

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: P331244-830

Luminaire Tested: **SA2XXDIP-C290D330U830-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331244-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D330U830-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2232.1 lumens  
Efficiency: N/A  
Efficacy: 110.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

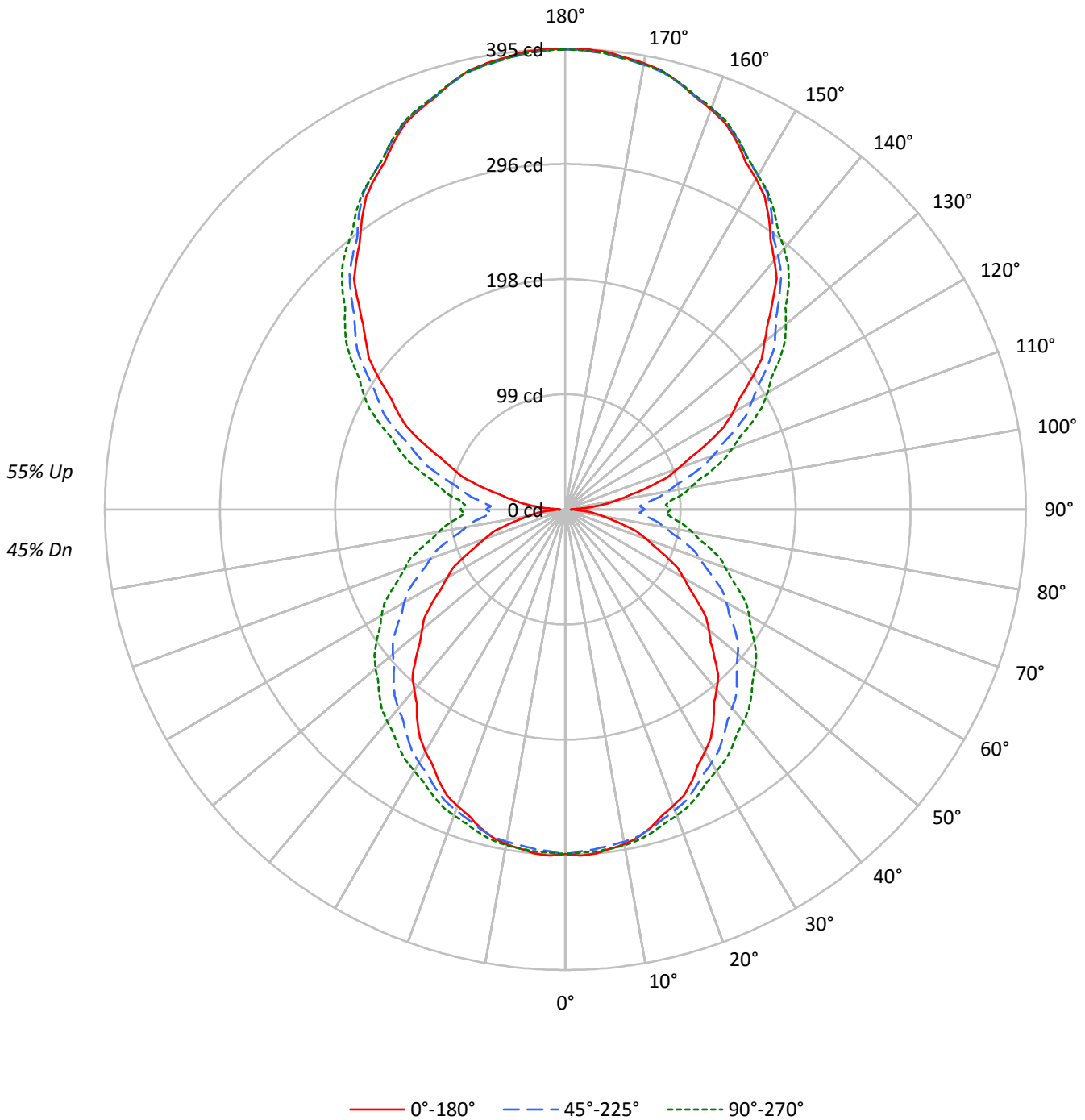
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	106	106	106	106	97	97	97	97	81	81	81	65	65	65	51	51	51	45
1	95	90	86	82	87	83	79	76	69	66	63	55	53	52	43	42	41	35
2	86	78	72	66	78	72	66	61	59	55	51	48	45	42	37	35	33	28
3	78	68	60	54	71	63	56	50	52	47	42	42	38	35	33	30	28	23
4	71	60	52	45	65	55	48	42	46	40	36	37	33	30	29	26	24	20
5	65	53	45	39	59	49	41	36	41	35	31	33	29	25	26	23	20	17
6	60	48	39	33	55	44	36	31	37	31	26	30	25	22	23	20	18	15
7	55	43	35	29	50	39	32	27	33	27	23	27	23	19	21	18	16	13
8	51	39	31	25	47	36	29	24	30	24	20	25	20	17	19	16	14	11
9	48	35	28	23	44	33	26	21	27	22	18	23	18	15	18	15	12	10
10	45	32	25	20	41	30	23	19	25	20	16	21	17	14	17	13	11	9

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

	0°	45°	90°
0°	4771	4771	4771
5°	4794	4593	4573
10°	4763	4457	4407
15°	4698	4312	4229
20°	4614	4159	4059
25°	4533	4009	3902
30°	4418	3857	3747
35°	4301	3711	3638
40°	4178	3584	3528
45°	4060	3473	3434
50°	3936	3371	3343
55°	3802	3261	3248
60°	3643	3149	3150
65°	3474	3016	3031
70°	3286	2872	2904
75°	3050	2735	2786
80°	2669	2592	2667
85°	2319	2468	2574



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.0	1.3
10°-20°	80.3	3.6
20°-30°	121.6	5.5
30°-40°	148.2	6.6
40°-50°	159.4	7.1
50°-60°	154.8	6.9
60°-70°	135.2	6.1
70°-80°	104.1	4.7
80°-90°	71.4	3.2
90°-100°	73.1	3.3
100°-110°	112.8	5.1
110°-120°	155.9	7.0
120°-130°	187.5	8.4
130°-140°	201.4	9.0
140°-150°	193.1	8.6
150°-160°	161.1	7.2
160°-170°	106.9	4.8
170°-180°	37.4	1.7
0°-30°	229.9	10.3
0°-40°	378.1	16.9
0°-60°	692.3	31.0
0°-90°	1002.9	44.9
90°-120°	341.9	15.3
90°-150°	923.8	41.4
90°-180°	1229.0	55.1
0°-180°	2232.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	296	295	292	295	294	28
15°	283	283	283	287	287	80
25°	257	260	264	269	270	118
35°	221	229	237	246	249	138
45°	182	193	208	221	226	140
55°	139	155	177	192	198	124
65°	95	116	141	158	164	94
75°	53	77	104	122	128	56
85°	16	42	69	87	93	17
90°	5	34	68	84	90	4
95°	21	44	71	86	91	23
105°	74	88	110	125	130	78
115°	135	142	160	172	176	133
125°	195	198	210	220	224	174
135°	251	255	260	268	271	194
145°	304	307	309	311	312	190
155°	348	349	350	352	351	160
165°	379	378	378	380	379	107
175°	394	393	392	394	393	37
180°	395	395	395	395	395	



TEST NUMBER: P331244-830

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	297.2	296.9	296.7	296.4	296.2	295.9	295.3	294.8	294.3	293.7	294.1
5°	296.3	296.1	295.8	295.5	295.1	294.7	294.2	293.6	293.0	292.5	293.0
7.5°	293.6	293.4	293.2	293.0	292.8	292.6	292.1	291.7	291.2	290.8	291.5
10°	291.6	291.4	291.2	291.1	290.9	290.6	290.3	290.0	289.7	289.5	290.2
12.5°	288.1	288.2	288.2	288.3	288.3	288.2	288.0	287.9	287.6	287.4	288.1
15°	282.6	282.8	283.0	283.1	283.3	283.4	283.4	283.4	283.4	283.4	284.3
17.5°	275.4	275.8	276.2	276.6	277.0	277.4	277.7	278.0	278.2	278.6	279.5
20°	270.6	271.1	271.5	272.0	272.5	273.0	273.3	273.7	274.1	274.5	275.5
22.5°	265.5	266.0	266.6	267.1	267.7	268.2	268.7	269.3	269.8	270.3	271.4
25°	256.9	257.6	258.3	258.9	259.6	260.3	261.2	262.0	262.9	263.7	264.9
27.5°	246.7	247.7	248.8	249.9	251.0	252.0	253.0	254.0	255.1	256.1	257.5
30°	239.8	241.0	242.2	243.5	244.7	246.0	247.2	248.5	249.7	250.9	252.4
32.5°	232.2	233.7	235.0	236.4	237.8	239.2	240.7	242.1	243.6	245.1	246.9
35°	221.4	223.0	224.6	226.2	227.8	229.5	231.4	233.2	235.0	236.8	238.8
37.5°	209.5	211.4	213.3	215.2	217.0	219.1	221.5	223.8	226.1	228.5	230.8
40°	201.7	203.8	205.9	207.9	210.0	212.4	214.9	217.5	220.1	222.6	225.1
42.5°	194.2	196.2	198.3	200.4	202.6	205.0	208.0	210.9	213.9	216.8	219.5
45°	181.5	184.1	186.7	189.3	191.8	194.7	198.1	201.4	204.7	208.1	211.0
47.5°	169.1	171.9	174.7	177.5	180.3	183.7	187.6	191.4	195.4	199.3	202.4
50°	160.6	163.5	166.5	169.4	172.4	176.0	180.3	184.5	188.8	193.1	196.3
52.5°	152.3	155.4	158.5	161.6	164.8	168.5	173.1	177.6	182.1	186.6	189.9
55°	139.1	142.6	146.0	149.4	152.9	157.0	162.0	166.9	171.9	176.8	180.3
57.5°	126.1	130.0	133.8	137.7	141.6	146.0	151.1	156.1	161.2	166.3	169.9
60°	116.9	121.0	125.1	129.1	133.3	138.0	143.5	148.8	154.3	159.7	163.3
62.5°	108.7	112.9	117.2	121.4	125.6	130.4	135.9	141.3	146.8	152.2	156.0
65°	95.0	99.7	104.3	109.1	113.7	118.9	124.4	130.1	135.7	141.3	145.2
67.5°	82.6	87.5	92.3	97.2	102.1	107.4	113.1	118.9	124.6	130.4	134.3
70°	73.6	78.6	83.5	88.5	93.4	98.9	104.7	110.7	116.6	122.4	126.6
72.5°	65.4	70.5	75.6	80.7	85.9	91.3	97.4	103.3	109.3	115.3	119.3
75°	52.7	58.0	63.3	68.6	74.0	79.6	85.8	91.9	97.9	104.1	108.1
77.5°	40.3	45.9	51.5	57.0	62.7	68.5	74.7	80.9	87.1	93.2	97.4
80°	32.1	37.9	43.7	49.5	55.3	61.4	67.5	73.7	79.8	86.1	90.0
82.5°	25.3	31.0	36.8	42.4	48.2	54.2	60.4	66.7	73.0	79.2	83.2
85°	15.5	21.3	27.2	33.1	39.0	45.0	51.1	57.2	63.2	69.4	73.3
87.5°	8.5	14.3	20.2	26.0	31.9	38.0	44.4	50.8	57.2	63.6	67.5
90°	4.6	11.0	17.4	23.8	30.3	37.3	45.1	52.8	60.4	68.1	71.8
92.5°	9.9	15.6	21.5	27.2	33.0	39.0	45.2	51.6	57.8	64.0	67.8
95°	20.7	25.9	31.2	36.4	41.6	47.1	53.0	58.8	64.7	70.6	74.2
97.5°	34.6	39.3	43.9	48.5	53.2	58.3	64.1	69.8	75.6	81.4	84.9
100°	45.2	49.4	53.5	57.6	61.7	66.5	72.1	77.7	83.2	88.8	92.3
102.5°	56.2	59.9	63.5	67.2	70.9	75.5	81.0	86.3	91.8	97.3	100.8
105°	73.7	76.7	79.7	82.7	85.7	89.7	94.8	99.9	105.0	110.1	113.6
107.5°	91.9	94.4	97.0	99.5	102.1	105.7	110.4	115.2	119.9	124.6	127.9
110°	103.3	105.7	108.0	110.3	112.6	116.2	120.8	125.5	130.2	134.8	137.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	116.0	118.1	120.2	122.2	124.2	127.4	131.9	136.2	140.5	145.0	147.8
115°	134.9	136.4	137.9	139.4	140.9	143.6	147.8	151.9	156.1	160.2	163.0
117.5°	153.3	154.6	155.8	157.1	158.3	160.8	164.3	167.9	171.4	174.9	177.6
120°	165.8	166.7	167.8	168.7	169.7	171.7	175.0	178.2	181.4	184.6	187.3
122.5°	177.2	178.1	179.0	179.8	180.7	182.7	185.9	189.1	192.2	195.4	197.7
125°	194.6	195.3	196.0	196.6	197.4	199.1	201.9	204.7	207.5	210.4	212.7
127.5°	212.1	212.8	213.6	214.3	215.0	216.5	218.7	220.8	223.1	225.3	227.3
130°	223.0	223.9	224.7	225.6	226.4	227.8	229.6	231.5	233.4	235.2	237.3
132.5°	235.3	235.9	236.6	237.3	238.0	239.1	240.7	242.2	243.8	245.4	247.2
135°	251.2	252.0	252.8	253.6	254.4	255.4	256.5	257.6	258.7	259.8	261.7
137.5°	268.4	269.1	269.8	270.3	271.0	271.6	272.3	272.9	273.4	274.1	275.8
140°	278.8	279.4	279.9	280.5	281.1	281.6	282.2	282.8	283.3	283.9	285.4
142.5°	289.5	290.0	290.6	291.2	291.7	292.2	292.5	292.8	293.0	293.3	294.6
145°	304.3	304.9	305.4	305.9	306.4	306.9	307.4	307.8	308.2	308.7	309.3
147.5°	318.0	318.7	319.2	319.9	320.5	320.9	321.2	321.6	321.9	322.2	322.3
150°	327.3	327.8	328.2	328.7	329.1	329.5	329.8	330.1	330.4	330.6	330.9
152.5°	335.6	336.0	336.5	337.0	337.3	337.8	338.1	338.5	338.8	339.2	339.5
155°	348.0	348.2	348.5	348.6	348.8	349.1	349.3	349.5	349.8	350.0	350.3
157.5°	358.5	358.7	358.8	359.0	359.2	359.3	359.5	359.6	359.7	359.9	360.3
160°	365.0	365.1	365.2	365.4	365.5	365.7	365.7	365.8	365.9	366.0	366.4
162.5°	370.8	370.9	370.9	370.9	371.0	371.0	371.1	371.2	371.3	371.3	371.8
165°	378.6	378.5	378.4	378.4	378.3	378.2	378.2	378.2	378.2	378.2	378.8
167.5°	385.1	384.9	384.7	384.5	384.3	384.2	384.1	384.1	384.1	384.1	384.6
170°	388.6	388.4	388.1	388.0	387.8	387.6	387.5	387.4	387.4	387.3	387.8
172.5°	391.0	390.8	390.6	390.3	390.1	389.9	389.9	389.8	389.7	389.6	390.2
175°	394.0	393.7	393.5	393.2	393.0	392.9	392.8	392.6	392.4	392.3	392.8
177.5°	395.1	394.9	394.7	394.6	394.5	394.3	394.2	394.1	393.9	393.8	394.2
180°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	294.5	294.8	295.2	295.4	295.2	295.0	294.9	294.7
5°	293.6	294.2	294.7	294.9	294.8	294.7	294.6	294.5
7.5°	292.2	292.8	293.6	293.9	293.8	293.7	293.6	293.5
10°	291.0	291.7	292.5	292.8	292.8	292.7	292.6	292.5
12.5°	288.9	289.6	290.4	290.8	290.7	290.6	290.5	290.4
15°	285.1	286.1	286.9	287.3	287.2	287.1	287.0	286.9
17.5°	280.4	281.3	282.1	282.6	282.6	282.6	282.6	282.6
20°	276.5	277.6	278.6	279.2	279.2	279.2	279.2	279.2
22.5°	272.5	273.5	274.6	275.1	275.3	275.4	275.6	275.8
25°	266.1	267.2	268.3	269.0	269.3	269.6	269.8	270.1
27.5°	258.9	260.4	261.8	262.7	262.9	263.1	263.3	263.5
30°	253.9	255.5	257.0	257.9	258.2	258.4	258.7	259.0
32.5°	248.5	250.3	252.1	253.3	253.7	254.3	254.8	255.2
35°	241.0	243.1	245.2	246.6	247.2	247.9	248.5	249.2
37.5°	233.1	235.4	237.8	239.3	240.0	240.7	241.4	242.0
40°	227.6	230.1	232.5	234.2	235.1	235.9	236.8	237.6
42.5°	222.3	224.9	227.6	229.4	230.3	231.1	232.0	232.8
45°	214.0	217.0	219.9	221.9	222.8	223.8	224.7	225.6
47.5°	205.5	208.5	211.6	213.7	214.7	215.7	216.8	217.8
50°	199.5	202.8	206.0	208.2	209.2	210.3	211.3	212.4
52.5°	193.2	196.5	199.8	202.1	203.2	204.3	205.5	206.5
55°	183.7	187.1	190.6	192.8	194.1	195.4	196.6	197.8
57.5°	173.6	177.3	181.0	183.4	184.7	186.0	187.2	188.5
60°	166.9	170.6	174.2	176.6	178.0	179.3	180.7	182.0
62.5°	159.9	163.7	167.6	170.1	171.4	172.6	173.9	175.1
65°	149.1	153.0	156.9	159.5	160.7	161.9	163.2	164.4
67.5°	138.2	142.1	146.1	148.7	150.0	151.3	152.6	153.9
70°	130.6	134.7	138.8	141.5	142.6	143.7	144.9	146.0
72.5°	123.3	127.3	131.3	134.0	135.3	136.8	138.2	139.5
75°	112.3	116.3	120.5	123.1	124.3	125.5	126.8	128.0
77.5°	101.4	105.5	109.5	112.3	113.6	114.9	116.2	117.5
80°	94.1	98.0	102.1	104.7	106.0	107.4	108.7	110.0
82.5°	87.2	91.2	95.2	97.8	99.1	100.4	101.6	102.8
85°	77.4	81.3	85.4	88.0	89.4	90.7	92.0	93.3
87.5°	71.4	75.2	79.1	81.6	82.8	84.1	85.3	86.5
90°	75.5	79.2	82.8	85.2	86.4	87.7	88.9	90.1
92.5°	71.5	75.3	79.1	81.5	82.7	83.8	85.0	86.1
95°	77.8	81.4	85.0	87.3	88.3	89.4	90.3	91.3
97.5°	88.4	92.0	95.5	97.7	98.9	100.0	101.1	102.2
100°	95.9	99.3	102.8	105.1	106.0	107.1	108.0	109.0
102.5°	104.3	107.8	111.3	113.6	114.5	115.5	116.5	117.4
105°	117.1	120.6	124.0	126.3	127.3	128.4	129.4	130.4
107.5°	131.1	134.4	137.6	139.6	140.3	141.0	141.8	142.4
110°	140.9	143.9	147.0	148.9	149.8	150.6	151.4	152.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	150.7	153.5	156.4	158.3	159.2	160.0	160.9	161.8
115°	165.8	168.5	171.4	173.1	174.0	174.8	175.6	176.4
117.5°	180.2	182.9	185.5	187.2	187.9	188.7	189.5	190.2
120°	189.9	192.7	195.3	197.0	197.8	198.7	199.5	200.3
122.5°	200.2	202.6	205.0	206.6	207.3	208.0	208.8	209.5
125°	215.1	217.4	219.7	221.3	222.1	222.9	223.7	224.4
127.5°	229.4	231.6	233.7	235.0	235.5	236.2	236.8	237.4
130°	239.5	241.6	243.7	245.1	245.5	246.0	246.5	246.9
132.5°	249.1	251.0	252.9	254.1	254.7	255.1	255.7	256.2
135°	263.6	265.5	267.5	268.7	269.3	269.8	270.3	270.9
137.5°	277.5	279.2	280.9	281.9	282.2	282.6	283.0	283.2
140°	286.9	288.5	290.0	290.9	291.2	291.4	291.7	292.0
142.5°	295.9	297.2	298.4	299.2	299.4	299.6	299.8	300.0
145°	310.0	310.7	311.2	311.7	311.9	312.1	312.3	312.4
147.5°	322.6	322.8	323.1	323.2	323.1	323.1	323.0	323.0
150°	331.1	331.3	331.6	331.6	331.3	331.1	330.9	330.6
152.5°	339.8	340.1	340.4	340.4	340.1	339.8	339.5	339.2
155°	350.7	351.1	351.5	351.6	351.3	351.1	350.9	350.6
157.5°	360.8	361.4	361.8	361.9	361.6	361.2	360.9	360.5
160°	366.8	367.3	367.8	367.8	367.5	367.2	366.9	366.6
162.5°	372.3	372.8	373.3	373.3	373.1	372.7	372.3	371.9
165°	379.3	379.8	380.3	380.4	380.0	379.7	379.3	379.0
167.5°	385.1	385.6	386.2	386.3	385.9	385.4	385.0	384.7
170°	388.3	388.8	389.4	389.4	389.0	388.5	388.0	387.6
172.5°	390.7	391.2	391.7	391.8	391.3	390.9	390.5	390.0
175°	393.3	393.8	394.4	394.4	394.0	393.5	393.0	392.6
177.5°	394.5	394.8	395.2	395.2	394.8	394.5	394.2	393.8
180°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6

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