

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: P242402

Luminaire Tested: **S122RDR-S290D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242402
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-S290D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1096.5 lumens
Efficiency: N/A
Efficacy: 94.5 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

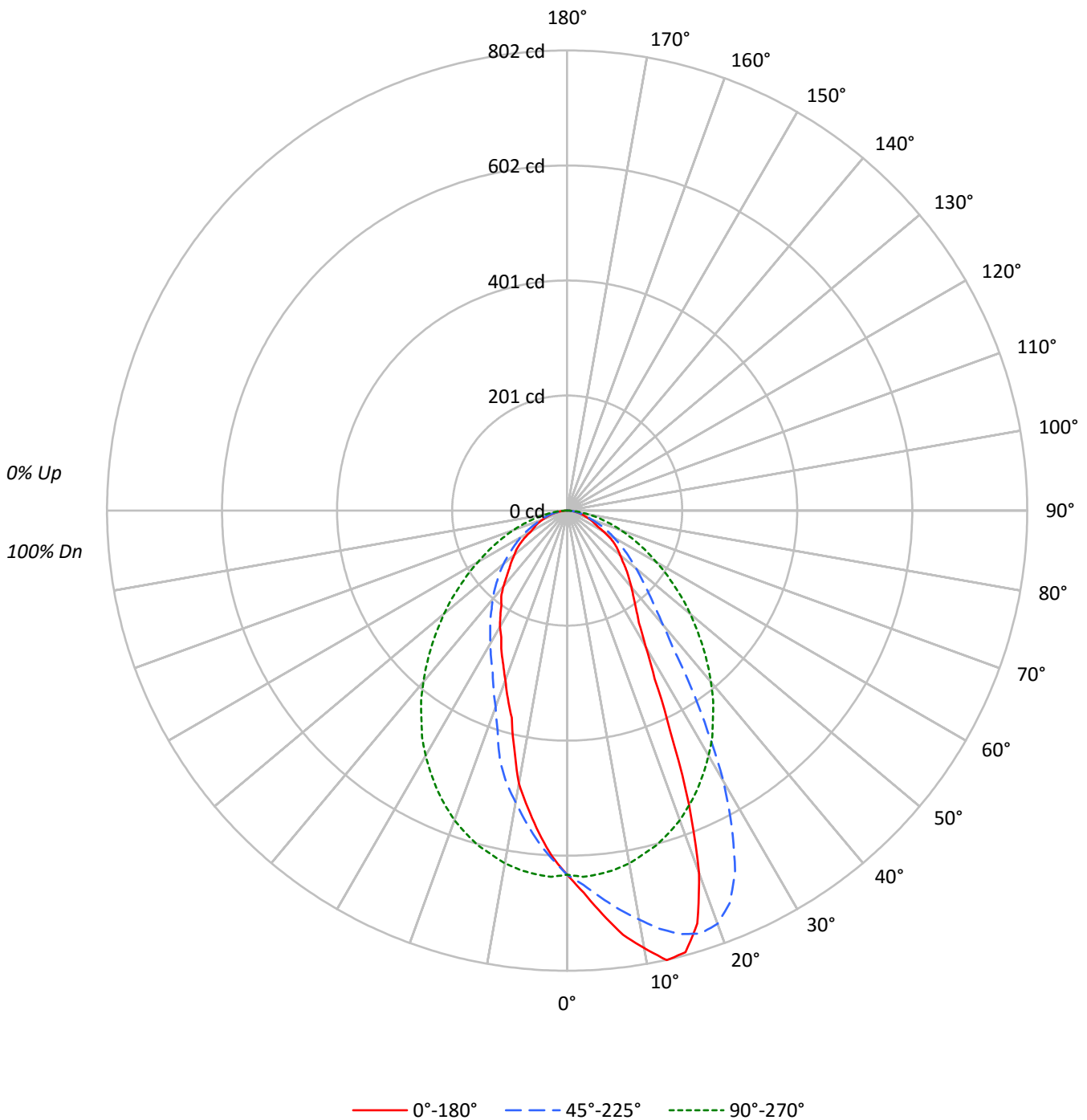
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	39
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12086	12086	12086
5°	13499	12163	10784
10°	14976	12077	9348
15°	15713	11899	7365
20°	13622	11637	6373
25°	8934	11278	5689
30°	6013	10843	5149
35°	4871	10294	4646
40°	4331	9697	4299
45°	3919	8997	3836
50°	3568	8303	3553
55°	3354	7535	3311
60°	2804	6827	2773
65°	2366	6202	2682
70°	2183	5536	2528
75°	2046	4820	2333
80°	1887	3971	2084
85°	1727	3125	1836



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.2	5.5
10°-20°	168.0	15.3
20°-30°	216.2	19.7
30°-40°	205.1	18.7
40°-50°	175.7	16.0
50°-60°	133.9	12.2
60°-70°	84.4	7.7
70°-80°	42.1	3.8
80°-90°	10.8	1.0
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°	444.4	40.5
0°-40°	649.5	59.2
0°-60°	959.1	87.5
0°-90°	1096.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1096.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	634	634	634	634	634	
5°	706	677	636	580	564	70
15°	797	764	603	452	374	217
25°	425	692	537	307	271	201
35°	210	376	443	233	200	133
45°	146	198	334	172	142	113
55°	101	124	227	117	100	89
65°	52	71	138	70	60	53
75°	28	31	66	36	32	29
85°	8	8	14	8	8	9
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°	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5
2.5°	666.7	667.4	668.0	666.5	666.5	665.2	662.3	660.1	653.9	653.1	653.1
5°	706.0	705.5	706.4	703.5	699.6	698.7	694.5	689.0	683.3	676.9	675.5
7.5°	745.7	743.0	741.9	743.2	739.0	733.3	726.3	719.6	709.7	701.6	696.5
10°	774.3	781.6	777.2	769.5	771.0	760.6	755.1	745.7	737.7	723.8	720.7
12.5°	802.5	804.3	803.6	800.1	797.2	790.9	782.9	775.0	758.7	746.5	733.7
15°	796.8	801.0	802.1	800.8	801.9	801.4	797.5	790.6	777.8	764.2	752.3
17.5°	754.5	759.3	763.3	766.8	772.3	783.1	786.4	787.8	782.5	772.8	762.9
20°	672.0	667.2	687.4	697.8	706.6	728.7	747.6	754.9	766.6	766.4	764.2
22.5°	555.2	557.8	576.8	589.6	619.5	641.6	663.9	696.3	721.6	740.4	751.8
25°	425.1	433.5	452.6	469.4	498.1	539.1	576.3	619.5	660.3	692.5	723.2
27.5°	330.7	331.8	349.2	366.2	383.9	419.3	469.2	521.0	579.2	621.1	674.0
30°	273.4	272.1	278.5	287.9	302.5	328.5	363.8	414.5	472.5	544.8	609.2
32.5°	232.8	233.3	237.7	244.1	255.5	271.0	292.4	331.2	385.2	455.9	534.2
35°	209.5	209.2	212.8	217.8	222.9	234.1	250.7	272.3	310.0	376.4	453.5
37.5°	190.1	191.2	192.7	196.0	202.2	208.8	219.2	234.4	263.0	304.3	373.5
40°	174.2	174.6	177.0	179.7	183.0	187.8	196.0	207.7	227.3	258.6	306.0
42.5°	159.6	160.1	161.6	164.0	166.5	171.3	177.7	187.4	202.4	225.1	262.1
45°	145.5	145.5	147.1	148.2	151.0	155.4	160.9	169.3	180.4	198.4	224.4
47.5°	131.8	131.8	132.9	134.9	136.9	140.4	146.2	153.2	161.2	175.9	199.1
50°	120.4	120.6	121.3	122.8	123.9	127.0	131.2	137.1	145.5	156.3	174.8
52.5°	111.1	110.9	111.8	112.2	112.9	114.9	117.7	122.8	130.1	139.1	153.7
55°	101.0	100.1	101.4	102.5	103.2	104.1	105.8	109.1	115.5	123.5	134.9
57.5°	89.1	88.6	89.3	90.4	92.4	94.6	95.7	97.9	101.2	107.4	119.5
60°	73.6	73.6	75.6	76.3	78.7	81.8	84.9	86.6	90.0	93.7	102.1
62.5°	60.0	60.2	60.9	61.5	62.6	66.6	71.2	75.6	78.7	82.2	87.1
65°	52.5	52.9	52.9	53.4	54.2	55.1	56.9	60.0	65.5	70.6	74.7
67.5°	45.9	45.9	46.1	46.5	46.7	47.8	48.5	50.0	51.2	56.9	62.6
70°	39.2	39.9	39.7	40.1	40.3	40.8	41.7	42.3	44.3	45.4	48.5
72.5°	33.1	33.5	33.5	33.7	34.4	34.4	35.1	35.7	36.8	37.7	39.0
75°	27.8	27.6	27.8	28.2	28.4	28.7	28.7	29.5	30.2	31.1	32.2
77.5°	22.5	22.7	22.7	22.7	22.7	23.2	23.2	23.6	24.3	24.7	25.4
80°	17.2	17.4	17.2	17.4	17.6	17.9	17.6	17.9	18.5	19.0	19.0
82.5°	12.3	12.3	12.6	12.6	12.6	12.6	13.0	13.0	13.4	13.2	13.4
85°	7.9	7.7	7.7	7.7	7.9	8.2	7.9	7.9	8.2	8.2	8.2
87.5°	3.5	3.7	3.7	3.7	3.7	3.7	3.7	4.0	3.7	4.0	3.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5
2.5°	653.5	651.7	650.2	646.2	644.2	639.8	639.2	638.9	633.2	627.7	626.2
5°	672.0	668.5	663.2	657.0	650.6	644.0	639.6	636.1	627.3	618.9	614.0
7.5°	690.3	683.9	675.5	665.0	655.9	645.3	638.1	631.4	619.3	608.3	601.0
10°	711.3	698.9	686.8	670.7	658.1	645.8	634.3	624.4	610.3	594.4	583.2
12.5°	724.3	710.4	692.5	676.9	659.7	643.1	626.8	613.4	596.2	579.6	565.7
15°	735.7	721.2	700.9	678.4	657.5	637.0	619.3	603.4	581.8	562.2	545.9
17.5°	746.3	726.3	705.3	679.3	656.1	631.2	609.0	589.1	565.5	542.4	523.9
20°	750.9	731.1	706.0	680.0	651.3	620.6	596.2	574.1	548.3	522.5	500.5
22.5°	748.1	733.7	705.1	672.7	643.1	610.7	582.3	555.8	526.5	500.0	473.6
25°	733.1	727.8	701.3	667.4	633.9	596.6	564.6	536.6	504.0	475.8	448.0
27.5°	705.5	713.2	694.5	657.7	621.5	581.4	546.6	515.0	481.7	450.2	422.4
30°	661.9	688.1	681.1	647.5	605.9	566.6	526.3	493.0	456.8	424.2	396.9
32.5°	602.1	649.7	660.1	633.4	590.0	545.9	503.1	470.1	431.9	397.1	370.6
35°	538.0	602.8	632.5	614.7	571.5	525.0	481.3	442.7	404.8	370.8	344.4
37.5°	461.9	548.3	594.2	592.2	551.0	503.6	456.2	418.0	379.0	345.5	317.9
40°	388.3	483.9	548.5	562.9	529.4	477.1	429.0	390.0	352.1	319.5	286.6
42.5°	322.1	417.4	500.5	528.0	503.1	451.3	403.0	361.8	325.2	294.8	261.0
45°	271.2	354.5	442.1	486.6	471.8	423.8	372.8	334.0	299.4	272.7	240.5
47.5°	234.8	295.4	383.4	441.6	439.9	394.2	343.5	306.2	273.6	248.9	221.6
50°	204.6	255.8	327.4	395.8	401.5	364.7	317.0	280.2	250.2	224.0	203.1
52.5°	177.5	217.4	280.0	344.8	363.8	333.1	287.3	254.0	225.1	201.5	184.3
55°	154.6	187.2	236.1	297.4	322.1	299.6	258.6	226.9	203.3	183.0	167.6
57.5°	134.5	160.1	200.9	252.2	280.2	265.0	230.0	203.7	182.8	163.8	151.5
60°	115.8	135.8	169.1	210.3	242.1	232.2	203.3	179.2	162.1	146.2	134.7
62.5°	98.1	114.6	142.0	173.5	202.0	199.3	177.0	157.9	143.3	129.2	119.9
65°	81.8	94.4	116.6	142.9	166.2	168.2	151.2	137.6	124.1	112.7	104.1
67.5°	67.7	76.3	93.0	116.2	134.1	140.2	128.8	117.7	106.7	97.5	89.7
70°	54.9	61.5	73.0	90.8	106.9	113.5	107.6	99.4	90.2	82.9	76.5
72.5°	41.9	48.3	56.0	67.9	81.1	88.4	87.3	82.0	75.0	69.2	63.3
75°	33.5	35.5	41.2	50.0	60.9	67.0	68.6	65.5	59.5	54.9	51.4
77.5°	26.0	27.3	30.4	35.7	43.2	48.7	51.2	50.7	46.3	43.2	39.9
80°	19.8	20.5	21.8	23.8	29.1	34.6	36.2	36.2	33.3	32.2	28.9
82.5°	13.9	14.3	15.0	15.9	17.6	22.3	24.0	24.5	22.9	21.4	19.0
85°	8.6	8.4	8.8	9.5	9.9	11.2	13.9	14.3	13.9	12.1	11.5
87.5°	3.7	4.0	4.0	3.7	4.0	4.2	5.3	6.4	5.5	4.9	4.4
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°	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5	634.5
2.5°	623.3	621.7	618.9	614.5	611.8	607.2	604.1	605.9	606.3	605.9	605.4
5°	608.7	604.1	597.7	591.5	585.8	579.6	576.1	574.6	571.5	569.7	568.8
7.5°	592.2	585.4	576.3	566.4	557.1	548.3	544.4	541.3	535.5	532.5	529.6
10°	573.2	560.7	551.6	537.5	528.9	516.4	507.8	508.0	499.4	494.5	491.0
12.5°	552.3	538.2	521.6	509.3	496.5	487.0	476.2	470.9	461.7	457.0	446.0
15°	528.7	512.6	496.7	479.5	467.4	451.8	436.8	418.5	403.7	390.9	387.4
17.5°	503.6	483.7	468.1	450.4	431.5	403.0	384.5	373.3	364.4	357.8	352.5
20°	477.6	457.3	440.3	409.9	381.9	364.0	351.2	343.1	333.8	326.5	322.6
22.5°	450.2	428.8	404.1	369.3	349.0	335.6	324.5	314.8	309.3	304.0	300.5
25°	424.6	401.5	363.3	340.0	322.3	307.3	299.4	293.7	287.1	279.3	275.8
27.5°	398.0	361.1	332.3	315.3	297.2	287.7	280.9	271.4	265.5	262.6	258.6
30°	367.3	330.5	309.1	290.1	278.2	267.4	259.1	254.2	248.5	242.5	240.1
32.5°	333.1	305.6	285.3	270.3	258.2	249.4	243.2	234.6	230.8	227.8	222.0
35°	306.0	283.8	265.0	252.2	240.8	233.3	225.5	220.9	213.4	210.3	208.4
37.5°	281.3	261.9	247.8	233.7	224.9	216.1	211.7	203.9	201.1	196.2	192.3
40°	261.0	242.1	228.6	217.6	207.5	201.3	195.3	189.4	184.5	182.6	177.5
42.5°	240.3	225.8	212.3	200.0	194.0	187.4	179.5	175.5	170.4	166.9	164.3
45°	221.6	207.9	196.4	186.5	179.0	172.2	167.3	160.1	157.2	150.8	148.2
47.5°	205.0	191.8	180.8	171.1	163.6	159.6	152.6	146.2	142.2	137.8	134.1
50°	187.2	176.6	166.0	157.6	151.0	144.6	137.4	134.5	127.4	125.5	123.5
52.5°	170.9	160.9	151.5	143.3	136.7	130.5	124.3	120.4	116.2	114.2	112.9
55°	155.9	146.2	136.9	129.6	123.0	116.6	112.7	108.0	105.8	104.3	102.5
57.5°	140.4	131.6	124.3	116.9	110.2	104.9	100.1	97.5	95.2	93.5	91.1
60°	125.9	117.5	111.1	104.3	97.5	93.3	89.7	86.4	83.8	80.7	79.8
62.5°	110.5	103.4	97.7	91.1	85.3	81.6	78.3	75.2	71.9	67.0	65.7
65°	96.6	90.8	84.7	79.2	73.9	70.1	65.3	61.7	60.4	60.0	59.7
67.5°	83.8	78.3	73.0	67.2	62.4	58.2	55.3	54.9	54.0	53.8	53.1
70°	71.0	65.9	60.6	55.3	50.7	50.0	49.2	48.3	47.2	46.7	46.3
72.5°	59.5	54.2	48.9	45.0	43.7	42.8	41.9	41.0	40.3	39.9	39.7
75°	47.4	42.6	39.0	37.5	36.4	35.7	34.4	33.7	33.3	32.6	32.4
77.5°	36.2	33.1	31.3	30.4	29.1	28.4	27.6	26.9	26.2	26.2	25.8
80°	26.0	24.7	23.6	22.3	21.8	20.9	20.7	20.1	20.3	19.6	19.6
82.5°	18.7	17.0	16.1	15.7	15.2	14.6	14.3	14.1	14.1	13.7	13.7
85°	10.4	9.9	9.5	9.0	9.0	8.4	8.6	8.4	8.4	7.9	7.7
87.5°	4.2	4.0	3.5	3.5	3.5	3.3	3.3	3.1	3.1	3.1	2.9
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°	634.5	634.5	634.5	634.5
2.5°	603.0	603.4	602.8	603.2
5°	567.7	565.1	564.6	564.0
7.5°	526.1	525.8	524.5	523.0
10°	486.2	485.1	484.8	483.3
12.5°	439.4	430.8	429.9	425.5
15°	382.1	380.8	376.4	373.5
17.5°	350.1	345.7	344.2	343.5
20°	319.5	315.5	314.8	314.4
22.5°	298.3	294.1	292.1	290.6
25°	273.6	272.1	271.2	270.7
27.5°	254.2	250.2	249.8	248.7
30°	238.1	237.0	235.5	234.1
32.5°	219.2	218.3	216.9	216.5
35°	206.1	203.1	201.7	199.8
37.5°	191.8	190.1	187.8	188.7
40°	174.6	173.5	173.1	172.9
42.5°	160.9	157.4	156.1	156.1
45°	147.1	144.2	142.2	142.4
47.5°	132.1	132.3	131.0	131.4
50°	121.9	120.6	119.7	119.9
52.5°	112.2	111.1	110.5	111.6
55°	101.4	100.1	99.9	99.7
57.5°	89.7	89.1	88.0	87.3
60°	76.9	75.2	73.0	72.8
62.5°	65.3	65.3	65.3	65.3
65°	59.3	59.1	59.3	59.5
67.5°	53.1	52.7	52.3	52.5
70°	45.9	45.6	45.4	45.4
72.5°	38.8	38.8	38.6	38.4
75°	32.2	31.7	31.7	31.7
77.5°	25.8	25.6	25.4	25.1
80°	19.4	19.2	19.0	19.0
82.5°	13.7	13.4	13.4	13.2
85°	7.9	8.2	7.9	8.4
87.5°	2.9	2.6	2.9	2.6
90°	0.0	0.0	0.0	0.0

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