

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: P197491

Luminaire Tested: **8WSL-LD2-120-UPL15-UNV-L840-CD2-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P197491
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-LD2-120-UPL15-UNV-L840-CD2-U
Description: 8FT. Linear Wavestream System, 15% Uplight, L840
Light Source: (476) 4000K CCT, 80 CRI LEDS
EL236N0119D840
Ballast/Driver: OSRAM
OT50W

Summary

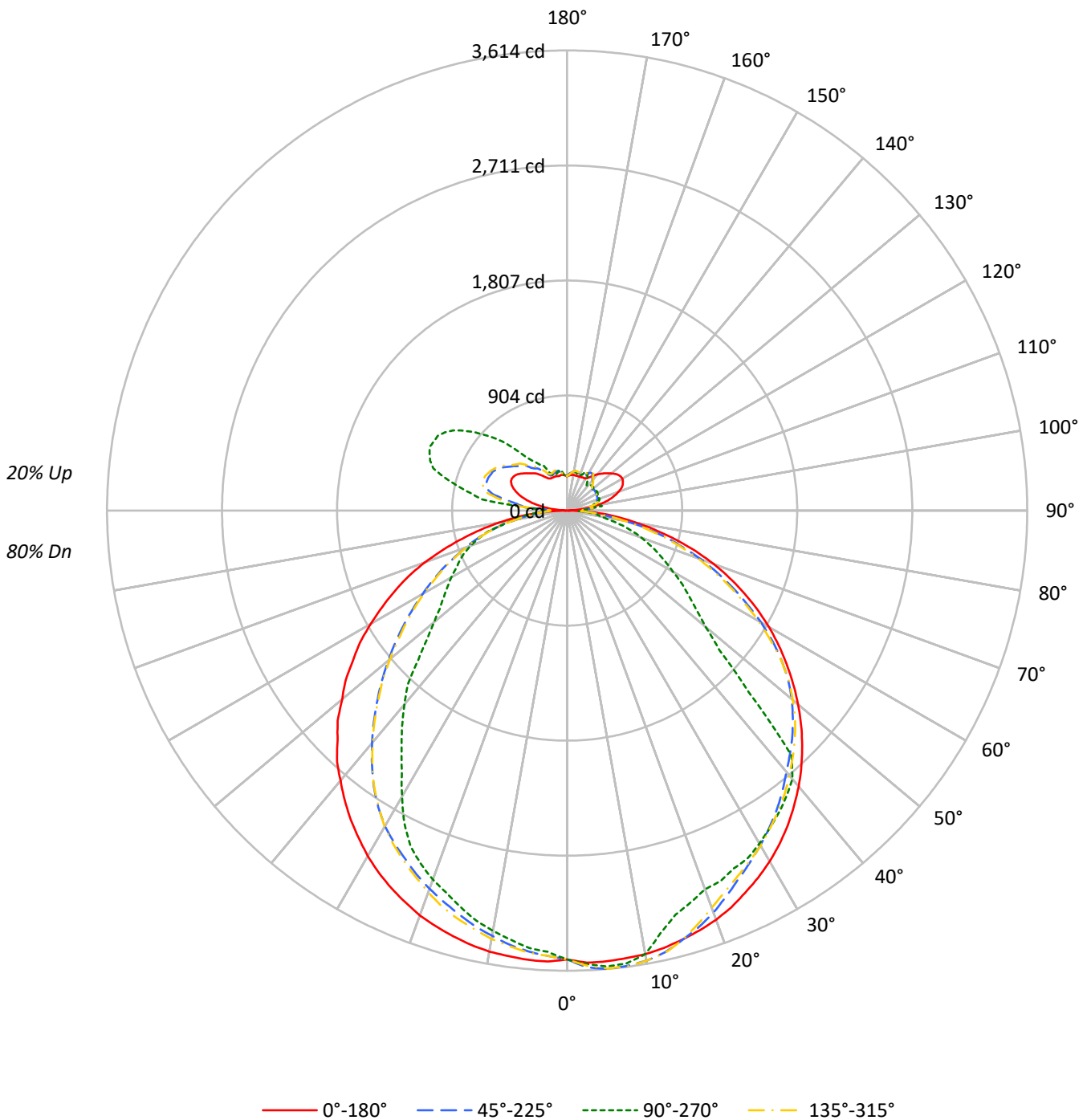
Lumens per Lamp: N/A
Luminaire Lumens: 12476.3 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 7.6' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 113.5
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				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°	9986	9986	9986	9986
5°	10105	10220	10070	9805
10°	10175	10175	10117	9639
15°	10231	9638	10148	9460
20°	10310	9541	10200	9297
25°	10348	9690	10221	9095
30°	10405	9876	10246	8486
35°	10441	10021	10245	7838
40°	10462	10177	10237	7348
45°	10458	8091	10215	6615
50°	10434	6243	10166	6011
55°	10394	5757	10134	5837
60°	10364	5434	10089	5962
65°	10282	5263	10010	6239
70°	10123	5129	9855	6670
75°	9656	4872	9346	7088
80°	9045	4424	8781	7065
85°	9077	5788	8418	8418



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	335.5	2.7
10°-20°	952.1	7.6
20°-30°	1438.8	11.5
30°-40°	1731.6	13.9
40°-50°	1761.0	14.1
50°-60°	1532.8	12.3
60°-70°	1195.7	9.6
70°-80°	739.1	5.9
80°-90°	260.1	2.1
90°-100°	244.8	2.0
100°-110°	474.1	3.8
110°-120°	518.7	4.2
120°-130°	454.8	3.6
130°-140°	340.7	2.7
140°-150°	233.3	1.9
150°-160°	148.5	1.2
160°-170°	86.8	0.7
170°-180°	28.0	0.2
0°-30°	2726.3	21.9
0°-40°	4457.9	35.7
0°-60°	7751.7	62.1
0°-90°	9946.6	79.7
90°-120°	1237.6	9.9
90°-150°	2266.4	18.2
90°-180°	2530.0	20.3
0°-180°	12476.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3525	3525	3525	3525	3525	
5°	3554	3594	3542	3448	3554	339
15°	3489	3286	3461	3226	3489	986
25°	3311	3100	3270	2910	3311	1528
35°	3019	2898	2963	2267	3019	1889
45°	2611	2020	2550	1651	2611	2014
55°	2105	1166	2052	1182	2105	1882
65°	1534	785	1494	931	1534	1516
75°	882	445	854	648	882	935
85°	279	178	259	259	279	279
90°	4	113	4	178	4	21
95°	109	186	85	372	109	113
105°	348	231	336	992	348	363
115°	482	263	482	1190	482	472
125°	490	275	490	1097	490	435
135°	413	275	413	801	413	321
145°	324	275	332	478	324	206
155°	287	332	283	328	287	133
165°	283	300	279	304	283	80
175°	279	291	279	283	279	27
180°	271	271	271	271	271	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3
2.5°	3553.7	3537.5	3590.1	3594.1	3565.8	3577.9	3577.9	3533.4	3545.6	3492.9	3501.0
5°	3553.7	3557.7	3614.4	3610.3	3594.1	3598.2	3610.3	3553.7	3541.5	3468.7	3476.8
7.5°	3545.6	3565.8	3606.3	3602.2	3586.0	3590.1	3610.3	3561.8	3529.4	3444.4	3440.3
10°	3537.5	3557.7	3590.1	3569.8	3537.5	3549.6	3590.1	3557.7	3517.2	3416.0	3391.8
12.5°	3517.2	3537.5	3553.7	3452.5	3395.8	3444.4	3557.7	3537.5	3492.9	3375.6	3343.2
15°	3488.9	3513.2	3492.9	3351.3	3286.5	3331.0	3492.9	3509.1	3460.6	3323.0	3282.5
17.5°	3456.5	3484.9	3432.2	3274.4	3225.8	3246.1	3408.0	3472.7	3424.1	3270.3	3221.8
20°	3420.1	3452.5	3359.4	3193.4	3165.1	3181.3	3318.9	3432.2	3383.7	3213.7	3161.1
22.5°	3371.5	3408.0	3274.4	3136.8	3148.9	3136.8	3238.0	3379.6	3327.0	3153.0	3092.3
25°	3310.8	3351.3	3189.4	3088.2	3100.3	3096.3	3169.2	3310.8	3270.3	3080.1	3015.3
27.5°	3250.1	3290.6	3112.5	3055.8	3076.1	3051.8	3104.4	3238.0	3205.6	3003.2	2942.5
30°	3181.3	3225.8	3035.6	2999.2	3019.4	3003.2	3039.6	3165.1	3132.7	2922.3	2861.5
32.5°	3104.4	3148.9	2954.6	2930.4	2958.7	2938.4	2962.7	3084.2	3047.7	2833.2	2760.4
35°	3019.4	3063.9	2869.6	2869.6	2898.0	2873.7	2885.8	3003.2	2962.7	2744.2	2647.0
37.5°	2926.3	2974.9	2776.5	2796.8	2829.2	2804.9	2804.9	2918.2	2869.6	2647.0	2517.5
40°	2829.2	2881.8	2679.4	2723.9	2752.3	2723.9	2715.8	2829.2	2768.5	2549.9	2383.9
42.5°	2723.9	2780.6	2590.4	2643.0	2606.6	2643.0	2622.7	2736.1	2675.4	2444.7	2246.3
45°	2610.6	2683.5	2501.3	2468.9	2019.7	2444.7	2529.7	2638.9	2549.9	2343.5	2108.7
47.5°	2493.2	2570.1	2404.2	2169.4	1623.0	2145.1	2428.5	2533.7	2444.7	2234.2	1971.1
50°	2367.8	2456.8	2303.0	1910.4	1416.6	1886.1	2315.1	2424.4	2307.0	2116.8	1833.5
52.5°	2238.2	2335.4	2189.7	1687.8	1279.0	1663.5	2193.7	2307.0	2193.7	1991.3	1699.9
55°	2104.7	2205.9	2056.1	1481.4	1165.7	1477.3	2052.1	2181.6	2052.1	1865.9	1566.4
57.5°	1971.1	2084.4	1914.4	1331.6	1068.5	1311.4	1894.2	2052.1	1930.6	1736.4	1436.8
60°	1829.4	1934.7	1760.6	1169.7	959.2	1165.7	1736.4	1918.5	1780.9	1602.8	1311.4
62.5°	1683.7	1801.1	1594.7	1028.1	870.2	1024.0	1566.4	1768.7	1635.2	1465.2	1189.9
65°	1534.0	1647.3	1436.8	914.7	785.2	906.6	1408.5	1614.9	1493.5	1327.6	1076.6
67.5°	1380.2	1485.4	1279.0	805.4	700.2	797.3	1246.6	1453.0	1347.8	1185.9	955.2
70°	1222.3	1319.5	1117.1	700.2	619.3	696.2	1088.8	1287.1	1189.9	1040.2	845.9
72.5°	1056.4	1145.4	947.1	599.0	534.3	595.0	922.8	1117.1	1015.9	886.4	748.8
75°	882.3	967.3	789.3	497.8	445.2	493.8	765.0	935.0	854.0	744.7	635.4
77.5°	716.4	801.4	627.4	384.5	340.0	376.4	599.0	765.0	696.2	603.1	518.1
80°	554.5	623.3	461.4	287.4	271.2	287.4	449.3	586.9	538.3	473.6	404.7
82.5°	408.8	449.3	311.7	234.8	234.8	234.8	303.6	416.9	396.6	352.1	307.6
85°	279.3	279.3	210.5	178.1	178.1	178.1	206.4	246.9	259.0	234.8	234.8
87.5°	117.4	121.4	109.3	97.1	93.1	97.1	105.2	101.2	101.2	113.3	141.7
90°	4.0	52.6	89.0	109.3	113.3	105.2	80.9	48.6	4.0	68.8	125.5
92.5°	28.3	113.3	105.2	137.6	141.7	129.5	109.3	89.0	16.2	125.5	133.6
95°	109.3	133.6	206.4	210.5	186.2	178.1	202.4	125.5	85.0	170.0	340.0
97.5°	174.0	202.4	186.2	242.8	275.2	242.8	194.3	194.3	161.9	263.1	396.6
100°	238.8	214.5	190.2	210.5	242.8	214.5	182.1	214.5	226.7	307.6	485.7
102.5°	299.5	238.8	238.8	206.4	210.5	202.4	230.7	234.8	283.3	348.1	599.0
105°	348.1	246.9	250.9	234.8	230.7	234.8	250.9	250.9	335.9	384.5	651.6
107.5°	392.6	255.0	246.9	259.0	263.1	259.0	246.9	255.0	384.5	408.8	663.8
110°	429.0	259.0	250.9	259.0	271.2	259.0	250.9	263.1	425.0	433.1	671.9



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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°	461.4	263.1	259.0	255.0	267.1	255.0	259.0	271.2	457.4	445.2	671.9
115°	481.6	267.1	259.0	259.0	263.1	259.0	263.1	275.2	481.6	449.3	663.8
117.5°	493.8	275.2	263.1	267.1	271.2	267.1	263.1	283.3	497.8	465.5	659.7
120°	501.9	303.6	263.1	271.2	275.2	271.2	263.1	307.6	501.9	473.6	643.5
122.5°	497.8	315.7	267.1	271.2	279.3	271.2	267.1	319.7	497.8	469.5	623.3
125°	489.7	327.8	267.1	267.1	275.2	271.2	271.2	327.8	489.7	461.4	595.0
127.5°	473.6	356.2	267.1	271.2	271.2	271.2	271.2	352.1	473.6	465.5	566.6
130°	453.3	376.4	259.0	275.2	271.2	279.3	267.1	376.4	453.3	453.3	542.4
132.5°	433.1	384.5	259.0	275.2	275.2	279.3	263.1	384.5	433.1	437.1	518.1
135°	412.8	392.6	275.2	271.2	275.2	275.2	279.3	392.6	412.8	420.9	501.9
137.5°	392.6	396.6	295.5	259.0	271.2	263.1	303.6	396.6	396.6	396.6	477.6
140°	372.4	392.6	311.7	250.9	255.0	259.0	319.7	396.6	380.5	384.5	437.1
142.5°	348.1	380.5	323.8	271.2	250.9	279.3	331.9	392.6	356.2	372.4	416.9
145°	323.8	368.3	348.1	299.5	275.2	311.7	360.2	380.5	331.9	364.3	404.7
147.5°	303.6	348.1	352.1	315.7	303.6	327.8	364.3	364.3	307.6	348.1	376.4
150°	291.4	327.8	340.0	327.8	315.7	344.0	356.2	335.9	291.4	335.9	352.1
152.5°	287.4	311.7	311.7	344.0	340.0	360.2	327.8	319.7	283.3	323.8	319.7
155°	287.4	307.6	299.5	315.7	331.9	331.9	311.7	311.7	283.3	323.8	303.6
157.5°	283.3	311.7	299.5	295.5	303.6	311.7	311.7	315.7	283.3	315.7	303.6
160°	283.3	315.7	303.6	291.4	295.5	307.6	315.7	315.7	283.3	315.7	307.6
162.5°	283.3	307.6	307.6	295.5	295.5	311.7	315.7	311.7	283.3	307.6	315.7
165°	283.3	307.6	311.7	303.6	299.5	319.7	315.7	303.6	279.3	303.6	319.7
167.5°	283.3	299.5	315.7	307.6	307.6	319.7	319.7	299.5	279.3	291.4	319.7
170°	283.3	295.5	311.7	307.6	311.7	323.8	311.7	295.5	283.3	287.4	307.6
172.5°	283.3	287.4	303.6	307.6	307.6	315.7	303.6	287.4	283.3	279.3	295.5
175°	279.3	287.4	295.5	295.5	291.4	303.6	291.4	283.3	279.3	275.2	283.3
177.5°	275.2	279.3	287.4	287.4	279.3	287.4	279.3	275.2	275.2	271.2	279.3
180°	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3525.3	3525.3	3525.3	3525.3	3525.3	3525.3
2.5°	3497.0	3468.7	3476.8	3501.0	3497.0	3553.7
5°	3460.6	3448.4	3448.4	3484.9	3480.8	3553.7
7.5°	3420.1	3399.9	3412.0	3452.5	3464.6	3545.6
10°	3367.5	3351.3	3355.3	3416.0	3436.3	3537.5
12.5°	3314.9	3298.7	3310.8	3367.5	3395.8	3517.2
15°	3254.1	3225.8	3258.2	3318.9	3355.3	3488.9
17.5°	3181.3	3148.9	3181.3	3262.2	3306.8	3456.5
20°	3116.5	3084.2	3104.4	3189.4	3250.1	3420.1
22.5°	3043.7	3003.2	3019.4	3112.5	3189.4	3371.5
25°	2962.7	2910.1	2934.4	3035.6	3120.6	3310.8
27.5°	2857.5	2768.5	2829.2	2954.6	3035.6	3250.1
30°	2711.8	2594.4	2691.6	2865.6	2958.7	3181.3
32.5°	2541.8	2416.3	2521.6	2756.3	2869.6	3104.4
35°	2375.9	2266.6	2363.7	2643.0	2780.6	3019.4
37.5°	2230.1	2129.0	2218.0	2513.5	2683.5	2926.3
40°	2080.4	1987.3	2076.3	2375.9	2586.3	2829.2
42.5°	1942.8	1853.7	1938.7	2238.2	2481.1	2723.9
45°	1797.1	1651.4	1789.0	2096.6	2367.8	2610.6
47.5°	1643.3	1489.5	1631.1	1959.0	2254.4	2493.2
50°	1501.6	1364.0	1493.5	1817.3	2133.0	2367.8
52.5°	1376.1	1258.8	1372.1	1675.6	2007.5	2238.2
55°	1258.8	1181.9	1262.8	1546.1	1890.2	2104.7
57.5°	1165.7	1113.0	1169.7	1420.7	1760.6	1971.1
60°	1084.7	1052.3	1088.8	1295.2	1623.0	1829.4
62.5°	995.7	983.5	995.7	1173.8	1489.5	1683.7
65°	918.8	930.9	918.8	1064.5	1347.8	1534.0
67.5°	845.9	874.2	850.0	947.1	1206.1	1380.2
70°	765.0	805.4	769.0	841.9	1060.4	1222.3
72.5°	680.0	728.5	680.0	740.7	906.6	1056.4
75°	590.9	647.6	595.0	631.4	760.9	882.3
77.5°	493.8	530.2	501.9	514.0	619.3	716.4
80°	392.6	433.1	396.6	404.7	489.7	554.5
82.5°	327.8	356.2	331.9	307.6	364.3	408.8
85°	242.8	259.0	250.9	238.8	250.9	279.3
87.5°	149.8	157.9	149.8	149.8	129.5	117.4
90°	165.9	178.1	165.9	129.5	72.9	4.0
92.5°	170.0	186.2	170.0	141.7	137.6	28.3
95°	380.5	372.4	404.7	368.3	210.5	109.3
97.5°	590.9	675.9	611.2	441.2	283.3	174.0
100°	680.0	760.9	708.3	550.5	323.8	238.8
102.5°	785.2	874.2	817.6	643.5	364.3	299.5
105°	914.7	991.6	943.1	680.0	400.7	348.1
107.5°	983.5	1100.9	1003.8	696.2	425.0	392.6
110°	1020.0	1145.4	1052.3	700.2	445.2	429.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	1048.3	1169.7	1072.6	700.2	453.3	461.4
115°	1048.3	1189.9	1072.6	688.1	465.5	481.6
117.5°	1048.3	1177.8	1072.6	675.9	481.6	493.8
120°	1011.9	1173.8	1044.2	659.7	485.7	501.9
122.5°	983.5	1141.4	1003.8	639.5	485.7	497.8
125°	930.9	1096.9	955.2	615.2	477.6	489.7
127.5°	874.2	1032.1	894.5	586.9	481.6	473.6
130°	821.6	959.2	833.8	558.5	465.5	453.3
132.5°	752.8	878.3	765.0	538.3	449.3	433.1
135°	688.1	801.4	704.3	522.1	429.0	412.8
137.5°	619.3	720.4	635.4	489.7	408.8	392.6
140°	538.3	619.3	554.5	453.3	396.6	372.4
142.5°	485.7	530.2	501.9	437.1	380.5	348.1
145°	453.3	477.6	465.5	420.9	372.4	323.8
147.5°	420.9	445.2	433.1	388.6	352.1	303.6
150°	408.8	408.8	425.0	360.2	340.0	291.4
152.5°	364.3	396.6	380.5	327.8	331.9	287.4
155°	311.7	327.8	327.8	315.7	331.9	287.4
157.5°	291.4	303.6	307.6	315.7	323.8	283.3
160°	291.4	295.5	307.6	319.7	319.7	283.3
162.5°	299.5	295.5	315.7	327.8	311.7	283.3
165°	307.6	303.6	323.8	331.9	303.6	283.3
167.5°	315.7	315.7	331.9	327.8	295.5	283.3
170°	315.7	323.8	331.9	315.7	291.4	283.3
172.5°	303.6	307.6	315.7	295.5	279.3	283.3
175°	287.4	283.3	295.5	283.3	279.3	279.3
177.5°	279.3	267.1	279.3	275.2	271.2	275.2
180°	271.2	271.2	271.2	271.2	271.2	271.2

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