

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: P192506

Luminaire Tested: **4WSL-LD2-55-UPL15-UNV-L835-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192506
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-LD2-55-UPL15-UNV-L835-CD1-U
Description: 4FT Linear Wavestream System, 15% Uplight, L835
Light Source: (238) 3500K CCT, 80 CRI LEDS
EL236N0119D835
Ballast/Driver: OSRAM
OT50W

Summary

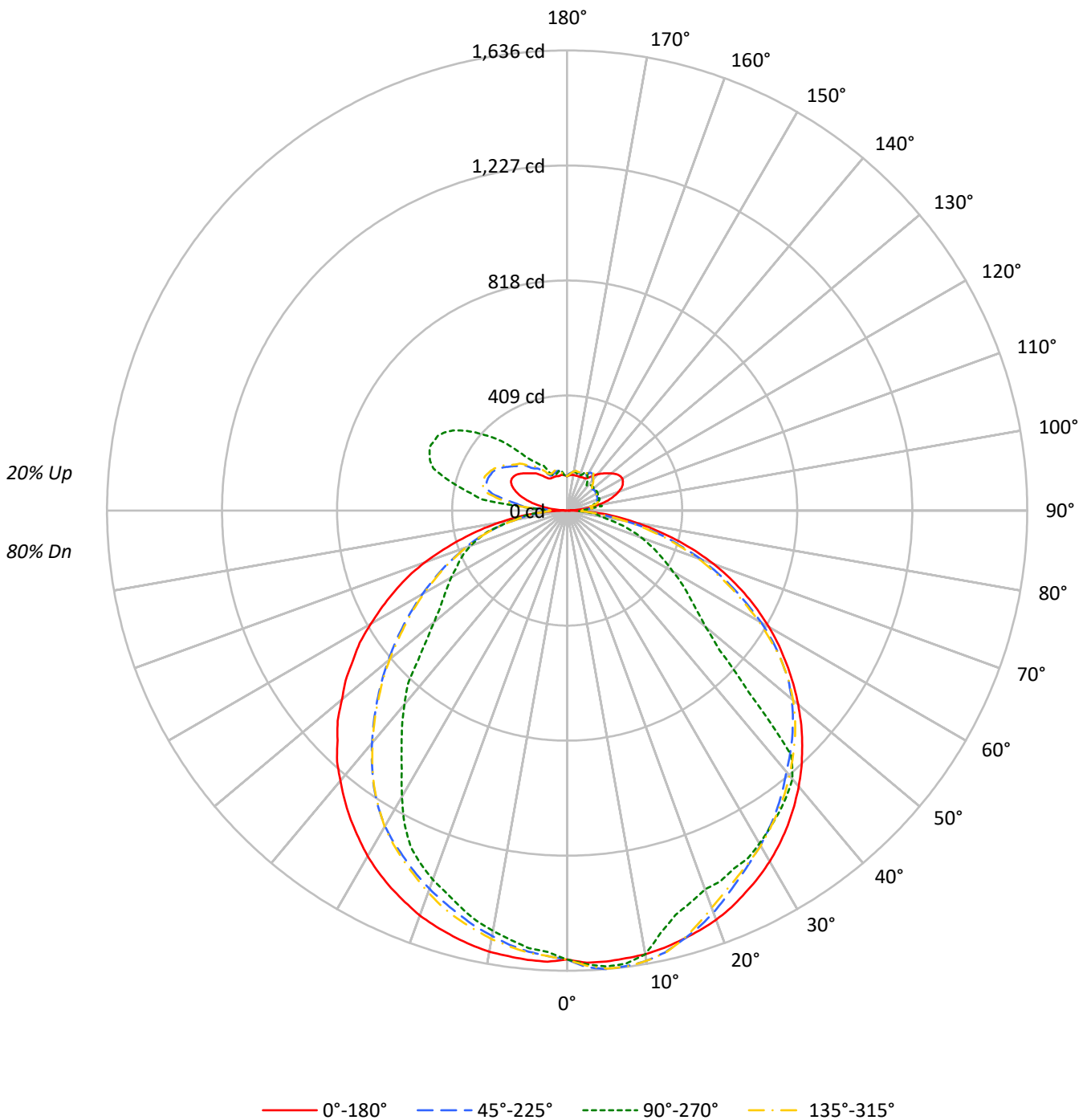
Lumens per Lamp: N/A
Luminaire Lumens: 5649.0 lumens
Efficiency: N/A
Efficacy: 113.2 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 49.9
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

TEST NUMBER: P192506

CATALOG NUMBER: 4WSL-LD2-55-UPL15-UNV-L835-CD1-U

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°	9043	9043	9043	9043
5°	9150	9254	9119	8879
10°	9214	9214	9161	8729
15°	9265	8728	9190	8567
20°	9336	8640	9237	8419
25°	9371	8775	9256	8236
30°	9423	8943	9279	7684
35°	9455	9074	9278	7098
40°	9474	9216	9270	6654
45°	9470	7327	9250	5990
50°	9449	5653	9207	5443
55°	9413	5213	9177	5285
60°	9385	4921	9136	5399
65°	9311	4765	9064	5650
70°	9167	4645	8925	6041
75°	8745	4413	8464	6418
80°	8192	4006	7951	6398
85°	8216	5239	7625	7625



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.9	2.7
10°-20°	431.1	7.6
20°-30°	651.4	11.5
30°-40°	784.0	13.9
40°-50°	797.3	14.1
50°-60°	694.0	12.3
60°-70°	541.4	9.6
70°-80°	334.7	5.9
80°-90°	117.8	2.1
90°-100°	110.9	2.0
100°-110°	214.6	3.8
110°-120°	234.9	4.2
120°-130°	205.9	3.6
130°-140°	154.3	2.7
140°-150°	105.6	1.9
150°-160°	67.2	1.2
160°-170°	39.3	0.7
170°-180°	12.7	0.2
0°-30°	1234.4	21.9
0°-40°	2018.4	35.7
0°-60°	3509.8	62.1
0°-90°	4503.6	79.7
90°-120°	560.4	9.9
90°-150°	1026.2	18.2
90°-180°	1145.0	20.3
0°-180°	5649.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1596	1596	1596	1596	1596	
5°	1609	1627	1604	1561	1609	153
15°	1580	1488	1567	1461	1580	447
25°	1499	1404	1481	1318	1499	692
35°	1367	1312	1342	1026	1367	855
45°	1182	914	1154	748	1182	912
55°	953	528	929	535	953	852
65°	695	356	676	422	695	686
75°	400	202	387	293	400	423
85°	126	81	117	117	126	126
90°	2	51	2	81	2	10
95°	50	84	38	169	50	51
105°	158	104	152	449	158	164
115°	218	119	218	539	218	214
125°	222	125	222	497	222	197
135°	187	125	187	363	187	145
145°	147	125	150	216	147	93
155°	130	150	128	148	130	60
165°	128	136	126	137	128	36
175°	126	132	126	128	126	12
180°	123	123	123	123	123	



TEST NUMBER: P192506

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2
2.5°	1609.0	1601.7	1625.5	1627.3	1614.5	1620.0	1620.0	1599.9	1605.4	1581.5	1585.2
5°	1609.0	1610.9	1636.5	1634.7	1627.3	1629.2	1634.7	1609.0	1603.5	1570.5	1574.2
7.5°	1605.4	1614.5	1632.8	1631.0	1623.7	1625.5	1634.7	1612.7	1598.0	1559.5	1557.7
10°	1601.7	1610.9	1625.5	1616.3	1601.7	1607.2	1625.5	1610.9	1592.5	1546.7	1535.7
12.5°	1592.5	1601.7	1609.0	1563.2	1537.5	1559.5	1610.9	1601.7	1581.5	1528.4	1513.7
15°	1579.7	1590.7	1581.5	1517.4	1488.1	1508.2	1581.5	1588.9	1566.9	1504.6	1486.2
17.5°	1565.0	1577.9	1554.0	1482.6	1460.6	1469.7	1543.0	1572.4	1550.4	1480.7	1458.7
20°	1548.5	1563.2	1521.1	1445.9	1433.1	1440.4	1502.7	1554.0	1532.1	1455.1	1431.3
22.5°	1526.6	1543.0	1482.6	1420.3	1425.8	1420.3	1466.1	1530.2	1506.4	1427.6	1400.1
25°	1499.1	1517.4	1444.1	1398.3	1403.8	1401.9	1434.9	1499.1	1480.7	1394.6	1365.3
27.5°	1471.6	1489.9	1409.3	1383.6	1392.8	1381.8	1405.6	1466.1	1451.4	1359.8	1332.3
30°	1440.4	1460.6	1374.4	1358.0	1367.1	1359.8	1376.3	1433.1	1418.4	1323.1	1295.6
32.5°	1405.6	1425.8	1337.8	1326.8	1339.6	1330.5	1341.5	1396.4	1379.9	1282.8	1249.8
35°	1367.1	1387.3	1299.3	1299.3	1312.1	1301.1	1306.6	1359.8	1341.5	1242.5	1198.5
37.5°	1325.0	1347.0	1257.2	1266.3	1281.0	1270.0	1270.0	1321.3	1299.3	1198.5	1139.9
40°	1281.0	1304.8	1213.2	1233.3	1246.2	1233.3	1229.7	1281.0	1253.5	1154.5	1079.4
42.5°	1233.3	1259.0	1172.9	1196.7	1180.2	1196.7	1187.5	1238.8	1211.3	1106.9	1017.1
45°	1182.0	1215.0	1132.5	1117.9	914.5	1106.9	1145.4	1194.9	1154.5	1061.1	954.8
47.5°	1128.9	1163.7	1088.6	982.3	734.9	971.3	1099.6	1147.2	1106.9	1011.6	892.5
50°	1072.1	1112.4	1042.7	865.0	641.4	854.0	1048.2	1097.7	1044.6	958.4	830.2
52.5°	1013.4	1057.4	991.4	764.2	579.1	753.2	993.3	1044.6	993.3	901.6	769.7
55°	953.0	998.8	931.0	670.7	527.8	668.9	929.1	987.8	929.1	844.8	709.2
57.5°	892.5	943.8	866.8	602.9	483.8	593.8	857.7	929.1	874.1	786.2	650.6
60°	828.3	876.0	797.2	529.6	434.3	527.8	786.2	868.7	806.3	725.7	593.8
62.5°	762.4	815.5	722.0	465.5	394.0	463.6	709.2	800.8	740.4	663.4	538.8
65°	694.6	745.9	650.6	414.2	355.5	410.5	637.7	731.2	676.2	601.1	487.5
67.5°	624.9	672.6	579.1	364.7	317.0	361.0	564.4	657.9	610.3	537.0	432.5
70°	553.4	597.4	505.8	317.0	280.4	315.2	493.0	582.8	538.8	471.0	383.0
72.5°	478.3	518.6	428.8	271.2	241.9	269.4	417.8	505.8	460.0	401.3	339.0
75°	399.5	438.0	357.4	225.4	201.6	223.6	346.4	423.3	386.7	337.2	287.7
77.5°	324.4	362.9	284.1	174.1	153.9	170.4	271.2	346.4	315.2	273.1	234.6
80°	251.1	282.2	208.9	130.1	122.8	130.1	203.4	265.7	243.7	214.4	183.3
82.5°	185.1	203.4	141.1	106.3	106.3	106.3	137.4	188.8	179.6	159.4	139.3
85°	126.4	126.4	95.3	80.6	80.6	80.6	93.5	111.8	117.3	106.3	106.3
87.5°	53.1	55.0	49.5	44.0	42.1	44.0	47.6	45.8	45.8	51.3	64.1
90°	1.8	23.8	40.3	49.5	51.3	47.6	36.7	22.0	1.8	31.2	56.8
92.5°	12.8	51.3	47.6	62.3	64.1	58.6	49.5	40.3	7.3	56.8	60.5
95°	49.5	60.5	93.5	95.3	84.3	80.6	91.6	56.8	38.5	77.0	153.9
97.5°	78.8	91.6	84.3	110.0	124.6	110.0	88.0	88.0	73.3	119.1	179.6
100°	108.1	97.1	86.1	95.3	110.0	97.1	82.5	97.1	102.6	139.3	219.9
102.5°	135.6	108.1	108.1	93.5	95.3	91.6	104.5	106.3	128.3	157.6	271.2
105°	157.6	111.8	113.6	106.3	104.5	106.3	113.6	113.6	152.1	174.1	295.0
107.5°	177.8	115.5	111.8	117.3	119.1	117.3	111.8	115.5	174.1	185.1	300.5
110°	194.3	117.3	113.6	117.3	122.8	117.3	113.6	119.1	192.4	196.1	304.2



TEST NUMBER: P192506

CATALOG NUMBER: 4WSL-LD2-55-UPL15-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	208.9	119.1	117.3	115.5	121.0	115.5	117.3	122.8	207.1	201.6	304.2
115°	218.1	121.0	117.3	117.3	119.1	117.3	119.1	124.6	218.1	203.4	300.5
117.5°	223.6	124.6	119.1	121.0	122.8	121.0	119.1	128.3	225.4	210.7	298.7
120°	227.2	137.4	119.1	122.8	124.6	122.8	119.1	139.3	227.2	214.4	291.4
122.5°	225.4	142.9	121.0	122.8	126.4	122.8	121.0	144.8	225.4	212.6	282.2
125°	221.7	148.4	121.0	121.0	124.6	122.8	122.8	148.4	221.7	208.9	269.4
127.5°	214.4	161.3	121.0	122.8	122.8	122.8	122.8	159.4	214.4	210.7	256.6
130°	205.3	170.4	117.3	124.6	122.8	126.4	121.0	170.4	205.3	205.3	245.6
132.5°	196.1	174.1	117.3	124.6	124.6	126.4	119.1	174.1	196.1	197.9	234.6
135°	186.9	177.8	124.6	122.8	124.6	124.6	126.4	177.8	186.9	190.6	227.2
137.5°	177.8	179.6	133.8	117.3	122.8	119.1	137.4	179.6	179.6	179.6	216.2
140°	168.6	177.8	141.1	113.6	115.5	117.3	144.8	179.6	172.3	174.1	197.9
142.5°	157.6	172.3	146.6	122.8	113.6	126.4	150.3	177.8	161.3	168.6	188.8
145°	146.6	166.8	157.6	135.6	124.6	141.1	163.1	172.3	150.3	164.9	183.3
147.5°	137.4	157.6	159.4	142.9	137.4	148.4	164.9	164.9	139.3	157.6	170.4
150°	131.9	148.4	153.9	148.4	142.9	155.8	161.3	152.1	131.9	152.1	159.4
152.5°	130.1	141.1	141.1	155.8	153.9	163.1	148.4	144.8	128.3	146.6	144.8
155°	130.1	139.3	135.6	142.9	150.3	150.3	141.1	141.1	128.3	146.6	137.4
157.5°	128.3	141.1	135.6	133.8	137.4	141.1	141.1	142.9	128.3	142.9	137.4
160°	128.3	142.9	137.4	131.9	133.8	139.3	142.9	142.9	128.3	142.9	139.3
162.5°	128.3	139.3	139.3	133.8	133.8	141.1	142.9	141.1	128.3	139.3	142.9
165°	128.3	139.3	141.1	137.4	135.6	144.8	142.9	137.4	126.4	137.4	144.8
167.5°	128.3	135.6	142.9	139.3	139.3	144.8	144.8	135.6	126.4	131.9	144.8
170°	128.3	133.8	141.1	139.3	141.1	146.6	141.1	133.8	128.3	130.1	139.3
172.5°	128.3	130.1	137.4	139.3	139.3	142.9	137.4	130.1	128.3	126.4	133.8
175°	126.4	130.1	133.8	133.8	131.9	137.4	131.9	128.3	126.4	124.6	128.3
177.5°	124.6	126.4	130.1	130.1	126.4	130.1	126.4	124.6	124.6	122.8	126.4
180°	122.8	122.8	122.8	122.8	122.8	122.8	122.8	122.8	122.8	122.8	122.8



TEST NUMBER: P192506

CATALOG NUMBER: 4WSL-LD2-55-UPL15-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1596.2	1596.2	1596.2	1596.2	1596.2	1596.2
2.5°	1583.4	1570.5	1574.2	1585.2	1583.4	1609.0
5°	1566.9	1561.4	1561.4	1577.9	1576.0	1609.0
7.5°	1548.5	1539.4	1544.9	1563.2	1568.7	1605.4
10°	1524.7	1517.4	1519.2	1546.7	1555.9	1601.7
12.5°	1500.9	1493.6	1499.1	1524.7	1537.5	1592.5
15°	1473.4	1460.6	1475.2	1502.7	1519.2	1579.7
17.5°	1440.4	1425.8	1440.4	1477.1	1497.2	1565.0
20°	1411.1	1396.4	1405.6	1444.1	1471.6	1548.5
22.5°	1378.1	1359.8	1367.1	1409.3	1444.1	1526.6
25°	1341.5	1317.6	1328.6	1374.4	1412.9	1499.1
27.5°	1293.8	1253.5	1281.0	1337.8	1374.4	1471.6
30°	1227.8	1174.7	1218.7	1297.5	1339.6	1440.4
32.5°	1150.9	1094.1	1141.7	1248.0	1299.3	1405.6
35°	1075.7	1026.3	1070.2	1196.7	1259.0	1367.1
37.5°	1009.8	963.9	1004.3	1138.0	1215.0	1325.0
40°	942.0	899.8	940.1	1075.7	1171.0	1281.0
42.5°	879.6	839.3	877.8	1013.4	1123.4	1233.3
45°	813.7	747.7	810.0	949.3	1072.1	1182.0
47.5°	744.0	674.4	738.5	887.0	1020.8	1128.9
50°	679.9	617.6	676.2	822.8	965.8	1072.1
52.5°	623.1	569.9	621.3	758.7	909.0	1013.4
55°	569.9	535.1	571.8	700.1	855.8	953.0
57.5°	527.8	504.0	529.6	643.2	797.2	892.5
60°	491.1	476.5	493.0	586.4	734.9	828.3
62.5°	450.8	445.3	450.8	531.5	674.4	762.4
65°	416.0	421.5	416.0	482.0	610.3	694.6
67.5°	383.0	395.8	384.8	428.8	546.1	624.9
70°	346.4	364.7	348.2	381.2	480.1	553.4
72.5°	307.9	329.9	307.9	335.4	410.5	478.3
75°	267.6	293.2	269.4	285.9	344.5	399.5
77.5°	223.6	240.1	227.2	232.7	280.4	324.4
80°	177.8	196.1	179.6	183.3	221.7	251.1
82.5°	148.4	161.3	150.3	139.3	164.9	185.1
85°	110.0	117.3	113.6	108.1	113.6	126.4
87.5°	67.8	71.5	67.8	67.8	58.6	53.1
90°	75.1	80.6	75.1	58.6	33.0	1.8
92.5°	77.0	84.3	77.0	64.1	62.3	12.8
95°	172.3	168.6	183.3	166.8	95.3	49.5
97.5°	267.6	306.0	276.7	199.8	128.3	78.8
100°	307.9	344.5	320.7	249.2	146.6	108.1
102.5°	355.5	395.8	370.2	291.4	164.9	135.6
105°	414.2	449.0	427.0	307.9	181.4	157.6
107.5°	445.3	498.5	454.5	315.2	192.4	177.8
110°	461.8	518.6	476.5	317.0	201.6	194.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	474.6	529.6	485.6	317.0	205.3	208.9
115°	474.6	538.8	485.6	311.5	210.7	218.1
117.5°	474.6	533.3	485.6	306.0	218.1	223.6
120°	458.1	531.5	472.8	298.7	219.9	227.2
122.5°	445.3	516.8	454.5	289.6	219.9	225.4
125°	421.5	496.6	432.5	278.6	216.2	221.7
127.5°	395.8	467.3	405.0	265.7	218.1	214.4
130°	372.0	434.3	377.5	252.9	210.7	205.3
132.5°	340.9	397.7	346.4	243.7	203.4	196.1
135°	311.5	362.9	318.9	236.4	194.3	186.9
137.5°	280.4	326.2	287.7	221.7	185.1	177.8
140°	243.7	280.4	251.1	205.3	179.6	168.6
142.5°	219.9	240.1	227.2	197.9	172.3	157.6
145°	205.3	216.2	210.7	190.6	168.6	146.6
147.5°	190.6	201.6	196.1	175.9	159.4	137.4
150°	185.1	185.1	192.4	163.1	153.9	131.9
152.5°	164.9	179.6	172.3	148.4	150.3	130.1
155°	141.1	148.4	148.4	142.9	150.3	130.1
157.5°	131.9	137.4	139.3	142.9	146.6	128.3
160°	131.9	133.8	139.3	144.8	144.8	128.3
162.5°	135.6	133.8	142.9	148.4	141.1	128.3
165°	139.3	137.4	146.6	150.3	137.4	128.3
167.5°	142.9	142.9	150.3	148.4	133.8	128.3
170°	142.9	146.6	150.3	142.9	131.9	128.3
172.5°	137.4	139.3	142.9	133.8	126.4	128.3
175°	130.1	128.3	133.8	128.3	126.4	126.4
177.5°	126.4	121.0	126.4	124.6	122.8	124.6
180°	122.8	122.8	122.8	122.8	122.8	122.8

(END OF REPORT)