

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: P332504-940

Luminaire Tested: **SA4XXDIP-C350D590U940-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332504-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C350D590U940-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3169.3 lumens  
Efficiency: N/A  
Efficacy: 123.8 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

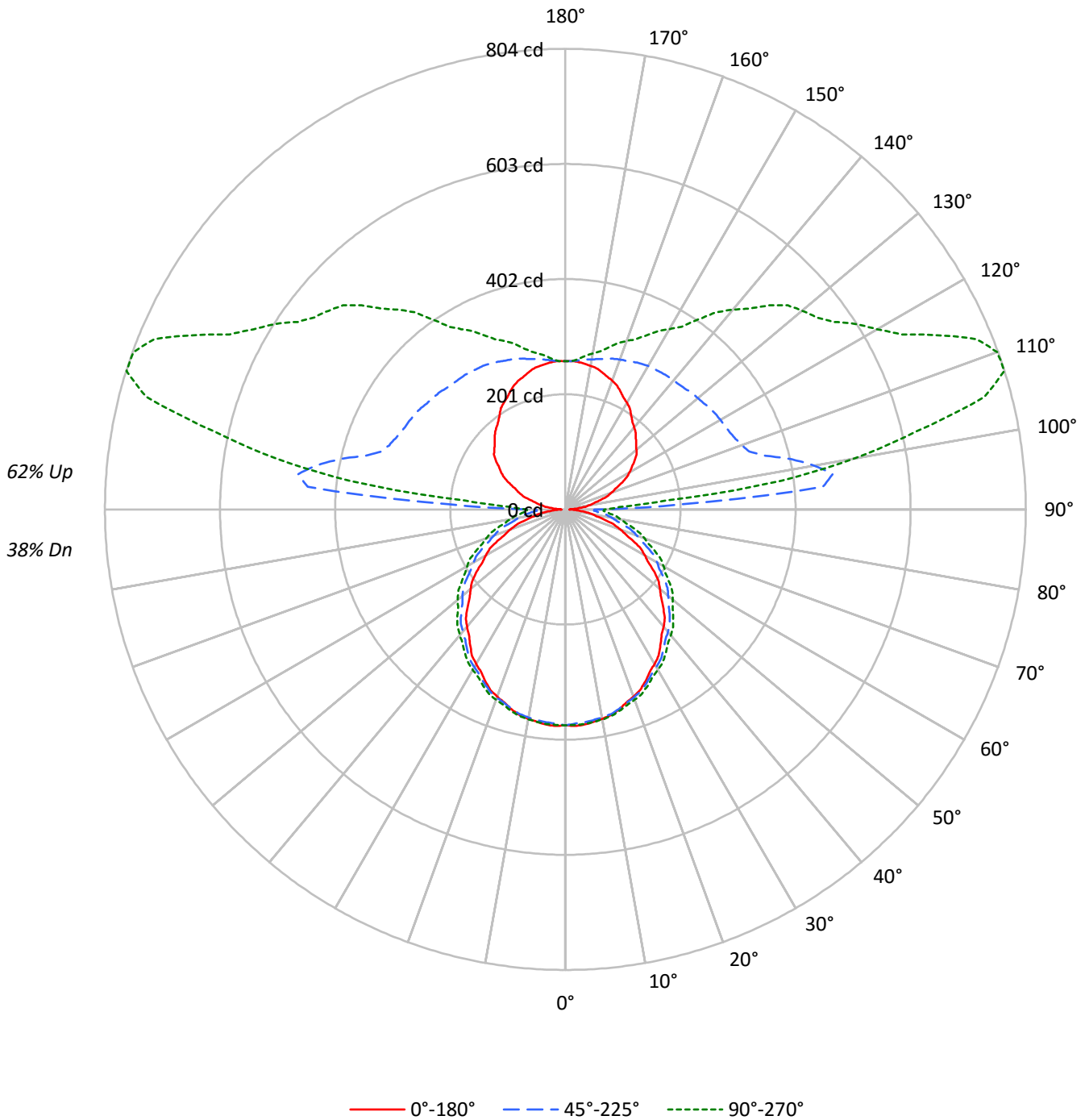
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45	38				38
1	94	90	86	82	85	81	78	75	66	63	61	51	50	48	38	37	36				30	
2	85	78	71	66	77	71	65	61	57	53	50	45	42	40	33	31	30				25	
3	78	68	61	55	70	62	55	50	50	45	42	39	36	33	29	27	25				20	
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21				17	
5	65	53	45	39	59	48	41	36	39	34	30	31	27	24	23	21	18				15	
6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16				13	
7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14				11	
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13				10	
9	47	35	28	23	43	32	26	21	27	21	18	21	17	15	16	13	11				9	
10	44	32	25	20	40	30	23	19	24	19	16	19	16	13	15	12	10				8	

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

	0°	45°	90°
0°	3043	3043	3043
5°	3053	2974	2982
10°	3033	2925	2923
15°	3006	2869	2854
20°	2965	2807	2785
25°	2919	2737	2710
30°	2869	2668	2634
35°	2812	2597	2566
40°	2768	2530	2497
45°	2700	2466	2436
50°	2643	2396	2373
55°	2585	2328	2298
60°	2493	2242	2231
65°	2392	2149	2146
70°	2271	2045	2049
75°	2101	1926	1961
80°	1913	1816	1875
85°	1676	1717	1825



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.7	1.1
10°-20°	102.3	3.2
20°-30°	154.6	4.9
30°-40°	187.1	5.9
40°-50°	197.8	6.2
50°-60°	186.2	5.9
60°-70°	154.4	4.9
70°-80°	108.5	3.4
80°-90°	62.8	2.0
90°-100°	223.4	7.0
100°-110°	416.2	13.1
110°-120°	366.7	11.6
120°-130°	303.5	9.6
130°-140°	248.9	7.9
140°-150°	187.7	5.9
150°-160°	131.3	4.1
160°-170°	77.2	2.4
170°-180°	25.1	0.8
0°-30°	292.6	9.2
0°-40°	479.7	15.1
0°-60°	863.6	27.2
0°-90°	1189.3	37.5
90°-120°	1006.3	31.8
90°-150°	1746.4	55.1
90°-180°	1980.0	62.5
0°-180°	3169.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	377	377	377	377	377	
5°	377	376	373	376	376	36
15°	362	362	361	364	364	102
25°	331	333	335	339	340	152
35°	290	295	299	304	306	181
45°	241	249	257	264	267	187
55°	189	198	211	219	222	168
65°	131	144	159	169	173	130
75°	73	88	106	117	122	77
85°	22	40	59	71	76	24
90°	7	28	51	64	68	5
95°	22	72	451	253	176	23
105°	63	99	362	756	758	68
115°	107	138	317	600	719	107
125°	148	175	308	506	571	132
135°	174	208	297	442	504	135
145°	200	229	292	367	405	126
155°	227	245	284	321	335	105
165°	248	255	272	288	292	70
175°	258	259	261	264	264	25
180°	259	259	259	259	259	



TEST NUMBER: P332504-940

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	378.3	378.0	377.8	377.6	377.4	376.9	376.4	375.8	375.1	374.5	375.1
5°	377.4	377.0	376.7	376.5	376.2	375.8	375.1	374.4	373.8	373.1	373.9
7.5°	374.2	374.0	373.8	373.6	373.4	373.1	372.6	372.0	371.5	371.0	371.8
10°	371.4	371.3	371.2	371.1	371.0	370.8	370.3	369.8	369.3	368.9	369.7
12.5°	367.7	367.7	367.7	367.7	367.7	367.5	367.1	366.8	366.5	366.2	366.9
15°	361.7	361.9	361.9	362.0	362.1	362.0	361.7	361.4	361.1	360.9	361.7
17.5°	353.6	353.8	354.1	354.4	354.6	354.8	354.7	354.6	354.6	354.5	355.4
20°	347.8	348.0	348.4	348.7	348.9	349.1	349.2	349.3	349.4	349.5	350.4
22.5°	341.3	341.7	342.1	342.4	342.8	343.0	343.2	343.4	343.6	343.8	344.6
25°	330.9	331.4	332.1	332.6	333.1	333.6	333.9	334.1	334.4	334.7	335.7
27.5°	319.2	320.1	320.9	321.7	322.5	323.2	323.6	324.0	324.5	324.9	325.8
30°	311.5	312.3	313.0	313.7	314.5	315.2	315.8	316.5	317.2	317.8	318.9
32.5°	303.1	304.0	304.9	305.8	306.7	307.5	308.2	308.9	309.7	310.4	311.6
35°	289.5	290.7	291.8	292.9	294.1	295.1	296.0	296.9	297.9	298.8	300.1
37.5°	276.0	277.2	278.6	279.8	281.2	282.3	283.6	284.7	285.9	287.0	288.4
40°	267.2	268.4	269.7	270.8	272.1	273.3	274.6	276.0	277.2	278.6	280.0
42.5°	257.1	258.4	259.8	261.2	262.5	263.9	265.6	267.1	268.6	270.1	271.7
45°	241.4	243.2	245.0	246.7	248.5	250.3	252.1	253.9	255.7	257.4	259.0
47.5°	226.5	228.4	230.2	232.0	233.8	235.8	237.8	240.0	242.0	244.1	245.7
50°	215.7	217.8	219.8	221.9	223.9	226.0	228.1	230.2	232.2	234.3	236.1
52.5°	204.9	207.0	209.0	211.1	213.1	215.3	217.7	220.1	222.4	224.8	226.7
55°	189.1	191.1	193.1	195.0	197.0	199.4	202.2	205.0	207.8	210.6	212.5
57.5°	171.5	173.9	176.3	178.8	181.2	183.8	186.6	189.4	192.2	195.0	197.2
60°	160.0	162.4	164.9	167.3	169.7	172.5	175.6	178.7	181.7	184.9	187.0
62.5°	148.8	151.5	154.2	156.9	159.4	162.4	165.4	168.5	171.7	174.8	176.9
65°	130.8	133.8	136.9	139.8	142.9	146.0	149.1	152.3	155.5	158.7	161.0
67.5°	113.5	116.7	119.9	123.1	126.3	129.6	133.0	136.4	139.8	143.2	145.6
70°	101.7	104.9	108.1	111.3	114.5	117.9	121.5	125.0	128.6	132.2	134.6
72.5°	90.2	93.5	96.8	100.0	103.3	106.8	110.6	114.4	118.2	122.0	124.4
75°	72.6	76.1	79.5	83.0	86.5	90.2	94.2	98.1	102.0	105.9	108.6
77.5°	56.2	59.8	63.5	67.1	70.8	74.7	78.8	83.0	87.1	91.2	93.9
80°	46.0	49.8	53.5	57.2	61.0	64.9	69.1	73.2	77.3	81.5	84.3
82.5°	35.8	39.8	43.7	47.6	51.5	55.5	59.7	63.8	67.9	72.1	74.9
85°	22.4	26.3	30.2	34.2	38.2	42.2	46.5	50.6	54.8	59.1	61.9
87.5°	12.6	16.6	20.8	24.7	28.6	32.5	37.3	41.4	45.7	50.0	52.6
90°	7.2	12.0	17.3	21.6	25.9	29.7	36.8	40.8	45.9	50.9	53.1
92.5°	12.2	18.3	26.4	35.9	46.8	61.1	91.0	134.5	176.9	201.1	176.8
95°	22.3	26.9	35.0	44.8	60.1	84.9	133.0	220.3	345.7	451.3	465.6
97.5°	35.1	37.7	44.8	53.6	66.7	87.8	125.7	198.4	323.1	470.7	572.1
100°	43.3	45.7	51.7	60.3	72.4	91.7	125.4	186.5	293.9	441.0	573.8
102.5°	51.5	54.4	59.7	67.5	78.9	97.3	128.0	182.2	274.0	404.7	541.5
105°	63.3	66.7	71.2	79.1	90.2	107.5	135.5	181.1	255.8	361.6	483.4
107.5°	77.3	79.8	83.9	91.9	102.3	119.2	144.9	186.6	250.7	336.4	436.2
110°	86.3	88.6	92.5	99.9	110.4	126.4	152.0	190.9	250.2	327.3	412.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	94.9	97.1	101.2	108.1	118.4	134.3	159.0	195.6	251.1	321.9	397.9
115°	107.4	109.7	114.1	120.0	130.5	146.2	169.5	203.0	253.3	317.4	383.5
117.5°	120.6	122.6	126.3	132.3	142.0	157.8	179.9	210.8	256.0	314.3	375.7
120°	129.3	130.5	134.4	140.3	149.2	165.0	187.0	216.2	258.1	312.7	371.0
122.5°	137.4	138.5	142.1	147.3	156.9	172.0	193.9	221.3	260.2	310.6	366.0
125°	147.7	149.6	152.6	158.1	167.6	183.0	203.7	229.4	263.8	307.9	358.5
127.5°	157.0	158.5	162.2	168.4	178.4	193.7	213.1	236.4	266.2	304.3	348.7
130°	162.0	164.0	167.9	175.5	185.0	200.5	219.3	240.6	268.0	302.1	342.5
132.5°	167.3	168.8	174.1	181.2	191.5	206.1	224.5	245.1	269.8	300.3	337.0
135°	174.3	176.4	181.5	190.1	200.7	214.3	231.8	250.7	272.2	297.3	328.3
137.5°	181.7	183.6	189.0	197.2	208.2	221.0	236.9	254.3	273.1	295.2	320.9
140°	187.0	188.4	193.9	202.5	213.1	225.3	240.7	257.0	274.4	293.8	316.9
142.5°	192.3	193.9	199.0	207.2	217.6	229.3	244.1	259.1	275.5	293.2	313.7
145°	200.4	201.8	206.8	213.7	223.4	234.5	247.7	261.4	276.3	291.9	308.8
147.5°	209.4	209.8	214.2	221.4	229.3	239.4	251.8	263.8	276.7	290.2	304.6
150°	215.1	215.5	219.5	225.5	233.0	242.6	253.9	265.0	276.7	288.9	301.7
152.5°	220.1	220.1	224.2	229.9	236.7	245.5	255.5	265.8	275.9	286.9	298.4
155°	227.4	227.9	231.0	236.0	241.7	249.2	257.9	266.5	274.6	283.8	293.5
157.5°	234.6	234.6	237.5	241.4	246.3	252.3	259.7	266.5	273.4	280.7	288.6
160°	239.1	239.1	241.1	244.7	248.7	254.3	260.5	266.5	272.2	278.2	284.9
162.5°	243.2	242.7	244.3	247.5	251.2	255.6	261.3	266.5	270.9	275.8	281.6
165°	247.7	247.7	248.7	251.3	253.9	256.9	261.4	265.6	268.6	272.2	276.3
167.5°	252.3	251.8	252.3	254.2	255.7	258.0	261.4	264.3	266.2	268.5	271.3
170°	254.3	253.9	254.3	255.8	256.9	258.4	260.9	263.5	264.5	266.0	268.0
172.5°	256.4	255.8	255.9	257.1	257.7	258.8	260.6	262.7	262.9	263.6	265.2
175°	258.4	257.9	257.9	258.4	259.0	259.0	259.9	261.4	260.9	260.9	262.0
177.5°	259.3	259.0	258.5	259.0	259.0	259.0	259.3	260.1	259.3	259.3	259.8
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	375.6	376.1	376.7	376.8	376.8	376.7	376.7	376.6
5°	374.6	375.3	376.1	376.5	376.4	376.2	376.1	376.0
7.5°	372.6	373.4	374.3	374.7	374.6	374.5	374.4	374.3
10°	370.6	371.4	372.3	372.6	372.6	372.5	372.4	372.3
12.5°	367.7	368.5	369.3	369.6	369.6	369.6	369.6	369.5
15°	362.6	363.4	364.3	364.6	364.5	364.4	364.4	364.3
17.5°	356.2	357.1	358.0	358.4	358.3	358.2	358.2	358.1
20°	351.3	352.3	353.2	353.7	353.7	353.7	353.7	353.7
22.5°	345.6	346.5	347.5	348.0	348.2	348.3	348.5	348.7
25°	336.8	337.8	338.9	339.4	339.5	339.6	339.7	339.7
27.5°	326.8	327.8	328.8	329.3	329.4	329.5	329.6	329.8
30°	319.9	320.9	321.9	322.5	322.7	323.0	323.2	323.3
32.5°	312.7	314.0	315.1	315.8	316.0	316.2	316.4	316.6
35°	301.5	302.7	304.1	304.9	305.1	305.4	305.8	306.0
37.5°	289.7	291.0	292.3	293.2	293.5	293.7	294.1	294.4
40°	281.4	282.8	284.2	285.1	285.4	285.9	286.2	286.6
42.5°	273.2	274.8	276.3	277.3	277.6	277.9	278.2	278.5
45°	260.6	262.3	263.9	264.8	265.4	265.8	266.3	266.7
47.5°	247.4	249.0	250.7	251.7	252.4	252.9	253.4	254.0
50°	238.0	239.9	241.7	243.0	243.5	244.1	244.7	245.2
52.5°	228.5	230.4	232.3	233.5	234.1	234.6	235.2	235.8
55°	214.4	216.2	218.1	219.4	219.9	220.4	221.1	221.6
57.5°	199.5	201.7	203.9	205.3	205.8	206.3	206.9	207.4
60°	189.2	191.4	193.5	194.9	195.7	196.4	197.2	198.0
62.5°	179.1	181.2	183.3	184.9	185.6	186.3	187.1	187.8
65°	163.4	165.8	168.1	169.6	170.4	171.1	171.9	172.6
67.5°	148.0	150.4	152.8	154.4	155.1	155.8	156.5	157.3
70°	137.1	139.7	142.2	143.8	144.5	145.2	145.8	146.4
72.5°	126.9	129.4	131.8	133.4	134.1	134.8	135.6	136.3
75°	111.2	113.8	116.5	118.2	119.0	119.8	120.7	121.5
77.5°	96.6	99.2	101.9	103.7	104.6	105.5	106.4	107.3
80°	87.1	89.9	92.7	94.5	95.2	96.0	96.8	97.5
82.5°	77.8	80.7	83.6	85.4	86.2	87.0	87.9	88.7
85°	64.7	67.5	70.4	72.2	73.1	74.1	75.0	76.0
87.5°	55.5	58.3	61.1	62.9	63.8	64.7	65.5	66.3
90°	56.4	59.6	62.9	64.6	65.8	67.1	67.3	68.1
92.5°	145.0	122.9	110.1	101.7	96.4	94.4	93.5	94.2
95°	418.7	342.4	276.8	229.1	205.0	190.1	181.8	176.0
97.5°	595.9	569.1	521.7	470.3	434.6	404.7	390.3	380.6
100°	650.6	663.3	641.0	604.8	561.2	530.9	516.3	512.9
102.5°	646.0	698.8	708.6	694.5	668.0	646.2	630.9	628.4
105°	602.3	692.6	745.3	767.7	769.5	766.2	759.8	757.5
107.5°	541.6	637.7	710.9	757.8	783.5	795.9	801.6	803.6
110°	505.0	595.1	671.1	728.5	765.4	787.5	797.4	802.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	477.5	557.4	629.2	686.6	728.3	754.9	768.5	776.7
115°	449.2	513.8	575.4	625.6	666.5	697.7	714.5	719.3
117.5°	433.8	487.6	536.4	579.1	614.1	640.5	657.7	661.6
120°	426.3	475.5	518.1	555.4	585.2	608.3	622.3	628.7
122.5°	419.7	467.3	506.2	539.1	564.3	584.1	596.0	602.3
125°	409.1	454.6	491.5	520.7	541.5	556.9	567.1	570.7
127.5°	396.2	439.7	476.4	504.1	525.2	539.0	547.7	551.4
130°	386.4	428.3	464.5	492.6	514.1	527.3	536.0	539.7
132.5°	376.3	415.7	451.1	479.1	500.2	515.1	523.3	526.9
135°	361.9	396.5	428.9	455.4	476.4	491.2	499.8	503.5
137.5°	348.9	378.4	405.8	429.7	449.2	463.8	470.9	475.1
140°	341.5	366.7	390.7	413.0	431.2	442.9	450.5	455.0
142.5°	334.8	357.0	377.7	397.0	413.1	423.9	430.6	433.8
145°	325.7	343.5	359.4	374.1	387.2	396.2	401.6	404.6
147.5°	318.1	331.9	344.2	355.5	365.2	372.9	377.1	378.4
150°	313.9	325.6	335.7	344.9	353.0	359.6	362.7	363.2
152.5°	309.3	319.4	328.8	336.4	343.2	348.7	350.4	351.0
155°	302.6	310.8	318.4	324.5	329.7	333.7	335.2	335.2
157.5°	295.4	302.3	308.6	313.5	317.4	320.5	321.4	321.4
160°	291.0	296.6	302.1	306.2	309.2	312.4	312.8	312.8
162.5°	286.5	291.2	295.6	299.3	301.6	304.6	305.1	304.7
165°	280.3	283.3	286.9	289.4	291.5	293.5	293.0	292.5
167.5°	274.3	276.6	279.5	281.0	282.0	283.3	283.2	282.9
170°	270.6	272.2	274.2	275.7	276.7	277.2	276.7	276.7
172.5°	267.3	268.5	269.7	270.8	271.4	272.0	271.4	270.6
175°	263.0	263.5	264.5	264.5	264.5	265.6	264.5	263.5
177.5°	260.1	260.6	260.6	260.9	260.6	260.9	260.1	259.3
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0

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