

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: P192479

Luminaire Tested: **4WSL-LD2-75-UPL8-UNV-L840-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P192479  
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-L840-CD1-U  
Description: 4FT Linear Wavestream System, 8% Uplight, L840  
Light Source: (238) 4000K CCT, 80 CRI LEDS  
EL236N0119D840  
Ballast/Driver: OSRAM  
OT85W1202772A0DIML

**Summary**

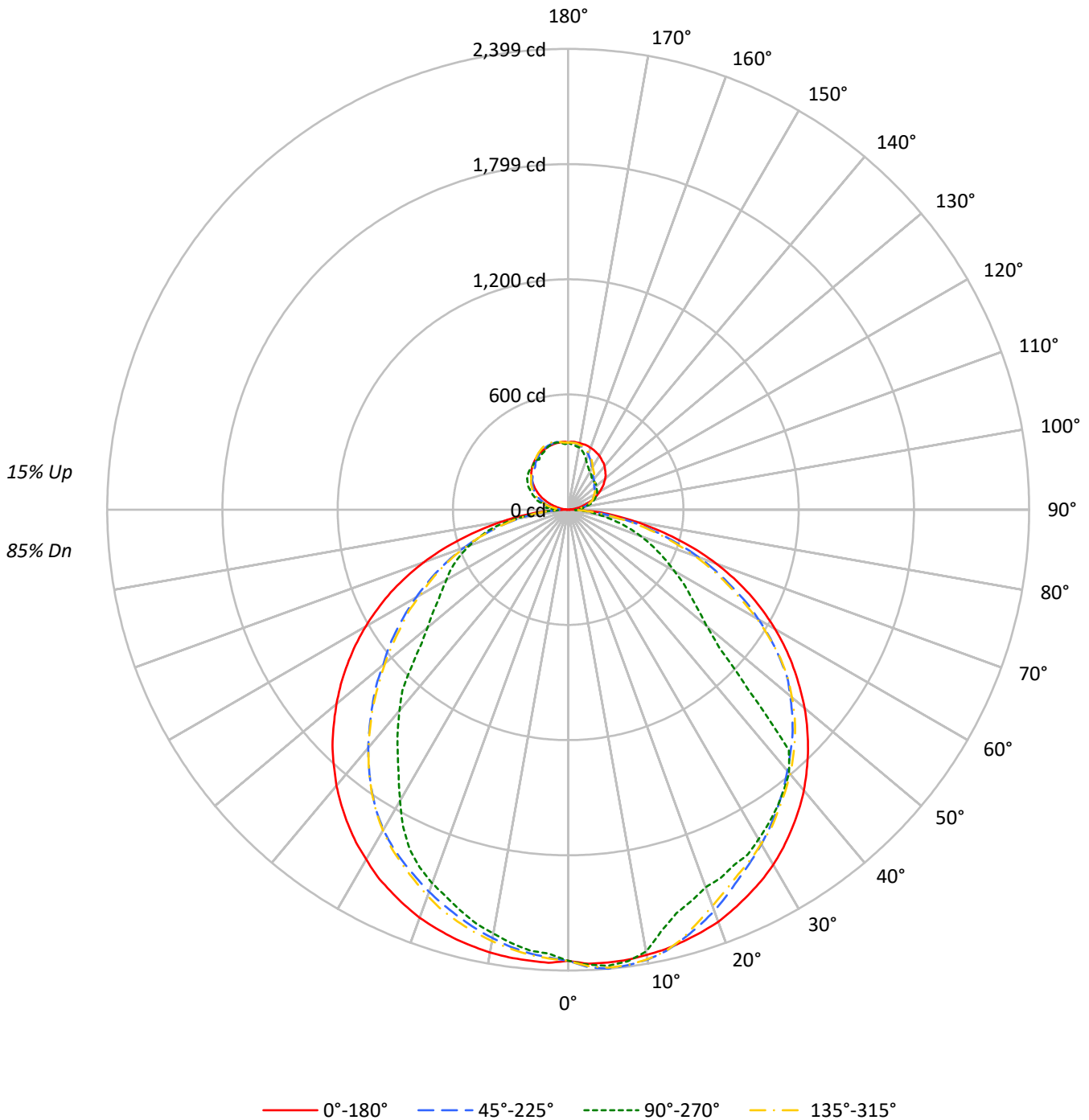
Lumens per Lamp: N/A  
Luminaire Lumens: 7789.0 lumens  
Efficiency: N/A  
Efficacy: 105.4 lumens/watt  
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36  
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 73.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	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°	13304	13304	13304	13304
5°	13455	13555	13397	13097
10°	13538	13436	13465	12887
15°	13640	12755	13537	12681
20°	13763	12611	13627	12475
25°	13846	12761	13689	12195
30°	13964	12960	13750	11447
35°	14032	13093	13824	10693
40°	14113	13220	13871	10096
45°	14141	10636	13899	9226
50°	14160	8265	13872	8420
55°	14130	7649	13856	8170
60°	14101	7207	13788	8289
65°	13953	6909	13650	8696
70°	13576	6664	13243	9079
75°	12713	6273	12328	9576
80°	11565	5742	11073	9106
85°	11278	6208	10134	8171



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	223.2	2.9
10°-20°	633.9	8.1
20°-30°	959.6	12.3
30°-40°	1158.8	14.9
40°-50°	1183.0	15.2
50°-60°	1034.3	13.3
60°-70°	801.7	10.3
70°-80°	482.0	6.2
80°-90°	148.8	1.9
90°-100°	62.7	0.8
100°-110°	120.0	1.5
110°-120°	162.9	2.1
120°-130°	185.2	2.4
130°-140°	187.9	2.4
140°-150°	172.9	2.2
150°-160°	142.7	1.8
160°-170°	95.9	1.2
170°-180°	33.3	0.4
0°-30°	1816.8	23.3
0°-40°	2975.6	38.2
0°-60°	5192.9	66.7
0°-90°	6625.4	85.1
90°-120°	345.6	4.4
90°-150°	891.7	11.4
90°-180°	1164.0	14.9
0°-180°	7789.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2348	2348	2348	2348	2348	
5°	2366	2384	2356	2303	2366	225
15°	2326	2175	2308	2162	2326	657
25°	2215	2042	2190	1951	2215	1022
35°	2029	1893	1999	1546	2029	1270
45°	1765	1328	1735	1152	1765	1361
55°	1431	774	1403	827	1431	1279
65°	1041	515	1018	649	1041	1027
75°	581	287	563	438	581	616
85°	174	96	156	126	174	175
90°	2	53	2	60	2	11
95°	15	73	15	116	15	19
105°	80	123	78	156	80	86
115°	156	158	153	211	156	154
125°	224	181	219	259	224	199
135°	274	199	272	287	274	212
145°	309	211	307	304	309	194
155°	334	246	332	322	334	154
165°	350	307	347	350	350	99
175°	354	337	354	347	354	34
180°	350	350	350	350	350	



TEST NUMBER: P192479

CATALOG NUMBER: 4WSL-LD2-75-UPL8-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3
2.5°	2365.9	2353.3	2383.5	2388.5	2370.9	2375.9	2378.4	2350.8	2360.8	2323.1	2333.2
5°	2365.9	2363.4	2398.6	2393.5	2383.5	2386.0	2393.5	2360.8	2355.8	2310.6	2318.1
7.5°	2363.4	2368.4	2391.0	2386.0	2370.9	2378.4	2391.0	2365.9	2350.8	2298.0	2295.5
10°	2353.3	2360.8	2378.4	2363.4	2335.7	2348.3	2375.9	2360.8	2340.7	2277.9	2265.3
12.5°	2343.2	2348.3	2353.3	2290.5	2245.2	2275.4	2353.3	2348.3	2325.6	2255.3	2232.6
15°	2325.6	2333.2	2313.1	2222.6	2174.8	2205.0	2308.0	2328.2	2308.0	2222.6	2194.9
17.5°	2305.5	2313.1	2270.3	2169.8	2134.6	2149.7	2250.2	2303.0	2285.4	2192.4	2157.2
20°	2282.9	2290.5	2222.6	2114.5	2091.8	2104.4	2194.9	2275.4	2260.3	2157.2	2117.0
22.5°	2250.2	2262.8	2167.3	2076.7	2074.2	2074.2	2142.1	2242.7	2227.6	2114.5	2071.7
25°	2215.0	2227.6	2111.9	2041.5	2041.5	2041.5	2094.3	2199.9	2189.9	2069.2	2026.5
27.5°	2177.3	2189.9	2061.7	2016.4	2023.9	2011.4	2054.1	2152.2	2152.2	2023.9	1978.7
30°	2134.6	2147.1	2011.4	1976.2	1981.2	1976.2	2008.9	2101.9	2101.9	1971.1	1923.4
32.5°	2084.3	2096.9	1956.1	1928.4	1938.5	1933.4	1966.1	2051.6	2054.1	1915.8	1858.0
35°	2029.0	2044.1	1898.2	1883.1	1893.2	1885.7	1908.3	1998.8	1998.8	1855.5	1782.6
37.5°	1971.1	1986.2	1837.9	1832.9	1842.9	1835.4	1853.0	1943.5	1938.5	1792.6	1702.1
40°	1908.3	1925.9	1775.0	1775.0	1787.6	1782.6	1797.7	1885.7	1875.6	1729.8	1619.2
42.5°	1837.9	1860.5	1712.2	1714.7	1699.6	1719.7	1734.8	1825.3	1805.2	1659.4	1528.6
45°	1765.0	1792.6	1651.8	1606.6	1327.5	1589.0	1669.4	1765.0	1734.8	1589.0	1440.6
47.5°	1687.0	1722.2	1581.4	1415.5	1068.5	1392.9	1599.0	1689.6	1654.4	1513.6	1355.2
50°	1606.6	1646.8	1508.5	1252.1	937.8	1226.9	1521.1	1614.1	1573.9	1435.6	1257.1
52.5°	1518.6	1563.8	1438.1	1108.8	849.8	1086.1	1440.6	1541.2	1490.9	1352.6	1176.7
55°	1430.6	1478.4	1342.6	985.6	774.4	965.5	1347.6	1448.2	1402.9	1267.2	1088.7
57.5°	1340.1	1387.8	1247.1	877.5	709.0	857.3	1242.0	1362.7	1312.4	1179.2	1000.7
60°	1244.5	1292.3	1144.0	779.4	636.1	764.3	1133.9	1267.2	1216.9	1088.7	915.2
62.5°	1144.0	1191.7	1045.9	688.9	575.8	676.3	1015.7	1174.1	1118.8	993.1	827.2
65°	1040.9	1076.1	930.3	603.4	515.4	593.4	910.1	1058.5	1018.3	892.5	744.2
67.5°	932.8	968.0	829.7	528.0	457.6	517.9	807.1	955.4	910.1	794.5	661.2
70°	819.6	849.8	724.1	455.1	402.3	447.5	699.0	839.7	799.5	691.4	573.2
72.5°	704.0	731.6	611.0	387.2	344.4	382.2	585.8	724.1	683.9	583.3	492.8
75°	580.8	608.4	505.4	319.3	286.6	314.3	482.7	600.9	563.2	480.2	409.8
77.5°	465.1	497.8	399.8	251.4	228.8	246.4	379.6	485.2	447.5	384.7	329.4
80°	354.5	382.2	296.7	191.1	176.0	188.6	276.6	369.6	339.4	296.7	256.4
82.5°	256.4	271.5	203.7	140.8	133.3	138.3	188.6	261.5	246.4	213.7	188.6
85°	173.5	171.0	125.7	98.1	95.5	98.1	113.1	158.4	155.9	143.3	120.7
87.5°	72.9	67.9	57.8	40.2	35.2	37.7	45.3	60.3	57.8	60.3	57.8
90°	2.5	25.1	40.2	50.3	52.8	50.3	40.2	25.1	2.5	27.7	45.3
92.5°	5.0	32.7	47.8	55.3	60.3	55.3	45.3	32.7	5.0	42.7	45.3
95°	15.1	45.3	55.3	67.9	72.9	67.9	55.3	42.7	15.1	37.7	67.9
97.5°	30.2	57.8	65.4	75.4	77.9	72.9	62.9	57.8	27.7	67.9	70.4
100°	45.3	72.9	85.5	85.5	88.0	85.5	83.0	70.4	42.7	75.4	85.5
102.5°	62.9	83.0	98.1	105.6	105.6	105.6	98.1	83.0	57.8	93.0	118.2
105°	80.5	90.5	108.1	118.2	123.2	118.2	108.1	93.0	77.9	108.1	125.7
107.5°	100.6	98.1	118.2	128.2	133.3	128.2	118.2	100.6	95.5	120.7	140.8
110°	120.7	108.1	128.2	138.3	140.8	138.3	128.2	108.1	115.7	135.8	155.9



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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°	138.3	115.7	138.3	148.3	150.9	148.3	138.3	118.2	133.3	145.8	171.0
115°	155.9	123.2	143.3	155.9	158.4	155.9	143.3	125.7	153.4	158.4	183.5
117.5°	173.5	133.3	148.3	163.4	165.9	163.4	150.9	135.8	171.0	173.5	196.1
120°	191.1	145.8	155.9	168.5	173.5	171.0	155.9	148.3	186.1	186.1	206.2
122.5°	206.2	155.9	163.4	173.5	178.5	173.5	163.4	160.9	203.7	198.6	218.7
125°	223.8	165.9	168.5	178.5	181.0	178.5	171.0	168.5	218.7	208.7	226.3
127.5°	236.3	178.5	173.5	183.5	186.1	183.5	176.0	181.0	233.8	228.8	233.8
130°	251.4	191.1	178.5	188.6	191.1	191.1	178.5	196.1	246.4	243.9	243.9
132.5°	264.0	203.7	183.5	193.6	196.1	196.1	186.1	206.2	259.0	256.4	251.4
135°	274.0	221.3	193.6	193.6	198.6	198.6	196.1	223.8	271.5	269.0	264.0
137.5°	284.1	236.3	201.1	196.1	198.6	198.6	206.2	238.9	281.6	281.6	271.5
140°	294.2	251.4	206.2	201.1	201.1	206.2	213.7	253.9	291.6	291.6	274.0
142.5°	304.2	264.0	213.7	208.7	203.7	213.7	221.3	269.0	299.2	301.7	281.6
145°	309.2	276.6	223.8	216.2	211.2	223.8	233.8	281.6	306.7	311.8	296.7
147.5°	316.8	289.1	236.3	221.3	221.3	228.8	243.9	291.6	314.3	319.3	304.2
150°	324.3	299.2	246.4	228.8	223.8	236.3	253.9	301.7	321.8	326.8	314.3
152.5°	329.4	309.2	261.5	238.9	233.8	248.9	271.5	309.2	326.8	331.9	324.3
155°	334.4	316.8	279.1	248.9	246.4	259.0	286.6	316.8	331.9	336.9	331.9
157.5°	339.4	324.3	291.6	264.0	253.9	274.0	299.2	326.8	336.9	341.9	339.4
160°	341.9	329.4	306.7	279.1	274.0	291.6	311.8	329.4	339.4	347.0	344.4
162.5°	347.0	334.4	316.8	296.7	291.6	306.7	321.8	336.9	344.4	349.5	349.5
165°	349.5	339.4	326.8	311.8	306.7	321.8	329.4	341.9	347.0	349.5	352.0
167.5°	349.5	344.4	334.4	321.8	319.3	331.9	339.4	347.0	349.5	349.5	354.5
170°	352.0	347.0	339.4	331.9	329.4	339.4	341.9	349.5	352.0	349.5	357.0
172.5°	352.0	349.5	344.4	336.9	331.9	344.4	347.0	349.5	352.0	349.5	354.5
175°	354.5	349.5	349.5	344.4	336.9	349.5	349.5	349.5	354.5	349.5	352.0
177.5°	354.5	349.5	349.5	347.0	341.9	349.5	349.5	349.5	354.5	349.5	352.0
180°	349.5	349.5	349.5	349.5	349.5	349.5	349.5	349.5	349.5	349.5	349.5



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2348.3	2348.3	2348.3	2348.3	2348.3	2348.3
2.5°	2330.7	2313.1	2318.1	2338.2	2330.7	2365.9
5°	2313.1	2303.0	2303.0	2325.6	2323.1	2365.9
7.5°	2285.4	2275.4	2280.4	2305.5	2310.6	2363.4
10°	2252.7	2240.2	2245.2	2280.4	2293.0	2353.3
12.5°	2217.5	2207.5	2212.5	2252.7	2270.3	2343.2
15°	2177.3	2162.2	2177.3	2220.1	2242.7	2325.6
17.5°	2132.1	2111.9	2129.5	2184.9	2212.5	2305.5
20°	2086.8	2069.2	2079.3	2139.6	2179.8	2282.9
22.5°	2041.5	2016.4	2026.5	2089.3	2139.6	2250.2
25°	1988.7	1951.0	1971.1	2039.0	2096.9	2215.0
27.5°	1918.3	1860.5	1903.3	1988.7	2046.6	2177.3
30°	1825.3	1749.9	1812.7	1928.4	1993.8	2134.6
32.5°	1722.2	1641.8	1712.2	1860.5	1938.5	2084.3
35°	1619.2	1546.2	1609.1	1785.1	1880.6	2029.0
37.5°	1521.1	1458.2	1516.1	1704.6	1820.3	1971.1
40°	1428.1	1365.2	1425.6	1616.6	1754.9	1908.3
42.5°	1335.0	1277.2	1335.0	1523.6	1687.0	1837.9
45°	1242.0	1151.5	1237.0	1433.1	1614.1	1765.0
47.5°	1141.5	1035.9	1133.9	1335.0	1536.2	1687.0
50°	1045.9	955.4	1040.9	1244.5	1455.7	1606.6
52.5°	962.9	890.0	957.9	1151.5	1372.8	1518.6
55°	885.0	827.2	885.0	1061.0	1284.8	1430.6
57.5°	814.6	776.9	817.1	983.1	1194.3	1340.1
60°	754.3	731.6	756.8	887.5	1103.7	1244.5
62.5°	696.4	693.9	699.0	812.1	1008.2	1144.0
65°	636.1	648.7	636.1	731.6	912.7	1040.9
67.5°	575.8	600.9	580.8	651.2	809.6	932.8
70°	520.4	548.1	520.4	568.2	706.5	819.6
72.5°	457.6	492.8	457.6	490.3	598.4	704.0
75°	397.2	437.5	399.8	409.8	495.3	580.8
77.5°	331.9	369.6	339.4	331.9	399.8	465.1
80°	264.0	279.1	264.0	261.5	309.2	354.5
82.5°	183.5	196.1	183.5	191.1	226.3	256.4
85°	120.7	125.7	120.7	123.2	150.9	173.5
87.5°	50.3	50.3	50.3	62.9	67.9	72.9
90°	55.3	60.3	55.3	45.3	27.7	2.5
92.5°	57.8	62.9	57.8	50.3	32.7	5.0
95°	103.1	115.7	98.1	62.9	52.8	15.1
97.5°	83.0	90.5	85.5	72.9	65.4	30.2
100°	98.1	105.6	98.1	103.1	80.5	45.3
102.5°	115.7	120.7	118.2	120.7	98.1	62.9
105°	150.9	155.9	150.9	130.7	113.1	80.5
107.5°	160.9	173.5	163.4	145.8	128.2	100.6
110°	173.5	183.5	176.0	160.9	140.8	120.7





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	186.1	198.6	191.1	178.5	150.9	138.3
115°	201.1	211.2	206.2	191.1	165.9	155.9
117.5°	216.2	223.8	218.7	201.1	181.0	173.5
120°	228.8	238.9	233.8	213.7	193.6	191.1
122.5°	238.9	248.9	243.9	226.3	206.2	206.2
125°	248.9	259.0	253.9	236.3	216.2	223.8
127.5°	256.4	269.0	264.0	243.9	238.9	236.3
130°	266.5	274.0	271.5	251.4	251.4	251.4
132.5°	271.5	281.6	276.6	261.5	266.5	264.0
135°	274.0	286.6	281.6	274.0	279.1	274.0
137.5°	279.1	289.1	286.6	281.6	291.6	284.1
140°	286.6	291.6	294.2	286.6	301.7	294.2
142.5°	294.2	296.7	301.7	294.2	311.8	304.2
145°	299.2	304.2	309.2	309.2	319.3	309.2
147.5°	299.2	306.7	306.7	314.3	329.4	316.8
150°	306.7	301.7	316.8	324.3	334.4	324.3
152.5°	316.8	314.3	326.8	334.4	339.4	329.4
155°	319.3	321.8	329.4	341.9	344.4	334.4
157.5°	329.4	326.8	339.4	349.5	349.5	339.4
160°	336.9	336.9	349.5	354.5	352.0	341.9
162.5°	344.4	344.4	357.0	357.0	354.5	347.0
165°	349.5	349.5	362.0	359.5	354.5	349.5
167.5°	352.0	354.5	364.6	362.0	354.5	349.5
170°	354.5	354.5	364.6	359.5	354.5	352.0
172.5°	354.5	352.0	362.0	357.0	352.0	352.0
175°	352.0	347.0	357.0	352.0	352.0	354.5
177.5°	349.5	341.9	349.5	349.5	352.0	354.5
180°	349.5	349.5	349.5	349.5	349.5	349.5

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