

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: P197487

Luminaire Tested: **8WSL-LD2-110-UPL15-UNV-L840-CD2-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P197487
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-LD2-110-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

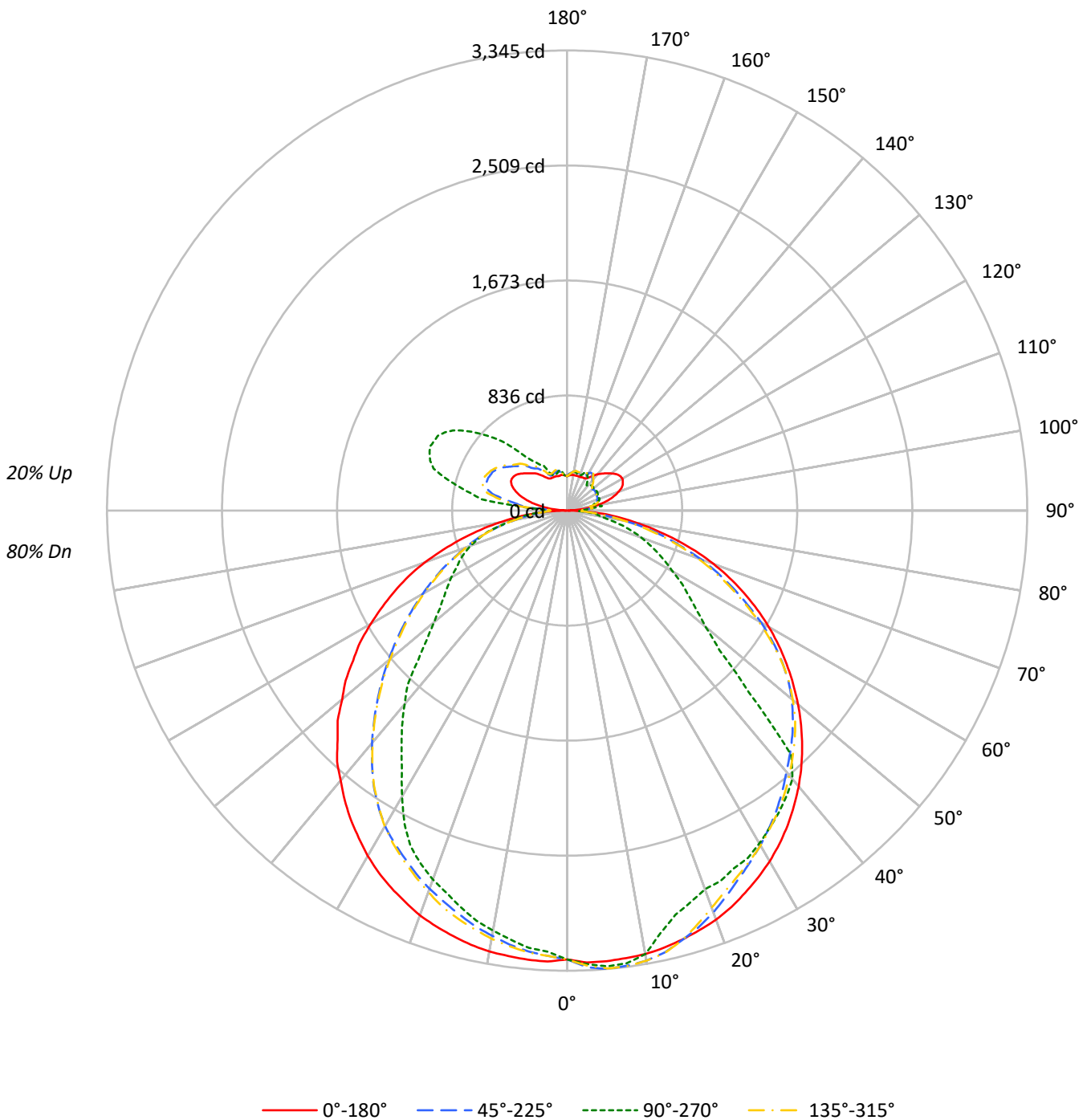
Lumens per Lamp: N/A
Luminaire Lumens: 11544.9 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 7.6' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 98.9
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°	9241	9241	9241	9241
5°	9350	9457	9318	9073
10°	9415	9415	9362	8920
15°	9468	8918	9391	8754
20°	9540	8829	9438	8603
25°	9575	8967	9458	8416
30°	9629	9139	9482	7852
35°	9662	9273	9480	7253
40°	9681	9417	9473	6800
45°	9677	7487	9452	6121
50°	9655	5777	9408	5562
55°	9618	5327	9378	5401
60°	9591	5028	9336	5517
65°	9514	4870	9263	5774
70°	9368	4746	9119	6173
75°	8936	4509	8649	6558
80°	8370	4093	8125	6536
85°	8398	5356	7790	7790



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.4	2.7
10°-20°	881.0	7.6
20°-30°	1331.4	11.5
30°-40°	1602.3	13.9
40°-50°	1629.5	14.1
50°-60°	1418.4	12.3
60°-70°	1106.4	9.6
70°-80°	684.0	5.9
80°-90°	240.7	2.1
90°-100°	226.6	2.0
100°-110°	438.7	3.8
110°-120°	480.0	4.2
120°-130°	420.8	3.6
130°-140°	315.3	2.7
140°-150°	215.9	1.9
150°-160°	137.4	1.2
160°-170°	80.4	0.7
170°-180°	25.9	0.2
0°-30°	2522.8	21.9
0°-40°	4125.1	35.7
0°-60°	7173.0	62.1
0°-90°	9204.0	79.7
90°-120°	1145.2	9.9
90°-150°	2097.2	18.2
90°-180°	2341.0	20.3
0°-180°	11544.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3262	3262	3262	3262	3262	
5°	3288	3326	3277	3191	3288	313
15°	3228	3041	3202	2985	3228	913
25°	3064	2869	3026	2693	3064	1414
35°	2794	2682	2742	2097	2794	1748
45°	2416	1869	2360	1528	2416	1863
55°	1948	1079	1899	1094	1948	1742
65°	1420	727	1382	861	1420	1403
75°	816	412	790	599	816	865
85°	258	165	240	240	258	258
90°	4	105	4	165	4	19
95°	101	172	79	345	101	105
105°	322	214	311	918	322	336
115°	446	243	446	1101	446	436
125°	453	255	453	1015	453	403
135°	382	255	382	742	382	297
145°	300	255	307	442	300	191
155°	266	307	262	303	266	123
165°	262	277	258	281	262	74
175°	258	270	258	262	258	25
180°	251	251	251	251	251	



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CATALOG NUMBER: 8WSL-LD2-110-UPL15-UNV-L840-CD2-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2
2.5°	3288.4	3273.4	3322.1	3325.8	3299.6	3310.9	3310.9	3269.7	3280.9	3232.2	3239.7
5°	3288.4	3292.1	3344.6	3340.8	3325.8	3329.6	3340.8	3288.4	3277.1	3209.7	3217.2
7.5°	3280.9	3299.6	3337.1	3333.3	3318.3	3322.1	3340.8	3295.9	3265.9	3187.3	3183.5
10°	3273.4	3292.1	3322.1	3303.4	3273.4	3284.6	3322.1	3292.1	3254.7	3161.0	3138.6
12.5°	3254.7	3273.4	3288.4	3194.7	3142.3	3187.3	3292.1	3273.4	3232.2	3123.6	3093.6
15°	3228.5	3250.9	3232.2	3101.1	3041.2	3082.4	3232.2	3247.2	3202.2	3074.9	3037.4
17.5°	3198.5	3224.7	3176.0	3030.0	2985.0	3003.7	3153.5	3213.5	3168.5	3026.2	2981.3
20°	3164.8	3194.7	3108.6	2955.0	2928.8	2943.8	3071.2	3176.0	3131.1	2973.8	2925.1
22.5°	3119.8	3153.5	3030.0	2902.6	2913.9	2902.6	2996.2	3127.3	3078.6	2917.6	2861.4
25°	3063.7	3101.1	2951.3	2857.7	2868.9	2865.2	2932.6	3063.7	3026.2	2850.2	2790.3
27.5°	3007.5	3044.9	2880.1	2827.7	2846.4	2824.0	2872.7	2996.2	2966.3	2779.0	2722.8
30°	2943.8	2985.0	2809.0	2775.3	2794.0	2779.0	2812.7	2928.8	2898.9	2704.1	2647.9
32.5°	2872.7	2913.9	2734.1	2711.6	2737.8	2719.1	2741.6	2853.9	2820.2	2621.7	2554.3
35°	2794.0	2835.2	2655.4	2655.4	2681.6	2659.2	2670.4	2779.0	2741.6	2539.3	2449.4
37.5°	2707.9	2752.8	2569.3	2588.0	2618.0	2595.5	2595.5	2700.4	2655.4	2449.4	2329.6
40°	2618.0	2666.7	2479.4	2520.6	2546.8	2520.6	2513.1	2618.0	2561.8	2359.5	2206.0
42.5°	2520.6	2573.0	2397.0	2445.7	2412.0	2445.7	2427.0	2531.8	2475.6	2262.2	2078.6
45°	2415.7	2483.1	2314.6	2284.6	1868.9	2262.2	2340.8	2441.9	2359.5	2168.5	1951.3
47.5°	2307.1	2378.3	2224.7	2007.5	1501.9	1985.0	2247.2	2344.6	2262.2	2067.4	1824.0
50°	2191.0	2273.4	2131.1	1767.8	1310.9	1745.3	2142.3	2243.4	2134.8	1958.8	1696.6
52.5°	2071.2	2161.0	2026.2	1561.8	1183.5	1539.3	2030.0	2134.8	2030.0	1842.7	1573.0
55°	1947.6	2041.2	1902.6	1370.8	1078.6	1367.0	1898.9	2018.7	1898.9	1726.6	1449.4
57.5°	1824.0	1928.8	1771.5	1232.2	988.8	1213.5	1752.8	1898.9	1786.5	1606.7	1329.6
60°	1692.9	1790.3	1629.2	1082.4	887.6	1078.6	1606.7	1775.3	1647.9	1483.1	1213.5
62.5°	1558.0	1666.7	1475.7	951.3	805.2	947.6	1449.4	1636.7	1513.1	1355.8	1101.1
65°	1419.5	1524.3	1329.6	846.4	726.6	838.9	1303.4	1494.4	1382.0	1228.5	996.3
67.5°	1277.2	1374.5	1183.5	745.3	647.9	737.8	1153.6	1344.6	1247.2	1097.4	883.9
70°	1131.1	1221.0	1033.7	647.9	573.0	644.2	1007.5	1191.0	1101.1	962.5	782.8
72.5°	977.5	1059.9	876.4	554.3	494.4	550.6	853.9	1033.7	940.1	820.2	692.9
75°	816.5	895.1	730.3	460.7	412.0	456.9	707.9	865.2	790.3	689.1	588.0
77.5°	662.9	741.6	580.5	355.8	314.6	348.3	554.3	707.9	644.2	558.1	479.4
80°	513.1	576.8	427.0	265.9	250.9	265.9	415.7	543.1	498.1	438.2	374.5
82.5°	378.3	415.7	288.4	217.2	217.2	217.2	280.9	385.8	367.0	325.8	284.6
85°	258.4	258.4	194.8	164.8	164.8	164.8	191.0	228.5	239.7	217.2	217.2
87.5°	108.6	112.4	101.1	89.9	86.1	89.9	97.4	93.6	93.6	104.9	131.1
90°	3.7	48.7	82.4	101.1	104.9	97.4	74.9	44.9	3.7	63.7	116.1
92.5°	26.2	104.9	97.4	127.3	131.1	119.8	101.1	82.4	15.0	116.1	123.6
95°	101.1	123.6	191.0	194.8	172.3	164.8	187.3	116.1	78.7	157.3	314.6
97.5°	161.0	187.3	172.3	224.7	254.7	224.7	179.8	179.8	149.8	243.4	367.0
100°	221.0	198.5	176.0	194.8	224.7	198.5	168.5	198.5	209.7	284.6	449.4
102.5°	277.2	221.0	221.0	191.0	194.8	187.3	213.5	217.2	262.2	322.1	554.3
105°	322.1	228.5	232.2	217.2	213.5	217.2	232.2	232.2	310.9	355.8	603.0
107.5°	363.3	236.0	228.5	239.7	243.4	239.7	228.5	236.0	355.8	378.3	614.2
110°	397.0	239.7	232.2	239.7	250.9	239.7	232.2	243.4	393.3	400.7	621.7



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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°	427.0	243.4	239.7	236.0	247.2	236.0	239.7	250.9	423.2	412.0	621.7
115°	445.7	247.2	239.7	239.7	243.4	239.7	243.4	254.7	445.7	415.7	614.2
117.5°	456.9	254.7	243.4	247.2	250.9	247.2	243.4	262.2	460.7	430.7	610.5
120°	464.4	280.9	243.4	250.9	254.7	250.9	243.4	284.6	464.4	438.2	595.5
122.5°	460.7	292.1	247.2	250.9	258.4	250.9	247.2	295.9	460.7	434.5	576.8
125°	453.2	303.4	247.2	247.2	254.7	250.9	250.9	303.4	453.2	427.0	550.6
127.5°	438.2	329.6	247.2	250.9	250.9	250.9	250.9	325.8	438.2	430.7	524.3
130°	419.5	348.3	239.7	254.7	250.9	258.4	247.2	348.3	419.5	419.5	501.9
132.5°	400.7	355.8	239.7	254.7	254.7	258.4	243.4	355.8	400.7	404.5	479.4
135°	382.0	363.3	254.7	250.9	254.7	254.7	258.4	363.3	382.0	389.5	464.4
137.5°	363.3	367.0	273.4	239.7	250.9	243.4	280.9	367.0	367.0	367.0	441.9
140°	344.6	363.3	288.4	232.2	236.0	239.7	295.9	367.0	352.1	355.8	404.5
142.5°	322.1	352.1	299.6	250.9	232.2	258.4	307.1	363.3	329.6	344.6	385.8
145°	299.6	340.8	322.1	277.2	254.7	288.4	333.3	352.1	307.1	337.1	374.5
147.5°	280.9	322.1	325.8	292.1	280.9	303.4	337.1	337.1	284.6	322.1	348.3
150°	269.7	303.4	314.6	303.4	292.1	318.4	329.6	310.9	269.7	310.9	325.8
152.5°	265.9	288.4	288.4	318.4	314.6	333.3	303.4	295.9	262.2	299.6	295.9
155°	265.9	284.6	277.2	292.1	307.1	307.1	288.4	288.4	262.2	299.6	280.9
157.5°	262.2	288.4	277.2	273.4	280.9	288.4	288.4	292.1	262.2	292.1	280.9
160°	262.2	292.1	280.9	269.7	273.4	284.6	292.1	292.1	262.2	292.1	284.6
162.5°	262.2	284.6	284.6	273.4	273.4	288.4	292.1	288.4	262.2	284.6	292.1
165°	262.2	284.6	288.4	280.9	277.2	295.9	292.1	280.9	258.4	280.9	295.9
167.5°	262.2	277.2	292.1	284.6	284.6	295.9	295.9	277.2	258.4	269.7	295.9
170°	262.2	273.4	288.4	284.6	288.4	299.6	288.4	273.4	262.2	265.9	284.6
172.5°	262.2	265.9	280.9	284.6	284.6	292.1	280.9	265.9	262.2	258.4	273.4
175°	258.4	265.9	273.4	273.4	269.7	280.9	269.7	262.2	258.4	254.7	262.2
177.5°	254.7	258.4	265.9	265.9	258.4	265.9	258.4	254.7	254.7	250.9	258.4
180°	250.9	250.9	250.9	250.9	250.9	250.9	250.9	250.9	250.9	250.9	250.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3262.2	3262.2	3262.2	3262.2	3262.2	3262.2
2.5°	3235.9	3209.7	3217.2	3239.7	3235.9	3288.4
5°	3202.2	3191.0	3191.0	3224.7	3221.0	3288.4
7.5°	3164.8	3146.1	3157.3	3194.7	3206.0	3280.9
10°	3116.1	3101.1	3104.9	3161.0	3179.8	3273.4
12.5°	3067.4	3052.4	3063.7	3116.1	3142.3	3254.7
15°	3011.2	2985.0	3015.0	3071.2	3104.9	3228.5
17.5°	2943.8	2913.9	2943.8	3018.7	3059.9	3198.5
20°	2883.9	2853.9	2872.7	2951.3	3007.5	3164.8
22.5°	2816.5	2779.0	2794.0	2880.1	2951.3	3119.8
25°	2741.6	2692.9	2715.3	2809.0	2887.6	3063.7
27.5°	2644.2	2561.8	2618.0	2734.1	2809.0	3007.5
30°	2509.4	2400.7	2490.6	2651.7	2737.8	2943.8
32.5°	2352.1	2235.9	2333.3	2550.6	2655.4	2872.7
35°	2198.5	2097.4	2187.3	2445.7	2573.0	2794.0
37.5°	2063.7	1970.0	2052.4	2325.8	2483.1	2707.9
40°	1925.1	1838.9	1921.3	2198.5	2393.3	2618.0
42.5°	1797.7	1715.4	1794.0	2071.2	2295.9	2520.6
45°	1662.9	1528.1	1655.4	1940.1	2191.0	2415.7
47.5°	1520.6	1378.3	1509.4	1812.7	2086.1	2307.1
50°	1389.5	1262.2	1382.0	1681.6	1973.8	2191.0
52.5°	1273.4	1164.8	1269.7	1550.6	1857.7	2071.2
55°	1164.8	1093.6	1168.5	1430.7	1749.1	1947.6
57.5°	1078.6	1030.0	1082.4	1314.6	1629.2	1824.0
60°	1003.7	973.8	1007.5	1198.5	1501.9	1692.9
62.5°	921.3	910.1	921.3	1086.1	1378.3	1558.0
65°	850.2	861.4	850.2	985.0	1247.2	1419.5
67.5°	782.8	809.0	786.5	876.4	1116.1	1277.2
70°	707.9	745.3	711.6	779.0	981.3	1131.1
72.5°	629.2	674.2	629.2	685.4	838.9	977.5
75°	546.8	599.2	550.6	584.3	704.1	816.5
77.5°	456.9	490.6	464.4	475.7	573.0	662.9
80°	363.3	400.7	367.0	374.5	453.2	513.1
82.5°	303.4	329.6	307.1	284.6	337.1	378.3
85°	224.7	239.7	232.2	221.0	232.2	258.4
87.5°	138.6	146.1	138.6	138.6	119.8	108.6
90°	153.6	164.8	153.6	119.8	67.4	3.7
92.5°	157.3	172.3	157.3	131.1	127.3	26.2
95°	352.1	344.6	374.5	340.8	194.8	101.1
97.5°	546.8	625.5	565.5	408.2	262.2	161.0
100°	629.2	704.1	655.4	509.4	299.6	221.0
102.5°	726.6	809.0	756.6	595.5	337.1	277.2
105°	846.4	917.6	872.7	629.2	370.8	322.1
107.5°	910.1	1018.7	928.8	644.2	393.3	363.3
110°	943.8	1059.9	973.8	647.9	412.0	397.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	970.0	1082.4	992.5	647.9	419.5	427.0
115°	970.0	1101.1	992.5	636.7	430.7	445.7
117.5°	970.0	1089.9	992.5	625.5	445.7	456.9
120°	936.3	1086.1	966.3	610.5	449.4	464.4
122.5°	910.1	1056.2	928.8	591.8	449.4	460.7
125°	861.4	1015.0	883.9	569.3	441.9	453.2
127.5°	809.0	955.1	827.7	543.1	445.7	438.2
130°	760.3	887.6	771.5	516.9	430.7	419.5
132.5°	696.6	812.7	707.9	498.1	415.7	400.7
135°	636.7	741.6	651.7	483.1	397.0	382.0
137.5°	573.0	666.7	588.0	453.2	378.3	363.3
140°	498.1	573.0	513.1	419.5	367.0	344.6
142.5°	449.4	490.6	464.4	404.5	352.1	322.1
145°	419.5	441.9	430.7	389.5	344.6	299.6
147.5°	389.5	412.0	400.7	359.5	325.8	280.9
150°	378.3	378.3	393.3	333.3	314.6	269.7
152.5°	337.1	367.0	352.1	303.4	307.1	265.9
155°	288.4	303.4	303.4	292.1	307.1	265.9
157.5°	269.7	280.9	284.6	292.1	299.6	262.2
160°	269.7	273.4	284.6	295.9	295.9	262.2
162.5°	277.2	273.4	292.1	303.4	288.4	262.2
165°	284.6	280.9	299.6	307.1	280.9	262.2
167.5°	292.1	292.1	307.1	303.4	273.4	262.2
170°	292.1	299.6	307.1	292.1	269.7	262.2
172.5°	280.9	284.6	292.1	273.4	258.4	262.2
175°	265.9	262.2	273.4	262.2	258.4	258.4
177.5°	258.4	247.2	258.4	254.7	250.9	254.7
180°	250.9	250.9	250.9	250.9	250.9	250.9

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