

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: P242122

Luminaire Tested: **S121DR-S305D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242122  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-S305D835-X4F0-XX-UDD-A-W  
Description: DEFINE 1 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1250.3 lumens  
Efficiency: N/A  
Efficacy: 107.8 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.37  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct

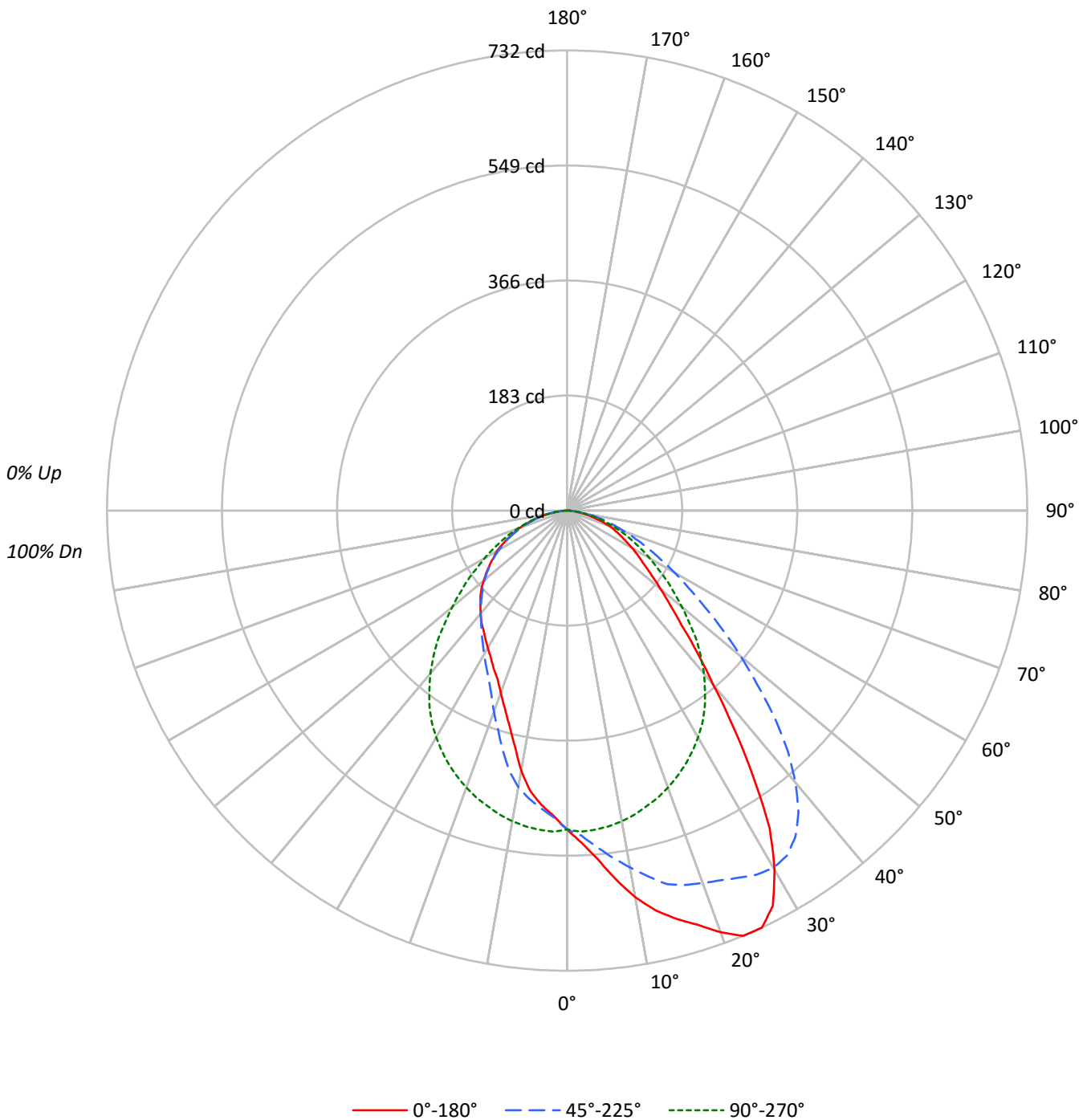
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P242122

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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	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	85	81	88	83	79	85	80	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	54
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48
6	73	60	52	46	71	59	51	45	57	50	45	56	49	45	54	49	44	42
7	68	55	46	41	66	54	46	40	52	45	40	51	45	40	50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	44	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30	28

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	15034	15034	15034
5°	16546	15157	13973
10°	18786	15101	12636
15°	20626	14936	10862
20°	22510	14785	9721
25°	23938	14555	9049
30°	22574	14253	8635
35°	18653	13803	8388
40°	13982	13089	8277
45°	10777	12202	8179
50°	8938	10980	7988
55°	7713	9970	7759
60°	7087	8990	7656
65°	6548	8126	7221
70°	6203	7303	6922
75°	5094	6445	6148
80°	4027	5255	5068
85°	3128	3876	3400



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.8	3.9
10°-20°	142.3	11.4
20°-30°	217.9	17.4
30°-40°	248.6	19.9
40°-50°	223.1	17.8
50°-60°	175.0	14.0
60°-70°	119.1	9.5
70°-80°	61.3	4.9
80°-90°	14.1	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°	409.0	32.7
0°-40°	657.6	52.6
0°-60°	1055.8	84.4
0°-90°	1250.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1250.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	507	507	507	507	507	
5°	556	537	510	476	470	55
15°	672	615	487	395	354	191
25°	732	644	445	295	277	330
35°	516	633	382	237	232	320
45°	257	467	291	192	195	204
55°	149	267	193	148	150	136
65°	93	142	116	101	103	93
75°	44	62	56	52	54	48
85°	9	12	11	11	10	11
90°	0	0	0	0	0	



TEST NUMBER: P242122

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4
2.5°	528.8	528.8	529.6	529.4	528.5	527.0	525.7	524.2	520.3	517.6	520.0
5°	556.3	557.4	558.5	558.2	555.0	552.1	548.0	546.9	539.9	536.6	535.5
7.5°	591.2	591.0	591.4	587.7	584.9	582.0	576.6	569.8	561.5	556.9	552.6
10°	624.4	626.4	625.5	620.9	616.5	613.5	604.7	596.4	586.2	576.4	570.9
12.5°	651.5	650.4	654.1	649.7	644.5	638.8	630.3	622.9	609.5	596.2	585.1
15°	672.4	671.3	671.8	668.5	663.0	658.0	649.3	641.4	628.8	615.4	603.7
17.5°	690.8	691.9	689.9	686.0	678.5	672.6	661.7	651.0	637.7	624.4	612.8
20°	713.9	715.0	711.3	705.6	698.4	688.4	677.0	661.7	646.9	630.5	616.1
22.5°	732.2	731.6	730.3	724.8	717.2	707.8	691.4	674.6	656.9	636.6	618.1
25°	732.2	733.1	733.8	730.9	725.9	718.0	706.9	689.2	669.4	644.5	618.5
27.5°	708.7	712.6	715.4	715.4	714.3	714.1	707.6	696.4	677.9	652.8	624.0
30°	659.8	665.0	669.4	676.1	684.2	689.4	691.4	687.0	677.4	656.3	626.4
32.5°	599.5	599.1	608.0	618.9	634.9	646.0	657.1	663.7	663.3	650.6	625.7
35°	515.7	521.8	532.5	547.8	568.3	586.6	610.9	623.5	633.6	633.1	617.2
37.5°	434.0	434.9	446.9	467.9	486.0	514.4	546.0	572.4	596.7	604.5	599.3
40°	361.5	367.6	375.7	393.2	411.3	436.2	476.4	511.7	541.6	564.8	571.1
42.5°	305.6	308.9	316.8	332.1	348.2	377.9	407.4	445.2	482.9	519.8	538.8
45°	257.2	260.2	267.4	278.1	293.2	316.6	346.9	383.6	424.0	467.2	494.3
47.5°	221.8	222.9	228.4	236.4	250.6	267.7	292.1	327.7	368.5	410.7	450.4
50°	193.9	195.6	199.3	205.7	216.1	232.1	251.5	278.4	316.1	359.8	400.2
52.5°	169.4	170.7	175.1	178.6	186.7	200.2	217.0	241.5	273.3	312.6	354.3
55°	149.3	150.6	152.8	156.8	163.1	172.3	186.7	206.1	233.4	266.6	305.6
57.5°	134.0	134.7	135.1	137.8	142.8	150.2	162.4	177.7	198.9	229.2	263.9
60°	119.6	119.4	121.2	123.1	126.2	130.8	139.7	153.5	172.5	197.1	229.5
62.5°	105.2	106.3	107.4	108.9	110.9	113.5	120.7	131.0	146.1	167.2	193.9
65°	93.4	93.7	94.5	94.8	97.2	99.8	105.2	112.2	124.7	141.9	164.0
67.5°	82.1	82.3	82.1	82.7	83.8	86.0	88.9	94.5	104.1	118.1	137.3
70°	71.6	71.0	70.1	71.2	72.3	73.4	75.3	79.7	86.9	97.4	113.3
72.5°	57.6	58.1	58.5	58.9	59.2	60.7	62.4	65.5	71.2	79.2	91.5
75°	44.5	44.5	45.2	45.6	47.6	48.0	50.0	52.2	56.8	62.4	72.0
77.5°	32.7	32.5	33.6	33.8	34.9	36.2	37.3	39.5	43.0	47.8	54.1
80°	23.6	23.8	23.6	23.6	24.2	25.1	26.6	27.7	30.1	33.2	37.8
82.5°	15.7	15.7	15.9	15.9	16.6	16.6	17.5	18.3	19.9	21.8	25.1
85°	9.2	9.2	9.0	9.0	9.2	9.2	10.0	10.7	10.9	12.2	13.3
87.5°	3.9	3.9	3.7	3.9	3.7	3.9	3.7	4.1	4.4	4.6	5.0
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4
2.5°	519.4	518.7	518.5	516.1	513.7	510.9	510.4	511.3	507.6	503.0	502.8
5°	532.9	530.5	527.0	522.4	518.5	513.3	510.6	509.6	503.9	497.3	496.0
7.5°	548.0	542.1	535.8	528.8	521.8	514.1	509.3	506.5	498.6	490.6	487.3
10°	562.4	554.7	545.1	534.4	524.6	514.1	506.9	501.9	492.3	482.3	477.2
12.5°	579.0	566.3	552.8	539.5	527.5	513.9	503.0	495.4	484.2	473.5	466.1
15°	591.0	572.6	562.2	543.2	528.1	511.7	498.4	486.9	474.6	462.8	455.4
17.5°	600.4	586.0	567.6	546.7	526.4	508.7	492.1	479.2	463.1	450.2	442.1
20°	603.4	588.8	570.0	547.1	526.8	504.1	484.4	468.9	451.7	436.0	424.8
22.5°	602.3	585.7	566.5	544.0	523.5	496.7	476.2	457.6	438.4	421.6	406.3
25°	599.9	580.7	559.6	538.4	515.4	489.0	465.5	445.2	422.0	403.7	385.3
27.5°	598.6	573.5	549.7	526.8	505.0	479.4	454.1	431.4	405.9	383.6	360.0
30°	598.2	568.3	538.4	511.7	491.7	465.7	440.6	416.6	386.6	361.5	337.5
32.5°	597.3	563.9	528.8	496.9	474.0	450.6	424.0	400.2	366.3	340.1	314.4
35°	591.4	556.3	517.6	481.4	454.5	430.3	406.5	381.6	346.5	318.3	293.6
37.5°	578.8	548.0	506.7	465.9	433.8	409.1	387.1	360.0	325.9	295.2	272.2
40°	560.0	534.9	494.9	450.6	412.8	385.8	362.4	338.4	303.2	273.8	253.0
42.5°	535.5	516.1	478.6	432.7	392.5	362.2	338.4	314.6	282.3	253.9	235.3
45°	503.4	491.4	458.5	413.3	372.9	337.7	312.0	291.2	261.3	235.3	218.3
47.5°	467.9	462.6	435.1	391.7	349.1	315.0	284.9	263.1	239.7	217.7	202.6
50°	424.8	429.0	407.4	367.4	326.2	291.2	261.8	238.2	217.9	200.9	187.5
52.5°	384.7	394.5	377.0	339.0	302.2	265.9	236.2	214.6	198.7	184.7	173.1
55°	339.9	354.1	343.6	310.9	274.2	242.1	212.4	193.0	179.2	168.5	158.7
57.5°	296.9	317.0	309.4	279.9	248.7	217.4	189.5	170.3	160.5	152.6	144.3
60°	258.7	277.0	276.0	250.8	219.6	191.9	169.0	151.7	143.0	137.8	130.6
62.5°	224.4	243.0	241.2	218.5	193.9	168.1	148.7	133.0	126.6	120.9	116.4
65°	189.5	205.4	206.3	189.5	165.7	145.0	128.4	115.9	110.3	106.8	103.5
67.5°	157.8	173.3	174.9	161.6	140.6	122.7	110.3	99.8	94.8	91.7	89.3
70°	130.1	142.8	145.6	134.5	116.8	102.8	92.3	84.3	81.0	77.9	77.1
72.5°	105.4	115.7	117.7	107.4	94.3	83.8	75.8	69.6	67.2	64.2	63.5
75°	83.8	91.0	91.3	84.5	74.7	66.6	60.0	56.3	53.7	51.5	51.1
77.5°	60.9	67.2	69.2	64.2	56.1	49.3	45.6	42.8	41.0	40.0	39.7
80°	44.1	48.2	49.1	44.8	40.0	35.8	33.2	30.8	29.7	28.6	28.2
82.5°	27.5	31.2	31.4	28.4	26.0	23.1	21.0	20.1	19.4	18.8	18.8
85°	14.8	16.8	16.6	15.3	14.2	12.7	11.8	11.4	10.9	10.5	10.5
87.5°	5.7	6.3	6.3	6.5	5.7	5.0	4.6	4.8	4.6	4.6	4.6
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4	507.4
2.5°	501.3	500.4	498.2	494.7	492.7	488.4	488.6	489.5	489.7	489.0	488.8
5°	492.3	489.7	486.2	481.8	478.8	475.5	473.3	474.6	474.0	473.8	472.7
7.5°	482.5	479.0	474.6	470.3	466.8	462.4	460.7	459.1	457.4	457.2	456.3
10°	472.7	468.3	463.3	456.9	452.1	446.7	441.4	438.6	435.3	432.9	427.9
12.5°	461.1	453.7	448.0	441.4	432.7	424.0	418.1	410.0	405.6	401.3	395.4
15°	447.8	438.2	428.3	415.2	407.6	395.4	386.6	380.7	374.0	369.6	364.6
17.5°	428.8	418.7	406.3	391.4	377.9	365.5	359.1	351.5	348.7	339.0	338.2
20°	410.0	394.9	379.4	364.4	349.3	340.4	332.3	327.3	322.0	315.9	313.9
22.5°	388.8	369.2	352.8	338.8	325.1	315.3	311.3	305.6	300.6	297.1	293.9
25°	363.1	344.9	328.4	315.3	302.8	295.4	290.4	286.2	284.0	280.1	278.8
27.5°	339.3	321.1	307.8	295.6	285.6	279.0	274.6	270.9	268.1	267.4	265.9
30°	315.0	299.5	286.9	276.4	267.4	263.9	259.8	258.1	256.3	255.4	253.7
32.5°	293.2	279.4	268.3	258.3	253.0	249.8	247.6	245.8	244.5	244.1	243.6
35°	273.3	260.7	251.5	244.3	240.4	236.9	235.8	234.3	233.6	233.4	233.2
37.5°	255.9	244.1	237.1	230.8	227.9	224.6	224.9	224.2	223.8	222.5	223.3
40°	238.2	229.0	221.8	216.8	214.8	213.7	213.3	212.9	213.1	213.1	212.9
42.5°	222.0	214.0	209.4	204.6	203.7	202.8	202.8	202.2	202.4	203.5	203.9
45°	207.4	201.1	196.9	193.0	193.0	191.9	192.8	192.6	193.2	193.9	194.3
47.5°	192.8	187.1	184.0	182.1	181.2	181.2	181.9	183.0	183.4	183.6	184.0
50°	178.1	174.0	171.4	170.3	170.1	171.2	171.8	171.6	172.3	173.1	173.8
52.5°	165.3	161.6	159.8	159.4	159.4	160.2	160.5	161.1	161.6	161.6	162.4
55°	151.9	149.3	148.0	147.8	148.0	148.5	149.3	149.8	149.5	150.0	150.0
57.5°	138.6	136.7	136.0	136.7	136.7	137.5	137.5	137.5	137.3	138.2	138.0
60°	126.2	124.0	124.7	124.4	125.1	125.1	125.8	125.8	125.1	126.0	126.4
62.5°	113.7	113.3	112.4	112.4	113.1	113.3	112.7	113.3	113.5	114.2	114.6
65°	100.6	99.1	99.8	99.6	100.2	101.3	100.4	100.4	101.1	102.0	102.4
67.5°	88.2	86.9	87.5	87.8	87.8	88.2	87.5	88.0	88.9	89.9	90.6
70°	75.5	75.1	75.3	75.1	75.1	76.2	76.4	76.2	77.1	78.2	78.4
72.5°	62.7	63.1	62.7	63.1	63.5	62.9	63.1	63.7	64.6	65.3	66.4
75°	50.9	50.2	50.4	51.5	51.3	51.7	51.5	52.2	53.7	53.3	53.5
77.5°	39.3	39.1	39.3	39.5	39.7	40.4	40.2	41.3	41.5	41.7	42.1
80°	27.9	28.2	28.4	28.8	29.5	29.3	29.7	29.9	30.8	29.9	30.6
82.5°	19.0	18.8	19.2	19.2	19.9	20.3	19.6	19.6	19.6	19.4	19.4
85°	10.5	11.1	11.1	11.1	10.7	10.7	10.9	10.7	10.7	10.7	10.5
87.5°	4.6	4.6	4.4	4.1	4.4	4.1	4.1	3.9	3.7	3.7	3.5
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):**

	165°	170°	175°	180°
0°	507.4	507.4	507.4	507.4
2.5°	487.5	488.6	487.3	486.4
5°	471.6	471.6	470.3	469.8
7.5°	453.7	453.9	451.5	449.7
10°	426.8	425.5	422.0	420.0
12.5°	391.0	393.0	387.7	383.8
15°	359.8	354.3	356.5	354.1
17.5°	333.6	331.8	329.4	329.7
20°	310.7	309.4	308.0	308.3
22.5°	292.5	291.5	291.0	289.5
25°	277.5	277.9	276.8	276.8
27.5°	265.0	264.4	263.7	262.9
30°	253.2	253.5	252.8	252.4
32.5°	242.8	243.0	242.6	241.9
35°	232.5	232.3	232.5	231.9
37.5°	223.1	222.9	223.1	224.0
40°	213.5	213.7	213.1	214.0
42.5°	204.1	204.3	204.3	203.9
45°	193.9	194.5	194.7	195.2
47.5°	183.8	184.9	184.5	184.7
50°	173.8	173.6	173.6	173.3
52.5°	162.6	162.0	161.8	162.0
55°	149.3	150.2	150.2	150.2
57.5°	138.4	138.6	139.3	138.4
60°	127.3	127.3	127.5	129.2
62.5°	114.8	115.1	115.5	115.7
65°	102.8	103.5	103.3	103.0
67.5°	91.0	91.0	91.3	90.8
70°	78.8	78.8	78.8	79.9
72.5°	66.2	66.2	66.4	66.8
75°	54.4	54.4	54.4	53.7
77.5°	41.5	41.7	41.7	41.9
80°	30.1	29.9	29.9	29.7
82.5°	19.0	19.2	19.0	18.8
85°	10.5	10.7	10.0	10.0
87.5°	3.7	3.7	3.5	3.9
90°	0.0	0.0	0.0	0.0

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