

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: P242284

Luminaire Tested: **S122DR-S290D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242284
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-S290D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 992.8 lumens
Efficiency: N/A
Efficacy: 85.6 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

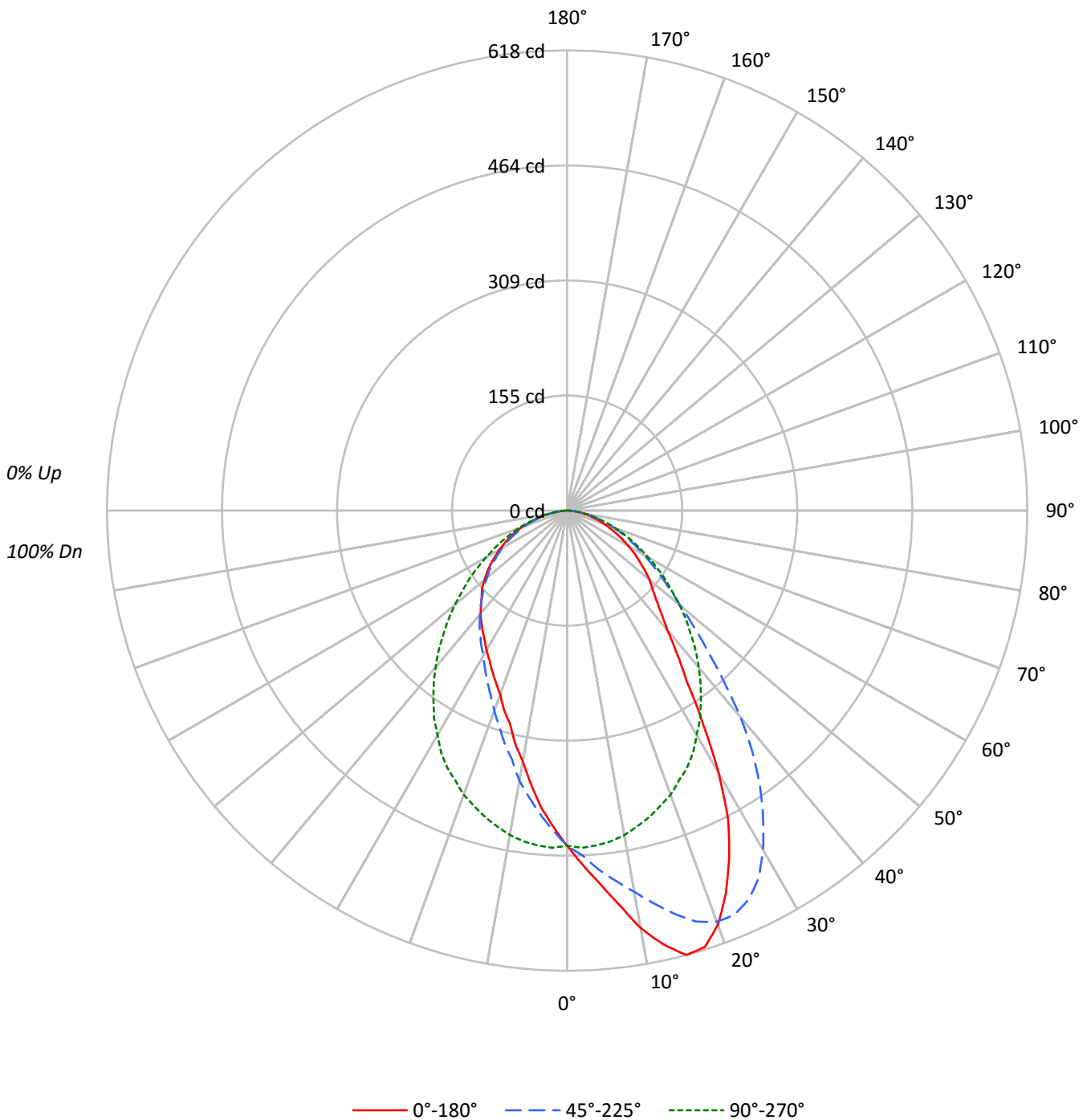
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	8571	8571	8571
5°	9610	8629	7646
10°	11013	8557	6617
15°	12183	8401	5847
20°	11998	8232	5329
25°	10817	8007	5002
30°	8941	7650	4762
35°	6515	7276	4592
40°	5204	6833	4498
45°	4547	6322	4369
50°	4276	5829	4285
55°	3942	5323	4171
60°	3611	4789	3992
65°	3290	4309	3822
70°	2985	3843	3564
75°	2649	3319	3157
80°	2282	2753	2545
85°	2032	2032	1508



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.9	4.3
10°-20°	124.8	12.6
20°-30°	181.1	18.2
30°-40°	190.9	19.2
40°-50°	168.9	17.0
50°-60°	134.8	13.6
60°-70°	91.6	9.2
70°-80°	46.9	4.7
80°-90°	11.1	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°	348.7	35.1
0°-40°	539.6	54.3
0°-60°	843.3	84.9
0°-90°	992.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	992.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	450	450	450	450	450	
5°	503	484	451	410	400	50
15°	618	561	426	324	296	171
25°	515	576	381	253	238	233
35°	280	451	313	203	198	181
45°	169	267	235	161	162	132
55°	119	154	160	121	126	106
65°	73	91	96	80	85	72
75°	36	44	45	40	43	38
85°	9	10	9	8	7	11
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°	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
2.5°	476.0	476.2	476.5	473.7	473.4	473.4	471.0	468.9	466.5	463.2	463.5
5°	502.6	504.5	505.2	503.1	500.0	499.7	496.7	491.9	487.4	483.8	481.2
7.5°	533.4	534.1	532.7	530.3	528.2	524.2	519.4	514.7	507.8	501.6	497.1
10°	569.4	570.4	567.5	563.5	560.2	555.4	547.4	539.3	529.4	519.9	512.3
12.5°	596.7	599.7	595.7	596.0	589.8	582.7	572.9	569.7	554.9	540.7	532.4
15°	617.8	617.6	618.0	614.7	610.6	609.5	599.5	588.6	569.0	561.3	547.8
17.5°	614.7	617.1	618.5	617.5	616.8	615.2	610.9	602.8	592.0	578.9	562.8
20°	591.9	595.3	595.9	599.8	602.1	605.0	606.2	604.3	598.3	587.7	574.2
22.5°	556.6	556.9	558.8	565.6	571.1	579.6	584.1	592.6	591.2	587.4	576.7
25°	514.7	513.0	519.1	522.2	533.4	545.2	553.7	563.0	571.3	576.3	573.0
27.5°	468.4	464.7	473.9	482.0	490.0	501.4	514.2	529.4	541.0	556.8	560.6
30°	406.5	408.0	416.7	425.5	439.3	457.3	472.2	489.3	507.8	526.0	538.6
32.5°	339.7	346.8	351.5	366.2	377.9	398.5	422.0	444.5	468.7	490.0	511.3
35°	280.2	287.1	294.7	304.6	321.7	341.6	362.9	391.8	423.2	451.4	474.6
37.5°	242.5	241.3	246.0	253.2	267.9	285.0	310.3	339.7	377.4	408.7	439.8
40°	209.3	208.6	211.7	218.3	228.8	240.6	262.0	287.1	321.5	362.0	400.9
42.5°	186.5	187.1	188.5	192.7	199.1	208.2	222.9	243.4	274.1	311.7	354.2
45°	168.8	170.0	171.9	174.2	178.3	186.3	195.3	210.5	235.4	267.2	308.4
47.5°	155.0	155.3	157.4	159.5	161.9	166.7	174.7	184.4	203.4	230.6	267.4
50°	144.3	143.0	144.4	146.0	148.6	151.7	156.5	165.5	177.3	198.2	227.8
52.5°	131.1	131.5	132.7	133.0	135.3	138.4	142.7	148.2	158.6	173.8	196.8
55°	118.7	119.5	120.2	121.2	123.3	125.6	129.0	133.2	141.5	153.8	171.8
57.5°	106.9	107.2	107.8	110.0	111.2	113.3	116.7	120.6	126.1	135.6	149.8
60°	94.8	94.8	96.2	97.0	98.8	100.8	103.4	107.1	111.9	119.3	130.2
62.5°	83.7	83.5	83.9	85.4	86.7	88.6	91.2	94.1	98.6	105.0	113.5
65°	73.0	72.6	73.7	74.0	75.4	77.3	79.4	82.7	86.3	91.2	99.1
67.5°	62.3	62.8	63.5	64.2	64.9	67.1	68.5	70.9	74.0	78.2	83.7
70°	53.6	53.6	53.6	54.1	55.2	56.2	57.6	59.5	62.4	65.9	70.7
72.5°	43.9	44.6	45.3	44.8	46.2	46.7	48.4	49.3	52.1	54.0	58.1
75°	36.0	36.0	36.0	36.8	37.4	37.9	38.9	40.0	41.3	44.1	46.4
77.5°	28.4	28.2	28.4	28.5	29.2	29.9	30.3	31.1	32.5	33.9	36.0
80°	20.8	21.1	21.3	21.6	21.6	22.0	22.1	23.3	24.2	25.1	26.3
82.5°	14.9	14.9	14.9	14.9	15.0	15.2	15.7	15.9	16.1	16.8	17.6
85°	9.3	9.2	9.2	9.5	9.3	9.3	9.7	10.0	10.0	10.2	10.7
87.5°	4.5	4.5	4.7	4.5	4.5	4.7	4.7	4.5	4.7	4.8	5.0
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°	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
2.5°	464.7	463.4	462.5	459.4	456.6	453.9	453.0	453.3	449.5	445.9	444.3
5°	479.8	476.3	473.1	468.4	462.8	456.8	453.7	451.3	445.2	438.6	434.8
7.5°	493.5	489.0	483.1	474.8	467.2	458.2	452.6	448.0	439.5	430.7	425.3
10°	505.7	499.0	490.9	480.1	470.3	458.7	450.6	442.4	432.1	421.0	414.1
12.5°	516.3	506.6	498.6	484.1	472.0	456.8	446.8	434.5	423.4	409.7	403.0
15°	534.3	517.5	502.3	486.7	472.4	452.1	441.4	426.0	411.6	395.4	387.6
17.5°	547.6	529.4	505.9	487.1	471.1	449.5	434.1	415.8	399.5	381.6	371.2
20°	558.7	537.0	511.3	487.8	467.7	442.1	425.0	406.1	386.2	365.3	353.9
22.5°	565.2	542.2	516.8	485.2	460.8	436.0	413.4	392.3	372.0	349.0	336.9
25°	565.6	544.8	517.8	483.9	455.2	427.0	401.1	381.0	356.6	335.5	318.1
27.5°	559.9	543.4	517.3	481.5	448.8	416.5	388.3	366.3	340.6	317.7	300.3
30°	547.3	538.6	513.4	477.4	440.9	405.4	373.6	347.8	322.2	299.1	281.1
32.5°	527.7	527.5	506.1	471.5	432.4	391.4	358.2	332.1	303.0	280.4	263.4
35°	500.9	509.2	495.2	462.2	421.3	378.3	342.6	312.9	283.5	261.7	245.6
37.5°	466.8	486.0	480.5	449.7	407.2	364.3	325.5	294.4	266.2	243.7	228.0
40°	431.4	457.7	461.5	435.0	391.9	347.5	305.8	274.8	247.5	227.4	211.5
42.5°	393.3	425.1	437.2	417.4	375.3	329.8	288.2	255.8	228.8	209.5	195.8
45°	349.9	390.5	409.4	397.3	356.5	310.1	267.2	234.7	210.1	191.8	180.9
47.5°	310.6	354.7	378.8	373.1	336.2	290.2	247.9	216.2	191.8	176.9	166.7
50°	268.4	314.1	344.7	346.1	314.1	268.6	226.1	196.7	174.7	161.0	153.1
52.5°	231.8	274.8	308.9	317.7	289.4	246.1	206.5	177.3	158.6	146.3	139.4
55°	200.8	237.6	274.7	288.2	264.8	223.3	186.1	160.3	142.2	133.5	127.3
57.5°	171.4	203.7	238.9	253.0	238.2	201.7	165.7	143.0	127.6	119.9	115.0
60°	149.1	173.3	203.7	221.6	209.1	177.5	147.0	125.7	113.6	106.9	102.4
62.5°	128.3	149.1	173.7	189.6	184.2	154.8	128.3	110.2	100.1	93.9	91.0
65°	109.3	126.3	146.2	161.2	156.7	134.0	111.7	95.6	87.3	82.3	79.7
67.5°	93.1	106.0	120.2	134.0	130.2	113.5	94.6	81.6	75.2	70.7	69.2
70°	77.8	87.2	99.5	110.0	107.1	93.9	79.7	69.0	63.7	60.0	58.5
72.5°	63.3	70.6	79.2	87.3	85.6	75.2	64.0	56.6	52.8	49.5	48.3
75°	50.0	55.9	61.6	67.3	66.8	58.3	51.4	45.1	41.9	39.3	38.7
77.5°	39.1	42.7	46.9	50.5	49.6	44.1	38.4	34.6	32.0	30.3	30.1
80°	28.2	30.1	32.9	35.3	34.1	32.0	27.7	25.1	23.3	21.6	20.9
82.5°	18.5	20.4	21.8	22.8	22.0	20.1	17.8	16.3	15.4	14.4	14.2
85°	10.7	11.8	12.5	12.8	12.5	11.2	10.0	9.3	8.5	8.0	7.8
87.5°	5.2	5.2	5.2	5.5	5.0	5.0	4.3	3.8	3.6	3.5	3.1
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°	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
2.5°	442.6	441.6	437.9	436.0	432.9	430.0	428.1	428.9	429.6	429.3	428.8
5°	431.4	428.1	423.1	418.7	415.6	409.9	407.5	406.3	405.3	404.0	402.8
7.5°	418.9	414.2	407.2	401.6	396.1	388.8	385.2	383.1	380.9	378.3	375.8
10°	405.4	398.2	390.5	381.9	375.0	368.6	362.9	359.1	355.6	352.3	349.9
12.5°	391.2	382.6	372.7	360.1	352.3	342.5	342.8	335.4	329.5	327.8	324.8
15°	376.0	364.3	352.3	338.3	332.3	324.0	318.8	313.6	308.9	305.6	304.8
17.5°	359.4	343.7	332.1	321.7	311.9	303.4	298.9	294.7	290.7	285.9	285.7
20°	339.9	326.7	313.8	304.9	294.7	286.1	280.2	276.0	272.8	270.2	267.9
22.5°	321.4	306.7	295.1	285.2	275.2	268.6	264.3	260.3	257.7	254.8	252.7
25°	301.3	290.1	277.1	266.2	257.9	253.4	249.6	246.1	244.4	242.5	240.1
27.5°	284.2	271.7	258.9	250.4	242.8	238.9	235.9	233.3	231.8	230.6	229.0
30°	265.8	253.2	243.7	235.4	229.3	225.4	223.6	222.3	220.4	219.7	219.0
32.5°	248.2	237.1	229.3	222.4	216.7	214.5	212.9	211.7	210.3	209.6	208.1
35°	231.8	222.3	214.3	210.3	205.7	203.4	202.2	200.5	199.1	198.4	198.2
37.5°	216.0	207.4	202.0	196.7	194.4	193.2	191.5	190.3	189.7	189.6	189.4
40°	200.8	194.1	189.4	185.2	184.4	182.3	180.9	179.9	179.9	180.1	179.9
42.5°	187.0	181.1	177.1	173.7	172.6	171.6	170.2	170.4	170.7	171.4	170.7
45°	173.0	168.6	165.7	164.0	162.1	160.9	160.7	161.2	161.4	161.5	162.1
47.5°	159.8	157.0	154.3	152.2	151.3	151.2	150.8	151.7	152.6	152.7	153.6
50°	148.4	145.1	142.9	141.7	141.0	140.6	141.0	142.0	142.7	143.6	144.1
52.5°	135.6	133.5	132.1	131.3	131.1	131.5	131.5	132.7	133.9	134.0	134.2
55°	124.0	122.3	121.9	120.4	121.1	120.9	121.8	122.5	123.5	124.5	124.7
57.5°	112.3	110.7	109.7	109.8	110.0	110.7	111.4	112.6	113.8	115.0	115.0
60°	100.5	99.8	99.3	99.3	99.6	100.7	101.5	102.7	103.4	104.1	104.6
62.5°	89.8	89.1	88.6	88.9	89.9	90.5	91.5	92.0	92.7	93.4	93.6
65°	78.4	78.0	78.5	78.9	79.0	79.9	81.1	81.6	82.3	82.7	83.9
67.5°	68.0	68.0	67.8	68.3	69.4	69.5	70.7	72.1	72.1	72.8	73.7
70°	57.4	57.8	58.1	58.5	59.3	59.7	60.5	61.1	61.7	62.3	62.8
72.5°	47.7	47.7	48.1	47.9	48.6	49.5	50.2	50.7	51.4	52.1	52.6
75°	38.2	38.2	38.6	38.7	39.6	40.5	40.3	40.6	41.3	42.0	42.4
77.5°	29.6	29.2	29.6	29.7	30.1	30.8	31.0	31.5	32.3	32.2	32.5
80°	21.3	20.8	21.3	21.4	21.4	22.3	22.3	22.7	23.2	22.7	23.2
82.5°	13.7	13.5	13.8	13.8	14.2	14.0	14.4	14.4	14.9	14.7	14.9
85°	7.6	7.4	7.6	7.4	7.6	7.8	7.8	7.6	7.6	8.0	7.4
87.5°	2.9	2.8	2.6	2.6	2.4	2.2	2.1	2.1	2.1	1.7	1.7
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):

	165°	170°	175°	180°
0°	450.0	450.0	450.0	450.0
2.5°	427.0	426.7	426.7	425.1
5°	400.4	399.9	399.0	399.9
7.5°	375.2	372.9	372.6	370.8
10°	347.0	345.6	345.4	342.1
12.5°	325.5	321.7	322.6	321.0
15°	300.1	300.1	299.4	296.5
17.5°	281.9	281.8	280.2	281.2
20°	266.0	265.0	262.9	262.9
22.5°	251.0	251.1	248.9	249.8
25°	239.9	238.5	237.5	238.0
27.5°	228.5	228.0	227.8	226.2
30°	218.8	217.1	217.4	216.5
32.5°	207.7	207.4	206.9	206.2
35°	197.9	198.0	197.2	197.5
37.5°	189.0	189.7	189.2	189.2
40°	180.4	180.4	180.4	180.9
42.5°	172.1	171.8	171.4	171.2
45°	162.4	162.9	163.1	162.2
47.5°	153.9	154.1	153.9	155.0
50°	144.9	144.6	144.9	144.6
52.5°	135.4	135.6	135.3	135.3
55°	125.4	125.7	125.6	125.6
57.5°	115.2	115.4	115.7	114.8
60°	104.5	105.3	105.2	104.8
62.5°	94.6	94.8	94.8	94.8
65°	84.4	84.8	84.2	84.8
67.5°	73.3	73.5	73.9	74.0
70°	63.1	63.0	63.5	64.0
72.5°	52.4	52.9	52.6	52.9
75°	42.0	42.5	42.4	42.9
77.5°	32.2	32.3	32.3	32.5
80°	23.2	22.8	22.5	23.2
82.5°	14.4	14.7	14.4	14.2
85°	7.4	7.3	6.9	6.9
87.5°	1.7	1.6	1.6	1.4
90°	0.0	0.0	0.0	0.0

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