

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: P243149

Luminaire Tested: **S122DR-H290D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243149
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-H290D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1183.0 lumens
Efficiency: N/A
Efficacy: 105.6 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

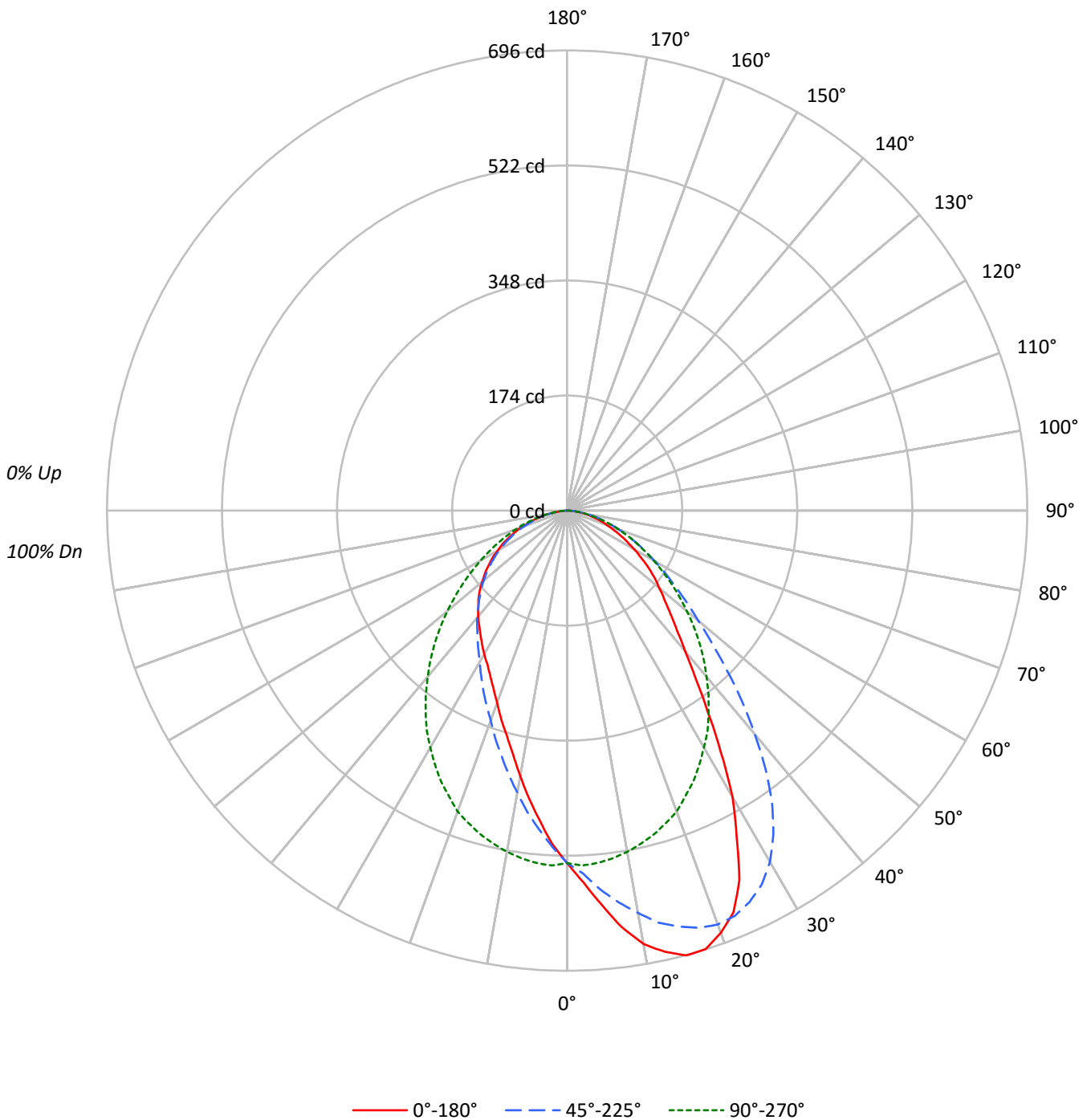
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10154	10154	10154
5°	11440	10228	9010
10°	12876	10137	7886
15°	13735	10000	6949
20°	13776	9819	6272
25°	12955	9493	5782
30°	10997	9097	5521
35°	8599	8671	5313
40°	6908	8148	5209
45°	5942	7613	5113
50°	5390	7005	4969
55°	4968	6383	4835
60°	4465	5749	4617
65°	4020	5165	4394
70°	3581	4595	4110
75°	3223	3952	3599
80°	2819	3181	2819
85°	2404	2382	1552



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.8	4.3
10°-20°	146.0	12.3
20°-30°	212.3	17.9
30°-40°	227.7	19.3
40°-50°	204.1	17.3
50°-60°	162.7	13.8
60°-70°	110.1	9.3
70°-80°	56.1	4.7
80°-90°	13.2	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°	409.1	34.6
0°-40°	636.8	53.8
0°-60°	1003.7	84.8
0°-90°	1183.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1183.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	533	533	533	533	533	
5°	598	575	535	484	471	59
15°	696	651	507	384	352	195
25°	616	653	452	300	275	277
35°	370	540	373	236	228	234
45°	221	342	283	187	190	173
55°	150	199	192	141	146	134
65°	89	115	115	93	98	88
75°	44	55	54	46	49	47
85°	11	13	11	8	7	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°	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1
2.5°	562.7	564.5	562.9	562.3	561.2	560.8	557.6	555.0	553.5	549.1	549.5
5°	598.3	602.2	600.0	599.8	595.5	592.7	590.0	586.0	580.1	575.4	571.6
7.5°	635.7	633.8	633.2	631.0	627.9	623.9	617.8	612.1	604.6	597.7	592.5
10°	665.7	665.1	666.1	660.6	658.6	652.5	647.2	638.3	628.6	617.8	611.1
12.5°	683.5	685.3	686.7	684.5	679.8	678.0	669.1	656.7	653.3	638.5	630.4
15°	696.5	697.3	697.5	695.1	692.8	688.2	682.9	675.0	664.2	651.3	645.2
17.5°	695.7	695.5	696.7	695.3	694.0	692.6	688.4	682.3	673.8	661.8	651.5
20°	679.6	683.1	685.9	686.5	686.3	687.1	685.1	681.1	675.0	666.3	654.7
22.5°	657.5	656.1	662.0	661.6	664.2	670.1	672.6	671.1	668.7	663.2	653.9
25°	616.4	617.8	621.9	626.3	636.3	639.9	647.6	653.5	654.3	652.9	647.2
27.5°	554.9	564.7	566.9	572.6	586.6	598.3	613.8	623.1	636.3	637.5	635.0
30°	500.0	499.6	503.0	513.2	526.0	543.6	563.7	587.6	602.8	613.3	617.0
32.5°	432.5	434.1	442.8	455.4	468.4	486.0	509.3	538.5	558.8	580.5	592.7
35°	369.8	374.7	383.0	391.7	405.9	430.0	455.8	480.1	511.2	540.2	560.0
37.5°	318.1	324.8	331.1	339.4	353.2	371.7	395.0	427.2	458.2	493.1	522.1
40°	277.8	280.4	284.7	292.8	302.1	320.6	344.1	368.2	401.7	441.8	479.9
42.5°	246.2	245.7	250.4	255.5	264.0	277.8	298.3	322.4	355.8	391.3	429.8
45°	220.6	220.8	222.8	228.1	234.8	242.7	258.5	281.2	306.4	341.8	382.6
47.5°	199.7	200.3	203.2	207.0	210.9	218.2	228.7	243.5	267.2	296.8	335.0
50°	181.9	182.9	184.9	187.6	190.6	195.7	203.6	215.3	234.0	259.1	293.8
52.5°	166.1	166.5	167.1	169.7	172.1	176.8	182.7	191.8	206.6	227.5	254.5
55°	149.6	149.2	150.6	152.7	154.9	158.2	164.4	171.7	182.1	198.7	221.0
57.5°	132.6	133.2	134.2	135.4	139.3	142.9	147.4	154.1	162.4	175.4	194.0
60°	117.2	117.2	118.4	120.0	122.5	124.9	129.2	135.4	142.7	152.7	168.3
62.5°	102.2	103.0	104.2	105.0	107.3	110.3	113.7	118.4	125.1	133.2	144.8
65°	89.2	88.8	90.0	91.6	93.3	95.3	99.1	103.0	108.1	115.4	125.1
67.5°	75.8	77.0	77.3	78.1	79.5	82.1	83.9	88.0	92.1	98.7	106.7
70°	64.3	65.1	65.7	66.7	67.9	69.1	70.8	74.2	78.3	82.9	88.6
72.5°	54.1	54.7	54.1	55.1	55.6	56.8	59.2	60.8	63.9	67.9	73.0
75°	43.8	44.2	44.0	45.0	45.2	46.4	47.6	48.9	52.5	54.7	58.2
77.5°	34.3	34.7	34.9	35.3	35.7	36.3	36.9	38.3	40.3	42.2	45.0
80°	25.7	25.7	26.2	26.4	26.6	27.0	28.0	28.4	29.8	30.4	32.6
82.5°	17.8	18.0	18.2	18.2	18.4	18.7	18.9	19.7	20.1	21.1	22.1
85°	11.0	11.2	11.2	11.2	11.8	11.6	11.6	12.0	12.6	12.6	13.0
87.5°	5.5	5.7	5.7	5.7	5.9	5.9	5.9	5.9	5.9	6.3	6.1
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°	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1
2.5°	549.3	549.1	548.3	544.8	542.0	538.5	537.9	537.3	532.4	527.0	525.5
5°	568.7	565.1	560.2	554.3	548.3	541.8	538.1	534.9	527.4	519.1	514.4
7.5°	587.6	580.7	573.0	563.7	553.9	543.4	536.7	530.4	520.1	509.3	502.8
10°	603.8	594.5	583.9	571.6	558.0	543.8	533.9	524.1	511.0	497.8	489.1
12.5°	617.2	605.4	591.4	574.8	562.3	542.8	529.0	516.0	501.6	484.4	474.9
15°	627.5	615.8	596.9	580.1	563.7	537.7	520.9	507.1	487.8	471.0	456.0
17.5°	639.9	623.3	604.6	580.5	562.3	532.6	513.6	495.7	474.7	455.0	438.4
20°	645.4	628.1	607.9	581.1	558.0	527.0	501.8	484.4	459.2	436.5	417.7
22.5°	646.2	629.6	607.7	579.3	550.5	518.9	489.9	467.2	442.0	417.9	396.8
25°	642.9	627.1	604.4	576.2	542.2	510.3	477.9	451.7	422.5	397.6	376.1
27.5°	633.8	621.0	599.4	569.3	533.7	496.8	461.5	432.9	404.1	375.9	355.4
30°	619.2	610.7	592.1	560.2	522.9	482.2	446.9	413.6	382.4	356.0	333.9
32.5°	600.4	596.3	580.9	549.3	511.8	466.3	429.4	395.0	361.1	336.0	313.3
35°	576.6	578.7	565.7	537.1	497.8	450.1	408.8	372.9	339.8	313.1	292.2
37.5°	545.6	556.2	547.9	521.1	479.9	433.7	387.3	351.2	316.5	290.8	272.5
40°	510.8	529.6	525.6	503.2	460.5	414.6	366.6	327.7	293.8	269.5	252.0
42.5°	470.0	497.2	501.6	481.3	441.4	390.7	343.3	305.8	273.1	249.2	232.4
45°	424.2	458.0	472.6	456.6	419.1	367.6	319.5	282.6	250.2	229.9	215.9
47.5°	378.3	418.9	438.6	430.9	393.1	342.9	295.8	259.7	229.1	211.3	198.1
50°	332.9	376.5	405.3	400.2	367.4	319.5	271.9	236.4	208.4	192.0	180.7
52.5°	293.0	334.3	365.6	368.2	338.8	292.6	246.6	213.7	189.8	175.0	165.5
55°	253.7	292.0	326.4	332.7	308.8	264.4	223.4	192.2	170.5	158.2	150.6
57.5°	218.6	253.4	287.5	298.5	279.2	239.1	198.3	170.9	152.1	142.7	136.0
60°	188.8	220.2	249.6	260.9	247.6	211.1	175.4	150.9	135.4	126.9	121.5
62.5°	162.8	187.1	213.1	225.5	216.7	184.9	153.7	132.0	119.4	112.1	107.9
65°	139.3	158.0	178.6	193.0	183.1	159.4	133.4	114.6	104.0	97.3	94.3
67.5°	117.6	133.2	149.6	161.0	156.1	134.6	112.7	98.1	89.2	84.1	81.3
70°	97.9	109.5	122.7	131.6	128.1	111.5	94.1	82.5	75.0	71.4	69.1
72.5°	80.3	87.8	97.9	105.2	101.4	89.8	77.3	68.1	62.5	58.4	56.6
75°	63.7	70.2	77.3	82.3	79.3	70.6	60.8	53.7	49.9	47.4	46.2
77.5°	48.3	53.5	58.4	60.8	59.4	53.1	46.4	40.8	37.7	36.1	34.7
80°	34.7	37.7	41.0	43.2	42.4	38.1	33.3	29.0	27.6	25.7	25.3
82.5°	23.3	25.7	26.4	27.4	26.8	24.9	21.5	18.9	17.8	16.8	16.6
85°	13.8	14.4	15.4	15.4	14.8	13.4	11.6	10.9	9.7	9.5	8.9
87.5°	6.1	6.1	6.1	6.1	6.1	5.7	4.9	4.5	4.1	3.9	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1	533.1
2.5°	524.1	522.1	519.3	516.2	513.4	509.1	507.7	507.7	508.7	507.5	506.5
5°	510.5	506.5	502.6	496.4	491.3	484.4	482.4	480.5	480.3	478.3	475.7
7.5°	495.9	489.9	481.8	473.2	467.6	460.1	456.0	454.8	451.1	447.5	443.4
10°	478.9	469.8	460.1	451.9	443.2	433.5	428.6	425.2	421.5	417.1	414.2
12.5°	458.4	448.1	439.2	429.6	422.3	408.6	407.1	402.7	395.2	388.7	386.3
15°	445.7	427.8	417.7	408.8	397.8	383.8	378.6	373.9	366.8	362.7	359.3
17.5°	423.4	407.3	394.6	382.8	372.1	361.3	353.6	349.6	343.9	340.4	337.0
20°	403.1	385.6	372.3	358.5	347.5	337.6	331.1	326.2	323.2	319.7	316.3
22.5°	382.6	364.2	351.6	337.6	324.6	318.7	311.0	306.8	302.9	300.1	296.6
25°	358.7	344.1	328.3	317.5	306.0	299.9	292.6	288.7	285.5	282.4	280.6
27.5°	337.4	322.6	308.0	297.2	287.5	281.6	277.0	273.3	269.3	267.0	265.6
30°	315.3	301.7	288.9	278.4	270.9	264.4	261.6	258.1	255.1	254.1	252.0
32.5°	295.6	280.4	270.1	260.7	254.3	249.8	247.8	244.1	243.5	242.5	241.3
35°	275.8	262.8	253.0	244.9	239.5	236.2	233.6	232.6	231.6	230.7	229.7
37.5°	256.3	246.1	236.8	230.3	225.9	223.4	222.8	220.8	220.6	219.2	219.2
40°	238.8	228.3	221.8	216.7	213.1	211.9	210.3	209.9	209.4	209.0	209.7
42.5°	221.2	214.1	208.6	203.2	200.5	199.5	199.1	198.5	198.1	199.3	199.7
45°	204.8	198.7	194.0	190.2	188.6	187.4	187.4	188.0	187.8	188.4	188.4
47.5°	189.6	184.1	180.1	178.8	176.8	176.4	176.6	176.4	177.4	178.2	179.0
50°	175.2	170.3	167.1	165.7	165.4	164.8	165.5	165.9	166.5	167.3	167.7
52.5°	159.2	156.9	154.9	153.5	153.3	153.5	153.3	154.7	155.3	156.5	156.3
55°	145.6	143.8	142.5	140.9	140.7	141.3	141.7	142.9	143.6	144.6	144.4
57.5°	132.8	131.4	129.8	129.4	129.2	129.4	131.2	131.0	132.2	133.0	133.4
60°	118.8	117.8	116.4	116.4	117.0	117.4	118.0	119.0	120.2	120.0	121.3
62.5°	106.0	104.8	104.4	105.0	104.8	105.8	106.4	106.4	107.9	108.5	108.9
65°	93.1	92.7	92.1	92.1	92.7	92.9	93.9	94.5	95.1	96.3	97.3
67.5°	81.1	80.1	80.1	79.7	80.5	81.1	81.7	82.5	82.9	84.3	84.8
70°	68.5	68.1	67.9	68.3	68.3	68.9	69.8	70.8	71.6	71.8	73.0
72.5°	56.2	56.2	56.2	56.8	57.2	57.8	58.0	58.8	60.0	60.2	60.8
75°	45.2	45.4	45.2	45.4	45.6	46.2	46.6	47.4	48.1	48.3	48.7
77.5°	34.9	34.5	34.1	34.7	35.1	36.3	36.1	36.5	37.3	36.9	37.3
80°	24.5	25.1	24.3	25.5	25.5	25.3	25.7	26.2	26.0	26.4	26.0
82.5°	16.6	16.0	16.0	16.6	16.8	16.2	16.6	16.8	17.0	16.6	16.4
85°	9.1	8.9	9.3	8.7	8.9	8.5	8.5	8.1	8.5	8.1	7.7
87.5°	3.4	3.2	3.4	2.8	2.6	2.4	2.2	2.2	1.8	1.8	1.8
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):

	165°	170°	175°	180°
0°	533.1	533.1	533.1	533.1
2.5°	507.9	505.7	504.7	505.5
5°	473.0	473.6	470.0	471.2
7.5°	442.8	440.2	441.0	439.6
10°	410.8	409.4	407.3	407.7
12.5°	389.3	380.0	379.4	377.7
15°	359.1	354.0	352.8	352.4
17.5°	335.0	330.7	332.3	331.1
20°	313.3	313.5	311.0	309.4
22.5°	294.2	293.8	292.8	291.2
25°	278.0	278.0	275.6	275.1
27.5°	263.2	263.6	261.6	261.6
30°	252.2	250.8	250.6	251.0
32.5°	241.1	239.5	239.7	239.5
35°	229.3	229.7	229.1	228.5
37.5°	219.2	219.2	219.2	218.6
40°	209.4	209.7	209.2	209.5
42.5°	199.5	199.7	199.7	198.9
45°	189.6	189.4	189.0	189.8
47.5°	179.4	179.4	179.2	179.6
50°	168.1	168.5	167.9	167.7
52.5°	156.7	156.9	156.7	157.1
55°	145.0	145.0	145.2	145.6
57.5°	133.0	134.4	133.4	134.2
60°	121.2	121.3	121.5	121.2
62.5°	109.9	109.7	109.9	110.5
65°	97.7	98.1	97.9	97.5
67.5°	85.6	85.2	85.8	85.2
70°	72.8	73.6	73.0	73.8
72.5°	61.2	61.0	61.4	60.4
75°	48.9	48.9	49.1	48.9
77.5°	37.5	37.1	36.9	36.3
80°	25.8	25.8	25.1	25.7
82.5°	15.8	16.0	16.2	15.0
85°	7.5	7.5	7.3	7.1
87.5°	1.6	1.6	1.8	2.0
90°	0.0	0.0	0.0	0.0

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