

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: P331469-930

Luminaire Tested: **S122DIW-S290D435U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331469-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S290D435U930-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 435 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2392.4 lumens  
Efficiency: N/A  
Efficacy: 104.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

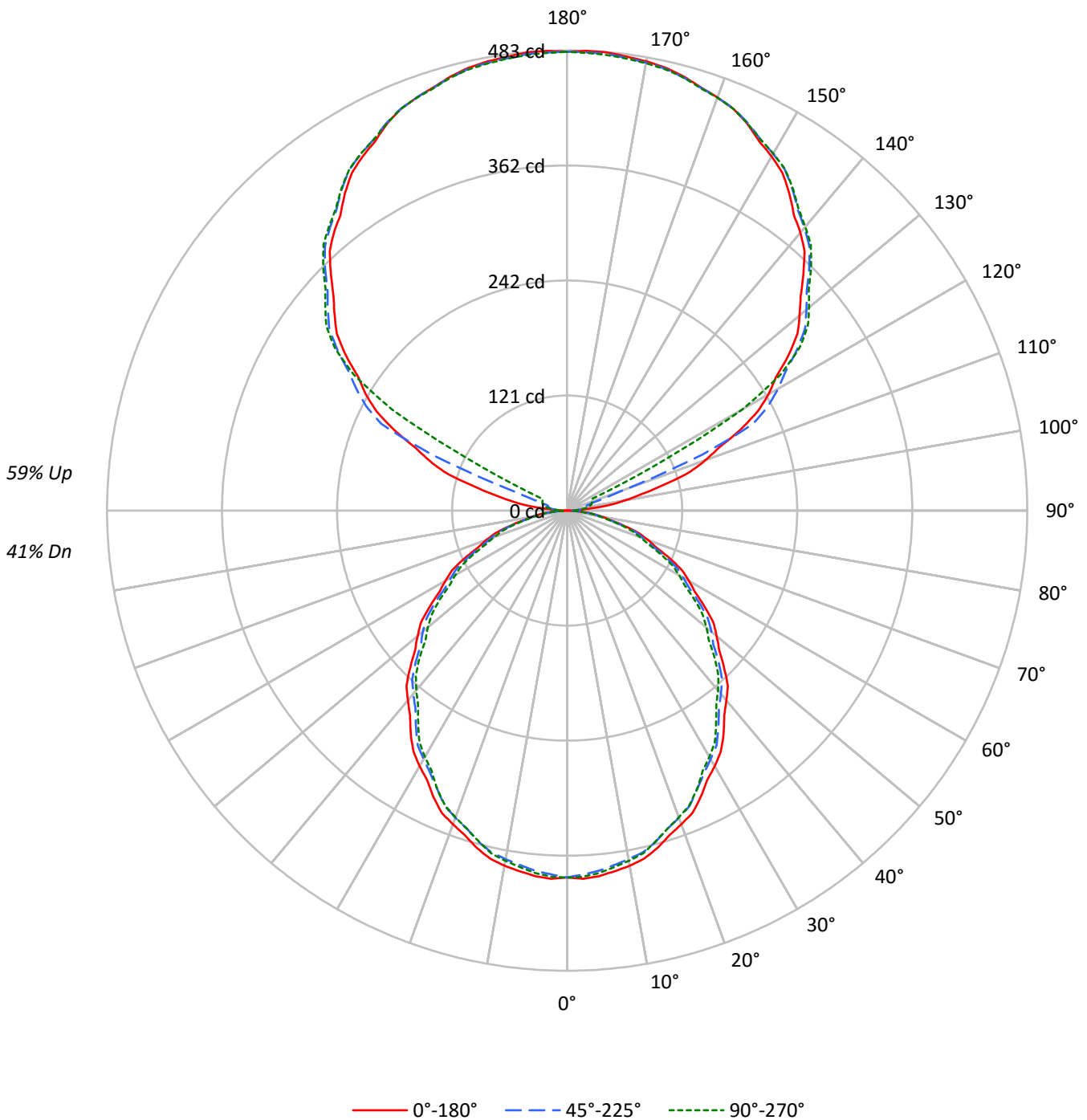
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20										
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	50	30	10	0														
RCR																																						
0	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	41																				
1	96	91	88	84	87	84	80	77	69	66	64	55	53	52	42	41	40	35																				
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34	29																				
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29	24																				
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	29	27	25	21																				
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22	18																				
6	61	49	42	36	56	45	38	33	38	32	28	31	27	24	24	21	19	16																				
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	14																				
8	53	40	33	28	48	37	30	26	31	26	22	26	22	19	20	17	15	13																				
9	49	37	30	25	45	34	27	23	29	23	20	23	20	17	19	16	14	11																				
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	14	12	10																				

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

	0°	45°	90°
0°	6218	6218	6218
5°	6242	6152	6190
10°	6205	6091	6120
15°	6128	6011	6006
20°	6019	5893	5887
25°	5911	5747	5747
30°	5774	5614	5565
35°	5643	5452	5373
40°	5480	5292	5191
45°	5318	5133	5005
50°	5144	4968	4793
55°	4963	4777	4597
60°	4760	4543	4379
65°	4542	4317	4118
70°	4263	4036	3843
75°	3880	3718	3624
80°	3440	3347	3171
85°	2816	2668	2408



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.2	1.5
10°-20°	101.9	4.3
20°-30°	149.8	6.3
30°-40°	174.0	7.3
40°-50°	173.8	7.3
50°-60°	151.6	6.3
60°-70°	112.1	4.7
70°-80°	63.5	2.7
80°-90°	18.3	0.8
90°-100°	16.1	0.7
100°-110°	58.9	2.5
110°-120°	157.5	6.6
120°-130°	259.9	10.9
130°-140°	276.4	11.6
140°-150°	256.9	10.7
150°-160°	206.6	8.6
160°-170°	133.1	5.6
170°-180°	45.8	1.9
0°-30°	287.9	12.0
0°-40°	461.9	19.3
0°-60°	787.3	32.9
0°-90°	981.1	41.0
90°-120°	232.4	9.7
90°-150°	1025.8	42.9
90°-180°	1411.0	59.0
0°-180°	2392.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	385	385	385	385	385	
5°	385	384	380	382	382	37
15°	367	364	360	361	359	103
25°	332	329	323	323	323	153
35°	286	282	277	274	273	179
45°	233	230	225	221	219	180
55°	176	174	170	165	163	158
65°	119	117	113	110	108	118
75°	62	61	60	58	58	66
85°	15	15	14	13	13	17
90°	0	4	7	9	9	2
95°	23	12	14	15	15	28
105°	106	110	21	25	26	113
115°	200	206	215	61	28	197
125°	283	288	294	297	298	252
135°	351	356	359	362	362	271
145°	407	407	412	414	413	254
155°	448	445	449	451	448	206
165°	472	470	471	473	471	133
175°	483	480	481	483	480	46
180°	482	482	482	482	482	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	386.9	386.6	386.3	386.0	385.6	385.1	384.4	383.7	382.9	382.2	382.9
5°	385.1	384.8	384.5	384.2	383.8	383.3	382.4	381.5	380.5	379.6	380.3
7.5°	381.8	381.2	380.7	380.3	379.8	379.0	378.1	377.2	376.3	375.4	376.0
10°	378.5	378.0	377.4	376.8	376.2	375.4	374.5	373.5	372.5	371.5	372.1
12.5°	374.1	373.6	373.1	372.5	372.0	371.3	370.3	369.3	368.4	367.4	367.8
15°	366.6	366.2	365.7	365.2	364.7	363.9	362.8	361.7	360.7	359.6	360.0
17.5°	357.2	356.7	356.2	355.7	355.2	354.4	353.4	352.2	351.1	350.1	350.4
20°	350.3	349.8	349.4	348.9	348.4	347.6	346.4	345.3	344.1	343.0	343.2
22.5°	343.6	342.8	342.2	341.4	340.8	339.9	338.8	337.7	336.6	335.6	335.6
25°	331.8	331.2	330.5	329.9	329.2	328.2	326.8	325.4	324.0	322.6	322.8
27.5°	318.5	318.0	317.3	316.7	316.2	315.3	314.2	313.1	312.0	310.9	310.6
30°	309.7	309.0	308.3	307.7	307.0	306.1	304.8	303.6	302.3	301.1	300.8
32.5°	300.1	299.6	299.1	298.6	298.1	297.1	295.8	294.6	293.3	292.0	291.5
35°	286.3	285.4	284.6	283.8	283.0	281.9	280.6	279.3	278.0	276.6	276.1
37.5°	270.7	269.9	269.2	268.5	267.7	266.8	265.5	264.2	262.8	261.5	260.9
40°	260.0	259.3	258.7	258.0	257.4	256.4	255.0	253.7	252.4	251.1	250.4
42.5°	249.6	249.0	248.3	247.7	247.0	246.0	244.7	243.4	242.1	240.8	239.9
45°	232.9	232.4	231.8	231.2	230.6	229.8	228.5	227.3	226.1	224.8	223.9
47.5°	216.4	215.8	215.3	214.7	214.2	213.3	212.0	210.8	209.5	208.1	207.2
50°	204.8	204.4	204.0	203.6	203.2	202.4	201.2	200.1	198.9	197.8	196.7
52.5°	193.6	193.0	192.5	191.9	191.4	190.5	189.5	188.4	187.3	186.2	185.2
55°	176.3	175.8	175.3	174.8	174.3	173.6	172.6	171.6	170.6	169.7	168.6
57.5°	159.0	158.6	158.2	157.8	157.4	156.6	155.6	154.5	153.4	152.3	151.3
60°	147.4	147.1	146.8	146.4	146.1	145.4	144.2	143.1	141.9	140.7	139.8
62.5°	136.2	135.6	135.1	134.6	134.0	133.3	132.4	131.6	130.7	129.8	128.9
65°	118.9	118.4	117.9	117.4	116.9	116.3	115.4	114.6	113.8	113.0	112.2
67.5°	101.3	100.9	100.5	100.1	99.8	99.2	98.4	97.7	96.9	96.2	95.6
70°	90.3	90.0	89.7	89.4	89.0	88.5	87.8	87.1	86.3	85.5	85.0
72.5°	79.1	78.8	78.4	78.1	77.8	77.4	76.9	76.5	76.0	75.5	74.9
75°	62.2	62.0	61.9	61.7	61.6	61.3	60.9	60.4	60.0	59.6	59.1
77.5°	47.1	46.8	46.6	46.3	46.0	45.7	45.6	45.4	45.2	45.1	44.8
80°	37.0	36.9	36.9	36.8	36.7	36.6	36.4	36.3	36.1	36.0	35.7
82.5°	27.6	27.6	27.6	27.5	27.5	27.4	27.3	27.2	27.1	27.1	26.7
85°	15.2	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.4	14.2
87.5°	5.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
90°	0.3	1.2	2.0	2.9	3.8	4.5	5.1	5.7	6.4	6.9	7.3
92.5°	7.0	6.9	6.8	6.8	6.8	6.8	7.2	7.5	7.7	8.1	8.3
95°	22.7	20.1	17.5	15.0	12.4	11.4	12.0	12.5	13.0	13.6	13.9
97.5°	44.9	37.7	30.6	23.3	16.1	13.2	14.4	15.7	17.0	18.2	18.5
100°	61.7	51.0	40.4	29.8	19.2	14.6	15.9	17.2	18.5	19.9	20.5
102.5°	80.1	77.9	75.6	73.4	71.1	64.5	53.5	42.5	31.5	20.4	21.2
105°	105.9	108.3	110.6	112.9	115.2	105.8	84.7	63.5	42.4	21.3	22.1
107.5°	135.4	137.3	139.2	141.0	142.9	131.2	105.8	80.5	55.1	29.8	28.9
110°	154.3	156.0	157.6	159.2	160.9	150.5	128.1	105.7	83.3	61.0	53.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	172.2	173.7	175.1	176.5	178.0	175.9	170.4	164.9	159.3	153.8	125.6
115°	200.4	201.7	203.0	204.3	205.6	207.2	209.2	211.2	213.0	215.0	179.1
117.5°	225.5	227.0	228.4	229.9	231.4	232.8	234.2	235.5	236.8	238.1	229.5
120°	243.9	245.1	246.2	247.4	248.6	249.9	251.3	252.7	254.0	255.4	256.3
122.5°	259.5	260.7	262.0	263.2	264.4	265.8	267.3	268.8	270.4	271.9	272.5
125°	283.3	284.3	285.4	286.3	287.3	288.5	290.1	291.6	293.0	294.5	295.0
127.5°	304.8	306.0	307.0	308.2	309.3	310.4	311.5	312.6	313.7	314.8	315.6
130°	318.5	319.8	321.0	322.2	323.4	324.5	325.4	326.2	327.1	327.9	328.7
132.5°	332.5	333.5	334.5	335.6	336.6	337.6	338.4	339.3	340.1	341.0	341.8
135°	350.6	351.8	353.0	354.2	355.6	356.4	357.2	357.9	358.6	359.3	360.0
137.5°	368.9	369.7	370.6	371.5	372.3	373.2	374.0	374.8	375.5	376.3	377.1
140°	380.9	381.5	382.1	382.7	383.4	384.1	385.0	385.8	386.6	387.5	388.2
142.5°	390.9	391.5	392.0	392.6	393.1	394.0	394.8	395.8	396.8	397.8	398.4
145°	406.7	406.6	406.5	406.4	406.3	407.0	408.3	409.6	410.9	412.2	412.8
147.5°	420.4	420.1	419.8	419.6	419.2	419.7	421.0	422.3	423.6	424.9	425.3
150°	429.3	428.8	428.2	427.7	427.1	427.5	428.8	430.0	431.2	432.4	432.9
152.5°	436.8	436.3	435.6	435.0	434.4	434.7	435.9	437.1	438.2	439.4	439.9
155°	447.8	447.1	446.4	445.7	445.0	445.2	446.1	446.9	447.9	448.8	449.3
157.5°	456.3	455.8	455.2	454.6	454.0	454.0	454.7	455.3	456.0	456.6	457.1
160°	461.4	460.9	460.5	460.0	459.5	459.5	460.0	460.5	460.9	461.4	461.9
162.5°	465.9	465.4	464.9	464.5	464.0	464.0	464.3	464.7	465.1	465.5	466.1
165°	471.8	471.4	470.9	470.4	469.9	469.9	470.1	470.3	470.6	470.8	471.3
167.5°	476.3	475.8	475.4	474.9	474.4	474.3	474.5	474.7	475.0	475.2	475.7
170°	478.8	478.3	477.8	477.4	477.0	476.8	477.0	477.1	477.3	477.4	477.9
172.5°	480.5	480.0	479.6	479.1	478.6	478.5	478.6	478.7	478.9	479.1	479.6
175°	482.7	482.1	481.5	481.0	480.5	480.3	480.5	480.6	480.7	480.9	481.4
177.5°	483.0	482.6	482.1	481.7	481.3	481.0	481.1	481.2	481.3	481.3	481.8
180°	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	383.5	384.2	384.8	385.1	385.0	384.8	384.7	384.6
5°	381.0	381.6	382.3	382.5	382.4	382.2	382.0	381.9
7.5°	376.7	377.3	378.0	378.2	378.1	377.8	377.6	377.5
10°	372.8	373.5	374.1	374.3	374.1	373.8	373.6	373.3
12.5°	368.3	368.7	369.2	369.3	369.2	368.9	368.8	368.6
15°	360.3	360.6	360.9	360.9	360.5	360.1	359.7	359.3
17.5°	350.8	351.2	351.6	351.6	351.1	350.8	350.4	350.0
20°	343.5	343.7	344.0	343.9	343.6	343.2	342.9	342.6
22.5°	335.7	335.7	335.7	335.7	335.5	335.3	335.1	334.9
25°	322.9	323.1	323.3	323.3	323.1	322.9	322.8	322.6
27.5°	310.4	310.1	309.9	309.6	309.2	308.8	308.4	308.0
30°	300.6	300.4	300.1	299.9	299.5	299.2	298.9	298.5
32.5°	291.1	290.6	290.2	289.8	289.4	289.1	288.8	288.5
35°	275.7	275.2	274.7	274.3	273.9	273.5	273.0	272.6
37.5°	260.2	259.7	259.0	258.5	258.1	257.7	257.4	257.0
40°	249.6	248.9	248.2	247.6	247.3	247.0	246.6	246.3
42.5°	239.1	238.3	237.5	236.8	236.4	235.9	235.5	235.1
45°	223.0	222.1	221.2	220.5	220.2	219.9	219.6	219.2
47.5°	206.3	205.3	204.3	203.6	203.2	202.7	202.2	201.7
50°	195.5	194.3	193.1	192.4	192.0	191.6	191.2	190.8
52.5°	184.3	183.4	182.4	181.6	181.1	180.6	180.0	179.4
55°	167.6	166.6	165.7	165.0	164.6	164.1	163.7	163.3
57.5°	150.3	149.4	148.4	147.7	147.5	147.2	146.8	146.5
60°	138.9	138.0	137.1	136.6	136.3	136.1	135.8	135.6
62.5°	128.1	127.3	126.5	125.9	125.6	125.2	124.9	124.6
65°	111.5	110.7	110.0	109.4	109.0	108.6	108.2	107.8
67.5°	95.1	94.5	93.9	93.4	93.1	92.8	92.5	92.1
70°	84.4	83.8	83.2	82.8	82.5	82.1	81.8	81.4
72.5°	74.4	73.8	73.2	72.7	72.5	72.2	72.0	71.7
75°	58.6	58.1	57.6	57.5	57.6	57.8	58.0	58.1
77.5°	44.6	44.4	44.1	43.9	43.6	43.5	43.2	43.0
80°	35.5	35.2	35.0	34.7	34.6	34.4	34.2	34.1
82.5°	26.4	26.1	25.8	25.6	25.6	25.5	25.5	25.5
85°	13.9	13.7	13.5	13.3	13.2	13.1	13.0	13.0
87.5°	5.3	5.2	5.1	5.0	5.0	4.9	4.9	4.8
90°	7.7	8.2	8.5	8.8	9.0	9.1	9.3	9.4
92.5°	8.5	8.7	8.9	9.0	9.1	9.2	9.3	9.4
95°	14.3	14.8	15.2	15.3	15.2	15.2	15.1	15.0
97.5°	18.8	19.2	19.4	19.6	19.7	19.8	19.9	20.0
100°	21.1	21.7	22.3	22.7	22.9	23.1	23.2	23.3
102.5°	22.0	22.8	23.6	24.1	24.4	24.6	24.8	25.0
105°	23.0	23.8	24.7	25.3	25.5	25.8	26.2	26.5
107.5°	28.0	27.1	26.3	26.0	26.3	26.7	26.9	27.2
110°	45.5	37.7	30.0	26.3	26.6	26.9	27.2	27.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	97.3	69.1	40.8	26.8	27.1	27.3	27.6	27.8
115°	143.3	107.5	71.6	50.9	45.3	39.7	34.2	28.5
117.5°	220.8	212.1	203.4	190.0	171.6	153.3	135.0	116.7
120°	257.3	258.2	259.2	254.4	243.9	233.5	223.0	212.5
122.5°	273.0	273.5	274.1	273.4	271.3	269.3	267.3	265.2
125°	295.5	296.1	296.6	297.0	297.3	297.5	297.7	297.9
127.5°	316.4	317.2	318.0	318.4	318.5	318.5	318.5	318.5
130°	329.6	330.4	331.3	331.7	331.7	331.6	331.5	331.4
132.5°	342.5	343.2	343.9	344.2	344.1	344.1	344.1	344.0
135°	360.9	361.6	362.4	362.6	362.6	362.4	362.2	362.1
137.5°	377.9	378.6	379.4	379.6	379.4	379.1	378.9	378.5
140°	388.9	389.6	390.3	390.4	390.0	389.6	389.3	388.9
142.5°	399.1	399.7	400.4	400.5	400.1	399.7	399.3	398.9
145°	413.4	413.8	414.4	414.5	414.1	413.7	413.4	412.9
147.5°	425.7	426.2	426.6	426.6	426.2	425.9	425.6	425.3
150°	433.4	433.8	434.3	434.4	434.0	433.6	433.2	432.8
152.5°	440.3	440.8	441.3	441.2	440.8	440.3	439.7	439.2
155°	449.8	450.2	450.7	450.6	450.0	449.4	448.7	448.2
157.5°	457.7	458.2	458.8	458.7	458.1	457.5	456.9	456.3
160°	462.3	462.8	463.3	463.2	462.7	462.1	461.5	461.1
162.5°	466.6	467.2	467.7	467.6	466.9	466.3	465.6	465.0
165°	471.9	472.4	473.0	473.0	472.4	471.9	471.3	470.8
167.5°	476.3	476.8	477.4	477.3	476.5	475.9	475.2	474.5
170°	478.5	479.1	479.6	479.5	478.8	478.1	477.4	476.7
172.5°	480.1	480.7	481.3	481.2	480.5	479.8	479.1	478.4
175°	482.0	482.5	483.1	483.0	482.2	481.4	480.6	479.9
177.5°	482.2	482.6	483.1	483.0	482.4	481.8	481.3	480.8
180°	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6

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