

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: P197499

Luminaire Tested: **8WSL-LD2-140-UPL15-UNV-L840-CD2-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P197499
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-LD2-140-UPL15-UNV-L840-CD2-U
Description: 8FT. Linear Wavestream System, 15% Uplight, L840
Light Source: (476) 4000K CCT, 80 CRI LEDS
EL236N0119D840
Ballast/Driver: OSRAM
OT85W1202772A0DIML

Summary

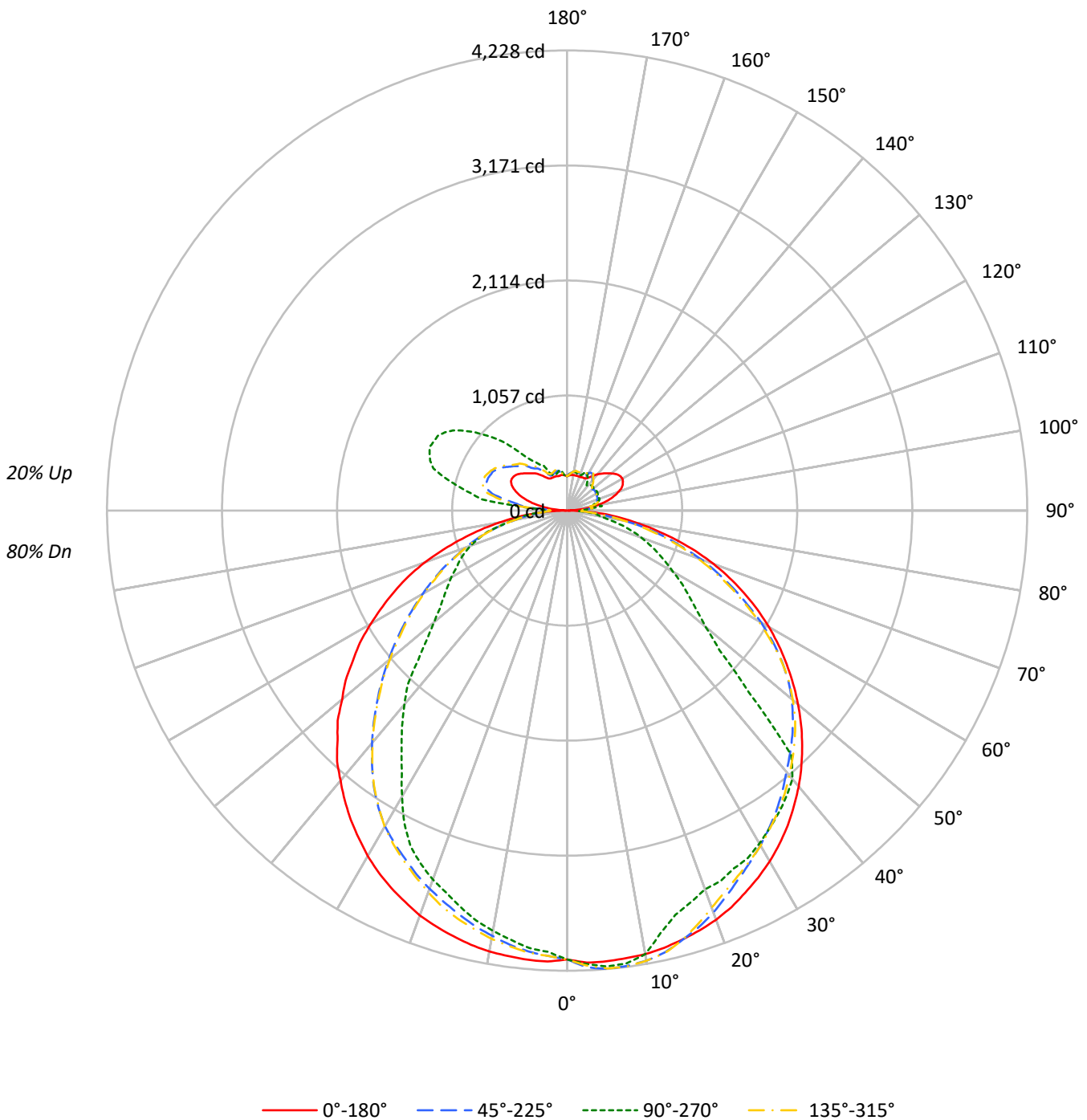
Lumens per Lamp: N/A
Luminaire Lumens: 14595.3 lumens
Efficiency: N/A
Efficacy: 106.8 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 7.6' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 136.6
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°	11682	11682	11682	11682
5°	11821	11955	11780	11471
10°	11903	11903	11835	11277
15°	11969	11275	11872	11066
20°	12061	11161	11932	10876
25°	12105	11336	11957	10640
30°	12173	11553	11987	9927
35°	12214	11723	11985	9169
40°	12238	11906	11975	8596
45°	12234	9465	11950	7739
50°	12206	7303	11893	7031
55°	12159	6734	11855	6828
60°	12125	6358	11802	6974
65°	12028	6157	11711	7299
70°	11842	5999	11529	7803
75°	11297	5700	10935	8291
80°	10582	5174	10272	8264
85°	10618	6770	9848	9848



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	392.5	2.7
10°-20°	1113.8	7.6
20°-30°	1683.1	11.5
30°-40°	2025.7	13.9
40°-50°	2060.1	14.1
50°-60°	1793.1	12.3
60°-70°	1398.7	9.6
70°-80°	864.7	5.9
80°-90°	304.2	2.1
90°-100°	286.4	2.0
100°-110°	554.6	3.8
110°-120°	606.8	4.2
120°-130°	532.0	3.6
130°-140°	398.6	2.7
140°-150°	272.9	1.9
150°-160°	173.7	1.2
160°-170°	101.6	0.7
170°-180°	32.8	0.2
0°-30°	3189.4	21.9
0°-40°	5215.0	35.7
0°-60°	9068.2	62.1
0°-90°	11635.9	79.7
90°-120°	1447.8	9.9
90°-150°	2651.3	18.2
90°-180°	2959.0	20.3
0°-180°	14595.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	4124	4124	4124	4124	4124	
5°	4157	4205	4143	4034	4157	396
15°	4082	3845	4048	3774	4082	1154
25°	3873	3627	3826	3404	3873	1788
35°	3532	3390	3466	2652	3532	2210
45°	3054	2363	2983	1932	3054	2356
55°	2462	1364	2401	1383	2462	2202
65°	1794	919	1747	1089	1794	1773
75°	1032	521	999	758	1032	1093
85°	327	208	303	303	327	326
90°	5	133	5	208	5	25
95°	128	218	99	436	128	133
105°	407	270	393	1160	407	424
115°	563	308	563	1392	563	552
125°	573	322	573	1283	573	509
135°	483	322	483	938	483	375
145°	379	322	388	559	379	241
155°	336	388	331	384	336	155
165°	331	350	327	355	331	94
175°	327	341	327	331	327	31
180°	317	317	317	317	317	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1
2.5°	4157.2	4138.3	4199.8	4204.6	4171.4	4185.6	4185.6	4133.5	4147.7	4086.2	4095.7
5°	4157.2	4161.9	4228.2	4223.5	4204.6	4209.3	4223.5	4157.2	4143.0	4057.8	4067.2
7.5°	4147.7	4171.4	4218.8	4214.0	4195.1	4199.8	4223.5	4166.7	4128.8	4029.4	4024.6
10°	4138.3	4161.9	4199.8	4176.2	4138.3	4152.5	4199.8	4161.9	4114.6	3996.2	3967.8
12.5°	4114.6	4138.3	4157.2	4038.8	3972.6	4029.4	4161.9	4138.3	4086.2	3948.9	3911.0
15°	4081.5	4109.9	4086.2	3920.5	3844.7	3896.8	4086.2	4105.1	4048.3	3887.3	3840.0
17.5°	4043.6	4076.7	4015.2	3830.5	3773.7	3797.4	3986.8	4062.5	4005.7	3825.8	3769.0
20°	4001.0	4038.8	3929.9	3735.8	3702.7	3721.6	3882.6	4015.2	3958.3	3759.5	3697.9
22.5°	3944.1	3986.8	3830.5	3669.5	3683.7	3669.5	3787.9	3953.6	3892.1	3688.5	3617.4
25°	3873.1	3920.5	3731.1	3612.7	3626.9	3622.2	3707.4	3873.1	3825.8	3603.2	3527.5
27.5°	3802.1	3849.4	3641.1	3574.8	3598.5	3570.1	3631.6	3787.9	3750.0	3513.3	3442.2
30°	3721.6	3773.7	3551.1	3508.5	3532.2	3513.3	3555.9	3702.7	3664.8	3418.6	3347.5
32.5°	3631.6	3683.7	3456.5	3428.0	3461.2	3437.5	3465.9	3608.0	3565.4	3314.4	3229.2
35°	3532.2	3584.3	3357.0	3357.0	3390.2	3361.8	3376.0	3513.3	3465.9	3210.2	3096.6
37.5°	3423.3	3480.1	3248.1	3271.8	3309.7	3281.3	3281.3	3413.8	3357.0	3096.6	2945.1
40°	3309.7	3371.2	3134.5	3186.6	3219.7	3186.6	3177.1	3309.7	3238.6	2983.0	2788.8
42.5°	3186.6	3252.9	3030.3	3091.9	3049.3	3091.9	3068.2	3200.8	3129.7	2859.9	2627.9
45°	3054.0	3139.2	2926.1	2888.3	2362.7	2859.9	2959.3	3087.1	2983.0	2741.5	2466.9
47.5°	2916.7	3006.6	2812.5	2537.9	1898.7	2509.5	2840.9	2964.0	2859.9	2613.6	2305.9
50°	2769.9	2874.1	2694.1	2234.9	1657.2	2206.4	2708.3	2836.2	2698.9	2476.3	2144.9
52.5°	2618.4	2732.0	2561.6	1974.4	1496.2	1946.0	2566.3	2698.9	2566.3	2329.6	1988.6
55°	2462.1	2580.5	2405.3	1733.0	1363.6	1728.2	2400.6	2552.1	2400.6	2182.8	1832.4
57.5°	2305.9	2438.5	2239.6	1557.8	1250.0	1534.1	2215.9	2400.6	2258.5	2031.3	1680.9
60°	2140.2	2263.3	2059.7	1368.4	1122.2	1363.6	2031.3	2244.3	2083.3	1875.0	1534.1
62.5°	1969.7	2107.0	1865.5	1202.7	1018.0	1197.9	1832.4	2069.1	1912.9	1714.0	1392.1
65°	1794.5	1927.1	1680.9	1070.1	918.6	1060.6	1647.7	1889.2	1747.2	1553.0	1259.5
67.5°	1614.6	1737.7	1496.2	942.2	819.1	932.8	1458.3	1699.8	1576.7	1387.3	1117.4
70°	1429.9	1543.6	1306.8	819.1	724.4	814.4	1273.7	1505.7	1392.1	1216.9	989.6
72.5°	1235.8	1340.0	1108.0	700.8	625.0	696.0	1079.5	1306.8	1188.5	1036.9	876.0
75°	1032.2	1131.6	923.3	582.4	520.8	577.7	894.9	1093.8	999.1	871.2	743.4
77.5°	838.1	937.5	733.9	449.8	397.7	440.3	700.8	894.9	814.4	705.5	606.1
80°	648.7	729.2	539.8	336.2	317.2	336.2	525.6	686.6	629.7	554.0	473.5
82.5°	478.2	525.6	364.6	274.6	274.6	274.6	355.1	487.7	464.0	411.9	359.8
85°	326.7	326.7	246.2	208.3	208.3	208.3	241.5	288.8	303.0	274.6	274.6
87.5°	137.3	142.0	127.8	113.6	108.9	113.6	123.1	118.4	118.4	132.6	165.7
90°	4.7	61.6	104.2	127.8	132.6	123.1	94.7	56.8	4.7	80.5	146.8
92.5°	33.1	132.6	123.1	161.0	165.7	151.5	127.8	104.2	18.9	146.8	156.3
95°	127.8	156.3	241.5	246.2	217.8	208.3	236.7	146.8	99.4	198.9	397.7
97.5°	203.6	236.7	217.8	284.1	322.0	284.1	227.3	227.3	189.4	307.8	464.0
100°	279.4	250.9	222.5	246.2	284.1	250.9	213.1	250.9	265.2	359.8	568.2
102.5°	350.4	279.4	279.4	241.5	246.2	236.7	269.9	274.6	331.4	407.2	700.8
105°	407.2	288.8	293.6	274.6	269.9	274.6	293.6	293.6	393.0	449.8	762.3
107.5°	459.3	298.3	288.8	303.0	307.8	303.0	288.8	298.3	449.8	478.2	776.5
110°	501.9	303.0	293.6	303.0	317.2	303.0	293.6	307.8	497.2	506.6	786.0



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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°	539.8	307.8	303.0	298.3	312.5	298.3	303.0	317.2	535.0	520.8	786.0
115°	563.4	312.5	303.0	303.0	307.8	303.0	307.8	322.0	563.4	525.6	776.5
117.5°	577.7	322.0	307.8	312.5	317.2	312.5	307.8	331.4	582.4	544.5	771.8
120°	587.1	355.1	307.8	317.2	322.0	317.2	307.8	359.8	587.1	554.0	752.8
122.5°	582.4	369.3	312.5	317.2	326.7	317.2	312.5	374.1	582.4	549.2	729.2
125°	572.9	383.5	312.5	312.5	322.0	317.2	317.2	383.5	572.9	539.8	696.0
127.5°	554.0	416.7	312.5	317.2	317.2	317.2	317.2	411.9	554.0	544.5	662.9
130°	530.3	440.3	303.0	322.0	317.2	326.7	312.5	440.3	530.3	530.3	634.5
132.5°	506.6	449.8	303.0	322.0	322.0	326.7	307.8	449.8	506.6	511.4	606.1
135°	483.0	459.3	322.0	317.2	322.0	322.0	326.7	459.3	483.0	492.4	587.1
137.5°	459.3	464.0	345.6	303.0	317.2	307.8	355.1	464.0	464.0	464.0	558.7
140°	435.6	459.3	364.6	293.6	298.3	303.0	374.1	464.0	445.1	449.8	511.4
142.5°	407.2	445.1	378.8	317.2	293.6	326.7	388.3	459.3	416.7	435.6	487.7
145°	378.8	430.9	407.2	350.4	322.0	364.6	421.4	445.1	388.3	426.1	473.5
147.5°	355.1	407.2	411.9	369.3	355.1	383.5	426.1	426.1	359.8	407.2	440.3
150°	340.9	383.5	397.7	383.5	369.3	402.5	416.7	393.0	340.9	393.0	411.9
152.5°	336.2	364.6	364.6	402.5	397.7	421.4	383.5	374.1	331.4	378.8	374.1
155°	336.2	359.8	350.4	369.3	388.3	388.3	364.6	364.6	331.4	378.8	355.1
157.5°	331.4	364.6	350.4	345.6	355.1	364.6	364.6	369.3	331.4	369.3	355.1
160°	331.4	369.3	355.1	340.9	345.6	359.8	369.3	369.3	331.4	369.3	359.8
162.5°	331.4	359.8	359.8	345.6	345.6	364.6	369.3	364.6	331.4	359.8	369.3
165°	331.4	359.8	364.6	355.1	350.4	374.1	369.3	355.1	326.7	355.1	374.1
167.5°	331.4	350.4	369.3	359.8	359.8	374.1	374.1	350.4	326.7	340.9	374.1
170°	331.4	345.6	364.6	359.8	364.6	378.8	364.6	345.6	331.4	336.2	359.8
172.5°	331.4	336.2	355.1	359.8	359.8	369.3	355.1	336.2	331.4	326.7	345.6
175°	326.7	336.2	345.6	345.6	340.9	355.1	340.9	331.4	326.7	322.0	331.4
177.5°	322.0	326.7	336.2	336.2	326.7	336.2	326.7	322.0	322.0	317.2	326.7
180°	317.2	317.2	317.2	317.2	317.2	317.2	317.2	317.2	317.2	317.2	317.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4124.1	4124.1	4124.1	4124.1	4124.1	4124.1
2.5°	4090.9	4057.8	4067.2	4095.7	4090.9	4157.2
5°	4048.3	4034.1	4034.1	4076.7	4072.0	4157.2
7.5°	4001.0	3977.3	3991.5	4038.8	4053.0	4147.7
10°	3939.4	3920.5	3925.2	3996.2	4019.9	4138.3
12.5°	3877.9	3858.9	3873.1	3939.4	3972.6	4114.6
15°	3806.8	3773.7	3811.6	3882.6	3925.2	4081.5
17.5°	3721.6	3683.7	3721.6	3816.3	3868.4	4043.6
20°	3645.8	3608.0	3631.6	3731.1	3802.1	4001.0
22.5°	3560.6	3513.3	3532.2	3641.1	3731.1	3944.1
25°	3465.9	3404.4	3432.8	3551.1	3650.6	3873.1
27.5°	3342.8	3238.6	3309.7	3456.5	3551.1	3802.1
30°	3172.4	3035.0	3148.7	3352.3	3461.2	3721.6
32.5°	2973.5	2826.7	2949.8	3224.4	3357.0	3631.6
35°	2779.4	2651.5	2765.2	3091.9	3252.9	3532.2
37.5°	2608.9	2490.5	2594.7	2940.4	3139.2	3423.3
40°	2433.7	2324.8	2429.0	2779.4	3025.6	3309.7
42.5°	2272.7	2168.6	2268.0	2618.4	2902.5	3186.6
45°	2102.3	1931.8	2092.8	2452.7	2769.9	3054.0
47.5°	1922.4	1742.4	1908.2	2291.7	2637.3	2916.7
50°	1756.6	1595.6	1747.2	2126.0	2495.3	2769.9
52.5°	1609.9	1472.5	1605.1	1960.2	2348.5	2618.4
55°	1472.5	1382.6	1477.3	1808.7	2211.2	2462.1
57.5°	1363.6	1302.1	1368.4	1661.9	2059.7	2305.9
60°	1268.9	1231.1	1273.7	1515.2	1898.7	2140.2
62.5°	1164.8	1150.6	1164.8	1373.1	1742.4	1969.7
65°	1074.8	1089.0	1074.8	1245.3	1576.7	1794.5
67.5°	989.6	1022.7	994.3	1108.0	1411.0	1614.6
70°	894.9	942.2	899.6	984.9	1240.5	1429.9
72.5°	795.5	852.3	795.5	866.5	1060.6	1235.8
75°	691.3	757.6	696.0	738.6	890.2	1032.2
77.5°	577.7	620.3	587.1	601.3	724.4	838.1
80°	459.3	506.6	464.0	473.5	572.9	648.7
82.5°	383.5	416.7	388.3	359.8	426.1	478.2
85°	284.1	303.0	293.6	279.4	293.6	326.7
87.5°	175.2	184.7	175.2	175.2	151.5	137.3
90°	194.1	208.3	194.1	151.5	85.2	4.7
92.5°	198.9	217.8	198.9	165.7	161.0	33.1
95°	445.1	435.6	473.5	430.9	246.2	127.8
97.5°	691.3	790.7	715.0	516.1	331.4	203.6
100°	795.5	890.2	828.6	643.9	378.8	279.4
102.5°	918.6	1022.7	956.4	752.8	426.1	350.4
105°	1070.1	1160.0	1103.2	795.5	468.8	407.2
107.5°	1150.6	1287.9	1174.2	814.4	497.2	459.3
110°	1193.2	1340.0	1231.1	819.1	520.8	501.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	1226.3	1368.4	1254.7	819.1	530.3	539.8
115°	1226.3	1392.1	1254.7	804.9	544.5	563.4
117.5°	1226.3	1377.8	1254.7	790.7	563.4	577.7
120°	1183.7	1373.1	1221.6	771.8	568.2	587.1
122.5°	1150.6	1335.2	1174.2	748.1	568.2	582.4
125°	1089.0	1283.1	1117.4	719.7	558.7	572.9
127.5°	1022.7	1207.4	1046.4	686.6	563.4	554.0
130°	961.2	1122.2	975.4	653.4	544.5	530.3
132.5°	880.7	1027.5	894.9	629.7	525.6	506.6
135°	804.9	937.5	823.9	610.8	501.9	483.0
137.5°	724.4	842.8	743.4	572.9	478.2	459.3
140°	629.7	724.4	648.7	530.3	464.0	435.6
142.5°	568.2	620.3	587.1	511.4	445.1	407.2
145°	530.3	558.7	544.5	492.4	435.6	378.8
147.5°	492.4	520.8	506.6	454.5	411.9	355.1
150°	478.2	478.2	497.2	421.4	397.7	340.9
152.5°	426.1	464.0	445.1	383.5	388.3	336.2
155°	364.6	383.5	383.5	369.3	388.3	336.2
157.5°	340.9	355.1	359.8	369.3	378.8	331.4
160°	340.9	345.6	359.8	374.1	374.1	331.4
162.5°	350.4	345.6	369.3	383.5	364.6	331.4
165°	359.8	355.1	378.8	388.3	355.1	331.4
167.5°	369.3	369.3	388.3	383.5	345.6	331.4
170°	369.3	378.8	388.3	369.3	340.9	331.4
172.5°	355.1	359.8	369.3	345.6	326.7	331.4
175°	336.2	331.4	345.6	331.4	326.7	326.7
177.5°	326.7	312.5	326.7	322.0	317.2	322.0
180°	317.2	317.2	317.2	317.2	317.2	317.2

(END OF REPORT)