

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: P197467

Luminaire Tested: **8WSL-LD2-70-UPL15-UNV-L840-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P197467  
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-LD2-70-UPL15-UNV-L840-CD1-U  
Description: 8FT. Linear Wavestream System, 15% Uplight, L840  
Light Source: (476) 4000K CCT, 80 CRI LEDS  
EL236N0119D840  
Ballast/Driver: OSRAM  
OT85W1202772A0DIML

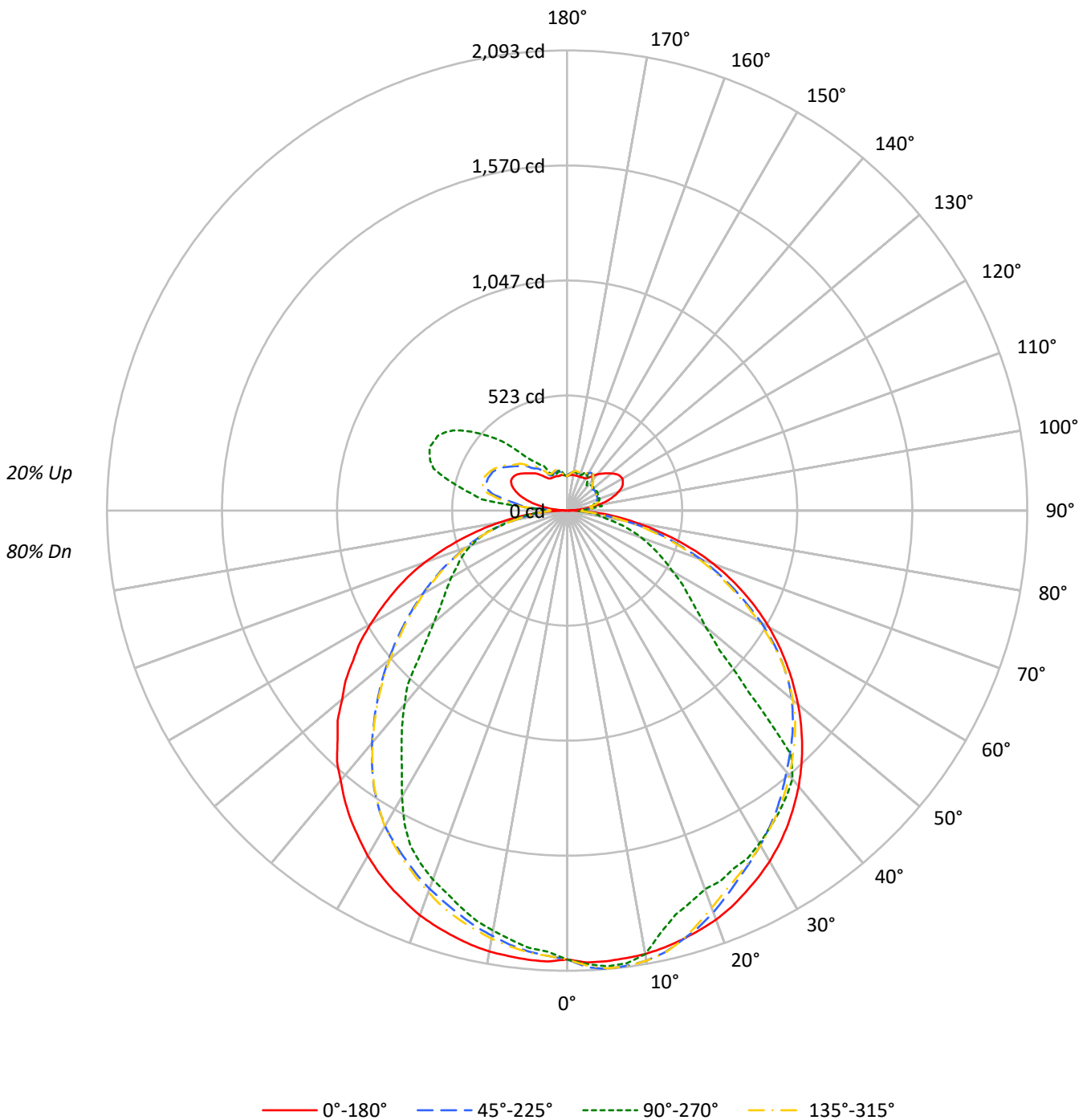
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7223.7 lumens  
Efficiency: N/A  
Efficacy: 113.6 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): 63.6  
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°	5782	5782	5782	5782
5°	5850	5917	5830	5677
10°	5891	5891	5857	5581
15°	5924	5580	5876	5477
20°	5969	5524	5906	5383
25°	5991	5610	5918	5266
30°	6025	5718	5933	4913
35°	6045	5802	5932	4538
40°	6057	5892	5927	4255
45°	6055	4685	5914	3830
50°	6041	3614	5887	3480
55°	6018	3333	5867	3379
60°	6001	3146	5841	3452
65°	5953	3047	5796	3613
70°	5861	2969	5706	3862
75°	5591	2821	5412	4103
80°	5238	2561	5085	4090
85°	5255	3351	4875	4875



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.2	2.7
10°-20°	551.2	7.6
20°-30°	833.0	11.5
30°-40°	1002.6	13.9
40°-50°	1019.6	14.1
50°-60°	887.5	12.3
60°-70°	692.3	9.6
70°-80°	428.0	5.9
80°-90°	150.6	2.1
90°-100°	141.8	2.0
100°-110°	274.5	3.8
110°-120°	300.3	4.2
120°-130°	263.3	3.6
130°-140°	197.3	2.7
140°-150°	135.1	1.9
150°-160°	86.0	1.2
160°-170°	50.3	0.7
170°-180°	16.2	0.2
0°-30°	1578.5	21.9
0°-40°	2581.1	35.7
0°-60°	4488.2	62.1
0°-90°	5759.0	79.7
90°-120°	716.6	9.9
90°-150°	1312.2	18.2
90°-180°	1465.0	20.3
0°-180°	7223.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2041	2041	2041	2041	2041	
5°	2058	2081	2050	1997	2058	196
15°	2020	1903	2004	1868	2020	571
25°	1917	1795	1894	1685	1917	885
35°	1748	1678	1715	1312	1748	1094
45°	1512	1169	1476	956	1512	1166
55°	1219	675	1188	684	1219	1090
65°	888	455	865	539	888	878
75°	511	258	494	375	511	541
85°	162	103	150	150	162	161
90°	2	66	2	103	2	12
95°	63	108	49	216	63	66
105°	202	134	194	574	202	210
115°	279	152	279	689	279	273
125°	284	159	284	635	284	252
135°	239	159	239	464	239	186
145°	188	159	192	276	188	119
155°	166	192	164	190	166	77
165°	164	173	162	176	164	46
175°	162	169	162	164	162	16
180°	157	157	157	157	157	



TEST NUMBER: P197467

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1
2.5°	2057.5	2048.2	2078.6	2081.0	2064.6	2071.6	2071.6	2045.8	2052.9	2022.4	2027.1
5°	2057.5	2059.9	2092.7	2090.3	2081.0	2083.3	2090.3	2057.5	2050.5	2008.3	2013.0
7.5°	2052.9	2064.6	2088.0	2085.7	2076.3	2078.6	2090.3	2062.2	2043.5	1994.3	1991.9
10°	2048.2	2059.9	2078.6	2066.9	2048.2	2055.2	2078.6	2059.9	2036.4	1977.9	1963.8
12.5°	2036.4	2048.2	2057.5	1999.0	1966.1	1994.3	2059.9	2048.2	2022.4	1954.4	1935.7
15°	2020.0	2034.1	2022.4	1940.4	1902.9	1928.6	2022.4	2031.8	2003.6	1924.0	1900.5
17.5°	2001.3	2017.7	1987.2	1895.8	1867.7	1879.4	1973.2	2010.7	1982.5	1893.5	1865.4
20°	1980.2	1999.0	1945.1	1849.0	1832.6	1841.9	1921.6	1987.2	1959.1	1860.7	1830.2
22.5°	1952.1	1973.2	1895.8	1816.2	1823.2	1816.2	1874.7	1956.8	1926.3	1825.5	1790.4
25°	1916.9	1940.4	1846.6	1788.0	1795.1	1792.7	1834.9	1916.9	1893.5	1783.4	1745.9
27.5°	1881.8	1905.2	1802.1	1769.3	1781.0	1767.0	1797.4	1874.7	1856.0	1738.8	1703.7
30°	1841.9	1867.7	1757.6	1736.5	1748.2	1738.8	1759.9	1832.6	1813.8	1692.0	1656.8
32.5°	1797.4	1823.2	1710.7	1696.6	1713.1	1701.3	1715.4	1785.7	1764.6	1640.4	1598.2
35°	1748.2	1774.0	1661.5	1661.5	1677.9	1663.8	1670.9	1738.8	1715.4	1588.9	1532.6
37.5°	1694.3	1722.4	1607.6	1619.3	1638.1	1624.0	1624.0	1689.6	1661.5	1532.6	1457.6
40°	1638.1	1668.5	1551.4	1577.1	1593.5	1577.1	1572.4	1638.1	1602.9	1476.4	1380.3
42.5°	1577.1	1609.9	1499.8	1530.3	1509.2	1530.3	1518.5	1584.2	1549.0	1415.4	1300.6
45°	1511.5	1553.7	1448.2	1429.5	1169.4	1415.4	1464.6	1527.9	1476.4	1356.9	1220.9
47.5°	1443.6	1488.1	1392.0	1256.1	939.7	1242.0	1406.1	1467.0	1415.4	1293.6	1141.3
50°	1370.9	1422.5	1333.4	1106.1	820.2	1092.0	1340.4	1403.7	1335.8	1225.6	1061.6
52.5°	1295.9	1352.2	1267.8	977.2	740.5	963.2	1270.1	1335.8	1270.1	1153.0	984.2
55°	1218.6	1277.2	1190.5	857.7	674.9	855.4	1188.1	1263.1	1188.1	1080.3	906.9
57.5°	1141.3	1206.9	1108.4	771.0	618.7	759.3	1096.7	1188.1	1117.8	1005.3	831.9
60°	1059.2	1120.2	1019.4	677.3	555.4	674.9	1005.3	1110.8	1031.1	928.0	759.3
62.5°	974.9	1042.8	923.3	595.2	503.8	592.9	906.9	1024.1	946.7	848.3	689.0
65°	888.2	953.8	831.9	529.6	454.6	524.9	815.5	935.0	864.7	768.6	623.4
67.5°	799.1	860.0	740.5	466.3	405.4	461.7	721.8	841.3	780.4	686.6	553.1
70°	707.7	764.0	646.8	405.4	358.5	403.1	630.4	745.2	689.0	602.3	489.8
72.5°	611.6	663.2	548.4	346.8	309.3	344.5	534.3	646.8	588.2	513.2	433.5
75°	510.9	560.1	457.0	288.2	257.8	285.9	442.9	541.3	494.5	431.2	367.9
77.5°	414.8	464.0	363.2	222.6	196.8	217.9	346.8	442.9	403.1	349.2	300.0
80°	321.1	360.9	267.2	166.4	157.0	166.4	260.1	339.8	311.7	274.2	234.3
82.5°	236.7	260.1	180.4	135.9	135.9	135.9	175.8	241.4	229.7	203.9	178.1
85°	161.7	161.7	121.9	103.1	103.1	103.1	119.5	142.9	150.0	135.9	135.9
87.5°	68.0	70.3	63.3	56.2	53.9	56.2	60.9	58.6	58.6	65.6	82.0
90°	2.3	30.5	51.6	63.3	65.6	60.9	46.9	28.1	2.3	39.8	72.6
92.5°	16.4	65.6	60.9	79.7	82.0	75.0	63.3	51.6	9.4	72.6	77.3
95°	63.3	77.3	119.5	121.9	107.8	103.1	117.2	72.6	49.2	98.4	196.8
97.5°	100.8	117.2	107.8	140.6	159.4	140.6	112.5	112.5	93.7	152.3	229.7
100°	138.3	124.2	110.1	121.9	140.6	124.2	105.5	124.2	131.2	178.1	281.2
102.5°	173.4	138.3	138.3	119.5	121.9	117.2	133.6	135.9	164.0	201.5	346.8
105°	201.5	142.9	145.3	135.9	133.6	135.9	145.3	145.3	194.5	222.6	377.3
107.5°	227.3	147.6	142.9	150.0	152.3	150.0	142.9	147.6	222.6	236.7	384.3
110°	248.4	150.0	145.3	150.0	157.0	150.0	145.3	152.3	246.1	250.7	389.0



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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°	267.2	152.3	150.0	147.6	154.7	147.6	150.0	157.0	264.8	257.8	389.0
115°	278.9	154.7	150.0	150.0	152.3	150.0	152.3	159.4	278.9	260.1	384.3
117.5°	285.9	159.4	152.3	154.7	157.0	154.7	152.3	164.0	288.2	269.5	382.0
120°	290.6	175.8	152.3	157.0	159.4	157.0	152.3	178.1	290.6	274.2	372.6
122.5°	288.2	182.8	154.7	157.0	161.7	157.0	154.7	185.1	288.2	271.8	360.9
125°	283.6	189.8	154.7	154.7	159.4	157.0	157.0	189.8	283.6	267.2	344.5
127.5°	274.2	206.2	154.7	157.0	157.0	157.0	157.0	203.9	274.2	269.5	328.1
130°	262.5	217.9	150.0	159.4	157.0	161.7	154.7	217.9	262.5	262.5	314.0
132.5°	250.7	222.6	150.0	159.4	159.4	161.7	152.3	222.6	250.7	253.1	300.0
135°	239.0	227.3	159.4	157.0	159.4	159.4	161.7	227.3	239.0	243.7	290.6
137.5°	227.3	229.7	171.1	150.0	157.0	152.3	175.8	229.7	229.7	229.7	276.5
140°	215.6	227.3	180.4	145.3	147.6	150.0	185.1	229.7	220.3	222.6	253.1
142.5°	201.5	220.3	187.5	157.0	145.3	161.7	192.2	227.3	206.2	215.6	241.4
145°	187.5	213.3	201.5	173.4	159.4	180.4	208.6	220.3	192.2	210.9	234.3
147.5°	175.8	201.5	203.9	182.8	175.8	189.8	210.9	210.9	178.1	201.5	217.9
150°	168.7	189.8	196.8	189.8	182.8	199.2	206.2	194.5	168.7	194.5	203.9
152.5°	166.4	180.4	180.4	199.2	196.8	208.6	189.8	185.1	164.0	187.5	185.1
155°	166.4	178.1	173.4	182.8	192.2	192.2	180.4	180.4	164.0	187.5	175.8
157.5°	164.0	180.4	173.4	171.1	175.8	180.4	180.4	182.8	164.0	182.8	175.8
160°	164.0	182.8	175.8	168.7	171.1	178.1	182.8	182.8	164.0	182.8	178.1
162.5°	164.0	178.1	178.1	171.1	171.1	180.4	182.8	180.4	164.0	178.1	182.8
165°	164.0	178.1	180.4	175.8	173.4	185.1	182.8	175.8	161.7	175.8	185.1
167.5°	164.0	173.4	182.8	178.1	178.1	185.1	185.1	173.4	161.7	168.7	185.1
170°	164.0	171.1	180.4	178.1	180.4	187.5	180.4	171.1	164.0	166.4	178.1
172.5°	164.0	166.4	175.8	178.1	178.1	182.8	175.8	166.4	164.0	161.7	171.1
175°	161.7	166.4	171.1	171.1	168.7	175.8	168.7	164.0	161.7	159.4	164.0
177.5°	159.4	161.7	166.4	166.4	161.7	166.4	161.7	159.4	159.4	157.0	161.7
180°	157.0	157.0	157.0	157.0	157.0	157.0	157.0	157.0	157.0	157.0	157.0



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2041.1	2041.1	2041.1	2041.1	2041.1	2041.1
2.5°	2024.7	2008.3	2013.0	2027.1	2024.7	2057.5
5°	2003.6	1996.6	1996.6	2017.7	2015.4	2057.5
7.5°	1980.2	1968.5	1975.5	1999.0	2006.0	2052.9
10°	1949.7	1940.4	1942.7	1977.9	1989.6	2048.2
12.5°	1919.3	1909.9	1916.9	1949.7	1966.1	2036.4
15°	1884.1	1867.7	1886.5	1921.6	1942.7	2020.0
17.5°	1841.9	1823.2	1841.9	1888.8	1914.6	2001.3
20°	1804.4	1785.7	1797.4	1846.6	1881.8	1980.2
22.5°	1762.3	1738.8	1748.2	1802.1	1846.6	1952.1
25°	1715.4	1684.9	1699.0	1757.6	1806.8	1916.9
27.5°	1654.5	1602.9	1638.1	1710.7	1757.6	1881.8
30°	1570.1	1502.1	1558.4	1659.2	1713.1	1841.9
32.5°	1471.7	1399.0	1460.0	1595.9	1661.5	1797.4
35°	1375.6	1312.3	1368.6	1530.3	1609.9	1748.2
37.5°	1291.2	1232.6	1284.2	1455.3	1553.7	1694.3
40°	1204.5	1150.6	1202.2	1375.6	1497.5	1638.1
42.5°	1124.8	1073.3	1122.5	1295.9	1436.5	1577.1
45°	1040.5	956.1	1035.8	1213.9	1370.9	1511.5
47.5°	951.4	862.4	944.4	1134.2	1305.3	1443.6
50°	869.4	789.7	864.7	1052.2	1235.0	1370.9
52.5°	796.8	728.8	794.4	970.2	1162.3	1295.9
55°	728.8	684.3	731.2	895.2	1094.4	1218.6
57.5°	674.9	644.4	677.3	822.5	1019.4	1141.3
60°	628.0	609.3	630.4	749.9	939.7	1059.2
62.5°	576.5	569.5	576.5	679.6	862.4	974.9
65°	532.0	539.0	532.0	616.3	780.4	888.2
67.5°	489.8	506.2	492.1	548.4	698.3	799.1
70°	442.9	466.3	445.3	487.4	614.0	707.7
72.5°	393.7	421.8	393.7	428.8	524.9	611.6
75°	342.1	374.9	344.5	365.6	440.6	510.9
77.5°	285.9	307.0	290.6	297.6	358.5	414.8
80°	227.3	250.7	229.7	234.3	283.6	321.1
82.5°	189.8	206.2	192.2	178.1	210.9	236.7
85°	140.6	150.0	145.3	138.3	145.3	161.7
87.5°	86.7	91.4	86.7	86.7	75.0	68.0
90°	96.1	103.1	96.1	75.0	42.2	2.3
92.5°	98.4	107.8	98.4	82.0	79.7	16.4
95°	220.3	215.6	234.3	213.3	121.9	63.3
97.5°	342.1	391.4	353.9	255.4	164.0	100.8
100°	393.7	440.6	410.1	318.7	187.5	138.3
102.5°	454.6	506.2	473.4	372.6	210.9	173.4
105°	529.6	574.1	546.0	393.7	232.0	201.5
107.5°	569.5	637.4	581.2	403.1	246.1	227.3
110°	590.5	663.2	609.3	405.4	257.8	248.4





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	607.0	677.3	621.0	405.4	262.5	267.2
115°	607.0	689.0	621.0	398.4	269.5	278.9
117.5°	607.0	681.9	621.0	391.4	278.9	285.9
120°	585.9	679.6	604.6	382.0	281.2	290.6
122.5°	569.5	660.8	581.2	370.3	281.2	288.2
125°	539.0	635.1	553.1	356.2	276.5	283.6
127.5°	506.2	597.6	517.9	339.8	278.9	274.2
130°	475.7	555.4	482.7	323.4	269.5	262.5
132.5°	435.9	508.5	442.9	311.7	260.1	250.7
135°	398.4	464.0	407.8	302.3	248.4	239.0
137.5°	358.5	417.1	367.9	283.6	236.7	227.3
140°	311.7	358.5	321.1	262.5	229.7	215.6
142.5°	281.2	307.0	290.6	253.1	220.3	201.5
145°	262.5	276.5	269.5	243.7	215.6	187.5
147.5°	243.7	257.8	250.7	225.0	203.9	175.8
150°	236.7	236.7	246.1	208.6	196.8	168.7
152.5°	210.9	229.7	220.3	189.8	192.2	166.4
155°	180.4	189.8	189.8	182.8	192.2	166.4
157.5°	168.7	175.8	178.1	182.8	187.5	164.0
160°	168.7	171.1	178.1	185.1	185.1	164.0
162.5°	173.4	171.1	182.8	189.8	180.4	164.0
165°	178.1	175.8	187.5	192.2	175.8	164.0
167.5°	182.8	182.8	192.2	189.8	171.1	164.0
170°	182.8	187.5	192.2	182.8	168.7	164.0
172.5°	175.8	178.1	182.8	171.1	161.7	164.0
175°	166.4	164.0	171.1	164.0	161.7	161.7
177.5°	161.7	154.7	161.7	159.4	157.0	159.4
180°	157.0	157.0	157.0	157.0	157.0	157.0

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