

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: P242412

Luminaire Tested: **S122RDR-S290D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242412
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-S290D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 934.9 lumens
Efficiency: N/A
Efficacy: 80.6 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

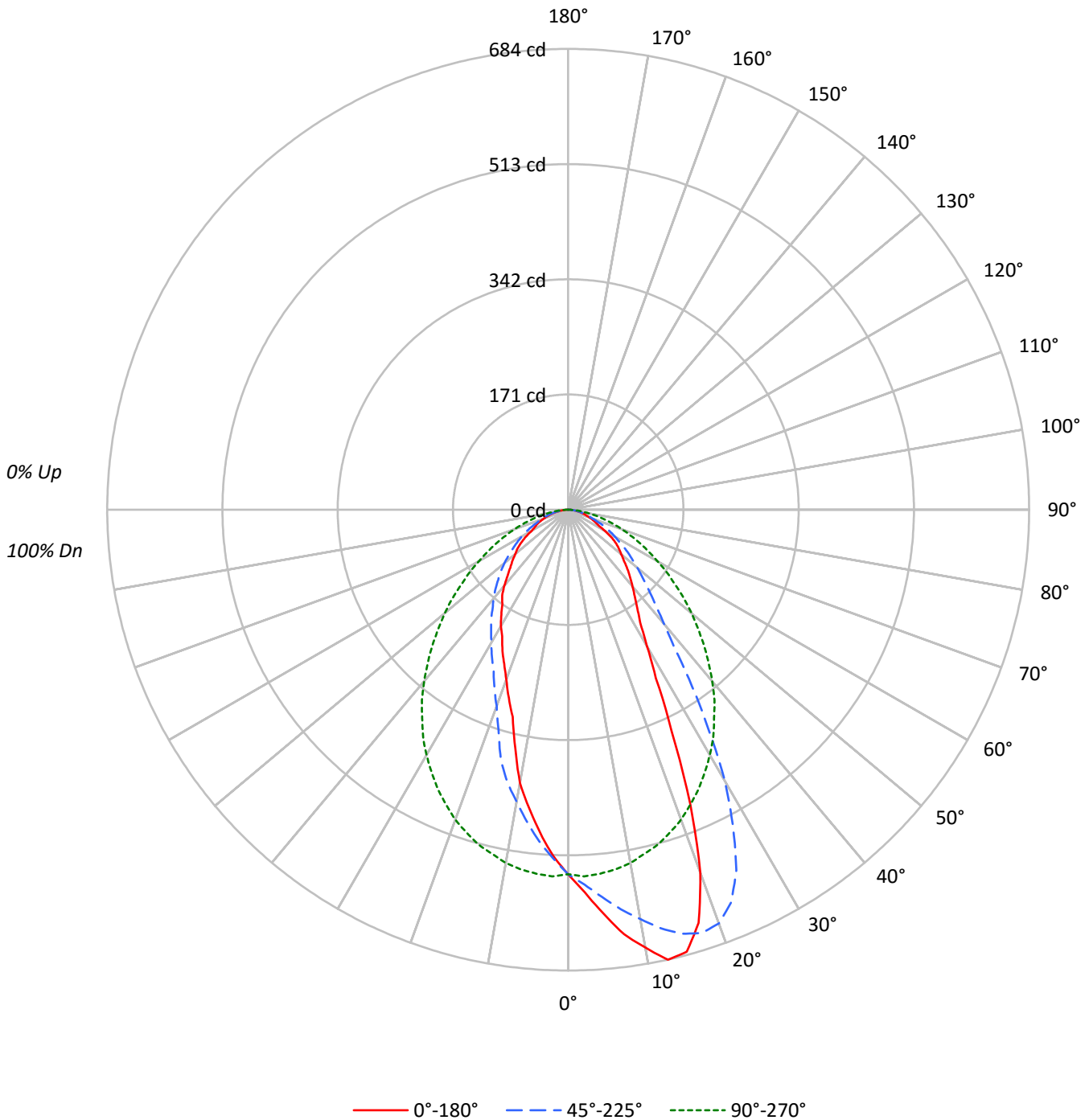
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	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	87	83	80	84	81	78	76
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	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	39
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	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°	10305	10305	10305
5°	11509	10369	9193
10°	12769	10296	7969
15°	13396	10146	6279
20°	11615	9922	5434
25°	7616	9615	4851
30°	5127	9244	4390
35°	4153	8778	3960
40°	3692	8268	3665
45°	3343	7672	3270
50°	3040	7079	3031
55°	2859	6423	2823
60°	2392	5821	2362
65°	2015	5287	2290
70°	1866	4723	2155
75°	1744	4107	1994
80°	1612	3378	1777
85°	1486	2666	1552



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.3	5.5
10°-20°	143.2	15.3
20°-30°	184.3	19.7
30°-40°	174.9	18.7
40°-50°	149.8	16.0
50°-60°	114.1	12.2
60°-70°	72.0	7.7
70°-80°	35.9	3.8
80°-90°	9.2	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°	378.9	40.5
0°-40°	553.7	59.2
0°-60°	817.7	87.5
0°-90°	934.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	934.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	541	541	541	541	541	
5°	602	577	542	494	481	59
15°	679	652	514	385	318	185
25°	362	590	458	262	231	171
35°	179	321	378	199	170	114
45°	124	169	285	147	121	96
55°	86	105	193	99	85	76
65°	45	60	117	60	51	45
75°	24	26	56	30	27	25
85°	7	7	12	7	7	8
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°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0
2.5°	568.4	569.0	569.6	568.3	568.3	567.1	564.7	562.8	557.5	556.8	556.8
5°	601.9	601.5	602.3	599.8	596.4	595.7	592.1	587.4	582.5	577.1	576.0
7.5°	635.7	633.5	632.5	633.7	630.1	625.2	619.2	613.6	605.1	598.1	593.8
10°	660.2	666.4	662.6	656.0	657.4	648.5	643.8	635.7	629.0	617.1	614.5
12.5°	684.2	685.7	685.2	682.2	679.7	674.3	667.5	660.7	646.8	636.5	625.6
15°	679.3	682.9	683.9	682.7	683.7	683.3	679.9	674.1	663.2	651.5	641.4
17.5°	643.3	647.4	650.8	653.8	658.5	667.7	670.5	671.6	667.1	658.9	650.4
20°	573.0	568.8	586.1	594.9	602.5	621.3	637.4	643.6	653.6	653.4	651.5
22.5°	473.3	475.6	491.7	502.6	528.2	547.0	566.0	593.6	615.2	631.2	641.0
25°	362.4	369.6	385.9	400.2	424.6	459.6	491.4	528.2	563.0	590.4	616.6
27.5°	282.0	282.9	297.8	312.2	327.3	357.5	400.0	444.2	493.8	529.5	574.6
30°	233.1	232.0	237.4	245.5	257.9	280.1	310.2	353.4	402.8	464.5	519.4
32.5°	198.5	198.9	202.6	208.1	217.9	231.0	249.3	282.3	328.4	388.7	455.5
35°	178.6	178.4	181.4	185.7	190.0	199.6	213.7	232.2	264.3	320.9	386.7
37.5°	162.0	163.0	164.3	167.1	172.4	178.0	186.8	199.8	224.3	259.4	318.4
40°	148.5	148.9	150.9	153.2	156.0	160.2	167.1	177.1	193.8	220.5	260.9
42.5°	136.1	136.5	137.8	139.9	141.9	146.1	151.5	159.8	172.6	191.9	223.5
45°	124.1	124.1	125.4	126.3	128.8	132.5	137.2	144.4	153.8	169.2	191.4
47.5°	112.4	112.4	113.3	115.0	116.7	119.7	124.6	130.6	137.4	150.0	169.7
50°	102.6	102.8	103.4	104.7	105.6	108.3	111.8	116.9	124.1	133.3	149.1
52.5°	94.7	94.6	95.3	95.7	96.2	97.9	100.4	104.7	110.9	118.6	131.0
55°	86.1	85.3	86.5	87.4	88.0	88.7	90.2	93.0	98.5	105.3	115.0
57.5°	75.9	75.6	76.1	77.1	78.8	80.6	81.6	83.5	86.3	91.5	101.9
60°	62.8	62.8	64.5	65.0	67.1	69.7	72.4	73.9	76.7	79.9	87.0
62.5°	51.1	51.3	51.9	52.4	53.4	56.8	60.7	64.5	67.1	70.1	74.3
65°	44.7	45.1	45.1	45.5	46.2	47.0	48.5	51.1	55.8	60.2	63.7
67.5°	39.1	39.1	39.3	39.7	39.9	40.8	41.4	42.7	43.6	48.5	53.4
70°	33.5	34.0	33.8	34.2	34.4	34.8	35.5	36.1	37.8	38.7	41.4
72.5°	28.2	28.6	28.6	28.8	29.3	29.3	29.9	30.5	31.4	32.1	33.3
75°	23.7	23.5	23.7	24.1	24.2	24.4	24.4	25.2	25.8	26.5	27.4
77.5°	19.2	19.4	19.4	19.4	19.4	19.7	19.7	20.1	20.7	21.1	21.6
80°	14.7	14.9	14.7	14.9	15.0	15.2	15.0	15.2	15.8	16.2	16.2
82.5°	10.5	10.5	10.7	10.7	10.7	10.7	11.1	11.1	11.5	11.3	11.5
85°	6.8	6.6	6.6	6.6	6.8	7.0	6.8	6.8	7.0	7.0	7.0
87.5°	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.2	3.4	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0
2.5°	557.2	555.7	554.3	551.0	549.3	545.5	544.9	544.8	539.9	535.2	533.9
5°	573.0	569.9	565.4	560.2	554.7	549.1	545.3	542.3	534.8	527.7	523.5
7.5°	588.6	583.1	576.0	566.9	559.2	550.2	544.0	538.4	528.0	518.6	512.4
10°	606.4	595.9	585.5	571.8	561.1	550.6	540.8	532.3	520.3	506.8	497.2
12.5°	617.5	605.7	590.4	577.1	562.4	548.3	534.4	523.0	508.3	494.2	482.3
15°	627.3	614.9	597.6	578.4	560.5	543.1	528.0	514.5	496.1	479.3	465.4
17.5°	636.3	619.2	601.3	579.2	559.4	538.2	519.2	502.3	482.2	462.4	446.6
20°	640.2	623.3	601.9	579.7	555.3	529.2	508.3	489.5	467.5	445.5	426.7
22.5°	637.8	625.6	601.1	573.5	548.3	520.7	496.4	473.9	448.9	426.3	403.8
25°	625.0	620.5	598.0	569.0	540.4	508.7	481.4	457.5	429.7	405.7	382.0
27.5°	601.5	608.1	592.1	560.7	529.9	495.7	466.0	439.1	410.7	383.8	360.2
30°	564.3	586.7	580.7	552.1	516.6	483.1	448.7	420.3	389.5	361.7	338.4
32.5°	513.4	554.0	562.8	540.1	503.0	465.4	429.0	400.8	368.2	338.5	316.0
35°	458.7	513.9	539.3	524.1	487.2	447.6	410.4	377.5	345.1	316.2	293.6
37.5°	393.8	467.5	506.6	504.9	469.8	429.3	388.9	356.4	323.1	294.6	271.1
40°	331.0	412.6	467.7	479.9	451.3	406.8	365.8	332.5	300.2	272.4	244.4
42.5°	274.6	355.8	426.7	450.2	429.0	384.8	343.6	308.5	277.3	251.3	222.6
45°	231.2	302.3	376.9	414.9	402.3	361.3	317.9	284.8	255.3	232.5	205.1
47.5°	200.2	251.9	326.9	376.5	375.0	336.1	292.9	261.1	233.3	212.2	188.9
50°	174.4	218.1	279.1	337.4	342.3	310.9	270.3	238.9	213.4	191.0	173.1
52.5°	151.3	185.3	238.7	294.0	310.2	284.0	244.9	216.5	191.9	171.8	157.1
55°	131.8	159.6	201.3	253.6	274.6	255.5	220.5	193.4	173.3	156.0	142.9
57.5°	114.7	136.5	171.2	215.0	238.9	225.9	196.1	173.7	155.8	139.7	129.1
60°	98.7	115.8	144.2	179.3	206.4	197.9	173.3	152.8	138.2	124.6	114.9
62.5°	83.6	97.7	121.1	147.9	172.2	169.9	150.9	134.6	122.2	110.2	102.3
65°	69.7	80.5	99.4	121.8	141.7	143.4	129.0	117.3	105.8	96.1	88.7
67.5°	57.7	65.0	79.3	99.1	114.3	119.6	109.8	100.4	91.0	83.1	76.5
70°	46.8	52.4	62.2	77.4	91.2	96.8	91.7	84.8	76.9	70.7	65.2
72.5°	35.7	41.2	47.7	57.9	69.2	75.4	74.4	69.9	63.9	59.0	53.9
75°	28.6	30.3	35.2	42.7	51.9	57.1	58.5	55.8	50.8	46.8	43.8
77.5°	22.2	23.3	25.9	30.5	36.8	41.5	43.6	43.2	39.5	36.8	34.0
80°	16.9	17.5	18.6	20.3	24.8	29.5	30.8	30.8	28.4	27.4	24.6
82.5°	11.8	12.2	12.8	13.5	15.0	19.0	20.5	20.9	19.5	18.2	16.2
85°	7.3	7.1	7.5	8.1	8.5	9.6	11.8	12.2	11.8	10.3	9.8
87.5°	3.2	3.4	3.4	3.2	3.4	3.6	4.5	5.5	4.7	4.1	3.8
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°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0
2.5°	531.4	530.1	527.7	523.9	521.6	517.7	515.1	516.6	516.9	516.6	516.2
5°	519.0	515.1	509.6	504.3	499.5	494.2	491.2	489.9	487.2	485.7	485.0
7.5°	504.9	499.1	491.4	482.9	475.0	467.5	464.1	461.5	456.6	454.0	451.5
10°	488.7	478.0	470.3	458.3	451.0	440.2	432.9	433.1	425.8	421.6	418.6
12.5°	470.9	458.9	444.8	434.2	423.3	415.2	406.0	401.5	393.6	389.7	380.3
15°	450.8	437.0	423.5	408.8	398.5	385.2	372.4	356.8	344.2	333.3	330.3
17.5°	429.3	412.4	399.1	384.0	367.9	343.6	327.8	318.2	310.7	305.1	300.6
20°	407.2	389.9	375.4	349.4	325.6	310.3	299.4	292.5	284.6	278.4	275.0
22.5°	383.8	365.6	344.6	314.9	297.6	286.1	276.7	268.4	263.7	259.2	256.2
25°	362.0	342.3	309.8	289.9	274.8	262.0	255.3	250.4	244.7	238.2	235.2
27.5°	339.3	307.9	283.3	268.8	253.4	245.3	239.5	231.4	226.3	223.9	220.5
30°	313.2	281.8	263.5	247.4	237.2	228.0	220.9	216.7	211.8	206.8	204.7
32.5°	284.0	260.5	243.2	230.5	220.1	212.6	207.3	200.0	196.8	194.2	189.3
35°	260.9	241.9	225.9	215.0	205.3	198.9	192.3	188.4	182.0	179.3	177.6
37.5°	239.9	223.3	211.3	199.3	191.7	184.2	180.5	173.9	171.4	167.3	163.9
40°	222.6	206.4	194.9	185.5	176.9	171.6	166.5	161.5	157.3	155.6	151.3
42.5°	204.9	192.5	181.0	170.5	165.4	159.8	153.0	149.6	145.3	142.3	140.0
45°	188.9	177.3	167.5	159.0	152.6	146.8	142.7	136.5	134.0	128.6	126.3
47.5°	174.8	163.5	154.1	145.9	139.5	136.1	130.1	124.6	121.2	117.5	114.3
50°	159.6	150.6	141.5	134.4	128.8	123.3	117.1	114.7	108.7	107.0	105.3
52.5°	145.7	137.2	129.1	122.2	116.5	111.3	106.0	102.6	99.1	97.4	96.2
55°	132.9	124.6	116.7	110.5	104.9	99.4	96.1	92.1	90.2	88.9	87.4
57.5°	119.7	112.2	106.0	99.6	94.0	89.5	85.3	83.1	81.2	79.7	77.6
60°	107.3	100.2	94.7	88.9	83.1	79.5	76.5	73.7	71.4	68.8	68.0
62.5°	94.2	88.2	83.3	77.6	72.7	69.6	66.7	64.1	61.3	57.1	56.0
65°	82.3	77.4	72.2	67.5	63.0	59.8	55.6	52.6	51.5	51.1	50.9
67.5°	71.4	66.7	62.2	57.3	53.2	49.6	47.2	46.8	46.1	45.9	45.3
70°	60.5	56.2	51.7	47.2	43.2	42.7	41.9	41.2	40.2	39.9	39.5
72.5°	50.8	46.2	41.7	38.3	37.2	36.5	35.7	35.0	34.4	34.0	33.8
75°	40.4	36.3	33.3	32.0	31.0	30.5	29.3	28.8	28.4	27.8	27.6
77.5°	30.8	28.2	26.7	25.9	24.8	24.2	23.5	22.9	22.4	22.4	22.0
80°	22.2	21.1	20.1	19.0	18.6	17.9	17.7	17.1	17.3	16.7	16.7
82.5°	16.0	14.5	13.7	13.3	13.0	12.4	12.2	12.0	12.0	11.7	11.7
85°	8.8	8.5	8.1	7.7	7.7	7.1	7.3	7.1	7.1	6.8	6.6
87.5°	3.6	3.4	3.0	3.0	3.0	2.8	2.8	2.6	2.6	2.6	2.4
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):

	165°	170°	175°	180°
0°	541.0	541.0	541.0	541.0
2.5°	514.1	514.5	513.9	514.3
5°	484.0	481.8	481.4	480.8
7.5°	448.5	448.3	447.2	445.9
10°	414.5	413.5	413.4	412.0
12.5°	374.6	367.3	366.6	362.8
15°	325.8	324.6	320.9	318.4
17.5°	298.5	294.7	293.4	292.9
20°	272.4	269.0	268.4	268.1
22.5°	254.3	250.8	249.1	247.8
25°	233.3	232.0	231.2	230.8
27.5°	216.7	213.4	213.0	212.0
30°	203.0	202.1	200.8	199.6
32.5°	186.8	186.1	185.0	184.6
35°	175.8	173.1	172.0	170.3
37.5°	163.5	162.0	160.2	160.9
40°	148.9	147.9	147.6	147.4
42.5°	137.2	134.2	133.1	133.1
45°	125.4	122.9	121.2	121.4
47.5°	112.6	112.8	111.7	112.0
50°	104.0	102.8	102.1	102.3
52.5°	95.7	94.7	94.2	95.1
55°	86.5	85.3	85.2	85.0
57.5°	76.5	75.9	75.0	74.4
60°	65.6	64.1	62.2	62.0
62.5°	55.6	55.6	55.6	55.6
65°	50.6	50.4	50.6	50.8
67.5°	45.3	44.9	44.6	44.7
70°	39.1	38.9	38.7	38.7
72.5°	33.1	33.1	32.9	32.7
75°	27.4	27.1	27.1	27.1
77.5°	22.0	21.8	21.6	21.4
80°	16.5	16.4	16.2	16.2
82.5°	11.7	11.5	11.5	11.3
85°	6.8	7.0	6.8	7.1
87.5°	2.4	2.3	2.4	2.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)