

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: P331620-935

Luminaire Tested: **SA2XXRDIP-C290D330U935-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331620-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXRDIP-C290D330U935-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

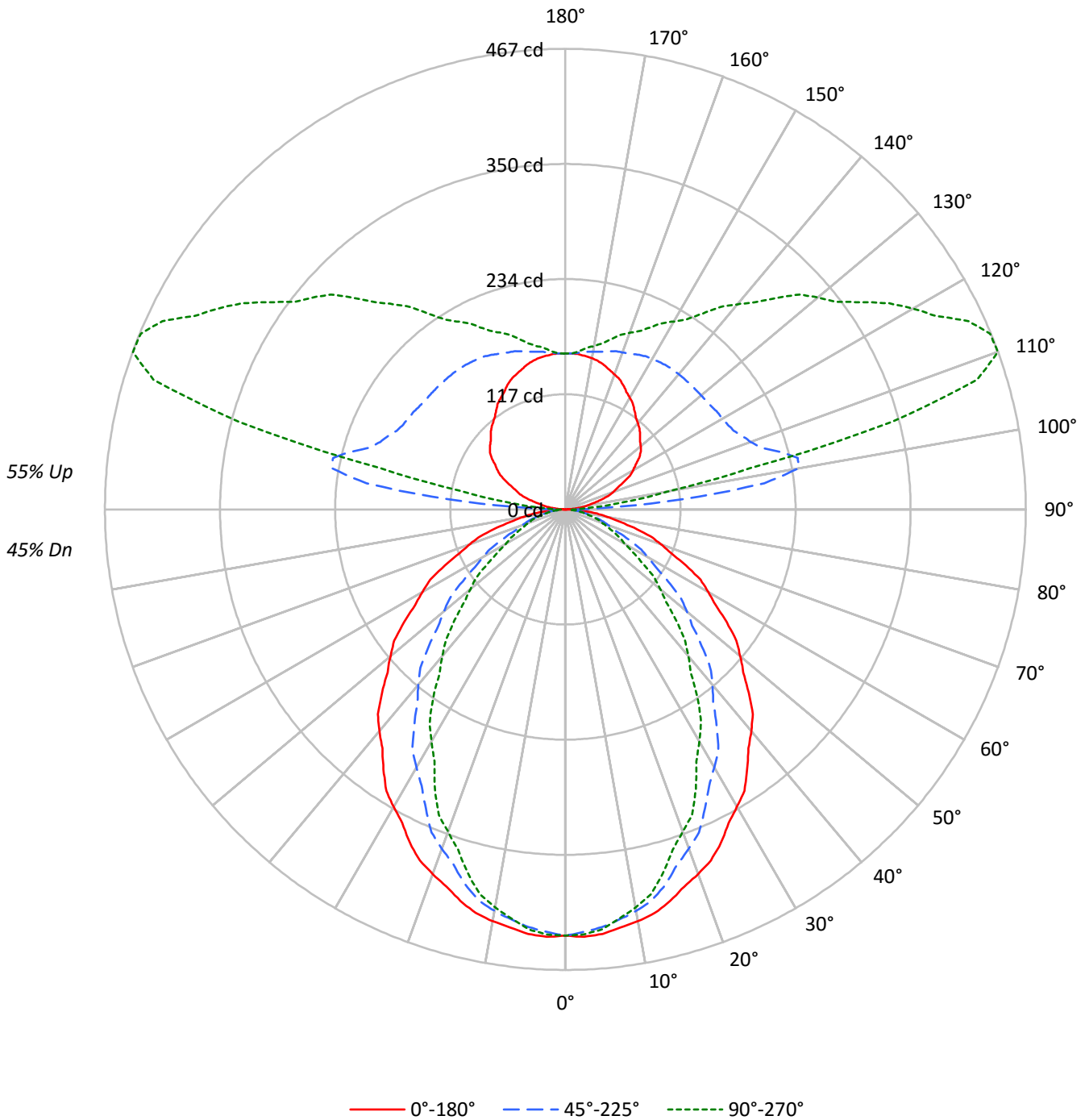
Lumens per Lamp: N/A  
Luminaire Lumens: 1991.2 lumens  
Efficiency: N/A  
Efficacy: 98.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 20.3  
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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45				
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44	38				
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38	33				
3	81	72	65	59	74	66	60	55	56	51	48	46	43	40	37	34	33	28				
4	74	64	56	51	68	59	52	47	50	45	41	41	38	35	33	31	28	25				
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25	22				
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	25	22	19				
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20	17				
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16				
9	51	39	31	27	46	36	30	25	31	26	22	26	22	19	21	19	16	14				
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15	13				

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

	0°	45°	90°
0°	6978	6978	6978
5°	7005	6891	6929
10°	6951	6779	6720
15°	6870	6578	6387
20°	6761	6290	5976
25°	6649	5964	5574
30°	6490	5630	5062
35°	6337	5267	4610
40°	6182	4890	4089
45°	6003	4464	3617
50°	5815	4037	3152
55°	5624	3578	2711
60°	5406	3094	2251
65°	5154	2598	2048
70°	4858	2143	1884
75°	4492	1953	1759
80°	3961	1748	1599
85°	3112	1371	1371



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.5	2.0
10°-20°	111.1	5.6
20°-30°	156.0	7.8
30°-40°	170.1	8.5
40°-50°	156.4	7.9
50°-60°	122.8	6.2
60°-70°	80.1	4.0
70°-80°	41.3	2.1
80°-90°	12.1	0.6
90°-100°	63.3	3.2
100°-110°	214.7	10.8
110°-120°	228.0	11.5
120°-130°	187.7	9.4
130°-140°	150.7	7.6
140°-150°	113.9	5.7
150°-160°	80.1	4.0
160°-170°	47.1	2.4
170°-180°	15.3	0.8
0°-30°	307.5	15.4
0°-40°	477.6	24.0
0°-60°	756.8	38.0
0°-90°	890.3	44.7
90°-120°	505.9	25.4
90°-150°	958.3	48.1
90°-180°	1101.0	55.3
0°-180°	1991.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	430	425	428	428	41
15°	411	406	394	386	382	116
25°	373	360	335	319	313	172
35°	322	301	267	243	234	201
45°	263	236	196	169	158	203
55°	200	169	127	104	96	179
65°	135	103	68	55	54	134
75°	72	45	31	29	28	76
85°	17	9	7	7	7	20
90°	0	4	10	10	10	1
95°	11	26	119	45	35	11
105°	37	56	225	403	343	39
115°	65	83	189	389	451	65
125°	91	108	181	315	366	81
135°	107	128	179	265	303	83
145°	122	141	178	221	242	77
155°	139	150	173	196	204	64
165°	152	156	166	176	179	43
175°	158	158	159	161	161	15
180°	158	158	158	158	158	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	433.8	433.4	433.1	432.7	432.4	431.8	431.0	430.3	429.6	428.8	429.5
5°	432.2	431.8	431.4	430.9	430.5	429.6	428.5	427.4	426.3	425.2	425.9
7.5°	427.7	427.2	426.6	426.1	425.6	424.6	423.4	422.0	420.7	419.4	419.6
10°	424.0	423.4	422.8	422.1	421.5	420.3	418.6	416.9	415.2	413.5	413.2
12.5°	419.3	418.5	417.8	417.1	416.3	414.8	412.6	410.4	408.1	405.9	405.4
15°	411.0	410.1	409.1	408.2	407.3	405.3	402.3	399.4	396.4	393.5	391.8
17.5°	401.0	399.5	398.0	396.6	395.1	392.5	388.7	385.0	381.2	377.4	375.4
20°	393.5	391.8	390.0	388.2	386.5	383.5	379.1	374.8	370.5	366.1	363.9
22.5°	385.4	383.4	381.4	379.5	377.5	374.1	369.2	364.3	359.5	354.6	351.7
25°	373.2	370.3	367.6	364.8	362.1	357.7	352.0	346.3	340.5	334.8	331.2
27.5°	358.4	355.4	352.4	349.4	346.3	341.6	335.1	328.6	322.2	315.7	311.6
30°	348.1	344.8	341.5	338.2	334.9	329.8	322.8	315.9	308.9	302.0	297.6
32.5°	338.1	334.2	330.4	326.5	322.6	317.2	310.1	303.0	295.9	288.8	283.8
35°	321.5	317.1	312.6	308.2	303.8	297.7	290.1	282.4	274.8	267.2	261.7
37.5°	305.0	300.1	295.2	290.3	285.4	279.0	270.8	262.6	254.5	246.3	240.3
40°	293.3	288.2	282.9	277.7	272.5	265.7	257.3	248.8	240.4	232.0	225.8
42.5°	281.5	276.0	270.4	265.0	259.5	252.4	243.7	235.0	226.3	217.6	211.2
45°	262.9	257.0	251.2	245.4	239.5	232.0	222.9	213.8	204.7	195.5	189.4
47.5°	244.7	238.5	232.4	226.2	220.0	212.2	202.8	193.4	183.9	174.5	168.4
50°	231.5	225.4	219.2	213.0	206.9	199.0	189.4	179.9	170.3	160.7	154.7
52.5°	218.7	212.2	205.9	199.4	193.0	185.0	175.6	166.3	157.0	147.6	141.8
55°	199.8	193.1	186.3	179.5	172.7	164.7	155.2	145.9	136.5	127.1	121.9
57.5°	180.6	173.6	166.6	159.7	152.7	144.7	135.7	126.7	117.7	108.7	103.8
60°	167.4	160.5	153.5	146.5	139.6	131.6	122.7	113.7	104.8	95.8	91.4
62.5°	154.5	147.7	140.7	133.7	126.7	119.0	110.5	101.9	93.4	84.9	80.7
65°	134.9	127.9	120.9	113.8	106.8	99.4	91.5	83.7	75.9	68.0	65.1
67.5°	116.0	109.0	102.0	95.1	88.1	81.0	74.0	67.0	59.9	52.9	51.5
70°	102.9	96.1	89.3	82.6	75.8	69.4	63.4	57.3	51.4	45.4	44.5
72.5°	90.3	83.9	77.3	70.9	64.3	58.7	53.9	49.1	44.3	39.4	38.7
75°	72.0	65.9	59.8	53.7	47.6	43.1	40.1	37.2	34.3	31.3	30.7
77.5°	53.9	48.6	43.2	37.9	32.5	29.2	27.7	26.3	24.9	23.5	23.2
80°	42.6	38.2	33.8	29.4	24.9	22.2	21.4	20.5	19.6	18.8	18.4
82.5°	32.3	28.8	25.4	22.0	18.5	16.4	15.8	15.2	14.6	14.1	13.9
85°	16.8	15.0	13.2	11.4	9.6	8.4	8.2	7.9	7.7	7.4	7.4
87.5°	5.1	4.7	4.4	4.0	3.5	3.4	3.7	4.1	4.5	4.6	4.5
90°	0.3	1.2	2.4	3.0	3.6	4.6	6.1	8.2	10.1	10.3	10.1
92.5°	3.7	5.3	7.6	8.9	10.9	13.8	20.7	30.4	39.0	39.5	33.4
95°	10.7	11.9	14.9	17.7	22.5	29.8	43.8	70.3	105.6	119.2	104.4
97.5°	17.3	18.9	22.2	26.3	31.9	40.2	57.8	94.7	153.3	203.5	213.5
100°	23.4	24.4	27.0	31.9	38.1	46.6	62.7	99.8	165.5	240.3	284.1
102.5°	29.0	29.7	32.5	37.3	43.7	52.2	67.1	100.0	160.8	241.5	310.4
105°	37.1	38.3	40.5	45.0	51.7	60.3	74.6	101.6	151.8	225.4	306.3
107.5°	45.9	46.8	48.9	53.1	59.8	68.4	82.2	105.8	147.3	208.1	279.7
110°	51.7	53.0	54.8	58.7	65.1	74.0	87.3	109.2	146.4	199.8	262.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	57.1	58.3	60.4	64.1	70.2	79.3	92.2	112.9	146.5	194.5	251.2
115°	65.4	66.9	68.8	72.4	78.5	86.7	99.8	118.3	147.8	188.6	236.7
117.5°	74.0	75.3	77.1	80.3	86.2	94.7	106.8	124.2	150.1	185.7	227.6
120°	79.4	80.6	82.5	85.2	91.3	99.8	111.7	128.1	151.5	184.1	222.7
122.5°	84.6	85.5	87.3	90.3	96.3	105.1	116.2	131.5	153.2	183.0	218.5
125°	91.3	92.2	94.0	97.6	103.8	112.3	123.2	136.9	155.8	181.3	212.7
127.5°	96.6	97.8	100.4	104.4	110.2	119.0	129.7	142.0	158.3	180.3	207.2
130°	99.8	101.0	104.0	108.3	114.4	122.9	133.5	145.1	160.3	179.8	203.5
132.5°	102.7	104.2	107.5	111.9	118.3	126.8	137.0	148.3	162.3	179.5	200.6
135°	107.1	108.3	111.9	116.5	123.6	132.0	141.8	152.4	164.6	179.2	196.5
137.5°	111.2	112.7	116.3	121.2	128.1	136.0	145.7	155.6	166.7	179.1	193.6
140°	114.4	115.6	119.2	124.2	130.8	138.7	147.8	157.3	167.6	178.9	191.9
142.5°	117.5	118.6	121.9	126.8	133.3	140.7	149.6	158.8	168.3	178.9	190.3
145°	122.3	123.6	126.6	131.1	137.2	143.9	152.1	160.7	169.1	178.2	188.0
147.5°	127.4	128.3	131.2	135.4	140.5	146.5	154.2	161.7	169.4	177.2	185.7
150°	130.8	131.7	134.1	138.1	142.7	148.2	155.2	162.1	169.1	176.4	183.7
152.5°	134.2	134.7	137.1	140.5	144.9	149.8	156.1	162.4	168.7	175.2	182.0
155°	139.1	139.3	141.1	144.5	147.8	152.4	157.6	162.7	167.9	173.1	178.9
157.5°	143.0	143.4	144.8	147.7	150.4	154.2	158.6	162.7	166.5	170.9	175.9
160°	145.7	146.0	147.2	149.6	152.1	155.5	159.1	162.7	165.8	169.4	173.7
162.5°	148.4	148.2	149.5	151.4	153.6	156.2	159.4	162.5	165.1	168.2	171.8
165°	151.5	151.2	151.8	153.6	155.2	157.0	159.7	161.9	163.7	165.8	168.5
167.5°	154.0	153.7	154.2	155.4	156.5	157.6	159.6	161.4	162.3	163.7	165.4
170°	155.8	155.2	155.5	156.4	157.0	157.9	159.4	160.9	161.5	162.5	163.7
172.5°	156.7	156.4	156.2	157.1	157.5	158.2	159.2	160.2	160.6	161.0	162.0
175°	157.9	157.6	157.3	157.9	157.9	158.2	158.8	159.4	159.1	159.4	159.7
177.5°	158.4	157.9	157.7	158.2	158.2	158.2	158.4	158.9	158.4	158.2	158.4
180°	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	430.2	430.8	431.5	431.8	431.7	431.5	431.4	431.3
5°	426.7	427.5	428.3	428.5	428.3	428.0	427.7	427.5
7.5°	419.8	420.1	420.3	420.2	419.7	419.2	418.8	418.4
10°	412.9	412.7	412.4	412.0	411.5	411.0	410.4	409.9
12.5°	405.0	404.5	404.1	403.4	402.5	401.7	400.8	399.9
15°	390.2	388.5	386.8	385.6	384.8	383.8	383.0	382.1
17.5°	373.4	371.4	369.5	367.8	366.3	364.8	363.3	361.8
20°	361.8	359.6	357.4	355.3	353.4	351.5	349.7	347.8
22.5°	349.0	346.1	343.4	341.2	339.8	338.4	336.9	335.5
25°	327.7	324.1	320.6	318.1	316.8	315.5	314.2	312.9
27.5°	307.4	303.2	299.1	296.0	293.9	291.9	289.8	287.7
30°	293.1	288.7	284.2	280.9	278.4	276.1	273.8	271.5
32.5°	278.7	273.6	268.5	264.9	262.8	260.5	258.3	256.1
35°	256.2	250.7	245.2	241.5	239.6	237.7	235.8	233.9
37.5°	234.3	228.3	222.2	218.1	215.9	213.7	211.5	209.3
40°	219.6	213.4	207.2	203.0	200.8	198.5	196.2	194.0
42.5°	204.7	198.4	192.0	187.8	185.5	183.4	181.2	179.0
45°	183.2	177.0	170.9	166.8	164.7	162.6	160.5	158.4
47.5°	162.2	156.1	150.0	145.9	144.0	142.2	140.3	138.4
50°	148.8	142.8	136.7	132.9	131.0	129.2	127.3	125.5
52.5°	136.0	130.3	124.5	120.7	119.1	117.4	115.6	114.0
55°	116.7	111.5	106.2	102.8	101.2	99.5	97.9	96.3
57.5°	99.1	94.3	89.5	86.4	85.1	83.7	82.3	80.8
60°	87.0	82.6	78.1	75.2	73.8	72.4	71.0	69.7
62.5°	76.5	72.2	68.0	65.4	64.6	63.8	62.9	62.1
65°	62.2	59.2	56.2	54.6	54.3	54.1	53.8	53.6
67.5°	50.2	48.8	47.4	46.7	46.3	46.1	45.8	45.5
70°	43.7	42.8	41.9	41.3	40.9	40.6	40.2	39.9
72.5°	38.0	37.2	36.5	36.1	35.8	35.6	35.4	35.2
75°	30.0	29.4	28.8	28.5	28.4	28.3	28.2	28.2
77.5°	22.7	22.4	22.0	21.9	21.7	21.5	21.4	21.3
80°	18.1	17.7	17.4	17.2	17.2	17.2	17.2	17.2
82.5°	13.7	13.4	13.3	13.2	13.2	13.2	13.2	13.2
85°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
87.5°	4.3	4.1	4.1	4.2	4.2	4.2	4.2	4.2
90°	9.7	9.1	9.7	10.1	10.1	10.1	10.1	10.1
92.5°	26.5	22.7	20.2	18.3	18.1	17.1	17.3	16.9
95°	79.7	61.1	48.4	41.7	37.7	35.3	34.4	34.7
97.5°	186.0	152.1	119.2	97.3	82.7	75.3	70.9	68.3
100°	277.8	240.0	198.4	161.5	136.3	123.2	114.4	108.9
102.5°	337.9	329.3	298.9	259.8	232.4	210.1	199.1	191.7
105°	369.6	404.0	407.9	398.0	379.0	360.2	347.1	342.9
107.5°	346.7	398.6	430.2	444.9	447.3	446.3	443.6	438.0
110°	327.0	381.5	420.4	445.4	458.5	464.3	467.0	466.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	309.0	361.3	402.9	431.5	449.7	459.3	464.5	466.1
115°	286.9	333.7	373.6	404.9	426.5	440.5	448.4	451.2
117.5°	270.2	311.3	347.5	376.9	398.9	413.7	422.0	424.3
120°	261.9	299.6	331.9	359.6	380.9	395.2	404.0	407.1
122.5°	255.4	289.9	320.5	345.4	364.5	378.7	386.5	389.0
125°	245.8	277.2	303.9	326.7	344.4	355.9	363.5	366.0
127.5°	236.3	264.8	290.0	311.0	326.4	337.3	343.8	345.8
130°	230.3	256.5	280.5	300.6	315.5	325.8	331.9	334.3
132.5°	224.5	248.7	270.8	289.6	304.3	314.6	320.2	322.4
135°	216.3	236.3	256.5	273.5	286.5	296.6	302.1	303.3
137.5°	209.8	226.6	242.5	257.4	269.3	277.9	282.8	284.6
140°	205.6	220.2	234.3	247.6	257.4	265.3	269.8	271.6
142.5°	202.2	214.6	226.7	237.9	247.1	254.3	258.4	258.7
145°	197.4	207.5	216.9	225.8	233.0	238.2	241.3	242.1
147.5°	193.7	201.6	209.0	215.4	221.4	225.6	227.6	228.3
150°	191.1	197.8	204.1	209.6	214.1	217.8	219.6	220.0
152.5°	188.4	194.6	200.0	204.7	208.4	211.5	212.8	212.9
155°	184.7	189.5	194.1	197.4	200.8	202.9	204.1	203.5
157.5°	180.4	184.4	188.2	190.9	193.2	195.0	195.5	195.5
160°	177.6	181.0	184.3	186.5	188.6	190.1	190.5	190.5
162.5°	175.0	177.9	180.7	182.4	184.5	185.5	185.8	185.5
165°	171.0	173.1	175.2	176.4	177.6	178.9	178.9	178.6
167.5°	167.1	168.8	170.2	171.3	171.9	172.5	172.5	172.1
170°	165.2	166.1	167.3	167.9	168.2	169.1	168.8	168.2
172.5°	163.0	163.7	164.6	165.0	165.3	165.7	165.4	165.1
175°	160.7	160.9	161.3	161.5	161.5	161.9	161.5	160.9
177.5°	158.9	158.9	159.2	159.2	159.2	159.2	158.9	158.4
180°	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2

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