

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: P243606

Luminaire Tested: **S124RDR-H350D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243606
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H350D840-X4F0-XX-UDD-A-W
Description: DEFINE 4 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: 1401.0 lumens
Efficiency: N/A
Efficacy: 125.1 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

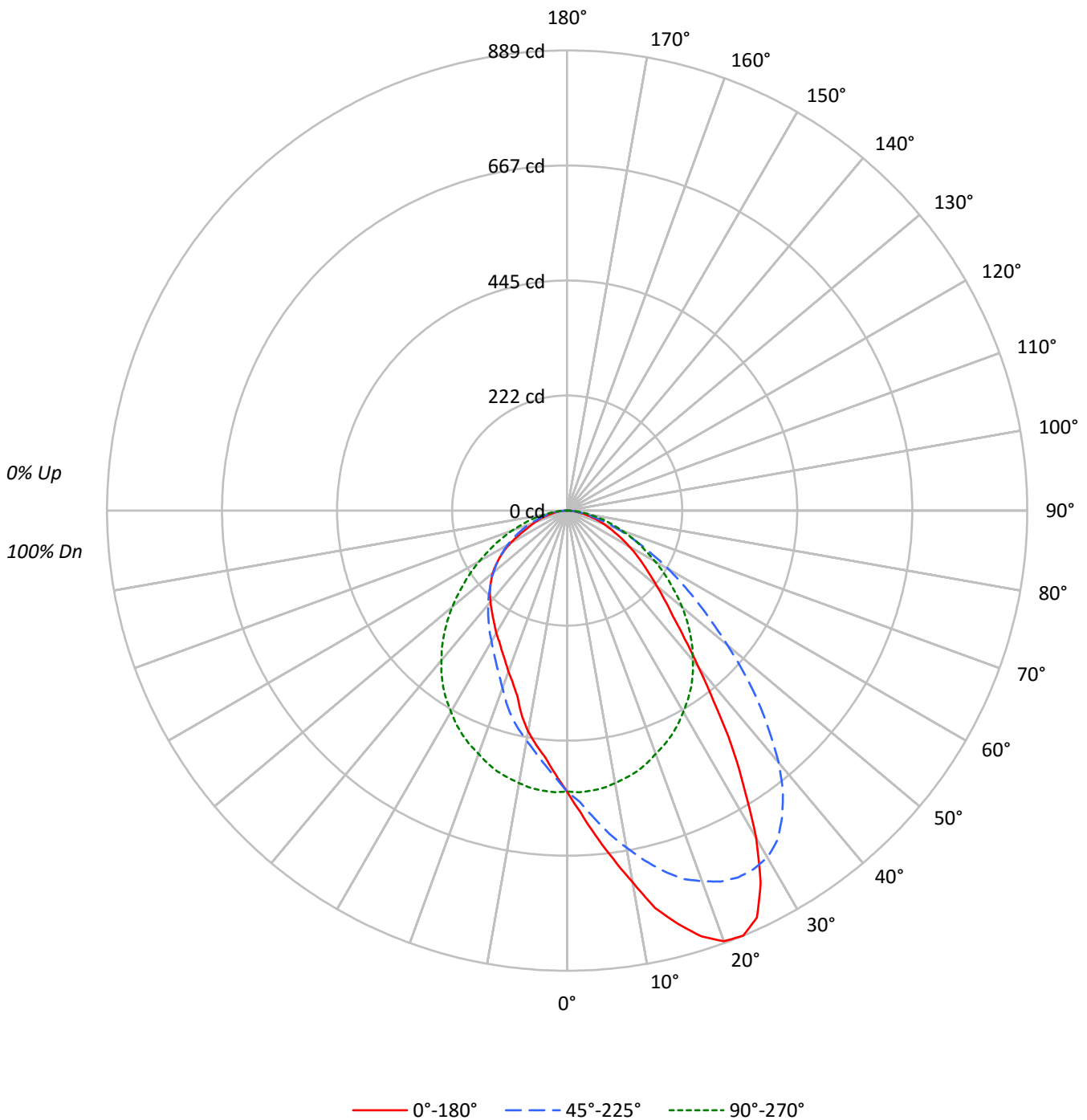
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75					73				
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65					63				
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57					55				
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	58	50	45	56	50	45	54	49	44					42				
7	68	55	46	41	66	54	46	40	53	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	45	38	33	43	37	33	42	37	32					31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4825	4825	4825
5°	5621	4845	4278
10°	6583	4825	3911
15°	7606	4801	3416
20°	8374	4733	3131
25°	8508	4689	2928
30°	7490	4606	2807
35°	6009	4528	2716
40°	4572	4383	2673
45°	3629	4223	2641
50°	3116	4013	2596
55°	2752	3753	2470
60°	2466	3483	2263
65°	2171	3218	1903
70°	1934	2924	1715
75°	1683	2658	1525
80°	1428	2283	1408
85°	1254	1958	1428



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.7	3.8
10°-20°	159.7	11.4
20°-30°	249.3	17.8
30°-40°	278.0	19.8
40°-50°	249.9	17.8
50°-60°	197.4	14.1
60°-70°	131.1	9.4
70°-80°	65.7	4.7
80°-90°	17.1	1.2
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°	461.7	33.0
0°-40°	739.7	52.8
0°-60°	1187.0	84.7
0°-90°	1401.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1401.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	543	543	543	543	543	
5°	630	596	543	493	479	63
15°	826	721	522	413	371	235
25°	868	782	478	325	298	388
35°	554	724	417	264	250	344
45°	289	521	336	211	210	229
55°	178	306	242	160	159	160
65°	103	157	153	105	90	103
75°	49	62	77	52	44	52
85°	12	13	19	14	14	14
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°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	583.0	580.9	580.7	577.9	577.7	575.0	574.1	571.8	567.1	563.5	563.8
5°	629.9	628.2	628.0	625.3	624.4	621.0	615.8	609.4	602.0	595.9	591.9
7.5°	678.1	681.1	677.9	677.9	671.8	667.8	657.4	652.1	639.4	630.5	621.2
10°	729.3	732.0	730.7	728.2	720.2	711.9	701.1	690.8	675.4	661.4	652.1
12.5°	786.3	778.1	783.4	775.6	769.0	755.9	745.5	724.8	712.6	692.3	674.1
15°	826.5	823.3	823.1	817.8	810.6	796.3	785.1	763.5	742.6	721.2	700.7
17.5°	862.4	862.9	859.9	851.4	842.1	828.2	813.0	793.7	769.8	746.2	721.9
20°	885.3	885.5	883.4	878.9	868.8	856.1	840.4	815.3	788.2	762.0	737.7
22.5°	888.6	889.3	888.6	885.9	878.9	868.6	854.2	832.8	805.6	775.6	746.6
25°	867.5	869.6	869.8	873.6	870.0	866.0	855.5	837.5	812.3	781.9	750.4
27.5°	809.6	815.5	821.0	827.8	833.9	839.4	840.2	830.7	809.2	780.8	750.8
30°	729.7	736.7	747.7	754.8	773.9	785.9	802.2	805.8	795.4	773.7	744.7
32.5°	636.7	644.1	648.3	672.0	699.2	718.9	746.0	762.0	766.0	755.7	732.0
35°	553.8	555.1	558.3	585.1	612.2	642.0	675.6	703.5	722.5	723.6	711.9
37.5°	465.0	466.5	479.0	499.5	523.0	555.7	594.4	634.1	669.0	685.1	681.7
40°	394.0	393.6	406.9	424.7	447.5	481.5	521.5	564.8	602.0	635.6	643.7
42.5°	336.5	338.0	349.4	359.8	381.8	405.6	448.3	493.4	541.1	577.9	602.4
45°	288.7	292.6	300.4	310.1	326.6	348.6	383.4	428.3	477.1	521.3	550.6
47.5°	255.8	256.8	260.8	272.9	283.9	301.6	331.4	369.5	412.8	462.3	501.0
50°	225.3	227.9	229.3	236.5	247.3	264.2	287.3	315.6	358.5	403.9	452.4
52.5°	199.1	200.6	203.3	209.9	218.4	230.2	248.4	273.3	309.0	351.1	396.8
55°	177.6	177.8	180.5	185.2	191.7	200.8	218.1	236.1	267.8	306.1	347.5
57.5°	158.1	156.8	159.4	162.1	168.5	176.3	187.5	205.9	230.6	263.2	300.6
60°	138.7	139.7	139.5	142.7	146.1	153.9	163.4	175.4	195.7	225.5	257.3
62.5°	120.5	120.3	122.4	124.3	126.6	133.0	140.8	150.7	166.6	188.6	219.2
65°	103.2	103.6	105.3	106.7	109.3	113.3	119.2	127.3	139.9	156.8	182.6
67.5°	87.5	89.0	89.8	90.3	92.6	95.5	100.6	107.2	115.8	129.4	150.9
70°	74.4	74.8	75.3	76.7	77.8	79.5	83.3	86.9	94.7	104.6	120.3
72.5°	62.1	61.7	63.0	63.4	63.8	65.5	67.9	69.8	74.8	83.3	93.0
75°	49.0	49.3	49.5	50.1	51.8	52.0	53.1	55.2	58.8	62.1	68.7
77.5°	36.8	37.4	37.2	37.8	38.5	39.1	39.5	41.4	44.0	46.7	49.9
80°	27.9	27.9	27.9	28.3	27.9	29.4	29.4	30.0	30.7	31.9	34.2
82.5°	19.0	19.4	19.7	19.9	20.1	20.1	20.3	20.7	21.6	22.0	22.6
85°	12.3	11.8	12.0	12.0	12.0	12.0	12.5	12.9	12.9	13.1	13.7
87.5°	5.5	5.5	5.5	5.5	5.3	5.5	5.7	5.7	5.9	5.9	6.3
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°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	562.5	561.8	558.7	555.3	552.1	549.0	547.9	544.7	540.9	537.5	533.7
5°	587.6	582.6	575.6	568.4	561.0	554.2	549.0	543.0	536.3	528.2	521.9
7.5°	613.0	603.7	592.3	581.7	569.0	558.9	548.7	540.3	530.6	519.2	510.5
10°	637.7	622.3	608.4	591.7	575.6	561.6	548.7	534.6	521.7	509.4	497.4
12.5°	657.4	642.0	621.9	601.4	580.7	562.5	545.2	528.5	512.4	497.6	484.3
15°	679.8	657.6	632.9	610.3	581.9	559.5	539.7	521.7	503.3	485.3	470.7
17.5°	696.3	670.1	639.4	613.4	586.2	558.3	534.4	511.8	490.6	471.8	456.8
20°	709.0	677.9	647.2	614.3	581.7	553.2	526.3	500.3	479.0	458.5	442.6
22.5°	714.5	681.7	647.7	611.9	577.3	544.9	517.0	490.2	466.1	445.0	426.6
25°	716.8	680.9	645.6	605.0	569.9	536.9	505.8	478.1	453.4	429.5	411.3
27.5°	714.9	676.4	635.8	597.6	557.8	525.5	492.5	464.4	438.6	415.6	395.3
30°	709.8	666.3	625.9	583.0	544.7	510.7	478.6	448.8	422.8	399.3	379.2
32.5°	696.7	654.9	609.0	567.1	525.9	492.3	463.1	433.8	407.3	382.8	363.4
35°	680.4	639.4	591.4	547.7	506.9	472.9	443.5	417.3	391.3	365.3	345.4
37.5°	659.9	618.3	572.0	524.9	484.9	451.9	425.1	398.7	372.9	349.0	326.8
40°	632.2	594.2	547.7	500.3	460.2	428.5	402.0	377.7	354.9	331.4	307.6
42.5°	597.8	568.8	520.8	474.1	434.8	403.3	379.9	358.1	336.1	312.0	290.4
45°	561.0	536.3	492.7	445.6	408.2	377.5	355.1	335.9	315.2	293.8	271.2
47.5°	519.6	501.2	463.6	416.8	377.5	351.3	330.6	313.1	294.2	275.2	253.2
50°	472.9	461.7	429.5	387.0	349.6	323.0	305.9	290.2	274.2	255.1	236.3
52.5°	426.1	424.0	394.0	356.6	321.3	296.6	279.9	265.5	252.4	234.4	218.6
55°	377.1	383.4	358.5	324.0	292.6	268.7	253.9	242.2	230.8	215.6	200.4
57.5°	333.6	340.7	323.6	291.9	262.5	242.2	229.6	219.0	209.1	195.1	185.0
60°	285.4	298.5	289.4	260.4	234.4	216.2	204.4	195.9	187.7	175.7	166.8
62.5°	247.3	256.4	251.1	229.6	206.5	191.7	181.2	173.3	166.8	157.5	148.8
65°	206.5	217.9	215.2	201.0	180.7	167.2	159.2	153.0	146.3	138.9	131.7
67.5°	169.7	181.6	180.9	171.2	156.2	145.0	137.4	133.0	127.5	120.3	115.8
70°	136.6	147.5	148.0	143.1	132.5	122.0	116.5	112.5	108.2	102.9	99.8
72.5°	106.1	116.0	117.7	115.4	108.6	101.7	96.8	94.1	90.5	86.0	83.3
75°	79.3	86.5	90.5	89.4	86.7	82.0	79.3	77.4	73.8	70.6	68.3
77.5°	56.4	62.1	66.2	67.9	66.6	64.7	62.1	60.7	56.9	55.4	54.1
80°	37.8	42.9	46.5	47.6	48.2	47.8	45.4	44.6	42.7	42.1	40.8
82.5°	23.3	26.0	28.5	31.3	32.6	32.6	31.3	31.5	29.8	29.0	28.5
85°	14.2	14.8	15.2	17.3	19.0	19.7	19.0	19.2	18.6	18.0	17.3
87.5°	6.6	6.6	6.8	7.2	7.6	8.9	9.3	9.9	9.1	9.1	7.6
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°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	531.4	528.7	526.5	523.2	520.4	516.0	514.5	514.5	515.3	514.3	515.3
5°	517.5	512.4	506.9	502.0	496.7	492.9	489.1	488.3	487.9	485.3	485.5
7.5°	503.5	496.7	489.8	483.4	476.9	471.0	466.9	465.2	463.8	462.1	460.2
10°	488.5	480.7	472.4	465.2	458.9	450.9	446.9	445.6	441.4	440.5	437.6
12.5°	472.6	464.6	456.4	447.1	440.9	433.1	427.2	424.5	420.4	417.5	413.0
15°	460.2	450.0	439.0	429.9	421.9	413.2	405.2	399.9	394.6	386.4	382.4
17.5°	444.7	433.1	423.6	413.9	402.3	389.6	380.1	372.2	366.5	359.8	355.8
20°	428.0	417.3	405.4	391.7	379.4	365.1	356.4	349.8	345.4	341.4	339.3
22.5°	413.2	400.8	384.5	371.4	354.3	342.9	335.9	331.7	327.4	323.2	321.1
25°	397.2	382.6	362.7	346.7	333.8	324.9	318.1	314.1	309.7	307.1	304.0
27.5°	381.3	362.5	342.6	328.1	317.9	307.6	301.9	298.7	295.3	291.7	289.2
30°	362.1	340.7	324.3	310.9	300.8	292.1	287.9	283.2	280.3	278.2	276.7
32.5°	342.0	321.5	306.5	295.1	285.2	278.6	273.3	270.4	267.8	265.5	263.8
35°	323.2	303.3	290.6	279.7	271.4	264.0	260.0	257.3	255.1	253.2	252.4
37.5°	304.6	287.7	273.9	265.3	256.6	250.7	246.9	244.4	243.1	241.2	241.4
40°	286.2	271.0	260.0	250.1	242.0	237.0	234.0	232.9	231.0	230.4	231.0
42.5°	269.7	255.8	245.2	235.9	228.9	224.1	221.7	220.3	219.6	219.4	219.6
45°	253.7	240.6	230.4	222.8	215.6	211.2	209.3	208.2	207.6	208.6	208.8
47.5°	237.6	225.8	216.7	207.8	201.9	198.7	196.8	195.9	196.6	197.0	198.5
50°	221.7	210.7	201.2	193.4	188.8	185.8	185.2	183.7	184.7	185.4	186.4
52.5°	205.7	195.7	187.3	179.9	175.0	173.1	171.6	171.0	172.5	172.5	173.5
55°	189.4	180.7	172.9	166.1	162.3	160.0	159.0	158.1	159.0	159.2	159.0
57.5°	174.2	165.9	157.7	152.0	148.8	146.3	145.2	144.8	144.6	145.4	145.2
60°	158.1	150.3	143.7	137.8	134.6	133.2	130.8	131.3	131.3	131.3	129.2
62.5°	142.0	134.2	128.5	124.5	120.7	118.2	117.7	117.1	115.8	115.6	112.9
65°	125.6	119.6	114.8	110.8	107.0	104.8	104.2	102.3	100.8	98.1	96.2
67.5°	110.3	106.1	100.4	97.0	93.9	91.3	89.0	87.5	84.6	81.8	80.1
70°	95.1	90.7	86.9	83.3	80.1	77.8	75.0	72.3	70.4	68.7	67.4
72.5°	79.9	76.1	72.9	69.5	66.2	63.8	61.7	59.6	58.8	57.9	57.3
75°	65.7	62.1	59.2	56.4	54.5	51.8	50.7	49.9	49.0	48.0	46.7
77.5°	52.0	49.3	46.9	44.6	42.9	41.4	40.6	38.0	35.9	35.5	35.1
80°	38.7	36.6	35.1	33.4	31.5	29.4	28.7	27.9	27.5	27.5	27.7
82.5°	27.1	25.8	24.1	22.6	22.0	21.1	21.1	20.9	20.7	20.9	20.9
85°	16.5	14.8	14.4	14.2	14.4	14.4	14.4	14.4	14.2	14.4	14.0
87.5°	7.2	7.8	8.0	7.4	7.6	7.2	7.4	7.4	7.4	7.6	7.4
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°	542.8	542.8	542.8	542.8
2.5°	514.1	514.1	512.0	510.3
5°	485.1	482.4	481.9	479.4
7.5°	458.1	457.6	456.6	456.6
10°	436.5	435.0	433.5	433.3
12.5°	406.1	408.2	405.6	405.0
15°	379.4	377.7	375.6	371.2
17.5°	354.7	351.5	350.7	348.8
20°	335.2	332.9	332.1	331.0
22.5°	316.9	316.4	313.9	313.3
25°	303.3	301.2	299.5	298.5
27.5°	288.5	287.1	286.2	284.5
30°	275.0	274.6	273.5	273.5
32.5°	262.7	261.5	261.5	261.3
35°	251.5	252.0	250.7	250.3
37.5°	241.0	240.3	240.6	240.1
40°	230.6	230.2	230.2	230.4
42.5°	220.0	220.3	220.7	220.7
45°	209.5	209.7	210.1	210.1
47.5°	199.5	199.1	199.5	199.1
50°	186.9	188.1	187.9	187.7
52.5°	174.0	173.5	174.4	174.2
55°	160.0	159.4	160.2	159.4
57.5°	144.4	144.6	144.6	144.2
60°	128.7	128.1	127.3	127.3
62.5°	110.6	108.6	107.4	108.2
65°	93.0	91.5	91.1	90.5
67.5°	79.1	77.4	76.7	76.5
70°	67.0	66.2	66.0	66.0
72.5°	56.9	56.9	56.2	55.8
75°	46.3	45.4	44.4	44.4
77.5°	34.7	34.5	34.2	34.2
80°	27.1	27.1	27.3	27.5
82.5°	20.3	20.5	20.7	20.7
85°	13.7	13.7	14.0	14.0
87.5°	7.4	7.4	7.4	7.2
90°	0.0	0.0	0.0	0.0

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