

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: P192521

Luminaire Tested: **4WSL-LD2-75-UPL15-UNV-L830-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192521
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: 4WSL-LD2-75-UPL15-UNV-L830-CD1-U
Description: 4FT Linear Wavestream System, 15% Uplight, L830
Light Source: (238) 3000K CCT, 80 CRI LEDS
EL236N0119D830
Ballast/Driver: OSRAM
OT85W1202772A0DIML

Summary

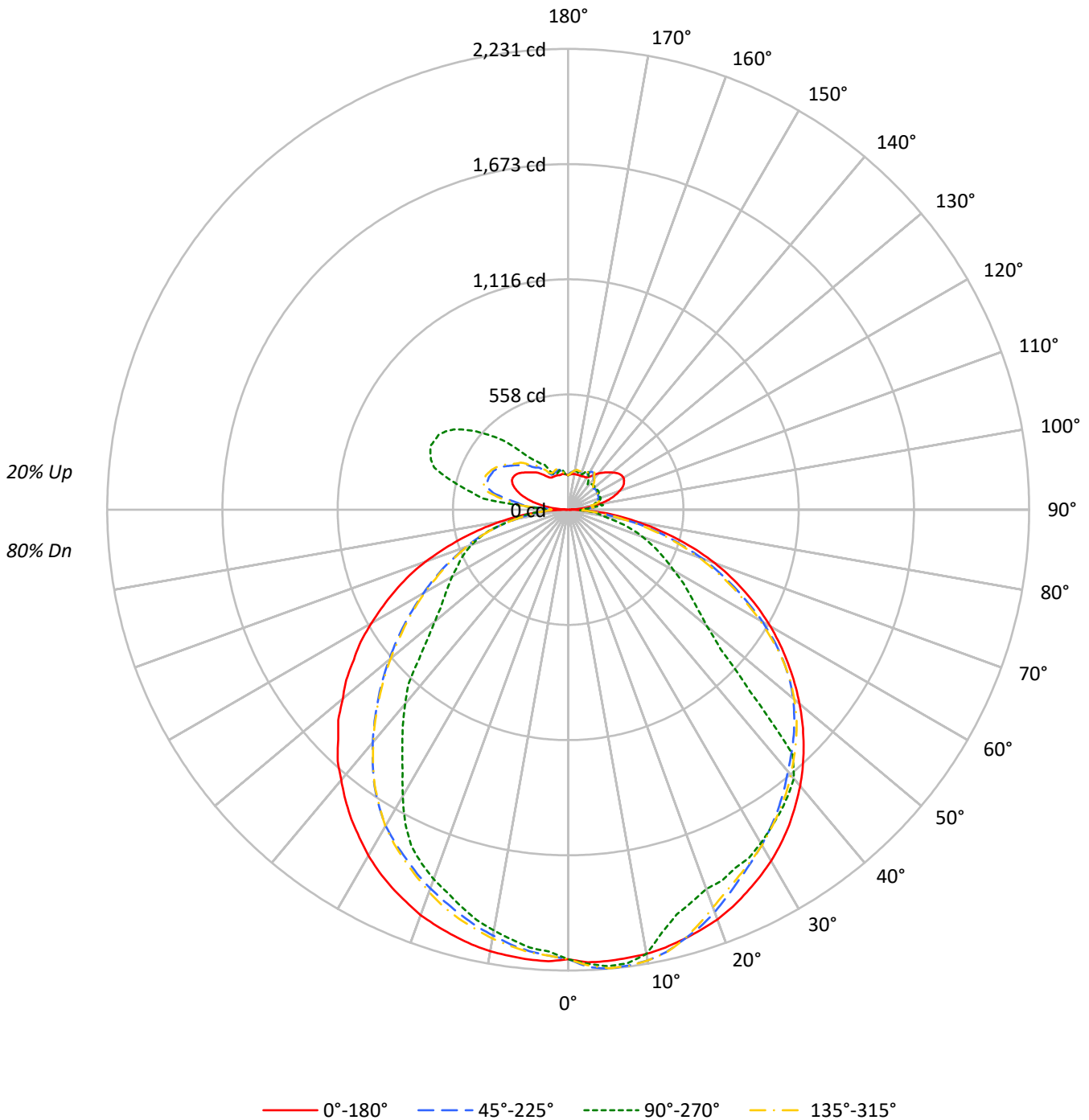
Lumens per Lamp: N/A
Luminaire Lumens: 7701.0 lumens
Efficiency: N/A
Efficacy: 104.2 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

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	
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°	12328	12328	12328	12328
5°	12474	12616	12431	12104
10°	12561	12561	12489	11900
15°	12630	11898	12528	11678
20°	12727	11778	12592	11477
25°	12774	11962	12618	11228
30°	12846	12192	12650	10476
35°	12889	12371	12647	9675
40°	12915	12563	12637	9072
45°	12910	9988	12610	8166
50°	12881	7707	12550	7420
55°	12831	7107	12510	7205
60°	12794	6709	12454	7360
65°	12693	6497	12358	7703
70°	12498	6331	12166	8236
75°	11921	6015	11538	8749
80°	11167	5461	10841	8721
85°	11206	7144	10394	10394



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.7
10°-20°	587.7	7.6
20°-30°	888.1	11.5
30°-40°	1068.8	13.9
40°-50°	1087.0	14.1
50°-60°	946.1	12.3
60°-70°	738.0	9.6
70°-80°	456.2	5.9
80°-90°	160.5	2.1
90°-100°	151.1	2.0
100°-110°	292.6	3.8
110°-120°	320.2	4.2
120°-130°	280.7	3.6
130°-140°	210.3	2.7
140°-150°	144.0	1.9
150°-160°	91.7	1.2
160°-170°	53.6	0.7
170°-180°	17.3	0.2
0°-30°	1682.8	21.9
0°-40°	2751.6	35.7
0°-60°	4784.7	62.1
0°-90°	6139.5	79.7
90°-120°	763.9	9.9
90°-150°	1398.9	18.2
90°-180°	1562.0	20.3
0°-180°	7701.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2176	2176	2176	2176	2176	
5°	2194	2218	2186	2128	2194	209
15°	2154	2029	2136	1991	2154	609
25°	2044	1914	2019	1796	2044	943
35°	1864	1789	1829	1399	1864	1166
45°	1611	1247	1574	1019	1611	1243
55°	1299	720	1267	730	1299	1162
65°	947	485	922	575	947	936
75°	545	275	527	400	545	577
85°	172	110	160	160	172	172
90°	2	70	2	110	2	13
95°	68	115	52	230	68	70
105°	215	142	207	612	215	224
115°	297	162	297	734	297	291
125°	302	170	302	677	302	269
135°	255	170	255	495	255	198
145°	200	170	205	295	200	127
155°	177	205	175	202	177	82
165°	175	185	172	187	175	50
175°	172	180	172	175	172	17
180°	167	167	167	167	167	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0
2.5°	2193.5	2183.5	2216.0	2218.5	2201.0	2208.5	2208.5	2181.0	2188.5	2156.0	2161.0
5°	2193.5	2196.0	2231.0	2228.5	2218.5	2221.0	2228.5	2193.5	2186.0	2141.0	2146.0
7.5°	2188.5	2201.0	2226.0	2223.5	2213.5	2216.0	2228.5	2198.5	2178.5	2126.0	2123.5
10°	2183.5	2196.0	2216.0	2203.5	2183.5	2191.0	2216.0	2196.0	2171.0	2108.6	2093.6
12.5°	2171.0	2183.5	2193.5	2131.0	2096.1	2126.0	2196.0	2183.5	2156.0	2083.6	2063.6
15°	2153.5	2168.5	2156.0	2068.6	2028.6	2056.1	2156.0	2166.0	2136.0	2051.1	2026.1
17.5°	2133.5	2151.0	2118.5	2021.1	1991.1	2003.6	2103.6	2143.5	2113.6	2018.6	1988.6
20°	2111.1	2131.0	2073.6	1971.1	1953.7	1963.7	2048.6	2118.5	2088.6	1983.6	1951.2
22.5°	2081.1	2103.6	2021.1	1936.2	1943.7	1936.2	1998.6	2086.1	2053.6	1946.2	1908.7
25°	2043.6	2068.6	1968.7	1906.2	1913.7	1911.2	1956.2	2043.6	2018.6	1901.2	1861.2
27.5°	2006.1	2031.1	1921.2	1886.2	1898.7	1883.7	1916.2	1998.6	1978.6	1853.7	1816.3
30°	1963.7	1991.1	1873.7	1851.2	1863.7	1853.7	1876.2	1953.7	1933.7	1803.8	1766.3
32.5°	1916.2	1943.7	1823.7	1808.8	1826.2	1813.8	1828.7	1903.7	1881.2	1748.8	1703.8
35°	1863.7	1891.2	1771.3	1771.3	1788.8	1773.8	1781.3	1853.7	1828.7	1693.8	1633.9
37.5°	1806.3	1836.2	1713.8	1726.3	1746.3	1731.3	1731.3	1801.3	1771.3	1633.9	1553.9
40°	1746.3	1778.8	1653.9	1681.3	1698.8	1681.3	1676.4	1746.3	1708.8	1573.9	1471.5
42.5°	1681.3	1716.3	1598.9	1631.4	1608.9	1631.4	1618.9	1688.8	1651.4	1509.0	1386.5
45°	1611.4	1656.4	1543.9	1524.0	1246.6	1509.0	1561.4	1628.9	1573.9	1446.5	1301.6
47.5°	1538.9	1586.4	1484.0	1339.1	1001.8	1324.1	1499.0	1563.9	1509.0	1379.1	1216.7
50°	1461.5	1516.5	1421.5	1179.2	874.4	1164.2	1429.0	1496.5	1424.0	1306.6	1131.7
52.5°	1381.6	1441.5	1351.6	1041.8	789.5	1026.8	1354.1	1424.0	1354.1	1229.2	1049.3
55°	1299.1	1361.6	1269.1	914.4	719.5	911.9	1266.6	1346.6	1266.6	1151.7	966.8
57.5°	1216.7	1286.6	1181.7	821.9	659.5	809.4	1169.2	1266.6	1191.7	1071.8	886.9
60°	1129.2	1194.2	1086.8	722.0	592.1	719.5	1071.8	1184.2	1099.2	989.3	809.4
62.5°	1039.3	1111.7	984.3	634.6	537.1	632.1	966.8	1091.8	1009.3	904.4	734.5
65°	946.9	1016.8	886.9	564.6	484.7	559.6	869.4	996.8	921.9	819.4	664.5
67.5°	851.9	916.9	789.5	497.2	432.2	492.2	769.5	896.9	831.9	732.0	589.6
70°	754.5	814.4	689.5	432.2	382.2	429.7	672.0	794.5	734.5	642.1	522.1
72.5°	652.1	707.0	584.6	369.7	329.8	367.2	569.6	689.5	627.1	547.1	462.2
75°	544.6	597.1	487.2	307.3	274.8	304.8	472.2	577.1	527.1	459.7	392.2
77.5°	442.2	494.7	387.2	237.3	209.9	232.3	369.7	472.2	429.7	372.2	319.8
80°	342.3	384.7	284.8	177.4	167.4	177.4	277.3	362.3	332.3	292.3	249.8
82.5°	252.3	277.3	192.4	144.9	144.9	144.9	187.4	257.3	244.8	217.4	189.9
85°	172.4	172.4	129.9	109.9	109.9	109.9	127.4	152.4	159.9	144.9	144.9
87.5°	72.5	74.9	67.5	60.0	57.5	60.0	65.0	62.5	62.5	70.0	87.4
90°	2.5	32.5	55.0	67.5	70.0	65.0	50.0	30.0	2.5	42.5	77.4
92.5°	17.5	70.0	65.0	84.9	87.4	79.9	67.5	55.0	10.0	77.4	82.4
95°	67.5	82.4	127.4	129.9	114.9	109.9	124.9	77.4	52.5	104.9	209.9
97.5°	107.4	124.9	114.9	149.9	169.9	149.9	119.9	119.9	99.9	162.4	244.8
100°	147.4	132.4	117.4	129.9	149.9	132.4	112.4	132.4	139.9	189.9	299.8
102.5°	184.9	147.4	147.4	127.4	129.9	124.9	142.4	144.9	174.9	214.9	369.7
105°	214.9	152.4	154.9	144.9	142.4	144.9	154.9	154.9	207.4	237.3	402.2
107.5°	242.3	157.4	152.4	159.9	162.4	159.9	152.4	157.4	237.3	252.3	409.7
110°	264.8	159.9	154.9	159.9	167.4	159.9	154.9	162.4	262.3	267.3	414.7



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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°	284.8	162.4	159.9	157.4	164.9	157.4	159.9	167.4	282.3	274.8	414.7
115°	297.3	164.9	159.9	159.9	162.4	159.9	162.4	169.9	297.3	277.3	409.7
117.5°	304.8	169.9	162.4	164.9	167.4	164.9	162.4	174.9	307.3	287.3	407.2
120°	309.8	187.4	162.4	167.4	169.9	167.4	162.4	189.9	309.8	292.3	397.2
122.5°	307.3	194.9	164.9	167.4	172.4	167.4	164.9	197.4	307.3	289.8	384.7
125°	302.3	202.4	164.9	164.9	169.9	167.4	167.4	202.4	302.3	284.8	367.2
127.5°	292.3	219.8	164.9	167.4	167.4	167.4	167.4	217.4	292.3	287.3	349.8
130°	279.8	232.3	159.9	169.9	167.4	172.4	164.9	232.3	279.8	279.8	334.8
132.5°	267.3	237.3	159.9	169.9	169.9	172.4	162.4	237.3	267.3	269.8	319.8
135°	254.8	242.3	169.9	167.4	169.9	169.9	172.4	242.3	254.8	259.8	309.8
137.5°	242.3	244.8	182.4	159.9	167.4	162.4	187.4	244.8	244.8	244.8	294.8
140°	229.8	242.3	192.4	154.9	157.4	159.9	197.4	244.8	234.8	237.3	269.8
142.5°	214.9	234.8	199.9	167.4	154.9	172.4	204.9	242.3	219.8	229.8	257.3
145°	199.9	227.3	214.9	184.9	169.9	192.4	222.3	234.8	204.9	224.8	249.8
147.5°	187.4	214.9	217.4	194.9	187.4	202.4	224.8	224.8	189.9	214.9	232.3
150°	179.9	202.4	209.9	202.4	194.9	212.4	219.8	207.4	179.9	207.4	217.4
152.5°	177.4	192.4	192.4	212.4	209.9	222.3	202.4	197.4	174.9	199.9	197.4
155°	177.4	189.9	184.9	194.9	204.9	204.9	192.4	192.4	174.9	199.9	187.4
157.5°	174.9	192.4	184.9	182.4	187.4	192.4	192.4	194.9	174.9	194.9	187.4
160°	174.9	194.9	187.4	179.9	182.4	189.9	194.9	194.9	174.9	194.9	189.9
162.5°	174.9	189.9	189.9	182.4	182.4	192.4	194.9	192.4	174.9	189.9	194.9
165°	174.9	189.9	192.4	187.4	184.9	197.4	194.9	187.4	172.4	187.4	197.4
167.5°	174.9	184.9	194.9	189.9	189.9	197.4	197.4	184.9	172.4	179.9	197.4
170°	174.9	182.4	192.4	189.9	192.4	199.9	192.4	182.4	174.9	177.4	189.9
172.5°	174.9	177.4	187.4	189.9	189.9	194.9	187.4	177.4	174.9	172.4	182.4
175°	172.4	177.4	182.4	182.4	179.9	187.4	179.9	174.9	172.4	169.9	174.9
177.5°	169.9	172.4	177.4	177.4	172.4	177.4	172.4	169.9	169.9	167.4	172.4
180°	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4	167.4



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2176.0	2176.0	2176.0	2176.0	2176.0	2176.0
2.5°	2158.5	2141.0	2146.0	2161.0	2158.5	2193.5
5°	2136.0	2128.5	2128.5	2151.0	2148.5	2193.5
7.5°	2111.1	2098.6	2106.1	2131.0	2138.5	2188.5
10°	2078.6	2068.6	2071.1	2108.6	2121.0	2183.5
12.5°	2046.1	2036.1	2043.6	2078.6	2096.1	2171.0
15°	2008.6	1991.1	2011.1	2048.6	2071.1	2153.5
17.5°	1963.7	1943.7	1963.7	2013.6	2041.1	2133.5
20°	1923.7	1903.7	1916.2	1968.7	2006.1	2111.1
22.5°	1878.7	1853.7	1863.7	1921.2	1968.7	2081.1
25°	1828.7	1796.3	1811.3	1873.7	1926.2	2043.6
27.5°	1763.8	1708.8	1746.3	1823.7	1873.7	2006.1
30°	1673.9	1601.4	1661.4	1768.8	1826.2	1963.7
32.5°	1568.9	1491.5	1556.4	1701.3	1771.3	1916.2
35°	1466.5	1399.0	1459.0	1631.4	1716.3	1863.7
37.5°	1376.6	1314.1	1369.1	1551.4	1656.4	1806.3
40°	1284.1	1226.7	1281.6	1466.5	1596.4	1746.3
42.5°	1199.2	1144.2	1196.7	1381.6	1531.5	1681.3
45°	1109.2	1019.3	1104.2	1294.1	1461.5	1611.4
47.5°	1014.3	919.4	1006.8	1209.2	1391.5	1538.9
50°	926.9	841.9	921.9	1121.7	1316.6	1461.5
52.5°	849.4	777.0	846.9	1034.3	1239.2	1381.6
55°	777.0	729.5	779.5	954.3	1166.7	1299.1
57.5°	719.5	687.0	722.0	876.9	1086.8	1216.7
60°	669.5	649.6	672.0	799.5	1001.8	1129.2
62.5°	614.6	607.1	614.6	724.5	919.4	1039.3
65°	567.1	574.6	567.1	657.0	831.9	946.9
67.5°	522.1	539.6	524.6	584.6	744.5	851.9
70°	472.2	497.2	474.7	519.6	654.6	754.5
72.5°	419.7	449.7	419.7	457.2	559.6	652.1
75°	364.7	399.7	367.2	389.7	469.7	544.6
77.5°	304.8	327.3	309.8	317.3	382.2	442.2
80°	242.3	267.3	244.8	249.8	302.3	342.3
82.5°	202.4	219.8	204.9	189.9	224.8	252.3
85°	149.9	159.9	154.9	147.4	154.9	172.4
87.5°	92.4	97.4	92.4	92.4	79.9	72.5
90°	102.4	109.9	102.4	79.9	45.0	2.5
92.5°	104.9	114.9	104.9	87.4	84.9	17.5
95°	234.8	229.8	249.8	227.3	129.9	67.5
97.5°	364.7	417.2	377.2	272.3	174.9	107.4
100°	419.7	469.7	437.2	339.8	199.9	147.4
102.5°	484.7	539.6	504.7	397.2	224.8	184.9
105°	564.6	612.1	582.1	419.7	247.3	214.9
107.5°	607.1	679.5	619.6	429.7	262.3	242.3
110°	629.6	707.0	649.6	432.2	274.8	264.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	647.1	722.0	662.0	432.2	279.8	284.8
115°	647.1	734.5	662.0	424.7	287.3	297.3
117.5°	647.1	727.0	662.0	417.2	297.3	304.8
120°	624.6	724.5	644.6	407.2	299.8	309.8
122.5°	607.1	704.5	619.6	394.7	299.8	307.3
125°	574.6	677.0	589.6	379.7	294.8	302.3
127.5°	539.6	637.1	552.1	362.3	297.3	292.3
130°	507.2	592.1	514.6	344.8	287.3	279.8
132.5°	464.7	542.1	472.2	332.3	277.3	267.3
135°	424.7	494.7	434.7	322.3	264.8	254.8
137.5°	382.2	444.7	392.2	302.3	252.3	242.3
140°	332.3	382.2	342.3	279.8	244.8	229.8
142.5°	299.8	327.3	309.8	269.8	234.8	214.9
145°	279.8	294.8	287.3	259.8	229.8	199.9
147.5°	259.8	274.8	267.3	239.8	217.4	187.4
150°	252.3	252.3	262.3	222.3	209.9	179.9
152.5°	224.8	244.8	234.8	202.4	204.9	177.4
155°	192.4	202.4	202.4	194.9	204.9	177.4
157.5°	179.9	187.4	189.9	194.9	199.9	174.9
160°	179.9	182.4	189.9	197.4	197.4	174.9
162.5°	184.9	182.4	194.9	202.4	192.4	174.9
165°	189.9	187.4	199.9	204.9	187.4	174.9
167.5°	194.9	194.9	204.9	202.4	182.4	174.9
170°	194.9	199.9	204.9	194.9	179.9	174.9
172.5°	187.4	189.9	194.9	182.4	172.4	174.9
175°	177.4	174.9	182.4	174.9	172.4	172.4
177.5°	172.4	164.9	172.4	169.9	167.4	169.9
180°	167.4	167.4	167.4	167.4	167.4	167.4

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