

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: P192477

Luminaire Tested: **4WSL-LD2-75-UPL8-UNV-L830-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P192477  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28106)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 4WSL-LD2-75-UPL8-UNV-L830-CD1-U  
Description: 4FT Linear Wavestream System, 8% Uplight, L830  
Light Source: (238) 3000K CCT, 80 CRI LEDS  
EL236N0119D830  
Ballast/Driver: OSRAM  
OT85W1202772A0DIML

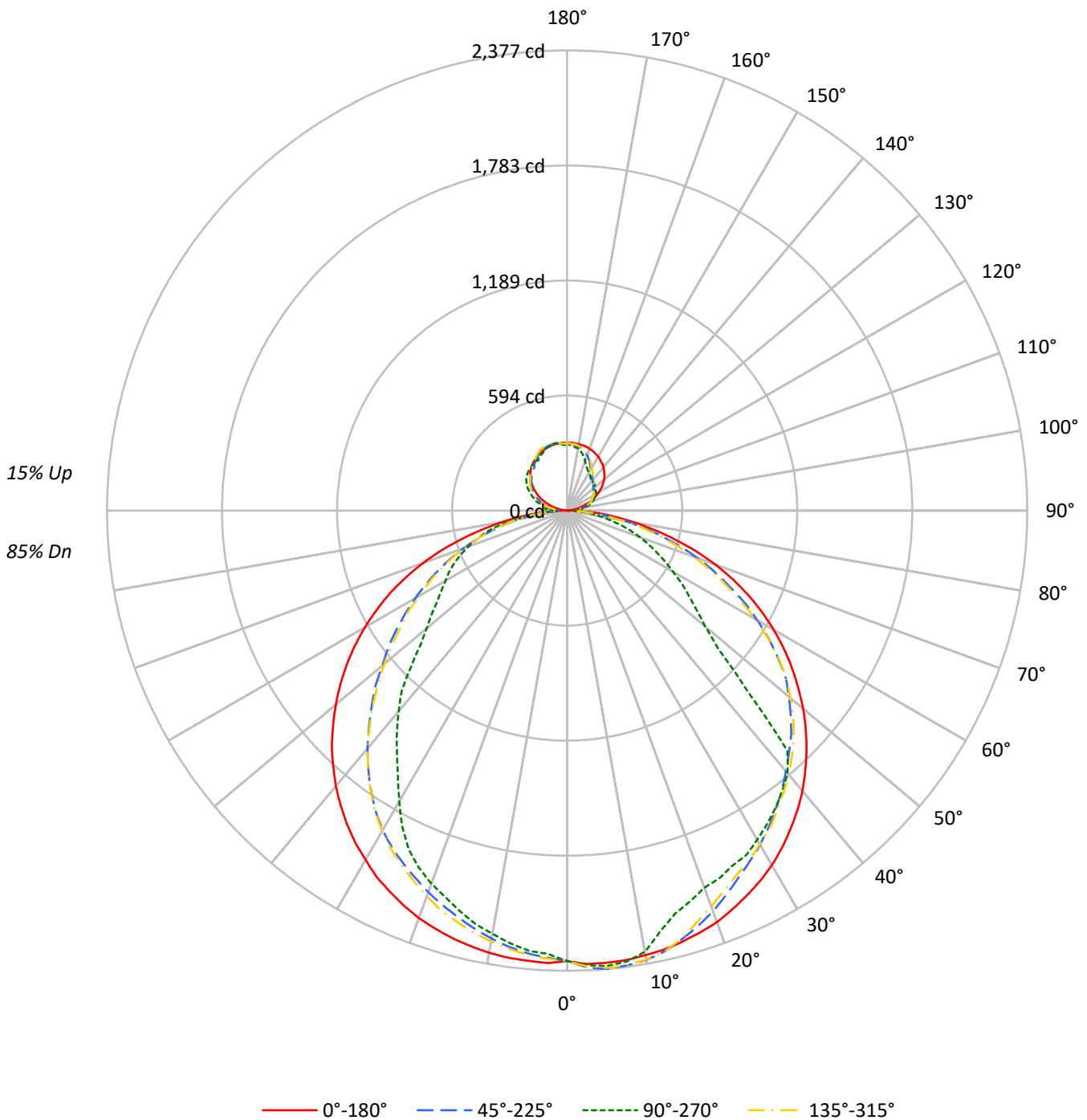
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7718.0 lumens  
Efficiency: N/A  
Efficacy: 104.4 lumens/watt  
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36  
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')  
CIE Type: Semi-Direct  
  
Input Watts (W): 73.9  
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			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	115	115	115	115	111	111	111	111	103	103	103	95	95	95	88	88	88	85
1	105	101	96	92	101	97	93	90	90	87	84	83	81	79	78	76	74	71
2	96	88	81	75	92	84	78	73	78	73	69	73	69	65	68	65	62	59
3	87	77	69	62	83	74	67	61	69	63	58	64	59	55	60	56	52	50
4	80	68	59	53	76	66	58	52	61	55	49	57	52	47	53	49	45	42
5	73	61	52	45	70	59	51	44	55	48	43	51	45	41	48	43	39	37
6	68	55	46	40	65	53	45	39	50	43	37	47	40	36	44	38	34	32
7	63	49	41	35	60	48	40	34	45	38	33	42	36	32	40	35	31	28
8	58	45	37	31	56	44	36	30	41	34	29	39	33	28	37	31	27	25
9	54	41	33	28	52	40	33	27	38	31	26	36	30	26	34	29	25	23
10	51	38	30	25	49	37	30	25	35	28	24	33	27	23	31	26	22	21

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	13182	13182	13182	13182
5°	13332	13431	13275	12977
10°	13415	13314	13343	12769
15°	13516	12639	13413	12566
20°	13638	12496	13503	12361
25°	13719	12645	13564	12084
30°	13836	12842	13624	11343
35°	13905	12974	13698	10596
40°	13984	13100	13744	10005
45°	14012	10539	13772	9141
50°	14030	8190	13746	8344
55°	14001	7579	13730	8095
60°	13973	7142	13662	8215
65°	13826	6846	13526	8617
70°	13453	6602	13122	8996
75°	12597	6216	12216	9489
80°	11461	5690	10972	9021
85°	11174	6156	10043	8099



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.2	2.9
10°-20°	628.1	8.1
20°-30°	950.9	12.3
30°-40°	1148.2	14.9
40°-50°	1172.3	15.2
50°-60°	1024.9	13.3
60°-70°	794.4	10.3
70°-80°	477.6	6.2
80°-90°	147.4	1.9
90°-100°	62.2	0.8
100°-110°	118.9	1.5
110°-120°	161.5	2.1
120°-130°	183.5	2.4
130°-140°	186.2	2.4
140°-150°	171.4	2.2
150°-160°	141.4	1.8
160°-170°	95.1	1.2
170°-180°	33.0	0.4
0°-30°	1800.2	23.3
0°-40°	2948.4	38.2
0°-60°	5145.6	66.7
0°-90°	6565.0	85.1
90°-120°	342.5	4.4
90°-150°	883.6	11.4
90°-180°	1153.0	14.9
0°-180°	7718.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2327	2327	2327	2327	2327	
5°	2344	2362	2334	2282	2344	223
15°	2304	2155	2287	2142	2304	651
25°	2195	2023	2170	1933	2195	1013
35°	2010	1876	1981	1532	2010	1259
45°	1749	1315	1719	1141	1749	1349
55°	1418	767	1390	820	1418	1267
65°	1031	511	1009	643	1031	1018
75°	576	284	558	434	576	611
85°	172	95	154	125	172	173
90°	2	52	2	60	2	11
95°	15	72	15	115	15	19
105°	80	122	77	154	80	85
115°	154	157	152	209	154	153
125°	222	179	217	257	222	197
135°	272	197	269	284	272	210
145°	306	209	304	301	306	193
155°	331	244	329	319	331	153
165°	346	304	344	346	346	98
175°	351	334	351	344	351	33
180°	346	346	346	346	346	



TEST NUMBER: P192477

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9
2.5°	2344.3	2331.9	2361.7	2366.7	2349.3	2354.3	2356.8	2329.4	2339.3	2302.0	2311.9
5°	2344.3	2341.8	2376.7	2371.7	2361.7	2364.2	2371.7	2339.3	2334.3	2289.5	2297.0
7.5°	2341.8	2346.8	2369.2	2364.2	2349.3	2356.8	2369.2	2344.3	2329.4	2277.0	2274.6
10°	2331.9	2339.3	2356.8	2341.8	2314.4	2326.9	2354.3	2339.3	2319.4	2257.1	2244.7
12.5°	2321.9	2326.9	2331.9	2269.6	2224.7	2254.6	2331.9	2326.9	2304.5	2234.7	2212.3
15°	2304.5	2311.9	2292.0	2202.3	2155.0	2184.9	2287.0	2306.9	2287.0	2202.3	2174.9
17.5°	2284.5	2292.0	2249.6	2150.0	2115.1	2130.1	2229.7	2282.0	2264.6	2172.4	2137.5
20°	2262.1	2269.6	2202.3	2095.2	2072.8	2085.2	2174.9	2254.6	2239.7	2137.5	2097.7
22.5°	2229.7	2242.2	2147.5	2057.8	2055.3	2055.3	2122.6	2222.2	2207.3	2095.2	2052.8
25°	2194.8	2207.3	2092.7	2022.9	2022.9	2022.9	2075.3	2179.9	2169.9	2050.3	2008.0
27.5°	2157.5	2169.9	2042.9	1998.0	2005.5	1993.0	2035.4	2132.6	2132.6	2005.5	1960.7
30°	2115.1	2127.6	1993.0	1958.2	1963.1	1958.2	1990.5	2082.7	2082.7	1953.2	1905.8
32.5°	2065.3	2077.7	1938.2	1910.8	1920.8	1915.8	1948.2	2032.9	2035.4	1898.4	1841.1
35°	2010.5	2025.4	1880.9	1866.0	1875.9	1868.5	1890.9	1980.6	1980.6	1838.6	1766.3
37.5°	1953.2	1968.1	1821.1	1816.2	1826.1	1818.6	1836.1	1925.8	1920.8	1776.3	1686.6
40°	1890.9	1908.3	1758.9	1758.9	1771.3	1766.3	1781.3	1868.5	1858.5	1714.0	1604.4
42.5°	1821.1	1843.6	1696.6	1699.1	1684.1	1704.0	1719.0	1808.7	1788.8	1644.3	1514.7
45°	1748.9	1776.3	1636.8	1591.9	1315.4	1574.5	1654.2	1748.9	1719.0	1574.5	1427.5
47.5°	1671.7	1706.5	1567.0	1402.6	1058.8	1380.2	1584.5	1674.2	1639.3	1499.8	1342.8
50°	1591.9	1631.8	1494.8	1240.7	929.3	1215.8	1507.2	1599.4	1559.6	1422.5	1245.6
52.5°	1504.7	1549.6	1425.0	1098.7	842.1	1076.2	1427.5	1527.2	1477.3	1340.3	1165.9
55°	1417.5	1464.9	1330.4	976.6	767.3	956.7	1335.3	1435.0	1390.1	1255.6	1078.7
57.5°	1327.9	1375.2	1235.7	869.5	702.5	849.5	1230.7	1350.3	1300.5	1168.4	991.5
60°	1233.2	1280.5	1133.5	772.3	630.3	757.4	1123.6	1255.6	1205.8	1078.7	906.8
62.5°	1133.5	1180.9	1036.4	682.6	570.5	670.2	1006.5	1163.4	1108.6	984.1	819.6
65°	1031.4	1066.3	921.8	597.9	510.7	587.9	901.8	1048.8	1009.0	884.4	737.4
67.5°	924.3	959.1	822.1	523.2	453.4	513.2	799.7	946.7	901.8	787.2	655.2
70°	812.2	842.1	717.5	450.9	398.6	443.5	692.6	832.1	792.2	685.1	568.0
72.5°	697.6	725.0	605.4	383.7	341.3	378.7	580.5	717.5	677.6	578.0	488.3
75°	575.5	602.9	500.8	316.4	284.0	311.4	478.3	595.4	558.1	475.8	406.1
77.5°	460.9	493.3	396.1	249.1	226.7	244.1	376.2	480.8	443.5	381.2	326.4
80°	351.3	378.7	294.0	189.3	174.4	186.8	274.0	366.2	336.3	294.0	254.1
82.5°	254.1	269.1	201.8	139.5	132.0	137.0	186.8	259.1	244.1	211.8	186.8
85°	171.9	169.4	124.6	97.2	94.7	97.2	112.1	157.0	154.5	142.0	119.6
87.5°	72.2	67.3	57.3	39.9	34.9	37.4	44.8	59.8	57.3	59.8	57.3
90°	2.5	24.9	39.9	49.8	52.3	49.8	39.9	24.9	2.5	27.4	44.8
92.5°	5.0	32.4	47.3	54.8	59.8	54.8	44.8	32.4	5.0	42.4	44.8
95°	14.9	44.8	54.8	67.3	72.2	67.3	54.8	42.4	14.9	37.4	67.3
97.5°	29.9	57.3	64.8	74.7	77.2	72.2	62.3	57.3	27.4	67.3	69.8
100°	44.8	72.2	84.7	84.7	87.2	84.7	82.2	69.8	42.4	74.7	84.7
102.5°	62.3	82.2	97.2	104.6	104.6	104.6	97.2	82.2	57.3	92.2	117.1
105°	79.7	89.7	107.1	117.1	122.1	117.1	107.1	92.2	77.2	107.1	124.6
107.5°	99.7	97.2	117.1	127.1	132.0	127.1	117.1	99.7	94.7	119.6	139.5
110°	119.6	107.1	127.1	137.0	139.5	137.0	127.1	107.1	114.6	134.5	154.5



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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°	137.0	114.6	137.0	147.0	149.5	147.0	137.0	117.1	132.0	144.5	169.4
115°	154.5	122.1	142.0	154.5	157.0	154.5	142.0	124.6	152.0	157.0	181.9
117.5°	171.9	132.0	147.0	161.9	164.4	161.9	149.5	134.5	169.4	171.9	194.3
120°	189.3	144.5	154.5	166.9	171.9	169.4	154.5	147.0	184.4	184.4	204.3
122.5°	204.3	154.5	161.9	171.9	176.9	171.9	161.9	159.4	201.8	196.8	216.7
125°	221.7	164.4	166.9	176.9	179.4	176.9	169.4	166.9	216.7	206.8	224.2
127.5°	234.2	176.9	171.9	181.9	184.4	181.9	174.4	179.4	231.7	226.7	231.7
130°	249.1	189.3	176.9	186.8	189.3	189.3	176.9	194.3	244.1	241.7	241.7
132.5°	261.6	201.8	181.9	191.8	194.3	194.3	184.4	204.3	256.6	254.1	249.1
135°	271.6	219.2	191.8	191.8	196.8	196.8	194.3	221.7	269.1	266.6	261.6
137.5°	281.5	234.2	199.3	194.3	196.8	196.8	204.3	236.7	279.0	279.0	269.1
140°	291.5	249.1	204.3	199.3	199.3	204.3	211.8	251.6	289.0	289.0	271.6
142.5°	301.4	261.6	211.8	206.8	201.8	211.8	219.2	266.6	296.5	299.0	279.0
145°	306.4	274.0	221.7	214.3	209.3	221.7	231.7	279.0	303.9	308.9	294.0
147.5°	313.9	286.5	234.2	219.2	219.2	226.7	241.7	289.0	311.4	316.4	301.4
150°	321.4	296.5	244.1	226.7	221.7	234.2	251.6	299.0	318.9	323.9	311.4
152.5°	326.4	306.4	259.1	236.7	231.7	246.6	269.1	306.4	323.9	328.9	321.4
155°	331.3	313.9	276.5	246.6	244.1	256.6	284.0	313.9	328.9	333.8	328.9
157.5°	336.3	321.4	289.0	261.6	251.6	271.6	296.5	323.9	333.8	338.8	336.3
160°	338.8	326.4	303.9	276.5	271.6	289.0	308.9	326.4	336.3	343.8	341.3
162.5°	343.8	331.3	313.9	294.0	289.0	303.9	318.9	333.8	341.3	346.3	346.3
165°	346.3	336.3	323.9	308.9	303.9	318.9	326.4	338.8	343.8	346.3	348.8
167.5°	346.3	341.3	331.3	318.9	316.4	328.9	336.3	343.8	346.3	346.3	351.3
170°	348.8	343.8	336.3	328.9	326.4	336.3	338.8	346.3	348.8	346.3	353.8
172.5°	348.8	346.3	341.3	333.8	328.9	341.3	343.8	346.3	348.8	346.3	351.3
175°	351.3	346.3	346.3	341.3	333.8	346.3	346.3	346.3	351.3	346.3	348.8
177.5°	351.3	346.3	346.3	343.8	338.8	346.3	346.3	346.3	351.3	346.3	348.8
180°	346.3	346.3	346.3	346.3	346.3	346.3	346.3	346.3	346.3	346.3	346.3



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2326.9	2326.9	2326.9	2326.9	2326.9	2326.9
2.5°	2309.4	2292.0	2297.0	2316.9	2309.4	2344.3
5°	2292.0	2282.0	2282.0	2304.5	2302.0	2344.3
7.5°	2264.6	2254.6	2259.6	2284.5	2289.5	2341.8
10°	2232.2	2219.7	2224.7	2259.6	2272.1	2331.9
12.5°	2197.3	2187.4	2192.3	2232.2	2249.6	2321.9
15°	2157.5	2142.5	2157.5	2199.8	2222.2	2304.5
17.5°	2112.6	2092.7	2110.1	2164.9	2192.3	2284.5
20°	2067.8	2050.3	2060.3	2120.1	2160.0	2262.1
22.5°	2022.9	1998.0	2008.0	2070.3	2120.1	2229.7
25°	1970.6	1933.2	1953.2	2020.4	2077.7	2194.8
27.5°	1900.9	1843.6	1885.9	1970.6	2027.9	2157.5
30°	1808.7	1733.9	1796.2	1910.8	1975.6	2115.1
32.5°	1706.5	1626.8	1696.6	1843.6	1920.8	2065.3
35°	1604.4	1532.1	1594.4	1768.8	1863.5	2010.5
37.5°	1507.2	1445.0	1502.3	1689.1	1803.7	1953.2
40°	1415.1	1352.8	1412.6	1601.9	1738.9	1890.9
42.5°	1322.9	1265.6	1322.9	1509.7	1671.7	1821.1
45°	1230.7	1141.0	1225.7	1420.0	1599.4	1748.9
47.5°	1131.0	1026.4	1123.6	1322.9	1522.2	1671.7
50°	1036.4	946.7	1031.4	1233.2	1442.5	1591.9
52.5°	954.2	881.9	949.2	1141.0	1360.2	1504.7
55°	876.9	819.6	876.9	1051.3	1273.1	1417.5
57.5°	807.2	769.8	809.7	974.1	1183.4	1327.9
60°	747.4	725.0	749.9	879.4	1093.7	1233.2
62.5°	690.1	687.6	692.6	804.7	999.0	1133.5
65°	630.3	642.8	630.3	725.0	904.3	1031.4
67.5°	570.5	595.4	575.5	645.2	802.2	924.3
70°	515.7	543.1	515.7	563.0	700.1	812.2
72.5°	453.4	488.3	453.4	485.8	592.9	697.6
75°	393.6	433.5	396.1	406.1	490.8	575.5
77.5°	328.9	366.2	336.3	328.9	396.1	460.9
80°	261.6	276.5	261.6	259.1	306.4	351.3
82.5°	181.9	194.3	181.9	189.3	224.2	254.1
85°	119.6	124.6	119.6	122.1	149.5	171.9
87.5°	49.8	49.8	49.8	62.3	67.3	72.2
90°	54.8	59.8	54.8	44.8	27.4	2.5
92.5°	57.3	62.3	57.3	49.8	32.4	5.0
95°	102.1	114.6	97.2	62.3	52.3	14.9
97.5°	82.2	89.7	84.7	72.2	64.8	29.9
100°	97.2	104.6	97.2	102.1	79.7	44.8
102.5°	114.6	119.6	117.1	119.6	97.2	62.3
105°	149.5	154.5	149.5	129.5	112.1	79.7
107.5°	159.4	171.9	161.9	144.5	127.1	99.7
110°	171.9	181.9	174.4	159.4	139.5	119.6





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	184.4	196.8	189.3	176.9	149.5	137.0
115°	199.3	209.3	204.3	189.3	164.4	154.5
117.5°	214.3	221.7	216.7	199.3	179.4	171.9
120°	226.7	236.7	231.7	211.8	191.8	189.3
122.5°	236.7	246.6	241.7	224.2	204.3	204.3
125°	246.6	256.6	251.6	234.2	214.3	221.7
127.5°	254.1	266.6	261.6	241.7	236.7	234.2
130°	264.1	271.6	269.1	249.1	249.1	249.1
132.5°	269.1	279.0	274.0	259.1	264.1	261.6
135°	271.6	284.0	279.0	271.6	276.5	271.6
137.5°	276.5	286.5	284.0	279.0	289.0	281.5
140°	284.0	289.0	291.5	284.0	299.0	291.5
142.5°	291.5	294.0	299.0	291.5	308.9	301.4
145°	296.5	301.4	306.4	306.4	316.4	306.4
147.5°	296.5	303.9	303.9	311.4	326.4	313.9
150°	303.9	299.0	313.9	321.4	331.3	321.4
152.5°	313.9	311.4	323.9	331.3	336.3	326.4
155°	316.4	318.9	326.4	338.8	341.3	331.3
157.5°	326.4	323.9	336.3	346.3	346.3	336.3
160°	333.8	333.8	346.3	351.3	348.8	338.8
162.5°	341.3	341.3	353.8	353.8	351.3	343.8
165°	346.3	346.3	358.7	356.3	351.3	346.3
167.5°	348.8	351.3	361.2	358.7	351.3	346.3
170°	351.3	351.3	361.2	356.3	351.3	348.8
172.5°	351.3	348.8	358.7	353.8	348.8	348.8
175°	348.8	343.8	353.8	348.8	348.8	351.3
177.5°	346.3	338.8	346.3	346.3	348.8	351.3
180°	346.3	346.3	346.3	346.3	346.3	346.3

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