

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: P242584

Luminaire Tested: **S123RDR-S340D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242584
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-S340D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1093.4 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

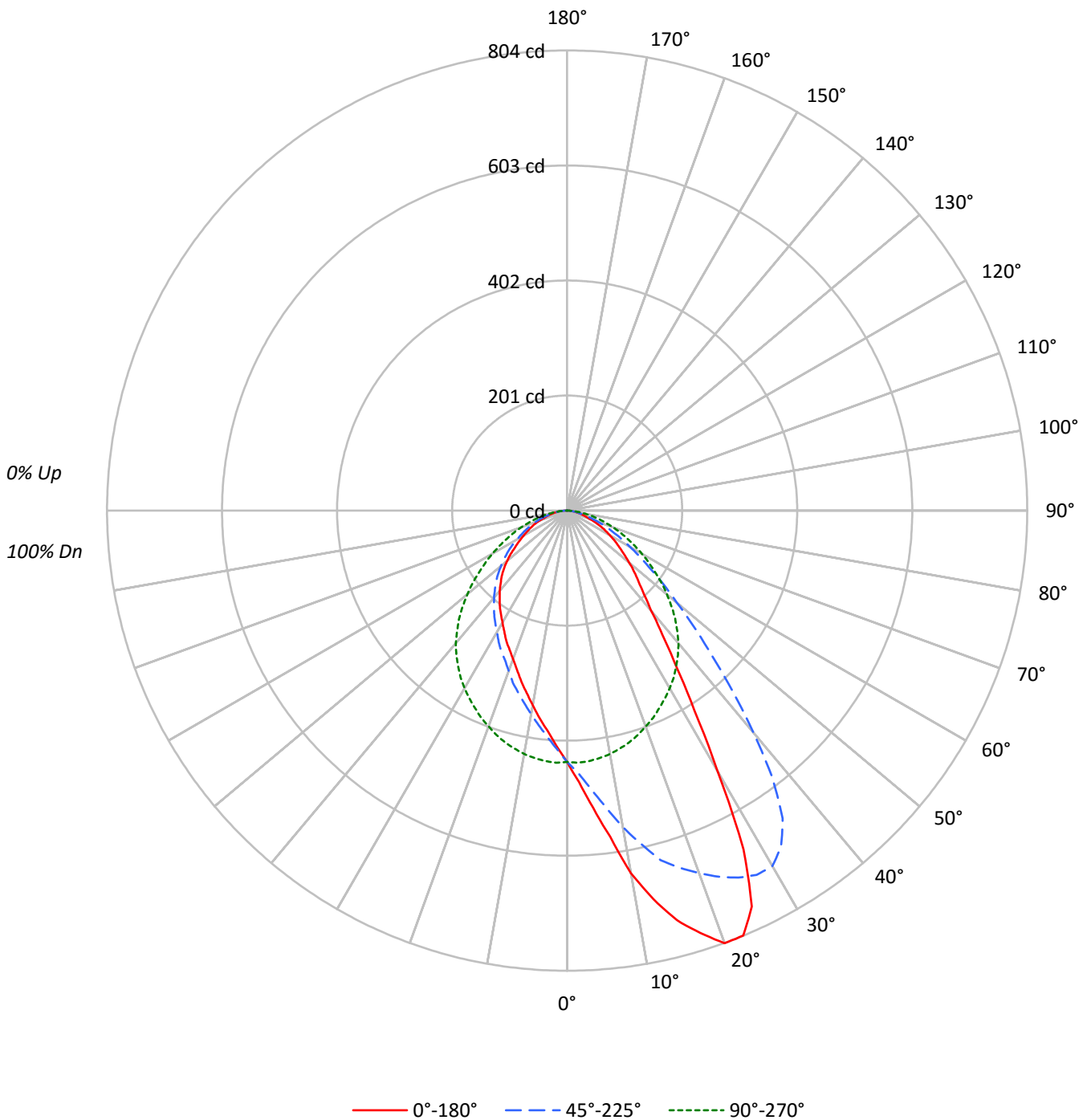
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5322	5322	5322
5°	6344	5345	4706
10°	7922	5315	4252
15°	9299	5260	3878
20°	10377	5179	3559
25°	10211	5093	3364
30°	7340	5015	3162
35°	4901	4913	3032
40°	3611	4788	2897
45°	3029	4572	2765
50°	2672	4288	2580
55°	2344	3964	2329
60°	2087	3656	2133
65°	1833	3321	1985
70°	1439	3023	1811
75°	1269	2641	1653
80°	1103	2241	1626
85°	890	1808	1725



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.1	3.9
10°-20°	135.0	12.3
20°-30°	212.6	19.4
30°-40°	221.1	20.2
40°-50°	189.1	17.3
50°-60°	144.2	13.2
60°-70°	92.4	8.4
70°-80°	44.3	4.0
80°-90°	11.6	1.1
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°	390.7	35.7
0°-40°	611.8	56.0
0°-60°	945.1	86.4
0°-90°	1093.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1093.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	439	439	439	439	439	
5°	521	489	439	397	387	53
15°	741	633	419	330	309	210
25°	764	708	381	272	252	332
35°	331	656	332	222	205	215
45°	177	356	267	176	161	139
55°	111	178	188	127	110	100
65°	64	88	116	79	69	63
75°	27	32	56	40	35	29
85°	6	7	13	12	12	7
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°	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1
2.5°	474.8	475.6	473.1	472.7	469.9	469.2	469.2	465.2	462.8	459.6	457.7
5°	521.4	524.4	522.9	519.5	513.9	512.6	509.0	503.4	497.0	489.1	485.3
7.5°	574.8	581.0	579.9	574.6	568.6	564.9	554.9	546.8	534.6	523.5	514.9
10°	643.6	639.3	635.9	630.8	625.4	616.5	606.0	591.5	574.8	561.7	547.0
12.5°	695.1	695.3	690.8	685.5	677.3	669.0	655.5	637.0	616.9	596.4	579.1
15°	741.0	742.1	739.3	733.8	722.9	708.1	688.5	681.2	653.4	632.7	612.0
17.5°	773.7	773.9	773.3	766.0	754.1	744.0	725.8	708.6	682.3	654.3	626.7
20°	804.5	802.6	803.0	794.6	786.3	774.1	756.4	728.4	707.7	674.1	645.3
22.5°	803.8	803.8	805.5	803.9	798.5	789.9	776.9	754.3	726.5	692.5	659.2
25°	763.5	762.0	770.9	773.3	782.9	784.6	780.5	767.5	742.5	707.5	667.5
27.5°	667.7	662.2	680.6	698.9	723.1	738.5	754.3	757.9	746.1	717.5	675.6
30°	524.4	542.1	550.4	580.1	613.2	652.6	687.2	720.1	728.2	717.3	684.4
32.5°	413.2	428.0	434.6	459.0	489.3	537.2	593.4	643.4	682.5	695.7	679.1
35°	331.2	331.4	347.2	358.5	387.0	434.6	485.0	547.4	609.4	656.4	661.3
37.5°	273.3	274.1	284.2	295.5	318.4	345.1	391.9	444.5	519.2	589.3	625.8
40°	228.2	229.9	237.0	248.1	263.5	282.5	317.1	366.0	425.8	506.0	571.6
42.5°	199.2	202.3	205.1	213.0	221.1	238.5	264.9	299.8	352.8	427.6	505.8
45°	176.7	178.2	181.0	185.0	193.6	206.0	224.8	250.2	295.3	356.4	432.1
47.5°	159.4	158.5	161.7	165.0	170.9	179.9	193.0	215.0	248.9	300.0	365.6
50°	141.7	141.5	143.6	146.1	151.5	157.7	168.0	183.6	209.2	249.8	308.6
52.5°	125.2	126.1	127.4	130.6	134.2	138.9	147.9	158.1	179.1	212.8	259.4
55°	110.9	111.5	113.5	115.2	118.0	123.1	128.9	138.3	153.4	177.8	218.2
57.5°	98.5	98.3	100.4	100.6	104.1	108.5	113.2	120.5	132.0	151.3	179.5
60°	86.1	85.5	87.2	88.5	90.2	93.6	97.4	104.5	113.2	126.5	149.8
62.5°	74.8	74.6	75.8	77.1	78.4	81.4	84.4	89.5	95.9	106.6	123.9
65°	63.9	64.5	65.0	65.6	66.4	68.2	71.2	75.0	79.7	87.6	100.9
67.5°	52.6	53.4	53.6	54.9	56.4	57.3	59.0	62.6	66.2	73.3	81.2
70°	40.6	40.4	40.6	41.2	43.2	45.3	47.7	50.2	52.3	57.0	63.3
72.5°	33.5	33.1	33.6	33.6	34.4	34.6	35.9	38.2	41.0	43.8	47.9
75°	27.1	27.1	27.1	27.1	27.8	28.2	28.8	29.3	30.3	31.8	35.2
77.5°	21.1	21.1	21.4	21.6	21.8	22.0	22.4	22.9	23.3	24.1	25.8
80°	15.8	16.0	15.8	16.0	16.0	16.4	16.5	17.1	17.3	18.2	18.8
82.5°	10.9	10.7	10.9	11.1	11.1	11.5	11.5	11.8	11.8	12.2	12.8
85°	6.4	6.0	6.4	6.2	6.6	6.2	6.4	6.8	6.8	7.0	7.7
87.5°	1.9	2.3	1.9	2.1	2.1	2.3	2.3	2.3	2.6	2.4	2.6
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°	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1
2.5°	457.0	456.4	453.8	450.8	446.8	444.2	442.1	441.0	437.6	433.5	430.6
5°	481.4	475.8	469.7	462.4	455.6	448.7	444.4	439.3	433.1	426.1	421.2
7.5°	505.6	495.9	485.2	474.1	462.8	452.8	443.6	436.1	426.7	417.1	410.5
10°	534.4	518.2	501.5	484.4	468.8	454.1	442.9	431.8	419.9	408.5	399.8
12.5°	560.5	538.0	518.0	496.1	475.0	456.8	439.3	425.8	410.9	398.5	388.3
15°	581.8	560.0	536.7	504.7	478.2	456.0	436.3	419.2	401.9	386.8	377.3
17.5°	603.9	570.9	540.2	515.4	480.8	453.9	430.8	410.9	392.1	376.7	364.7
20°	616.7	585.0	550.9	516.9	483.1	452.1	424.1	401.5	381.8	363.7	352.8
22.5°	624.4	587.4	551.1	513.9	477.4	444.9	417.3	391.9	370.1	353.2	339.1
25°	630.1	587.2	547.7	511.7	475.0	440.0	407.1	380.8	357.7	339.5	325.2
27.5°	634.6	585.0	539.7	500.4	463.3	427.8	398.1	369.9	346.8	327.8	312.2
30°	635.7	582.1	530.1	486.7	448.9	416.9	385.0	358.3	333.5	313.0	298.7
32.5°	637.2	575.2	517.1	470.3	431.4	399.8	371.6	346.4	320.9	300.8	286.1
35°	632.0	573.5	503.9	450.9	412.2	381.6	355.5	332.0	307.0	287.4	272.6
37.5°	616.0	564.3	490.8	429.3	389.3	361.1	339.3	317.9	294.7	273.3	259.6
40°	589.1	549.2	475.0	410.0	367.7	338.5	319.4	302.6	280.5	260.7	245.7
42.5°	549.1	528.8	460.0	389.7	343.2	315.4	300.0	284.6	265.8	245.7	231.8
45°	498.3	501.5	438.3	367.9	321.1	292.9	277.6	266.7	249.4	232.9	218.4
47.5°	436.7	463.3	415.2	344.9	297.0	270.5	257.1	247.2	235.2	218.0	204.7
50°	376.5	419.2	386.3	321.8	274.6	248.3	235.2	227.4	217.3	204.5	191.9
52.5°	321.1	367.7	351.3	296.1	250.4	226.9	214.1	208.1	200.6	188.7	177.6
55°	270.9	317.3	312.8	270.1	226.1	204.5	194.7	187.6	182.1	173.1	164.1
57.5°	227.3	272.2	273.1	241.4	205.1	183.1	174.6	169.0	165.2	158.1	149.2
60°	186.5	226.9	234.8	212.2	182.1	163.3	155.1	150.8	147.9	142.5	136.1
62.5°	152.6	185.5	194.7	180.1	160.2	142.9	136.8	132.7	131.0	126.5	121.1
65°	122.0	150.6	159.2	150.2	138.7	124.6	119.4	115.8	114.1	111.5	107.3
67.5°	96.2	118.4	127.8	120.3	116.0	106.0	102.4	100.4	98.9	97.0	93.4
70°	73.7	89.1	98.9	97.2	93.8	89.1	86.7	85.3	83.8	82.3	79.3
72.5°	55.6	65.0	74.1	75.6	72.9	72.9	70.9	70.5	69.7	67.9	66.5
75°	39.3	46.6	53.0	55.5	56.6	57.5	56.6	56.4	56.2	54.7	53.8
77.5°	27.3	32.0	36.3	40.6	42.1	43.4	43.6	44.4	43.8	42.9	42.5
80°	19.7	20.7	23.5	27.1	29.9	31.0	31.8	32.1	32.0	31.8	31.0
82.5°	13.0	13.7	14.7	16.9	19.2	21.2	21.6	21.4	22.0	22.2	21.6
85°	7.7	7.9	8.3	8.6	10.0	12.0	12.6	13.0	13.3	13.3	12.2
87.5°	3.0	2.8	3.2	3.2	3.8	3.9	5.1	6.0	6.2	5.5	5.5
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°	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1
2.5°	429.7	427.3	425.6	421.8	419.4	416.7	414.1	415.8	415.6	415.4	415.4
5°	417.1	412.8	408.8	403.8	400.6	396.6	393.6	393.2	394.0	391.4	389.9
7.5°	405.3	399.6	394.0	388.7	382.9	378.4	375.6	374.4	372.4	370.7	369.2
10°	392.7	385.7	380.3	373.3	366.9	361.3	357.7	355.3	353.9	352.6	350.2
12.5°	379.7	372.9	365.6	357.5	351.5	344.7	342.3	339.5	336.7	335.2	331.6
15°	367.1	358.3	350.9	342.7	335.9	329.5	325.8	320.3	319.5	317.7	314.3
17.5°	354.9	345.1	334.4	328.8	322.0	315.2	309.2	307.5	301.9	300.0	296.8
20°	339.9	331.0	323.3	315.2	304.1	297.9	293.4	291.0	286.7	284.0	282.1
22.5°	326.9	317.9	308.6	298.9	290.2	283.1	280.1	275.9	274.1	270.1	268.0
25°	314.7	304.9	294.2	284.0	277.4	272.2	266.9	263.5	260.2	258.5	254.7
27.5°	299.8	290.0	279.7	271.8	264.3	259.0	253.9	251.1	246.8	244.0	241.9
30°	288.0	275.9	267.3	260.3	250.0	245.1	241.5	237.8	234.8	231.8	229.7
32.5°	274.2	263.5	255.5	246.4	239.1	233.6	228.8	225.6	223.1	220.3	218.2
35°	259.8	250.6	242.1	233.5	227.6	222.2	216.7	213.9	211.5	208.8	207.0
37.5°	246.6	238.0	230.1	221.8	214.7	210.0	205.5	203.6	200.2	198.3	196.4
40°	234.6	226.1	217.5	209.6	202.1	198.7	194.7	191.5	188.5	187.2	185.2
42.5°	221.4	213.0	206.0	197.4	191.5	186.7	183.1	179.5	177.4	175.4	174.4
45°	208.5	200.9	193.8	185.3	179.5	175.6	171.4	168.2	166.2	164.8	162.8
47.5°	196.1	188.3	181.2	173.7	168.0	163.5	159.2	157.1	154.3	152.8	151.3
50°	182.3	175.6	167.9	161.1	155.5	150.9	147.6	144.7	142.3	140.2	139.3
52.5°	169.7	162.4	156.0	149.8	143.8	138.5	135.5	132.5	130.8	128.4	127.3
55°	155.6	148.7	143.0	136.8	131.0	126.7	122.9	120.3	118.4	115.8	114.3
57.5°	142.7	136.7	129.7	124.2	118.0	114.7	111.5	107.7	105.5	103.4	101.9
60°	129.5	122.4	116.5	111.5	106.2	101.5	98.7	95.9	93.4	91.4	90.0
62.5°	115.8	109.8	104.3	98.7	94.0	90.0	86.7	84.4	82.3	81.2	79.9
65°	101.7	96.8	91.2	86.7	82.1	79.1	76.5	74.4	72.9	72.0	70.9
67.5°	88.7	84.0	78.9	74.2	71.2	68.8	66.9	65.0	64.3	63.2	62.4
70°	76.1	71.2	66.9	63.5	60.5	58.8	57.7	56.4	55.6	54.1	53.4
72.5°	62.4	59.2	56.4	53.8	51.5	50.0	48.5	46.8	45.5	43.8	43.0
75°	51.3	48.1	45.7	43.8	42.3	40.2	38.2	36.5	35.9	35.3	35.2
77.5°	40.0	38.0	36.1	34.6	32.5	30.6	30.1	29.7	29.5	29.1	29.1
80°	29.9	28.0	26.7	24.8	23.7	23.7	23.7	23.3	23.5	23.5	23.5
82.5°	20.3	18.6	18.0	17.7	17.7	17.9	17.9	18.0	17.9	18.2	18.0
85°	11.5	11.7	12.0	11.8	12.0	12.0	12.4	12.2	12.4	12.0	12.4
87.5°	5.3	5.8	6.0	6.2	6.4	6.2	6.4	6.4	6.6	6.6	6.6
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°	439.1	439.1	439.1	439.1
2.5°	413.2	413.0	413.2	412.4
5°	389.3	389.1	388.5	386.8
7.5°	367.7	367.3	365.8	366.2
10°	348.9	349.1	346.8	345.5
12.5°	330.6	329.5	327.8	326.3
15°	315.0	313.2	308.6	309.0
17.5°	295.7	294.2	294.0	291.4
20°	279.1	278.2	278.6	275.9
22.5°	266.2	265.2	263.2	262.8
25°	253.6	252.1	250.6	251.5
27.5°	240.8	239.7	238.0	238.0
30°	228.8	227.6	226.9	225.9
32.5°	216.5	216.5	215.0	215.0
35°	206.2	205.1	204.7	204.9
37.5°	196.2	194.7	194.0	193.2
40°	185.3	183.8	183.5	183.1
42.5°	173.1	172.7	172.6	171.8
45°	162.2	162.0	160.9	161.3
47.5°	150.6	149.6	149.1	149.6
50°	138.5	138.2	136.5	136.8
52.5°	126.5	124.8	124.4	124.1
55°	113.0	111.3	110.5	110.2
57.5°	99.6	99.1	98.3	98.9
60°	88.2	88.2	88.2	88.0
62.5°	79.3	78.8	78.6	78.9
65°	70.3	70.1	69.4	69.2
67.5°	62.0	61.3	61.3	60.9
70°	52.4	52.1	50.9	51.1
72.5°	42.1	41.7	41.7	41.4
75°	35.0	34.8	34.6	35.3
77.5°	29.1	29.1	29.3	28.9
80°	23.5	23.5	23.3	23.3
82.5°	17.7	17.9	18.0	17.7
85°	12.4	12.2	12.6	12.4
87.5°	7.0	6.6	6.6	6.8
90°	0.0	0.0	0.0	0.0

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