

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: P332093-930

Luminaire Tested: **S123DIW-S340D460U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332093-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D460U930-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2476.5 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

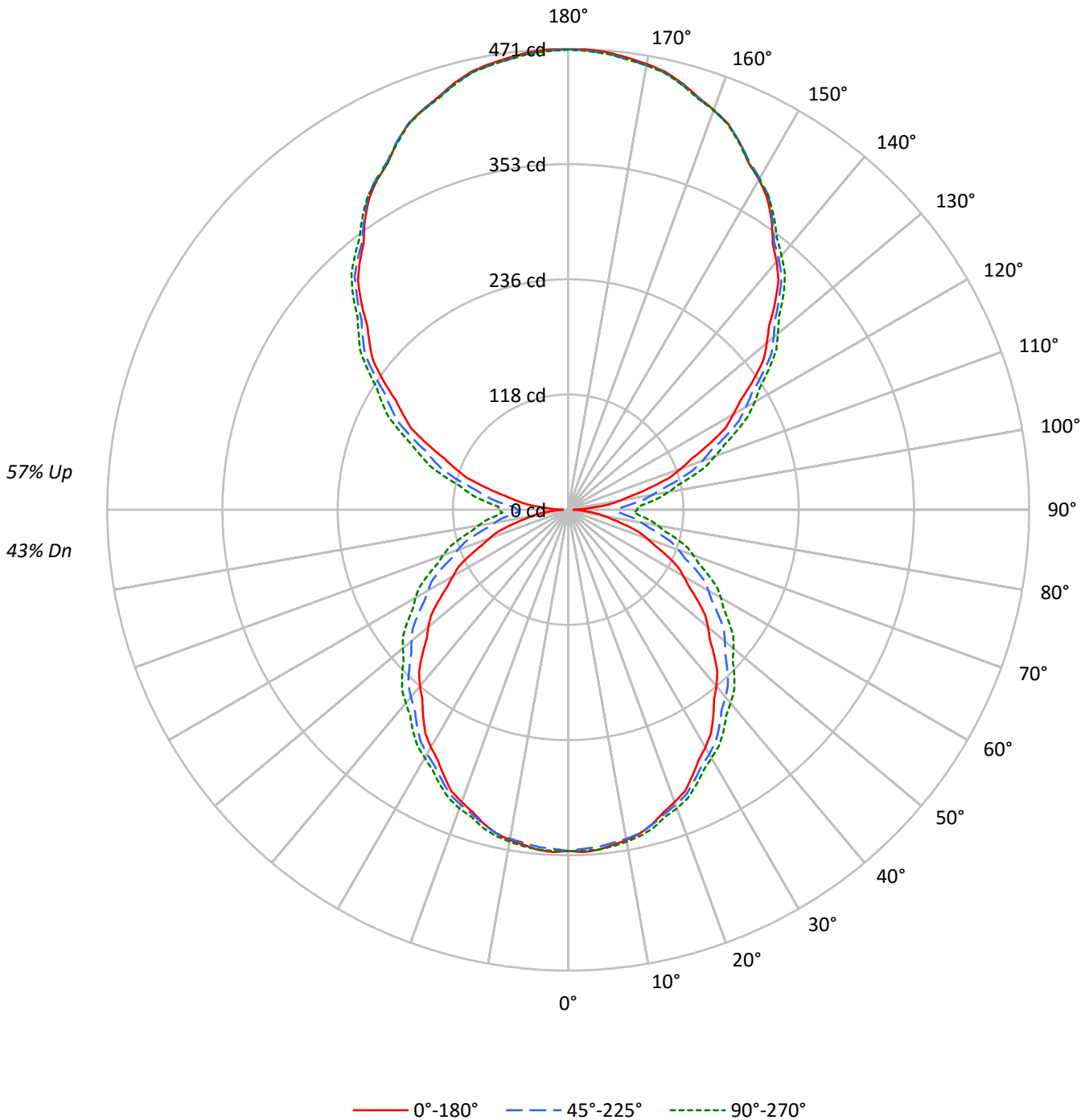
Input Watts (W): 23
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20										
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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	43																				
1	95	91	86	83	87	83	79	76	68	66	63	55	53	52	43	42	40	35																				
2	86	79	72	67	79	72	66	62	59	55	52	48	45	42	37	35	33	28																				
3	79	69	61	55	71	63	56	51	52	47	43	42	38	35	33	30	28	24																				
4	72	61	53	46	65	56	49	43	46	41	36	37	33	30	29	26	24	20																				
5	66	54	46	39	60	49	42	37	41	35	31	33	29	26	26	23	21	17																				
6	60	48	40	34	55	44	37	32	37	31	27	30	26	23	23	20	18	15																				
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	21	18	16	13																				
8	52	39	32	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12																				
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11																				
10	45	33	26	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10																				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3753	3753	3753
5°	3765	3659	3661
10°	3732	3575	3556
15°	3684	3479	3443
20°	3615	3370	3318
25°	3530	3245	3186
30°	3444	3132	3053
35°	3345	3012	2946
40°	3252	2903	2833
45°	3149	2798	2741
50°	3047	2695	2641
55°	2936	2589	2550
60°	2826	2482	2458
65°	2714	2366	2347
70°	2542	2237	2234
75°	2331	2092	2120
80°	2084	1946	1988
85°	1855	1845	1910



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.1	1.3
10°-20°	94.2	3.8
20°-30°	141.0	5.7
30°-40°	168.3	6.8
40°-50°	176.1	7.1
50°-60°	165.3	6.7
60°-70°	138.0	5.6
70°-80°	98.8	4.0
80°-90°	60.3	2.4
90°-100°	67.6	2.7
100°-110°	118.9	4.8
110°-120°	174.1	7.0
120°-130°	215.5	8.7
130°-140°	235.3	9.5
140°-150°	227.7	9.2
150°-160°	190.8	7.7
160°-170°	127.0	5.1
170°-180°	44.5	1.8
0°-30°	268.3	10.8
0°-40°	436.6	17.6
0°-60°	778.0	31.4
0°-90°	1075.0	43.4
90°-120°	360.6	14.6
90°-150°	1039.1	42.0
90°-180°	1401.0	56.6
0°-180°	2476.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	349	349	349	349	349	
5°	349	348	346	349	349	33
15°	332	333	333	337	337	94
25°	300	304	305	310	310	138
35°	258	264	269	275	276	162
45°	211	220	230	237	240	163
55°	161	174	187	197	201	144
65°	111	126	143	154	158	110
75°	60	78	97	109	114	64
85°	19	38	58	70	74	20
90°	5	28	52	66	71	5
95°	26	44	65	78	82	28
105°	86	97	116	126	130	92
115°	159	165	178	187	190	157
125°	231	233	242	249	250	206
135°	299	301	305	310	311	230
145°	362	362	364	366	366	226
155°	414	414	415	416	413	191
165°	451	450	450	452	450	127
175°	469	468	468	470	467	45
180°	470	470	470	470	470	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7
2.5°	350.3	350.1	349.8	349.7	349.4	349.1	348.5	348.0	347.5	346.9	347.5
5°	349.1	348.9	348.8	348.6	348.5	348.1	347.6	347.1	346.6	346.1	346.7
7.5°	345.7	345.8	345.8	345.8	345.8	345.6	345.1	344.6	344.1	343.6	344.5
10°	342.7	342.8	343.0	343.2	343.3	343.2	342.8	342.3	341.9	341.5	342.3
12.5°	339.0	339.2	339.5	339.7	340.0	339.9	339.7	339.3	339.1	338.8	339.6
15°	332.4	332.6	332.9	333.1	333.4	333.5	333.4	333.3	333.2	333.1	334.0
17.5°	324.1	324.6	325.1	325.5	326.0	326.3	326.3	326.2	326.2	326.2	326.9
20°	318.0	318.5	318.9	319.5	320.0	320.3	320.5	320.7	320.8	321.0	321.8
22.5°	311.6	312.1	312.6	313.1	313.6	314.0	314.2	314.5	314.7	315.0	315.9
25°	300.1	300.9	301.8	302.6	303.5	304.0	304.3	304.5	304.8	305.1	306.1
27.5°	288.5	289.5	290.5	291.5	292.4	293.2	293.7	294.2	294.8	295.3	296.3
30°	280.4	281.4	282.6	283.6	284.8	285.6	286.3	287.0	287.6	288.4	289.3
32.5°	271.3	272.5	273.7	274.9	276.1	277.2	278.1	279.0	279.9	280.7	281.8
35°	258.3	259.7	261.1	262.4	263.7	265.0	266.0	267.2	268.2	269.4	270.6
37.5°	244.7	246.1	247.7	249.2	250.7	252.2	253.5	254.9	256.2	257.6	259.0
40°	235.5	237.1	238.6	240.1	241.6	243.2	244.9	246.6	248.3	250.0	251.4
42.5°	225.5	227.4	229.2	231.1	232.9	234.7	236.5	238.2	240.0	241.7	243.4
45°	211.2	213.3	215.2	217.3	219.3	221.4	223.5	225.6	227.7	229.8	231.5
47.5°	196.2	198.5	200.8	203.2	205.5	207.8	210.2	212.6	215.0	217.4	219.2
50°	186.5	188.9	191.3	193.6	196.0	198.4	201.1	203.7	206.4	209.0	210.9
52.5°	176.2	178.7	181.2	183.7	186.2	188.9	191.8	194.7	197.5	200.4	202.4
55°	161.1	163.9	166.6	169.4	172.2	175.1	178.1	181.2	184.3	187.3	189.6
57.5°	146.3	149.2	152.1	155.1	157.9	161.1	164.4	167.7	171.0	174.4	176.7
60°	136.0	139.0	142.1	145.1	148.1	151.4	154.9	158.3	161.8	165.3	167.6
62.5°	126.3	129.4	132.5	135.6	138.7	142.1	145.8	149.4	153.1	156.8	159.1
65°	111.3	114.6	117.9	121.2	124.5	128.0	131.7	135.4	139.1	142.8	145.4
67.5°	96.1	99.6	103.1	106.6	110.1	113.7	117.5	121.3	125.1	128.9	131.6
70°	85.4	89.1	92.7	96.4	100.0	103.9	107.9	111.9	116.0	120.0	122.8
72.5°	75.7	79.4	83.0	86.7	90.3	94.2	98.3	102.6	106.7	111.0	113.7
75°	60.4	64.4	68.3	72.3	76.3	80.4	84.6	88.8	93.0	97.3	100.0
77.5°	47.0	51.0	55.0	59.0	63.0	67.2	71.4	75.7	79.9	84.2	87.2
80°	37.6	41.7	45.9	50.1	54.1	58.5	62.8	67.2	71.6	76.0	78.8
82.5°	29.4	33.6	37.8	42.0	46.2	50.5	55.0	59.4	63.9	68.4	71.3
85°	18.6	22.8	27.1	31.3	35.5	39.9	44.4	48.8	53.2	57.7	60.6
87.5°	10.2	14.5	18.9	23.3	27.6	32.1	36.6	41.2	45.7	50.1	53.1
90°	5.3	10.3	15.2	20.2	25.1	30.3	35.7	41.0	46.4	51.8	55.0
92.5°	13.6	17.9	22.2	26.4	30.7	35.3	40.1	45.0	49.8	54.7	57.7
95°	26.0	29.8	33.7	37.6	41.4	45.7	50.5	55.4	60.2	65.0	67.9
97.5°	42.5	45.8	49.2	52.7	56.0	59.9	64.4	68.8	73.2	77.7	80.6
100°	53.6	56.8	60.1	63.3	66.4	70.2	74.5	78.8	83.1	87.4	90.1
102.5°	66.7	69.4	72.2	74.8	77.5	81.1	85.4	89.8	94.2	98.6	101.2
105°	86.2	88.4	90.6	92.8	94.9	98.2	102.6	107.0	111.3	115.7	118.1
107.5°	108.4	110.3	112.1	113.9	115.8	118.5	122.3	126.0	129.8	133.5	136.0
110°	122.4	124.0	125.7	127.4	129.1	131.7	135.3	138.8	142.4	145.9	148.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	137.1	138.5	139.8	141.2	142.5	144.9	148.1	151.4	154.7	157.9	160.5
115°	158.9	160.2	161.4	162.7	164.0	166.0	168.9	171.8	174.6	177.5	179.6
117.5°	181.2	182.0	182.7	183.5	184.3	186.1	188.7	191.4	194.0	196.6	198.6
120°	194.8	195.7	196.6	197.5	198.4	200.1	202.4	204.8	207.2	209.5	211.4
122.5°	209.2	209.9	210.4	211.0	211.6	213.0	215.5	217.9	220.4	222.8	224.5
125°	231.0	231.2	231.5	231.7	232.0	233.2	235.5	237.7	240.0	242.3	243.8
127.5°	251.4	251.8	252.3	252.7	253.2	254.3	256.1	258.0	259.8	261.6	262.9
130°	265.0	265.5	266.1	266.7	267.3	268.2	269.7	271.1	272.6	274.0	275.2
132.5°	278.3	278.9	279.5	280.1	280.8	281.7	282.9	284.1	285.2	286.4	287.6
135°	298.9	299.3	299.7	300.1	300.5	301.2	302.1	302.9	303.7	304.6	305.7
137.5°	318.0	318.4	318.8	319.1	319.4	320.0	320.7	321.5	322.2	322.9	323.9
140°	331.1	331.5	331.9	332.3	332.7	333.0	333.4	333.8	334.1	334.4	335.6
142.5°	343.2	343.5	343.9	344.2	344.5	344.8	345.0	345.2	345.4	345.6	346.7
145°	362.1	362.2	362.2	362.3	362.4	362.6	362.8	363.1	363.3	363.5	364.2
147.5°	378.3	378.5	378.9	379.1	379.4	379.7	379.9	380.2	380.4	380.7	380.8
150°	389.8	390.0	390.1	390.3	390.4	390.6	390.8	390.9	391.1	391.3	391.3
152.5°	399.3	399.5	399.7	399.9	400.1	400.3	400.4	400.6	400.6	400.7	400.9
155°	414.2	414.2	414.2	414.2	414.2	414.3	414.3	414.4	414.5	414.6	414.9
157.5°	426.9	426.8	426.7	426.6	426.5	426.5	426.6	426.6	426.6	426.7	427.1
160°	434.9	434.7	434.6	434.4	434.2	434.1	434.1	434.1	434.1	434.1	434.6
162.5°	442.0	441.7	441.5	441.2	441.1	441.0	441.0	441.1	441.2	441.2	441.6
165°	451.1	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.5
167.5°	458.4	458.1	457.8	457.5	457.1	457.0	457.1	457.1	457.2	457.2	457.8
170°	462.6	462.3	461.9	461.6	461.3	461.1	461.1	461.1	461.1	461.1	461.7
172.5°	465.9	465.5	465.2	464.9	464.5	464.3	464.3	464.3	464.3	464.3	464.9
175°	469.2	468.9	468.6	468.2	467.9	467.7	467.7	467.7	467.7	467.7	468.2
177.5°	470.7	470.3	470.1	469.9	469.6	469.4	469.4	469.4	469.4	469.4	469.9
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7
2.5°	348.0	348.5	349.1	349.3	349.3	349.2	349.1	349.0
5°	347.4	348.1	348.8	349.1	349.0	348.9	348.8	348.7
7.5°	345.4	346.2	347.0	347.4	347.3	347.2	347.1	347.0
10°	343.2	344.1	344.9	345.2	345.0	344.9	344.7	344.5
12.5°	340.3	341.1	341.9	342.2	342.0	341.9	341.7	341.5
15°	334.8	335.7	336.6	336.9	336.8	336.7	336.6	336.6
17.5°	327.7	328.5	329.2	329.5	329.4	329.3	329.2	329.1
20°	322.5	323.3	324.1	324.5	324.6	324.7	324.7	324.8
22.5°	316.8	317.8	318.8	319.3	319.2	319.1	319.1	319.0
25°	307.2	308.3	309.4	310.0	310.0	310.0	310.0	310.0
27.5°	297.2	298.2	299.1	299.6	299.7	299.8	299.8	299.9
30°	290.3	291.4	292.4	292.9	292.9	292.9	292.9	292.9
32.5°	282.9	284.0	285.0	285.7	285.9	286.1	286.3	286.5
35°	271.9	273.1	274.4	275.2	275.6	275.9	276.2	276.5
37.5°	260.4	261.9	263.3	264.2	264.4	264.7	265.0	265.2
40°	252.8	254.3	255.7	256.6	256.9	257.3	257.6	258.0
42.5°	244.9	246.5	248.0	249.1	249.6	250.0	250.5	250.9
45°	233.0	234.6	236.3	237.4	238.1	238.7	239.5	240.1
47.5°	221.0	222.9	224.7	225.8	226.3	226.9	227.4	228.0
50°	212.8	214.7	216.7	218.0	218.6	219.2	219.7	220.4
52.5°	204.5	206.4	208.5	209.9	210.6	211.3	212.0	212.7
55°	191.8	194.1	196.4	197.9	198.5	199.3	199.9	200.6
57.5°	179.0	181.2	183.5	185.1	185.9	186.7	187.5	188.3
60°	170.0	172.4	174.7	176.3	177.2	178.2	179.1	180.1
62.5°	161.4	163.8	166.2	167.8	168.7	169.5	170.4	171.3
65°	147.9	150.4	153.0	154.7	155.5	156.4	157.2	158.0
67.5°	134.4	137.1	139.9	141.7	142.4	143.1	143.8	144.5
70°	125.5	128.2	130.9	132.6	133.5	134.3	135.2	136.0
72.5°	116.4	119.2	122.0	123.8	124.7	125.5	126.4	127.2
75°	102.8	105.6	108.4	110.3	111.3	112.3	113.3	114.4
77.5°	90.1	93.0	96.0	97.8	98.6	99.4	100.1	100.9
80°	81.7	84.6	87.5	89.3	90.2	91.0	91.9	92.7
82.5°	74.1	77.0	79.9	81.7	82.6	83.4	84.2	85.1
85°	63.5	66.4	69.2	71.1	71.9	72.8	73.6	74.4
87.5°	56.0	58.9	61.9	63.8	64.7	65.6	66.4	67.3
90°	58.2	61.4	64.6	66.7	67.7	68.7	69.7	70.7
92.5°	60.8	63.9	66.9	68.8	69.5	70.2	70.8	71.5
95°	70.8	73.8	76.7	78.6	79.5	80.3	81.1	82.0
97.5°	83.4	86.3	89.2	91.1	91.9	92.7	93.5	94.3
100°	92.8	95.5	98.2	100.0	101.0	102.0	103.1	104.0
102.5°	103.8	106.4	109.1	110.8	111.6	112.4	113.2	114.0
105°	120.4	122.8	125.1	126.8	127.7	128.7	129.6	130.4
107.5°	138.5	141.0	143.6	145.2	145.9	146.5	147.1	147.7
110°	150.9	153.4	156.0	157.5	158.0	158.5	159.0	159.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	163.0	165.5	168.0	169.7	170.3	171.0	171.8	172.5
115°	181.7	183.8	186.0	187.3	187.9	188.5	189.1	189.7
117.5°	200.6	202.6	204.6	205.8	206.2	206.6	207.1	207.5
120°	213.3	215.2	217.0	218.2	218.6	219.0	219.4	219.9
122.5°	226.2	227.8	229.4	230.5	230.8	231.2	231.5	232.0
125°	245.2	246.7	248.1	249.0	249.2	249.5	249.7	250.1
127.5°	264.1	265.3	266.5	267.2	267.4	267.6	267.7	268.0
130°	276.5	277.9	279.1	279.7	279.6	279.6	279.5	279.4
132.5°	288.7	289.8	291.0	291.6	291.7	291.9	292.0	292.1
135°	307.0	308.2	309.3	310.1	310.3	310.5	310.8	311.1
137.5°	324.9	325.9	326.9	327.4	327.5	327.7	327.8	327.8
140°	336.8	337.9	339.2	339.7	339.5	339.3	339.2	339.1
142.5°	347.7	348.8	349.8	350.3	350.3	350.3	350.3	350.3
145°	364.8	365.3	365.9	366.2	366.2	366.2	366.2	366.2
147.5°	381.1	381.2	381.5	381.5	381.2	381.1	380.9	380.7
150°	391.3	391.3	391.3	391.1	390.8	390.4	390.1	389.8
152.5°	401.0	401.1	401.3	401.1	400.7	400.3	399.9	399.6
155°	415.2	415.6	415.9	415.7	415.2	414.6	414.0	413.4
157.5°	427.5	427.8	428.1	428.0	427.6	427.1	426.6	426.2
160°	435.0	435.4	435.8	435.8	435.5	435.1	434.8	434.5
162.5°	442.1	442.5	442.9	442.8	442.3	441.7	441.2	440.7
165°	451.0	451.5	452.0	451.9	451.3	450.8	450.2	449.6
167.5°	458.3	458.8	459.3	459.3	458.8	458.3	457.8	457.2
170°	462.3	462.8	463.4	463.4	462.8	462.3	461.7	461.1
172.5°	465.4	465.9	466.4	466.4	465.8	465.2	464.6	464.1
175°	468.7	469.2	469.7	469.7	469.1	468.6	468.0	467.4
177.5°	470.3	470.7	471.0	471.0	470.5	470.1	469.6	469.1
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3

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