

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: P334110

Luminaire Tested: **S124DW-S350D930-4F0-1E-UDD-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P334110
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DW-S350D930-4F0-1E-UDD-A
Description: DEFINE 4 DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 350 LUMENS PER FOOT
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1185.6 lumens
Efficiency: N/A
Efficacy: 102.2 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 4' x L: 0.33' x H: 0')
CIE Type: Direct

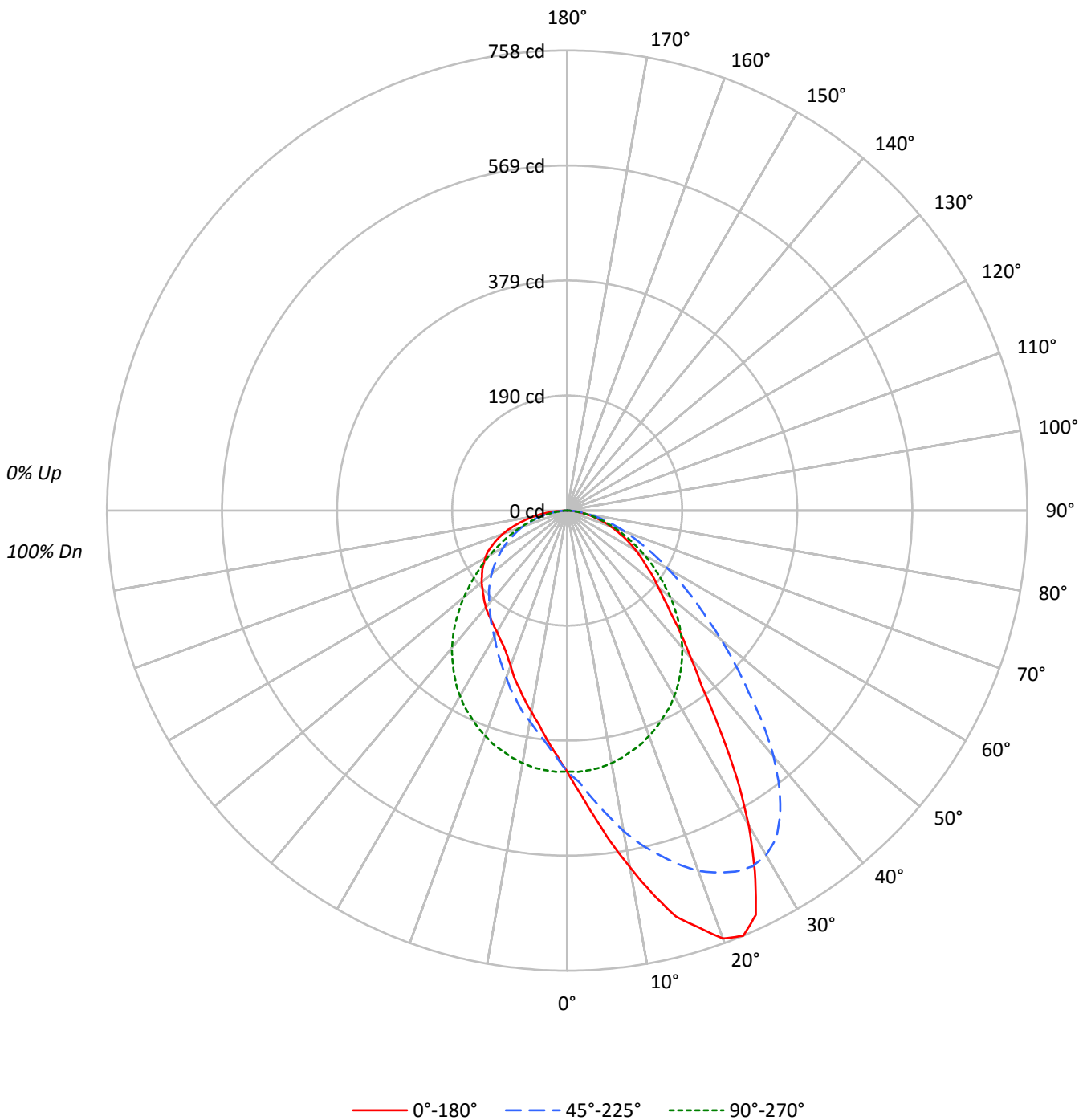
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62					62			
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46					46			
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33					33			
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30					30			
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27					27			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	3469	3469	3469
5°	4085	3477	3070
10°	4891	3463	2763
15°	5787	3428	2538
20°	6444	3392	2337
25°	6548	3339	2197
30°	5572	3289	2153
35°	4284	3207	2154
40°	3339	3110	2194
45°	2783	2965	2231
50°	2450	2788	2307
55°	2245	2576	2400
60°	2104	2385	2512
65°	1958	2172	2604
70°	1789	1961	2662
75°	1600	1728	2633
80°	1339	1413	2548
85°	991	1019	2436



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.8	3.5
10°-20°	129.1	10.9
20°-30°	205.0	17.3
30°-40°	227.8	19.2
40°-50°	207.2	17.5
50°-60°	169.3	14.3
60°-70°	120.9	10.2
70°-80°	66.5	5.6
80°-90°	18.0	1.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	375.9	31.7
0°-40°	603.8	50.9
0°-60°	980.3	82.7
0°-90°	1185.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1185.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	430	430	430	430	430	
5°	504	476	429	386	379	51
15°	692	588	410	323	304	196
25°	735	656	375	266	247	326
35°	435	612	325	220	219	275
45°	244	422	260	182	195	192
55°	160	254	183	142	170	144
65°	102	142	114	99	136	101
75°	51	66	55	55	84	54
85°	11	14	11	16	26	13
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7
2.5°	464.2	464.0	462.2	461.9	460.6	459.0	458.7	455.8	450.1	447.5	446.8
5°	504.1	507.6	503.0	502.1	501.6	495.7	492.7	489.1	480.9	476.1	472.4
7.5°	550.7	550.9	548.9	547.0	543.6	538.6	531.8	524.0	514.6	505.0	498.2
10°	596.6	598.0	595.7	595.4	586.3	580.6	569.2	559.6	548.6	536.3	525.1
12.5°	645.0	642.2	641.3	631.9	632.0	620.5	606.8	596.8	578.3	563.7	547.9
15°	692.4	688.5	686.0	675.5	670.3	655.9	641.8	631.0	608.7	587.5	571.5
17.5°	719.8	724.6	718.2	713.9	699.9	690.4	676.4	654.1	637.6	611.2	592.9
20°	750.1	750.4	747.2	742.8	732.3	719.4	703.8	678.9	658.0	631.9	604.1
22.5°	758.2	758.2	757.3	753.3	746.0	736.2	720.3	700.6	674.2	645.2	617.4
25°	735.1	734.4	736.0	740.6	737.6	734.4	725.3	709.8	686.3	656.3	626.3
27.5°	669.6	674.2	683.8	695.2	703.4	710.7	710.2	703.6	686.9	660.9	629.0
30°	597.7	603.7	610.5	621.9	644.0	656.6	670.5	681.0	675.1	655.4	626.2
32.5°	518.7	519.0	529.9	543.2	563.0	590.2	614.2	638.3	648.6	640.6	617.4
35°	434.7	437.1	448.0	460.8	485.6	515.3	548.4	577.9	602.3	612.1	599.7
37.5°	364.2	372.0	380.2	394.8	417.4	444.3	479.9	516.7	552.5	574.2	576.5
40°	316.8	321.3	326.8	337.3	355.8	382.1	411.7	455.5	494.1	529.0	540.4
42.5°	279.4	281.6	284.4	293.7	306.7	332.8	359.2	396.4	435.2	478.6	499.6
45°	243.8	246.5	252.2	257.7	268.4	286.6	311.7	343.3	382.3	422.5	457.8
47.5°	217.1	218.9	222.5	228.5	238.2	250.4	271.8	298.7	336.8	375.7	413.5
50°	195.1	196.5	199.2	204.5	211.5	222.1	238.9	263.6	291.9	331.2	368.1
52.5°	177.6	178.0	179.8	183.0	188.1	196.7	209.7	229.1	254.9	288.9	325.5
55°	159.5	160.2	162.0	164.6	169.4	175.1	185.6	201.0	223.9	254.3	286.2
57.5°	144.5	145.2	146.7	147.7	152.0	156.8	165.4	176.4	194.4	221.4	250.4
60°	130.3	129.9	131.7	132.6	135.3	139.2	145.4	155.9	171.0	191.9	218.0
62.5°	116.4	115.9	117.3	118.5	119.8	123.0	127.8	135.5	147.0	165.4	187.1
65°	102.5	101.8	102.7	104.1	105.5	107.3	111.1	118.4	128.2	141.7	158.9
67.5°	88.3	89.2	89.2	90.1	91.0	93.4	96.1	101.8	108.8	119.8	135.1
70°	75.8	76.0	76.7	76.7	77.2	79.4	81.5	84.5	91.3	101.3	113.2
72.5°	63.4	64.3	63.7	64.4	64.8	66.0	67.5	70.3	75.8	82.6	92.2
75°	51.3	51.8	51.8	52.0	52.5	53.0	54.3	56.4	60.5	66.0	73.0
77.5°	39.5	39.5	39.9	40.6	40.6	41.5	42.5	44.1	46.5	50.5	55.0
80°	28.8	29.2	29.0	29.4	29.4	30.1	30.4	32.6	33.5	36.0	39.3
82.5°	19.2	19.6	19.6	20.1	20.5	20.5	21.0	21.5	22.4	24.6	25.5
85°	10.7	11.0	10.7	11.0	11.6	11.7	12.3	12.5	13.2	13.7	15.0
87.5°	3.9	4.4	4.4	4.6	5.0	5.2	5.3	5.2	5.9	6.1	6.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7
2.5°	446.9	444.4	442.7	441.2	437.3	435.0	433.2	430.7	427.9	424.9	421.1
5°	468.6	462.6	458.1	451.4	445.0	439.6	434.1	429.1	423.1	416.5	411.7
7.5°	490.9	482.5	471.3	462.6	452.1	443.0	435.0	426.6	417.7	409.2	401.2
10°	511.9	500.3	487.5	472.4	458.1	445.5	433.8	422.4	411.3	400.3	390.9
12.5°	534.5	519.4	498.9	480.6	464.2	446.2	431.4	416.9	403.0	391.2	379.8
15°	554.3	533.4	511.5	487.9	466.9	447.1	427.7	410.1	395.1	379.8	369.2
17.5°	566.7	540.9	517.4	492.7	468.5	443.7	423.6	403.9	385.3	370.4	357.0
20°	579.0	553.4	522.2	497.5	467.2	441.6	417.4	394.8	375.2	359.0	345.1
22.5°	589.7	559.1	527.9	493.4	463.3	435.7	408.7	385.9	365.8	348.5	335.3
25°	592.2	558.2	524.4	492.0	457.8	425.6	401.5	374.8	353.5	335.5	321.3
27.5°	593.1	557.1	519.6	484.3	449.1	419.7	388.4	365.1	343.0	323.9	310.4
30°	591.1	553.2	512.1	473.1	437.7	405.1	378.8	352.8	330.2	311.3	297.1
32.5°	584.9	545.0	502.5	460.6	423.6	391.9	364.5	340.1	318.2	299.7	284.6
35°	571.7	532.7	487.7	444.8	407.2	375.0	350.5	325.4	303.3	285.7	271.3
37.5°	554.1	517.8	472.0	427.4	391.2	358.5	333.7	310.6	290.7	272.5	257.6
40°	529.5	498.6	452.6	409.4	369.5	338.7	315.9	295.1	275.4	258.4	244.4
42.5°	501.2	475.2	433.8	387.3	349.2	318.2	296.2	278.0	259.7	244.4	230.3
45°	466.5	448.7	408.8	366.5	326.4	297.2	276.1	259.7	244.0	228.7	217.0
47.5°	427.9	417.9	383.2	342.6	304.2	275.0	256.7	241.0	226.8	213.4	202.9
50°	388.9	384.6	355.6	316.8	280.5	253.5	234.9	222.0	210.2	198.8	189.0
52.5°	350.5	351.4	325.9	291.2	258.3	232.5	214.1	202.2	192.4	183.7	175.1
55°	311.1	316.1	295.6	264.0	233.9	210.4	193.8	183.0	175.9	168.2	161.6
57.5°	275.0	283.4	265.6	236.5	211.1	188.7	174.1	165.7	157.9	152.9	147.7
60°	239.8	247.6	234.4	210.9	187.2	168.7	155.0	147.7	141.1	137.9	134.6
62.5°	208.4	215.2	206.3	184.9	165.2	147.6	136.5	129.6	125.7	122.1	120.1
65°	178.9	184.8	176.4	160.5	142.9	128.7	119.3	113.7	109.5	108.0	105.5
67.5°	149.7	155.0	150.6	136.7	121.7	110.5	103.1	97.2	94.7	93.3	91.7
70°	124.2	129.6	124.8	113.0	102.2	93.1	86.1	83.1	80.5	79.9	77.4
72.5°	102.7	105.9	101.1	92.6	83.7	76.4	71.4	68.2	67.1	66.0	65.0
75°	80.3	83.5	80.3	73.2	66.6	61.2	56.6	55.4	53.8	53.2	52.3
77.5°	60.2	63.2	60.7	55.9	50.7	46.3	43.6	41.8	41.6	40.6	40.9
80°	43.4	45.2	42.9	39.9	36.0	33.1	31.3	30.4	29.4	29.0	29.7
82.5°	28.1	28.7	27.8	26.0	23.3	21.7	20.6	19.6	19.6	19.8	19.6
85°	16.2	16.0	15.8	14.1	13.2	11.9	11.2	11.0	10.9	11.2	11.6
87.5°	6.8	6.9	6.8	6.1	5.5	5.0	4.8	4.6	4.8	5.0	5.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7	429.7
2.5°	419.3	417.7	415.4	412.2	409.6	406.7	406.0	404.9	407.1	405.3	404.8
5°	407.6	403.9	399.1	393.5	390.3	385.7	384.8	383.0	381.3	381.1	379.3
7.5°	395.3	390.2	384.1	378.4	373.4	368.4	365.2	364.9	362.0	360.6	358.8
10°	383.6	376.8	369.5	364.2	358.1	352.8	349.0	346.9	345.1	343.2	341.4
12.5°	369.7	362.4	356.7	350.8	343.3	339.6	332.8	328.7	328.7	329.3	323.9
15°	359.5	352.4	343.2	335.0	331.1	323.2	319.8	315.6	312.9	310.2	308.1
17.5°	347.1	338.4	331.2	322.0	314.7	308.8	304.2	301.9	297.6	293.7	291.0
20°	335.5	326.1	318.4	308.5	300.3	292.6	288.9	285.3	282.3	279.1	276.1
22.5°	323.8	313.8	304.0	294.4	286.9	278.7	275.2	270.0	267.2	265.7	262.7
25°	311.3	300.6	289.9	280.7	272.9	265.7	260.9	257.2	254.0	252.6	250.6
27.5°	297.8	287.3	277.1	266.5	257.4	252.2	248.3	245.3	243.3	241.2	240.3
30°	285.0	273.9	262.9	253.1	244.9	239.8	236.2	234.2	232.8	231.9	231.0
32.5°	272.0	261.1	249.4	240.6	233.5	229.1	226.6	224.6	224.1	223.9	223.7
35°	257.9	246.9	236.2	228.2	221.2	219.5	217.1	216.1	215.7	217.0	217.5
37.5°	244.4	234.1	224.1	216.1	211.5	208.6	207.7	207.5	208.8	209.9	211.1
40°	231.4	221.4	212.2	205.4	201.1	199.5	199.2	200.1	201.5	202.7	204.2
42.5°	218.8	209.0	200.8	194.5	191.9	190.4	190.8	191.7	193.8	195.4	197.7
45°	205.6	197.4	189.2	184.0	181.6	181.9	181.9	183.5	185.5	187.8	190.1
47.5°	193.3	184.9	178.0	173.5	172.3	171.8	172.7	174.8	177.5	180.1	183.3
50°	180.8	173.0	167.1	163.2	161.8	162.3	163.8	165.7	169.1	172.7	176.0
52.5°	168.2	161.3	155.9	152.4	151.5	152.5	154.0	157.3	160.2	164.1	168.4
55°	155.0	149.0	144.7	142.0	141.7	142.2	143.8	147.2	151.5	156.3	160.2
57.5°	142.0	136.9	132.8	130.8	131.0	131.4	133.8	137.9	142.2	147.4	152.4
60°	128.9	124.2	121.0	119.6	119.8	120.9	124.1	127.8	133.5	138.5	143.8
62.5°	116.4	112.5	109.5	108.2	107.9	110.5	113.6	117.5	123.2	128.9	134.7
65°	102.9	99.7	97.2	96.5	97.0	98.8	102.7	107.9	112.7	118.5	124.6
67.5°	89.7	87.0	85.3	85.6	86.1	88.6	92.0	96.5	101.8	107.9	114.1
70°	77.2	74.8	73.3	73.5	74.6	77.8	80.6	85.1	91.0	97.2	102.2
72.5°	64.4	63.0	61.8	62.7	63.7	65.7	69.4	73.9	78.8	84.5	89.9
75°	51.4	51.4	50.7	51.3	52.9	55.0	57.7	62.3	67.5	72.1	76.4
77.5°	40.4	39.9	40.2	40.8	41.8	44.5	47.5	50.9	55.0	59.8	63.4
80°	29.2	29.4	30.3	31.3	31.7	33.6	36.8	39.9	42.9	46.8	50.2
82.5°	20.1	20.3	20.6	22.1	22.4	24.6	26.3	29.4	32.0	34.4	37.0
85°	11.9	11.9	12.8	13.3	14.2	15.7	16.9	18.7	21.2	23.0	25.6
87.5°	5.7	5.7	6.4	6.8	7.3	8.2	8.5	10.5	11.2	12.1	13.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	429.7	429.7	429.7	429.7
2.5°	404.4	404.0	402.8	402.6
5°	378.2	377.3	376.8	378.8
7.5°	358.5	357.8	356.2	355.6
10°	339.6	338.9	337.5	337.1
12.5°	321.5	319.8	319.8	320.4
15°	305.8	305.1	303.1	303.7
17.5°	289.8	289.1	286.4	289.1
20°	274.8	273.4	272.1	272.0
22.5°	260.6	259.3	259.5	258.1
25°	249.2	247.9	247.6	246.7
27.5°	239.9	239.2	238.5	238.9
30°	231.6	231.4	231.0	231.0
32.5°	224.6	224.6	225.0	225.0
35°	218.2	218.8	219.1	218.6
37.5°	212.5	212.9	213.4	213.9
40°	205.8	207.0	207.4	208.2
42.5°	199.3	200.8	201.8	201.8
45°	192.8	194.2	195.4	195.4
47.5°	186.0	188.0	189.2	189.4
50°	179.1	181.6	182.8	183.7
52.5°	172.3	174.8	176.6	176.9
55°	164.3	167.8	169.8	170.5
57.5°	157.2	160.4	162.5	163.0
60°	148.6	152.2	155.0	155.6
62.5°	139.9	143.6	146.1	147.7
65°	129.6	133.3	135.8	136.3
67.5°	118.7	122.6	124.2	125.3
70°	107.2	110.2	112.0	112.8
72.5°	94.0	97.2	99.3	99.3
75°	80.5	83.3	84.4	84.4
77.5°	66.4	68.0	69.4	69.8
80°	52.9	53.8	54.8	54.8
82.5°	39.0	39.7	40.8	40.6
85°	25.3	26.9	26.7	26.3
87.5°	14.2	14.4	15.0	15.3
90°	0.0	0.0	0.0	0.0

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