

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: P243080

Luminaire Tested: **S121RDR-H305D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243080  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-67)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121RDR-H305D830-X4F0-XX-UDD-A-W  
Description: DEFINE 1 REGRESSED 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: 922.4 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 0.89 / 1.21 / 1.07  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct

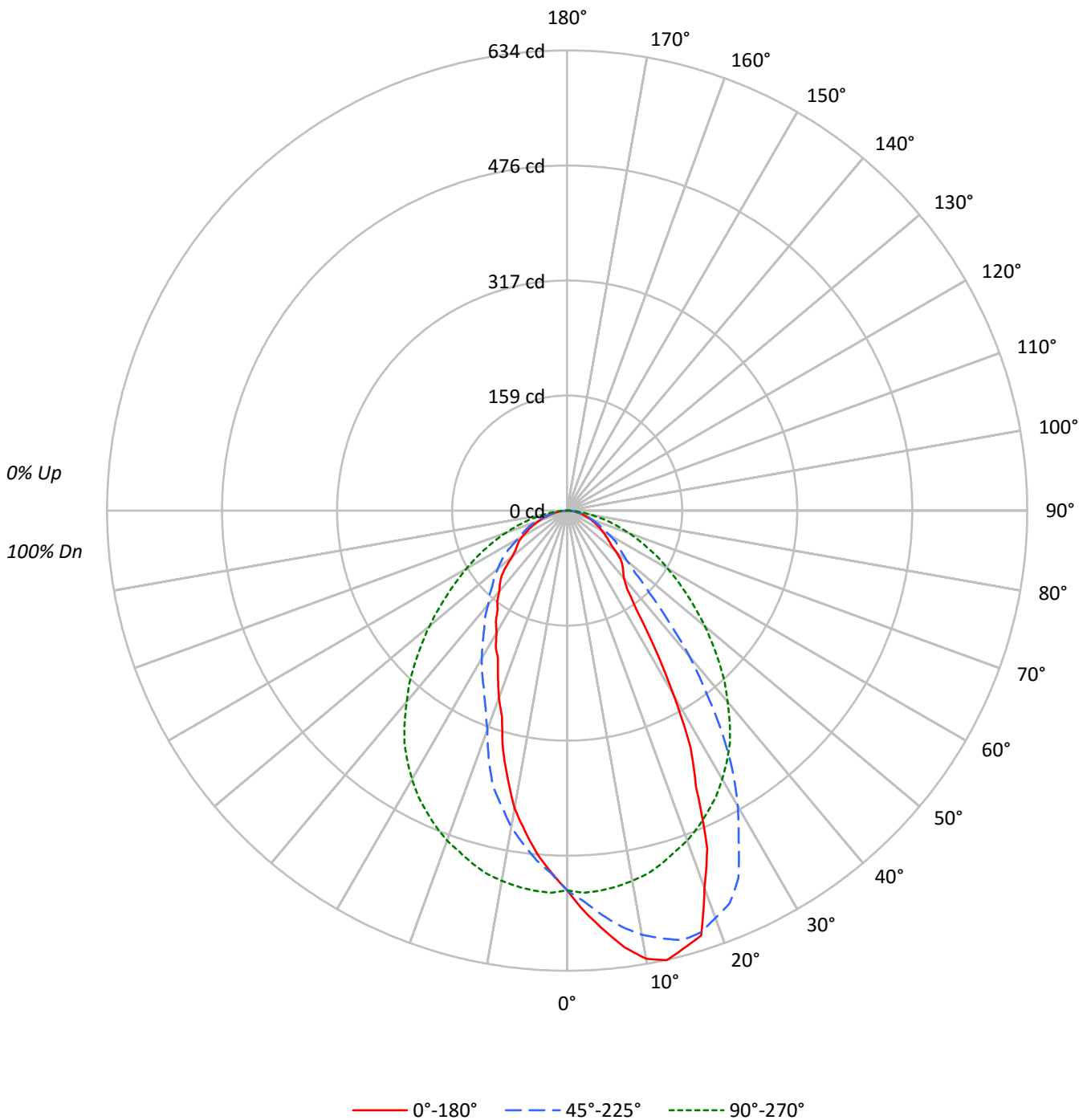
Input Watts (W): 11.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	107	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	73	92	84	77	72	81	75	71	78	73	70	76	72	68	66
4	87	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	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	55	50	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	46	41	51	45	41	50	44	40	39
9	62	50	43	38	61	50	42	38	49	42	37	48	42	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°	15502	15502	15502
5°	17254	15627	14119
10°	18864	15582	12537
15°	19138	15451	10469
20°	17443	15255	8658
25°	13741	14977	7366
30°	10045	14616	6641
35°	5994	14132	6037
40°	4699	13294	5632
45°	4530	12407	5359
50°	4038	11413	4550
55°	3528	10383	4344
60°	3295	9505	4207
65°	3071	8645	3898
70°	2902	7797	3552
75°	2667	6938	3160
80°	2423	5614	2764
85°	2278	4284	2006



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	50.0	5.4
10°-20°	139.3	15.1
20°-30°	185.3	20.1
30°-40°	176.7	19.2
40°-50°	146.7	15.9
50°-60°	109.1	11.8
60°-70°	70.6	7.7
70°-80°	36.0	3.9
80°-90°	8.8	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°	374.6	40.6
0°-40°	551.3	59.8
0°-60°	807.1	87.5
0°-90°	922.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	922.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	523	523	523	523	523	
5°	580	560	525	484	475	57
15°	624	613	504	394	341	174
25°	420	559	458	271	225	195
35°	166	371	391	199	167	113
45°	108	160	296	145	128	82
55°	68	87	201	105	84	62
65°	44	50	123	63	56	44
75°	23	26	61	31	28	25
85°	7	6	13	7	6	7
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°	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2
2.5°	553.2	551.8	553.4	552.8	550.3	550.9	547.7	545.7	541.0	539.2	539.2
5°	580.1	582.0	580.9	581.2	578.7	577.1	573.7	570.0	564.1	559.7	558.2
7.5°	606.9	607.5	608.1	606.5	603.5	600.8	596.0	590.5	584.0	578.5	574.1
10°	627.0	628.4	627.6	625.2	623.1	618.9	613.8	607.9	600.8	593.5	588.2
12.5°	634.5	635.7	637.5	636.1	635.9	633.9	628.8	621.5	612.8	603.7	597.6
15°	623.9	623.1	627.8	626.6	626.2	625.4	626.8	625.2	620.7	612.8	605.3
17.5°	614.0	613.6	618.3	619.5	617.7	615.2	613.6	611.6	609.5	609.7	608.7
20°	553.2	565.3	567.6	573.9	587.4	596.2	605.1	604.7	598.4	597.4	597.0
22.5°	504.3	508.8	506.7	516.9	524.2	540.2	555.8	575.5	588.7	585.4	583.2
25°	420.3	434.5	441.0	453.8	472.3	492.7	501.5	522.5	542.8	558.6	570.6
27.5°	368.2	371.3	375.5	388.7	395.6	414.1	447.3	475.7	494.6	511.8	543.6
30°	293.6	295.0	309.4	316.7	337.0	355.1	383.9	406.8	444.9	470.4	494.8
32.5°	224.1	222.9	238.7	247.2	267.3	291.8	324.0	345.3	382.6	424.2	453.4
35°	165.7	165.5	174.0	179.9	202.0	220.8	261.6	289.4	330.3	371.1	408.8
37.5°	135.0	134.8	136.5	141.7	150.9	172.0	191.8	233.0	272.9	313.1	360.3
40°	121.5	122.5	122.9	125.3	128.4	134.8	146.8	175.6	214.7	262.6	310.0
42.5°	114.4	114.4	114.8	115.4	117.0	118.8	126.1	137.1	168.5	206.8	259.8
45°	108.1	108.3	108.7	109.1	108.7	109.7	113.1	117.6	129.8	160.0	211.3
47.5°	100.6	100.4	101.4	102.0	102.8	104.0	104.2	106.5	111.9	127.7	164.9
50°	87.6	87.8	88.8	91.2	93.7	95.9	97.3	98.8	100.6	108.1	127.9
52.5°	75.8	76.0	76.6	78.3	80.7	83.5	87.8	91.4	92.7	95.1	106.1
55°	68.3	68.3	69.1	70.0	70.6	72.6	75.6	79.5	84.6	86.6	91.4
57.5°	62.0	62.0	62.3	62.3	63.1	64.1	66.1	68.1	72.4	78.7	81.7
60°	55.6	55.6	56.0	56.0	57.0	57.4	58.8	60.0	62.3	66.7	72.6
62.5°	49.7	49.3	49.7	49.9	50.5	51.1	52.1	53.5	54.8	57.4	61.8
65°	43.8	43.6	44.0	44.4	44.8	45.6	46.2	47.2	48.3	49.7	51.9
67.5°	38.7	38.5	38.7	39.3	39.1	39.5	40.4	40.8	42.0	43.4	45.2
70°	33.5	33.1	33.5	33.5	33.7	34.3	34.3	35.3	36.3	37.1	38.7
72.5°	28.0	28.2	28.0	28.2	28.6	28.8	29.2	29.8	30.4	31.2	32.2
75°	23.3	23.3	23.5	23.7	24.1	24.1	24.3	24.7	25.1	25.5	26.6
77.5°	18.5	18.7	18.9	19.1	19.1	19.3	19.5	19.7	20.3	20.5	21.1
80°	14.2	14.4	14.4	14.4	14.8	14.4	14.8	15.2	15.2	15.4	15.8
82.5°	10.3	10.5	10.3	10.5	10.7	10.7	10.5	10.7	10.7	11.0	11.0
85°	6.7	6.3	6.3	6.3	6.3	6.3	6.5	6.7	6.5	6.5	6.7
87.5°	2.8	2.8	2.8	2.8	3.0	2.8	3.0	3.0	3.0	2.8	3.0
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°	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2
2.5°	540.2	538.6	537.2	534.9	531.9	527.6	527.0	527.2	521.9	516.7	515.9
5°	554.8	552.2	547.9	542.8	538.0	530.7	527.6	525.4	517.3	510.4	507.7
7.5°	570.4	564.3	558.4	550.3	542.4	532.9	527.0	522.5	511.8	502.7	498.0
10°	582.6	575.1	566.6	556.4	545.5	533.9	525.0	517.9	505.1	493.8	487.9
12.5°	591.3	582.8	572.8	560.5	548.1	532.7	521.9	512.4	496.8	483.4	476.3
15°	595.8	586.8	574.3	560.9	548.1	531.9	517.5	503.7	488.3	471.5	462.7
17.5°	600.0	588.2	574.1	558.8	545.7	528.8	511.0	493.1	475.7	459.9	445.5
20°	597.0	587.0	571.4	555.4	540.8	521.1	502.3	483.8	462.1	443.7	429.3
22.5°	583.2	581.4	564.7	547.5	530.7	511.8	490.1	471.7	448.5	426.8	409.4
25°	567.0	564.9	555.8	537.4	518.5	498.8	479.2	458.1	431.3	408.8	388.9
27.5°	553.4	548.5	542.0	524.8	504.5	484.8	464.6	444.1	415.5	390.5	367.8
30°	525.8	530.5	523.2	511.4	487.9	468.8	449.5	427.2	398.7	369.9	346.7
32.5°	482.0	510.6	503.3	493.8	470.8	449.8	431.5	409.6	378.2	349.8	325.7
35°	443.3	468.0	484.6	473.1	452.8	428.5	409.8	390.7	357.9	328.9	305.8
37.5°	405.8	432.1	459.7	449.3	432.5	406.4	386.7	367.8	337.4	308.2	285.1
40°	356.7	395.0	421.6	425.8	408.6	382.4	363.2	343.7	316.9	287.9	263.2
42.5°	309.6	358.7	380.2	401.5	383.9	359.3	338.0	321.4	295.6	270.1	243.3
45°	260.2	316.1	347.8	364.2	357.9	335.4	312.1	296.1	274.4	250.8	225.3
47.5°	217.4	270.5	315.9	325.2	331.3	309.2	287.5	271.3	252.5	233.0	208.7
50°	172.4	227.5	276.0	292.8	304.4	284.3	261.6	247.6	231.8	214.3	192.8
52.5°	134.2	185.7	236.6	265.2	269.1	258.7	237.7	223.9	211.3	195.5	176.0
55°	106.5	146.4	197.3	230.6	234.4	231.8	213.1	201.0	191.8	178.6	162.2
57.5°	88.4	113.8	159.8	198.3	203.8	206.2	190.8	179.9	171.7	161.2	146.4
60°	76.4	89.8	124.9	162.6	177.8	181.9	168.3	160.4	153.5	144.0	130.2
62.5°	67.5	73.6	95.5	131.8	151.3	154.9	148.0	142.1	136.3	127.3	115.0
65°	56.2	62.7	73.6	101.8	125.9	127.7	129.0	123.3	118.8	111.3	100.4
67.5°	47.2	52.3	59.4	78.1	101.0	106.1	109.7	107.1	102.8	95.3	86.0
70°	40.1	43.0	48.1	58.6	77.1	88.2	91.9	90.0	87.8	79.7	71.8
72.5°	33.3	35.7	38.7	45.0	58.2	70.0	75.6	74.6	72.2	66.1	59.6
75°	27.6	28.6	31.0	34.5	42.2	53.3	59.8	60.6	57.8	52.1	47.0
77.5°	21.7	22.7	24.1	26.2	31.2	38.7	44.0	46.0	44.2	40.1	34.9
80°	16.6	17.2	18.2	19.1	21.1	26.2	31.8	32.9	32.0	28.6	25.5
82.5°	11.0	11.4	12.2	13.0	14.0	16.4	21.1	21.9	21.7	18.7	16.6
85°	6.7	6.7	6.9	7.5	7.9	8.9	11.4	12.6	12.0	10.1	9.1
87.5°	2.8	3.0	2.8	2.8	2.8	3.0	3.7	5.1	3.9	3.0	2.8
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2	523.2
2.5°	513.8	513.0	510.0	507.3	504.1	500.4	500.6	501.1	499.8	499.4	500.7
5°	503.7	500.9	496.4	491.9	488.3	483.6	480.8	482.2	481.2	479.4	478.3
7.5°	493.1	489.1	482.6	476.9	472.1	463.3	461.3	458.9	456.9	453.0	452.2
10°	480.4	474.7	466.4	458.3	449.6	442.7	436.2	433.5	428.1	424.6	423.6
12.5°	467.4	457.9	448.7	436.8	427.0	416.9	411.2	407.2	401.9	393.2	389.1
15°	454.0	439.6	427.2	414.1	407.4	393.8	383.0	370.7	364.2	349.6	341.1
17.5°	436.0	419.5	402.7	392.0	378.0	359.1	340.9	334.6	324.8	315.3	305.8
20°	411.8	396.6	380.6	364.6	343.3	321.4	314.5	303.6	292.8	287.1	282.1
22.5°	389.5	373.1	354.2	333.0	311.1	294.0	284.9	277.0	270.3	265.2	259.5
25°	368.4	351.4	324.4	302.9	283.7	271.1	266.6	256.3	249.2	245.4	240.5
27.5°	345.1	321.8	300.1	277.8	260.8	253.7	243.3	235.2	227.7	220.4	218.6
30°	323.0	297.1	275.6	257.5	245.0	235.2	224.5	215.1	210.1	207.4	202.8
32.5°	301.1	274.8	254.7	240.5	227.1	216.6	206.6	201.6	194.1	188.0	184.1
35°	277.6	254.7	238.7	222.2	209.3	199.1	193.9	182.7	178.6	176.8	172.6
37.5°	256.9	236.6	220.4	207.8	193.7	185.5	175.4	172.8	167.3	162.6	161.2
40°	239.7	220.6	205.4	189.0	180.3	169.5	164.5	157.6	155.7	153.9	150.7
42.5°	221.0	204.6	187.2	176.2	163.4	158.4	150.7	148.8	144.0	142.3	141.1
45°	205.0	189.8	173.2	159.8	152.5	145.2	142.3	137.3	135.2	133.0	130.8
47.5°	189.4	173.6	160.4	147.8	139.7	136.3	131.0	127.5	125.1	122.9	120.7
50°	175.0	159.0	144.2	135.2	129.4	124.7	121.3	118.4	115.0	110.3	105.4
52.5°	159.4	145.0	133.0	124.1	119.0	114.4	111.5	106.3	99.8	94.7	92.3
55°	143.8	130.2	119.8	112.7	109.1	104.8	98.1	90.6	86.4	85.6	85.0
57.5°	130.6	117.8	108.1	102.6	98.5	90.8	83.7	80.9	79.7	79.3	78.9
60°	115.8	104.4	97.5	91.5	84.6	77.3	75.2	74.8	73.6	73.0	72.6
62.5°	102.2	92.3	86.0	78.9	71.6	70.2	68.7	67.7	67.1	65.7	65.1
65°	89.0	81.1	74.2	66.7	64.1	63.1	61.8	60.4	58.8	57.8	57.0
67.5°	76.4	68.7	61.4	58.6	57.2	55.6	53.9	51.9	51.1	49.7	49.5
70°	63.9	56.8	52.9	51.1	48.5	47.2	45.2	44.4	43.0	42.4	41.8
72.5°	52.1	47.0	45.4	42.8	41.0	38.9	37.9	37.1	36.3	35.3	35.3
75°	40.6	39.3	36.3	34.3	32.6	31.4	31.0	29.6	29.4	28.8	28.4
77.5°	32.4	29.6	28.6	26.4	25.3	24.7	24.3	23.5	22.7	22.5	22.3
80°	22.9	21.5	20.3	19.3	18.3	18.0	17.6	17.4	17.0	16.6	16.4
82.5°	15.0	14.2	13.4	12.8	12.6	12.0	11.6	11.4	11.0	11.0	11.0
85°	8.1	7.9	7.5	7.1	6.7	6.7	6.5	6.3	6.3	5.7	5.7
87.5°	2.6	2.6	2.4	2.4	2.0	2.2	2.0	2.0	1.8	2.0	2.0
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):**

	165°	170°	175°	180°
0°	523.2	523.2	523.2	523.2
2.5°	499.2	499.2	498.4	499.2
5°	477.5	475.7	475.1	474.7
7.5°	449.8	448.3	446.7	445.1
10°	421.6	419.3	417.9	416.7
12.5°	384.9	382.0	376.4	378.0
15°	339.8	339.9	327.1	341.3
17.5°	302.9	303.8	298.7	297.9
20°	279.4	279.0	277.0	274.6
22.5°	255.3	253.5	252.7	249.0
25°	232.8	229.7	230.6	225.3
27.5°	216.4	213.9	213.1	212.7
30°	200.1	194.7	193.0	194.1
32.5°	183.5	183.1	182.5	182.7
35°	169.5	168.7	166.9	166.9
37.5°	159.8	160.0	159.0	158.2
40°	148.0	147.0	146.8	145.6
42.5°	139.5	137.5	136.7	136.9
45°	129.6	128.4	127.5	127.9
47.5°	118.0	116.8	114.6	114.0
50°	102.2	100.6	99.6	98.7
52.5°	90.4	90.2	89.8	89.6
55°	84.6	84.1	84.1	84.1
57.5°	78.7	78.3	78.1	78.5
60°	72.2	71.8	71.0	71.0
62.5°	64.1	63.7	63.5	62.7
65°	56.0	55.8	55.4	55.6
67.5°	48.5	48.3	48.3	47.7
70°	41.2	41.2	40.6	41.0
72.5°	34.5	34.3	34.3	34.3
75°	28.0	27.8	27.6	27.6
77.5°	22.1	22.1	21.7	21.7
80°	16.0	16.0	15.8	16.2
82.5°	10.7	11.0	10.7	10.7
85°	5.7	5.9	5.9	5.9
87.5°	1.8	1.6	1.6	1.6
90°	0.0	0.0	0.0	0.0

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