.3	143.8	143.8	134.7	125.6	131.1	143.8
170°	127.4	132.9	140.2	138.3	140.2	145.6	140.2	132.9	127.4	129.2	138.3
172.5°	127.4	129.2	136.5	138.3	138.3	142.0	136.5	129.2	127.4	125.6	132.9
175°	125.6	129.2	132.9	132.9	131.1	136.5	131.1	127.4	125.6	123.8	127.4
177.5°	123.8	125.6	129.2	129.2	125.6	129.2	125.6	123.8	123.8	122.0	125.6
180°	122.0	122.0	122.0	122.0	122.0	122.0	122.0	122.0	122.0	122.0	122.0



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CATALOG NUMBER: 4WSL-LD2-50-UPL15-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1585.5	1585.5	1585.5	1585.5	1585.5	1585.5
2.5°	1572.7	1560.0	1563.6	1574.5	1572.7	1598.2
5°	1556.3	1550.9	1550.9	1567.3	1565.4	1598.2
7.5°	1538.1	1529.0	1534.5	1552.7	1558.1	1594.6
10°	1514.5	1507.2	1509.0	1536.3	1545.4	1590.9
12.5°	1490.8	1483.5	1489.0	1514.5	1527.2	1581.8
15°	1463.5	1450.8	1465.3	1492.6	1509.0	1569.1
17.5°	1430.7	1416.2	1430.7	1467.1	1487.2	1554.5
20°	1401.6	1387.0	1396.1	1434.4	1461.7	1538.1
22.5°	1368.8	1350.6	1357.9	1399.8	1434.4	1516.3
25°	1332.4	1308.8	1319.7	1365.2	1403.4	1489.0
27.5°	1285.1	1245.1	1272.4	1328.8	1365.2	1461.7
30°	1219.6	1166.8	1210.5	1288.8	1330.6	1430.7
32.5°	1143.1	1086.7	1134.0	1239.6	1290.6	1396.1
35°	1068.5	1019.4	1063.0	1188.6	1250.5	1357.9
37.5°	1003.0	957.5	997.5	1130.4	1206.8	1316.1
40°	935.6	893.8	933.8	1068.5	1163.2	1272.4
42.5°	873.7	833.7	871.9	1006.6	1115.8	1225.0
45°	808.2	742.7	804.6	942.9	1064.9	1174.1
47.5°	739.0	669.9	733.6	881.0	1013.9	1121.3
50°	675.3	613.4	671.7	817.3	959.3	1064.9
52.5°	618.9	566.1	617.1	753.6	902.9	1006.6
55°	566.1	531.5	567.9	695.3	850.1	946.5
57.5°	524.2	500.6	526.1	638.9	791.8	886.5
60°	487.8	473.3	489.7	582.5	729.9	822.8
62.5°	447.8	442.3	447.8	527.9	669.9	757.2
65°	413.2	418.7	413.2	478.7	606.1	689.9
67.5°	380.4	393.2	382.3	425.9	542.4	620.7
70°	344.0	362.2	345.9	378.6	476.9	549.7
72.5°	305.8	327.6	305.8	333.1	407.7	475.1
75°	265.8	291.2	267.6	284.0	342.2	396.8
77.5°	222.1	238.5	225.7	231.2	278.5	322.2
80°	176.6	194.8	178.4	182.0	220.3	249.4
82.5°	147.4	160.2	149.3	138.3	163.8	183.8
85°	109.2	116.5	112.9	107.4	112.9	125.6
87.5°	67.3	71.0	67.3	67.3	58.2	52.8
90°	74.6	80.1	74.6	58.2	32.8	1.8
92.5°	76.5	83.7	76.5	63.7	61.9	12.7
95°	171.1	167.5	182.0	165.6	94.7	49.1
97.5°	265.8	304.0	274.9	198.4	127.4	78.3
100°	305.8	342.2	318.5	247.6	145.6	107.4
102.5°	353.1	393.2	367.7	289.4	163.8	134.7
105°	411.4	446.0	424.1	305.8	180.2	156.5
107.5°	442.3	495.1	451.4	313.1	191.1	176.6
110°	458.7	515.1	473.3	314.9	200.2	192.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	471.4	526.1	482.4	314.9	203.9	207.5
115°	471.4	535.2	482.4	309.4	209.3	216.6
117.5°	471.4	529.7	482.4	304.0	216.6	222.1
120°	455.1	527.9	469.6	296.7	218.4	225.7
122.5°	442.3	513.3	451.4	287.6	218.4	223.9
125°	418.7	493.3	429.6	276.7	214.8	220.3
127.5°	393.2	464.2	402.3	263.9	216.6	213.0
130°	369.5	431.4	375.0	251.2	209.3	203.9
132.5°	338.6	395.0	344.0	242.1	202.0	194.8
135°	309.4	360.4	316.7	234.8	192.9	185.7
137.5°	278.5	324.0	285.8	220.3	183.8	176.6
140°	242.1	278.5	249.4	203.9	178.4	167.5
142.5°	218.4	238.5	225.7	196.6	171.1	156.5
145°	203.9	214.8	209.3	189.3	167.5	145.6
147.5°	189.3	200.2	194.8	174.7	158.4	136.5
150°	183.8	183.8	191.1	162.0	152.9	131.1
152.5°	163.8	178.4	171.1	147.4	149.3	129.2
155°	140.2	147.4	147.4	142.0	149.3	129.2
157.5°	131.1	136.5	138.3	142.0	145.6	127.4
160°	131.1	132.9	138.3	143.8	143.8	127.4
162.5°	134.7	132.9	142.0	147.4	140.2	127.4
165°	138.3	136.5	145.6	149.3	136.5	127.4
167.5°	142.0	142.0	149.3	147.4	132.9	127.4
170°	142.0	145.6	149.3	142.0	131.1	127.4
172.5°	136.5	138.3	142.0	132.9	125.6	127.4
175°	129.2	127.4	132.9	127.4	125.6	125.6
177.5°	125.6	120.1	125.6	123.8	122.0	123.8
180°	122.0	122.0	122.0	122.0	122.0	122.0

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