

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: P242299

Luminaire Tested: **S122DR-S290D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242299
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S290D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1265.6 lumens
Efficiency: N/A
Efficacy: 109.1 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

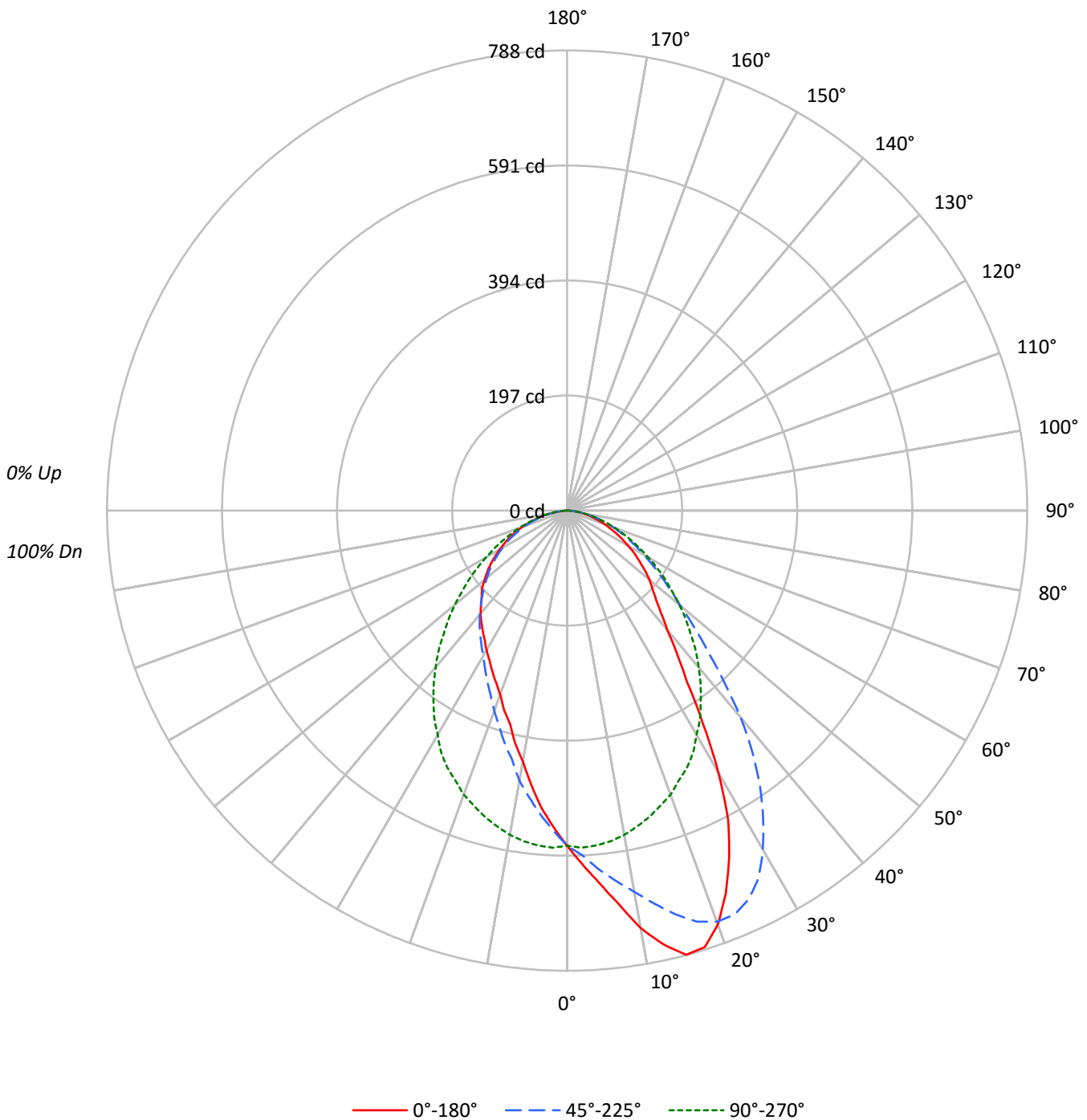
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10928	10928	10928
5°	12250	11000	9748
10°	14040	10909	8435
15°	15531	10710	7452
20°	15294	10494	6793
25°	13791	10208	6377
30°	11397	9752	6073
35°	8306	9276	5855
40°	6634	8713	5734
45°	5797	8060	5571
50°	5450	7429	5461
55°	5024	6788	5317
60°	4602	6107	5090
65°	4192	5494	4868
70°	3809	4901	4544
75°	3378	4232	4026
80°	2907	3510	3236
85°	2601	2601	1923



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.6	4.3
10°-20°	159.0	12.6
20°-30°	230.8	18.2
30°-40°	243.3	19.2
40°-50°	215.3	17.0
50°-60°	171.9	13.6
60°-70°	116.7	9.2
70°-80°	59.8	4.7
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°	444.5	35.1
0°-40°	687.9	54.3
0°-60°	1075.0	84.9
0°-90°	1265.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1265.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	574	574	574	574	574	
5°	641	617	575	523	510	64
15°	788	716	543	413	378	218
25°	656	735	486	323	303	298
35°	357	576	399	259	252	231
45°	215	341	299	205	207	169
55°	151	196	204	154	160	136
65°	93	116	122	102	108	92
75°	46	56	58	52	55	49
85°	12	13	12	10	9	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°	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7
2.5°	606.8	607.0	607.5	603.9	603.5	603.5	600.4	597.7	594.7	590.5	590.9
5°	640.7	643.2	644.1	641.4	637.4	637.0	633.2	627.1	621.3	616.7	613.4
7.5°	680.0	680.9	679.1	676.0	673.4	668.3	662.1	656.2	647.4	639.4	633.7
10°	725.9	727.2	723.4	718.4	714.2	708.0	697.9	687.5	674.9	662.8	653.1
12.5°	760.7	764.4	759.4	759.8	751.9	742.8	730.3	726.3	707.3	689.3	678.7
15°	787.6	787.4	787.8	783.6	778.3	777.0	764.2	750.3	725.4	715.5	698.3
17.5°	783.6	786.7	788.5	787.1	786.3	784.3	778.8	768.4	754.7	738.0	717.5
20°	754.5	758.9	759.6	764.7	767.5	771.3	772.8	770.4	762.7	749.2	732.0
22.5°	709.5	710.0	712.4	721.0	728.1	738.9	744.6	755.4	753.6	748.8	735.1
25°	656.2	654.0	661.7	665.7	680.0	695.0	705.8	717.7	728.3	734.7	730.5
27.5°	597.1	592.5	604.1	614.5	624.6	639.2	655.5	674.9	689.7	709.8	714.6
30°	518.2	520.1	531.2	542.4	560.0	583.0	601.9	623.8	647.4	670.5	686.6
32.5°	433.0	442.1	448.0	466.8	481.8	508.0	538.0	566.7	597.5	624.6	651.8
35°	357.2	366.0	375.7	388.3	410.1	435.5	462.6	499.4	539.5	575.5	605.0
37.5°	309.1	307.6	313.5	322.8	341.5	363.4	395.6	433.0	481.1	521.0	560.7
40°	266.8	265.9	269.9	278.3	291.7	306.7	334.0	366.0	409.9	461.5	511.1
42.5°	237.7	238.6	240.3	245.6	253.8	265.5	284.2	310.2	349.5	397.3	451.6
45°	215.2	216.7	219.2	222.0	227.3	237.5	248.9	268.3	300.1	340.7	393.1
47.5°	197.6	198.0	200.6	203.3	206.4	212.6	222.7	235.0	259.3	293.9	340.9
50°	183.9	182.3	184.1	186.1	189.4	193.4	199.5	211.0	226.0	252.7	290.4
52.5°	167.1	167.6	169.1	169.6	172.4	176.4	181.9	189.0	202.2	221.6	250.9
55°	151.3	152.4	153.2	154.6	157.2	160.1	164.5	169.8	180.4	196.0	218.9
57.5°	136.3	136.7	137.4	140.2	141.8	144.4	148.8	153.7	160.7	172.9	190.9
60°	120.8	120.8	122.6	123.7	125.9	128.5	131.9	136.5	142.7	152.1	166.0
62.5°	106.7	106.5	106.9	108.9	110.5	112.9	116.2	119.9	125.7	133.8	144.6
65°	93.0	92.6	93.9	94.4	96.1	98.6	101.2	105.4	110.0	116.2	126.3
67.5°	79.4	80.0	80.9	81.8	82.7	85.6	87.3	90.4	94.4	99.7	106.7
70°	68.4	68.4	68.4	69.0	70.3	71.7	73.4	75.8	79.6	84.0	90.2
72.5°	56.0	56.9	57.8	57.1	58.9	59.5	61.7	62.8	66.4	68.8	74.1
75°	45.9	45.9	45.9	47.0	47.6	48.3	49.6	50.9	52.7	56.2	59.1
77.5°	36.2	35.9	36.2	36.4	37.3	38.1	38.6	39.7	41.5	43.2	45.9
80°	26.5	26.9	27.1	27.6	27.6	28.0	28.2	29.8	30.9	32.0	33.5
82.5°	19.0	19.0	19.0	19.0	19.2	19.4	20.1	20.3	20.5	21.4	22.5
85°	11.9	11.7	11.7	12.1	11.9	11.9	12.3	12.8	12.8	13.0	13.7
87.5°	5.7	5.7	6.0	5.7	5.7	6.0	6.0	5.7	6.0	6.2	6.4
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7
2.5°	592.5	590.7	589.6	585.6	582.1	578.6	577.5	577.9	573.1	568.4	566.4
5°	611.6	607.2	603.0	597.1	590.0	582.3	578.3	575.3	567.5	559.2	554.3
7.5°	629.1	623.3	615.8	605.2	595.5	584.1	577.0	571.1	560.3	549.0	542.2
10°	644.7	636.1	625.8	612.1	599.5	584.7	574.4	564.0	550.8	536.7	527.9
12.5°	658.2	645.8	635.7	617.2	601.7	582.3	569.5	553.9	539.8	522.3	513.7
15°	681.1	659.7	640.3	620.5	602.2	576.4	562.7	543.1	524.8	504.0	494.1
17.5°	698.1	674.9	644.9	620.9	600.6	573.1	553.4	530.1	509.3	486.4	473.2
20°	712.2	684.6	651.8	621.8	596.2	563.6	541.7	517.7	492.4	465.7	451.1
22.5°	720.6	691.2	658.8	618.5	587.4	555.9	527.0	500.1	474.3	444.9	429.5
25°	721.0	694.5	660.1	616.9	580.3	544.4	511.3	485.7	454.7	427.8	405.5
27.5°	713.7	692.8	659.5	613.8	572.2	530.9	495.0	467.0	434.1	405.0	382.8
30°	697.6	686.6	654.4	608.6	562.0	516.8	476.3	443.4	410.8	381.2	358.3
32.5°	672.7	672.5	645.2	601.1	551.2	499.0	456.6	423.3	386.3	357.4	335.8
35°	638.5	649.1	631.3	589.1	537.1	482.2	436.8	398.9	361.4	333.6	313.1
37.5°	595.1	619.6	612.5	573.3	519.0	464.4	415.0	375.3	339.3	310.7	290.6
40°	549.9	583.4	588.3	554.5	499.6	443.0	389.8	350.4	315.5	289.9	269.7
42.5°	501.4	542.0	557.4	532.0	478.5	420.5	367.3	326.1	291.7	267.0	249.6
45°	446.1	497.9	521.9	506.5	454.4	395.3	340.7	299.2	267.9	244.5	230.6
47.5°	396.0	452.2	482.9	475.6	428.6	370.0	316.0	275.6	244.5	225.6	212.6
50°	342.2	400.4	439.4	441.2	400.4	342.4	288.2	250.7	222.7	205.3	195.1
52.5°	295.5	350.4	393.8	405.0	368.9	313.8	263.3	226.0	202.2	186.5	177.7
55°	256.0	303.0	350.1	367.3	337.6	284.7	237.2	204.4	181.2	170.2	162.3
57.5°	218.5	259.7	304.5	322.6	303.6	257.1	211.2	182.3	162.7	152.8	146.6
60°	190.1	220.9	259.7	282.4	266.6	226.2	187.4	160.3	144.9	136.3	130.5
62.5°	163.6	190.1	221.4	241.7	234.8	197.3	163.6	140.5	127.7	119.7	116.0
65°	139.3	161.0	186.3	205.5	199.8	170.9	142.4	121.9	111.3	105.0	101.6
67.5°	118.6	135.2	153.2	170.9	166.0	144.6	120.6	104.1	95.9	90.2	88.2
70°	99.2	111.1	126.8	140.2	136.5	119.7	101.6	88.0	81.1	76.5	74.5
72.5°	80.7	90.0	101.0	111.3	109.1	95.9	81.6	72.1	67.2	63.1	61.5
75°	63.7	71.2	78.5	85.8	85.1	74.3	65.5	57.5	53.4	50.1	49.4
77.5°	49.8	54.5	59.8	64.4	63.3	56.2	48.9	44.1	40.8	38.6	38.4
80°	35.9	38.4	41.9	45.0	43.4	40.8	35.3	32.0	29.8	27.6	26.7
82.5°	23.6	26.0	27.8	29.1	28.0	25.6	22.7	20.7	19.6	18.3	18.1
85°	13.7	15.0	15.9	16.3	15.9	14.3	12.8	11.9	10.8	10.1	9.9
87.5°	6.6	6.6	6.6	7.1	6.4	6.4	5.5	4.9	4.6	4.4	4.0
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7	573.7
2.5°	564.2	562.9	558.3	555.9	551.9	548.1	545.7	546.8	547.7	547.3	546.6
5°	549.9	545.7	539.3	533.8	529.8	522.6	519.5	517.9	516.6	515.1	513.5
7.5°	534.0	528.1	519.0	512.0	504.9	495.7	491.0	488.4	485.5	482.2	479.1
10°	516.8	507.6	497.9	486.8	478.0	469.9	462.6	457.7	453.3	449.1	446.1
12.5°	498.7	487.7	475.2	459.1	449.1	436.6	437.0	427.5	420.0	417.8	414.1
15°	479.3	464.4	449.1	431.3	423.6	413.0	406.4	399.7	393.8	389.6	388.5
17.5°	458.2	438.1	423.3	410.1	397.5	386.7	381.0	375.7	370.6	364.5	364.2
20°	433.3	416.5	400.0	388.7	375.7	364.7	357.2	351.9	347.7	344.4	341.5
22.5°	409.7	390.9	376.2	363.6	350.8	342.4	336.9	331.8	328.5	324.8	322.1
25°	384.1	369.8	353.2	339.3	328.8	323.0	318.2	313.8	311.6	309.1	306.0
27.5°	362.3	346.4	330.1	319.3	309.6	304.5	300.7	297.4	295.5	293.9	291.9
30°	338.9	322.8	310.7	300.1	292.4	287.3	285.1	283.3	280.9	280.0	279.1
32.5°	316.4	302.3	292.4	283.6	276.3	273.4	271.4	269.9	268.1	267.2	265.2
35°	295.5	283.3	273.2	268.1	262.2	259.3	257.8	255.5	253.8	252.9	252.7
37.5°	275.4	264.4	257.5	250.7	247.8	246.3	244.1	242.5	241.9	241.7	241.4
40°	256.0	247.4	241.4	236.1	235.0	232.4	230.6	229.3	229.3	229.5	229.3
42.5°	238.3	230.9	225.8	221.4	220.0	218.7	217.0	217.2	217.6	218.5	217.6
45°	220.5	215.0	211.2	209.0	206.6	205.1	204.8	205.5	205.7	205.9	206.6
47.5°	203.7	200.2	196.7	194.0	192.9	192.7	192.3	193.4	194.5	194.7	195.8
50°	189.2	185.0	182.1	180.6	179.7	179.3	179.7	181.0	181.9	183.0	183.7
52.5°	172.9	170.2	168.5	167.4	167.1	167.6	167.6	169.1	170.7	170.9	171.1
55°	158.1	155.9	155.4	153.5	154.3	154.1	155.2	156.1	157.4	158.8	159.0
57.5°	143.1	141.1	139.8	140.0	140.2	141.1	142.0	143.5	145.1	146.6	146.6
60°	128.1	127.2	126.6	126.6	127.0	128.3	129.4	131.0	131.9	132.7	133.4
62.5°	114.4	113.6	112.9	113.3	114.7	115.3	116.6	117.3	118.2	119.1	119.3
65°	99.9	99.4	100.1	100.5	100.8	101.9	103.4	104.1	105.0	105.4	106.9
67.5°	86.7	86.7	86.4	87.1	88.4	88.6	90.2	91.9	91.9	92.8	93.9
70°	73.2	73.6	74.1	74.5	75.6	76.1	77.2	77.8	78.7	79.4	80.0
72.5°	60.9	60.9	61.3	61.1	62.0	63.1	63.9	64.6	65.5	66.4	67.0
75°	48.7	48.7	49.2	49.4	50.5	51.6	51.4	51.8	52.7	53.6	54.0
77.5°	37.7	37.3	37.7	37.9	38.4	39.2	39.5	40.1	41.2	41.0	41.5
80°	27.1	26.5	27.1	27.3	27.3	28.4	28.4	28.9	29.5	28.9	29.5
82.5°	17.4	17.2	17.6	17.6	18.1	17.9	18.3	18.3	19.0	18.7	19.0
85°	9.7	9.5	9.7	9.5	9.7	9.9	9.9	9.7	9.7	10.1	9.5
87.5°	3.7	3.5	3.3	3.3	3.1	2.9	2.6	2.6	2.6	2.2	2.2
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°	573.7	573.7	573.7	573.7
2.5°	544.4	543.9	543.9	542.0
5°	510.4	509.8	508.7	509.8
7.5°	478.2	475.4	474.9	472.7
10°	442.3	440.5	440.3	436.1
12.5°	415.0	410.1	411.2	409.2
15°	382.6	382.6	381.7	377.9
17.5°	359.4	359.2	357.2	358.5
20°	339.1	337.8	335.1	335.1
22.5°	319.9	320.2	317.3	318.4
25°	305.8	304.1	302.7	303.4
27.5°	291.3	290.6	290.4	288.4
30°	278.9	276.7	277.2	276.1
32.5°	264.8	264.4	263.7	262.8
35°	252.2	252.5	251.4	251.8
37.5°	241.0	241.9	241.2	241.2
40°	230.0	230.0	230.0	230.6
42.5°	219.4	218.9	218.5	218.3
45°	207.0	207.7	207.9	206.8
47.5°	196.2	196.5	196.2	197.6
50°	184.8	184.3	184.8	184.3
52.5°	172.6	172.9	172.4	172.4
55°	159.9	160.3	160.1	160.1
57.5°	146.8	147.1	147.5	146.4
60°	133.2	134.3	134.1	133.6
62.5°	120.6	120.8	120.8	120.8
65°	107.6	108.0	107.4	108.0
67.5°	93.5	93.7	94.1	94.4
70°	80.5	80.3	80.9	81.6
72.5°	66.8	67.5	67.0	67.5
75°	53.6	54.2	54.0	54.7
77.5°	41.0	41.2	41.2	41.5
80°	29.5	29.1	28.7	29.5
82.5°	18.3	18.7	18.3	18.1
85°	9.5	9.3	8.8	8.8
87.5°	2.2	2.0	2.0	1.8
90°	0.0	0.0	0.0	0.0

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