

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: P332503

Luminaire Tested: **S124DIP-S350D590U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332503  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D590U835-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3489.1 lumens  
Efficiency: N/A  
Efficacy: 136.3 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

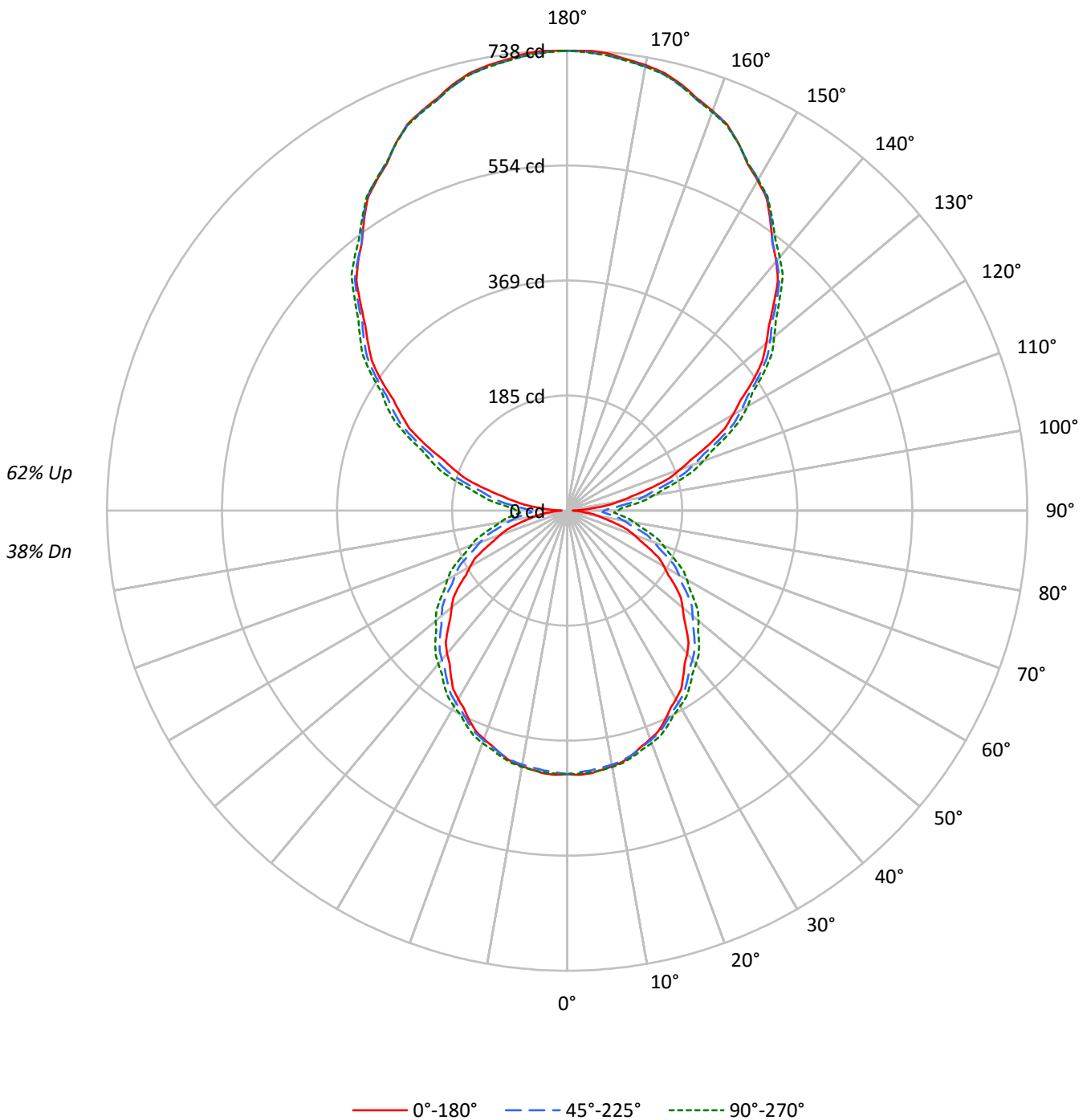
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	94	90	86	82	85	82	78	75	66	64	61	52	50	49	39	38	37	31
2	86	78	72	66	77	71	65	61	57	53	50	45	42	40	34	32	30	25
3	78	68	61	55	70	62	56	50	50	46	42	40	36	33	30	27	25	21
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	24	22	18
5	65	53	45	39	59	49	41	36	40	34	30	31	27	24	24	21	19	15
6	60	48	40	34	54	43	36	31	36	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	19	17	14	12
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	18	15	13	10
9	47	35	28	23	43	32	26	21	27	22	18	21	17	15	16	14	12	9
10	44	32	25	20	40	30	23	19	24	19	16	20	16	13	15	12	10	8

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

	0°	45°	90°
0°	3412	3412	3412
5°	3423	3335	3344
10°	3402	3281	3278
15°	3371	3217	3200
20°	3325	3147	3124
25°	3274	3070	3039
30°	3217	2992	2954
35°	3154	2912	2878
40°	3103	2836	2800
45°	3027	2766	2732
50°	2964	2686	2661
55°	2899	2610	2577
60°	2796	2513	2501
65°	2682	2410	2407
70°	2547	2292	2298
75°	2356	2161	2199
80°	2145	2037	2102
85°	1878	1926	2046



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.0	1.1
10°-20°	114.7	3.3
20°-30°	173.4	5.0
30°-40°	209.8	6.0
40°-50°	221.8	6.4
50°-60°	208.8	6.0
60°-70°	173.2	5.0
70°-80°	121.7	3.5
80°-90°	71.0	2.0
90°-100°	89.5	2.6
100°-110°	174.3	5.0
110°-120°	264.9	7.6
120°-130°	333.9	9.6
130°-140°	367.1	10.5
140°-150°	356.9	10.2
150°-160°	299.3	8.6
160°-170°	199.1	5.7
170°-180°	69.7	2.0
0°-30°	328.1	9.4
0°-40°	537.9	15.4
0°-60°	968.5	27.8
0°-90°	1334.3	38.2
90°-120°	528.6	15.2
90°-150°	1586.6	45.5
90°-180°	2155.0	61.8
0°-180°	3489.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	423	423	423	423	423	
5°	423	422	418	422	422	40
15°	406	406	405	409	408	114
25°	371	374	375	380	381	171
35°	325	330	335	341	343	203
45°	271	280	289	296	299	209
55°	212	222	236	245	248	189
65°	147	162	178	189	194	145
75°	81	99	119	132	136	87
85°	25	45	66	80	85	27
90°	9	34	59	76	82	7
95°	40	61	84	98	103	43
105°	137	148	167	180	186	146
115°	252	256	270	279	282	248
125°	364	364	375	382	384	324
135°	468	472	475	481	482	362
145°	568	570	570	572	573	355
155°	650	650	650	652	650	299
165°	708	706	705	708	706	199
175°	736	734	733	736	733	70
180°	738	738	738	738	738	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	424.2	423.9	423.7	423.4	423.2	422.7	422.1	421.4	420.7	420.0	420.6
5°	423.2	422.8	422.5	422.2	421.9	421.4	420.6	419.9	419.2	418.4	419.3
7.5°	419.6	419.4	419.2	419.0	418.8	418.4	417.8	417.2	416.6	416.0	416.9
10°	416.5	416.4	416.3	416.2	416.1	415.8	415.3	414.7	414.2	413.7	414.6
12.5°	412.4	412.3	412.3	412.3	412.3	412.1	411.7	411.4	411.0	410.7	411.5
15°	405.6	405.8	405.9	406.0	406.1	406.0	405.6	405.3	405.0	404.7	405.6
17.5°	396.5	396.8	397.1	397.4	397.7	397.9	397.8	397.7	397.7	397.6	398.6
20°	390.0	390.3	390.7	391.0	391.3	391.5	391.6	391.7	391.8	391.9	393.0
22.5°	382.8	383.2	383.6	384.0	384.4	384.7	384.9	385.1	385.3	385.5	386.5
25°	371.1	371.7	372.4	373.0	373.6	374.1	374.4	374.7	375.0	375.4	376.5
27.5°	358.0	359.0	359.9	360.8	361.7	362.4	362.9	363.4	363.9	364.4	365.4
30°	349.3	350.2	351.0	351.8	352.7	353.5	354.2	354.9	355.7	356.4	357.6
32.5°	339.9	340.9	341.9	342.9	343.9	344.8	345.6	346.4	347.3	348.1	349.4
35°	324.7	326.0	327.2	328.5	329.8	330.9	332.0	333.0	334.1	335.1	336.6
37.5°	309.5	310.9	312.4	313.8	315.3	316.6	318.0	319.3	320.6	321.9	323.4
40°	299.6	301.0	302.4	303.7	305.1	306.5	308.0	309.5	310.9	312.4	314.0
42.5°	288.3	289.8	291.3	292.9	294.4	296.0	297.8	299.5	301.2	302.9	304.7
45°	270.7	272.7	274.7	276.7	278.7	280.7	282.7	284.7	286.7	288.7	290.5
47.5°	254.0	256.1	258.1	260.2	262.2	264.4	266.7	269.1	271.4	273.7	275.5
50°	241.9	244.2	246.5	248.8	251.1	253.4	255.8	258.1	260.4	262.7	264.8
52.5°	229.8	232.1	234.4	236.7	239.0	241.5	244.1	246.8	249.4	252.1	254.2
55°	212.1	214.3	216.5	218.7	220.9	223.6	226.7	229.9	233.0	236.2	238.3
57.5°	192.3	195.0	197.7	200.5	203.2	206.1	209.3	212.4	215.5	218.7	221.2
60°	179.4	182.1	184.9	187.6	190.3	193.4	196.9	200.4	203.8	207.3	209.7
62.5°	166.9	169.9	172.9	175.9	178.8	182.1	185.5	189.0	192.5	196.0	198.4
65°	146.7	150.1	153.5	156.8	160.2	163.7	167.2	170.8	174.4	178.0	180.6
67.5°	127.3	130.9	134.5	138.1	141.6	145.3	149.2	153.0	156.8	160.6	163.3
70°	114.1	117.6	121.2	124.8	128.4	132.2	136.2	140.2	144.2	148.2	151.0
72.5°	101.2	104.9	108.5	112.2	115.8	119.8	124.0	128.3	132.5	136.8	139.5
75°	81.4	85.3	89.2	93.1	97.0	101.1	105.6	110.0	114.4	118.8	121.8
77.5°	63.0	67.1	71.2	75.3	79.4	83.8	88.4	93.1	97.7	102.3	105.3
80°	51.6	55.8	60.0	64.2	68.4	72.8	77.5	82.1	86.7	91.4	94.5
82.5°	40.2	44.6	49.0	53.4	57.7	62.2	66.9	71.5	76.1	80.8	84.0
85°	25.1	29.5	33.9	38.3	42.8	47.3	52.1	56.8	61.5	66.3	69.4
87.5°	14.4	18.9	23.5	28.1	32.6	37.3	42.1	46.9	51.8	56.6	59.8
90°	9.3	14.9	20.5	26.1	31.7	37.3	42.8	48.3	53.9	59.4	63.2
92.5°	19.4	24.8	30.2	35.6	40.9	46.2	51.5	56.7	61.9	67.2	70.6
95°	40.4	45.0	49.6	54.2	58.8	63.7	68.9	74.1	79.3	84.5	87.7
97.5°	65.4	69.3	73.2	77.1	81.0	85.6	90.9	96.2	101.5	106.8	110.0
100°	85.1	88.3	91.5	94.8	98.0	102.3	107.5	112.8	118.0	123.2	126.3
102.5°	106.0	108.6	111.2	113.8	116.4	120.3	125.3	130.4	135.4	140.5	143.6
105°	137.2	139.4	141.6	143.8	146.1	149.4	153.8	158.2	162.6	167.0	170.0
107.5°	170.7	172.6	174.5	176.3	178.2	181.0	184.8	188.5	192.3	196.1	199.0
110°	193.1	194.9	196.6	198.3	200.0	202.7	206.2	209.8	213.4	216.9	219.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	216.5	217.8	219.2	220.6	221.9	224.2	227.5	230.8	234.1	237.4	239.7
115°	251.5	252.5	253.4	254.4	255.3	257.3	260.4	263.6	266.7	269.8	272.0
117.5°	285.0	285.6	286.3	287.0	287.6	289.4	292.4	295.4	298.3	301.3	303.0
120°	306.9	307.8	308.6	309.4	310.2	312.0	314.6	317.3	320.0	322.7	324.1
122.5°	330.2	330.5	330.7	331.0	331.3	332.8	335.5	338.2	340.9	343.6	345.2
125°	364.1	364.0	363.9	363.7	363.6	364.8	367.3	369.8	372.4	374.9	376.6
127.5°	395.1	395.4	395.7	395.9	396.2	397.3	399.1	400.9	402.7	404.5	406.2
130°	416.6	416.9	417.2	417.5	417.7	418.7	420.4	422.1	423.8	425.4	427.1
132.5°	439.0	439.2	439.3	439.5	439.7	440.4	441.6	442.9	444.1	445.4	446.9
135°	468.1	468.8	469.6	470.3	471.1	471.9	472.6	473.3	474.1	474.8	476.2
137.5°	500.2	500.5	500.7	501.0	501.2	501.6	502.2	502.8	503.3	503.9	505.1
140°	521.7	521.8	522.0	522.1	522.3	522.4	522.5	522.6	522.7	522.8	524.1
142.5°	540.9	541.1	541.4	541.6	541.8	541.9	541.7	541.6	541.4	541.2	542.4
145°	568.0	568.4	568.8	569.2	569.6	569.8	570.0	570.1	570.2	570.3	570.9
147.5°	594.9	595.4	595.9	596.4	596.9	597.1	597.0	596.9	596.8	596.7	596.7
150°	611.3	611.7	612.1	612.5	612.9	613.1	613.1	613.1	613.1	613.1	613.1
152.5°	626.5	626.7	627.0	627.3	627.6	627.8	627.9	628.0	628.1	628.2	628.5
155°	650.2	650.2	650.2	650.2	650.2	650.1	650.0	649.9	649.8	649.6	650.1
157.5°	670.3	670.0	669.8	669.6	669.4	669.2	669.2	669.2	669.2	669.1	669.5
160°	682.1	682.0	681.9	681.8	681.6	681.5	681.4	681.3	681.1	681.0	681.4
162.5°	693.1	692.8	692.4	692.1	691.8	691.5	691.4	691.3	691.2	691.0	691.7
165°	707.8	707.4	707.0	706.7	706.3	706.0	705.7	705.5	705.2	705.0	705.7
167.5°	719.1	718.6	718.0	717.5	717.0	716.7	716.7	716.8	716.8	716.8	717.6
170°	725.5	724.9	724.2	723.6	722.9	722.7	722.8	722.9	723.1	723.2	724.0
172.5°	730.0	729.5	729.0	728.5	727.9	727.7	727.7	727.7	727.7	727.8	728.6
175°	736.3	735.7	735.1	734.4	733.8	733.4	733.3	733.2	733.0	732.9	733.8
177.5°	738.4	737.9	737.4	736.9	736.3	736.1	736.1	736.1	736.1	736.1	736.8
180°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	421.2	421.8	422.4	422.6	422.6	422.5	422.4	422.3
5°	420.1	420.9	421.8	422.2	422.1	421.9	421.8	421.7
7.5°	417.9	418.8	419.8	420.2	420.1	420.0	419.9	419.8
10°	415.6	416.5	417.5	417.9	417.8	417.7	417.6	417.5
12.5°	412.4	413.3	414.1	414.5	414.5	414.5	414.5	414.4
15°	406.6	407.5	408.5	408.9	408.8	408.7	408.6	408.5
17.5°	399.5	400.5	401.5	401.9	401.8	401.7	401.7	401.6
20°	394.0	395.1	396.1	396.7	396.7	396.7	396.7	396.7
22.5°	387.6	388.6	389.7	390.3	390.5	390.6	390.8	391.0
25°	377.7	378.8	380.0	380.6	380.7	380.8	380.9	381.0
27.5°	366.5	367.6	368.7	369.3	369.4	369.5	369.6	369.8
30°	358.7	359.9	361.0	361.7	361.9	362.2	362.4	362.6
32.5°	350.7	352.1	353.4	354.2	354.4	354.6	354.8	355.0
35°	338.1	339.5	341.0	341.9	342.2	342.5	342.9	343.2
37.5°	324.9	326.3	327.8	328.8	329.1	329.4	329.8	330.1
40°	315.6	317.1	318.7	319.7	320.1	320.6	321.0	321.4
42.5°	306.4	308.2	309.9	311.0	311.3	311.6	312.0	312.3
45°	292.3	294.1	295.9	297.0	297.6	298.1	298.6	299.1
47.5°	277.4	279.2	281.1	282.3	283.0	283.6	284.2	284.9
50°	266.9	269.0	271.1	272.5	273.1	273.7	274.4	275.0
52.5°	256.3	258.4	260.5	261.9	262.5	263.1	263.8	264.4
55°	240.4	242.5	244.6	246.0	246.6	247.2	247.9	248.5
57.5°	223.7	226.2	228.7	230.2	230.8	231.4	232.0	232.6
60°	212.2	214.6	217.0	218.6	219.5	220.3	221.2	222.0
62.5°	200.8	203.2	205.6	207.3	208.1	208.9	209.8	210.6
65°	183.2	185.9	188.5	190.2	191.1	191.9	192.8	193.6
67.5°	166.0	168.7	171.3	173.1	173.9	174.7	175.5	176.4
70°	153.8	156.7	159.5	161.3	162.0	162.8	163.5	164.2
72.5°	142.3	145.1	147.8	149.6	150.4	151.2	152.1	152.9
75°	124.7	127.6	130.6	132.5	133.5	134.4	135.4	136.3
77.5°	108.3	111.3	114.3	116.3	117.3	118.3	119.3	120.3
80°	97.7	100.8	104.0	106.0	106.8	107.7	108.5	109.3
82.5°	87.2	90.5	93.7	95.8	96.7	97.6	98.6	99.5
85°	72.6	75.7	78.9	81.0	82.0	83.1	84.1	85.2
87.5°	63.0	66.2	69.4	71.5	72.4	73.4	74.4	75.4
90°	67.0	70.8	74.7	77.1	78.2	79.3	80.4	81.5
92.5°	74.0	77.4	80.9	83.1	84.1	85.1	86.1	87.0
95°	91.0	94.2	97.4	99.5	100.4	101.4	102.3	103.3
97.5°	113.2	116.4	119.6	121.7	122.6	123.5	124.4	125.3
100°	129.4	132.5	135.6	137.5	138.3	139.0	139.7	140.5
102.5°	146.7	149.8	153.0	155.0	155.9	156.8	157.7	158.7
105°	173.0	176.0	179.0	181.1	182.4	183.6	184.8	186.0
107.5°	201.9	204.9	207.8	209.7	210.4	211.1	211.9	212.6
110°	221.2	223.4	225.6	227.3	228.5	229.7	230.9	232.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	241.9	244.2	246.5	248.1	249.0	249.9	250.9	251.8
115°	274.2	276.3	278.5	279.9	280.5	281.1	281.8	282.4
117.5°	304.8	306.5	308.3	309.5	310.1	310.6	311.2	311.8
120°	325.6	327.1	328.5	329.8	330.9	332.0	333.1	334.2
122.5°	346.9	348.6	350.3	351.2	351.6	351.9	352.2	352.5
125°	378.3	380.1	381.8	382.9	383.3	383.7	384.0	384.4
127.5°	407.8	409.4	411.1	412.2	412.7	413.2	413.7	414.2
130°	428.7	430.4	432.0	432.9	433.0	433.1	433.3	433.4
132.5°	448.5	450.0	451.6	452.6	453.0	453.4	453.9	454.3
135°	477.7	479.1	480.5	481.4	481.6	481.9	482.1	482.4
137.5°	506.3	507.5	508.7	509.6	510.2	510.8	511.4	512.0
140°	525.3	526.5	527.8	528.6	529.0	529.4	529.8	530.2
142.5°	543.6	544.7	545.9	546.7	547.1	547.5	548.0	548.4
145°	571.4	571.9	572.4	572.6	572.7	572.7	572.8	572.8
147.5°	596.7	596.6	596.6	596.7	596.9	597.1	597.4	597.6
150°	613.1	613.1	613.1	613.1	612.9	612.8	612.7	612.6
152.5°	628.8	629.1	629.4	629.4	629.1	628.7	628.4	628.1
155°	650.6	651.1	651.7	651.7	651.1	650.6	650.1	649.6
157.5°	669.9	670.3	670.7	670.6	670.2	669.8	669.3	668.9
160°	681.8	682.1	682.5	682.4	681.8	681.1	680.5	679.9
162.5°	692.4	693.1	693.8	693.8	693.2	692.5	691.9	691.3
165°	706.5	707.2	708.0	708.1	707.6	707.1	706.6	706.1
167.5°	718.3	719.1	719.9	719.8	719.1	718.3	717.5	716.7
170°	724.7	725.5	726.2	726.2	725.3	724.4	723.5	722.6
172.5°	729.5	730.4	731.2	731.2	730.3	729.4	728.5	727.7
175°	734.7	735.6	736.4	736.4	735.6	734.7	733.8	732.9
177.5°	737.5	738.2	738.9	738.9	738.1	737.3	736.4	735.6
180°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5

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