

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: P242564

Luminaire Tested: **S123RDR-S340D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242564  
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-S340D830-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

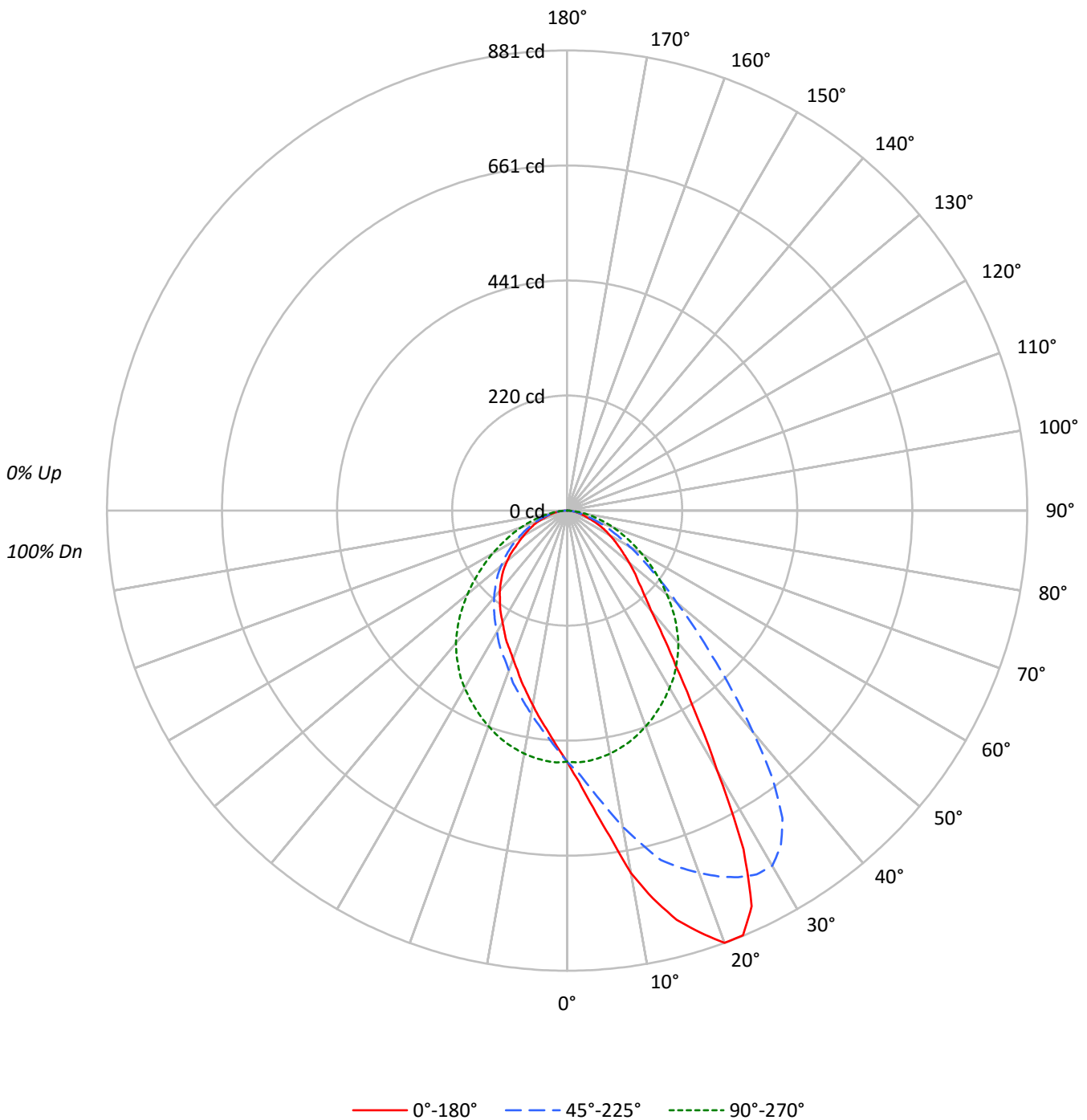
Lumens per Lamp: N/A  
Luminaire Lumens: 1196.9 lumens  
Efficiency: N/A  
Efficacy: 103.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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°	5827	5827	5827
5°	6945	5851	5153
10°	8672	5818	4655
15°	10180	5759	4245
20°	11360	5669	3897
25°	11178	5576	3682
30°	8035	5489	3461
35°	5365	5377	3319
40°	3953	5242	3171
45°	3315	5005	3027
50°	2927	4695	2825
55°	2566	4341	2549
60°	2284	4000	2335
65°	2008	3637	2171
70°	1574	3310	1985
75°	1386	2890	1812
80°	1208	2457	1780
85°	974	1975	1891



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.2	3.9
10°-20°	147.8	12.3
20°-30°	232.7	19.4
30°-40°	242.0	20.2
40°-50°	207.1	17.3
50°-60°	157.8	13.2
60°-70°	101.1	8.4
70°-80°	48.4	4.0
80°-90°	12.7	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°	427.7	35.7
0°-40°	669.7	56.0
0°-60°	1034.6	86.4
0°-90°	1196.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1196.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	481	481	481	481	481	
5°	571	535	481	434	424	58
15°	811	693	459	361	338	230
25°	836	774	417	298	275	363
35°	363	719	363	243	224	236
45°	193	390	292	192	177	152
55°	121	195	205	139	121	110
65°	70	96	127	87	76	69
75°	30	35	62	44	39	32
85°	7	8	14	13	14	8
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°	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7
2.5°	519.8	520.6	517.9	517.5	514.4	513.6	513.6	509.3	506.6	503.1	501.1
5°	570.8	574.1	572.5	568.8	562.6	561.1	557.2	551.1	544.1	535.4	531.3
7.5°	629.3	636.0	634.8	629.0	622.5	618.3	607.4	598.6	585.2	573.1	563.6
10°	704.6	699.8	696.1	690.6	684.6	674.9	663.4	647.6	629.3	614.8	598.8
12.5°	760.9	761.2	756.2	750.5	741.4	732.3	717.5	697.4	675.3	652.9	634.0
15°	811.2	812.4	809.3	803.3	791.4	775.1	753.7	745.7	715.3	692.6	670.0
17.5°	847.0	847.2	846.5	838.5	825.6	814.4	794.5	775.8	747.0	716.3	686.0
20°	880.7	878.6	879.1	869.8	860.7	847.4	828.0	797.4	774.7	737.9	706.4
22.5°	879.9	879.9	881.7	880.1	874.1	864.7	850.5	825.8	795.3	758.1	721.6
25°	835.8	834.2	843.9	846.5	857.0	858.9	854.4	840.2	812.8	774.5	730.7
27.5°	730.9	724.9	745.1	765.1	791.6	808.5	825.8	829.7	816.7	785.4	739.5
30°	574.1	593.4	602.5	635.0	671.2	714.4	752.3	788.3	797.2	785.2	749.2
32.5°	452.3	468.5	475.7	502.5	535.6	588.1	649.6	704.4	747.2	761.6	743.5
35°	362.6	362.8	380.1	392.4	423.7	475.7	530.9	599.2	667.1	718.6	723.9
37.5°	299.2	300.0	311.1	323.5	348.6	377.8	429.0	486.7	568.3	645.1	685.0
40°	249.8	251.7	259.5	271.6	288.5	309.3	347.1	400.6	466.1	553.9	625.8
42.5°	218.1	221.4	224.5	233.1	242.0	261.1	289.9	328.2	386.2	468.1	553.7
45°	193.4	195.1	198.2	202.5	211.9	225.5	246.1	273.9	323.3	390.1	473.1
47.5°	174.5	173.5	177.0	180.7	187.0	196.9	211.3	235.4	272.4	328.4	400.2
50°	155.2	154.9	157.2	159.9	165.9	172.6	184.0	201.0	229.0	273.5	337.9
52.5°	137.0	138.1	139.5	143.0	146.9	152.1	161.9	173.1	196.1	232.9	284.0
55°	121.4	122.0	124.3	126.1	129.2	134.8	141.2	151.4	167.9	194.7	238.9
57.5°	107.8	107.6	109.9	110.1	114.0	118.7	123.9	131.9	144.5	165.6	196.5
60°	94.2	93.6	95.5	96.9	98.8	102.5	106.6	114.4	123.9	138.5	164.0
62.5°	81.9	81.7	82.9	84.4	85.8	89.1	92.4	97.9	104.9	116.7	135.6
65°	70.0	70.6	71.2	71.8	72.6	74.7	78.0	82.1	87.2	95.9	110.5
67.5°	57.6	58.4	58.6	60.1	61.7	62.8	64.6	68.5	72.4	80.3	88.9
70°	44.4	44.2	44.4	45.1	47.3	49.6	52.3	54.9	57.2	62.3	69.3
72.5°	36.6	36.2	36.8	36.8	37.7	37.9	39.3	41.8	44.9	47.9	52.5
75°	29.6	29.6	29.6	29.6	30.5	30.9	31.5	32.1	33.1	34.8	38.5
77.5°	23.0	23.0	23.5	23.7	23.9	24.1	24.5	25.1	25.5	26.3	28.2
80°	17.3	17.5	17.3	17.5	17.5	17.9	18.1	18.7	18.9	20.0	20.6
82.5°	11.9	11.7	11.9	12.1	12.1	12.6	12.6	13.0	13.0	13.4	14.0
85°	7.0	6.6	7.0	6.8	7.2	6.8	7.0	7.4	7.4	7.6	8.4
87.5°	2.1	2.5	2.1	2.3	2.3	2.5	2.5	2.5	2.9	2.7	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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7
2.5°	500.2	499.6	496.7	493.4	489.1	486.2	484.0	482.7	479.0	474.5	471.4
5°	527.0	520.8	514.2	506.2	498.8	491.2	486.4	480.9	474.1	466.5	461.1
7.5°	553.5	542.8	531.1	519.0	506.6	495.7	485.6	477.4	467.1	456.6	449.4
10°	585.0	567.3	549.0	530.3	513.2	497.1	484.8	472.7	459.7	447.1	437.7
12.5°	613.6	588.9	567.1	543.0	520.0	500.0	480.9	466.1	449.8	436.2	425.1
15°	636.9	613.0	587.5	552.5	523.5	499.2	477.6	458.9	439.9	423.5	413.0
17.5°	661.1	624.9	591.4	564.2	526.4	496.9	471.6	449.8	429.2	412.4	399.2
20°	675.1	640.4	603.1	565.9	528.8	494.9	464.2	439.5	417.9	398.2	386.2
22.5°	683.6	643.0	603.3	562.6	522.7	487.1	456.8	429.0	405.2	386.6	371.2
25°	689.7	642.8	599.6	560.1	520.0	481.7	445.7	416.9	391.6	371.6	356.0
27.5°	694.7	640.4	590.8	547.8	507.2	468.3	435.8	405.0	379.6	358.9	341.8
30°	695.9	637.3	580.3	532.7	491.4	456.4	421.4	392.2	365.0	342.6	327.0
32.5°	697.6	629.7	566.1	514.8	472.2	437.7	406.8	379.2	351.3	329.2	313.2
35°	691.8	627.8	551.7	493.6	451.3	417.7	389.1	363.4	336.0	314.6	298.4
37.5°	674.3	617.7	537.3	470.0	426.2	395.3	371.4	348.0	322.7	299.2	284.2
40°	644.9	601.3	520.0	448.8	402.5	370.6	349.6	331.3	307.0	285.4	268.9
42.5°	601.1	578.8	503.5	426.6	375.7	345.3	328.4	311.5	291.0	268.9	253.7
45°	545.5	549.0	479.9	402.7	351.5	320.6	303.9	292.0	273.1	255.0	239.1
47.5°	478.0	507.2	454.6	377.6	325.1	296.1	281.5	270.6	257.4	238.7	224.1
50°	412.2	458.9	422.9	352.3	300.6	271.8	257.4	249.0	237.9	223.9	210.1
52.5°	351.5	402.5	384.6	324.1	274.1	248.4	234.4	227.8	219.6	206.6	194.5
55°	296.5	347.3	342.4	295.7	247.5	223.9	213.2	205.4	199.4	189.5	179.6
57.5°	248.8	298.0	299.0	264.2	224.5	200.4	191.2	185.0	180.9	173.1	163.4
60°	204.1	248.4	257.0	232.3	199.4	178.8	169.8	165.0	161.9	156.0	149.0
62.5°	167.1	203.1	213.2	197.1	175.3	156.4	149.8	145.3	143.4	138.5	132.5
65°	133.5	164.8	174.3	164.4	151.9	136.4	130.7	126.8	124.9	122.0	117.5
67.5°	105.4	129.6	139.9	131.7	127.0	116.1	112.1	109.9	108.2	106.2	102.3
70°	80.7	97.5	108.2	106.4	102.7	97.5	94.9	93.4	91.8	90.1	86.8
72.5°	60.9	71.2	81.1	82.7	79.8	79.8	77.6	77.2	76.3	74.3	72.8
75°	43.0	51.0	58.0	60.7	61.9	63.0	61.9	61.7	61.5	59.9	58.9
77.5°	29.8	35.0	39.7	44.4	46.1	47.5	47.7	48.6	47.9	46.9	46.5
80°	21.6	22.6	25.7	29.6	32.7	34.0	34.8	35.2	35.0	34.8	34.0
82.5°	14.2	15.0	16.1	18.5	21.0	23.3	23.7	23.5	24.1	24.3	23.7
85°	8.4	8.6	9.1	9.5	10.9	13.2	13.8	14.2	14.6	14.6	13.4
87.5°	3.3	3.1	3.5	3.5	4.1	4.3	5.6	6.6	6.8	6.0	6.0
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°	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7	480.7
2.5°	470.4	467.7	465.9	461.8	459.1	456.2	453.3	455.2	455.0	454.8	454.8
5°	456.6	451.9	447.6	442.0	438.5	434.2	430.9	430.5	431.3	428.4	426.8
7.5°	443.6	437.5	431.3	425.5	419.2	414.2	411.1	409.9	407.6	405.8	404.1
10°	429.9	422.2	416.3	408.7	401.7	395.5	391.6	388.9	387.5	386.0	383.4
12.5°	415.7	408.3	400.2	391.4	384.8	377.4	374.7	371.6	368.5	366.9	363.0
15°	401.9	392.2	384.2	375.1	367.7	360.7	356.6	350.6	349.8	347.8	344.1
17.5°	388.5	377.8	366.1	359.9	352.5	345.1	338.5	336.6	330.5	328.4	324.9
20°	372.0	362.4	353.9	345.1	332.9	326.1	321.2	318.5	313.8	310.9	308.9
22.5°	357.8	348.0	337.9	327.2	317.7	309.9	306.6	302.1	300.0	295.7	293.4
25°	344.5	333.8	322.0	310.9	303.7	298.0	292.2	288.5	284.8	282.9	278.8
27.5°	328.2	317.5	306.2	297.5	289.3	283.6	278.0	274.9	270.2	267.1	264.8
30°	315.2	302.1	292.6	285.0	273.7	268.3	264.4	260.3	257.0	253.7	251.5
32.5°	300.2	288.5	279.6	269.8	261.7	255.8	250.4	246.9	244.3	241.2	238.9
35°	284.4	274.3	265.0	255.6	249.2	243.2	237.3	234.2	231.5	228.6	226.6
37.5°	270.0	260.5	251.9	242.8	235.0	229.8	224.9	222.9	219.1	217.1	215.0
40°	256.8	247.5	238.1	229.4	221.2	217.5	213.2	209.7	206.4	204.9	202.7
42.5°	242.4	233.1	225.5	216.1	209.7	204.3	200.4	196.5	194.2	192.0	191.0
45°	228.2	220.0	212.2	202.9	196.5	192.2	187.7	184.2	181.9	180.5	178.2
47.5°	214.6	206.2	198.4	190.1	184.0	179.0	174.3	172.0	168.9	167.3	165.6
50°	199.6	192.2	183.8	176.3	170.2	165.2	161.5	158.4	155.8	153.5	152.5
52.5°	185.8	177.8	170.8	164.0	157.4	151.7	148.4	145.1	143.2	140.5	139.3
55°	170.4	162.8	156.6	149.8	143.4	138.7	134.6	131.7	129.6	126.8	125.1
57.5°	156.2	149.6	142.0	136.0	129.2	125.5	122.0	117.9	115.4	113.2	111.5
60°	141.8	134.0	127.6	122.0	116.3	111.1	108.0	104.9	102.3	100.0	98.6
62.5°	126.8	120.2	114.2	108.0	102.9	98.6	94.9	92.4	90.1	88.9	87.5
65°	111.3	106.0	99.8	94.9	89.9	86.6	83.7	81.5	79.8	78.8	77.6
67.5°	97.1	92.0	86.4	81.3	78.0	75.3	73.3	71.2	70.4	69.1	68.3
70°	83.3	78.0	73.3	69.6	66.3	64.4	63.2	61.7	60.9	59.3	58.4
72.5°	68.3	64.8	61.7	58.9	56.4	54.7	53.1	51.2	49.8	47.9	47.1
75°	56.2	52.7	50.0	47.9	46.3	44.0	41.8	39.9	39.3	38.7	38.5
77.5°	43.8	41.6	39.5	37.9	35.6	33.5	32.9	32.5	32.3	31.9	31.9
80°	32.7	30.7	29.2	27.2	25.9	25.9	25.9	25.5	25.7	25.7	25.7
82.5°	22.2	20.4	19.8	19.3	19.3	19.5	19.5	19.8	19.5	20.0	19.8
85°	12.6	12.8	13.2	13.0	13.2	13.2	13.6	13.4	13.6	13.2	13.6
87.5°	5.8	6.4	6.6	6.8	7.0	6.8	7.0	7.0	7.2	7.2	7.2
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):**

	165°	170°	175°	180°
0°	480.7	480.7	480.7	480.7
2.5°	452.3	452.1	452.3	451.5
5°	426.2	425.9	425.3	423.5
7.5°	402.5	402.1	400.4	400.8
10°	381.9	382.1	379.6	378.2
12.5°	362.0	360.7	358.9	357.2
15°	344.9	342.8	337.9	338.3
17.5°	323.7	322.0	321.8	318.9
20°	305.6	304.5	305.0	302.1
22.5°	291.4	290.3	288.1	287.7
25°	277.6	275.9	274.3	275.3
27.5°	263.6	262.4	260.5	260.5
30°	250.4	249.2	248.4	247.3
32.5°	237.0	237.0	235.4	235.4
35°	225.7	224.5	224.1	224.3
37.5°	214.8	213.2	212.4	211.5
40°	202.9	201.2	200.8	200.4
42.5°	189.5	189.1	188.9	188.1
45°	177.6	177.4	176.1	176.6
47.5°	164.8	163.8	163.2	163.8
50°	151.7	151.2	149.4	149.8
52.5°	138.5	136.6	136.2	135.8
55°	123.7	121.8	121.0	120.6
57.5°	109.1	108.4	107.6	108.2
60°	96.5	96.5	96.5	96.3
62.5°	86.8	86.2	86.0	86.4
65°	77.0	76.8	75.9	75.7
67.5°	67.9	67.1	67.1	66.7
70°	57.4	57.0	55.8	56.0
72.5°	46.1	45.7	45.7	45.3
75°	38.3	38.1	37.9	38.7
77.5°	31.9	31.9	32.1	31.7
80°	25.7	25.7	25.5	25.5
82.5°	19.3	19.5	19.8	19.3
85°	13.6	13.4	13.8	13.6
87.5°	7.6	7.2	7.2	7.4
90°	0.0	0.0	0.0	0.0

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