

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: P197459

Luminaire Tested: **8WSL-LD2-60-UPL15-UNV-L840-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P197459
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: 8WSL-LD2-60-UPL15-UNV-L840-CD1-U
Description: 8FT. Linear Wavestream System, 15% Uplight, L840
Light Source: (476) 4000K CCT, 80 CRI LEDS
EL236N0119D840
Ballast/Driver: OSRAM
OT50W

Summary

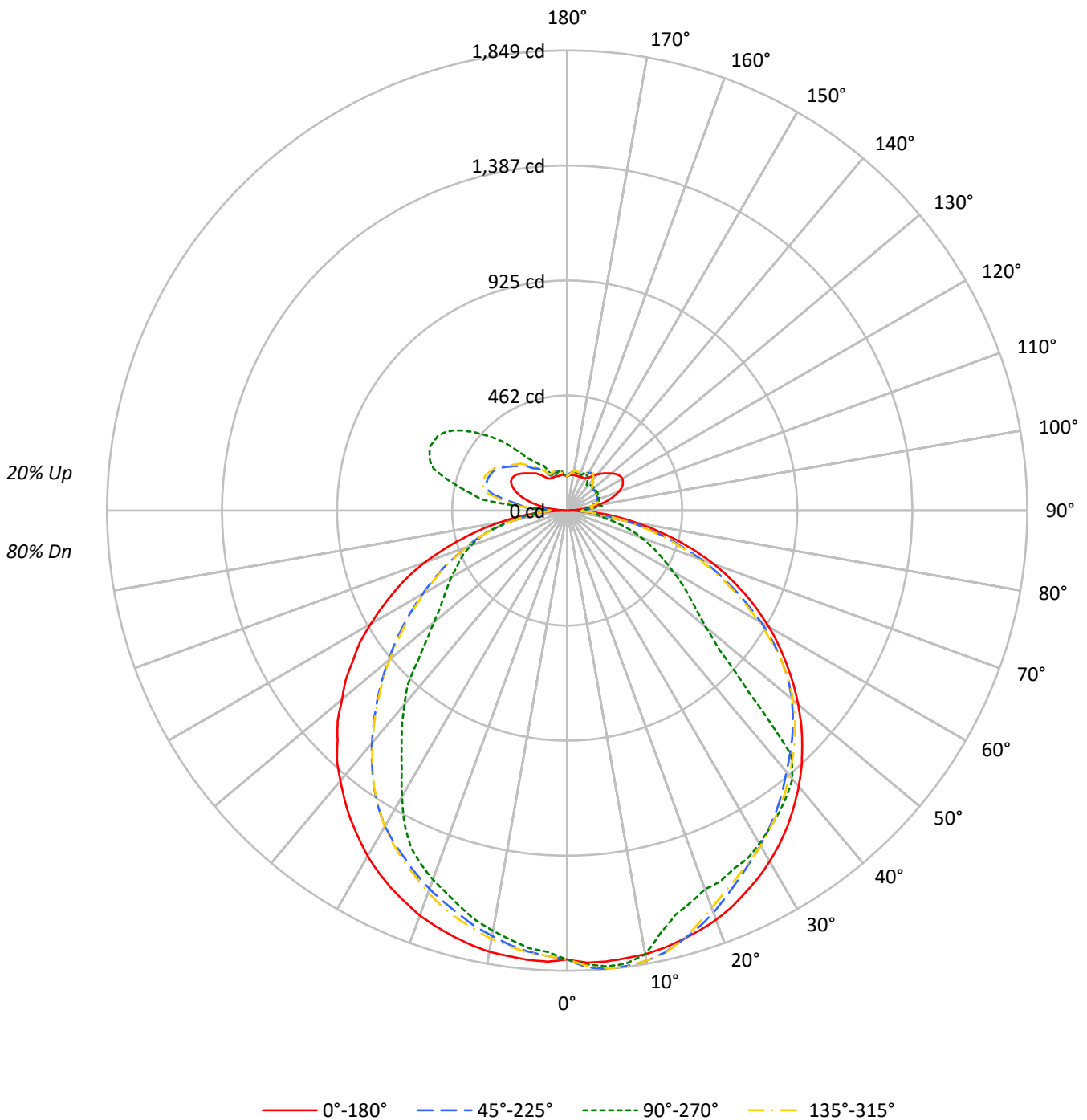
Lumens per Lamp: N/A
Luminaire Lumens: 6384.0 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 7.6' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 53.5
Input Voltage (V): NR
Input Current (A_{in}): 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	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°	5110	5110	5110	5110
5°	5170	5229	5153	5017
10°	5206	5206	5176	4932
15°	5235	4932	5193	4840
20°	5275	4882	5219	4757
25°	5295	4958	5230	4654
30°	5324	5053	5243	4342
35°	5343	5128	5242	4011
40°	5353	5207	5238	3760
45°	5351	4140	5227	3385
50°	5339	3194	5202	3075
55°	5318	2946	5185	2986
60°	5303	2780	5163	3051
65°	5261	2693	5122	3192
70°	5180	2625	5043	3413
75°	4941	2493	4783	3627
80°	4628	2264	4492	3615
85°	4644	2961	4306	4306



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.7	2.7
10°-20°	487.2	7.6
20°-30°	736.2	11.5
30°-40°	886.0	13.9
40°-50°	901.1	14.1
50°-60°	784.3	12.3
60°-70°	611.8	9.6
70°-80°	378.2	5.9
80°-90°	133.1	2.1
90°-100°	125.3	2.0
100°-110°	242.6	3.8
110°-120°	265.4	4.2
120°-130°	232.7	3.6
130°-140°	174.3	2.7
140°-150°	119.4	1.9
150°-160°	76.0	1.2
160°-170°	44.4	0.7
170°-180°	14.3	0.2
0°-30°	1395.0	21.9
0°-40°	2281.1	35.7
0°-60°	3966.5	62.1
0°-90°	5089.6	79.7
90°-120°	633.3	9.9
90°-150°	1159.7	18.2
90°-180°	1294.0	20.3
0°-180°	6384.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1804	1804	1804	1804	1804	
5°	1818	1839	1812	1764	1818	173
15°	1785	1682	1771	1651	1785	505
25°	1694	1586	1673	1489	1694	782
35°	1545	1483	1516	1160	1545	967
45°	1336	1033	1305	845	1336	1030
55°	1077	596	1050	605	1077	963
65°	785	402	764	476	785	776
75°	452	228	437	331	452	478
85°	143	91	132	132	143	143
90°	2	58	2	91	2	11
95°	56	95	44	190	56	58
105°	178	118	172	507	178	186
115°	246	135	246	609	246	241
125°	251	141	251	561	251	223
135°	211	141	211	410	211	164
145°	166	141	170	244	166	106
155°	147	170	145	168	147	68
165°	145	153	143	155	145	41
175°	143	149	143	145	143	14
180°	139	139	139	139	139	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9
2.5°	1818.4	1810.1	1837.0	1839.1	1824.6	1830.8	1830.8	1808.0	1814.2	1787.3	1791.4
5°	1818.4	1820.4	1849.4	1847.4	1839.1	1841.2	1847.4	1818.4	1812.2	1774.9	1779.0
7.5°	1814.2	1824.6	1845.3	1843.2	1834.9	1837.0	1847.4	1822.5	1805.9	1762.5	1760.4
10°	1810.1	1820.4	1837.0	1826.7	1810.1	1816.3	1837.0	1820.4	1799.7	1748.0	1735.5
12.5°	1799.7	1810.1	1818.4	1766.6	1737.6	1762.5	1820.4	1810.1	1787.3	1727.2	1710.7
15°	1785.2	1797.7	1787.3	1714.8	1681.7	1704.5	1787.3	1795.6	1770.7	1700.3	1679.6
17.5°	1768.7	1783.2	1756.2	1675.5	1650.6	1661.0	1743.8	1777.0	1752.1	1673.4	1648.5
20°	1750.0	1766.6	1719.0	1634.0	1619.6	1627.8	1698.3	1756.2	1731.4	1644.4	1617.5
22.5°	1725.2	1743.8	1675.5	1605.1	1611.3	1605.1	1656.8	1729.3	1702.4	1613.3	1582.3
25°	1694.1	1714.8	1632.0	1580.2	1586.4	1584.3	1621.6	1694.1	1673.4	1576.1	1542.9
27.5°	1663.0	1683.8	1592.6	1563.6	1574.0	1561.6	1588.5	1656.8	1640.3	1536.7	1505.6
30°	1627.8	1650.6	1553.3	1534.6	1545.0	1536.7	1555.4	1619.6	1603.0	1495.3	1464.2
32.5°	1588.5	1611.3	1511.9	1499.4	1513.9	1503.6	1516.0	1578.1	1559.5	1449.7	1412.4
35°	1545.0	1567.8	1468.4	1468.4	1482.9	1470.4	1476.7	1536.7	1516.0	1404.2	1354.5
37.5°	1497.4	1522.2	1420.7	1431.1	1447.7	1435.2	1435.2	1493.2	1468.4	1354.5	1288.2
40°	1447.7	1474.6	1371.0	1393.8	1408.3	1393.8	1389.7	1447.7	1416.6	1304.8	1219.8
42.5°	1393.8	1422.8	1325.5	1352.4	1333.7	1352.4	1342.0	1400.0	1369.0	1250.9	1149.4
45°	1335.8	1373.1	1279.9	1263.3	1033.4	1250.9	1294.4	1350.3	1304.8	1199.1	1079.0
47.5°	1275.8	1315.1	1230.2	1110.1	830.5	1097.7	1242.6	1296.5	1250.9	1143.2	1008.6
50°	1211.6	1257.1	1178.4	977.5	724.9	965.1	1184.6	1240.6	1180.5	1083.2	938.2
52.5°	1145.3	1195.0	1120.4	863.6	654.4	851.2	1122.5	1180.5	1122.5	1019.0	869.8
55°	1076.9	1128.7	1052.1	758.0	596.5	755.9	1050.0	1116.3	1050.0	954.7	801.5
57.5°	1008.6	1066.6	979.6	681.4	546.8	671.0	969.2	1050.0	987.9	888.5	735.2
60°	936.1	990.0	900.9	598.5	490.8	596.5	888.5	981.7	911.3	820.1	671.0
62.5°	861.6	921.6	816.0	526.0	445.3	524.0	801.5	905.0	836.7	749.7	608.9
65°	784.9	842.9	735.2	468.1	401.8	463.9	720.7	826.3	764.2	679.3	550.9
67.5°	706.2	760.1	654.4	412.1	358.3	408.0	637.9	743.5	689.7	606.8	488.8
70°	625.5	675.2	571.6	358.3	316.9	356.2	557.1	658.6	608.9	532.3	432.8
72.5°	540.5	586.1	484.6	306.5	273.4	304.4	472.2	571.6	519.8	453.6	383.1
75°	451.5	495.0	403.9	254.7	227.8	252.7	391.4	478.4	437.0	381.1	325.2
77.5°	366.6	410.1	321.0	196.7	174.0	192.6	306.5	391.4	356.2	308.6	265.1
80°	283.7	318.9	236.1	147.0	138.8	147.0	229.9	300.3	275.4	242.3	207.1
82.5°	209.2	229.9	159.5	120.1	120.1	120.1	155.3	213.3	203.0	180.2	157.4
85°	142.9	142.9	107.7	91.1	91.1	91.1	105.6	126.3	132.5	120.1	120.1
87.5°	60.1	62.1	55.9	49.7	47.6	49.7	53.8	51.8	51.8	58.0	72.5
90°	2.1	26.9	45.6	55.9	58.0	53.8	41.4	24.9	2.1	35.2	64.2
92.5°	14.5	58.0	53.8	70.4	72.5	66.3	55.9	45.6	8.3	64.2	68.3
95°	55.9	68.3	105.6	107.7	95.3	91.1	103.6	64.2	43.5	87.0	174.0
97.5°	89.1	103.6	95.3	124.3	140.8	124.3	99.4	99.4	82.8	134.6	203.0
100°	122.2	109.8	97.3	107.7	124.3	109.8	93.2	109.8	116.0	157.4	248.5
102.5°	153.3	122.2	122.2	105.6	107.7	103.6	118.0	120.1	145.0	178.1	306.5
105°	178.1	126.3	128.4	120.1	118.0	120.1	128.4	128.4	171.9	196.7	333.4
107.5°	200.9	130.5	126.3	132.5	134.6	132.5	126.3	130.5	196.7	209.2	339.7
110°	219.5	132.5	128.4	132.5	138.8	132.5	128.4	134.6	217.5	221.6	343.8



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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°	236.1	134.6	132.5	130.5	136.7	130.5	132.5	138.8	234.0	227.8	343.8
115°	246.5	136.7	132.5	132.5	134.6	132.5	134.6	140.8	246.5	229.9	339.7
117.5°	252.7	140.8	134.6	136.7	138.8	136.7	134.6	145.0	254.7	238.2	337.6
120°	256.8	155.3	134.6	138.8	140.8	138.8	134.6	157.4	256.8	242.3	329.3
122.5°	254.7	161.5	136.7	138.8	142.9	138.8	136.7	163.6	254.7	240.2	318.9
125°	250.6	167.8	136.7	136.7	140.8	138.8	138.8	167.8	250.6	236.1	304.4
127.5°	242.3	182.3	136.7	138.8	138.8	138.8	138.8	180.2	242.3	238.2	289.9
130°	232.0	192.6	132.5	140.8	138.8	142.9	136.7	192.6	232.0	232.0	277.5
132.5°	221.6	196.7	132.5	140.8	140.8	142.9	134.6	196.7	221.6	223.7	265.1
135°	211.2	200.9	140.8	138.8	140.8	140.8	142.9	200.9	211.2	215.4	256.8
137.5°	200.9	203.0	151.2	132.5	138.8	134.6	155.3	203.0	203.0	203.0	244.4
140°	190.5	200.9	159.5	128.4	130.5	132.5	163.6	203.0	194.7	196.7	223.7
142.5°	178.1	194.7	165.7	138.8	128.4	142.9	169.8	200.9	182.3	190.5	213.3
145°	165.7	188.5	178.1	153.3	140.8	159.5	184.3	194.7	169.8	186.4	207.1
147.5°	155.3	178.1	180.2	161.5	155.3	167.8	186.4	186.4	157.4	178.1	192.6
150°	149.1	167.8	174.0	167.8	161.5	176.0	182.3	171.9	149.1	171.9	180.2
152.5°	147.0	159.5	159.5	176.0	174.0	184.3	167.8	163.6	145.0	165.7	163.6
155°	147.0	157.4	153.3	161.5	169.8	169.8	159.5	159.5	145.0	165.7	155.3
157.5°	145.0	159.5	153.3	151.2	155.3	159.5	159.5	161.5	145.0	161.5	155.3
160°	145.0	161.5	155.3	149.1	151.2	157.4	161.5	161.5	145.0	161.5	157.4
162.5°	145.0	157.4	157.4	151.2	151.2	159.5	161.5	159.5	145.0	157.4	161.5
165°	145.0	157.4	159.5	155.3	153.3	163.6	161.5	155.3	142.9	155.3	163.6
167.5°	145.0	153.3	161.5	157.4	157.4	163.6	163.6	153.3	142.9	149.1	163.6
170°	145.0	151.2	159.5	157.4	159.5	165.7	159.5	151.2	145.0	147.0	157.4
172.5°	145.0	147.0	155.3	157.4	157.4	161.5	155.3	147.0	145.0	142.9	151.2
175°	142.9	147.0	151.2	151.2	149.1	155.3	149.1	145.0	142.9	140.8	145.0
177.5°	140.8	142.9	147.0	147.0	142.9	147.0	142.9	140.8	140.8	138.8	142.9
180°	138.8	138.8	138.8	138.8	138.8	138.8	138.8	138.8	138.8	138.8	138.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1803.9	1803.9	1803.9	1803.9	1803.9	1803.9
2.5°	1789.4	1774.9	1779.0	1791.4	1789.4	1818.4
5°	1770.7	1764.5	1764.5	1783.2	1781.1	1818.4
7.5°	1750.0	1739.7	1745.9	1766.6	1772.8	1814.2
10°	1723.1	1714.8	1716.9	1748.0	1758.3	1810.1
12.5°	1696.2	1687.9	1694.1	1723.1	1737.6	1799.7
15°	1665.1	1650.6	1667.2	1698.3	1716.9	1785.2
17.5°	1627.8	1611.3	1627.8	1669.3	1692.0	1768.7
20°	1594.7	1578.1	1588.5	1632.0	1663.0	1750.0
22.5°	1557.4	1536.7	1545.0	1592.6	1632.0	1725.2
25°	1516.0	1489.1	1501.5	1553.3	1596.8	1694.1
27.5°	1462.2	1416.6	1447.7	1511.9	1553.3	1663.0
30°	1387.6	1327.5	1377.2	1466.3	1513.9	1627.8
32.5°	1300.6	1236.4	1290.3	1410.4	1468.4	1588.5
35°	1215.7	1159.8	1209.5	1352.4	1422.8	1545.0
37.5°	1141.1	1089.4	1134.9	1286.1	1373.1	1497.4
40°	1064.5	1016.9	1062.4	1215.7	1323.4	1447.7
42.5°	994.1	948.5	992.0	1145.3	1269.5	1393.8
45°	919.5	845.0	915.4	1072.8	1211.6	1335.8
47.5°	840.8	762.1	834.6	1002.4	1153.6	1275.8
50°	768.4	697.9	764.2	929.9	1091.4	1211.6
52.5°	704.2	644.1	702.1	857.4	1027.2	1145.3
55°	644.1	604.7	646.2	791.1	967.2	1076.9
57.5°	596.5	569.5	598.5	726.9	900.9	1008.6
60°	555.0	538.5	557.1	662.7	830.5	936.1
62.5°	509.5	503.3	509.5	600.6	762.1	861.6
65°	470.1	476.3	470.1	544.7	689.7	784.9
67.5°	432.8	447.3	434.9	484.6	617.2	706.2
70°	391.4	412.1	393.5	430.8	542.6	625.5
72.5°	347.9	372.8	347.9	379.0	463.9	540.5
75°	302.4	331.4	304.4	323.1	389.4	451.5
77.5°	252.7	271.3	256.8	263.0	316.9	366.6
80°	200.9	221.6	203.0	207.1	250.6	283.7
82.5°	167.8	182.3	169.8	157.4	186.4	209.2
85°	124.3	132.5	128.4	122.2	128.4	142.9
87.5°	76.6	80.8	76.6	76.6	66.3	60.1
90°	84.9	91.1	84.9	66.3	37.3	2.1
92.5°	87.0	95.3	87.0	72.5	70.4	14.5
95°	194.7	190.5	207.1	188.5	107.7	55.9
97.5°	302.4	345.9	312.7	225.7	145.0	89.1
100°	347.9	389.4	362.4	281.7	165.7	122.2
102.5°	401.8	447.3	418.3	329.3	186.4	153.3
105°	468.1	507.4	482.6	347.9	205.0	178.1
107.5°	503.3	563.3	513.6	356.2	217.5	200.9
110°	521.9	586.1	538.5	358.3	227.8	219.5



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	536.4	598.5	548.8	358.3	232.0	236.1
115°	536.4	608.9	548.8	352.1	238.2	246.5
117.5°	536.4	602.7	548.8	345.9	246.5	252.7
120°	517.8	600.6	534.3	337.6	248.5	256.8
122.5°	503.3	584.0	513.6	327.2	248.5	254.7
125°	476.3	561.3	488.8	314.8	244.4	250.6
127.5°	447.3	528.1	457.7	300.3	246.5	242.3
130°	420.4	490.8	426.6	285.8	238.2	232.0
132.5°	385.2	449.4	391.4	275.4	229.9	221.6
135°	352.1	410.1	360.4	267.2	219.5	211.2
137.5°	316.9	368.6	325.2	250.6	209.2	200.9
140°	275.4	316.9	283.7	232.0	203.0	190.5
142.5°	248.5	271.3	256.8	223.7	194.7	178.1
145°	232.0	244.4	238.2	215.4	190.5	165.7
147.5°	215.4	227.8	221.6	198.8	180.2	155.3
150°	209.2	209.2	217.5	184.3	174.0	149.1
152.5°	186.4	203.0	194.7	167.8	169.8	147.0
155°	159.5	167.8	167.8	161.5	169.8	147.0
157.5°	149.1	155.3	157.4	161.5	165.7	145.0
160°	149.1	151.2	157.4	163.6	163.6	145.0
162.5°	153.3	151.2	161.5	167.8	159.5	145.0
165°	157.4	155.3	165.7	169.8	155.3	145.0
167.5°	161.5	161.5	169.8	167.8	151.2	145.0
170°	161.5	165.7	169.8	161.5	149.1	145.0
172.5°	155.3	157.4	161.5	151.2	142.9	145.0
175°	147.0	145.0	151.2	145.0	142.9	142.9
177.5°	142.9	136.7	142.9	140.8	138.8	140.8
180°	138.8	138.8	138.8	138.8	138.8	138.8

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