

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: P243144

Luminaire Tested: **S122DR-H290D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243144
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-H290D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 994.3 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

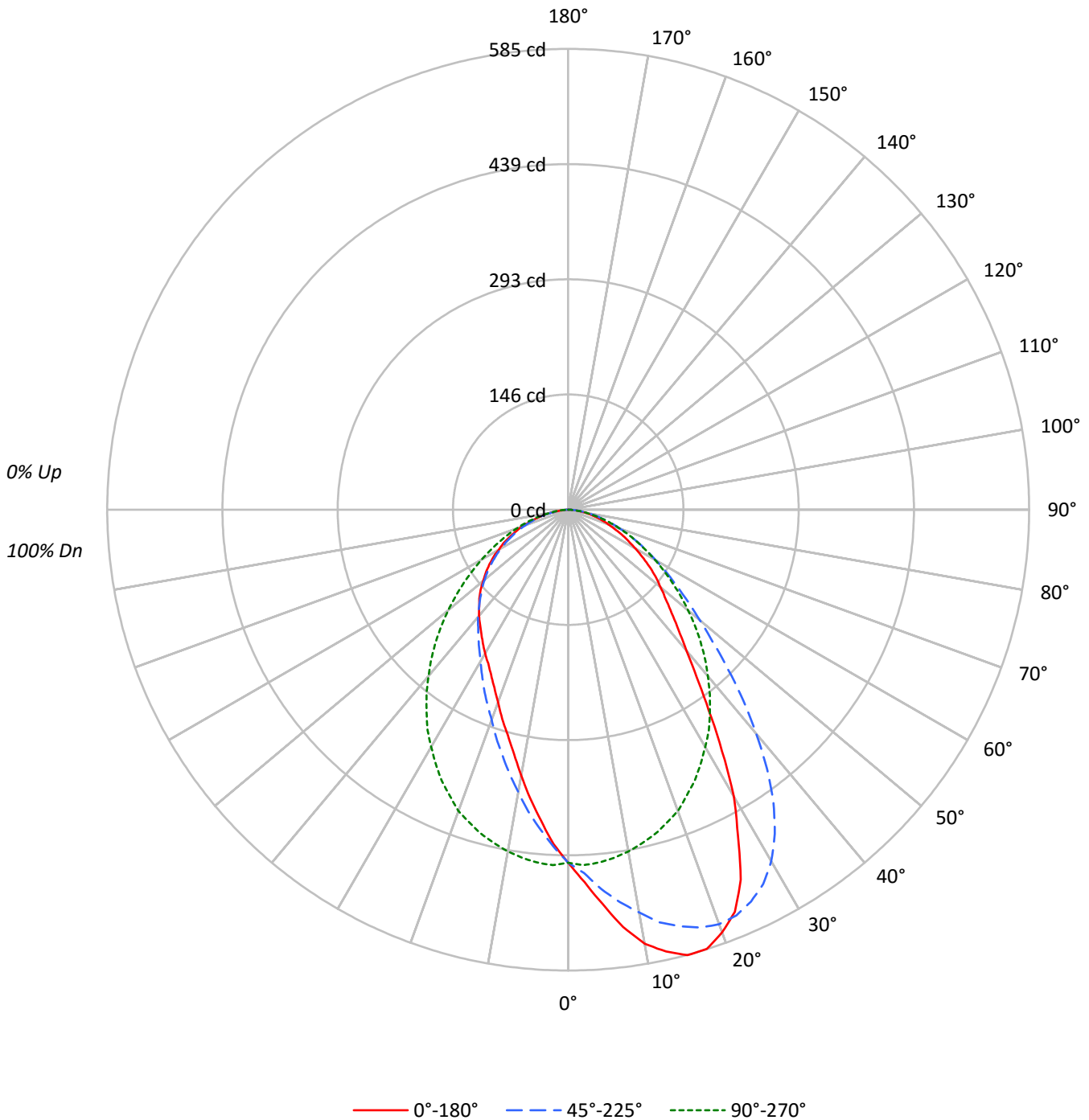
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8535	8535	8535
5°	9614	8597	7572
10°	10822	8520	6626
15°	11544	8405	5841
20°	11576	8252	5270
25°	10889	7978	4859
30°	9242	7645	4639
35°	7227	7287	4465
40°	5806	6850	4379
45°	4994	6398	4297
50°	4531	5888	4178
55°	4174	5363	4065
60°	3752	4834	3878
65°	3380	4345	3691
70°	3013	3859	3453
75°	2708	3319	3025
80°	2369	2676	2369
85°	2032	1989	1311



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.7	4.3
10°-20°	122.7	12.3
20°-30°	178.4	17.9
30°-40°	191.4	19.3
40°-50°	171.6	17.3
50°-60°	136.8	13.8
60°-70°	92.5	9.3
70°-80°	47.2	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°	343.8	34.6
0°-40°	535.2	53.8
0°-60°	843.6	84.8
0°-90°	994.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	994.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	448	448	448	448	448	
5°	503	484	450	407	396	50
15°	585	547	426	323	296	164
25°	518	549	380	252	231	233
35°	311	454	313	198	192	197
45°	185	287	238	158	160	145
55°	126	167	162	119	122	112
65°	75	97	96	78	82	74
75°	37	46	45	39	41	39
85°	9	11	9	7	6	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°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	473.0	474.5	473.1	472.6	471.6	471.3	468.7	466.5	465.2	461.5	461.9
5°	502.8	506.1	504.3	504.1	500.5	498.2	495.9	492.5	487.6	483.6	480.4
7.5°	534.3	532.7	532.2	530.4	527.7	524.4	519.2	514.4	508.1	502.3	498.0
10°	559.5	559.0	559.9	555.2	553.6	548.4	543.9	536.5	528.4	519.2	513.6
12.5°	574.5	576.0	577.1	575.3	571.3	569.8	562.4	551.9	549.1	536.7	529.9
15°	585.4	586.1	586.2	584.2	582.3	578.4	574.0	567.3	558.2	547.4	542.3
17.5°	584.7	584.6	585.6	584.4	583.3	582.1	578.6	573.5	566.3	556.2	547.6
20°	571.1	574.1	576.5	577.0	576.8	577.4	575.8	572.5	567.3	560.0	550.3
22.5°	552.6	551.4	556.4	556.1	558.2	563.2	565.3	564.0	562.0	557.4	549.6
25°	518.1	519.2	522.7	526.4	534.8	537.8	544.3	549.3	549.9	548.8	543.9
27.5°	466.3	474.6	476.5	481.3	493.0	502.8	515.9	523.7	534.8	535.8	533.7
30°	420.2	419.9	422.7	431.3	442.1	456.9	473.8	493.9	506.6	515.4	518.6
32.5°	363.5	364.8	372.1	382.8	393.7	408.5	428.0	452.6	469.7	487.9	498.2
35°	310.8	314.9	321.9	329.2	341.1	361.4	383.1	403.5	429.7	454.1	470.6
37.5°	267.3	273.0	278.3	285.2	296.9	312.4	332.0	359.0	385.1	414.4	438.8
40°	233.5	235.7	239.3	246.1	253.9	269.5	289.2	309.5	337.6	371.3	403.3
42.5°	207.0	206.5	210.4	214.8	221.9	233.5	250.7	271.0	299.0	328.9	361.2
45°	185.4	185.6	187.2	191.7	197.3	204.0	217.2	236.3	257.5	287.2	321.6
47.5°	167.8	168.3	170.8	174.0	177.3	183.4	192.2	204.6	224.5	249.4	281.6
50°	152.9	153.7	155.4	157.7	160.2	164.5	171.1	180.9	196.7	217.7	246.9
52.5°	139.6	140.0	140.5	142.6	144.6	148.6	153.6	161.2	173.6	191.2	213.9
55°	125.7	125.4	126.5	128.4	130.2	133.0	138.1	144.3	153.1	167.0	185.7
57.5°	111.4	111.9	112.8	113.8	117.1	120.1	123.9	129.5	136.5	147.4	163.0
60°	98.5	98.5	99.5	100.8	103.0	105.0	108.6	113.8	119.9	128.4	141.5
62.5°	85.9	86.6	87.6	88.2	90.2	92.7	95.5	99.5	105.1	111.9	121.7
65°	75.0	74.6	75.6	76.9	78.4	80.1	83.3	86.6	90.9	97.0	105.1
67.5°	63.7	64.7	65.0	65.7	66.8	69.0	70.5	74.0	77.4	82.9	89.7
70°	54.1	54.7	55.2	56.1	57.0	58.0	59.5	62.4	65.8	69.7	74.5
72.5°	45.4	45.9	45.4	46.3	46.8	47.8	49.8	51.1	53.7	57.0	61.4
75°	36.8	37.1	37.0	37.8	38.0	39.0	40.0	41.1	44.1	45.9	48.9
77.5°	28.9	29.2	29.4	29.7	30.0	30.5	31.0	32.2	33.8	35.5	37.8
80°	21.6	21.6	22.1	22.2	22.4	22.7	23.5	23.9	25.0	25.5	27.4
82.5°	14.9	15.1	15.3	15.3	15.4	15.8	15.9	16.6	16.9	17.7	18.6
85°	9.3	9.5	9.5	9.5	10.0	9.8	9.8	10.1	10.6	10.6	10.9
87.5°	4.6	4.8	4.8	4.8	5.0	5.0	5.0	5.0	5.0	5.3	5.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	461.7	461.5	460.9	457.9	455.6	452.6	452.1	451.6	447.4	443.0	441.6
5°	477.9	475.0	470.8	465.8	460.9	455.4	452.2	449.6	443.3	436.3	432.3
7.5°	493.9	488.1	481.6	473.8	465.5	456.7	451.1	445.8	437.1	428.0	422.6
10°	507.5	499.7	490.7	480.4	469.0	457.1	448.8	440.5	429.5	418.4	411.1
12.5°	518.7	508.8	497.0	483.1	472.6	456.2	444.6	433.7	421.6	407.1	399.2
15°	527.4	517.6	501.7	487.6	473.8	451.9	437.8	426.2	410.0	395.9	383.3
17.5°	537.8	523.9	508.1	487.9	472.6	447.6	431.7	416.6	399.0	382.4	368.5
20°	542.5	527.9	510.9	488.4	469.0	443.0	421.7	407.1	385.9	366.8	351.1
22.5°	543.1	529.2	510.8	486.9	462.7	436.2	411.8	392.7	371.5	351.2	333.5
25°	540.3	527.0	508.0	484.2	455.7	428.9	401.7	379.6	355.1	334.2	316.1
27.5°	532.7	521.9	503.8	478.4	448.6	417.6	387.9	363.8	339.6	315.9	298.7
30°	520.4	513.3	497.7	470.8	439.5	405.3	375.6	347.6	321.4	299.2	280.6
32.5°	504.6	501.2	488.2	461.7	430.2	391.9	360.9	332.0	303.5	282.4	263.4
35°	484.6	486.4	475.5	451.4	418.4	378.3	343.6	313.4	285.6	263.2	245.6
37.5°	458.5	467.5	460.5	438.0	403.3	364.5	325.5	295.2	266.0	244.4	229.0
40°	429.4	445.1	441.8	422.9	387.1	348.4	308.1	275.5	246.9	226.5	211.8
42.5°	395.0	417.9	421.6	404.5	371.0	328.4	288.6	257.0	229.5	209.5	195.4
45°	356.6	384.9	397.2	383.7	352.2	309.0	268.5	237.5	210.3	193.2	181.4
47.5°	317.9	352.1	368.7	362.2	330.3	288.2	248.6	218.2	192.5	177.6	166.5
50°	279.8	316.4	340.6	336.3	308.8	268.5	228.5	198.7	175.1	161.4	151.9
52.5°	246.3	280.9	307.3	309.5	284.7	245.9	207.3	179.6	159.5	147.1	139.1
55°	213.3	245.4	274.3	279.6	259.5	222.2	187.7	161.5	143.3	133.0	126.5
57.5°	183.7	212.9	241.6	250.9	234.7	201.0	166.7	143.6	127.9	119.9	114.3
60°	158.7	185.1	209.8	219.2	208.1	177.4	147.4	126.9	113.8	106.6	102.2
62.5°	136.8	157.2	179.1	189.6	182.1	155.4	129.2	110.9	100.3	94.2	90.7
65°	117.1	132.8	150.1	162.2	153.9	134.0	112.1	96.4	87.4	81.8	79.3
67.5°	98.8	111.9	125.7	135.3	131.2	113.1	94.7	82.4	75.0	70.6	68.3
70°	82.3	92.0	103.2	110.6	107.6	93.7	79.1	69.3	63.0	60.0	58.0
72.5°	67.5	73.8	82.3	88.4	85.2	75.5	65.0	57.2	52.6	49.1	47.6
75°	53.6	59.0	65.0	69.2	66.7	59.4	51.1	45.1	42.0	39.8	38.8
77.5°	40.6	44.9	49.1	51.1	49.9	44.6	39.0	34.3	31.7	30.3	29.2
80°	29.2	31.7	34.5	36.3	35.7	32.0	28.0	24.4	23.2	21.6	21.2
82.5°	19.6	21.6	22.2	23.1	22.6	20.9	18.1	15.9	14.9	14.1	13.9
85°	11.6	12.1	12.9	12.9	12.4	11.3	9.8	9.1	8.1	8.0	7.5
87.5°	5.1	5.1	5.1	5.1	5.1	4.8	4.1	3.8	3.5	3.3	3.2
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	440.5	438.8	436.5	433.8	431.5	427.9	426.7	426.7	427.5	426.5	425.7
5°	429.0	425.7	422.4	417.2	412.9	407.1	405.5	403.8	403.7	402.0	399.8
7.5°	416.8	411.8	405.0	397.7	393.0	386.7	383.3	382.3	379.1	376.1	372.6
10°	402.5	394.9	386.7	379.8	372.5	364.3	360.2	357.4	354.2	350.6	348.1
12.5°	385.2	376.6	369.2	361.0	354.9	343.5	342.1	338.5	332.2	326.7	324.7
15°	374.6	359.5	351.1	343.6	334.3	322.6	318.2	314.3	308.3	304.8	302.0
17.5°	355.9	342.3	331.7	321.7	312.8	303.6	297.2	293.9	289.1	286.1	283.3
20°	338.8	324.0	312.9	301.3	292.0	283.7	278.3	274.1	271.6	268.7	265.8
22.5°	321.6	306.1	295.5	283.7	272.8	267.8	261.4	257.9	254.6	252.2	249.3
25°	301.5	289.2	276.0	266.8	257.2	252.1	245.9	242.6	240.0	237.3	235.8
27.5°	283.6	271.1	258.9	249.8	241.6	236.7	232.8	229.7	226.4	224.4	223.2
30°	265.0	253.6	242.8	234.0	227.7	222.2	219.9	216.9	214.4	213.6	211.8
32.5°	248.4	235.7	227.0	219.1	213.8	210.0	208.3	205.1	204.6	203.8	202.8
35°	231.8	220.9	212.6	205.8	201.3	198.5	196.4	195.5	194.7	193.9	193.0
37.5°	215.4	206.8	199.0	193.5	189.9	187.7	187.2	185.6	185.4	184.2	184.2
40°	200.7	191.9	186.4	182.1	179.1	178.1	176.8	176.5	176.0	175.6	176.3
42.5°	185.9	179.9	175.3	170.8	168.5	167.7	167.3	166.8	166.5	167.5	167.8
45°	172.1	167.0	163.0	159.9	158.5	157.5	157.5	158.0	157.9	158.4	158.4
47.5°	159.4	154.7	151.4	150.2	148.6	148.3	148.4	148.3	149.1	149.8	150.4
50°	147.3	143.1	140.5	139.3	139.0	138.5	139.1	139.5	140.0	140.6	141.0
52.5°	133.8	131.8	130.2	129.0	128.9	129.0	128.9	130.0	130.5	131.5	131.3
55°	122.4	120.9	119.7	118.4	118.2	118.7	119.1	120.1	120.7	121.6	121.4
57.5°	111.6	110.4	109.1	108.8	108.6	108.8	110.3	110.1	111.1	111.8	112.1
60°	99.8	99.0	97.8	97.8	98.3	98.7	99.2	100.0	101.0	100.8	102.0
62.5°	89.1	88.1	87.7	88.2	88.1	88.9	89.4	89.4	90.7	91.2	91.5
65°	78.3	77.9	77.4	77.4	77.9	78.1	78.9	79.4	79.9	80.9	81.8
67.5°	68.2	67.3	67.3	67.0	67.7	68.2	68.7	69.3	69.7	70.8	71.3
70°	57.5	57.2	57.0	57.4	57.4	57.9	58.7	59.5	60.2	60.4	61.4
72.5°	47.3	47.3	47.3	47.8	48.1	48.6	48.8	49.4	50.4	50.6	51.1
75°	38.0	38.1	38.0	38.1	38.3	38.8	39.1	39.8	40.5	40.6	41.0
77.5°	29.4	29.0	28.7	29.2	29.5	30.5	30.3	30.7	31.3	31.0	31.3
80°	20.6	21.1	20.4	21.4	21.4	21.2	21.6	22.1	21.9	22.2	21.9
82.5°	13.9	13.4	13.4	13.9	14.1	13.6	13.9	14.1	14.3	13.9	13.8
85°	7.6	7.5	7.8	7.3	7.5	7.1	7.1	6.8	7.1	6.8	6.5
87.5°	2.8	2.7	2.8	2.3	2.2	2.0	1.8	1.8	1.5	1.5	1.5
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°	448.1	448.1	448.1	448.1
2.5°	426.9	425.0	424.2	424.9
5°	397.5	398.0	395.0	396.0
7.5°	372.1	370.0	370.6	369.5
10°	345.3	344.1	342.3	342.6
12.5°	327.2	319.4	318.9	317.4
15°	301.8	297.5	296.5	296.2
17.5°	281.6	277.9	279.3	278.3
20°	263.4	263.5	261.4	260.0
22.5°	247.3	246.9	246.1	244.8
25°	233.7	233.7	231.7	231.2
27.5°	221.2	221.6	219.9	219.9
30°	211.9	210.8	210.6	210.9
32.5°	202.7	201.3	201.5	201.3
35°	192.7	193.0	192.5	192.0
37.5°	184.2	184.2	184.2	183.7
40°	176.0	176.3	175.8	176.1
42.5°	167.7	167.8	167.8	167.2
45°	159.4	159.2	158.9	159.5
47.5°	150.7	150.7	150.6	150.9
50°	141.3	141.6	141.1	141.0
52.5°	131.7	131.8	131.7	132.0
55°	121.9	121.9	122.1	122.4
57.5°	111.8	112.9	112.1	112.8
60°	101.8	102.0	102.2	101.8
62.5°	92.4	92.2	92.4	92.9
65°	82.1	82.4	82.3	81.9
67.5°	72.0	71.6	72.1	71.6
70°	61.2	61.9	61.4	62.0
72.5°	51.4	51.2	51.6	50.7
75°	41.1	41.1	41.3	41.1
77.5°	31.5	31.2	31.0	30.5
80°	21.7	21.7	21.1	21.6
82.5°	13.3	13.4	13.6	12.6
85°	6.3	6.3	6.1	6.0
87.5°	1.3	1.3	1.5	1.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)