

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: P332718-930

Luminaire Tested: **S124DIW-S350D470U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332718-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D470U930-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2501.5 lumens
Efficiency: N/A
Efficacy: 108.8 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: General Diffuse

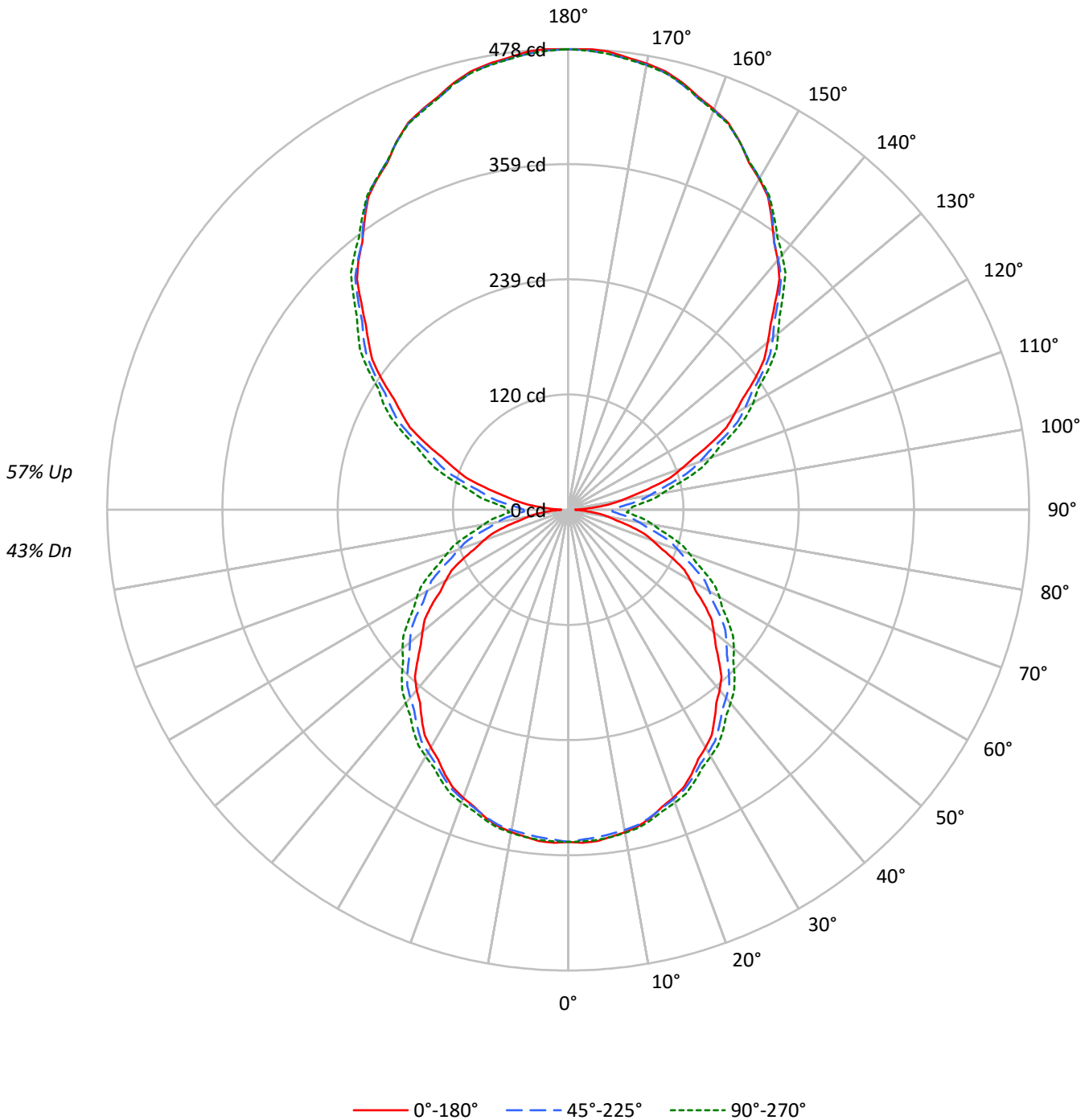
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2782	2782	2782
5°	2791	2719	2726
10°	2774	2675	2673
15°	2749	2623	2608
20°	2711	2566	2547
25°	2669	2503	2478
30°	2623	2439	2408
35°	2571	2374	2347
40°	2530	2313	2282
45°	2468	2256	2228
50°	2417	2190	2169
55°	2363	2129	2101
60°	2280	2049	2039
65°	2187	1965	1962
70°	2076	1868	1874
75°	1922	1763	1793
80°	1750	1660	1713
85°	1534	1571	1669



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.6	1.3
10°-20°	93.5	3.7
20°-30°	141.4	5.7
30°-40°	171.1	6.8
40°-50°	180.8	7.2
50°-60°	170.2	6.8
60°-70°	141.2	5.6
70°-80°	99.2	4.0
80°-90°	57.5	2.3
90°-100°	64.8	2.6
100°-110°	118.0	4.7
110°-120°	175.0	7.0
120°-130°	218.2	8.7
130°-140°	238.6	9.5
140°-150°	231.3	9.2
150°-160°	193.9	7.8
160°-170°	129.0	5.2
170°-180°	45.2	1.8
0°-30°	267.5	10.7
0°-40°	438.6	17.5
0°-60°	789.6	31.6
0°-90°	1087.5	43.5
90°-120°	357.7	14.3
90°-150°	1045.9	41.8
90°-180°	1414.0	56.5
0°-180°	2501.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	345	344	341	344	344	33
15°	331	331	330	333	333	93
25°	303	305	306	310	311	139
35°	265	269	273	278	280	166
45°	221	228	235	242	244	171
55°	173	181	193	200	203	154
65°	120	132	145	154	158	119
75°	66	81	97	107	111	71
85°	20	37	54	65	70	22
90°	7	27	46	59	64	5
95°	27	43	62	73	77	29
105°	90	98	113	124	128	95
115°	163	167	178	186	189	161
125°	236	236	245	251	253	210
135°	303	306	308	313	315	235
145°	368	369	369	371	372	230
155°	421	421	421	422	421	194
165°	458	457	457	459	457	129
175°	477	475	475	477	475	45
180°	478	478	478	478	478	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	345.8	345.6	345.4	345.2	345.0	344.6	344.1	343.6	343.0	342.4	342.9
5°	345.0	344.7	344.5	344.2	344.0	343.6	342.9	342.3	341.8	341.1	341.9
7.5°	342.1	341.9	341.8	341.6	341.4	341.1	340.6	340.1	339.7	339.2	339.9
10°	339.6	339.5	339.4	339.3	339.2	339.0	338.6	338.1	337.7	337.3	338.0
12.5°	336.2	336.1	336.1	336.1	336.1	336.0	335.7	335.4	335.1	334.8	335.5
15°	330.7	330.8	330.9	331.0	331.1	331.0	330.7	330.4	330.2	330.0	330.7
17.5°	323.3	323.5	323.8	324.0	324.2	324.4	324.3	324.2	324.2	324.2	325.0
20°	318.0	318.2	318.5	318.8	319.0	319.2	319.3	319.4	319.4	319.5	320.4
22.5°	312.1	312.4	312.7	313.1	313.4	313.6	313.8	314.0	314.1	314.3	315.1
25°	302.6	303.0	303.6	304.1	304.6	305.0	305.2	305.5	305.7	306.1	307.0
27.5°	291.9	292.7	293.4	294.2	294.9	295.5	295.9	296.3	296.7	297.1	297.9
30°	284.8	285.5	286.2	286.8	287.6	288.2	288.8	289.3	290.0	290.6	291.6
32.5°	277.1	277.9	278.8	279.6	280.4	281.1	281.8	282.4	283.2	283.8	284.9
35°	264.7	265.8	266.8	267.8	268.9	269.8	270.7	271.5	272.4	273.2	274.4
37.5°	252.3	253.5	254.7	255.8	257.1	258.1	259.3	260.3	261.4	262.4	263.7
40°	244.3	245.4	246.5	247.6	248.7	249.9	251.1	252.3	253.5	254.7	256.0
42.5°	235.1	236.3	237.5	238.8	240.0	241.3	242.8	244.2	245.6	247.0	248.4
45°	220.7	222.3	224.0	225.6	227.2	228.9	230.5	232.1	233.7	235.4	236.8
47.5°	207.1	208.8	210.4	212.1	213.8	215.6	217.4	219.4	221.3	223.1	224.6
50°	197.2	199.1	201.0	202.8	204.7	206.6	208.6	210.4	212.3	214.2	215.9
52.5°	187.4	189.2	191.1	193.0	194.9	196.9	199.0	201.2	203.3	205.5	207.2
55°	172.9	174.7	176.5	178.3	180.1	182.3	184.8	187.4	190.0	192.6	194.3
57.5°	156.8	159.0	161.2	163.5	165.7	168.0	170.6	173.2	175.7	178.3	180.3
60°	146.3	148.5	150.7	153.0	155.2	157.7	160.5	163.4	166.2	169.0	171.0
62.5°	136.1	138.5	141.0	143.4	145.8	148.5	151.2	154.1	156.9	159.8	161.8
65°	119.6	122.4	125.1	127.8	130.6	133.5	136.3	139.3	142.2	145.1	147.2
67.5°	103.8	106.7	109.7	112.6	115.4	118.5	121.6	124.7	127.8	130.9	133.1
70°	93.0	95.9	98.8	101.7	104.7	107.8	111.0	114.3	117.6	120.8	123.1
72.5°	82.5	85.5	88.5	91.5	94.4	97.7	101.1	104.6	108.0	111.5	113.7
75°	66.4	69.5	72.7	75.9	79.1	82.4	86.1	89.7	93.3	96.9	99.3
77.5°	51.4	54.7	58.0	61.4	64.7	68.3	72.1	75.9	79.7	83.4	85.9
80°	42.1	45.5	48.9	52.3	55.8	59.4	63.2	66.9	70.7	74.5	77.0
82.5°	32.8	36.4	39.9	43.5	47.0	50.7	54.5	58.3	62.0	65.9	68.5
85°	20.5	24.1	27.6	31.2	34.9	38.6	42.5	46.3	50.1	54.1	56.6
87.5°	11.7	15.3	19.0	22.7	26.3	30.2	34.0	37.9	41.8	45.7	48.3
90°	7.3	11.6	16.0	20.3	24.6	28.9	33.3	37.7	42.0	46.3	49.3
92.5°	13.8	17.9	22.0	26.2	30.2	34.4	38.6	42.7	46.8	51.0	53.7
95°	27.1	30.7	34.3	37.9	41.5	45.2	49.4	53.5	57.6	61.6	64.2
97.5°	43.3	46.3	49.3	52.3	55.4	58.9	63.1	67.3	71.4	75.6	78.1
100°	55.9	58.5	61.1	63.7	66.2	69.5	73.6	77.7	81.8	85.9	88.3
102.5°	69.5	71.7	73.7	75.8	77.9	81.0	84.9	88.8	92.8	96.7	99.2
105°	89.5	91.3	93.2	95.0	96.8	99.4	102.9	106.4	109.9	113.4	115.8
107.5°	111.3	112.8	114.3	115.8	117.3	119.6	122.6	125.6	128.7	131.8	134.1
110°	125.7	127.1	128.5	129.9	131.2	133.4	136.2	139.2	142.1	145.0	146.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	140.8	141.9	143.0	144.1	145.2	147.1	149.8	152.5	155.2	157.9	159.8
115°	163.4	164.2	164.9	165.7	166.5	168.2	170.7	173.3	175.9	178.5	180.3
117.5°	185.1	185.6	186.1	186.6	187.2	188.7	191.1	193.6	196.0	198.4	199.9
120°	199.2	199.8	200.4	201.0	201.5	203.0	205.2	207.4	209.7	211.9	213.2
122.5°	214.3	214.5	214.7	214.8	215.0	216.2	218.5	220.7	222.9	225.2	226.6
125°	236.1	236.0	235.9	235.9	235.8	236.8	238.9	240.9	243.0	245.0	246.5
127.5°	256.2	256.4	256.6	256.7	256.9	257.7	259.3	260.7	262.3	263.7	265.1
130°	270.1	270.3	270.4	270.6	270.8	271.5	272.9	274.3	275.7	277.0	278.4
132.5°	284.6	284.7	284.8	284.9	284.9	285.5	286.6	287.6	288.6	289.7	291.0
135°	303.4	303.9	304.4	304.8	305.3	305.9	306.5	307.0	307.7	308.3	309.5
137.5°	324.2	324.3	324.5	324.7	324.7	325.1	325.5	325.9	326.3	326.8	327.8
140°	338.1	338.2	338.3	338.3	338.3	338.4	338.6	338.7	338.8	338.8	339.8
142.5°	350.5	350.7	350.7	350.9	351.1	351.1	351.0	350.8	350.7	350.6	351.6
145°	367.9	368.2	368.4	368.7	368.9	369.1	369.2	369.2	369.3	369.4	369.9
147.5°	385.4	385.7	386.0	386.4	386.6	386.8	386.7	386.6	386.6	386.5	386.5
150°	396.1	396.3	396.6	396.8	397.1	397.1	397.1	397.1	397.1	397.1	397.1
152.5°	405.8	406.0	406.2	406.3	406.5	406.7	406.7	406.8	406.8	406.9	407.1
155°	421.2	421.2	421.2	421.2	421.2	421.1	421.0	420.9	420.9	420.8	421.1
157.5°	434.1	434.0	433.9	433.7	433.6	433.5	433.5	433.5	433.4	433.4	433.7
160°	441.9	441.8	441.7	441.6	441.6	441.5	441.4	441.3	441.2	441.2	441.4
162.5°	449.0	448.7	448.5	448.3	448.1	447.9	447.8	447.8	447.7	447.6	448.1
165°	458.4	458.2	458.0	457.7	457.5	457.3	457.1	457.0	456.8	456.6	457.1
167.5°	465.8	465.5	465.1	464.8	464.4	464.2	464.2	464.3	464.3	464.3	464.8
170°	469.9	469.5	469.1	468.7	468.3	468.1	468.2	468.3	468.4	468.5	469.0
172.5°	472.9	472.5	472.2	471.9	471.5	471.3	471.3	471.4	471.4	471.4	472.0
175°	477.0	476.5	476.1	475.7	475.3	475.1	475.0	474.9	474.8	474.7	475.3
177.5°	478.3	477.9	477.6	477.3	477.0	476.8	476.8	476.8	476.8	476.8	477.3
180°	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	343.4	343.9	344.4	344.5	344.5	344.5	344.4	344.3
5°	342.5	343.2	343.9	344.2	344.1	344.0	343.9	343.8
7.5°	340.7	341.4	342.3	342.6	342.5	342.4	342.3	342.3
10°	338.8	339.6	340.4	340.7	340.6	340.6	340.5	340.4
12.5°	336.2	337.0	337.6	337.9	337.9	337.9	337.9	337.9
15°	331.5	332.2	333.0	333.4	333.3	333.2	333.1	333.0
17.5°	325.7	326.5	327.3	327.7	327.6	327.5	327.5	327.4
20°	321.2	322.1	322.9	323.4	323.4	323.4	323.4	323.4
22.5°	316.0	316.8	317.7	318.2	318.4	318.5	318.6	318.8
25°	307.9	308.8	309.8	310.3	310.4	310.5	310.5	310.6
27.5°	298.8	299.7	300.6	301.1	301.2	301.3	301.3	301.5
30°	292.4	293.4	294.3	294.9	295.1	295.3	295.5	295.6
32.5°	285.9	287.1	288.1	288.8	288.9	289.1	289.3	289.4
35°	275.7	276.8	278.0	278.8	279.0	279.2	279.6	279.8
37.5°	264.9	266.0	267.3	268.1	268.3	268.6	268.9	269.1
40°	257.3	258.5	259.8	260.7	261.0	261.4	261.7	262.0
42.5°	249.8	251.3	252.7	253.6	253.8	254.0	254.4	254.6
45°	238.3	239.8	241.2	242.1	242.6	243.0	243.4	243.9
47.5°	226.2	227.6	229.2	230.2	230.7	231.2	231.7	232.3
50°	217.6	219.3	221.0	222.2	222.7	223.1	223.7	224.2
52.5°	209.0	210.7	212.4	213.5	214.0	214.5	215.1	215.6
55°	196.0	197.7	199.4	200.6	201.1	201.5	202.1	202.6
57.5°	182.4	184.4	186.5	187.7	188.2	188.7	189.1	189.6
60°	173.0	175.0	176.9	178.2	179.0	179.6	180.3	181.0
62.5°	163.7	165.7	167.6	169.0	169.7	170.3	171.0	171.7
65°	149.4	151.6	153.7	155.1	155.8	156.5	157.2	157.8
67.5°	135.3	137.5	139.7	141.1	141.8	142.4	143.1	143.8
70°	125.4	127.8	130.0	131.5	132.1	132.7	133.3	133.9
72.5°	116.0	118.3	120.5	122.0	122.6	123.3	124.0	124.7
75°	101.7	104.0	106.5	108.0	108.8	109.6	110.4	111.1
77.5°	88.3	90.7	93.2	94.8	95.6	96.4	97.3	98.1
80°	79.7	82.2	84.8	86.4	87.1	87.8	88.5	89.1
82.5°	71.1	73.8	76.4	78.1	78.8	79.6	80.4	81.1
85°	59.2	61.7	64.3	66.0	66.9	67.8	68.6	69.5
87.5°	50.9	53.5	56.0	57.7	58.5	59.3	60.1	60.9
90°	52.3	55.3	58.2	60.2	61.0	61.9	62.7	63.6
92.5°	56.4	59.1	61.8	63.6	64.4	65.1	66.0	66.7
95°	66.8	69.3	71.9	73.5	74.4	75.1	75.9	76.6
97.5°	80.6	83.2	85.8	87.4	88.1	88.9	89.6	90.3
100°	90.8	93.3	95.8	97.3	97.9	98.5	99.1	99.7
102.5°	101.7	104.1	106.6	108.3	109.0	109.7	110.5	111.2
105°	118.2	120.6	122.9	124.7	125.6	126.5	127.4	128.3
107.5°	136.5	138.8	141.1	142.6	143.2	143.8	144.4	145.0
110°	148.6	150.4	152.2	153.6	154.6	155.5	156.5	157.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	161.7	163.5	165.4	166.7	167.5	168.2	168.9	169.7
115°	182.1	183.8	185.7	186.9	187.4	187.9	188.4	188.9
117.5°	201.4	202.9	204.4	205.5	205.9	206.5	207.0	207.5
120°	214.5	215.8	217.1	218.3	219.1	220.0	220.8	221.6
122.5°	228.0	229.5	230.9	231.8	232.1	232.4	232.8	233.1
125°	247.9	249.4	250.9	251.8	252.2	252.5	252.8	253.2
127.5°	266.5	267.9	269.3	270.2	270.7	271.1	271.6	272.0
130°	279.7	281.1	282.5	283.3	283.5	283.7	283.9	284.1
132.5°	292.3	293.6	294.9	295.8	296.1	296.5	296.9	297.3
135°	310.7	311.9	313.1	313.8	314.1	314.4	314.6	314.9
137.5°	328.8	329.9	330.9	331.7	332.2	332.6	333.0	333.5
140°	340.9	341.9	342.9	343.6	344.0	344.3	344.7	345.0
142.5°	352.5	353.5	354.5	355.1	355.5	355.8	356.1	356.4
145°	370.3	370.7	371.2	371.5	371.5	371.6	371.7	371.9
147.5°	386.5	386.5	386.5	386.6	386.8	387.0	387.2	387.4
150°	397.1	397.1	397.1	397.1	397.1	397.0	396.9	396.8
152.5°	407.3	407.5	407.7	407.6	407.5	407.2	407.1	406.8
155°	421.4	421.8	422.1	422.1	421.8	421.4	421.1	420.8
157.5°	433.9	434.1	434.4	434.4	434.1	433.8	433.6	433.3
160°	441.6	441.9	442.1	442.1	441.6	441.2	440.8	440.3
162.5°	448.5	449.0	449.4	449.4	449.0	448.6	448.2	447.8
165°	457.6	458.1	458.6	458.7	458.4	458.0	457.7	457.4
167.5°	465.3	465.8	466.3	466.3	465.8	465.3	464.7	464.2
170°	469.4	469.9	470.4	470.3	469.8	469.2	468.6	468.1
172.5°	472.5	473.1	473.6	473.6	473.0	472.5	471.9	471.3
175°	475.9	476.5	477.0	477.0	476.5	475.9	475.3	474.7
177.5°	477.8	478.2	478.7	478.6	478.1	477.6	477.0	476.5
180°	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7

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