

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: NEO-RAY

Report Number: P332401-940

Luminaire Tested: **S123RDIW-S340D1030U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332401-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S340D1030U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4347.1 lumens
Efficiency: N/A
Efficacy: 114.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

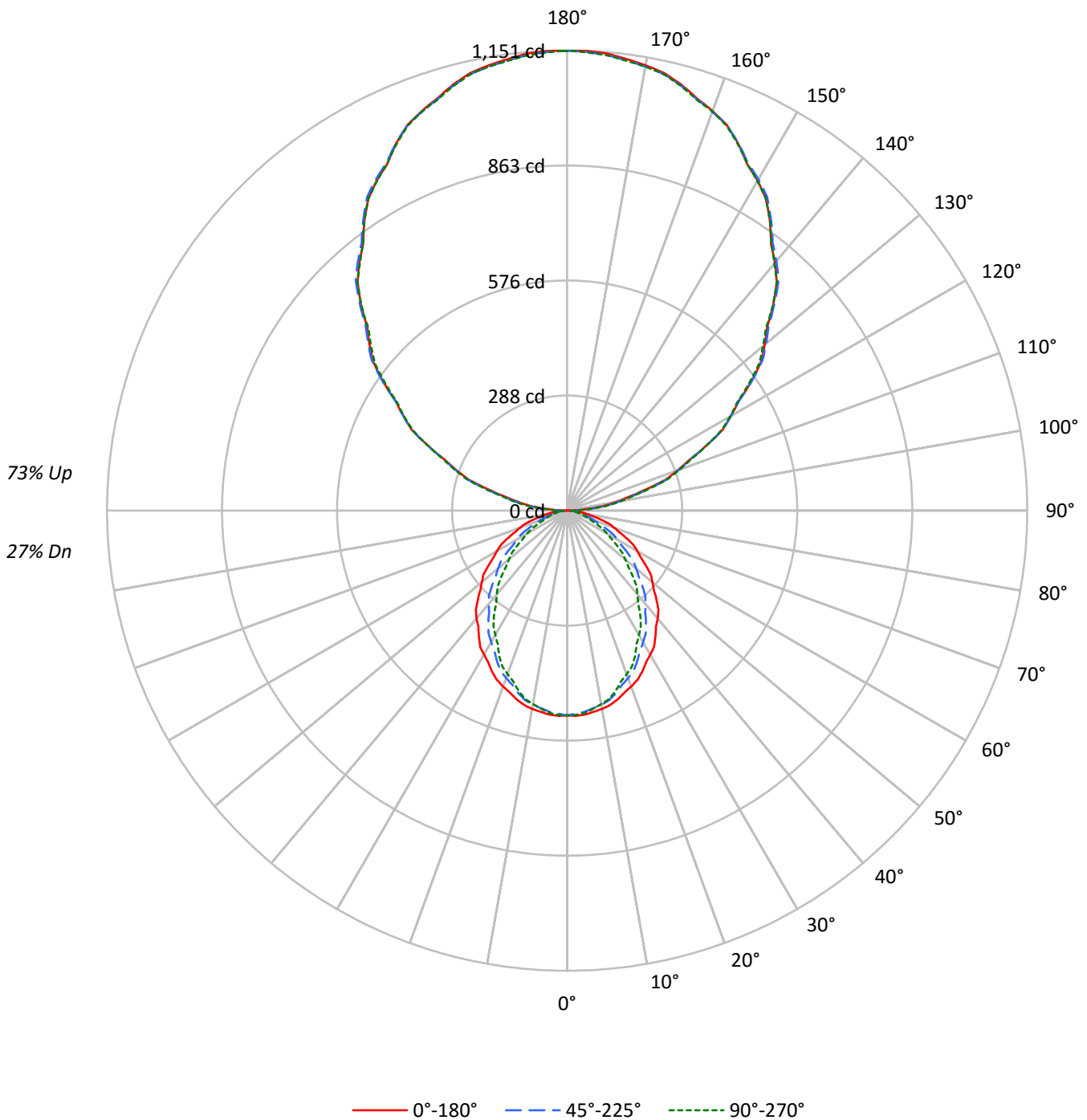
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35	27
1	93	89	85	82	83	79	76	73	62	60	58	46	44	43	31	30	30	23
2	85	78	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	56	69	61	55	51	48	44	41	36	33	31	24	23	22	17
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19	14
5	65	54	46	40	58	48	42	37	38	33	30	29	25	23	20	18	16	13
6	60	48	40	35	53	43	37	32	34	29	26	26	23	20	18	16	14	11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	18	16	14	13	10
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	15	13	11	9
9	47	36	28	24	42	32	26	22	26	21	18	20	16	14	14	12	10	8
10	44	33	26	21	39	30	23	19	24	19	16	18	15	13	13	11	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5514	5514	5514
5°	5535	5459	5491
10°	5503	5391	5372
15°	5446	5264	5209
20°	5363	5108	4987
25°	5280	4930	4772
30°	5169	4724	4467
35°	5056	4520	4188
40°	4950	4279	3842
45°	4813	4042	3529
50°	4662	3771	3178
55°	4506	3462	2852
60°	4366	3130	2495
65°	4182	2774	2137
70°	3950	2326	1725
75°	3614	1834	1626
80°	3217	1624	1494
85°	2717	1433	1334



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.1	1.1
10°-20°	133.9	3.1
20°-30°	192.7	4.4
30°-40°	217.1	5.0
40°-50°	207.7	4.8
50°-60°	170.1	3.9
60°-70°	114.8	2.6
70°-80°	57.7	1.3
80°-90°	18.7	0.4
90°-100°	74.9	1.7
100°-110°	224.2	5.2
110°-120°	381.4	8.8
120°-130°	501.7	11.5
130°-140°	563.9	13.0
140°-150°	554.3	12.8
150°-160°	466.6	10.7
160°-170°	310.6	7.1
170°-180°	108.8	2.5
0°-30°	374.7	8.6
0°-40°	591.8	13.6
0°-60°	969.6	22.3
0°-90°	1160.7	26.7
90°-120°	680.6	15.7
90°-150°	2300.3	52.9
90°-180°	3186.0	73.3
0°-180°	4347.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	512	512	512	512	512	
5°	512	510	505	509	508	49
15°	489	484	472	470	467	138
25°	445	434	415	407	402	204
35°	385	369	344	327	319	241
45°	316	297	266	243	232	244
55°	240	219	184	161	152	215
65°	164	141	109	89	84	162
75°	87	67	44	40	39	93
85°	22	13	12	11	11	25
90°	1	10	22	25	27	4
95°	53	60	67	70	70	60
105°	203	205	213	213	215	218
115°	384	386	385	386	385	380
125°	562	564	563	559	556	501
135°	729	734	734	730	728	562
145°	884	886	889	888	884	552
155°	1013	1013	1014	1017	1011	466
165°	1103	1100	1100	1105	1100	311
175°	1147	1144	1144	1148	1143	109
180°	1150	1150	1150	1150	1150	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	514.0	513.6	513.4	513.1	512.8	512.2	511.3	510.4	509.5	508.6	509.4
5°	512.3	511.8	511.4	511.0	510.4	509.7	508.5	507.5	506.3	505.2	506.0
7.5°	507.6	507.0	506.6	506.0	505.6	504.6	503.2	501.8	500.2	498.8	499.3
10°	503.5	502.9	502.3	501.7	501.0	499.8	498.2	496.5	494.8	493.2	493.3
12.5°	497.9	497.2	496.5	495.8	495.1	493.7	491.6	489.6	487.6	485.5	485.4
15°	488.7	487.6	486.6	485.5	484.6	482.8	480.2	477.6	475.0	472.4	472.0
17.5°	476.9	475.7	474.6	473.3	472.2	469.9	466.6	463.3	460.1	456.8	455.8
20°	468.2	466.8	465.3	463.9	462.4	459.9	456.4	452.8	449.3	445.9	444.6
22.5°	458.6	456.9	455.2	453.5	451.8	449.2	445.4	441.7	437.9	434.2	432.7
25°	444.6	442.3	440.0	437.7	435.3	432.0	427.8	423.6	419.3	415.1	413.1
27.5°	427.6	425.0	422.4	419.9	417.3	413.8	409.0	404.2	399.5	394.8	392.1
30°	415.9	413.1	410.4	407.6	404.8	400.8	395.7	390.5	385.3	380.1	377.0
32.5°	404.3	401.1	398.0	394.8	391.7	387.4	381.9	376.5	371.0	365.5	362.1
35°	384.8	381.4	378.1	374.8	371.5	366.9	361.2	355.4	349.7	344.0	340.1
37.5°	365.0	361.2	357.6	353.9	350.2	345.3	339.2	333.1	327.0	320.8	316.4
40°	352.3	348.3	344.2	340.2	336.1	330.7	324.2	317.6	311.1	304.5	299.8
42.5°	338.0	333.9	329.9	325.8	321.8	316.4	309.6	302.8	296.0	289.3	284.0
45°	316.2	312.0	307.9	303.7	299.5	293.9	286.9	279.7	272.6	265.5	260.2
47.5°	294.4	289.8	285.2	280.6	276.1	270.3	263.1	256.0	249.0	241.8	236.1
50°	278.4	274.0	269.7	265.4	261.0	255.1	247.6	240.1	232.6	225.2	219.5
52.5°	264.1	259.4	254.7	249.9	245.2	239.2	231.8	224.4	217.0	209.6	203.7
55°	240.1	235.6	231.1	226.6	222.0	215.9	208.0	200.2	192.3	184.5	179.1
57.5°	218.0	213.1	208.2	203.2	198.3	191.9	184.0	176.1	168.3	160.4	155.3
60°	202.8	197.7	192.6	187.5	182.4	176.1	168.4	160.8	153.1	145.4	140.4
62.5°	187.4	182.4	177.3	172.3	167.2	160.8	153.1	145.4	137.8	130.1	125.5
65°	164.2	159.1	154.0	148.9	143.8	137.7	130.5	123.2	116.1	108.9	104.3
67.5°	140.8	135.6	130.5	125.4	120.2	114.2	107.3	100.4	93.5	86.6	83.2
70°	125.5	120.5	115.5	110.5	105.6	99.8	93.4	86.9	80.4	73.9	70.7
72.5°	110.2	105.3	100.4	95.4	90.5	85.2	79.3	73.4	67.5	61.6	59.0
75°	86.9	82.4	77.9	73.6	69.1	64.4	59.3	54.2	49.1	44.1	43.2
77.5°	65.5	61.5	57.5	53.5	49.6	45.9	42.6	39.3	36.1	32.8	32.4
80°	51.9	48.2	44.4	40.6	36.8	34.0	32.0	30.1	28.1	26.2	25.9
82.5°	39.0	35.7	32.5	29.2	25.9	23.8	22.9	22.0	21.1	20.2	19.9
85°	22.0	20.0	17.9	16.0	13.9	12.8	12.5	12.2	11.9	11.6	11.4
87.5°	8.1	7.8	7.3	7.0	6.5	6.6	7.1	7.6	8.1	8.6	8.7
90°	0.9	2.9	4.9	7.0	8.9	11.2	13.8	16.5	19.1	21.7	22.5
92.5°	21.8	23.2	24.6	25.9	27.3	28.7	30.2	31.7	33.2	34.7	35.3
95°	53.3	54.7	56.1	57.5	58.9	60.5	62.1	63.7	65.3	66.9	67.7
97.5°	94.7	95.7	96.8	97.8	98.9	100.0	101.1	102.3	103.4	104.6	105.6
100°	122.9	124.0	125.3	126.4	127.7	128.8	129.8	130.8	131.8	132.8	133.4
102.5°	155.4	156.1	156.9	157.6	158.3	159.3	160.6	161.9	163.3	164.6	165.2
105°	203.3	203.7	204.1	204.5	204.9	206.0	207.8	209.6	211.4	213.2	213.2
107.5°	259.0	259.1	259.4	259.7	259.8	260.4	261.1	261.8	262.5	263.2	263.9
110°	293.6	294.0	294.4	294.8	295.2	295.6	296.0	296.4	296.9	297.2	298.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	329.8	330.0	330.2	330.5	330.7	330.8	330.9	331.0	331.1	331.2	332.2
115°	384.0	384.5	385.1	385.8	386.4	386.5	386.0	385.7	385.2	384.9	385.0
117.5°	438.5	438.9	439.3	439.7	440.1	440.1	439.5	439.0	438.5	438.0	437.9
120°	472.5	473.7	474.9	476.1	477.3	477.4	476.4	475.4	474.4	473.4	473.1
122.5°	507.9	508.8	509.7	510.5	511.4	511.6	511.1	510.6	510.1	509.5	509.0
125°	562.0	562.5	563.1	563.7	564.4	564.5	564.0	563.7	563.2	562.8	562.0
127.5°	611.8	613.1	614.4	615.6	616.9	617.3	616.9	616.4	616.0	615.5	614.5
130°	645.1	646.7	648.3	649.9	651.5	651.9	651.4	650.8	650.1	649.5	648.7
132.5°	678.2	679.8	681.4	683.1	684.7	685.3	684.8	684.4	683.9	683.5	682.5
135°	729.1	730.2	731.5	732.6	733.9	734.3	734.1	734.0	733.8	733.5	732.7
137.5°	776.1	777.0	778.0	779.0	780.1	780.8	781.3	781.9	782.4	782.9	782.0
140°	808.5	809.6	810.6	811.5	812.5	813.2	813.3	813.6	813.8	814.0	813.8
142.5°	838.2	839.2	840.2	841.2	842.2	842.8	843.2	843.6	844.0	844.4	844.1
145°	884.4	884.8	885.2	885.6	886.0	886.5	887.2	887.8	888.3	888.9	888.8
147.5°	924.9	925.6	926.3	927.1	927.8	928.4	929.0	929.6	930.1	930.7	930.7
150°	953.1	953.5	953.9	954.3	954.7	955.1	955.5	955.9	956.3	956.7	956.7
152.5°	976.2	976.8	977.3	977.9	978.5	978.8	979.1	979.4	979.6	979.8	980.2
155°	1012.7	1012.7	1012.7	1012.7	1012.7	1012.8	1013.0	1013.3	1013.4	1013.6	1014.4
157.5°	1043.8	1043.6	1043.3	1043.0	1042.9	1042.8	1042.9	1043.1	1043.3	1043.4	1044.3
160°	1063.3	1062.9	1062.5	1062.1	1061.7	1061.5	1061.5	1061.5	1061.5	1061.5	1062.5
162.5°	1080.7	1080.1	1079.5	1079.0	1078.4	1078.2	1078.3	1078.5	1078.7	1078.9	1079.9
165°	1103.0	1102.4	1101.9	1101.3	1100.6	1100.4	1100.4	1100.4	1100.4	1100.4	1101.5
167.5°	1121.0	1120.2	1119.4	1118.6	1117.8	1117.4	1117.6	1117.8	1117.9	1118.0	1119.3
170°	1131.0	1130.2	1129.4	1128.6	1127.8	1127.5	1127.5	1127.5	1127.5	1127.5	1128.8
172.5°	1139.0	1138.2	1137.4	1136.6	1135.8	1135.4	1135.4	1135.4	1135.4	1135.4	1136.7
175°	1147.4	1146.6	1145.8	1145.0	1144.2	1143.7	1143.7	1143.7	1143.7	1143.7	1145.0
177.5°	1150.8	1150.1	1149.5	1148.8	1148.2	1147.9	1147.9	1147.9	1147.9	1147.9	1148.8
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	510.2	511.0	511.9	512.2	512.1	511.9	511.8	511.7
5°	506.9	507.7	508.5	508.9	508.7	508.5	508.4	508.2
7.5°	499.8	500.2	500.7	500.8	500.4	500.2	499.8	499.5
10°	493.4	493.5	493.6	493.4	492.9	492.5	492.0	491.5
12.5°	485.4	485.4	485.4	485.0	484.5	483.9	483.4	482.9
15°	471.4	471.0	470.6	470.0	469.4	468.7	468.1	467.4
17.5°	454.9	453.9	452.9	451.9	450.9	450.0	449.1	448.1
20°	443.4	442.2	441.0	439.9	438.7	437.7	436.6	435.4
22.5°	431.2	429.7	428.2	427.0	425.9	424.9	423.8	422.8
25°	411.2	409.3	407.3	405.8	404.8	403.9	402.8	401.8
27.5°	389.4	386.7	384.1	381.9	380.3	378.8	377.3	375.7
30°	373.9	370.8	367.7	365.3	363.8	362.4	360.9	359.4
32.5°	358.6	355.3	351.8	349.3	347.8	346.3	344.6	343.1
35°	336.1	332.1	328.1	325.3	323.7	322.0	320.3	318.7
37.5°	311.8	307.3	302.8	299.5	297.5	295.4	293.4	291.3
40°	295.0	290.2	285.3	281.9	279.7	277.7	275.5	273.4
42.5°	278.7	273.6	268.3	264.7	262.8	260.9	259.0	257.1
45°	254.9	249.7	244.4	240.7	238.5	236.3	234.1	231.8
47.5°	230.3	224.6	218.9	215.1	213.1	211.2	209.1	207.1
50°	213.7	208.0	202.3	198.4	196.3	194.1	192.0	189.8
52.5°	197.7	191.7	185.8	181.9	179.9	178.1	176.2	174.2
55°	173.8	168.4	163.1	159.4	157.7	155.8	153.9	152.0
57.5°	150.3	145.2	140.2	136.8	135.3	133.7	132.2	130.5
60°	135.5	130.5	125.5	122.2	120.6	119.0	117.5	115.9
62.5°	120.7	116.1	111.4	108.2	106.6	105.0	103.3	101.7
65°	99.8	95.3	90.8	88.0	86.9	86.0	85.0	83.9
67.5°	79.8	76.4	73.0	70.8	69.7	68.7	67.6	66.5
70°	67.5	64.3	61.0	58.9	57.9	56.9	55.8	54.8
72.5°	56.4	53.8	51.1	49.6	49.1	48.7	48.3	47.9
75°	42.2	41.3	40.3	39.8	39.6	39.4	39.2	39.1
77.5°	31.8	31.3	30.9	30.5	30.3	30.1	30.0	29.8
80°	25.6	25.3	25.1	24.9	24.6	24.4	24.3	24.1
82.5°	19.6	19.4	19.1	18.9	18.9	18.8	18.8	18.8
85°	11.2	11.1	10.9	10.8	10.8	10.8	10.8	10.8
87.5°	8.8	8.9	9.0	9.1	9.1	9.1	9.1	9.1
90°	23.3	24.1	24.9	25.5	25.9	26.3	26.7	27.1
92.5°	35.9	36.6	37.3	37.5	37.2	37.0	36.7	36.5
95°	68.5	69.3	70.1	70.4	70.4	70.4	70.4	70.4
97.5°	106.5	107.4	108.3	108.7	108.6	108.6	108.5	108.4
100°	134.0	134.6	135.2	135.7	136.1	136.5	136.9	137.3
102.5°	165.8	166.4	167.0	167.3	167.2	167.1	167.0	166.9
105°	213.2	213.2	213.2	213.4	213.8	214.2	214.6	215.0
107.5°	264.6	265.2	265.8	266.0	265.8	265.6	265.3	265.0
110°	298.8	299.6	300.4	300.6	300.2	299.8	299.4	299.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	333.1	334.0	335.0	335.5	335.4	335.3	335.3	335.2
115°	385.2	385.5	385.7	385.7	385.5	385.2	385.0	384.9
117.5°	437.9	437.8	437.8	437.5	436.9	436.4	435.8	435.2
120°	473.0	472.8	472.6	472.3	471.9	471.4	471.1	470.6
122.5°	508.5	507.9	507.5	506.8	506.3	505.8	505.2	504.6
125°	561.2	560.4	559.6	558.8	558.0	557.2	556.4	555.6
127.5°	613.3	612.2	611.1	610.0	609.1	608.2	607.3	606.4
130°	647.9	647.1	646.3	645.2	643.8	642.4	641.1	639.6
132.5°	681.6	680.6	679.7	678.7	677.5	676.5	675.4	674.3
135°	731.9	731.1	730.3	729.8	729.3	729.0	728.5	728.2
137.5°	781.2	780.3	779.5	778.7	777.9	777.2	776.4	775.7
140°	813.6	813.3	813.2	812.3	810.9	809.6	808.2	806.7
142.5°	843.9	843.7	843.6	842.8	841.8	840.7	839.6	838.6
145°	888.6	888.3	888.1	887.6	886.8	886.0	885.2	884.4
147.5°	930.7	930.7	930.7	930.1	928.9	927.6	926.5	925.2
150°	956.7	956.7	956.7	956.1	954.9	953.7	952.5	951.3
152.5°	980.4	980.8	981.1	980.8	979.7	978.7	977.6	976.6
155°	1015.2	1016.0	1016.8	1016.6	1015.1	1013.7	1012.4	1010.9
157.5°	1045.1	1046.0	1046.8	1046.7	1045.5	1044.5	1043.3	1042.1
160°	1063.5	1064.5	1065.5	1065.6	1064.8	1064.0	1063.2	1062.4
162.5°	1080.8	1081.8	1082.9	1082.7	1081.5	1080.1	1078.9	1077.5
165°	1102.8	1103.9	1105.2	1105.1	1103.7	1102.2	1100.8	1099.5
167.5°	1120.5	1121.8	1123.0	1123.0	1121.8	1120.5	1119.3	1118.0
170°	1130.2	1131.7	1133.1	1133.1	1131.7	1130.2	1128.8	1127.5
172.5°	1137.9	1139.2	1140.4	1140.3	1138.9	1137.5	1136.0	1134.7
175°	1146.1	1147.4	1148.5	1148.4	1147.0	1145.6	1144.2	1142.8
177.5°	1149.8	1150.8	1151.7	1151.6	1150.5	1149.4	1148.3	1147.2
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0

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