

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: P331767-840

Luminaire Tested: **S122RDIW-S290D435U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331767-840  
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: S122RDIW-S290D435U840-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 435 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2792.2 lumens  
Efficiency: N/A  
Efficacy: 121.4 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: Semi-Indirect

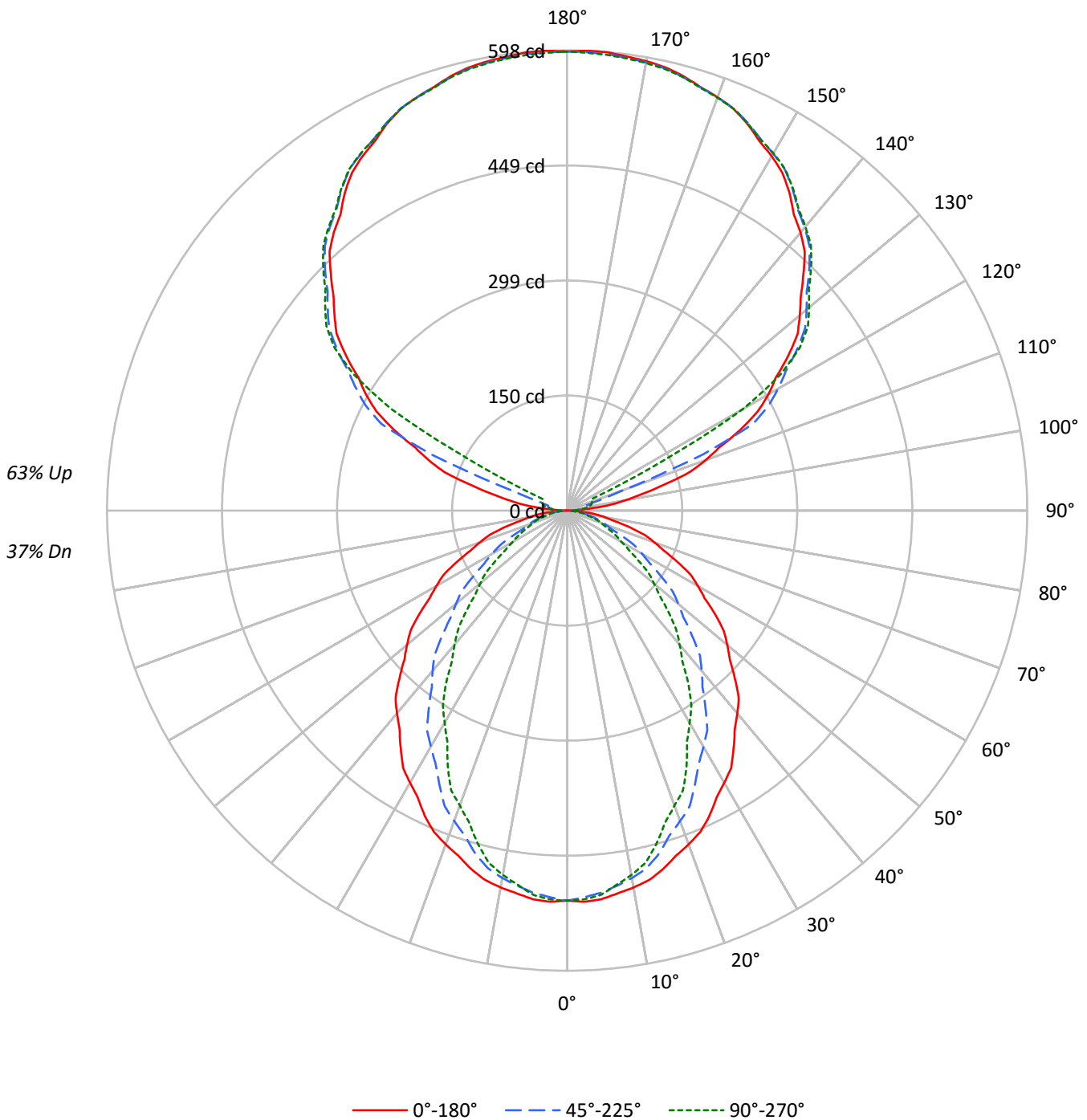
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20					20					20					20					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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45	37								
1	95	91	88	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32								
2	87	80	74	69	79	73	68	64	59	56	53	47	45	43	36	34	33	28								
3	80	71	64	58	72	64	58	54	53	48	45	42	39	36	32	30	28	24								
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	29	26	25	21								
5	67	56	48	42	61	51	44	39	42	37	33	34	30	27	26	24	22	18								
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16								
7	57	45	38	32	52	42	35	30	35	29	26	28	24	21	22	19	17	14								
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	17	16	13								
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	18	16	14	12								
10	46	34	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13	11								

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

	0°	45°	90°
0°	8186	8186	8186
5°	8217	8083	8126
10°	8153	7950	7883
15°	8058	7714	7492
20°	7930	7378	7009
25°	7798	6996	6538
30°	7612	6604	5936
35°	7433	6177	5409
40°	7253	5735	4795
45°	7040	5236	4242
50°	6822	4735	3697
55°	6598	4197	3178
60°	6339	3630	2638
65°	6044	3049	2399
70°	5698	2511	2209
75°	5265	2289	2059
80°	4649	2046	1878
85°	3649	1612	1612



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.4	1.7
10°-20°	130.3	4.7
20°-30°	183.0	6.6
30°-40°	199.5	7.1
40°-50°	183.4	6.6
50°-60°	144.1	5.2
60°-70°	93.9	3.4
70°-80°	48.4	1.7
80°-90°	14.0	0.5
90°-100°	19.9	0.7
100°-110°	73.0	2.6
110°-120°	195.0	7.0
120°-130°	322.0	11.5
130°-140°	342.4	12.3
140°-150°	318.3	11.4
150°-160°	255.9	9.2
160°-170°	164.9	5.9
170°-180°	56.8	2.0
0°-30°	360.7	12.9
0°-40°	560.2	20.1
0°-60°	887.7	31.8
0°-90°	1044.1	37.4
90°-120°	287.9	10.3
90°-150°	1270.6	45.5
90°-180°	1748.0	62.6
0°-180°	2792.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	507	507	507	507	507	
5°	507	504	499	502	501	48
15°	482	476	462	453	448	136
25°	438	422	393	375	367	201
35°	377	353	313	285	274	236
45°	308	277	229	198	186	238
55°	234	198	149	123	113	209
65°	158	121	80	65	63	157
75°	84	53	37	34	33	89
85°	20	11	9	9	9	23
90°	0	5	9	11	12	2
95°	28	15	17	19	19	34
105°	131	137	26	31	33	140
115°	248	256	266	76	35	244
125°	351	357	365	368	369	313
135°	434	441	445	449	448	335
145°	504	504	511	513	512	315
155°	555	551	556	558	555	255
165°	584	582	583	586	583	165
175°	598	595	596	598	594	57
180°	596	596	596	596	596	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0
2.5°	508.8	508.4	508.0	507.6	507.2	506.4	505.5	504.7	503.8	502.9	503.7
5°	507.0	506.4	505.9	505.4	504.9	503.9	502.6	501.3	500.0	498.7	499.6
7.5°	501.7	501.1	500.4	499.8	499.2	498.1	496.6	494.9	493.4	491.9	492.1
10°	497.3	496.6	495.8	495.1	494.4	493.0	491.0	489.0	487.0	484.9	484.6
12.5°	491.8	490.9	490.0	489.2	488.3	486.6	483.9	481.3	478.7	476.1	475.5
15°	482.1	481.0	479.9	478.8	477.7	475.3	471.9	468.5	464.9	461.5	459.6
17.5°	470.3	468.6	466.9	465.1	463.4	460.4	456.0	451.5	447.1	442.6	440.3
20°	461.5	459.5	457.5	455.3	453.3	449.8	444.6	439.6	434.5	429.4	426.9
22.5°	452.0	449.7	447.4	445.1	442.8	438.8	433.0	427.3	421.6	415.9	412.5
25°	437.7	434.3	431.1	427.9	424.6	419.6	412.8	406.2	399.4	392.7	388.5
27.5°	420.4	416.9	413.3	409.8	406.2	400.6	393.0	385.5	377.9	370.3	365.5
30°	408.3	404.5	400.5	396.7	392.8	386.8	378.6	370.5	362.3	354.2	349.0
32.5°	396.6	392.0	387.5	382.9	378.4	372.0	363.8	355.4	347.1	338.7	332.9
35°	377.1	371.9	366.7	361.5	356.3	349.2	340.2	331.2	322.3	313.4	306.9
37.5°	357.7	351.9	346.2	340.5	334.8	327.2	317.6	308.0	298.5	288.9	281.9
40°	344.1	338.0	331.8	325.7	319.6	311.6	301.7	291.9	282.0	272.1	264.8
42.5°	330.1	323.7	317.2	310.8	304.4	296.0	285.8	275.6	265.4	255.2	247.7
45°	308.3	301.4	294.6	287.8	280.9	272.2	261.5	250.7	240.0	229.3	222.2
47.5°	287.0	279.7	272.6	265.3	258.0	248.9	237.8	226.8	215.7	204.7	197.5
50°	271.6	264.4	257.1	249.8	242.7	233.4	222.2	211.0	199.8	188.5	181.5
52.5°	256.5	248.9	241.5	233.9	226.3	217.0	206.0	195.1	184.1	173.1	166.3
55°	234.4	226.5	218.5	210.6	202.6	193.2	182.1	171.1	160.1	149.1	143.0
57.5°	211.8	203.6	195.4	187.3	179.2	169.8	159.2	148.7	138.0	127.4	121.8
60°	196.3	188.2	180.1	171.9	163.7	154.4	143.9	133.4	122.9	112.4	107.1
62.5°	181.3	173.2	165.0	156.8	148.7	139.6	129.6	119.6	109.6	99.6	94.6
65°	158.2	150.0	141.8	133.5	125.2	116.5	107.3	98.2	89.0	79.8	76.3
67.5°	136.0	127.8	119.7	111.5	103.3	95.0	86.7	78.6	70.3	62.0	60.4
70°	120.7	112.7	104.7	96.8	88.9	81.4	74.3	67.3	60.3	53.2	52.2
72.5°	105.9	98.4	90.7	83.1	75.4	68.9	63.2	57.6	51.9	46.3	45.3
75°	84.4	77.3	70.2	63.0	55.8	50.6	47.1	43.6	40.2	36.7	36.0
77.5°	63.2	57.0	50.7	44.4	38.2	34.2	32.5	30.9	29.2	27.6	27.2
80°	50.0	44.8	39.6	34.4	29.2	26.1	25.0	24.0	23.0	22.0	21.6
82.5°	37.9	33.8	29.8	25.8	21.7	19.3	18.6	17.9	17.2	16.6	16.3
85°	19.7	17.6	15.5	13.3	11.2	9.9	9.6	9.3	9.0	8.7	8.7
87.5°	6.0	5.6	5.0	4.6	4.2	4.0	4.2	4.3	4.5	4.6	4.6
90°	0.4	1.5	2.5	3.6	4.6	5.6	6.4	7.1	7.9	8.6	9.1
92.5°	8.7	8.6	8.5	8.4	8.4	8.5	8.9	9.3	9.6	10.0	10.3
95°	28.1	24.8	21.7	18.6	15.3	14.1	14.8	15.5	16.2	16.9	17.3
97.5°	55.6	46.8	37.9	28.9	20.0	16.4	17.9	19.4	21.0	22.5	22.9
100°	76.4	63.2	50.1	37.0	23.8	18.1	19.7	21.3	22.9	24.6	25.3
102.5°	99.2	96.4	93.6	90.9	88.1	79.9	66.2	52.6	39.0	25.2	26.3
105°	131.2	134.1	136.9	139.9	142.7	131.1	104.9	78.7	52.5	26.4	27.4
107.5°	167.7	170.1	172.4	174.7	177.0	162.5	131.1	99.7	68.3	36.9	35.7
110°	191.2	193.2	195.2	197.2	199.2	186.4	158.6	131.0	103.2	75.5	65.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	213.3	215.1	216.9	218.6	220.5	217.9	211.1	204.2	197.3	190.6	155.5
115°	248.2	249.8	251.5	253.1	254.7	256.7	259.1	261.6	263.9	266.3	221.9
117.5°	279.3	281.1	283.0	284.8	286.6	288.4	290.0	291.6	293.4	295.0	284.3
120°	302.2	303.6	305.0	306.5	307.9	309.5	311.2	313.0	314.7	316.4	317.5
122.5°	321.4	323.0	324.5	326.0	327.5	329.2	331.1	333.0	334.9	336.8	337.5
125°	350.9	352.1	353.5	354.7	355.9	357.4	359.3	361.1	362.9	364.8	365.4
127.5°	377.6	379.0	380.3	381.7	383.1	384.5	385.9	387.2	388.6	389.9	390.9
130°	394.6	396.1	397.6	399.1	400.6	401.9	403.0	404.0	405.2	406.2	407.2
132.5°	411.8	413.0	414.3	415.7	417.0	418.2	419.2	420.3	421.3	422.4	423.3
135°	434.2	435.8	437.3	438.8	440.4	441.5	442.4	443.3	444.1	445.0	446.0
137.5°	457.0	458.0	459.1	460.2	461.2	462.2	463.2	464.2	465.1	466.2	467.1
140°	471.8	472.5	473.3	474.0	474.8	475.7	476.9	477.9	478.9	480.0	480.8
142.5°	484.2	484.9	485.5	486.3	487.0	488.0	489.1	490.3	491.5	492.7	493.5
145°	503.7	503.6	503.5	503.4	503.3	504.1	505.7	507.4	509.0	510.6	511.3
147.5°	520.7	520.4	520.0	519.7	519.3	519.9	521.5	523.1	524.7	526.3	526.8
150°	531.8	531.1	530.4	529.8	529.1	529.5	531.1	532.6	534.1	535.6	536.2
152.5°	541.1	540.4	539.6	538.9	538.1	538.5	539.9	541.4	542.8	544.3	544.8
155°	554.6	553.8	552.9	552.1	551.2	551.4	552.5	553.6	554.8	555.9	556.5
157.5°	565.2	564.5	563.8	563.1	562.4	562.4	563.2	564.0	564.8	565.6	566.2
160°	571.5	570.9	570.4	569.8	569.2	569.2	569.8	570.4	570.9	571.5	572.1
162.5°	577.0	576.4	575.8	575.3	574.7	574.7	575.1	575.6	576.1	576.6	577.3
165°	584.4	583.9	583.3	582.7	582.1	582.0	582.3	582.6	582.9	583.1	583.8
167.5°	590.0	589.4	588.9	588.2	587.6	587.5	587.7	588.0	588.3	588.5	589.3
170°	593.1	592.5	591.9	591.4	590.8	590.6	590.8	591.0	591.2	591.4	592.0
172.5°	595.1	594.6	594.0	593.4	592.8	592.7	592.8	593.0	593.2	593.4	594.1
175°	597.8	597.1	596.4	595.8	595.1	594.9	595.1	595.3	595.4	595.6	596.3
177.5°	598.2	597.7	597.1	596.6	596.1	595.8	595.9	596.0	596.1	596.1	596.7
180°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0
2.5°	504.5	505.3	506.1	506.4	506.3	506.1	505.9	505.8
5°	500.5	501.4	502.3	502.6	502.3	502.0	501.7	501.4
7.5°	492.4	492.7	492.9	492.8	492.3	491.7	491.2	490.7
10°	484.3	484.0	483.7	483.2	482.6	482.0	481.4	480.8
12.5°	475.0	474.4	473.9	473.1	472.1	471.1	470.1	469.1
15°	457.7	455.7	453.7	452.3	451.3	450.2	449.2	448.2
17.5°	438.0	435.7	433.4	431.4	429.6	427.9	426.1	424.3
20°	424.3	421.7	419.2	416.8	414.5	412.3	410.1	407.9
22.5°	409.3	406.0	402.7	400.2	398.5	396.9	395.2	393.5
25°	384.4	380.1	376.0	373.1	371.6	370.0	368.5	367.0
27.5°	360.5	355.7	350.8	347.2	344.8	342.3	339.9	337.5
30°	343.8	338.6	333.4	329.4	326.6	323.9	321.1	318.4
32.5°	326.9	320.9	315.0	310.7	308.2	305.6	303.0	300.4
35°	300.5	294.1	287.6	283.3	281.0	278.8	276.6	274.4
37.5°	274.8	267.7	260.6	255.8	253.3	250.6	248.1	245.5
40°	257.6	250.3	243.1	238.1	235.5	232.9	230.1	227.5
42.5°	240.1	232.7	225.2	220.3	217.6	215.1	212.5	210.0
45°	214.9	207.6	200.5	195.6	193.2	190.7	188.2	185.8
47.5°	190.3	183.1	175.9	171.2	169.0	166.7	164.5	162.3
50°	174.5	167.4	160.4	155.8	153.7	151.6	149.4	147.2
52.5°	159.6	152.8	146.0	141.6	139.7	137.6	135.6	133.7
55°	136.8	130.8	124.6	120.6	118.7	116.7	114.8	112.9
57.5°	116.2	110.6	105.0	101.4	99.8	98.2	96.5	94.8
60°	102.0	96.8	91.6	88.2	86.5	84.9	83.3	81.7
62.5°	89.7	84.7	79.8	76.7	75.7	74.8	73.8	72.8
65°	72.9	69.4	65.9	64.0	63.7	63.4	63.1	62.8
67.5°	58.9	57.3	55.6	54.7	54.3	54.0	53.7	53.4
70°	51.2	50.2	49.2	48.5	48.0	47.6	47.2	46.8
72.5°	44.5	43.6	42.8	42.3	42.0	41.8	41.5	41.3
75°	35.2	34.5	33.8	33.4	33.3	33.2	33.1	33.0
77.5°	26.7	26.3	25.9	25.7	25.4	25.2	25.1	24.9
80°	21.2	20.8	20.4	20.2	20.2	20.2	20.2	20.2
82.5°	16.1	15.8	15.6	15.5	15.5	15.5	15.5	15.5
85°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
87.5°	4.6	4.7	4.7	4.7	4.7	4.8	4.8	4.9
90°	9.6	10.1	10.5	10.9	11.1	11.3	11.5	11.6
92.5°	10.5	10.8	11.0	11.2	11.3	11.4	11.5	11.6
95°	17.8	18.3	18.8	19.0	18.9	18.8	18.7	18.6
97.5°	23.3	23.7	24.0	24.3	24.4	24.5	24.6	24.7
100°	26.2	26.9	27.7	28.2	28.4	28.6	28.7	28.9
102.5°	27.3	28.3	29.3	29.9	30.2	30.5	30.7	31.0
105°	28.5	29.5	30.6	31.3	31.6	32.0	32.4	32.8
107.5°	34.7	33.6	32.5	32.2	32.6	33.0	33.3	33.7
110°	56.4	46.8	37.2	32.5	32.9	33.3	33.7	34.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	120.6	85.5	50.6	33.2	33.5	33.8	34.1	34.4
115°	177.5	133.1	88.7	63.0	56.1	49.2	42.3	35.3
117.5°	273.5	262.8	252.0	235.3	212.6	189.9	167.2	144.5
120°	318.7	319.8	321.0	315.1	302.2	289.2	276.2	263.3
122.5°	338.1	338.8	339.5	338.6	336.1	333.6	331.0	328.5
125°	366.1	366.8	367.4	367.9	368.2	368.5	368.8	369.0
127.5°	391.9	392.8	393.8	394.4	394.5	394.5	394.6	394.6
130°	408.3	409.3	410.4	410.9	410.8	410.7	410.6	410.5
132.5°	424.2	425.1	426.0	426.4	426.3	426.2	426.2	426.1
135°	447.0	447.9	448.9	449.2	449.1	448.9	448.7	448.5
137.5°	468.1	469.0	469.9	470.2	469.9	469.6	469.3	468.9
140°	481.7	482.6	483.4	483.6	483.1	482.6	482.2	481.7
142.5°	494.3	495.1	495.9	496.0	495.5	495.1	494.6	494.1
145°	512.0	512.6	513.3	513.4	512.9	512.4	512.0	511.5
147.5°	527.4	527.9	528.4	528.4	528.0	527.6	527.1	526.7
150°	536.8	537.3	538.0	538.1	537.6	537.0	536.5	536.1
152.5°	545.4	546.0	546.6	546.5	545.9	545.3	544.6	544.0
155°	557.1	557.6	558.3	558.2	557.3	556.6	555.8	555.1
157.5°	566.9	567.5	568.3	568.2	567.4	566.6	565.9	565.2
160°	572.6	573.2	573.8	573.7	573.1	572.4	571.7	571.1
162.5°	577.9	578.7	579.3	579.2	578.3	577.5	576.7	575.9
165°	584.5	585.1	585.8	585.8	585.1	584.5	583.8	583.1
167.5°	590.0	590.6	591.3	591.2	590.3	589.5	588.5	587.7
170°	592.7	593.4	594.0	593.9	593.1	592.2	591.4	590.5
172.5°	594.7	595.4	596.1	596.0	595.1	594.3	593.4	592.6
175°	597.0	597.6	598.3	598.2	597.2	596.3	595.3	594.4
177.5°	597.2	597.7	598.3	598.2	597.5	596.8	596.1	595.5
180°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5

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