

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

Luminaire Tested: **S124RDIW-S350D770U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333021  
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-S350D770U835-4F0-1E-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: 4501.0 lumens  
Efficiency: N/A  
Efficacy: 148.1 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

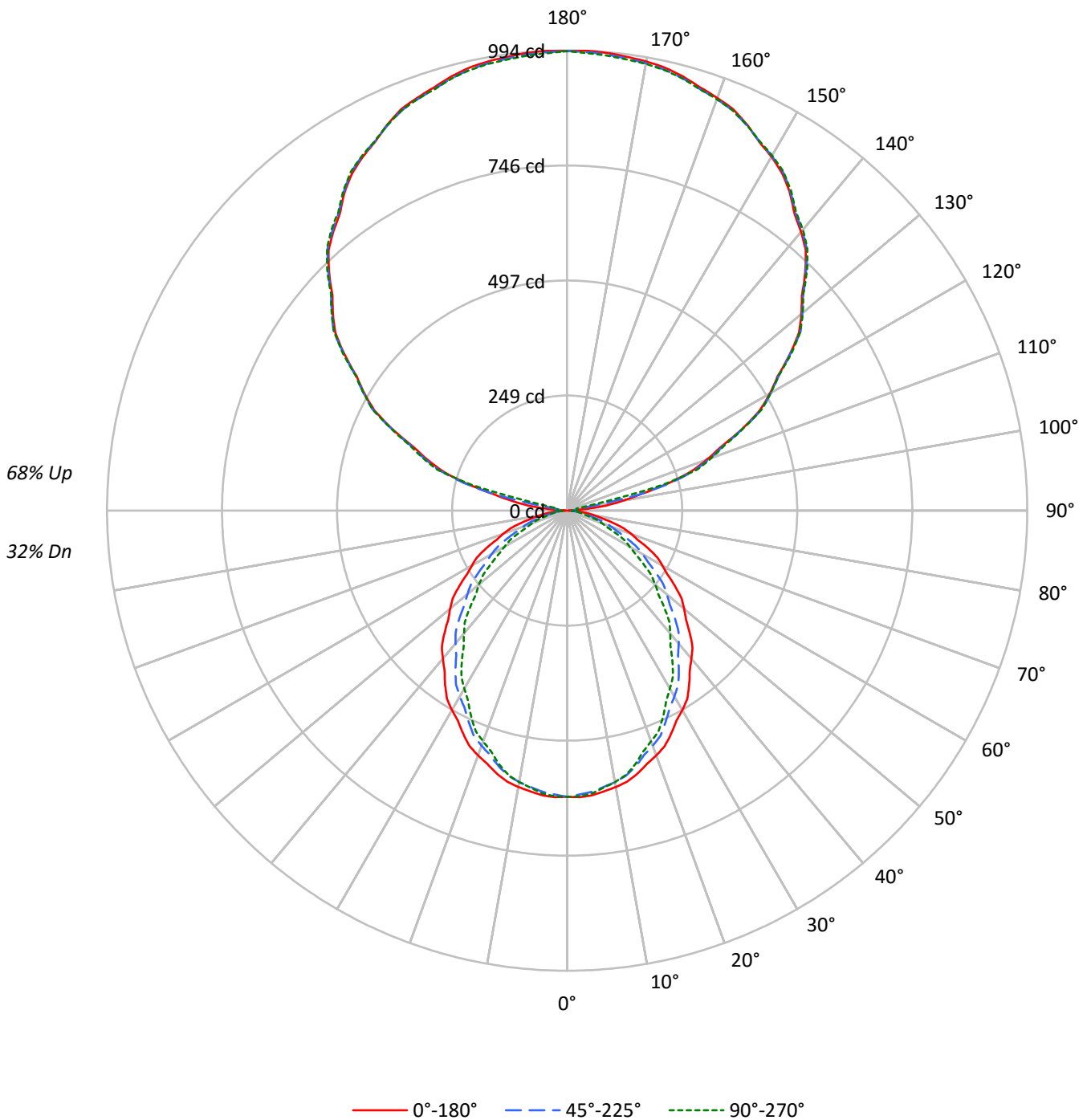
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4991	4991	4991
5°	5002	4941	4971
10°	4970	4882	4882
15°	4914	4779	4743
20°	4835	4643	4558
25°	4735	4486	4372
30°	4638	4320	4139
35°	4529	4147	3905
40°	4400	3951	3652
45°	4280	3756	3394
50°	4143	3532	3121
55°	3997	3298	2825
60°	3836	3042	2522
65°	3689	2722	2223
70°	3474	2367	1888
75°	3203	1965	1535
80°	2794	1497	1409
85°	2371	1362	1269



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.1	1.3
10°-20°	161.9	3.6
20°-30°	233.8	5.2
30°-40°	265.1	5.9
40°-50°	255.9	5.7
50°-60°	212.8	4.7
60°-70°	147.0	3.3
70°-80°	74.5	1.7
80°-90°	22.0	0.5
90°-100°	33.9	0.8
100°-110°	216.4	4.8
110°-120°	414.0	9.2
120°-130°	525.6	11.7
130°-140°	562.3	12.5
140°-150°	525.8	11.7
150°-160°	424.0	9.4
160°-170°	273.5	6.1
170°-180°	94.3	2.1
0°-30°	453.8	10.1
0°-40°	718.9	16.0
0°-60°	1187.7	26.4
0°-90°	1431.1	31.8
90°-120°	664.4	14.8
90°-150°	2278.1	50.6
90°-180°	3070.0	68.2
0°-180°	4501.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	618	618	618	618	618	
5°	617	615	610	614	613	59
15°	588	583	572	571	568	166
25°	532	522	504	496	491	245
35°	460	444	421	405	396	287
45°	375	357	329	307	297	289
55°	284	264	234	211	201	254
65°	193	172	142	123	116	191
75°	103	85	63	53	49	108
85°	26	16	15	14	14	29
90°	2	10	16	21	22	3
95°	41	17	16	21	22	52
105°	223	228	232	236	212	234
115°	417	419	419	420	420	410
125°	586	589	588	590	591	523
135°	727	727	730	731	733	560
145°	839	841	841	842	843	524
155°	920	920	918	921	919	424
165°	970	967	966	972	966	274
175°	992	988	989	995	986	94
180°	992	992	992	992	992	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2
2.5°	619.7	619.3	619.0	618.7	618.3	617.7	616.8	615.9	614.9	614.0	614.9
5°	617.2	616.8	616.4	616.0	615.5	614.7	613.4	612.2	610.9	609.7	610.7
7.5°	611.6	611.2	610.8	610.3	609.9	608.8	607.2	605.5	603.9	602.3	602.9
10°	606.3	605.8	605.3	604.8	604.2	603.0	601.1	599.2	597.3	595.5	595.9
12.5°	599.5	598.9	598.3	597.7	597.1	595.7	593.4	591.2	589.0	586.7	587.0
15°	587.9	586.9	586.0	585.0	584.1	582.3	579.7	577.0	574.4	571.8	571.6
17.5°	573.8	572.4	571.0	569.7	568.3	566.0	562.9	559.7	556.6	553.4	552.8
20°	562.8	561.4	560.1	558.7	557.3	554.9	551.3	547.7	544.1	540.5	539.7
22.5°	550.7	549.1	547.6	546.1	544.5	541.8	538.0	534.2	530.4	526.5	525.3
25°	531.6	529.7	527.8	525.9	524.0	520.9	516.6	512.3	507.9	503.6	501.8
27.5°	511.5	509.1	506.7	504.4	502.0	498.5	493.9	489.3	484.7	480.1	477.8
30°	497.5	494.8	492.2	489.6	487.0	483.2	478.2	473.3	468.3	463.4	460.8
32.5°	482.7	479.7	476.8	473.8	470.8	466.8	461.7	456.6	451.5	446.4	443.3
35°	459.6	456.2	452.9	449.5	446.1	441.8	436.6	431.3	426.1	420.8	417.2
37.5°	434.9	431.4	428.0	424.5	421.0	416.4	410.5	404.7	398.9	393.1	389.1
40°	417.5	414.0	410.5	407.1	403.6	398.9	392.9	386.9	380.9	374.9	370.5
42.5°	400.8	397.2	393.5	389.9	386.3	381.3	375.1	368.8	362.6	356.3	351.8
45°	374.9	371.0	367.1	363.2	359.3	354.2	347.9	341.6	335.3	329.0	323.8
47.5°	348.1	344.1	340.1	336.0	332.0	326.7	320.2	313.6	307.0	300.5	295.1
50°	329.9	325.8	321.7	317.6	313.5	308.1	301.4	294.6	287.9	281.2	275.9
52.5°	311.4	307.3	303.3	299.3	295.3	289.8	282.9	276.0	269.1	262.2	256.9
55°	284.0	279.8	275.6	271.4	267.2	261.6	254.8	248.0	241.1	234.3	228.8
57.5°	256.9	252.5	248.2	243.8	239.4	233.9	227.1	220.4	213.7	206.9	201.4
60°	237.6	233.4	229.2	225.0	220.8	215.3	208.6	201.8	195.1	188.4	182.9
62.5°	220.2	215.8	211.4	207.1	202.7	197.1	190.2	183.3	176.4	169.5	164.4
65°	193.1	188.6	184.1	179.6	175.0	169.4	162.7	155.9	149.2	142.5	138.0
67.5°	165.0	160.7	156.3	152.0	147.7	142.4	136.1	129.9	123.6	117.4	113.5
70°	147.2	142.8	138.4	134.0	129.5	124.3	118.3	112.3	106.3	100.3	96.9
72.5°	128.3	124.3	120.3	116.3	112.3	107.5	101.8	96.1	90.5	84.8	81.9
75°	102.7	98.8	94.9	91.0	87.1	82.7	77.8	72.8	67.9	63.0	60.5
77.5°	76.8	73.5	70.2	66.9	63.6	59.9	55.9	51.9	47.9	43.9	42.5
80°	60.1	57.1	54.0	51.0	47.9	44.8	41.7	38.5	35.3	32.2	31.9
82.5°	45.7	42.9	40.1	37.3	34.5	32.2	30.4	28.6	26.8	25.0	24.8
85°	25.6	23.5	21.4	19.2	17.1	15.9	15.6	15.3	15.0	14.7	14.5
87.5°	9.2	8.8	8.5	8.2	7.9	7.8	8.0	8.2	8.4	8.6	8.7
90°	2.2	4.0	5.9	7.7	9.5	11.1	12.4	13.7	15.0	16.3	17.3
92.5°	9.4	9.5	9.6	9.6	9.7	10.5	11.8	13.1	14.4	15.7	16.7
95°	40.8	35.2	29.6	24.0	18.4	15.7	15.8	16.0	16.2	16.3	17.3
97.5°	86.7	90.2	93.7	97.2	100.7	93.2	74.8	56.4	38.0	19.6	19.7
100°	121.7	124.7	127.7	130.6	133.6	123.7	101.0	78.2	55.4	32.7	29.9
102.5°	160.9	163.1	165.3	167.5	169.6	169.2	166.3	163.3	160.3	157.4	127.1
105°	223.4	224.4	225.4	226.4	227.4	228.3	229.1	229.9	230.8	231.6	233.1
107.5°	281.5	282.0	282.5	283.0	283.5	284.3	285.4	286.5	287.6	288.7	289.5
110°	320.7	321.2	321.7	322.2	322.6	323.4	324.4	325.4	326.4	327.3	327.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	358.7	359.6	360.5	361.3	362.2	362.9	363.4	363.8	364.3	364.8	364.7
115°	417.2	417.7	418.2	418.6	419.1	419.3	419.1	419.0	418.8	418.6	419.0
117.5°	469.9	470.5	471.2	471.8	472.5	473.0	473.4	473.7	474.1	474.5	474.4
120°	505.5	506.2	506.8	507.5	508.1	508.4	508.2	508.1	507.9	507.7	508.1
122.5°	538.8	539.1	539.5	539.9	540.3	540.6	540.9	541.1	541.3	541.6	541.8
125°	586.4	587.1	587.7	588.4	589.0	589.2	588.9	588.6	588.2	587.9	588.4
127.5°	631.5	631.7	631.9	632.0	632.2	632.7	633.4	634.2	634.9	635.7	635.6
130°	660.6	660.8	661.0	661.1	661.3	661.6	662.1	662.6	663.1	663.6	663.8
132.5°	687.4	687.7	688.0	688.2	688.5	689.0	689.6	690.3	690.9	691.5	691.7
135°	727.4	727.3	727.1	726.9	726.8	727.0	727.7	728.3	729.0	729.7	730.0
137.5°	762.9	763.0	763.1	763.1	763.2	763.6	764.3	765.0	765.8	766.5	766.8
140°	786.1	786.4	786.7	787.1	787.4	787.7	788.1	788.4	788.7	789.1	789.5
142.5°	806.9	807.5	808.1	808.6	809.2	809.6	809.8	810.0	810.2	810.4	810.8
145°	838.8	839.3	839.8	840.3	840.8	841.0	841.0	841.0	841.0	841.0	841.2
147.5°	864.2	865.1	866.0	866.9	867.9	868.2	868.1	867.9	867.7	867.6	867.7
150°	882.6	883.2	883.9	884.6	885.2	885.5	885.3	885.1	885.0	884.8	884.8
152.5°	898.0	898.5	899.1	899.6	900.1	900.2	899.9	899.7	899.4	899.1	899.3
155°	919.7	919.9	920.0	920.2	920.4	920.2	919.7	919.2	918.7	918.2	918.9
157.5°	938.0	937.9	937.8	937.7	937.6	937.2	936.7	936.1	935.5	935.0	935.8
160°	948.6	948.1	947.7	947.2	946.7	946.3	946.2	946.0	945.8	945.7	946.7
162.5°	958.1	957.5	956.9	956.3	955.6	955.2	955.1	954.9	954.7	954.6	955.6
165°	970.2	969.3	968.5	967.7	966.9	966.5	966.5	966.5	966.5	966.5	967.8
167.5°	979.7	978.8	978.0	977.1	976.2	975.8	975.7	975.6	975.5	975.4	976.8
170°	985.0	984.0	983.0	982.0	981.1	980.6	980.8	981.0	981.1	981.3	982.6
172.5°	988.6	987.6	986.6	985.6	984.6	984.2	984.4	984.5	984.7	984.9	986.2
175°	992.4	991.4	990.5	989.5	988.5	988.1	988.2	988.4	988.6	988.7	990.2
177.5°	994.2	993.3	992.4	991.4	990.5	990.2	990.5	990.7	991.0	991.2	992.3
180°	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2
2.5°	615.9	616.8	617.7	618.1	618.0	618.0	617.9	617.8
5°	611.8	612.8	613.9	614.3	614.1	613.9	613.6	613.4
7.5°	603.6	604.3	605.0	605.1	604.8	604.5	604.1	603.8
10°	596.3	596.7	597.1	597.1	596.7	596.3	595.9	595.5
12.5°	587.2	587.5	587.8	587.6	587.0	586.4	585.8	585.2
15°	571.4	571.2	570.9	570.5	569.7	569.0	568.3	567.5
17.5°	552.2	551.7	551.1	550.2	549.1	548.0	546.9	545.8
20°	538.9	538.0	537.2	536.1	534.7	533.3	532.0	530.6
22.5°	524.0	522.7	521.5	520.3	519.2	518.1	517.0	515.8
25°	500.0	498.3	496.5	495.1	494.0	492.9	491.9	490.8
27.5°	475.6	473.4	471.2	469.4	467.8	466.3	464.8	463.3
30°	458.1	455.5	452.9	450.7	449.0	447.4	445.7	444.0
32.5°	440.3	437.2	434.2	431.8	430.2	428.6	427.0	425.4
35°	413.6	410.1	406.5	403.8	401.9	400.0	398.1	396.2
37.5°	385.1	381.1	377.1	374.1	372.2	370.3	368.4	366.5
40°	366.0	361.6	357.2	354.1	352.2	350.3	348.4	346.5
42.5°	347.3	342.8	338.3	335.1	333.1	331.1	329.1	327.2
45°	318.7	313.5	308.3	304.8	302.9	301.0	299.1	297.3
47.5°	289.8	284.4	279.1	275.4	273.3	271.2	269.1	267.1
50°	270.6	265.4	260.1	256.5	254.5	252.5	250.5	248.5
52.5°	251.5	246.2	240.9	237.1	235.1	233.0	230.9	228.8
55°	223.4	217.9	212.4	208.7	206.7	204.7	202.7	200.7
57.5°	195.8	190.3	184.7	181.2	179.7	178.2	176.6	175.1
60°	177.4	172.0	166.5	162.9	161.2	159.6	157.9	156.2
62.5°	159.4	154.3	149.3	146.1	144.7	143.4	142.0	140.7
65°	133.4	128.9	124.4	121.5	120.2	119.0	117.7	116.4
67.5°	109.6	105.7	101.8	99.2	97.8	96.4	95.0	93.6
70°	93.4	89.9	86.5	84.2	83.1	82.1	81.0	80.0
72.5°	78.9	75.9	73.0	71.0	70.0	69.1	68.1	67.1
75°	58.1	55.7	53.3	51.8	51.1	50.5	49.9	49.2
77.5°	41.1	39.7	38.3	37.5	37.3	37.1	36.9	36.7
80°	31.6	31.2	30.9	30.7	30.6	30.5	30.4	30.3
82.5°	24.5	24.3	24.1	23.9	23.8	23.7	23.6	23.5
85°	14.3	14.0	13.8	13.7	13.7	13.7	13.7	13.7
87.5°	8.8	8.9	9.0	9.2	9.3	9.5	9.6	9.8
90°	18.3	19.3	20.3	20.9	21.3	21.6	21.9	22.3
92.5°	17.7	18.7	19.7	20.2	20.3	20.4	20.4	20.5
95°	18.3	19.3	20.3	20.9	21.0	21.2	21.4	21.5
97.5°	19.8	19.9	20.0	20.1	20.3	20.5	20.6	20.8
100°	27.1	24.2	21.4	20.1	20.3	20.5	20.6	20.8
102.5°	96.9	66.6	36.4	21.2	21.3	21.3	21.3	21.4
105°	234.6	236.0	237.5	235.3	229.4	223.4	217.5	211.6
107.5°	290.2	290.9	291.7	292.3	293.0	293.6	294.2	294.8
110°	328.0	328.3	328.7	329.1	329.6	330.1	330.6	331.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	364.6	364.6	364.5	364.8	365.4	366.0	366.7	367.3
115°	419.3	419.6	420.0	420.1	420.1	420.1	420.1	420.1
117.5°	474.3	474.3	474.2	474.1	474.1	474.0	473.9	473.9
120°	508.4	508.7	509.0	509.0	508.7	508.4	508.1	507.7
122.5°	542.0	542.2	542.4	542.3	542.0	541.6	541.3	541.0
125°	588.9	589.4	589.9	590.2	590.4	590.5	590.7	590.9
127.5°	635.5	635.4	635.3	635.2	635.1	634.9	634.8	634.7
130°	663.9	664.1	664.3	664.3	664.3	664.3	664.3	664.3
132.5°	691.8	692.0	692.2	692.2	692.1	691.9	691.8	691.7
135°	730.3	730.7	731.0	731.3	731.6	732.0	732.3	732.6
137.5°	767.2	767.6	767.9	768.1	768.0	767.9	767.8	767.7
140°	790.0	790.5	791.0	791.4	791.5	791.7	791.9	792.0
142.5°	811.2	811.5	811.9	812.1	812.1	812.1	812.2	812.2
145°	841.3	841.5	841.7	841.9	842.2	842.6	842.9	843.2
147.5°	867.8	868.0	868.1	868.3	868.4	868.6	868.8	868.9
150°	884.8	884.8	884.8	884.9	885.1	885.2	885.4	885.5
152.5°	899.6	899.8	900.1	900.2	900.1	900.0	899.9	899.8
155°	919.5	920.2	920.8	920.9	920.4	919.9	919.4	919.0
157.5°	936.7	937.6	938.4	938.4	937.6	936.7	935.8	935.0
160°	947.7	948.6	949.6	949.6	948.6	947.7	946.7	945.7
162.5°	956.6	957.5	958.5	958.5	957.4	956.2	955.1	954.0
165°	969.1	970.4	971.7	971.7	970.2	968.7	967.2	965.7
167.5°	978.3	979.7	981.2	981.1	979.4	977.8	976.1	974.5
170°	983.9	985.3	986.6	986.4	984.8	983.1	981.5	979.8
172.5°	987.5	988.8	990.1	989.9	988.1	986.4	984.6	982.8
175°	991.7	993.2	994.7	994.4	992.4	990.5	988.5	986.5
177.5°	993.4	994.4	995.5	995.2	993.6	992.0	990.5	988.9
180°	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4

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