

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: P243262

Luminaire Tested: **S122RDR-H290D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243262
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-H290D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1088.7 lumens
Efficiency: N/A
Efficacy: 97.2 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

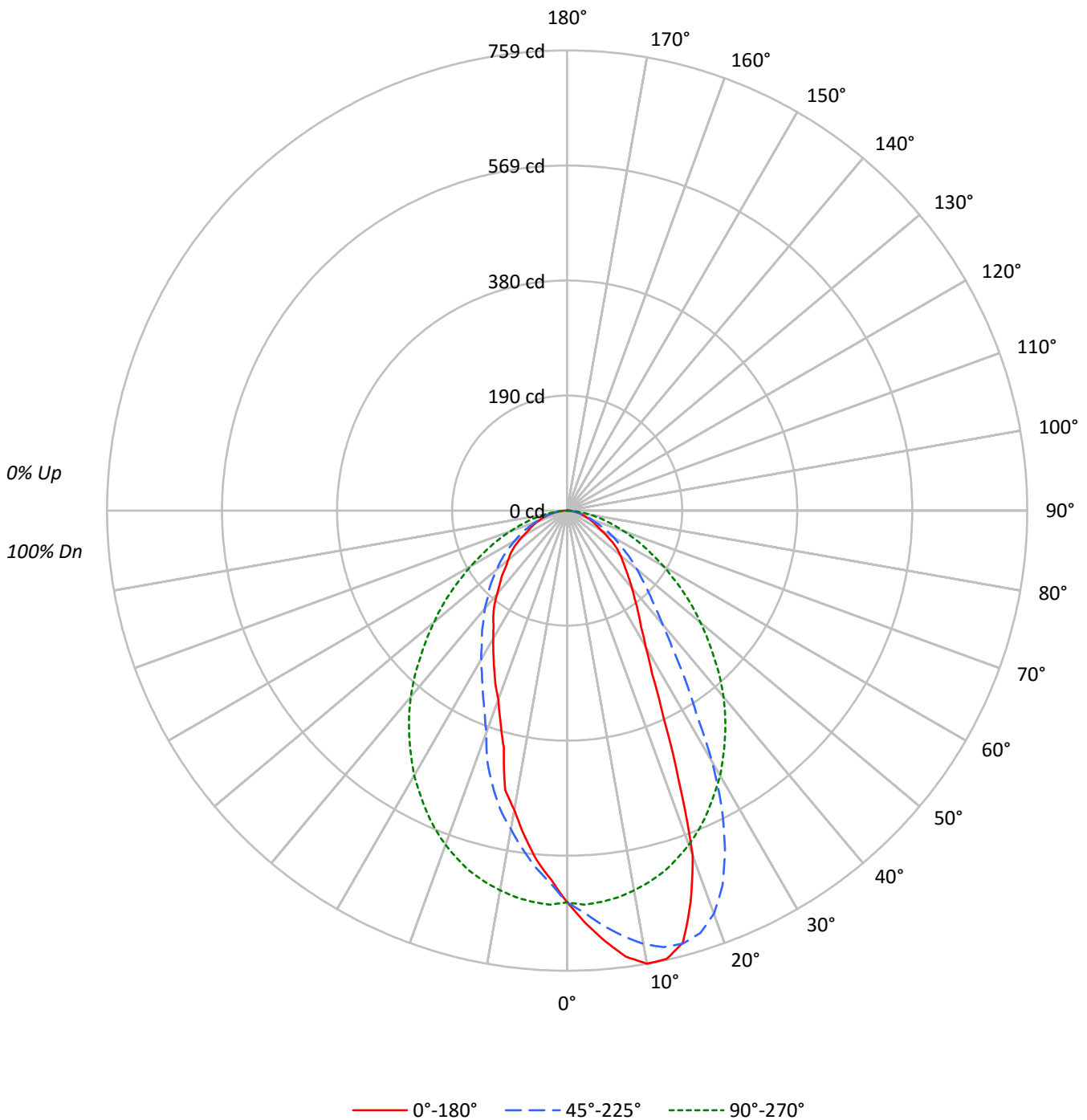
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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					100			
1	110	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	86	83	79	84	80	78					76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68					66				
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60					58				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	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					38				
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	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°	12305	12305	12305
5°	13621	12388	11059
10°	14678	12303	9698
15°	14547	12159	7971
20°	12272	11890	6728
25°	7890	11524	5990
30°	5701	11098	5364
35°	4748	10564	4934
40°	4120	9976	4468
45°	3680	9231	4089
50°	3396	8502	3757
55°	3045	7764	3580
60°	2430	6991	3223
65°	2231	6278	2975
70°	2049	5547	2824
75°	1869	4857	2679
80°	1623	4037	2501
85°	1289	3235	2317



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.2	5.6
10°-20°	167.3	15.4
20°-30°	210.9	19.4
30°-40°	202.5	18.6
40°-50°	174.4	16.0
50°-60°	133.3	12.2
60°-70°	84.8	7.8
70°-80°	43.0	3.9
80°-90°	11.3	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°	439.4	40.4
0°-40°	641.8	59.0
0°-60°	949.5	87.2
0°-90°	1088.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1088.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	646	646	646	646	646	
5°	712	687	648	591	578	69
15°	738	739	617	472	404	200
25°	375	616	548	329	285	179
35°	204	338	454	245	212	129
45°	137	189	343	181	152	106
55°	92	115	234	126	108	81
65°	50	64	139	77	66	49
75°	25	29	66	40	36	27
85°	6	7	15	11	11	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°	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
2.5°	680.2	681.1	681.5	680.5	678.1	678.3	676.2	672.6	668.2	664.2	666.5
5°	712.4	713.4	713.2	711.3	709.0	706.9	703.3	698.2	692.9	687.4	686.4
7.5°	742.0	744.3	743.7	740.1	738.4	735.4	729.3	723.6	715.5	707.7	704.6
10°	758.9	760.8	759.7	758.9	757.0	754.0	748.5	743.0	734.2	725.9	721.3
12.5°	757.6	759.3	760.2	761.0	760.4	759.3	757.0	752.3	745.1	737.5	731.6
15°	737.7	735.0	733.1	738.4	740.3	747.5	749.2	749.8	744.9	739.2	737.7
17.5°	677.3	678.1	692.7	690.4	693.6	711.1	718.1	727.6	731.6	730.3	732.9
20°	605.4	595.5	602.7	613.2	623.2	648.8	665.7	680.7	698.0	707.7	717.0
22.5°	480.3	480.5	497.8	515.2	537.6	565.3	591.0	619.8	650.7	669.5	691.2
25°	375.4	385.6	393.2	400.8	433.3	460.0	502.9	537.8	580.3	616.0	652.6
27.5°	303.6	314.1	315.4	332.5	351.7	373.3	401.4	456.4	499.9	552.4	597.6
30°	259.2	261.3	265.7	270.2	284.3	304.4	334.6	369.1	417.5	477.3	538.0
32.5°	227.0	226.6	231.0	238.0	245.8	259.4	276.5	305.0	348.8	396.4	467.2
35°	204.2	203.6	206.7	209.3	213.9	224.9	240.3	259.2	290.7	338.0	393.0
37.5°	182.6	183.9	185.8	188.6	194.7	201.7	212.0	227.7	252.6	283.9	336.5
40°	165.7	167.2	169.3	171.2	175.9	181.6	188.6	201.0	217.7	245.0	285.4
42.5°	150.5	151.1	152.8	155.6	159.0	164.0	170.8	180.3	194.3	213.3	248.6
45°	136.6	136.6	138.5	141.0	143.1	148.0	153.3	162.3	173.1	189.4	214.6
47.5°	124.7	124.9	126.0	126.4	128.7	133.2	138.9	146.1	154.9	167.4	190.9
50°	114.6	115.4	115.8	116.5	117.3	119.6	123.7	129.2	138.9	149.9	165.5
52.5°	104.0	105.1	105.9	107.2	108.4	108.7	111.6	115.2	122.0	133.4	146.1
55°	91.7	92.6	94.3	95.3	97.0	98.5	100.8	103.4	107.8	115.4	128.5
57.5°	77.8	78.0	79.7	80.8	84.1	87.5	89.6	92.4	95.5	100.8	110.8
60°	63.8	64.5	64.7	65.5	68.5	72.1	76.3	80.5	83.9	88.6	95.5
62.5°	56.2	56.4	57.1	57.9	58.1	59.8	61.1	66.2	72.1	76.7	81.4
65°	49.5	49.7	49.7	50.3	51.2	52.0	52.6	54.5	57.1	63.6	69.3
67.5°	43.1	42.9	43.3	44.0	44.2	44.8	45.9	46.9	48.6	50.5	56.4
70°	36.8	36.8	36.6	37.2	37.8	38.0	38.7	39.7	40.8	42.5	44.4
72.5°	30.4	30.9	30.9	31.3	31.5	32.3	32.8	33.2	34.7	35.5	37.0
75°	25.4	25.2	25.8	25.6	26.0	26.2	26.8	27.5	27.9	28.7	30.0
77.5°	20.3	19.9	20.3	20.1	20.5	20.9	20.9	21.6	22.0	22.8	23.5
80°	14.8	14.8	15.0	15.4	15.4	15.6	16.1	15.9	16.7	16.9	17.5
82.5°	10.1	10.4	10.4	10.6	10.6	10.6	11.0	11.0	11.2	11.6	11.8
85°	5.9	5.7	5.9	5.9	5.9	6.1	6.3	6.1	6.6	7.0	7.0
87.5°	1.7	1.7	1.9	2.1	2.1	2.3	2.3	2.3	2.5	2.5	2.7
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°	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
2.5°	666.5	665.4	662.7	660.2	655.5	651.7	650.4	650.7	644.9	639.0	637.3
5°	684.9	681.1	675.6	669.9	662.9	655.9	651.5	647.9	639.0	630.1	625.1
7.5°	700.1	694.0	686.0	676.9	667.8	657.4	650.2	643.5	631.2	619.2	612.6
10°	714.1	705.4	694.4	682.6	670.5	657.0	646.6	636.1	620.6	607.1	595.9
12.5°	727.4	713.6	702.4	685.3	672.0	653.6	639.4	627.2	609.0	592.1	579.6
15°	728.7	718.9	703.9	686.2	665.9	648.8	631.0	616.6	595.9	577.1	555.7
17.5°	728.4	720.8	705.2	687.0	662.7	640.3	621.1	602.2	578.6	556.6	538.2
20°	720.8	715.5	702.0	680.5	655.9	630.1	608.8	586.6	558.9	536.3	516.2
22.5°	702.9	704.1	693.6	674.3	647.9	619.2	594.4	568.8	540.5	514.5	489.2
25°	672.4	686.0	682.8	664.8	636.7	605.2	577.1	548.3	517.9	490.2	466.7
27.5°	634.6	660.0	665.4	651.5	624.7	589.4	557.4	526.1	495.1	465.3	441.2
30°	589.8	627.6	641.6	634.0	609.2	572.2	535.2	504.6	470.6	438.8	413.5
32.5°	533.3	586.4	610.9	613.2	592.9	553.2	512.2	479.2	444.3	414.3	387.1
35°	470.3	535.4	575.4	586.2	571.6	532.3	489.2	454.3	417.1	386.8	359.4
37.5°	406.9	483.4	535.9	556.8	547.1	509.0	463.4	428.1	391.3	360.4	334.6
40°	348.6	421.3	489.4	522.1	519.2	483.9	437.8	401.2	363.8	335.3	306.9
42.5°	296.4	366.5	441.4	485.3	487.7	456.8	409.7	372.9	337.0	308.6	279.0
45°	255.1	316.9	391.1	443.5	453.6	428.3	380.5	342.7	309.9	283.3	253.7
47.5°	222.2	270.2	339.1	400.6	418.5	396.4	350.7	314.8	283.9	261.1	233.2
50°	193.6	238.7	297.2	354.1	380.5	363.8	321.1	286.9	259.0	237.0	212.4
52.5°	168.3	203.1	253.9	308.4	343.9	328.7	292.3	260.9	234.6	214.1	193.6
55°	147.3	176.5	221.3	269.9	302.7	294.3	261.9	233.8	210.8	191.3	174.6
57.5°	125.8	150.3	186.4	229.8	261.9	260.6	234.0	206.9	188.8	170.4	158.3
60°	107.0	126.8	156.2	193.0	225.3	225.6	204.8	183.5	167.8	152.0	140.6
62.5°	90.3	106.1	131.7	161.3	187.1	193.6	178.2	159.6	146.9	134.7	124.9
65°	75.9	87.7	107.0	133.8	154.1	163.0	152.8	139.3	128.7	117.7	109.1
67.5°	62.6	71.2	85.4	106.5	126.8	133.4	129.2	118.8	111.2	102.1	95.5
70°	49.3	56.7	66.6	82.4	99.1	108.2	107.0	99.6	93.2	86.7	80.5
72.5°	39.1	43.3	50.9	62.4	75.7	85.8	86.2	82.4	77.2	71.7	67.6
75°	31.5	33.4	37.0	45.9	56.4	64.9	67.9	66.0	61.7	58.3	55.6
77.5°	24.3	26.0	28.3	32.6	40.8	47.4	50.9	51.2	48.6	45.7	43.5
80°	18.2	18.8	20.5	22.6	26.8	32.6	36.8	36.8	35.3	33.8	32.6
82.5°	12.5	13.1	14.0	15.0	17.1	20.5	24.3	24.9	24.1	23.7	22.0
85°	7.0	7.6	8.0	8.7	9.5	11.2	14.0	14.8	15.0	13.7	12.9
87.5°	2.7	2.7	3.0	3.2	3.4	4.0	5.1	6.3	6.3	5.7	5.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
2.5°	635.2	632.3	628.5	625.1	620.4	615.8	614.9	616.6	617.0	614.9	615.6
5°	620.2	614.7	610.1	602.5	597.6	591.3	587.0	587.0	587.0	583.9	580.9
7.5°	604.6	597.2	588.3	581.1	571.2	562.9	558.9	557.0	553.2	550.0	546.4
10°	586.4	576.0	565.0	553.8	545.2	533.8	527.0	522.8	516.2	513.5	508.2
12.5°	565.0	554.7	541.4	523.2	520.6	506.7	497.2	489.4	481.3	474.8	472.5
15°	547.9	530.0	512.2	499.3	480.5	472.2	458.3	457.0	450.5	431.2	416.2
17.5°	520.2	504.2	484.5	470.1	455.1	436.7	421.9	407.3	393.4	379.9	379.4
20°	495.7	476.9	458.3	442.6	416.4	390.2	381.1	367.8	359.6	348.8	345.6
22.5°	468.9	449.2	425.9	403.1	372.5	356.0	346.0	335.5	327.2	322.4	317.5
25°	441.8	422.1	391.3	363.2	342.2	329.3	320.9	309.5	303.6	299.3	293.0
27.5°	415.4	390.4	357.9	335.5	318.6	304.0	296.4	287.1	280.5	275.0	271.0
30°	389.2	354.9	327.2	309.9	292.6	283.5	273.5	266.6	261.7	256.6	250.1
32.5°	360.4	324.5	306.5	285.2	275.0	261.9	254.7	247.5	241.2	237.6	235.3
35°	327.0	298.1	282.0	266.3	253.5	244.8	234.6	230.2	226.8	219.8	216.9
37.5°	298.7	277.8	260.9	246.9	235.1	225.8	221.1	213.5	208.6	206.3	203.1
40°	275.2	256.6	242.0	227.9	217.9	211.2	202.9	198.9	192.6	190.2	187.7
42.5°	254.9	237.8	222.6	211.8	203.1	193.8	189.6	182.9	180.1	174.4	172.3
45°	234.4	219.2	205.9	195.3	187.1	181.4	173.8	169.5	164.7	161.7	156.0
47.5°	213.9	200.4	189.4	180.5	173.3	166.4	160.0	156.4	150.3	147.1	144.2
50°	198.1	185.0	174.6	165.7	158.3	151.4	147.3	141.4	135.9	132.3	131.3
52.5°	179.3	167.8	158.3	151.6	144.2	139.1	133.6	127.0	124.3	120.7	119.9
55°	162.6	153.3	145.2	138.0	131.7	126.0	119.6	115.0	112.9	111.2	109.9
57.5°	146.9	138.0	130.6	124.1	118.6	112.7	107.4	104.6	102.7	100.8	99.6
60°	131.5	123.5	116.7	111.2	105.5	99.8	96.0	93.6	92.2	89.4	88.6
62.5°	117.7	110.3	103.4	98.3	93.0	88.6	85.4	82.2	79.9	77.8	73.4
65°	102.7	96.2	90.9	85.8	80.8	77.4	73.8	70.2	67.2	67.2	67.2
67.5°	89.4	83.7	78.2	73.8	69.3	65.3	61.7	61.5	60.5	60.0	59.4
70°	75.9	71.9	66.8	61.9	57.5	55.6	55.0	53.9	52.6	52.4	51.6
72.5°	63.6	59.0	54.3	50.1	49.3	48.4	47.1	46.1	45.2	44.6	44.2
75°	52.0	47.4	43.5	42.5	41.4	40.0	38.9	38.0	37.6	37.6	37.4
77.5°	39.7	37.0	35.3	33.6	32.8	31.9	31.3	30.9	30.2	30.4	30.0
80°	29.2	28.3	26.8	25.8	25.4	24.5	24.1	23.9	23.5	23.5	23.3
82.5°	20.9	19.4	18.8	18.2	17.8	17.3	17.5	17.3	17.1	16.9	17.1
85°	12.0	11.8	11.4	11.4	11.4	11.2	11.2	11.2	11.0	10.8	10.8
87.5°	5.3	5.5	5.5	5.1	5.7	5.7	5.5	5.5	5.3	5.7	5.3
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):

	165°	170°	175°	180°
0°	646.0	646.0	646.0	646.0
2.5°	612.8	612.6	611.3	609.2
5°	579.6	578.8	576.7	578.4
7.5°	544.1	541.8	539.7	540.7
10°	506.1	505.2	503.9	501.4
12.5°	464.0	467.4	463.8	471.8
15°	401.6	416.6	397.8	404.2
17.5°	370.6	370.8	368.2	365.3
20°	341.4	334.0	336.7	331.9
22.5°	313.3	311.6	310.7	309.0
25°	288.1	285.0	283.9	285.0
27.5°	269.5	268.0	264.0	263.4
30°	246.3	245.6	244.4	243.9
32.5°	231.7	228.9	228.3	225.8
35°	215.4	213.9	212.9	212.2
37.5°	199.1	198.3	196.4	197.4
40°	185.8	181.6	179.9	179.7
42.5°	171.2	168.9	165.5	164.5
45°	154.3	153.3	152.2	151.8
47.5°	139.5	138.9	137.6	137.0
50°	128.9	127.3	127.0	126.8
52.5°	118.8	118.2	117.5	118.4
55°	109.3	108.4	107.8	107.8
57.5°	98.9	97.4	96.2	96.4
60°	86.9	86.0	85.0	84.6
62.5°	72.9	72.9	72.7	72.7
65°	66.4	66.0	65.7	66.0
67.5°	59.2	58.8	58.1	58.3
70°	50.9	50.7	50.9	50.7
72.5°	43.5	43.3	43.5	44.0
75°	36.8	36.6	36.4	36.4
77.5°	29.8	29.6	29.2	29.6
80°	23.3	23.0	22.8	22.8
82.5°	16.5	16.7	16.5	16.5
85°	10.8	11.0	10.8	10.6
87.5°	5.5	5.7	5.3	5.1
90°	0.0	0.0	0.0	0.0

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