

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: P332874

Luminaire Tested: **S124RDIP-S350D590U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332874  
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: S124RDIP-S350D590U835-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 590 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3789.6 lumens  
Efficiency: N/A  
Efficacy: 148.0 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

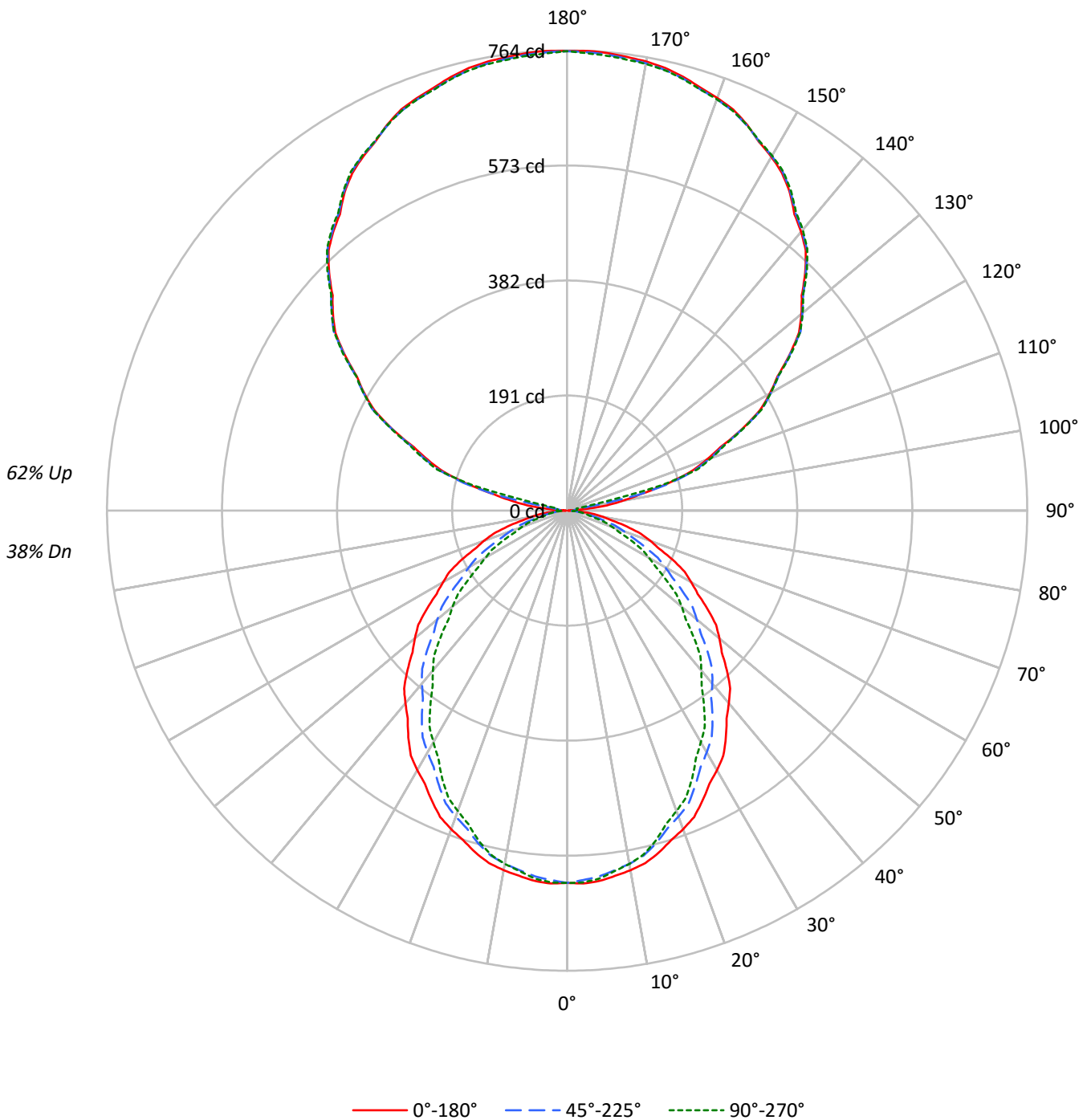
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32
2	87	80	74	69	79	73	68	63	59	56	53	47	44	42	35	34	32	27
3	79	70	63	58	72	64	58	53	52	48	44	42	38	36	31	30	28	23
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	28	26	24	20
5	67	55	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18
6	61	50	42	36	56	45	39	34	38	32	29	30	26	24	23	21	19	16
7	57	45	37	32	51	41	34	29	34	29	25	27	24	21	21	19	17	14
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15	12
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13	11
10	46	34	27	22	41	31	25	21	26	21	18	21	18	15	17	14	12	10

**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	1.5
10°-20°	161.9	4.3
20°-30°	233.8	6.2
30°-40°	265.1	7.0
40°-50°	255.9	6.8
50°-60°	212.8	5.6
60°-70°	147.0	3.9
70°-80°	74.5	2.0
80°-90°	21.3	0.6
90°-100°	26.1	0.7
100°-110°	166.3	4.4
110°-120°	318.2	8.4
120°-130°	403.9	10.7
130°-140°	432.1	11.4
140°-150°	404.1	10.7
150°-160°	325.9	8.6
160°-170°	210.2	5.5
170°-180°	72.4	1.9
0°-30°	453.8	12.0
0°-40°	718.9	19.0
0°-60°	1187.7	31.3
0°-90°	1430.4	37.7
90°-120°	510.6	13.5
90°-150°	1750.6	46.2
90°-180°	2359.0	62.2
0°-180°	3789.6	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	8	12	16	17	3
95°	31	13	12	16	16	40
105°	172	175	178	182	163	180
115°	321	322	322	323	323	315
125°	451	453	452	453	454	402
135°	559	559	561	562	563	431
145°	645	646	646	647	648	403
155°	707	707	706	708	706	326
165°	746	743	743	747	742	211
175°	763	759	760	764	758	73
180°	763	763	763	763	763	



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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°	9.1	8.7	8.3	7.9	7.5	7.3	7.5	7.6	7.7	7.8	7.9
90°	1.7	3.1	4.5	5.9	7.3	8.5	9.5	10.5	11.5	12.5	13.3
92.5°	7.2	7.3	7.3	7.4	7.5	8.0	9.1	10.1	11.1	12.1	12.9
95°	31.4	27.1	22.8	18.4	14.1	12.0	12.2	12.3	12.4	12.5	13.3
97.5°	66.6	69.3	72.0	74.7	77.4	71.6	57.5	43.4	29.2	15.1	15.1
100°	93.5	95.8	98.1	100.4	102.7	95.1	77.6	60.1	42.6	25.1	22.9
102.5°	123.7	125.3	127.0	128.7	130.4	130.1	127.8	125.5	123.2	120.9	97.7
105°	171.7	172.5	173.2	174.0	174.7	175.4	176.1	176.7	177.3	178.0	179.1
107.5°	216.3	216.7	217.1	217.4	217.8	218.4	219.3	220.2	221.0	221.9	222.5
110°	246.4	246.8	247.2	247.6	247.9	248.5	249.3	250.0	250.8	251.6	251.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	275.6	276.3	277.0	277.7	278.4	278.9	279.2	279.6	280.0	280.3	280.3
115°	320.6	321.0	321.3	321.7	322.1	322.2	322.1	322.0	321.8	321.7	322.0
117.5°	361.1	361.6	362.1	362.6	363.1	363.5	363.8	364.1	364.3	364.6	364.6
120°	388.5	389.0	389.5	390.0	390.5	390.7	390.6	390.4	390.3	390.2	390.4
122.5°	414.0	414.3	414.6	414.9	415.2	415.5	415.7	415.8	416.0	416.2	416.3
125°	450.6	451.1	451.7	452.2	452.7	452.8	452.5	452.3	452.0	451.8	452.2
127.5°	485.3	485.4	485.6	485.7	485.8	486.2	486.8	487.3	487.9	488.5	488.4
130°	507.7	507.8	507.9	508.1	508.2	508.4	508.8	509.2	509.6	510.0	510.1
132.5°	528.2	528.4	528.7	528.9	529.1	529.5	530.0	530.4	530.9	531.4	531.5
135°	559.0	558.9	558.8	558.6	558.5	558.7	559.2	559.7	560.2	560.7	561.0
137.5°	586.3	586.3	586.4	586.4	586.5	586.8	587.3	587.9	588.5	589.0	589.3
140°	604.1	604.3	604.6	604.8	605.1	605.3	605.6	605.9	606.1	606.4	606.7
142.5°	620.1	620.5	621.0	621.4	621.9	622.2	622.3	622.5	622.6	622.8	623.1
145°	644.6	645.0	645.3	645.7	646.1	646.3	646.3	646.3	646.3	646.3	646.4
147.5°	664.1	664.8	665.5	666.2	666.9	667.2	667.1	667.0	666.8	666.7	666.8
150°	678.2	678.7	679.3	679.8	680.3	680.5	680.3	680.2	680.1	679.9	679.9
152.5°	690.1	690.5	690.9	691.3	691.7	691.8	691.6	691.4	691.1	690.9	691.1
155°	706.8	706.9	707.0	707.1	707.3	707.1	706.8	706.4	706.0	705.6	706.1
157.5°	720.8	720.7	720.6	720.6	720.5	720.2	719.8	719.4	718.9	718.5	719.2
160°	729.0	728.6	728.2	727.9	727.5	727.2	727.1	727.0	726.8	726.7	727.5
162.5°	736.3	735.8	735.3	734.9	734.4	734.1	733.9	733.8	733.7	733.6	734.3
165°	745.5	744.9	744.3	743.6	743.0	742.7	742.7	742.7	742.7	742.7	743.7
167.5°	752.8	752.2	751.5	750.9	750.2	749.8	749.8	749.7	749.6	749.5	750.7
170°	757.0	756.2	755.4	754.7	753.9	753.6	753.7	753.8	754.0	754.1	755.1
172.5°	759.7	758.9	758.2	757.4	756.7	756.3	756.5	756.6	756.7	756.8	757.9
175°	762.7	761.9	761.1	760.4	759.6	759.3	759.4	759.6	759.7	759.8	760.9
177.5°	764.0	763.3	762.6	761.9	761.2	760.9	761.1	761.3	761.5	761.7	762.6
180°	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7



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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°	7.9	8.0	8.1	8.2	8.3	8.5	8.6	8.7
90°	14.1	14.8	15.6	16.1	16.4	16.6	16.9	17.1
92.5°	13.6	14.4	15.1	15.5	15.6	15.6	15.7	15.7
95°	14.1	14.8	15.6	16.0	16.2	16.3	16.4	16.5
97.5°	15.2	15.3	15.4	15.5	15.6	15.7	15.8	16.0
100°	20.8	18.6	16.5	15.5	15.6	15.7	15.8	16.0
102.5°	74.4	51.2	27.9	16.3	16.4	16.4	16.4	16.4
105°	180.3	181.4	182.5	180.8	176.3	171.7	167.1	162.6
107.5°	223.0	223.6	224.1	224.6	225.1	225.6	226.1	226.6
110°	252.1	252.3	252.6	252.9	253.3	253.6	254.0	254.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	280.2	280.2	280.1	280.3	280.8	281.3	281.8	282.2
115°	322.2	322.5	322.7	322.9	322.9	322.9	322.9	322.9
117.5°	364.5	364.5	364.4	364.4	364.3	364.3	364.2	364.2
120°	390.7	390.9	391.2	391.2	390.9	390.7	390.4	390.2
122.5°	416.5	416.6	416.8	416.7	416.5	416.2	416.0	415.7
125°	452.5	452.9	453.3	453.6	453.7	453.8	453.9	454.1
127.5°	488.4	488.3	488.2	488.1	488.0	487.9	487.8	487.7
130°	510.2	510.3	510.5	510.5	510.5	510.5	510.5	510.5
132.5°	531.7	531.8	531.9	531.9	531.8	531.7	531.6	531.5
135°	561.2	561.5	561.7	562.0	562.2	562.5	562.8	563.0
137.5°	589.6	589.9	590.1	590.2	590.2	590.1	590.0	589.9
140°	607.1	607.5	607.9	608.1	608.3	608.4	608.5	608.6
142.5°	623.3	623.6	623.9	624.1	624.1	624.1	624.1	624.2
145°	646.5	646.7	646.8	647.0	647.2	647.5	647.8	648.0
147.5°	666.9	667.0	667.1	667.2	667.4	667.5	667.6	667.7
150°	679.9	679.9	679.9	680.0	680.1	680.3	680.4	680.5
152.5°	691.3	691.5	691.7	691.8	691.7	691.6	691.5	691.5
155°	706.6	707.1	707.6	707.7	707.3	706.9	706.6	706.2
157.5°	719.8	720.5	721.1	721.1	720.5	719.8	719.2	718.5
160°	728.2	729.0	729.8	729.8	729.0	728.2	727.5	726.7
162.5°	735.1	735.8	736.6	736.6	735.7	734.8	734.0	733.1
165°	744.7	745.7	746.8	746.7	745.5	744.4	743.3	742.1
167.5°	751.8	752.9	754.0	753.9	752.7	751.4	750.1	748.9
170°	756.1	757.1	758.2	758.0	756.8	755.5	754.2	753.0
172.5°	758.9	759.9	760.9	760.7	759.4	758.0	756.6	755.2
175°	762.1	763.2	764.4	764.2	762.7	761.1	759.6	758.1
177.5°	763.4	764.2	765.0	764.8	763.6	762.4	761.1	759.9
180°	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7

(END OF REPORT)