

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: P243272

Luminaire Tested: **S122RDR-H290D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243272
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-H290D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 928.2 lumens
Efficiency: N/A
Efficacy: 82.9 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

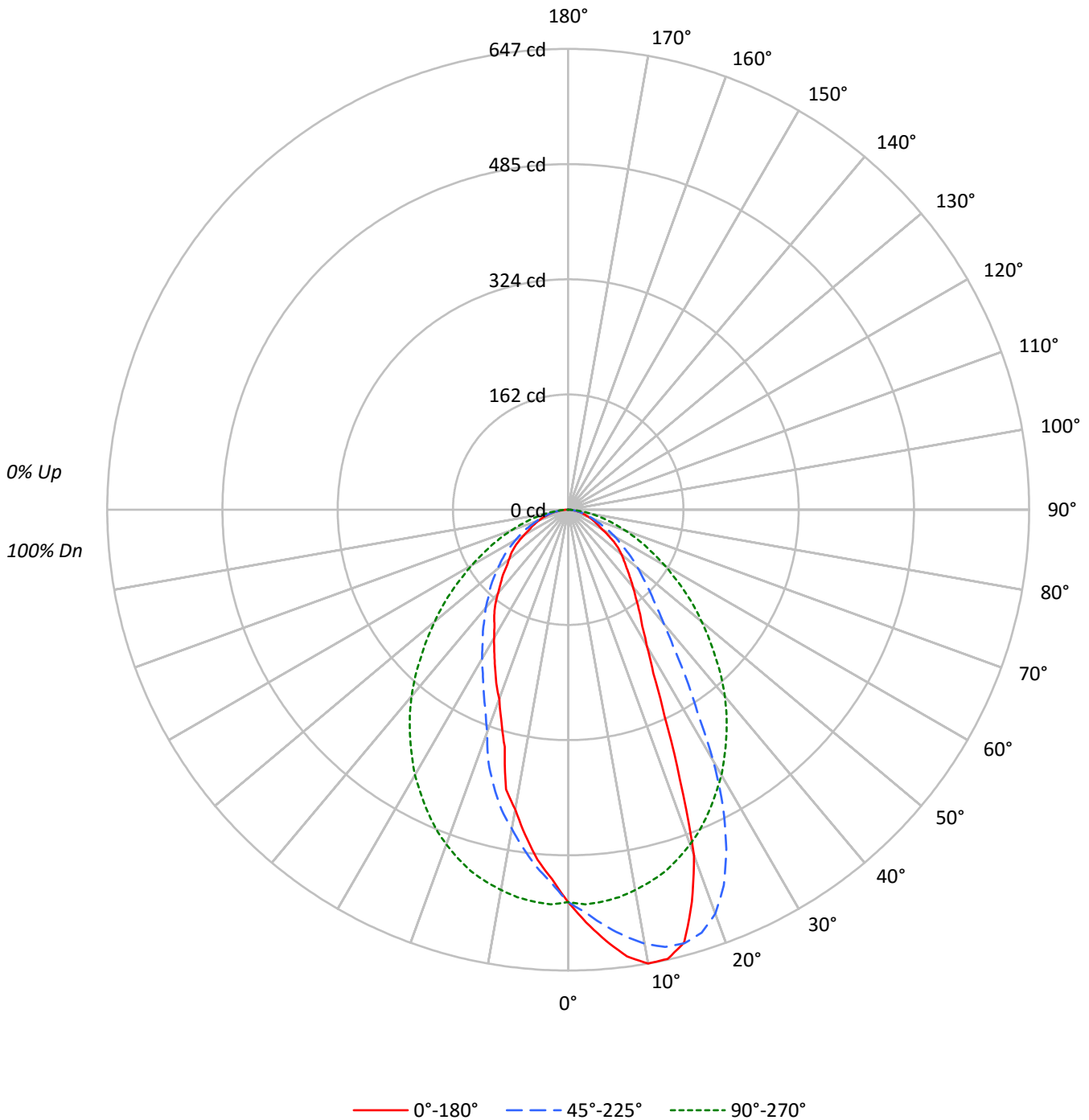
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	10491	10491	10491
5°	11614	10562	9428
10°	12514	10489	8269
15°	12404	10367	6795
20°	10463	10137	5736
25°	6727	9825	5105
30°	4861	9462	4575
35°	4048	9006	4206
40°	3513	8506	3809
45°	3136	7868	3486
50°	2895	7248	3203
55°	2597	6618	3052
60°	2072	5958	2747
65°	1902	5354	2533
70°	1749	4728	2411
75°	1590	4136	2281
80°	1382	3444	2139
85°	1093	2754	1967



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.1	5.6
10°-20°	142.6	15.4
20°-30°	179.8	19.4
30°-40°	172.6	18.6
40°-50°	148.7	16.0
50°-60°	113.7	12.2
60°-70°	72.3	7.8
70°-80°	36.7	3.9
80°-90°	9.7	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°	374.6	40.4
0°-40°	547.2	59.0
0°-60°	809.6	87.2
0°-90°	928.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	928.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	551	551	551	551	551	
5°	607	586	552	504	493	59
15°	629	630	526	403	345	171
25°	320	525	468	281	243	153
35°	174	288	387	209	181	110
45°	116	162	292	155	129	91
55°	78	98	199	107	92	69
65°	42	54	119	66	56	42
75°	22	24	56	34	31	23
85°	5	6	13	10	9	6
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°	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8
2.5°	580.0	580.7	581.1	580.2	578.2	578.3	576.5	573.5	569.7	566.3	568.3
5°	607.4	608.3	608.1	606.5	604.5	602.7	599.6	595.3	590.8	586.1	585.2
7.5°	632.6	634.6	634.0	631.0	629.5	627.0	621.8	616.9	610.1	603.4	600.7
10°	647.0	648.6	647.7	647.0	645.4	642.9	638.2	633.5	625.9	618.9	614.9
12.5°	645.9	647.4	648.1	648.8	648.3	647.4	645.4	641.4	635.3	628.8	623.8
15°	629.0	626.7	625.0	629.5	631.2	637.3	638.7	639.3	635.1	630.3	629.0
17.5°	577.4	578.2	590.6	588.6	591.3	606.3	612.2	620.3	623.8	622.7	624.8
20°	516.2	507.7	513.8	522.8	531.3	553.1	567.5	580.3	595.1	603.4	611.3
22.5°	409.5	409.7	424.4	439.2	458.3	481.9	503.9	528.4	554.7	570.8	589.3
25°	320.1	328.7	335.2	341.7	369.5	392.2	428.8	458.5	494.7	525.2	556.4
27.5°	258.8	267.8	268.9	283.5	299.9	318.3	342.3	389.1	426.2	470.9	509.5
30°	221.0	222.8	226.5	230.3	242.4	259.5	285.3	314.7	355.9	407.0	458.7
32.5°	193.6	193.2	197.0	202.9	209.6	221.1	235.7	260.1	297.4	337.9	398.3
35°	174.1	173.6	176.3	178.4	182.4	191.8	204.9	221.0	247.8	288.2	335.0
37.5°	155.7	156.8	158.4	160.8	166.0	171.9	180.8	194.1	215.4	242.0	286.9
40°	141.3	142.6	144.4	146.0	149.9	154.8	160.8	171.4	185.6	208.9	243.3
42.5°	128.3	128.9	130.3	132.6	135.5	139.9	145.6	153.7	165.6	181.8	211.9
45°	116.4	116.4	118.0	120.2	122.0	126.2	130.7	138.4	147.6	161.5	182.9
47.5°	106.3	106.5	107.4	107.8	109.8	113.5	118.4	124.5	132.1	142.7	162.7
50°	97.7	98.4	98.8	99.3	100.0	102.0	105.4	110.1	118.4	127.8	141.1
52.5°	88.7	89.6	90.3	91.4	92.5	92.6	95.2	98.2	104.0	113.7	124.5
55°	78.2	78.9	80.4	81.3	82.7	84.0	86.0	88.1	91.9	98.4	109.6
57.5°	66.3	66.5	67.9	68.8	71.7	74.6	76.4	78.8	81.5	86.0	94.4
60°	54.4	55.0	55.1	55.9	58.4	61.5	65.1	68.7	71.6	75.5	81.5
62.5°	47.9	48.1	48.7	49.4	49.6	51.0	52.1	56.4	61.5	65.4	69.4
65°	42.2	42.4	42.4	42.9	43.6	44.3	44.9	46.5	48.7	54.2	59.1
67.5°	36.8	36.6	36.9	37.5	37.7	38.2	39.1	40.0	41.5	43.1	48.1
70°	31.4	31.4	31.2	31.7	32.3	32.4	33.0	33.9	34.8	36.2	37.8
72.5°	26.0	26.3	26.3	26.7	26.9	27.6	27.9	28.3	29.6	30.3	31.5
75°	21.6	21.4	22.0	21.8	22.2	22.3	22.9	23.4	23.8	24.5	25.6
77.5°	17.3	16.9	17.3	17.1	17.5	17.8	17.8	18.4	18.7	19.5	20.0
80°	12.6	12.6	12.8	13.2	13.2	13.3	13.7	13.5	14.2	14.4	15.0
82.5°	8.7	8.8	8.8	9.0	9.0	9.0	9.4	9.4	9.6	9.9	10.1
85°	5.0	4.9	5.0	5.0	5.0	5.2	5.4	5.2	5.6	5.9	5.9
87.5°	1.4	1.4	1.6	1.8	1.8	2.0	2.0	2.0	2.2	2.2	2.3
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°	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8
2.5°	568.3	567.4	565.0	562.8	558.9	555.6	554.6	554.7	549.9	544.8	543.4
5°	583.9	580.7	576.0	571.1	565.2	559.2	555.5	552.4	544.8	537.3	532.9
7.5°	596.9	591.7	584.8	577.1	569.3	560.5	554.4	548.6	538.2	527.9	522.3
10°	608.8	601.4	592.0	582.0	571.7	560.1	551.3	542.3	529.1	517.6	508.1
12.5°	620.2	608.4	598.9	584.3	572.9	557.3	545.2	534.7	519.2	504.8	494.2
15°	621.2	613.0	600.2	585.0	567.7	553.1	538.0	525.7	508.1	492.0	473.8
17.5°	621.1	614.6	601.2	585.7	565.0	545.9	529.5	513.5	493.3	474.5	458.9
20°	614.6	610.1	598.5	580.2	559.2	537.3	519.1	500.1	476.5	457.2	440.1
22.5°	599.3	600.3	591.3	574.9	552.4	527.9	506.8	485.0	460.8	438.7	417.0
25°	573.3	584.8	582.1	566.8	542.8	516.0	492.0	467.5	441.6	417.9	397.9
27.5°	541.0	562.7	567.4	555.5	532.6	502.5	475.3	448.6	422.1	396.7	376.1
30°	502.8	535.1	547.0	540.5	519.4	487.9	456.3	430.2	401.2	374.2	352.5
32.5°	454.7	500.0	520.9	522.8	505.5	471.7	436.7	408.6	378.8	353.2	330.0
35°	401.0	456.5	490.6	499.8	487.3	453.8	417.0	387.3	355.6	329.8	306.4
37.5°	346.9	412.2	456.9	474.7	466.4	434.0	395.1	365.0	333.6	307.3	285.3
40°	297.2	359.2	417.2	445.2	442.6	412.5	373.3	342.1	310.2	285.8	261.7
42.5°	252.7	312.5	376.3	413.8	415.8	389.5	349.3	317.9	287.3	263.1	237.9
45°	217.5	270.2	333.4	378.1	386.8	365.1	324.4	292.1	264.2	241.5	216.3
47.5°	189.4	230.3	289.1	341.5	356.8	337.9	299.0	268.4	242.0	222.6	198.8
50°	165.1	203.5	253.4	301.9	324.4	310.2	273.8	244.6	220.8	202.0	181.1
52.5°	143.5	173.2	216.5	263.0	293.2	280.3	249.3	222.4	200.1	182.6	165.1
55°	125.6	150.5	188.7	230.2	258.1	250.9	223.3	199.3	179.7	163.1	148.9
57.5°	107.2	128.1	159.0	195.9	223.3	222.2	199.5	176.4	160.9	145.3	135.0
60°	91.2	108.1	133.2	164.5	192.1	192.3	174.6	156.4	143.1	129.6	119.9
62.5°	77.0	90.5	112.3	137.5	159.5	165.1	151.9	136.1	125.3	114.8	106.5
65°	64.7	74.8	91.2	114.1	131.4	139.0	130.3	118.8	109.8	100.4	93.0
67.5°	53.3	60.7	72.8	90.8	108.1	113.7	110.1	101.3	94.8	87.0	81.5
70°	42.0	48.3	56.8	70.3	84.5	92.3	91.2	84.9	79.5	73.9	68.7
72.5°	33.3	36.9	43.4	53.2	64.5	73.2	73.5	70.3	65.8	61.1	57.7
75°	26.9	28.5	31.5	39.1	48.1	55.3	57.9	56.2	52.6	49.7	47.4
77.5°	20.7	22.2	24.2	27.8	34.8	40.4	43.4	43.6	41.5	38.9	37.1
80°	15.5	16.0	17.5	19.3	22.9	27.8	31.4	31.4	30.1	28.8	27.8
82.5°	10.6	11.2	11.9	12.8	14.6	17.5	20.7	21.3	20.5	20.2	18.7
85°	5.9	6.5	6.8	7.4	8.1	9.6	11.9	12.6	12.8	11.7	11.0
87.5°	2.3	2.3	2.5	2.7	2.9	3.4	4.3	5.4	5.4	4.9	4.7
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8	550.8
2.5°	541.6	539.1	535.8	532.9	529.0	525.0	524.3	525.7	526.1	524.3	524.8
5°	528.8	524.1	520.1	513.6	509.5	504.1	500.5	500.5	500.5	497.8	495.3
7.5°	515.4	509.1	501.6	495.4	487.0	479.9	476.5	474.9	471.7	469.0	465.9
10°	500.0	491.1	481.7	472.2	464.8	455.1	449.3	445.7	440.1	437.8	433.3
12.5°	481.7	472.9	461.6	446.1	443.9	432.0	423.9	417.2	410.4	404.8	402.8
15°	467.1	451.8	436.7	425.7	409.7	402.6	390.7	389.7	384.1	367.7	354.9
17.5°	443.5	429.8	413.1	400.8	388.0	372.3	359.7	347.3	335.4	323.9	323.5
20°	422.6	406.6	390.7	377.4	355.0	332.7	324.9	313.6	306.6	297.4	294.7
22.5°	399.7	383.0	363.2	343.7	317.6	303.5	295.0	286.0	279.0	274.8	270.7
25°	376.7	359.9	333.6	309.6	291.8	280.8	273.6	263.9	258.8	255.2	249.8
27.5°	354.1	332.9	305.1	286.0	271.6	259.2	252.7	244.7	239.2	234.5	231.1
30°	331.8	302.6	279.0	264.2	249.4	241.7	233.2	227.3	223.1	218.8	213.2
32.5°	307.3	276.6	261.3	243.1	234.5	223.3	217.2	211.0	205.6	202.6	200.6
35°	278.8	254.1	240.4	227.1	216.1	208.7	200.1	196.3	193.4	187.4	184.9
37.5°	254.7	236.8	222.4	210.5	200.4	192.5	188.5	182.0	177.9	175.9	173.2
40°	234.7	218.8	206.4	194.3	185.8	180.0	173.0	169.6	164.2	162.2	160.0
42.5°	217.4	202.8	189.8	180.6	173.2	165.3	161.7	155.9	153.6	148.7	146.9
45°	199.9	186.9	175.5	166.5	159.5	154.6	148.1	144.5	140.4	137.9	133.0
47.5°	182.4	170.9	161.5	153.9	147.8	141.8	136.4	133.4	128.1	125.4	122.9
50°	168.9	157.7	148.9	141.3	135.0	129.0	125.6	120.6	115.9	112.8	111.9
52.5°	152.8	143.1	135.0	129.2	122.9	118.6	113.9	108.3	106.0	102.9	102.2
55°	138.6	130.7	123.8	117.7	112.3	107.4	102.0	98.0	96.2	94.8	93.7
57.5°	125.3	117.7	111.4	105.8	101.1	96.1	91.6	89.2	87.6	86.0	84.9
60°	112.1	105.3	99.5	94.8	89.9	85.1	81.8	79.8	78.6	76.2	75.5
62.5°	100.4	94.1	88.1	83.8	79.3	75.5	72.8	70.1	68.1	66.3	62.5
65°	87.6	82.0	77.5	73.2	68.8	66.0	62.9	59.8	57.3	57.3	57.3
67.5°	76.2	71.4	66.7	62.9	59.1	55.7	52.6	52.4	51.5	51.2	50.6
70°	64.7	61.3	57.0	52.8	49.0	47.4	46.9	46.0	44.9	44.7	44.0
72.5°	54.2	50.3	46.3	42.7	42.0	41.3	40.2	39.3	38.6	38.0	37.7
75°	44.3	40.4	37.1	36.2	35.3	34.1	33.2	32.4	32.1	32.1	31.9
77.5°	33.9	31.5	30.1	28.7	27.9	27.2	26.7	26.3	25.8	26.0	25.6
80°	24.9	24.2	22.9	22.0	21.6	20.9	20.5	20.4	20.0	20.0	19.8
82.5°	17.8	16.6	16.0	15.5	15.1	14.8	15.0	14.8	14.6	14.4	14.6
85°	10.3	10.1	9.7	9.7	9.7	9.6	9.6	9.6	9.4	9.2	9.2
87.5°	4.5	4.7	4.7	4.3	4.9	4.9	4.7	4.7	4.5	4.9	4.5
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°	550.8	550.8	550.8	550.8
2.5°	522.5	522.3	521.2	519.4
5°	494.2	493.5	491.7	493.1
7.5°	463.9	461.9	460.1	461.0
10°	431.5	430.7	429.7	427.5
12.5°	395.6	398.5	395.4	402.3
15°	342.4	355.2	339.2	344.6
17.5°	315.9	316.1	314.0	311.4
20°	291.1	284.8	287.1	283.0
22.5°	267.1	265.7	264.9	263.5
25°	245.6	242.9	242.0	242.9
27.5°	229.8	228.5	225.1	224.6
30°	210.0	209.4	208.3	208.0
32.5°	197.5	195.2	194.6	192.5
35°	183.7	182.4	181.5	180.9
37.5°	169.8	169.1	167.4	168.3
40°	158.4	154.8	153.4	153.2
42.5°	146.0	144.0	141.1	140.2
45°	131.6	130.7	129.8	129.4
47.5°	118.9	118.4	117.3	116.8
50°	109.9	108.5	108.3	108.1
52.5°	101.3	100.7	100.2	100.9
55°	93.2	92.5	91.9	91.9
57.5°	84.3	83.1	82.0	82.2
60°	74.1	73.4	72.5	72.1
62.5°	62.2	62.2	62.0	62.0
65°	56.6	56.2	56.1	56.2
67.5°	50.5	50.1	49.6	49.7
70°	43.4	43.3	43.4	43.3
72.5°	37.1	36.9	37.1	37.5
75°	31.4	31.2	31.0	31.0
77.5°	25.4	25.2	24.9	25.2
80°	19.8	19.6	19.5	19.5
82.5°	14.1	14.2	14.1	14.1
85°	9.2	9.4	9.2	9.0
87.5°	4.7	4.9	4.5	4.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)