

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: P243257

Luminaire Tested: **S122RDR-H290D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243257
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-H290D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1078.1 lumens
Efficiency: N/A
Efficacy: 96.3 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

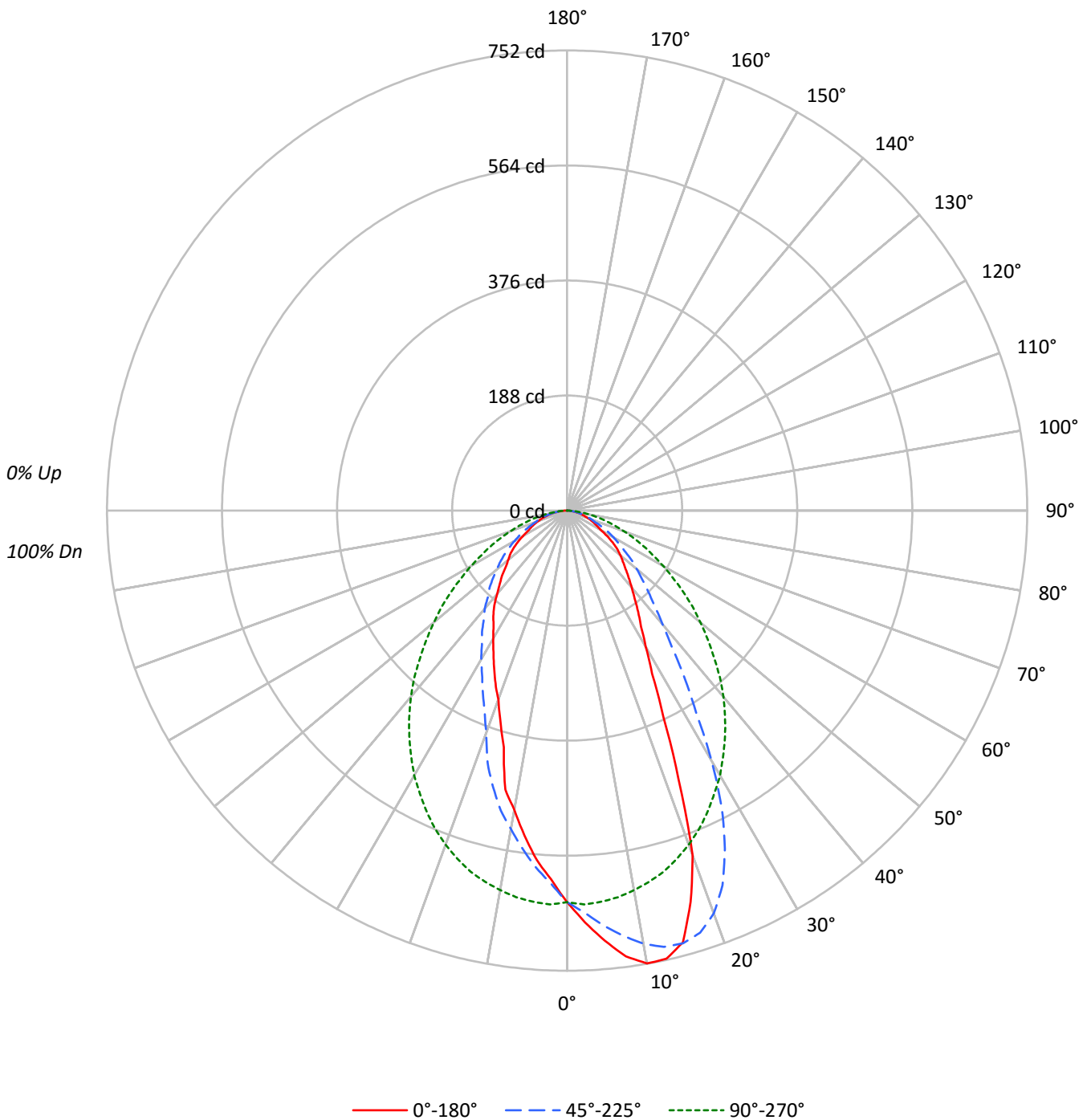
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	12185	12185	12185
5°	13488	12268	10950
10°	14535	12183	9603
15°	14405	12041	7892
20°	12152	11775	6661
25°	7814	11412	5931
30°	5644	10991	5314
35°	4702	10459	4888
40°	4080	9879	4423
45°	3642	9140	4049
50°	3363	8419	3722
55°	3015	7688	3547
60°	2408	6922	3189
65°	2208	6215	2943
70°	2027	5491	2796
75°	1847	4806	2649
80°	1612	3993	2479
85°	1289	3213	2295



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.6	5.6
10°-20°	165.7	15.4
20°-30°	208.8	19.4
30°-40°	200.5	18.6
40°-50°	172.7	16.0
50°-60°	132.0	12.2
60°-70°	84.0	7.8
70°-80°	42.6	3.9
80°-90°	11.2	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°	435.1	40.4
0°-40°	635.6	59.0
0°-60°	940.3	87.2
0°-90°	1078.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1078.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	640	640	640	640	640	
5°	705	681	642	586	573	69
15°	730	732	611	468	400	198
25°	372	610	543	326	282	178
35°	202	335	450	242	210	127
45°	135	188	339	180	150	105
55°	91	114	232	125	107	80
65°	49	63	138	77	65	49
75°	25	28	65	40	36	27
85°	6	7	15	11	10	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°	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7
2.5°	673.6	674.4	674.9	673.8	671.5	671.7	669.6	666.1	661.7	657.7	660.0
5°	705.4	706.5	706.3	704.4	702.1	700.0	696.4	691.4	686.2	680.7	679.7
7.5°	734.7	737.0	736.4	732.8	731.2	728.2	722.2	716.5	708.6	700.8	697.7
10°	751.5	753.4	752.3	751.5	749.6	746.7	741.2	735.8	727.0	718.8	714.2
12.5°	750.2	751.9	752.7	753.6	752.9	751.9	749.6	745.0	737.9	730.3	724.5
15°	730.5	727.8	725.9	731.2	733.0	740.2	741.8	742.5	737.7	732.0	730.5
17.5°	670.7	671.5	686.0	683.6	686.8	704.2	711.1	720.5	724.5	723.2	725.7
20°	599.5	589.7	596.8	607.2	617.1	642.4	659.2	674.0	691.2	700.8	710.0
22.5°	475.6	475.8	493.0	510.1	532.3	559.7	585.3	613.7	644.3	662.9	684.5
25°	371.8	381.8	389.3	396.9	429.1	455.5	498.0	532.5	574.6	610.0	646.2
27.5°	300.6	311.1	312.3	329.3	348.3	369.7	397.5	451.9	495.0	547.0	591.8
30°	256.6	258.7	263.1	267.5	281.5	301.4	331.4	365.5	413.4	472.7	532.7
32.5°	224.8	224.4	228.8	235.7	243.4	256.8	273.8	302.1	345.4	392.5	462.6
35°	202.2	201.6	204.7	207.2	211.8	222.7	238.0	256.6	287.8	334.7	389.1
37.5°	180.9	182.1	184.0	186.7	192.8	199.7	210.0	225.4	250.1	281.1	333.2
40°	164.1	165.6	167.7	169.6	174.2	179.8	186.7	199.1	215.6	242.6	282.6
42.5°	149.0	149.7	151.3	154.1	157.4	162.4	169.1	178.6	192.4	211.2	246.2
45°	135.2	135.2	137.1	139.6	141.7	146.5	151.8	160.8	171.4	187.6	212.5
47.5°	123.5	123.7	124.8	125.2	127.5	131.9	137.5	144.6	153.4	165.8	189.0
50°	113.5	114.3	114.7	115.3	116.2	118.5	122.5	127.9	137.5	148.4	163.9
52.5°	103.0	104.0	104.9	106.1	107.4	107.6	110.5	114.1	120.8	132.1	144.6
55°	90.8	91.7	93.4	94.4	96.1	97.5	99.8	102.4	106.8	114.3	127.3
57.5°	77.0	77.2	78.9	80.0	83.3	86.7	88.8	91.5	94.6	99.8	109.7
60°	63.2	63.8	64.1	64.9	67.8	71.4	75.6	79.8	83.1	87.7	94.6
62.5°	55.7	55.9	56.5	57.4	57.6	59.2	60.5	65.5	71.4	76.0	80.6
65°	49.0	49.2	49.2	49.8	50.7	51.5	52.1	54.0	56.5	63.0	68.7
67.5°	42.7	42.5	42.9	43.5	43.7	44.4	45.4	46.5	48.1	50.0	55.9
70°	36.4	36.4	36.2	36.8	37.5	37.7	38.3	39.4	40.4	42.1	44.0
72.5°	30.1	30.6	30.6	31.0	31.2	32.0	32.4	32.9	34.3	35.2	36.6
75°	25.1	24.9	25.5	25.3	25.7	26.0	26.6	27.2	27.6	28.5	29.7
77.5°	20.1	19.7	20.1	19.9	20.3	20.7	20.7	21.4	21.8	22.6	23.2
80°	14.7	14.7	14.9	15.3	15.3	15.5	15.9	15.7	16.5	16.7	17.4
82.5°	10.0	10.3	10.3	10.5	10.5	10.5	10.9	10.9	11.1	11.5	11.7
85°	5.9	5.7	5.9	5.9	5.9	6.1	6.3	6.1	6.5	6.9	6.9
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°	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7
2.5°	660.0	658.9	656.2	653.7	649.1	645.3	644.1	644.3	638.6	632.8	631.1
5°	678.2	674.4	669.0	663.3	656.4	649.5	645.1	641.6	632.8	624.0	619.0
7.5°	693.3	687.2	679.3	670.3	661.3	651.0	643.9	637.2	625.0	613.1	606.6
10°	707.1	698.5	687.6	675.9	664.0	650.6	640.3	629.9	614.6	601.2	590.1
12.5°	720.3	706.7	695.6	678.6	665.4	647.2	633.2	621.1	603.1	586.3	574.0
15°	721.5	711.9	697.0	679.5	659.4	642.4	624.8	610.6	590.1	571.5	550.3
17.5°	721.3	713.8	698.3	680.3	656.2	634.0	615.0	596.4	572.9	551.1	532.9
20°	713.8	708.6	695.2	673.8	649.5	624.0	602.9	580.9	553.5	531.1	511.2
22.5°	696.0	697.3	686.8	667.7	641.6	613.1	588.6	563.3	535.2	509.5	484.4
25°	665.9	679.3	676.1	658.3	630.5	599.3	571.5	543.0	512.8	485.4	462.2
27.5°	628.4	653.5	658.9	645.1	618.5	583.6	552.0	521.0	490.2	460.7	436.9
30°	584.0	621.5	635.3	627.8	603.3	566.6	530.0	499.7	466.0	434.6	409.4
32.5°	528.1	580.7	604.9	607.2	587.2	547.8	507.2	474.5	440.0	410.3	383.3
35°	465.7	530.2	569.8	580.5	566.0	527.1	484.4	449.8	413.0	383.1	355.8
37.5°	402.9	478.7	530.6	551.4	541.7	504.1	458.8	423.9	387.5	356.9	331.4
40°	345.2	417.2	484.6	517.0	514.1	479.1	433.5	397.3	360.2	332.0	303.9
42.5°	293.5	363.0	437.1	480.6	482.9	452.3	405.7	369.2	333.7	305.6	276.3
45°	252.7	313.8	387.2	439.2	449.2	424.1	376.8	339.3	306.9	280.5	251.2
47.5°	220.0	267.5	335.8	396.7	414.5	392.5	347.3	311.7	281.1	258.5	230.9
50°	191.7	236.3	294.3	350.6	376.8	360.2	318.0	284.1	256.4	234.7	210.4
52.5°	166.6	201.2	251.4	305.4	340.6	325.5	289.5	258.3	232.3	212.0	191.7
55°	145.9	174.8	219.2	267.3	299.8	291.4	259.4	231.5	208.7	189.4	172.9
57.5°	124.5	148.8	184.6	227.5	259.4	258.1	231.7	204.9	186.9	168.7	156.8
60°	105.9	125.6	154.7	191.1	223.1	223.3	202.8	181.7	166.2	150.5	139.2
62.5°	89.4	105.1	130.4	159.7	185.3	191.7	176.5	158.0	145.5	133.3	123.7
65°	75.1	86.9	105.9	132.5	152.6	161.4	151.3	137.9	127.5	116.6	108.0
67.5°	62.0	70.5	84.6	105.5	125.6	132.1	127.9	117.6	110.1	101.1	94.6
70°	48.8	56.1	65.9	81.6	98.2	107.2	105.9	98.6	92.3	85.8	79.8
72.5°	38.7	42.9	50.4	61.8	74.9	85.0	85.4	81.6	76.4	71.0	67.0
75°	31.2	33.1	36.6	45.4	55.9	64.3	67.2	65.3	61.1	57.8	55.1
77.5°	24.1	25.7	28.0	32.2	40.4	46.9	50.4	50.7	48.1	45.2	43.1
80°	18.0	18.6	20.3	22.4	26.6	32.2	36.4	36.4	35.0	33.5	32.2
82.5°	12.4	13.0	13.8	14.9	17.0	20.3	24.1	24.7	23.9	23.4	21.8
85°	6.9	7.5	8.0	8.6	9.4	11.1	13.8	14.7	14.9	13.6	12.8
87.5°	2.7	2.7	2.9	3.1	3.3	4.0	5.0	6.3	6.3	5.7	5.4
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7
2.5°	629.0	626.1	622.3	619.0	614.4	609.8	608.9	610.6	611.0	608.9	609.5
5°	614.2	608.7	604.1	596.6	591.8	585.5	581.3	581.3	581.3	578.2	575.2
7.5°	598.7	591.3	582.5	575.4	565.6	557.4	553.5	551.6	547.8	544.7	541.1
10°	580.7	570.4	559.5	548.4	539.8	528.5	521.8	517.7	511.2	508.4	503.2
12.5°	559.5	549.3	536.1	518.1	515.6	501.7	492.3	484.6	476.6	470.1	467.8
15°	542.6	524.8	507.2	494.4	475.8	467.6	453.8	452.6	446.1	427.0	412.2
17.5°	515.1	499.2	479.8	465.5	450.7	432.5	417.8	403.4	389.6	376.2	375.7
20°	490.9	472.2	453.8	438.3	412.4	386.4	377.4	364.2	356.1	345.4	342.2
22.5°	464.3	444.8	421.8	399.2	368.8	352.5	342.7	332.2	324.0	319.2	314.4
25°	437.5	418.0	387.5	359.6	338.9	326.1	317.8	306.4	300.6	296.4	290.1
27.5°	411.3	386.6	354.4	332.2	315.5	301.0	293.5	284.3	277.8	272.3	268.4
30°	385.4	351.5	324.0	306.9	289.7	280.7	270.9	264.0	259.1	254.1	247.6
32.5°	356.9	321.3	303.5	282.4	272.3	259.4	252.2	245.1	238.8	235.3	233.0
35°	323.8	295.1	279.2	263.7	251.0	242.4	232.3	228.0	224.6	217.7	214.8
37.5°	295.8	275.1	258.3	244.5	232.8	223.6	219.0	211.4	206.6	204.3	201.2
40°	272.5	254.1	239.7	225.7	215.8	209.1	201.0	197.0	190.7	188.4	185.9
42.5°	252.4	235.5	220.4	209.7	201.2	191.9	187.8	181.1	178.3	172.7	170.6
45°	232.1	217.1	203.9	193.4	185.3	179.6	172.1	167.9	163.1	160.1	154.5
47.5°	211.8	198.4	187.6	178.8	171.6	164.7	158.5	154.9	148.8	145.7	142.8
50°	196.1	183.2	172.9	164.1	156.8	149.9	145.9	140.0	134.6	131.0	130.0
52.5°	177.5	166.2	156.8	150.1	142.8	137.7	132.3	125.8	123.1	119.5	118.7
55°	161.0	151.8	143.8	136.7	130.4	124.8	118.5	113.9	111.8	110.1	108.8
57.5°	145.5	136.7	129.4	122.9	117.4	111.6	106.3	103.6	101.7	99.8	98.6
60°	130.2	122.2	115.5	110.1	104.5	98.8	95.0	92.7	91.3	88.5	87.7
62.5°	116.6	109.3	102.4	97.3	92.1	87.7	84.6	81.4	79.1	77.0	72.6
65°	101.7	95.2	90.0	85.0	80.0	76.6	73.1	69.5	66.6	66.6	66.6
67.5°	88.5	82.9	77.4	73.1	68.7	64.7	61.1	60.9	59.9	59.4	58.8
70°	75.1	71.2	66.1	61.3	56.9	55.1	54.4	53.4	52.1	51.9	51.1
72.5°	63.0	58.4	53.8	49.6	48.8	47.9	46.7	45.6	44.8	44.2	43.7
75°	51.5	46.9	43.1	42.1	41.0	39.6	38.5	37.7	37.3	37.3	37.1
77.5°	39.4	36.6	35.0	33.3	32.4	31.6	31.0	30.6	29.9	30.1	29.7
80°	28.9	28.0	26.6	25.5	25.1	24.3	23.9	23.7	23.2	23.2	23.0
82.5°	20.7	19.3	18.6	18.0	17.6	17.2	17.4	17.2	17.0	16.7	17.0
85°	11.9	11.7	11.3	11.3	11.3	11.1	11.1	11.1	10.9	10.7	10.7
87.5°	5.2	5.4	5.4	5.0	5.7	5.7	5.4	5.4	5.2	5.7	5.2
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°	639.7	639.7	639.7	639.7
2.5°	606.8	606.6	605.4	603.3
5°	574.0	573.1	571.0	572.7
7.5°	538.8	536.5	534.4	535.4
10°	501.1	500.3	499.0	496.5
12.5°	459.5	462.8	459.3	467.2
15°	397.7	412.6	393.9	400.2
17.5°	366.9	367.2	364.6	361.7
20°	338.1	330.7	333.5	328.6
22.5°	310.2	308.5	307.7	306.0
25°	285.3	282.2	281.1	282.2
27.5°	266.9	265.4	261.4	260.8
30°	243.9	243.2	242.0	241.6
32.5°	229.4	226.7	226.1	223.6
35°	213.3	211.8	210.8	210.2
37.5°	197.2	196.3	194.5	195.5
40°	184.0	179.8	178.1	177.9
42.5°	169.6	167.2	163.9	162.9
45°	152.8	151.8	150.7	150.3
47.5°	138.2	137.5	136.3	135.6
50°	127.7	126.0	125.8	125.6
52.5°	117.6	117.0	116.4	117.2
55°	108.2	107.4	106.8	106.8
57.5°	98.0	96.5	95.2	95.5
60°	86.0	85.2	84.1	83.7
62.5°	72.2	72.2	72.0	72.0
65°	65.7	65.3	65.1	65.3
67.5°	58.6	58.2	57.6	57.8
70°	50.4	50.2	50.4	50.2
72.5°	43.1	42.9	43.1	43.5
75°	36.4	36.2	36.0	36.0
77.5°	29.5	29.3	28.9	29.3
80°	23.0	22.8	22.6	22.6
82.5°	16.3	16.5	16.3	16.3
85°	10.7	10.9	10.7	10.5
87.5°	5.4	5.7	5.2	5.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)