

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: P332720-935

Luminaire Tested: **S124DIW-S350D470U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332720-935
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-S350D470U935-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH 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: 2706.3 lumens
Efficiency: N/A
Efficacy: 117.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

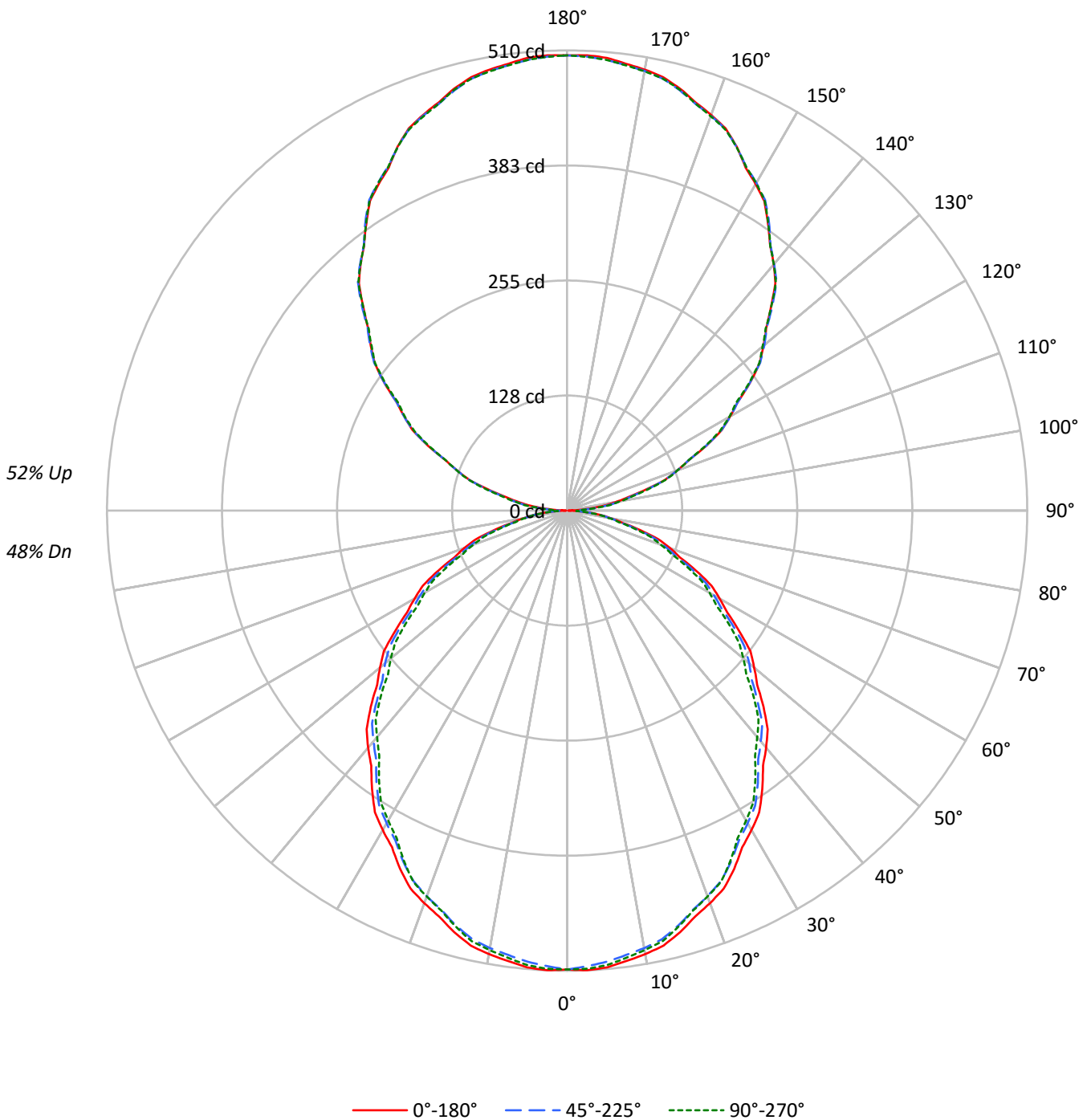
Input Watts (W): 23
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	97	93	89	86	89	86	82	79	72	70	68	60	58	56	48	47	46	41
2	89	81	75	70	81	75	70	65	63	59	56	52	50	47	42	40	39	34
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	38	35	33	29
4	74	63	55	49	68	58	51	46	50	44	40	41	37	34	34	31	28	25
5	68	56	48	42	62	52	45	40	44	39	34	37	33	30	30	27	25	21
6	63	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	22	19
7	58	46	38	32	53	42	35	30	36	31	26	30	26	23	25	22	19	17
8	54	41	34	28	49	38	32	27	33	27	24	28	24	20	23	20	17	15
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	13
10	47	35	27	23	43	32	26	21	28	23	19	24	19	17	20	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4106	4106	4106
5°	4118	4068	4099
10°	4092	4036	4055
15°	4043	3978	3989
20°	3978	3907	3911
25°	3902	3827	3815
30°	3811	3731	3697
35°	3714	3631	3582
40°	3616	3518	3453
45°	3513	3406	3342
50°	3399	3307	3204
55°	3275	3178	3074
60°	3152	3034	2942
65°	3012	2896	2779
70°	2858	2712	2608
75°	2617	2492	2427
80°	2329	2236	2176
85°	2038	1964	1927



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.9	1.8
10°-20°	135.0	5.0
20°-30°	198.6	7.3
30°-40°	230.9	8.5
40°-50°	230.9	8.5
50°-60°	202.0	7.5
60°-70°	150.0	5.5
70°-80°	85.2	3.1
80°-90°	26.1	1.0
90°-100°	33.3	1.2
100°-110°	98.6	3.6
110°-120°	167.3	6.2
120°-130°	220.6	8.2
130°-140°	247.7	9.2
140°-150°	243.4	9.0
150°-160°	204.8	7.6
160°-170°	136.2	5.0
170°-180°	47.7	1.8
0°-30°	381.5	14.1
0°-40°	612.4	22.6
0°-60°	1045.3	38.6
0°-90°	1306.7	48.3
90°-120°	299.1	11.1
90°-150°	1010.9	37.4
90°-180°	1400.0	51.7
0°-180°	2706.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	509	509	509	509	509	
5°	508	506	502	506	506	48
15°	484	482	476	478	477	136
25°	438	435	430	430	428	201
35°	377	374	368	366	364	236
45°	308	305	298	294	293	237
55°	233	231	226	221	218	208
65°	158	156	152	148	146	156
75°	84	82	80	78	78	89
85°	22	22	21	21	21	24
90°	1	5	9	11	12	3
95°	23	27	30	31	31	26
105°	91	91	93	94	95	96
115°	170	170	169	169	169	168
125°	248	248	247	247	246	221
135°	320	322	322	321	320	247
145°	388	390	390	390	389	243
155°	445	445	444	446	444	205
165°	484	483	482	484	483	136
175°	504	502	501	504	501	48
180°	504	504	504	504	504	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6
2.5°	509.9	509.7	509.5	509.3	509.0	508.5	507.7	507.0	506.2	505.3	506.1
5°	508.2	507.8	507.5	507.1	506.8	506.1	505.1	504.1	503.1	502.0	503.1
7.5°	503.5	503.1	502.7	502.4	502.0	501.3	500.2	499.1	498.0	496.9	497.7
10°	499.2	498.9	498.5	498.2	497.8	497.1	495.8	494.6	493.5	492.3	493.0
12.5°	493.7	493.4	493.0	492.6	492.2	491.5	490.2	489.0	487.7	486.5	487.2
15°	483.7	483.4	483.0	482.7	482.3	481.5	480.1	478.7	477.3	476.0	476.6
17.5°	471.7	471.3	470.9	470.5	469.9	469.1	467.8	466.5	465.2	463.9	464.3
20°	463.0	462.5	462.1	461.6	461.2	460.3	458.9	457.5	456.2	454.8	455.1
22.5°	453.5	452.9	452.3	451.7	451.1	450.1	448.8	447.5	446.1	444.7	445.2
25°	438.1	437.5	436.9	436.2	435.6	434.6	433.3	432.0	430.8	429.6	429.6
27.5°	420.5	419.8	419.2	418.5	417.9	417.0	415.8	414.7	413.5	412.2	412.1
30°	408.8	408.0	407.3	406.6	405.9	404.9	403.7	402.5	401.4	400.2	399.8
32.5°	396.4	395.7	395.0	394.4	393.7	392.8	391.6	390.3	389.1	387.8	387.4
35°	376.9	376.3	375.7	375.1	374.4	373.5	372.2	370.9	369.7	368.4	367.8
37.5°	356.5	355.9	355.3	354.8	354.2	353.3	351.9	350.5	349.1	347.8	347.1
40°	343.1	342.4	341.7	341.0	340.3	339.2	337.9	336.5	335.1	333.8	332.9
42.5°	328.8	328.4	328.0	327.5	327.1	326.1	324.6	323.0	321.6	320.1	319.0
45°	307.7	307.0	306.4	305.8	305.1	304.1	302.6	301.2	299.8	298.3	297.3
47.5°	285.6	285.2	284.7	284.3	283.9	283.0	281.6	280.3	279.0	277.6	276.5
50°	270.6	270.3	269.9	269.5	269.1	268.4	267.1	265.8	264.5	263.3	262.0
52.5°	256.0	255.5	255.0	254.6	254.2	253.3	251.9	250.6	249.3	248.0	246.8
55°	232.7	232.5	232.1	231.9	231.6	230.8	229.5	228.3	227.0	225.8	224.7
57.5°	210.5	210.3	209.9	209.7	209.3	208.5	207.2	206.0	204.7	203.5	202.5
60°	195.2	194.8	194.3	193.8	193.4	192.6	191.4	190.2	189.1	187.9	187.1
62.5°	180.2	179.9	179.4	179.1	178.7	177.9	176.6	175.4	174.1	172.9	172.1
65°	157.7	157.3	156.8	156.4	155.9	155.2	154.3	153.4	152.5	151.6	150.7
67.5°	135.1	134.7	134.2	133.8	133.4	132.8	131.9	131.0	130.2	129.2	128.4
70°	121.1	120.4	119.8	119.2	118.5	117.8	117.1	116.4	115.6	114.9	114.2
72.5°	106.1	105.4	104.8	104.2	103.5	102.9	102.3	101.8	101.2	100.6	100.0
75°	83.9	83.5	83.1	82.6	82.1	81.7	81.3	80.8	80.3	79.9	79.6
77.5°	62.9	62.7	62.4	62.3	62.1	61.7	61.4	61.0	60.5	60.2	60.0
80°	50.1	49.9	49.6	49.3	49.1	48.8	48.6	48.5	48.3	48.1	47.9
82.5°	37.7	37.6	37.5	37.4	37.2	37.1	37.1	37.1	37.0	37.0	36.9
85°	22.0	22.0	22.0	22.0	22.0	22.0	21.7	21.5	21.4	21.2	21.2
87.5°	8.7	8.9	9.0	9.0	9.2	9.3	9.4	9.4	9.5	9.6	9.6
90°	1.2	2.2	3.1	4.0	5.0	5.8	6.5	7.2	7.9	8.6	9.1
92.5°	8.4	9.5	10.5	11.6	12.7	13.5	14.0	14.5	15.0	15.4	15.8
95°	23.4	24.2	25.0	25.7	26.5	27.2	27.8	28.4	29.0	29.6	29.9
97.5°	40.9	41.5	42.1	42.8	43.4	44.1	44.8	45.5	46.1	46.9	47.2
100°	54.6	54.9	55.3	55.6	56.1	56.6	57.3	58.1	58.9	59.7	59.8
102.5°	69.0	69.1	69.2	69.4	69.6	70.0	70.7	71.4	72.1	72.8	73.0
105°	90.9	91.0	91.1	91.2	91.3	91.4	91.8	92.1	92.5	92.8	93.1
107.5°	113.9	114.0	114.2	114.3	114.3	114.4	114.5	114.5	114.6	114.6	114.9
110°	129.5	129.7	129.8	130.0	130.2	130.3	130.2	130.1	130.0	129.9	129.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	145.8	145.8	145.9	145.9	145.9	145.9	145.7	145.5	145.3	145.3	145.2
115°	170.1	170.1	170.1	170.1	170.1	170.0	169.9	169.7	169.5	169.4	169.3
117.5°	193.0	193.1	193.2	193.3	193.3	193.3	193.2	193.0	193.0	192.8	192.5
120°	208.4	208.7	209.1	209.4	209.7	209.7	209.5	209.2	209.0	208.7	208.3
122.5°	224.3	224.4	224.5	224.6	224.8	224.8	224.7	224.5	224.5	224.4	224.0
125°	247.7	247.7	247.7	247.7	247.7	247.7	247.6	247.5	247.5	247.4	247.2
127.5°	269.1	269.3	269.6	269.8	270.1	270.2	270.0	269.8	269.8	269.6	269.4
130°	284.0	284.3	284.6	284.8	285.1	285.2	285.2	285.2	285.2	285.2	285.0
132.5°	299.3	299.5	299.7	299.9	300.1	300.1	300.1	300.0	300.0	299.9	299.7
135°	319.5	320.0	320.6	321.1	321.6	321.8	321.8	321.8	321.8	321.8	321.7
137.5°	341.6	341.8	342.0	342.2	342.5	342.7	342.9	343.0	343.1	343.3	343.0
140°	356.2	356.4	356.5	356.7	356.9	357.0	357.0	357.0	357.0	357.0	356.9
142.5°	369.6	369.8	370.0	370.1	370.3	370.4	370.3	370.2	370.1	370.1	370.1
145°	388.2	388.6	388.9	389.3	389.6	389.8	389.9	389.9	390.0	390.1	390.0
147.5°	406.7	407.0	407.4	407.9	408.3	408.5	408.4	408.3	408.3	408.2	408.1
150°	417.8	418.2	418.5	418.9	419.2	419.4	419.4	419.4	419.4	419.4	419.4
152.5°	428.4	428.7	428.9	429.1	429.3	429.5	429.5	429.6	429.6	429.7	429.9
155°	444.8	444.8	444.8	444.8	444.8	444.7	444.6	444.5	444.4	444.4	444.7
157.5°	458.5	458.3	458.2	458.1	457.9	457.8	457.8	457.8	457.7	457.7	458.0
160°	466.7	466.6	466.5	466.4	466.3	466.2	466.1	466.1	466.0	465.9	466.1
162.5°	474.2	473.9	473.6	473.5	473.2	473.0	472.9	472.9	472.8	472.7	473.2
165°	484.1	483.9	483.6	483.4	483.1	482.9	482.8	482.6	482.4	482.2	482.8
167.5°	491.9	491.5	491.2	490.9	490.4	490.3	490.3	490.3	490.3	490.3	490.9
170°	496.3	495.8	495.4	495.0	494.6	494.4	494.5	494.6	494.6	494.7	495.2
172.5°	499.4	499.0	498.7	498.3	497.9	497.7	497.7	497.8	497.8	497.8	498.4
175°	503.7	503.3	502.8	502.4	502.0	501.7	501.6	501.5	501.4	501.4	502.0
177.5°	505.1	504.7	504.4	504.0	503.7	503.5	503.5	503.5	503.5	503.5	504.0
180°	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6
2.5°	506.8	507.6	508.2	508.6	508.5	508.4	508.3	508.2
5°	504.1	505.1	506.1	506.4	506.3	506.1	505.9	505.8
7.5°	498.4	499.3	500.1	500.4	500.3	500.2	500.1	500.0
10°	493.8	494.5	495.2	495.5	495.3	495.1	494.9	494.7
12.5°	488.0	488.8	489.7	489.9	489.7	489.4	489.1	488.9
15°	477.1	477.6	478.2	478.3	478.0	477.8	477.5	477.3
17.5°	464.6	464.9	465.3	465.4	465.2	465.0	464.9	464.7
20°	455.4	455.6	455.9	456.0	455.7	455.6	455.4	455.2
22.5°	445.7	446.2	446.7	446.8	446.4	446.1	445.7	445.5
25°	429.7	429.8	429.9	429.8	429.4	429.0	428.7	428.3
27.5°	411.8	411.6	411.4	411.0	410.6	410.2	409.7	409.2
30°	399.5	399.2	398.7	398.4	397.9	397.4	397.0	396.6
32.5°	386.9	386.5	386.1	385.6	385.2	384.7	384.3	383.8
35°	367.1	366.5	365.8	365.3	364.9	364.5	363.9	363.5
37.5°	346.4	345.7	345.0	344.4	343.8	343.2	342.6	342.0
40°	332.0	331.1	330.2	329.5	329.0	328.6	328.1	327.7
42.5°	318.0	316.9	315.9	315.2	314.9	314.6	314.3	314.0
45°	296.4	295.3	294.4	293.7	293.4	293.2	292.9	292.7
47.5°	275.3	274.2	273.1	272.2	271.6	270.9	270.2	269.5
50°	260.7	259.5	258.2	257.3	256.8	256.2	255.6	255.1
52.5°	245.7	244.6	243.5	242.5	241.9	241.2	240.5	239.8
55°	223.6	222.5	221.4	220.6	220.1	219.6	219.0	218.4
57.5°	201.5	200.4	199.4	198.6	198.1	197.6	197.1	196.5
60°	186.2	185.5	184.6	184.0	183.6	183.0	182.6	182.2
62.5°	171.4	170.7	169.9	169.3	168.8	168.4	168.0	167.5
65°	149.8	148.9	148.0	147.3	146.9	146.4	145.9	145.5
67.5°	127.5	126.7	125.8	125.3	125.2	125.0	124.9	124.8
70°	113.5	112.8	112.0	111.5	111.2	111.0	110.7	110.5
72.5°	99.4	98.8	98.2	97.8	97.6	97.3	97.0	96.8
75°	79.1	78.8	78.4	78.2	78.1	78.0	77.9	77.8
77.5°	59.9	59.8	59.8	59.6	59.3	59.1	58.8	58.6
80°	47.7	47.5	47.4	47.3	47.1	47.0	46.9	46.8
82.5°	36.8	36.7	36.6	36.5	36.4	36.2	36.2	36.1
85°	21.2	21.2	21.2	21.2	21.1	21.0	20.8	20.8
87.5°	9.7	9.8	10.0	10.0	10.1	10.1	10.2	10.2
90°	9.6	10.2	10.7	11.0	11.2	11.4	11.5	11.7
92.5°	16.1	16.4	16.7	16.9	17.0	17.1	17.2	17.3
95°	30.1	30.4	30.7	30.8	30.8	30.8	30.8	30.8
97.5°	47.5	47.9	48.1	48.3	48.3	48.3	48.3	48.3
100°	60.0	60.2	60.4	60.4	60.4	60.4	60.4	60.4
102.5°	73.3	73.5	73.8	74.0	74.0	74.0	74.1	74.2
105°	93.4	93.7	93.9	94.2	94.5	94.7	95.0	95.2
107.5°	115.1	115.4	115.6	115.7	115.7	115.7	115.6	115.6
110°	129.6	129.4	129.2	129.2	129.5	129.8	130.0	130.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	145.2	145.1	145.1	145.1	145.2	145.2	145.3	145.3
115°	169.2	169.1	169.0	168.9	168.8	168.8	168.7	168.6
117.5°	192.3	191.9	191.7	191.4	191.2	191.1	190.9	190.7
120°	207.8	207.4	207.0	206.9	207.1	207.2	207.4	207.6
122.5°	223.8	223.4	223.2	222.8	222.6	222.2	221.9	221.6
125°	247.0	246.8	246.7	246.5	246.3	246.2	246.0	245.8
127.5°	269.2	269.1	268.9	268.7	268.6	268.5	268.4	268.2
130°	284.8	284.6	284.5	284.2	283.9	283.5	283.2	282.8
132.5°	299.5	299.4	299.2	299.0	298.9	298.8	298.6	298.5
135°	321.5	321.3	321.2	321.0	320.7	320.5	320.2	319.9
137.5°	342.8	342.6	342.3	342.2	342.3	342.3	342.4	342.5
140°	356.8	356.7	356.6	356.5	356.5	356.4	356.3	356.2
142.5°	370.1	370.1	370.1	370.0	370.0	370.0	370.0	370.0
145°	389.9	389.9	389.8	389.6	389.3	389.1	388.8	388.6
147.5°	408.0	407.9	407.9	407.9	407.8	407.7	407.6	407.5
150°	419.4	419.4	419.4	419.4	419.3	419.2	419.1	419.0
152.5°	430.2	430.3	430.6	430.5	430.3	430.1	429.9	429.6
155°	445.1	445.4	445.7	445.7	445.4	445.1	444.7	444.4
157.5°	458.2	458.5	458.7	458.7	458.5	458.1	457.9	457.5
160°	466.4	466.7	466.9	466.8	466.4	466.0	465.5	465.0
162.5°	473.6	474.2	474.6	474.6	474.2	473.7	473.3	472.9
165°	483.3	483.8	484.3	484.4	484.1	483.7	483.4	483.0
167.5°	491.4	491.9	492.4	492.4	491.9	491.4	490.8	490.3
170°	495.8	496.3	496.8	496.7	496.1	495.5	494.9	494.3
172.5°	499.0	499.6	500.2	500.2	499.6	498.9	498.3	497.7
175°	502.6	503.2	503.8	503.8	503.2	502.6	502.0	501.4
177.5°	504.5	505.0	505.5	505.4	504.9	504.4	503.8	503.3
180°	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5

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