

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: P242481

Luminaire Tested: **S123DR-S340D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242481
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S340D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 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: 1170.9 lumens
Efficiency: N/A
Efficacy: 100.9 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

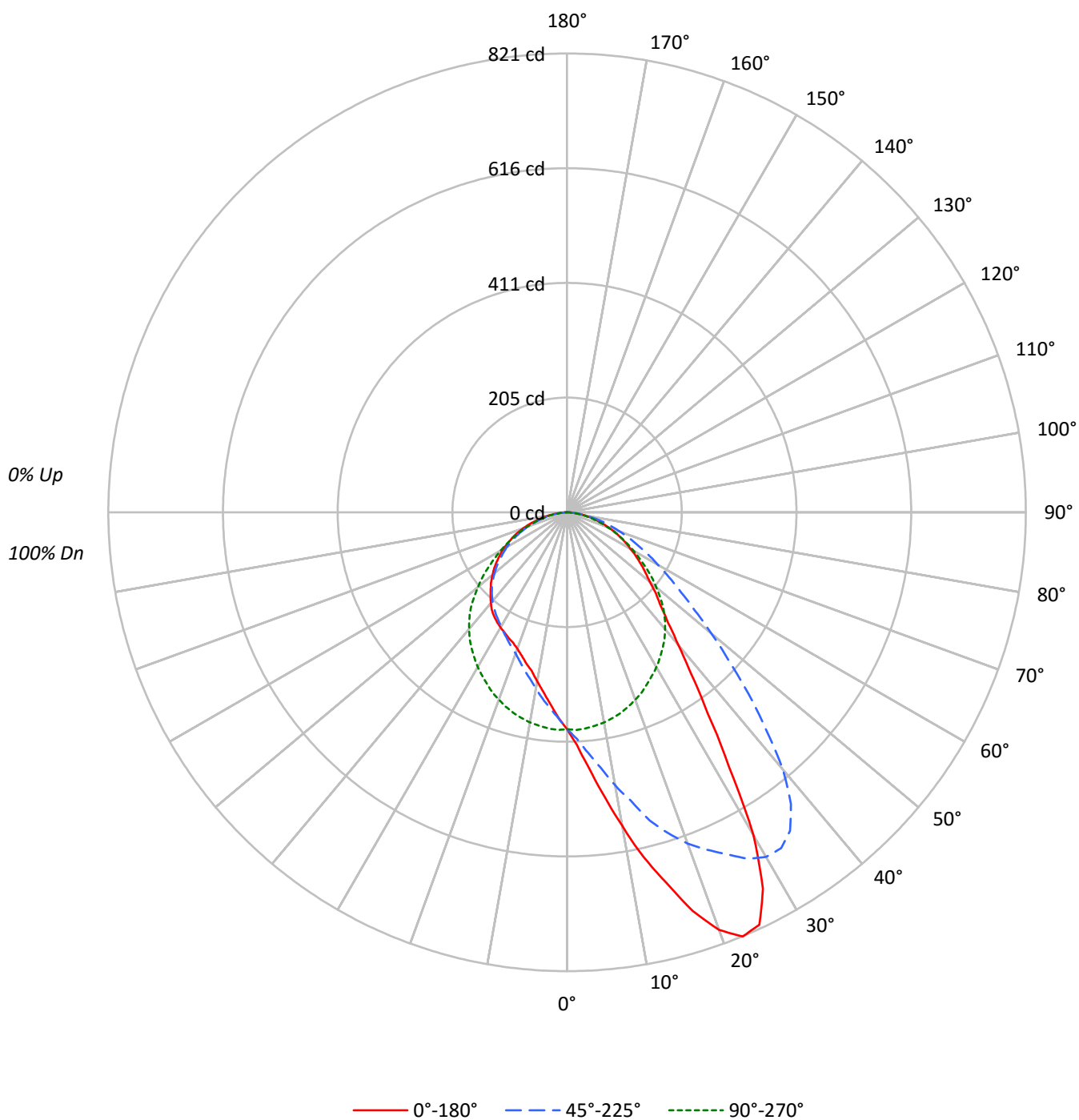
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53		
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47		
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41		
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36		
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33		
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29		
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4702	4702	4702
5°	5608	4722	4186
10°	7019	4698	3780
15°	8608	4661	3519
20°	10256	4601	3351
25°	10889	4530	3313
30°	9334	4477	3331
35°	6492	4402	3365
40°	4889	4315	3355
45°	4059	4186	3312
50°	3636	3920	3281
55°	3400	3635	3242
60°	3190	3336	3207
65°	2997	3040	3106
70°	2810	2704	2959
75°	2520	2370	2712
80°	2206	1941	2338
85°	1725	1405	1572

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.2	3.3
10°-20°	122.5	10.5
20°-30°	206.2	17.6
30°-40°	233.0	19.9
40°-50°	208.7	17.8
50°-60°	168.5	14.4
60°-70°	117.4	10.0
70°-80°	61.6	5.3
80°-90°	14.8	1.3
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°	366.9	31.3
0°-40°	599.9	51.2
0°-60°	977.1	83.5
0°-90°	1170.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1170.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	388	388	388	388	388	
5°	461	432	388	352	344	47
15°	686	571	371	293	280	198
25°	814	675	339	252	248	360
35°	439	696	298	222	227	283
45°	237	459	244	190	193	187
55°	161	249	172	147	153	144
65°	104	140	106	100	108	104
75°	54	66	51	50	58	57
85°	12	14	10	10	11	15
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°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	417.6	417.3	416.3	417.1	415.6	413.5	413.3	411.4	406.0	405.6	404.1
5°	460.9	459.4	459.2	459.0	456.4	452.8	446.0	445.5	436.4	431.9	426.5
7.5°	513.1	512.6	511.1	509.4	500.5	496.2	489.8	481.6	471.0	460.9	454.5
10°	570.3	576.5	568.8	563.5	558.6	549.4	538.7	525.3	512.0	496.4	484.6
12.5°	631.5	633.8	633.8	628.9	620.6	605.4	584.4	569.3	557.3	528.7	518.6
15°	686.0	697.5	690.2	673.3	673.6	660.3	635.5	608.2	593.8	571.0	540.0
17.5°	747.7	749.8	747.5	731.7	724.0	704.7	682.3	656.9	629.7	602.0	569.9
20°	795.1	793.9	787.4	780.0	763.9	749.6	724.6	695.4	657.9	630.8	594.9
22.5°	821.4	819.3	817.1	811.2	798.4	782.8	761.0	728.5	693.2	653.3	610.5
25°	814.2	816.7	817.1	815.4	810.7	801.5	783.8	758.4	722.7	674.8	631.5
27.5°	759.0	765.2	773.1	778.3	786.8	792.4	786.8	770.8	741.5	698.6	645.5
30°	666.9	659.4	678.0	701.5	717.4	745.6	761.4	762.4	747.5	712.0	660.5
32.5°	539.1	551.3	556.9	587.2	626.8	659.4	694.7	726.1	733.4	712.7	669.3
35°	438.7	449.0	464.1	479.1	516.7	549.0	604.3	652.4	690.7	695.8	668.2
37.5°	364.6	370.7	379.9	395.8	421.6	461.6	505.4	568.0	620.8	658.0	654.3
40°	309.0	310.5	321.2	332.7	352.6	384.2	422.7	476.5	543.0	600.7	624.8
42.5°	267.3	271.0	274.0	284.9	299.8	321.6	356.7	398.8	458.4	527.0	579.9
45°	236.8	240.6	243.4	250.7	262.0	278.0	303.0	343.6	390.0	458.6	522.0
47.5°	215.8	215.4	217.8	223.7	231.8	244.5	263.0	290.0	334.6	391.9	458.2
50°	192.8	195.9	196.6	200.9	206.9	215.8	230.4	252.6	287.6	336.4	396.2
52.5°	176.7	177.1	179.5	182.3	187.4	193.8	206.0	222.2	247.7	287.6	341.3
55°	160.9	160.9	163.0	165.4	168.4	174.6	183.1	195.9	216.7	249.0	294.5
57.5°	146.2	147.0	148.9	149.4	152.1	156.4	163.7	173.9	189.8	216.0	253.6
60°	131.6	133.3	133.1	134.6	136.8	140.0	146.0	153.9	167.8	187.8	218.2
62.5°	118.8	118.2	118.2	120.1	122.4	125.4	128.8	135.3	146.6	163.7	188.5
65°	104.5	104.1	105.4	106.6	107.3	109.6	112.6	118.6	126.5	139.7	159.8
67.5°	92.1	91.0	91.9	92.3	93.6	95.5	98.5	102.2	108.6	119.7	135.9
70°	79.3	78.4	78.2	78.6	79.7	81.0	83.1	86.6	92.5	100.9	112.0
72.5°	66.2	65.6	65.6	66.5	66.9	67.7	69.0	72.2	76.5	82.3	92.5
75°	53.8	53.8	53.8	53.9	54.5	55.3	56.4	58.1	61.7	66.2	73.1
77.5°	42.5	42.7	42.3	42.1	43.0	43.4	43.6	45.5	47.6	50.9	56.4
80°	31.6	30.6	31.0	31.6	32.0	32.1	32.7	33.1	34.8	36.5	40.0
82.5°	21.4	20.7	20.7	21.6	21.6	21.8	22.4	22.9	23.3	24.8	26.3
85°	12.4	12.4	12.6	12.6	12.8	12.6	13.2	13.3	13.3	14.3	15.4
87.5°	5.6	5.3	5.5	5.6	5.5	5.6	5.8	6.0	6.2	6.4	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	403.0	401.5	400.0	397.3	395.1	391.9	391.0	389.8	386.4	383.4	381.2
5°	424.4	419.9	413.3	407.3	402.4	395.8	392.1	388.1	382.5	377.4	373.3
7.5°	444.9	437.0	427.8	417.8	408.2	399.0	391.7	385.1	377.8	370.7	365.2
10°	470.3	457.5	443.2	427.8	414.6	401.9	391.1	381.7	371.6	362.8	355.4
12.5°	499.2	478.7	457.7	438.1	422.0	403.0	389.5	376.9	365.0	353.9	345.5
15°	520.8	496.8	473.5	447.7	424.0	401.9	386.4	371.4	358.1	347.2	336.6
17.5°	542.3	515.9	486.2	455.2	427.4	401.9	380.8	364.6	348.3	335.1	325.0
20°	559.9	528.9	494.1	461.6	430.0	400.7	377.0	356.7	338.7	324.6	312.8
22.5°	575.2	537.6	501.3	465.9	429.9	397.7	370.1	349.0	329.1	315.4	302.6
25°	584.7	541.3	505.2	464.4	425.2	392.5	362.4	338.7	319.2	303.0	290.0
27.5°	593.8	540.8	500.0	456.0	419.5	387.0	354.7	329.3	308.8	291.3	278.0
30°	602.8	541.7	490.8	447.3	410.5	376.7	345.5	319.9	298.1	280.2	267.8
32.5°	608.4	541.1	482.3	435.3	396.2	367.3	335.5	308.8	286.3	268.8	256.9
35°	609.9	537.9	472.3	417.8	380.6	351.5	325.0	297.5	274.0	257.7	244.2
37.5°	606.7	532.1	461.4	402.0	361.8	332.9	309.8	286.3	263.7	245.5	233.6
40°	596.4	526.5	448.3	385.1	342.3	314.6	295.7	272.7	250.5	233.4	222.5
42.5°	576.7	515.0	433.8	366.3	322.0	294.3	277.2	259.0	238.3	222.5	211.6
45°	542.1	497.3	419.3	347.5	302.0	273.5	258.1	244.2	225.2	209.6	200.2
47.5°	497.9	473.5	398.5	327.8	281.2	253.6	237.4	225.9	211.1	198.5	189.3
50°	451.5	442.6	377.2	307.5	260.3	233.4	218.0	207.9	197.9	185.3	177.1
52.5°	397.9	406.9	352.4	286.4	239.1	212.8	198.5	191.0	182.1	172.4	165.4
55°	348.3	368.0	323.1	262.4	218.0	192.8	179.1	172.0	166.7	159.0	152.8
57.5°	300.2	325.4	292.7	238.1	197.4	175.4	161.8	153.8	150.4	146.0	141.0
60°	258.3	283.1	259.6	213.7	176.5	155.8	144.2	137.6	134.2	131.4	127.2
62.5°	220.9	246.0	227.2	188.9	156.0	137.2	127.4	121.0	118.6	117.5	114.1
65°	187.2	208.8	195.7	163.0	136.6	119.7	110.5	106.0	103.6	103.0	100.7
67.5°	158.1	174.8	164.7	140.0	118.6	103.2	95.1	91.2	89.1	88.9	87.0
70°	129.5	144.9	137.6	115.8	97.9	86.5	79.7	76.3	75.2	75.0	74.1
72.5°	107.3	116.9	111.5	94.2	81.4	71.2	66.7	63.2	61.8	62.2	61.7
75°	82.7	90.8	87.4	74.8	63.7	57.0	52.8	50.6	49.4	50.0	49.2
77.5°	63.2	68.8	65.4	55.8	48.7	43.6	40.4	38.9	37.8	37.8	37.4
80°	44.9	47.9	46.2	41.0	35.3	31.2	28.8	27.8	27.3	27.1	26.9
82.5°	28.8	31.2	29.1	25.9	22.6	20.5	19.4	18.0	17.7	17.9	17.7
85°	16.2	17.1	16.4	14.1	12.6	11.5	10.7	10.1	9.8	10.0	9.6
87.5°	7.0	7.1	6.6	5.8	5.5	4.9	4.9	4.5	4.1	4.1	3.9
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9	387.9
2.5°	379.9	378.5	376.7	373.9	371.6	368.0	368.0	368.6	368.6	368.4	368.0
5°	369.9	367.1	363.7	359.8	355.6	351.5	350.7	349.2	348.1	347.3	346.4
7.5°	359.8	355.1	350.4	344.9	340.2	336.3	333.4	331.0	329.5	327.8	326.5
10°	349.4	343.2	337.4	331.6	325.2	320.1	316.9	314.6	313.0	311.4	310.7
12.5°	337.2	329.9	323.3	317.8	310.7	305.4	302.4	301.7	299.6	296.0	294.2
15°	325.4	318.8	311.1	302.6	299.2	292.8	289.3	287.6	286.4	284.0	283.3
17.5°	315.6	306.7	297.9	291.7	285.5	280.4	278.4	276.1	274.6	272.4	271.8
20°	303.4	295.7	287.8	281.0	274.4	268.8	267.1	265.6	264.1	263.1	262.4
22.5°	291.0	283.3	277.1	270.8	263.7	260.5	258.6	256.9	256.0	255.4	254.7
25°	279.5	272.7	265.4	259.8	254.1	251.7	250.5	249.6	248.9	247.9	247.7
27.5°	269.3	261.8	255.6	250.2	246.0	244.0	242.7	242.1	242.1	242.5	242.7
30°	257.7	250.9	246.0	241.5	237.8	235.9	235.7	235.7	236.5	236.6	237.0
32.5°	247.0	241.7	236.8	232.5	229.9	228.7	229.7	229.7	230.2	230.8	231.6
35°	236.6	231.8	228.0	224.2	221.8	222.4	222.7	223.1	224.0	225.2	225.9
37.5°	226.9	222.4	218.4	215.4	213.9	215.0	216.0	216.7	217.8	218.8	219.5
40°	216.2	213.0	209.2	206.6	206.9	207.5	208.3	209.2	210.1	210.7	211.5
42.5°	206.2	202.8	200.2	198.1	198.7	199.4	199.8	200.2	201.3	202.4	202.8
45°	196.0	193.4	190.8	189.5	189.8	190.2	190.6	191.2	192.1	192.8	193.0
47.5°	184.6	182.7	181.0	179.5	180.3	180.1	180.6	181.8	182.1	182.5	183.6
50°	173.7	172.0	169.9	169.5	169.5	169.5	169.7	171.2	171.2	172.0	172.7
52.5°	161.6	160.7	159.6	158.8	158.4	158.4	159.4	160.0	160.3	161.5	162.2
55°	149.8	148.7	147.5	147.0	146.6	147.0	148.5	148.9	149.8	150.4	150.9
57.5°	137.4	136.6	135.7	135.3	135.3	135.5	136.6	137.6	137.8	139.7	140.4
60°	125.2	123.9	123.1	123.1	122.7	124.4	124.1	125.9	126.3	127.4	128.8
62.5°	112.6	110.7	110.5	110.5	111.3	111.5	112.2	112.8	113.9	115.4	116.3
65°	98.9	97.9	99.2	99.1	98.7	99.8	99.8	100.7	101.9	103.2	105.3
67.5°	86.1	85.3	85.7	85.5	86.1	86.8	87.4	88.2	89.5	91.0	92.3
70°	73.1	73.7	72.7	73.5	74.1	74.2	74.6	75.7	77.3	78.2	79.7
72.5°	60.5	60.3	60.7	60.9	61.5	61.8	62.2	63.5	65.2	66.0	67.1
75°	48.5	48.3	48.9	48.9	49.8	50.2	50.6	51.1	52.6	53.8	54.7
77.5°	37.6	37.8	37.6	38.3	38.0	38.2	39.3	39.8	40.0	42.5	42.9
80°	26.7	27.1	27.3	27.4	27.6	27.3	28.6	29.1	29.1	30.4	31.4
82.5°	17.3	17.5	18.0	18.2	18.2	18.8	18.6	19.0	19.5	19.9	21.2
85°	9.6	10.1	10.3	10.1	10.3	10.0	10.5	10.7	10.9	10.9	10.9
87.5°	3.8	3.9	3.8	3.9	3.8	3.9	3.9	3.6	3.6	4.1	3.4
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):

	165°	170°	175°	180°
0°	387.9	387.9	387.9	387.9
2.5°	366.7	366.5	367.8	366.9
5°	345.3	345.8	344.0	344.0
7.5°	325.9	325.2	325.4	324.0
10°	308.4	307.3	306.9	307.1
12.5°	294.0	294.0	291.0	291.0
15°	283.3	279.7	279.3	280.4
17.5°	271.4	269.3	269.5	269.2
20°	262.4	261.3	261.1	259.8
22.5°	254.1	253.9	254.1	252.6
25°	247.5	248.5	247.7	247.7
27.5°	243.0	243.0	242.5	242.5
30°	237.8	237.6	238.0	238.0
32.5°	232.5	232.9	232.9	233.1
35°	227.1	227.2	227.8	227.4
37.5°	219.9	220.9	220.7	221.0
40°	211.6	212.2	212.0	212.0
42.5°	203.2	203.6	203.0	202.6
45°	193.8	193.4	194.0	193.2
47.5°	183.4	183.6	183.8	184.6
50°	173.1	174.2	174.2	174.0
52.5°	163.0	163.3	164.3	164.3
55°	152.4	152.8	153.2	153.4
57.5°	141.7	141.5	142.3	142.5
60°	130.3	130.3	131.8	132.3
62.5°	118.0	118.8	120.3	119.2
65°	106.2	107.7	107.5	108.3
67.5°	93.8	94.7	96.2	96.2
70°	81.2	82.1	82.9	83.5
72.5°	69.0	69.4	71.4	70.3
75°	56.0	57.3	58.5	57.9
77.5°	43.6	45.3	45.7	45.1
80°	32.7	32.5	33.6	33.5
82.5°	21.8	21.6	22.0	22.2
85°	11.7	12.2	11.5	11.3
87.5°	3.4	3.4	3.2	3.0
90°	0.0	0.0	0.0	0.0

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