

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: P242417

Luminaire Tested: **S122RDR-S290D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242417  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122RDR-S290D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 968.2 lumens  
Efficiency: N/A  
Efficacy: 83.5 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct

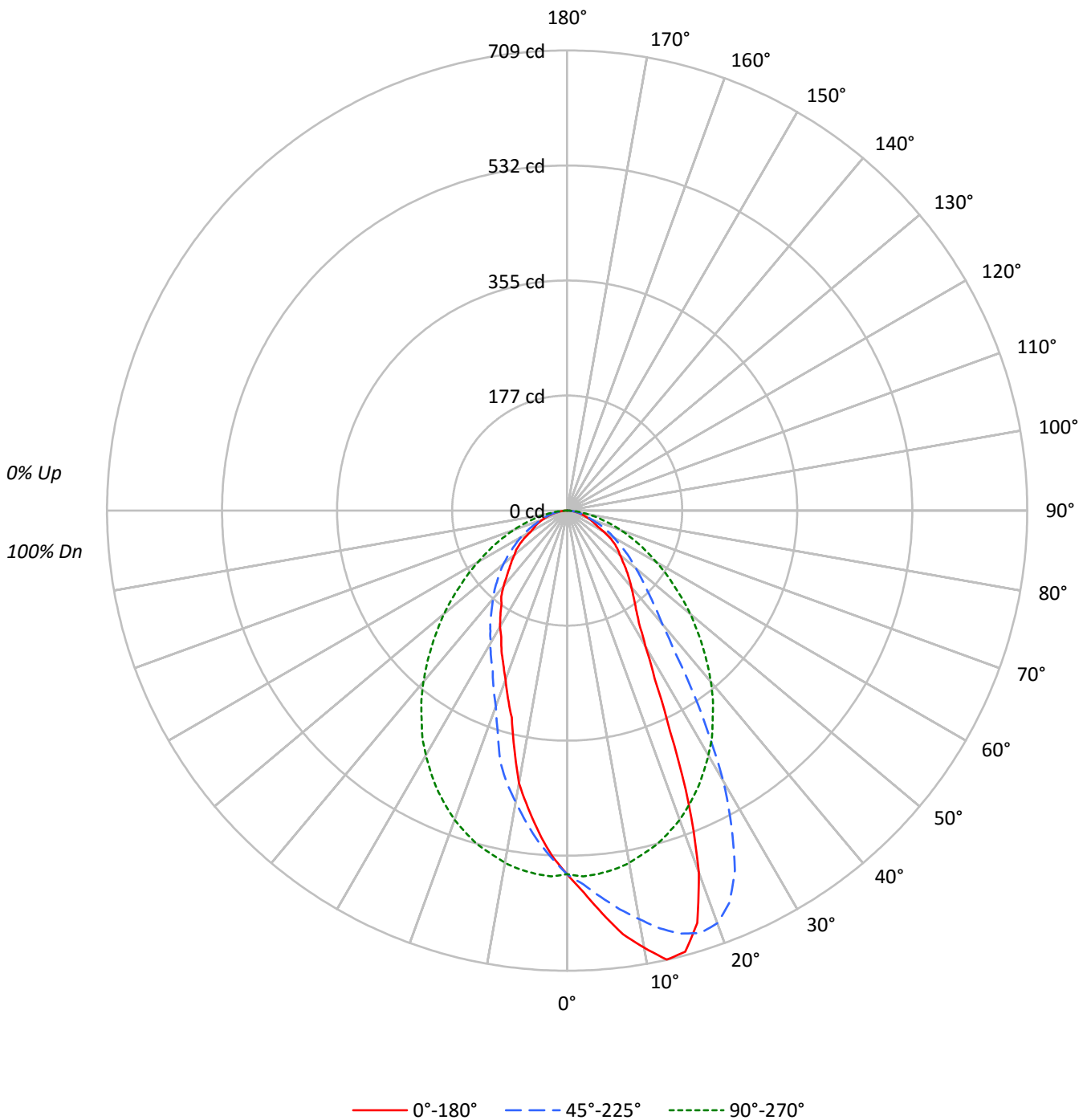
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P242417

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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	106	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	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	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	54	49	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	45	41	51	45	40	50	44	40	39
9	62	50	43	38	61	50	42	37	49	42	37	47	41	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°	10672	10672	10672
5°	11920	10740	9522
10°	13224	10663	8253
15°	13875	10507	6504
20°	12028	10277	5627
25°	7888	9960	5025
30°	5309	9574	4548
35°	4299	9090	4102
40°	3824	8564	3794
45°	3461	7944	3389
50°	3150	7331	3138
55°	2962	6652	2922
60°	2476	6031	2446
65°	2087	5476	2371
70°	1933	4890	2233
75°	1803	4254	2061
80°	1667	3499	1832
85°	1530	2776	1617



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.1	5.5
10°-20°	148.3	15.3
20°-30°	190.9	19.7
30°-40°	181.1	18.7
40°-50°	155.2	16.0
50°-60°	118.2	12.2
60°-70°	74.6	7.7
70°-80°	37.2	3.8
80°-90°	9.6	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°	392.4	40.5
0°-40°	573.5	59.2
0°-60°	846.9	87.5
0°-90°	968.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	968.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	560	560	560	560	560	
5°	623	598	562	512	498	61
15°	704	675	533	399	330	191
25°	375	612	474	271	239	177
35°	185	332	391	206	176	118
45°	128	175	295	152	126	99
55°	89	109	200	103	88	79
65°	46	62	122	62	53	47
75°	24	28	58	32	28	26
85°	7	7	13	7	7	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°	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3
2.5°	588.7	589.3	589.9	588.5	588.5	587.4	584.8	582.9	577.4	576.6	576.6
5°	623.4	623.0	623.8	621.2	617.7	616.9	613.2	608.4	603.3	597.7	596.5
7.5°	658.4	656.1	655.1	656.3	652.6	647.5	641.3	635.4	626.7	619.5	615.0
10°	683.7	690.1	686.3	679.4	680.8	671.7	666.8	658.4	651.4	639.1	636.4
12.5°	708.6	710.2	709.6	706.5	704.0	698.3	691.3	684.3	669.9	659.2	647.9
15°	703.6	707.3	708.3	707.1	708.1	707.7	704.2	698.1	686.8	674.8	664.3
17.5°	666.2	670.5	674.0	677.1	682.0	691.5	694.4	695.6	690.9	682.4	673.6
20°	593.4	589.1	607.0	616.2	624.0	643.4	660.2	666.6	676.9	676.7	674.8
22.5°	490.2	492.5	509.3	520.6	547.1	566.5	586.2	614.8	637.2	653.7	663.9
25°	375.3	382.7	399.7	414.5	439.8	476.0	508.9	547.1	583.1	611.5	638.6
27.5°	292.0	293.0	308.4	323.4	338.9	370.3	414.3	460.0	511.4	548.4	595.1
30°	241.4	240.2	245.9	254.3	267.1	290.1	321.2	366.0	417.2	481.1	537.9
32.5°	205.6	206.0	209.9	215.5	225.6	239.3	258.1	292.4	340.1	402.6	471.7
35°	184.9	184.8	187.9	192.3	196.8	206.8	221.4	240.4	273.7	332.3	400.5
37.5°	167.8	168.8	170.2	173.1	178.5	184.4	193.5	206.9	232.3	268.7	329.8
40°	153.8	154.2	156.3	158.7	161.6	165.9	173.1	183.4	200.7	228.4	270.2
42.5°	140.9	141.3	142.7	144.8	147.0	151.3	156.9	165.5	178.7	198.8	231.5
45°	128.5	128.5	129.9	130.8	133.4	137.3	142.1	149.5	159.2	175.2	198.2
47.5°	116.4	116.4	117.4	119.1	120.9	124.0	129.1	135.3	142.3	155.4	175.8
50°	106.3	106.5	107.1	108.4	109.4	112.1	115.8	121.1	128.5	138.0	154.4
52.5°	98.1	97.9	98.7	99.1	99.7	101.4	104.0	108.4	114.9	122.8	135.7
55°	89.2	88.4	89.6	90.5	91.1	91.9	93.4	96.4	102.0	109.0	119.1
57.5°	78.7	78.3	78.8	79.8	81.6	83.5	84.5	86.4	89.4	94.8	105.5
60°	65.0	65.0	66.8	67.4	69.5	72.2	75.0	76.5	79.4	82.7	90.1
62.5°	53.0	53.1	53.7	54.3	55.3	58.8	62.9	66.8	69.5	72.6	76.9
65°	46.3	46.7	46.7	47.1	47.9	48.7	50.2	53.0	57.8	62.3	66.0
67.5°	40.5	40.5	40.7	41.1	41.3	42.2	42.8	44.2	45.2	50.2	55.3
70°	34.7	35.2	35.0	35.4	35.6	36.0	36.8	37.4	39.1	40.1	42.8
72.5°	29.2	29.6	29.6	29.8	30.4	30.4	31.0	31.5	32.5	33.3	34.5
75°	24.5	24.3	24.5	24.9	25.1	25.3	25.3	26.1	26.7	27.5	28.4
77.5°	19.9	20.1	20.1	20.1	20.1	20.4	20.4	20.8	21.4	21.8	22.4
80°	15.2	15.4	15.2	15.4	15.6	15.8	15.6	15.8	16.4	16.7	16.7
82.5°	10.9	10.9	11.1	11.1	11.1	11.1	11.5	11.5	11.9	11.7	11.9
85°	7.0	6.8	6.8	6.8	7.0	7.2	7.0	7.0	7.2	7.2	7.2
87.5°	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.3	3.5	3.3
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°	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3
2.5°	577.0	575.5	574.1	570.6	568.9	565.0	564.4	564.2	559.1	554.3	552.9
5°	593.4	590.3	585.6	580.2	574.5	568.7	564.8	561.7	553.9	546.5	542.2
7.5°	609.5	603.9	596.5	587.2	579.2	569.8	563.4	557.6	546.9	537.1	530.7
10°	628.0	617.1	606.4	592.2	581.1	570.2	560.1	551.3	538.9	524.9	514.9
12.5°	639.5	627.3	611.5	597.7	582.5	567.9	553.5	541.6	526.4	511.8	499.6
15°	649.7	636.8	618.9	599.0	580.5	562.4	546.9	532.8	513.8	496.4	482.0
17.5°	659.0	641.3	622.8	599.8	579.4	557.4	537.7	520.2	499.4	478.9	462.6
20°	663.1	645.6	623.4	600.4	575.1	548.0	526.4	507.0	484.2	461.4	441.9
22.5°	660.6	647.9	622.6	594.0	567.9	539.3	514.2	490.8	464.9	441.5	418.2
25°	647.3	642.6	619.3	589.3	559.7	526.8	498.6	473.9	445.0	420.1	395.6
27.5°	623.0	629.8	613.2	580.7	548.8	513.4	482.6	454.8	425.4	397.5	373.0
30°	584.4	607.6	601.4	571.8	535.0	500.3	464.7	435.3	403.4	374.6	350.4
32.5°	531.7	573.7	582.9	559.3	521.0	482.0	444.3	415.1	381.4	350.6	327.3
35°	475.0	532.3	558.5	542.8	504.6	463.5	425.0	390.9	357.4	327.5	304.1
37.5°	407.9	484.2	524.7	522.9	486.5	444.7	402.8	369.1	334.7	305.1	280.7
40°	342.8	427.3	484.4	497.0	467.4	421.3	378.9	344.4	310.9	282.1	253.1
42.5°	284.4	368.5	441.9	466.3	444.3	398.5	355.9	319.5	287.2	260.3	230.5
45°	239.5	313.0	390.3	429.7	416.6	374.2	329.2	294.9	264.4	240.8	212.4
47.5°	207.3	260.9	338.6	389.9	388.4	348.1	303.3	270.4	241.6	219.8	195.7
50°	180.7	225.8	289.1	349.5	354.5	322.0	280.0	247.4	221.0	197.8	179.3
52.5°	156.7	192.0	247.2	304.5	321.2	294.2	253.7	224.3	198.8	177.9	162.8
55°	136.5	165.3	208.5	262.6	284.4	264.6	228.4	200.3	179.5	161.6	148.0
57.5°	118.8	141.3	177.4	222.7	247.4	234.0	203.1	179.9	161.4	144.6	133.7
60°	102.2	119.9	149.3	185.7	213.8	205.0	179.5	158.3	143.1	129.1	119.0
62.5°	86.6	101.2	125.4	153.2	178.3	176.0	156.3	139.4	126.5	114.1	105.9
65°	72.2	83.3	103.0	126.2	146.8	148.5	133.6	121.5	109.6	99.5	91.9
67.5°	59.8	67.4	82.2	102.6	118.4	123.8	113.7	104.0	94.2	86.0	79.2
70°	48.5	54.3	64.4	80.2	94.4	100.3	95.0	87.8	79.6	73.2	67.6
72.5°	37.0	42.6	49.4	60.0	71.6	78.1	77.1	72.4	66.2	61.1	55.9
75°	29.6	31.3	36.4	44.2	53.7	59.2	60.5	57.8	52.6	48.5	45.4
77.5°	23.0	24.1	26.9	31.5	38.2	43.0	45.2	44.8	40.9	38.2	35.2
80°	17.5	18.1	19.3	21.0	25.7	30.6	31.9	31.9	29.4	28.4	25.5
82.5°	12.3	12.7	13.2	14.0	15.6	19.7	21.2	21.6	20.2	18.9	16.7
85°	7.6	7.4	7.8	8.4	8.8	9.9	12.3	12.7	12.3	10.7	10.1
87.5°	3.3	3.5	3.5	3.3	3.5	3.7	4.7	5.6	4.9	4.3	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°	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3
2.5°	550.4	549.0	546.5	542.6	540.2	536.2	533.4	535.0	535.4	535.0	534.6
5°	537.5	533.4	527.8	522.3	517.3	511.8	508.7	507.3	504.6	503.1	502.3
7.5°	522.9	516.9	508.9	500.1	492.0	484.2	480.7	477.9	472.9	470.2	467.6
10°	506.2	495.1	487.1	474.6	467.0	455.9	448.4	448.5	441.0	436.7	433.6
12.5°	487.7	475.2	460.6	449.7	438.4	430.1	420.5	415.8	407.7	403.6	393.8
15°	466.8	452.6	438.6	423.4	412.7	398.9	385.7	369.5	356.5	345.2	342.1
17.5°	444.7	427.1	413.3	397.7	381.0	355.9	339.5	329.6	321.8	316.0	311.3
20°	421.7	403.8	388.8	361.9	337.2	321.4	310.1	302.9	294.7	288.3	284.8
22.5°	397.5	378.7	356.9	326.1	308.2	296.3	286.6	278.0	273.1	268.5	265.4
25°	375.0	354.5	320.8	300.2	284.6	271.4	264.4	259.3	253.5	246.7	243.5
27.5°	351.4	318.9	293.4	278.4	262.4	254.1	248.0	239.7	234.4	231.9	228.4
30°	324.3	291.8	272.9	256.2	245.7	236.1	228.8	224.5	219.4	214.1	212.0
32.5°	294.2	269.8	251.9	238.7	228.0	220.2	214.7	207.1	203.8	201.1	196.0
35°	270.2	250.6	234.0	222.7	212.6	206.0	199.2	195.1	188.5	185.7	184.0
37.5°	248.4	231.3	218.8	206.4	198.6	190.8	186.9	180.1	177.5	173.3	169.8
40°	230.5	213.8	201.9	192.2	183.2	177.7	172.5	167.2	162.9	161.2	156.7
42.5°	212.2	199.4	187.5	176.6	171.3	165.5	158.5	155.0	150.5	147.4	145.0
45°	195.7	183.6	173.5	164.7	158.1	152.0	147.8	141.3	138.8	133.2	130.8
47.5°	181.1	169.4	159.6	151.1	144.5	140.9	134.7	129.1	125.6	121.7	118.4
50°	165.3	155.9	146.6	139.2	133.4	127.7	121.3	118.8	112.5	110.8	109.0
52.5°	150.9	142.1	133.7	126.5	120.7	115.3	109.8	106.3	102.6	100.8	99.7
55°	137.6	129.1	120.9	114.5	108.6	103.0	99.5	95.4	93.4	92.1	90.5
57.5°	124.0	116.2	109.8	103.2	97.3	92.7	88.4	86.0	84.1	82.5	80.4
60°	111.2	103.8	98.1	92.1	86.0	82.4	79.2	76.3	74.0	71.3	70.5
62.5°	97.5	91.3	86.2	80.4	75.3	72.0	69.1	66.4	63.5	59.2	58.0
65°	85.3	80.2	74.8	69.9	65.2	61.9	57.6	54.5	53.3	53.0	52.8
67.5°	74.0	69.1	64.4	59.4	55.1	51.4	48.9	48.5	47.7	47.5	46.9
70°	62.7	58.2	53.5	48.9	44.8	44.2	43.4	42.6	41.7	41.3	40.9
72.5°	52.6	47.9	43.2	39.7	38.5	37.8	37.0	36.2	35.6	35.2	35.0
75°	41.9	37.6	34.5	33.1	32.1	31.5	30.4	29.8	29.4	28.8	28.6
77.5°	31.9	29.2	27.6	26.9	25.7	25.1	24.3	23.8	23.2	23.2	22.8
80°	23.0	21.8	20.8	19.7	19.3	18.5	18.3	17.7	17.9	17.3	17.3
82.5°	16.5	15.0	14.2	13.8	13.4	12.8	12.7	12.5	12.5	12.1	12.1
85°	9.2	8.8	8.4	8.0	8.0	7.4	7.6	7.4	7.4	7.0	6.8
87.5°	3.7	3.5	3.1	3.1	3.1	2.9	2.9	2.7	2.7	2.7	2.5
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°	560.3	560.3	560.3	560.3
2.5°	532.5	532.8	532.3	532.6
5°	501.3	499.0	498.6	498.0
7.5°	464.5	464.3	463.1	461.8
10°	429.3	428.3	428.1	426.7
12.5°	388.0	380.4	379.6	375.7
15°	337.4	336.2	332.3	329.8
17.5°	309.2	305.3	303.9	303.3
20°	282.1	278.6	278.0	277.6
22.5°	263.4	259.7	258.0	256.6
25°	241.6	240.2	239.5	239.1
27.5°	224.5	221.0	220.6	219.6
30°	210.3	209.3	207.9	206.8
32.5°	193.5	192.7	191.6	191.2
35°	182.0	179.3	178.1	176.4
37.5°	169.4	167.8	165.9	166.6
40°	154.2	153.2	152.8	152.6
42.5°	142.1	139.0	137.8	137.8
45°	129.9	127.3	125.6	125.8
47.5°	116.6	116.8	115.6	116.0
50°	107.7	106.5	105.7	105.9
52.5°	99.1	98.1	97.5	98.5
55°	89.6	88.4	88.2	88.0
57.5°	79.2	78.7	77.7	77.1
60°	67.9	66.4	64.4	64.2
62.5°	57.6	57.6	57.6	57.6
65°	52.4	52.2	52.4	52.6
67.5°	46.9	46.5	46.1	46.3
70°	40.5	40.3	40.1	40.1
72.5°	34.3	34.3	34.1	33.9
75°	28.4	28.0	28.0	28.0
77.5°	22.8	22.6	22.4	22.2
80°	17.1	16.9	16.7	16.7
82.5°	12.1	11.9	11.9	11.7
85°	7.0	7.2	7.0	7.4
87.5°	2.5	2.3	2.5	2.3
90°	0.0	0.0	0.0	0.0

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