

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: P333021-840

Luminaire Tested: **S124RDIW-S350D770U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333021-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIW-S350D770U840-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 770 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4545.4 lumens  
Efficiency: N/A  
Efficacy: 149.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

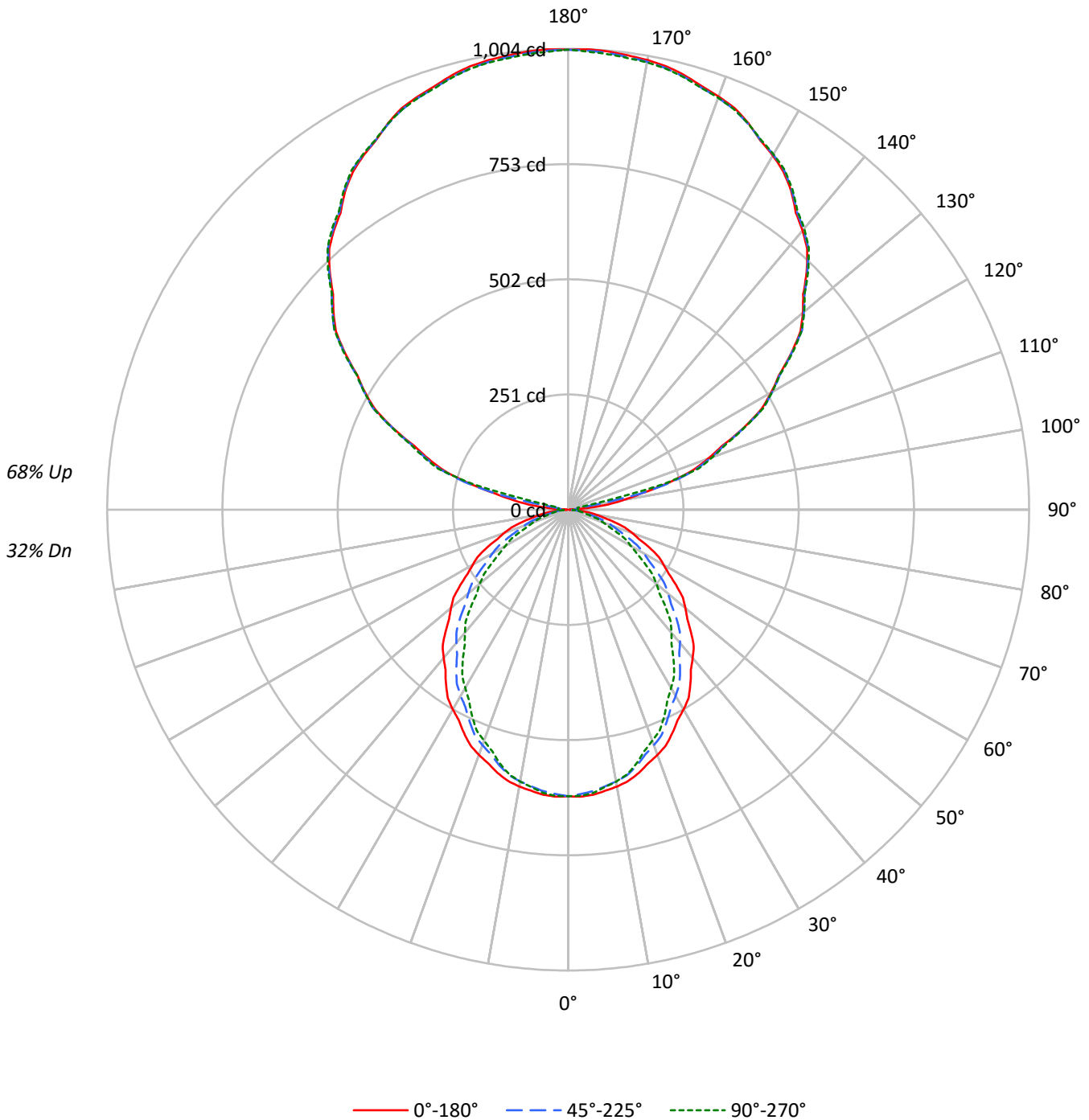
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	103	103	103	92	92	92	92	73	73	73	56	56	56	39	39	39	32
1	94	90	86	83	84	81	78	75	64	62	60	49	48	46	35	34	34	27
2	86	78	73	68	77	71	66	62	56	53	50	43	41	39	31	30	28	23
3	78	69	62	57	70	62	56	52	50	46	42	38	36	33	28	26	24	20
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	25	23	21	17
5	66	54	47	41	59	49	43	38	40	35	31	31	27	25	22	20	18	15
6	60	49	41	35	54	44	37	33	36	31	27	28	24	22	20	18	16	13
7	56	44	36	31	50	40	33	29	32	27	24	25	22	19	19	16	15	12
8	52	40	32	27	46	36	30	25	29	25	21	23	20	17	17	15	13	10
9	48	36	29	24	43	33	27	22	27	22	19	21	18	15	16	13	12	9
10	45	33	26	22	40	30	24	20	25	20	17	20	16	14	15	12	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5040	5040	5040
5°	5051	4989	5020
10°	5019	4930	4930
15°	4962	4826	4790
20°	4883	4689	4603
25°	4782	4530	4415
30°	4683	4363	4180
35°	4574	4188	3943
40°	4443	3990	3687
45°	4322	3793	3427
50°	4185	3567	3152
55°	4037	3330	2853
60°	3873	3073	2546
65°	3725	2749	2245
70°	3510	2391	1907
75°	3235	1984	1550
80°	2822	1511	1423
85°	2399	1371	1278



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.6	1.3
10°-20°	163.5	3.6
20°-30°	236.1	5.2
30°-40°	267.7	5.9
40°-50°	258.5	5.7
50°-60°	214.9	4.7
60°-70°	148.4	3.3
70°-80°	75.2	1.7
80°-90°	22.2	0.5
90°-100°	34.3	0.8
100°-110°	218.6	4.8
110°-120°	418.1	9.2
120°-130°	530.7	11.7
130°-140°	567.9	12.5
140°-150°	531.0	11.7
150°-160°	428.2	9.4
160°-170°	276.2	6.1
170°-180°	95.2	2.1
0°-30°	458.3	10.1
0°-40°	726.0	16.0
0°-60°	1199.4	26.4
0°-90°	1445.2	31.8
90°-120°	670.9	14.8
90°-150°	2300.6	50.6
90°-180°	3100.0	68.2
0°-180°	4545.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	624	624	624	624	624	
5°	623	621	616	620	620	59
15°	594	589	577	576	573	167
25°	537	528	509	501	496	247
35°	464	448	425	409	400	290
45°	379	360	332	310	300	292
55°	287	267	237	213	203	256
65°	195	174	144	124	118	193
75°	104	86	64	53	50	110
85°	26	17	15	14	14	29
90°	2	10	16	21	22	3
95°	41	17	16	21	22	53
105°	226	230	234	239	214	236
115°	421	423	423	424	424	414
125°	592	595	594	596	597	529
135°	735	734	737	738	740	566
145°	847	849	849	850	852	529
155°	929	929	927	930	928	428
165°	980	976	976	981	975	277
175°	1002	998	998	1004	996	95
180°	1002	1002	1002	1002	1002	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3
2.5°	625.8	625.4	625.1	624.8	624.4	623.8	622.9	622.0	621.0	620.1	621.0
5°	623.3	622.9	622.5	622.1	621.6	620.8	619.5	618.2	616.9	615.7	616.7
7.5°	617.6	617.2	616.8	616.3	615.9	614.8	613.2	611.5	609.9	608.2	608.8
10°	612.3	611.8	611.3	610.8	610.2	608.9	607.0	605.1	603.2	601.4	601.8
12.5°	605.4	604.8	604.2	603.6	603.0	601.6	599.3	597.0	594.8	592.5	592.8
15°	593.7	592.7	591.8	590.8	589.9	588.0	585.4	582.7	580.1	577.4	577.2
17.5°	579.5	578.0	576.6	575.3	573.9	571.6	568.5	565.2	562.1	558.9	558.3
20°	568.4	566.9	565.6	564.2	562.8	560.4	556.7	553.1	549.5	545.8	545.0
22.5°	556.1	554.5	553.0	551.5	549.9	547.1	543.3	539.5	535.6	531.7	530.5
25°	536.8	534.9	533.0	531.1	529.2	526.0	521.7	517.4	512.9	508.6	506.8
27.5°	516.5	514.1	511.7	509.4	507.0	503.4	498.8	494.1	489.5	484.8	482.5
30°	502.4	499.7	497.1	494.4	491.8	488.0	482.9	478.0	472.9	468.0	465.3
32.5°	487.5	484.4	481.5	478.5	475.4	471.4	466.3	461.1	456.0	450.8	447.7
35°	464.1	460.7	457.4	453.9	450.5	446.2	440.9	435.6	430.3	425.0	421.3
37.5°	439.2	435.7	432.2	428.7	425.2	420.5	414.5	408.7	402.8	397.0	392.9
40°	421.6	418.1	414.5	411.1	407.6	402.8	396.8	390.7	384.7	378.6	374.2
42.5°	404.8	401.1	397.4	393.7	390.1	385.1	378.8	372.4	366.2	359.8	355.3
45°	378.6	374.7	370.7	366.8	362.8	357.7	351.3	345.0	338.6	332.2	327.0
47.5°	351.5	347.5	343.5	339.3	335.3	329.9	323.4	316.7	310.0	303.5	298.0
50°	333.2	329.0	324.9	320.7	316.6	311.1	304.4	297.5	290.7	284.0	278.6
52.5°	314.5	310.3	306.3	302.3	298.2	292.7	285.7	278.7	271.8	264.8	259.4
55°	286.8	282.6	278.3	274.1	269.8	264.2	257.3	250.4	243.5	236.6	231.1
57.5°	259.4	255.0	250.6	246.2	241.8	236.2	229.3	222.6	215.8	208.9	203.4
60°	239.9	235.7	231.5	227.2	223.0	217.4	210.7	203.8	197.0	190.3	184.7
62.5°	222.4	217.9	213.5	209.1	204.7	199.0	192.1	185.1	178.1	171.2	166.0
65°	195.0	190.5	185.9	181.4	176.7	171.1	164.3	157.4	150.7	143.9	139.4
67.5°	166.6	162.3	157.8	153.5	149.2	143.8	137.4	131.2	124.8	118.6	114.6
70°	148.7	144.2	139.8	135.3	130.8	125.5	119.5	113.4	107.3	101.3	97.9
72.5°	129.6	125.5	121.5	117.4	113.4	108.6	102.8	97.0	91.4	85.6	82.7
75°	103.7	99.8	95.8	91.9	88.0	83.5	78.6	73.5	68.6	63.6	61.1
77.5°	77.6	74.2	70.9	67.6	64.2	60.5	56.5	52.4	48.4	44.3	42.9
80°	60.7	57.7	54.5	51.5	48.4	45.2	42.1	38.9	35.6	32.5	32.2
82.5°	46.2	43.3	40.5	37.7	34.8	32.5	30.7	28.9	27.1	25.2	25.0
85°	25.9	23.7	21.6	19.4	17.3	16.1	15.8	15.5	15.1	14.8	14.6
87.5°	9.3	8.9	8.6	8.3	8.0	7.9	8.1	8.3	8.5	8.7	8.8
90°	2.2	4.0	6.0	7.8	9.6	11.2	12.5	13.8	15.1	16.5	17.5
92.5°	9.5	9.6	9.7	9.7	9.8	10.6	11.9	13.2	14.5	15.9	16.9
95°	41.2	35.5	29.9	24.2	18.6	15.9	16.0	16.2	16.4	16.5	17.5
97.5°	87.6	91.1	94.6	98.2	101.7	94.1	75.5	57.0	38.4	19.8	19.9
100°	122.9	125.9	129.0	131.9	134.9	124.9	102.0	79.0	55.9	33.0	30.2
102.5°	162.5	164.7	166.9	169.2	171.3	170.9	167.9	164.9	161.9	159.0	128.4
105°	225.6	226.6	227.6	228.6	229.6	230.6	231.4	232.2	233.1	233.9	235.4
107.5°	284.3	284.8	285.3	285.8	286.3	287.1	288.2	289.3	290.4	291.5	292.4
110°	323.9	324.4	324.9	325.4	325.8	326.6	327.6	328.6	329.6	330.5	330.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	362.2	363.1	364.1	364.9	365.8	366.5	367.0	367.4	367.9	368.4	368.3
115°	421.3	421.8	422.3	422.7	423.2	423.4	423.2	423.1	422.9	422.7	423.1
117.5°	474.5	475.1	475.8	476.5	477.2	477.7	478.1	478.4	478.8	479.2	479.1
120°	510.5	511.2	511.8	512.5	513.1	513.4	513.2	513.1	512.9	512.7	513.1
122.5°	544.1	544.4	544.8	545.2	545.6	545.9	546.2	546.4	546.6	546.9	547.1
125°	592.2	592.9	593.5	594.2	594.8	595.0	594.7	594.4	594.0	593.7	594.2
127.5°	637.7	637.9	638.1	638.2	638.4	638.9	639.6	640.5	641.2	642.0	641.9
130°	667.1	667.3	667.5	667.6	667.8	668.1	668.6	669.1	669.6	670.1	670.3
132.5°	694.2	694.5	694.8	695.0	695.3	695.8	696.4	697.1	697.7	698.3	698.5
135°	734.6	734.5	734.3	734.1	734.0	734.2	734.9	735.5	736.2	736.9	737.2
137.5°	770.4	770.5	770.6	770.6	770.7	771.1	771.8	772.5	773.4	774.1	774.4
140°	793.9	794.2	794.5	794.9	795.2	795.5	795.9	796.2	796.5	796.9	797.3
142.5°	814.9	815.5	816.1	816.6	817.2	817.6	817.8	818.0	818.2	818.4	818.8
145°	847.1	847.6	848.1	848.6	849.1	849.3	849.3	849.3	849.3	849.3	849.5
147.5°	872.7	873.6	874.5	875.5	876.5	876.8	876.7	876.5	876.3	876.2	876.3
150°	891.3	891.9	892.6	893.3	893.9	894.2	894.0	893.8	893.7	893.5	893.5
152.5°	906.9	907.4	908.0	908.5	909.0	909.1	908.8	908.6	908.3	908.0	908.2
155°	928.8	929.0	929.1	929.3	929.5	929.3	928.8	928.3	927.8	927.3	928.0
157.5°	947.3	947.2	947.1	947.0	946.8	946.4	945.9	945.3	944.7	944.2	945.0
160°	958.0	957.5	957.0	956.5	956.0	955.6	955.5	955.3	955.1	955.0	956.0
162.5°	967.6	966.9	966.3	965.7	965.0	964.6	964.5	964.3	964.1	964.0	965.0
165°	979.8	978.9	978.1	977.2	976.4	976.0	976.0	976.0	976.0	976.0	977.3
167.5°	989.4	988.5	987.6	986.7	985.8	985.4	985.3	985.2	985.1	985.0	986.4
170°	994.7	993.7	992.7	991.7	990.8	990.3	990.5	990.7	990.8	991.0	992.3
172.5°	998.4	997.3	996.3	995.3	994.3	993.9	994.1	994.2	994.4	994.6	995.9
175°	1002.2	1001.2	1000.3	999.3	998.3	997.8	997.9	998.2	998.4	998.5	1000.0
177.5°	1004.0	1003.1	1002.2	1001.2	1000.3	1000.0	1000.3	1000.5	1000.8	1001.0	1002.1
180°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3
2.5°	622.0	622.9	623.8	624.2	624.1	624.1	624.0	623.9
5°	617.8	618.8	620.0	620.4	620.2	620.0	619.7	619.5
7.5°	609.6	610.3	611.0	611.1	610.8	610.5	610.1	609.8
10°	602.2	602.6	603.0	603.0	602.6	602.2	601.8	601.4
12.5°	593.0	593.3	593.6	593.4	592.8	592.2	591.6	591.0
15°	577.0	576.8	576.5	576.1	575.3	574.6	573.9	573.1
17.5°	557.6	557.1	556.5	555.6	554.5	553.4	552.3	551.2
20°	544.2	543.3	542.5	541.4	540.0	538.6	537.2	535.8
22.5°	529.2	527.9	526.6	525.4	524.3	523.2	522.1	520.9
25°	504.9	503.2	501.4	500.0	498.9	497.8	496.8	495.6
27.5°	480.3	478.1	475.8	474.0	472.4	470.9	469.4	467.9
30°	462.6	460.0	457.4	455.1	453.4	451.8	450.1	448.4
32.5°	444.6	441.5	438.5	436.1	434.4	432.8	431.2	429.6
35°	417.7	414.1	410.5	407.8	405.9	403.9	402.0	400.1
37.5°	388.9	384.9	380.8	377.8	375.9	374.0	372.0	370.1
40°	369.6	365.2	360.7	357.6	355.7	353.8	351.8	349.9
42.5°	350.7	346.2	341.6	338.4	336.4	334.4	332.3	330.4
45°	321.8	316.6	311.3	307.8	305.9	304.0	302.1	300.2
47.5°	292.7	287.2	281.9	278.1	276.0	273.9	271.8	269.7
50°	273.3	268.0	262.7	259.0	257.0	255.0	253.0	251.0
52.5°	254.0	248.6	243.3	239.4	237.4	235.3	233.2	231.1
55°	225.6	220.0	214.5	210.8	208.7	206.7	204.7	202.7
57.5°	197.7	192.2	186.5	183.0	181.5	180.0	178.3	176.8
60°	179.2	173.7	168.1	164.5	162.8	161.2	159.5	157.7
62.5°	161.0	155.8	150.8	147.5	146.1	144.8	143.4	142.1
65°	134.7	130.2	125.6	122.7	121.4	120.2	118.9	117.5
67.5°	110.7	106.7	102.8	100.2	98.8	97.4	95.9	94.5
70°	94.3	90.8	87.4	85.0	83.9	82.9	81.8	80.8
72.5°	79.7	76.6	73.7	71.7	70.7	69.8	68.8	67.8
75°	58.7	56.2	53.8	52.3	51.6	51.0	50.4	49.7
77.5°	41.5	40.1	38.7	37.9	37.7	37.5	37.3	37.1
80°	31.9	31.5	31.2	31.0	30.9	30.8	30.7	30.6
82.5°	24.7	24.5	24.3	24.1	24.0	23.9	23.8	23.7
85°	14.4	14.1	13.9	13.8	13.8	13.8	13.8	13.8
87.5°	8.9	9.0	9.1	9.3	9.4	9.6	9.7	9.9
90°	18.5	19.5	20.5	21.1	21.5	21.8	22.1	22.5
92.5°	17.9	18.9	19.9	20.4	20.5	20.6	20.6	20.7
95°	18.5	19.5	20.5	21.1	21.2	21.4	21.6	21.7
97.5°	20.0	20.1	20.2	20.3	20.5	20.7	20.8	21.0
100°	27.4	24.4	21.6	20.3	20.5	20.7	20.8	21.0
102.5°	97.9	67.3	36.8	21.4	21.5	21.5	21.5	21.6
105°	236.9	238.3	239.8	237.6	231.7	225.6	219.6	213.7
107.5°	293.1	293.8	294.6	295.2	295.9	296.5	297.1	297.7
110°	331.2	331.5	331.9	332.3	332.9	333.4	333.9	334.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	368.2	368.2	368.1	368.4	369.0	369.6	370.3	370.9
115°	423.4	423.7	424.1	424.2	424.2	424.2	424.2	424.2
117.5°	479.0	479.0	478.9	478.8	478.8	478.7	478.6	478.6
120°	513.4	513.7	514.0	514.0	513.7	513.4	513.1	512.7
122.5°	547.3	547.5	547.8	547.6	547.3	546.9	546.6	546.3
125°	594.7	595.2	595.7	596.0	596.2	596.3	596.5	596.7
127.5°	641.8	641.7	641.6	641.5	641.4	641.2	641.1	641.0
130°	670.4	670.7	670.9	670.9	670.9	670.9	670.9	670.9
132.5°	698.6	698.8	699.0	699.0	698.9	698.7	698.6	698.5
135°	737.5	737.9	738.2	738.5	738.8	739.2	739.5	739.8
137.5°	774.8	775.2	775.5	775.7	775.6	775.5	775.4	775.3
140°	797.8	798.3	798.8	799.2	799.3	799.5	799.7	799.8
142.5°	819.2	819.5	819.9	820.1	820.1	820.1	820.2	820.2
145°	849.6	849.8	850.0	850.2	850.5	850.9	851.2	851.5
147.5°	876.4	876.6	876.7	876.9	877.0	877.2	877.4	877.5
150°	893.5	893.5	893.5	893.6	893.8	893.9	894.1	894.2
152.5°	908.5	908.7	909.0	909.1	909.0	908.9	908.8	908.7
155°	928.6	929.3	929.9	930.0	929.5	929.0	928.5	928.1
157.5°	945.9	946.8	947.7	947.7	946.8	945.9	945.0	944.2
160°	957.0	958.0	959.0	959.0	958.0	957.0	956.0	955.0
162.5°	966.0	966.9	968.0	968.0	966.8	965.6	964.5	963.4
165°	978.7	980.0	981.3	981.3	979.8	978.3	976.7	975.2
167.5°	988.0	989.4	990.9	990.8	989.1	987.4	985.7	984.1
170°	993.6	995.0	996.3	996.1	994.5	992.8	991.2	989.5
172.5°	997.2	998.6	999.9	999.7	997.8	996.1	994.3	992.5
175°	1001.5	1003.0	1004.5	1004.2	1002.2	1000.3	998.3	996.2
177.5°	1003.2	1004.2	1005.3	1005.0	1003.4	1001.8	1000.3	998.7
180°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2

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