

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: P192460

Luminaire Tested: **4WSL-LD2-50-UPL8-UNV-L850-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P192460  
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-LD2-50-UPL8-UNV-L850-CD1-U  
Description: 4FT Linear Wavestream System, 8% Uplight, L850  
Light Source: (238) 5000K CCT, 80 CRI LEDS  
EL236N0119D850  
Ballast/Driver: OSRAM  
OT50W

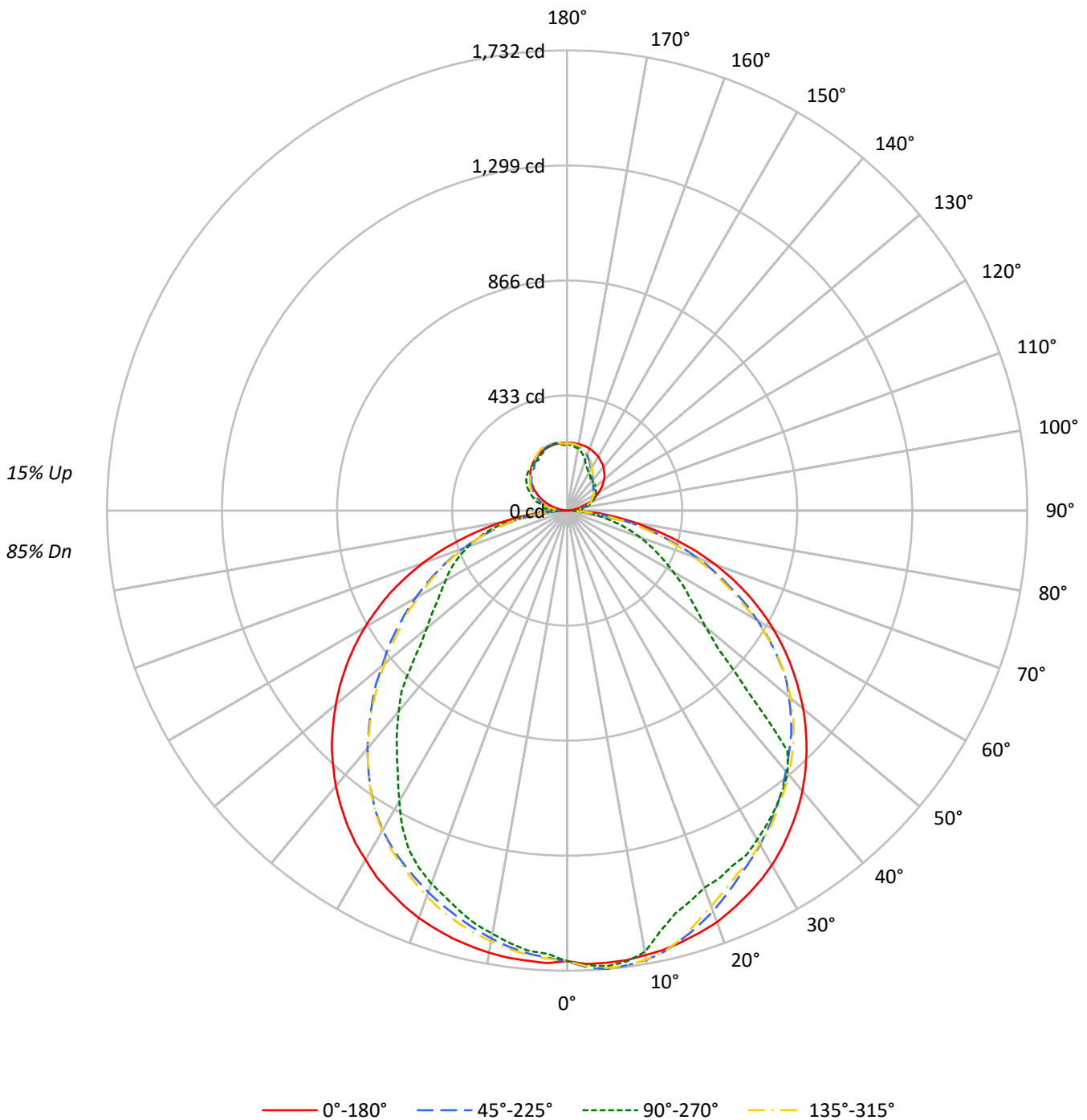
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5624.0 lumens  
Efficiency: N/A  
Efficacy: 125.5 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): 44.8  
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

TEST NUMBER: P192460

CATALOG NUMBER: 4WSL-LD2-50-UPL8-UNV-L850-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P192460

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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°	9606	9606	9606	9606
5°	9715	9787	9673	9457
10°	9775	9702	9722	9305
15°	9849	9210	9774	9157
20°	9938	9106	9839	9008
25°	9997	9214	9884	8806
30°	10083	9358	9928	8265
35°	10132	9454	9981	7722
40°	10190	9545	10016	7290
45°	10210	7679	10036	6661
50°	10224	5968	10016	6080
55°	10202	5522	10005	5900
60°	10182	5204	9955	5986
65°	10075	4989	9855	6279
70°	9803	4812	9562	6556
75°	9180	4531	8900	6915
80°	8352	4147	7996	6574
85°	8145	4485	7319	5902



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.2	2.9
10°-20°	457.7	8.1
20°-30°	692.9	12.3
30°-40°	836.7	14.9
40°-50°	854.2	15.2
50°-60°	746.8	13.3
60°-70°	578.9	10.3
70°-80°	348.0	6.2
80°-90°	107.4	1.9
90°-100°	45.3	0.8
100°-110°	86.6	1.5
110°-120°	117.6	2.1
120°-130°	133.7	2.4
130°-140°	135.7	2.4
140°-150°	124.9	2.2
150°-160°	103.0	1.8
160°-170°	69.3	1.2
170°-180°	24.1	0.4
0°-30°	1311.8	23.3
0°-40°	2148.5	38.2
0°-60°	3749.5	66.7
0°-90°	4783.8	85.1
90°-120°	249.6	4.4
90°-150°	643.8	11.4
90°-180°	840.0	14.9
0°-180°	5624.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1696	1696	1696	1696	1696	
5°	1708	1721	1701	1663	1708	163
15°	1679	1570	1666	1561	1679	475
25°	1599	1474	1581	1409	1599	738
35°	1465	1367	1443	1116	1465	917
45°	1274	958	1253	831	1274	983
55°	1033	559	1013	597	1033	923
65°	752	372	735	468	752	742
75°	419	207	407	316	419	445
85°	125	69	113	91	125	126
90°	2	38	2	44	2	8
95°	11	53	11	84	11	14
105°	58	89	56	113	58	62
115°	113	114	111	152	113	111
125°	162	131	158	187	162	143
135°	198	143	196	207	198	153
145°	223	152	222	220	223	140
155°	241	178	240	232	241	111
165°	252	222	250	252	252	71
175°	256	243	256	250	256	24
180°	252	252	252	252	252	



TEST NUMBER: P192460

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6
2.5°	1708.3	1699.2	1721.0	1724.6	1711.9	1715.5	1717.3	1697.4	1704.6	1677.4	1684.7
5°	1708.3	1706.5	1731.9	1728.2	1721.0	1722.8	1728.2	1704.6	1701.0	1668.3	1673.8
7.5°	1706.5	1710.1	1726.4	1722.8	1711.9	1717.3	1726.4	1708.3	1697.4	1659.3	1657.4
10°	1699.2	1704.6	1717.3	1706.5	1686.5	1695.6	1715.5	1704.6	1690.1	1644.7	1635.7
12.5°	1691.9	1695.6	1699.2	1653.8	1621.1	1642.9	1699.2	1695.6	1679.2	1628.4	1612.1
15°	1679.2	1684.7	1670.1	1604.8	1570.3	1592.1	1666.5	1681.0	1666.5	1604.8	1584.8
17.5°	1664.7	1670.1	1639.3	1566.7	1541.3	1552.1	1624.8	1662.9	1650.2	1583.0	1557.6
20°	1648.4	1653.8	1604.8	1526.7	1510.4	1519.5	1584.8	1642.9	1632.0	1557.6	1528.5
22.5°	1624.8	1633.8	1564.9	1499.5	1497.7	1497.7	1546.7	1619.3	1608.4	1526.7	1495.9
25°	1599.3	1608.4	1524.9	1474.1	1474.1	1474.1	1512.2	1588.5	1581.2	1494.1	1463.2
27.5°	1572.1	1581.2	1488.6	1455.9	1461.4	1452.3	1483.2	1554.0	1554.0	1461.4	1428.7
30°	1541.3	1550.3	1452.3	1426.9	1430.5	1426.9	1450.5	1517.7	1517.7	1423.3	1388.8
32.5°	1504.9	1514.0	1412.4	1392.4	1399.7	1396.0	1419.6	1481.3	1483.2	1383.3	1341.6
35°	1465.0	1475.9	1370.6	1359.7	1367.0	1361.5	1377.9	1443.2	1443.2	1339.7	1287.1
37.5°	1423.3	1434.1	1327.0	1323.4	1330.7	1325.2	1337.9	1403.3	1399.7	1294.4	1229.0
40°	1377.9	1390.6	1281.7	1281.7	1290.7	1287.1	1298.0	1361.5	1354.3	1249.0	1169.1
42.5°	1327.0	1343.4	1236.3	1238.1	1227.2	1241.7	1252.6	1318.0	1303.4	1198.1	1103.7
45°	1274.4	1294.4	1192.7	1160.0	958.5	1147.3	1205.4	1274.4	1252.6	1147.3	1040.2
47.5°	1218.1	1243.5	1141.9	1022.1	771.5	1005.7	1154.6	1219.9	1194.5	1092.9	978.5
50°	1160.0	1189.1	1089.2	904.1	677.1	885.9	1098.3	1165.5	1136.4	1036.6	907.7
52.5°	1096.5	1129.2	1038.4	800.6	613.6	784.2	1040.2	1112.8	1076.5	976.7	849.6
55°	1032.9	1067.4	969.4	711.6	559.1	697.1	973.0	1045.7	1013.0	914.9	786.1
57.5°	967.6	1002.1	900.4	633.6	511.9	619.0	896.8	983.9	947.6	851.4	722.5
60°	898.6	933.1	826.0	562.8	459.3	551.9	818.7	914.9	878.6	786.1	660.8
62.5°	826.0	860.5	755.2	497.4	415.7	488.3	733.4	847.8	807.8	717.1	597.3
65°	751.6	777.0	671.7	435.7	372.2	428.4	657.2	764.3	735.2	644.5	537.4
67.5°	673.5	698.9	599.1	381.2	330.4	374.0	582.7	689.8	657.2	573.7	477.4
70°	591.8	613.6	522.8	328.6	290.5	323.1	504.7	606.3	577.3	499.2	413.9
72.5°	508.3	528.3	441.1	279.6	248.7	275.9	423.0	522.8	493.8	421.2	355.8
75°	419.4	439.3	364.9	230.6	207.0	226.9	348.6	433.9	406.6	346.7	295.9
77.5°	335.8	359.4	288.6	181.5	165.2	177.9	274.1	350.4	323.1	277.8	237.8
80°	256.0	275.9	214.2	138.0	127.1	136.2	199.7	266.9	245.1	214.2	185.2
82.5°	185.2	196.1	147.0	101.7	96.2	99.8	136.2	188.8	177.9	154.3	136.2
85°	125.3	123.4	90.8	70.8	69.0	70.8	81.7	114.4	112.6	103.5	87.1
87.5°	52.6	49.0	41.8	29.0	25.4	27.2	32.7	43.6	41.8	43.6	41.8
90°	1.8	18.2	29.0	36.3	38.1	36.3	29.0	18.2	1.8	20.0	32.7
92.5°	3.6	23.6	34.5	39.9	43.6	39.9	32.7	23.6	3.6	30.9	32.7
95°	10.9	32.7	39.9	49.0	52.6	49.0	39.9	30.9	10.9	27.2	49.0
97.5°	21.8	41.8	47.2	54.5	56.3	52.6	45.4	41.8	20.0	49.0	50.8
100°	32.7	52.6	61.7	61.7	63.5	61.7	59.9	50.8	30.9	54.5	61.7
102.5°	45.4	59.9	70.8	76.2	76.2	76.2	70.8	59.9	41.8	67.2	85.3
105°	58.1	65.4	78.1	85.3	89.0	85.3	78.1	67.2	56.3	78.1	90.8
107.5°	72.6	70.8	85.3	92.6	96.2	92.6	85.3	72.6	69.0	87.1	101.7
110°	87.1	78.1	92.6	99.8	101.7	99.8	92.6	78.1	83.5	98.0	112.6



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CATALOG NUMBER: 4WSL-LD2-50-UPL8-UNV-L850-CD1-U

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	99.8	83.5	99.8	107.1	108.9	107.1	99.8	85.3	96.2	105.3	123.4
115°	112.6	89.0	103.5	112.6	114.4	112.6	103.5	90.8	110.7	114.4	132.5
117.5°	125.3	96.2	107.1	118.0	119.8	118.0	108.9	98.0	123.4	125.3	141.6
120°	138.0	105.3	112.6	121.6	125.3	123.4	112.6	107.1	134.3	134.3	148.9
122.5°	148.9	112.6	118.0	125.3	128.9	125.3	118.0	116.2	147.0	143.4	157.9
125°	161.6	119.8	121.6	128.9	130.7	128.9	123.4	121.6	157.9	150.7	163.4
127.5°	170.6	128.9	125.3	132.5	134.3	132.5	127.1	130.7	168.8	165.2	168.8
130°	181.5	138.0	128.9	136.2	138.0	138.0	128.9	141.6	177.9	176.1	176.1
132.5°	190.6	147.0	132.5	139.8	141.6	141.6	134.3	148.9	187.0	185.2	181.5
135°	197.9	159.8	139.8	139.8	143.4	143.4	141.6	161.6	196.1	194.2	190.6
137.5°	205.1	170.6	145.2	141.6	143.4	143.4	148.9	172.5	203.3	203.3	196.1
140°	212.4	181.5	148.9	145.2	145.2	148.9	154.3	183.4	210.6	210.6	197.9
142.5°	219.7	190.6	154.3	150.7	147.0	154.3	159.8	194.2	216.0	217.8	203.3
145°	223.3	199.7	161.6	156.1	152.5	161.6	168.8	203.3	221.5	225.1	214.2
147.5°	228.7	208.8	170.6	159.8	159.8	165.2	176.1	210.6	226.9	230.6	219.7
150°	234.2	216.0	177.9	165.2	161.6	170.6	183.4	217.8	232.4	236.0	226.9
152.5°	237.8	223.3	188.8	172.5	168.8	179.7	196.1	223.3	236.0	239.6	234.2
155°	241.4	228.7	201.5	179.7	177.9	187.0	207.0	228.7	239.6	243.3	239.6
157.5°	245.1	234.2	210.6	190.6	183.4	197.9	216.0	236.0	243.3	246.9	245.1
160°	246.9	237.8	221.5	201.5	197.9	210.6	225.1	237.8	245.1	250.5	248.7
162.5°	250.5	241.4	228.7	214.2	210.6	221.5	232.4	243.3	248.7	252.3	252.3
165°	252.3	245.1	236.0	225.1	221.5	232.4	237.8	246.9	250.5	252.3	254.2
167.5°	252.3	248.7	241.4	232.4	230.6	239.6	245.1	250.5	252.3	252.3	256.0
170°	254.2	250.5	245.1	239.6	237.8	245.1	246.9	252.3	254.2	252.3	257.8
172.5°	254.2	252.3	248.7	243.3	239.6	248.7	250.5	252.3	254.2	252.3	256.0
175°	256.0	252.3	252.3	248.7	243.3	252.3	252.3	252.3	256.0	252.3	254.2
177.5°	256.0	252.3	252.3	250.5	246.9	252.3	252.3	252.3	256.0	252.3	254.2
180°	252.3	252.3	252.3	252.3	252.3	252.3	252.3	252.3	252.3	252.3	252.3



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1695.6	1695.6	1695.6	1695.6	1695.6	1695.6
2.5°	1682.9	1670.1	1673.8	1688.3	1682.9	1708.3
5°	1670.1	1662.9	1662.9	1679.2	1677.4	1708.3
7.5°	1650.2	1642.9	1646.5	1664.7	1668.3	1706.5
10°	1626.6	1617.5	1621.1	1646.5	1655.6	1699.2
12.5°	1601.2	1593.9	1597.5	1626.6	1639.3	1691.9
15°	1572.1	1561.2	1572.1	1603.0	1619.3	1679.2
17.5°	1539.4	1524.9	1537.6	1577.6	1597.5	1664.7
20°	1506.8	1494.1	1501.3	1544.9	1573.9	1648.4
22.5°	1474.1	1455.9	1463.2	1508.6	1544.9	1624.8
25°	1436.0	1408.7	1423.3	1472.3	1514.0	1599.3
27.5°	1385.1	1343.4	1374.2	1436.0	1477.7	1572.1
30°	1318.0	1263.5	1308.9	1392.4	1439.6	1541.3
32.5°	1243.5	1185.4	1236.3	1343.4	1399.7	1504.9
35°	1169.1	1116.5	1161.8	1288.9	1357.9	1465.0
37.5°	1098.3	1052.9	1094.7	1230.8	1314.3	1423.3
40°	1031.1	985.7	1029.3	1167.3	1267.1	1377.9
42.5°	964.0	922.2	964.0	1100.1	1218.1	1327.0
45°	896.8	831.4	893.2	1034.8	1165.5	1274.4
47.5°	824.2	747.9	818.7	964.0	1109.2	1218.1
50°	755.2	689.8	751.6	898.6	1051.1	1160.0
52.5°	695.3	642.6	691.7	831.4	991.2	1096.5
55°	639.0	597.3	639.0	766.1	927.7	1032.9
57.5°	588.2	561.0	590.0	709.8	862.3	967.6
60°	544.6	528.3	546.4	640.8	796.9	898.6
62.5°	502.9	501.0	504.7	586.4	728.0	826.0
65°	459.3	468.4	459.3	528.3	659.0	751.6
67.5°	415.7	433.9	419.4	470.2	584.6	673.5
70°	375.8	395.8	375.8	410.3	510.1	591.8
72.5°	330.4	355.8	330.4	354.0	432.1	508.3
75°	286.8	315.9	288.6	295.9	357.6	419.4
77.5°	239.6	266.9	245.1	239.6	288.6	335.8
80°	190.6	201.5	190.6	188.8	223.3	256.0
82.5°	132.5	141.6	132.5	138.0	163.4	185.2
85°	87.1	90.8	87.1	89.0	108.9	125.3
87.5°	36.3	36.3	36.3	45.4	49.0	52.6
90°	39.9	43.6	39.9	32.7	20.0	1.8
92.5°	41.8	45.4	41.8	36.3	23.6	3.6
95°	74.4	83.5	70.8	45.4	38.1	10.9
97.5°	59.9	65.4	61.7	52.6	47.2	21.8
100°	70.8	76.2	70.8	74.4	58.1	32.7
102.5°	83.5	87.1	85.3	87.1	70.8	45.4
105°	108.9	112.6	108.9	94.4	81.7	58.1
107.5°	116.2	125.3	118.0	105.3	92.6	72.6
110°	125.3	132.5	127.1	116.2	101.7	87.1





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	134.3	143.4	138.0	128.9	108.9	99.8
115°	145.2	152.5	148.9	138.0	119.8	112.6
117.5°	156.1	161.6	157.9	145.2	130.7	125.3
120°	165.2	172.5	168.8	154.3	139.8	138.0
122.5°	172.5	179.7	176.1	163.4	148.9	148.9
125°	179.7	187.0	183.4	170.6	156.1	161.6
127.5°	185.2	194.2	190.6	176.1	172.5	170.6
130°	192.4	197.9	196.1	181.5	181.5	181.5
132.5°	196.1	203.3	199.7	188.8	192.4	190.6
135°	197.9	207.0	203.3	197.9	201.5	197.9
137.5°	201.5	208.8	207.0	203.3	210.6	205.1
140°	207.0	210.6	212.4	207.0	217.8	212.4
142.5°	212.4	214.2	217.8	212.4	225.1	219.7
145°	216.0	219.7	223.3	223.3	230.6	223.3
147.5°	216.0	221.5	221.5	226.9	237.8	228.7
150°	221.5	217.8	228.7	234.2	241.4	234.2
152.5°	228.7	226.9	236.0	241.4	245.1	237.8
155°	230.6	232.4	237.8	246.9	248.7	241.4
157.5°	237.8	236.0	245.1	252.3	252.3	245.1
160°	243.3	243.3	252.3	256.0	254.2	246.9
162.5°	248.7	248.7	257.8	257.8	256.0	250.5
165°	252.3	252.3	261.4	259.6	256.0	252.3
167.5°	254.2	256.0	263.2	261.4	256.0	252.3
170°	256.0	256.0	263.2	259.6	256.0	254.2
172.5°	256.0	254.2	261.4	257.8	254.2	254.2
175°	254.2	250.5	257.8	254.2	254.2	256.0
177.5°	252.3	246.9	252.3	252.3	254.2	256.0
180°	252.3	252.3	252.3	252.3	252.3	252.3

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