

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: P243252

Luminaire Tested: **S122RDR-H290D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243252
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-H290D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1016.2 lumens
Efficiency: N/A
Efficacy: 90.7 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

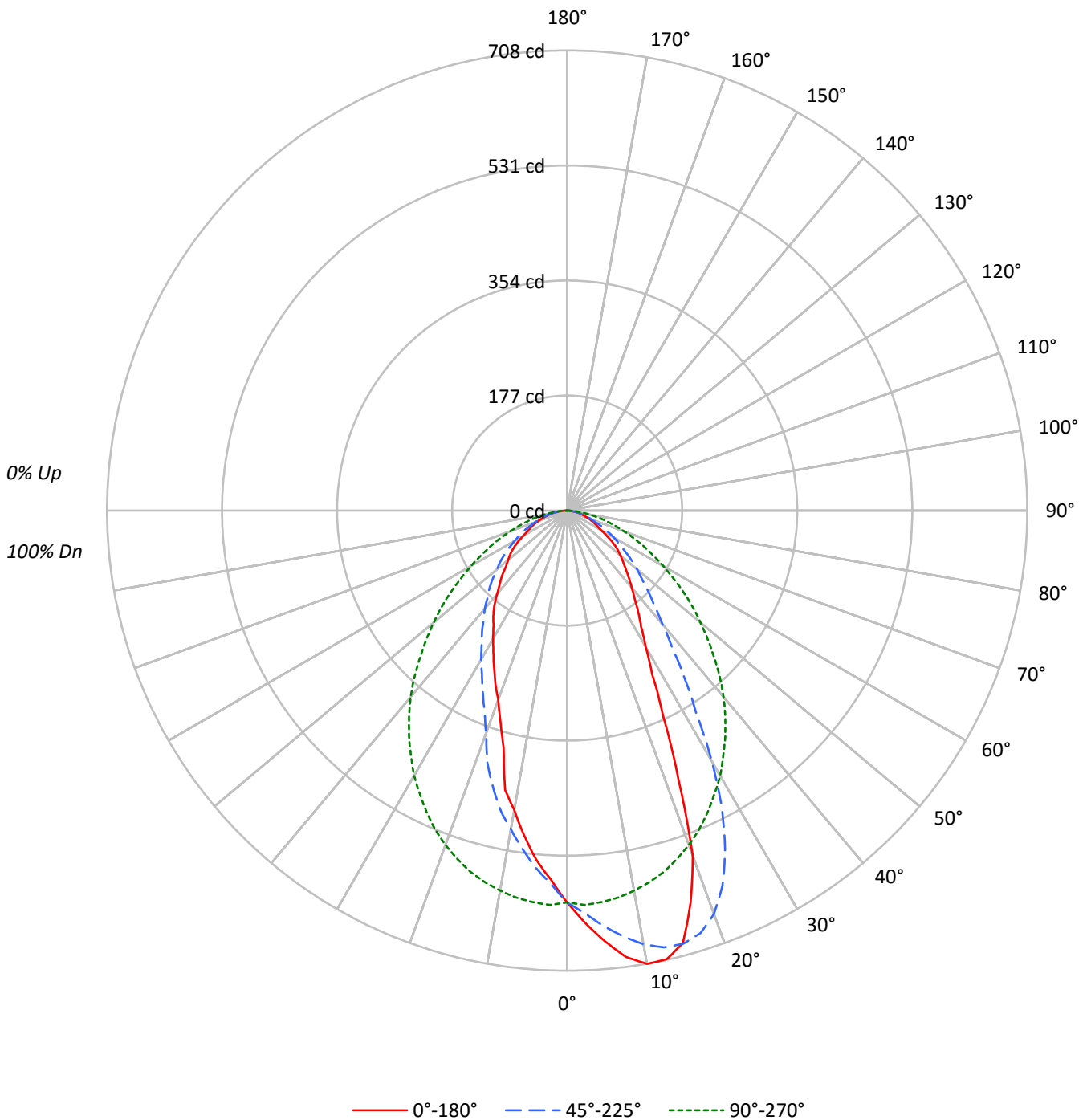
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11484	11484	11484
5°	12713	11562	10321
10°	13700	11483	9052
15°	13579	11349	7438
20°	11455	11098	6280
25°	7364	10756	5590
30°	5320	10357	5008
35°	4432	9859	4606
40°	3847	9312	4170
45°	3435	8615	3817
50°	3168	7933	3509
55°	2843	7246	3341
60°	2270	6526	3006
65°	2082	5859	2776
70°	1910	5174	2640
75°	1744	4533	2495
80°	1514	3762	2336
85°	1202	3016	2164



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.1	5.6
10°-20°	156.2	15.4
20°-30°	196.8	19.4
30°-40°	189.0	18.6
40°-50°	162.8	16.0
50°-60°	124.4	12.2
60°-70°	79.2	7.8
70°-80°	40.1	3.9
80°-90°	10.6	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°	410.1	40.4
0°-40°	599.0	59.0
0°-60°	886.2	87.2
0°-90°	1016.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1016.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	603	603	603	603	603	
5°	665	642	605	552	540	65
15°	689	690	576	441	377	187
25°	350	575	512	307	266	167
35°	191	316	424	228	198	120
45°	128	177	320	169	142	99
55°	86	108	218	118	101	76
65°	46	59	130	72	62	46
75°	24	27	62	37	34	25
85°	6	6	14	10	10	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°	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9
2.5°	634.9	635.7	636.1	635.1	632.9	633.1	631.1	627.8	623.7	619.9	622.1
5°	664.9	665.9	665.7	663.9	661.7	659.8	656.4	651.7	646.7	641.6	640.6
7.5°	692.5	694.7	694.1	690.7	689.2	686.4	680.7	675.3	667.8	660.5	657.6
10°	708.3	710.1	709.1	708.3	706.5	703.8	698.6	693.5	685.2	677.5	673.2
12.5°	707.1	708.7	709.5	710.3	709.7	708.7	706.5	702.2	695.5	688.4	682.8
15°	688.6	686.0	684.2	689.2	690.9	697.6	699.2	699.8	695.3	689.9	688.6
17.5°	632.1	632.9	646.5	644.4	647.3	663.7	670.2	679.1	682.8	681.7	684.0
20°	565.1	555.8	562.5	572.4	581.6	605.5	621.3	635.3	651.5	660.5	669.2
22.5°	448.3	448.5	464.6	480.8	501.7	527.6	551.6	578.5	607.3	624.8	645.2
25°	350.4	359.9	367.0	374.1	404.5	429.3	469.4	501.9	541.6	574.9	609.1
27.5°	283.3	293.2	294.4	310.3	328.3	348.4	374.7	426.0	466.6	515.5	557.8
30°	241.9	243.9	248.0	252.1	265.4	284.1	312.3	344.5	389.7	445.5	502.1
32.5°	211.9	211.5	215.6	222.2	229.5	242.1	258.1	284.7	325.5	369.9	436.0
35°	190.6	190.0	193.0	195.3	199.7	209.9	224.3	241.9	271.3	315.5	366.8
37.5°	170.5	171.6	173.4	176.0	181.7	188.2	197.9	212.5	235.8	265.0	314.1
40°	154.7	156.1	158.0	159.8	164.2	169.5	176.0	187.6	203.2	228.7	266.3
42.5°	140.5	141.1	142.6	145.2	148.4	153.1	159.4	168.3	181.3	199.1	232.0
45°	127.5	127.5	129.2	131.6	133.6	138.1	143.0	151.5	161.6	176.8	200.3
47.5°	116.4	116.6	117.6	118.0	120.2	124.3	129.6	136.3	144.6	156.3	178.2
50°	106.9	107.7	108.1	108.7	109.5	111.7	115.4	120.5	129.6	139.9	154.5
52.5°	97.1	98.1	98.8	100.0	101.2	101.4	104.2	107.5	113.8	124.5	136.3
55°	85.6	86.4	88.0	89.0	90.6	91.9	94.1	96.5	100.6	107.7	120.0
57.5°	72.6	72.8	74.4	75.4	78.5	81.7	83.7	86.2	89.2	94.1	103.4
60°	59.6	60.2	60.4	61.2	63.9	67.3	71.2	75.2	78.3	82.7	89.2
62.5°	52.5	52.7	53.3	54.1	54.3	55.8	57.0	61.8	67.3	71.6	76.0
65°	46.2	46.4	46.4	47.0	47.7	48.5	49.1	50.9	53.3	59.4	64.7
67.5°	40.2	40.1	40.4	41.0	41.2	41.8	42.8	43.8	45.4	47.2	52.7
70°	34.3	34.3	34.1	34.7	35.3	35.5	36.1	37.1	38.1	39.7	41.4
72.5°	28.4	28.8	28.8	29.2	29.4	30.2	30.6	31.0	32.4	33.1	34.5
75°	23.7	23.5	24.1	23.9	24.3	24.5	25.1	25.6	26.0	26.8	28.0
77.5°	18.9	18.5	18.9	18.7	19.1	19.5	19.5	20.1	20.5	21.3	21.9
80°	13.8	13.8	14.0	14.4	14.4	14.6	15.0	14.8	15.6	15.8	16.4
82.5°	9.5	9.7	9.7	9.9	9.9	9.9	10.3	10.3	10.5	10.9	11.0
85°	5.5	5.3	5.5	5.5	5.5	5.7	5.9	5.7	6.1	6.5	6.5
87.5°	1.6	1.6	1.8	2.0	2.0	2.2	2.2	2.2	2.4	2.4	2.6
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°	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9
2.5°	622.1	621.1	618.5	616.2	611.8	608.3	607.1	607.3	602.0	596.4	594.8
5°	639.2	635.7	630.6	625.2	618.7	612.2	608.1	604.7	596.4	588.1	583.4
7.5°	653.4	647.7	640.2	631.7	623.3	613.6	606.9	600.6	589.1	577.9	571.8
10°	666.5	658.4	648.1	637.1	625.8	613.2	603.5	593.7	579.3	566.6	556.2
12.5°	678.9	666.1	655.6	639.6	627.2	610.0	596.8	585.4	568.4	552.6	541.0
15°	680.1	671.0	657.0	640.4	621.5	605.5	588.9	575.5	556.2	538.6	518.7
17.5°	679.9	672.8	658.2	641.2	618.5	597.6	579.7	562.1	540.0	519.5	502.3
20°	672.8	667.8	655.2	635.1	612.2	588.1	568.2	547.5	521.7	500.5	481.8
22.5°	656.0	657.2	647.3	629.4	604.7	577.9	554.8	530.9	504.5	480.2	456.5
25°	627.6	640.2	637.3	620.5	594.3	564.9	538.6	511.8	483.4	457.5	435.6
27.5°	592.3	616.0	621.1	608.1	583.0	550.1	520.3	491.1	462.1	434.2	411.8
30°	550.5	585.8	598.8	591.7	568.6	534.1	499.6	470.9	439.2	409.6	385.9
32.5°	497.8	547.3	570.2	572.4	553.4	516.3	478.0	447.3	414.7	386.7	361.2
35°	439.0	499.8	537.0	547.1	533.5	496.8	456.5	424.0	389.3	361.1	335.4
37.5°	379.8	451.2	500.1	519.7	510.6	475.1	432.5	399.5	365.2	336.4	312.3
40°	325.3	393.2	456.7	487.3	484.6	451.6	408.6	374.5	339.5	312.9	286.5
42.5°	276.6	342.1	412.0	453.0	455.2	426.4	382.4	348.0	314.5	288.1	260.4
45°	238.1	295.7	365.0	413.9	423.4	399.7	355.1	319.8	289.2	264.4	236.8
47.5°	207.4	252.1	316.5	373.9	390.6	369.9	327.3	293.8	265.0	243.7	217.6
50°	180.7	222.7	277.4	330.5	355.1	339.5	299.7	267.7	241.7	221.2	198.3
52.5°	157.0	189.6	237.0	287.9	321.0	306.8	272.9	243.5	219.0	199.9	180.7
55°	137.5	164.7	206.6	251.9	282.5	274.6	244.4	218.2	196.7	178.6	163.0
57.5°	117.4	140.3	174.0	214.5	244.4	243.3	218.4	193.2	176.2	159.0	147.8
60°	99.8	118.4	145.8	180.1	210.3	210.5	191.2	171.3	156.7	141.9	131.2
62.5°	84.2	99.0	122.9	150.5	174.6	180.7	166.3	149.0	137.1	125.7	116.6
65°	70.8	81.9	99.8	124.9	143.8	152.1	142.6	130.0	120.2	109.9	101.8
67.5°	58.4	66.5	79.7	99.4	118.4	124.5	120.5	110.9	103.8	95.3	89.2
70°	46.0	52.9	62.1	76.9	92.5	101.0	99.8	92.9	87.0	80.9	75.2
72.5°	36.5	40.4	47.5	58.2	70.6	80.1	80.5	76.9	72.0	66.9	63.1
75°	29.4	31.2	34.5	42.8	52.7	60.6	63.3	61.6	57.6	54.5	51.9
77.5°	22.7	24.3	26.4	30.4	38.1	44.2	47.5	47.7	45.4	42.6	40.6
80°	17.0	17.6	19.1	21.1	25.1	30.4	34.3	34.3	32.9	31.6	30.4
82.5°	11.6	12.2	13.0	14.0	16.0	19.1	22.7	23.3	22.5	22.1	20.5
85°	6.5	7.1	7.5	8.1	8.9	10.5	13.0	13.8	14.0	12.8	12.0
87.5°	2.6	2.6	2.8	3.0	3.2	3.7	4.7	5.9	5.9	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9
2.5°	592.9	590.1	586.6	583.4	579.1	574.7	573.9	575.5	575.9	573.9	574.5
5°	578.9	573.7	569.4	562.3	557.8	551.8	547.9	547.9	547.9	544.9	542.2
7.5°	564.3	557.4	549.1	542.4	533.1	525.4	521.7	519.9	516.3	513.4	510.0
10°	547.3	537.6	527.4	516.9	508.8	498.2	491.9	487.9	481.8	479.2	474.3
12.5°	527.4	517.7	505.3	488.3	485.9	472.9	464.0	456.7	449.2	443.1	441.0
15°	511.4	494.6	478.0	466.0	448.5	440.8	427.7	426.6	420.4	402.5	388.5
17.5°	485.5	470.6	452.2	438.8	424.8	407.6	393.8	380.2	367.2	354.5	354.1
20°	462.7	445.1	427.7	413.1	388.7	364.2	355.7	343.3	335.6	325.5	322.6
22.5°	437.6	419.3	397.6	376.2	347.6	332.2	323.0	313.1	305.4	300.9	296.3
25°	412.3	394.0	365.2	339.0	319.4	307.4	299.5	288.8	283.3	279.4	273.5
27.5°	387.7	364.4	334.0	313.1	297.3	283.7	276.6	267.9	261.8	256.7	252.9
30°	363.2	331.3	305.4	289.2	273.1	264.6	255.3	248.8	244.3	239.5	233.4
32.5°	336.4	302.8	286.1	266.2	256.7	244.4	237.7	231.0	225.1	221.8	219.6
35°	305.2	278.2	263.2	248.6	236.6	228.5	219.0	214.9	211.7	205.2	202.4
37.5°	278.8	259.2	243.5	230.4	219.4	210.7	206.4	199.3	194.7	192.6	189.6
40°	256.9	239.5	225.9	212.7	203.4	197.1	189.4	185.7	179.7	177.6	175.2
42.5°	237.9	222.0	207.8	197.7	189.6	180.9	177.0	170.7	168.1	162.8	160.8
45°	218.8	204.6	192.2	182.3	174.6	169.3	162.2	158.2	153.7	150.9	145.6
47.5°	199.7	187.0	176.8	168.5	161.8	155.3	149.4	146.0	140.3	137.3	134.6
50°	184.9	172.6	163.0	154.7	147.8	141.3	137.5	132.0	126.9	123.5	122.5
52.5°	167.3	156.7	147.8	141.5	134.6	129.8	124.7	118.6	116.0	112.7	111.9
55°	151.7	143.0	135.5	128.8	122.9	117.6	111.7	107.3	105.4	103.8	102.6
57.5°	137.1	128.8	121.9	115.8	110.7	105.2	100.2	97.7	95.9	94.1	92.9
60°	122.7	115.2	108.9	103.8	98.5	93.1	89.6	87.4	86.0	83.5	82.7
62.5°	109.9	103.0	96.5	91.7	86.8	82.7	79.7	76.7	74.6	72.6	68.5
65°	95.9	89.8	84.8	80.1	75.4	72.2	68.9	65.5	62.7	62.7	62.7
67.5°	83.5	78.1	73.0	68.9	64.7	61.0	57.6	57.4	56.4	56.0	55.4
70°	70.8	67.1	62.3	57.8	53.7	51.9	51.3	50.3	49.1	48.9	48.1
72.5°	59.4	55.0	50.7	46.8	46.0	45.2	44.0	43.0	42.2	41.6	41.2
75°	48.5	44.2	40.6	39.7	38.7	37.3	36.3	35.5	35.1	35.1	34.9
77.5°	37.1	34.5	32.9	31.4	30.6	29.8	29.2	28.8	28.2	28.4	28.0
80°	27.2	26.4	25.1	24.1	23.7	22.9	22.5	22.3	21.9	21.9	21.7
82.5°	19.5	18.2	17.6	17.0	16.6	16.2	16.4	16.2	16.0	15.8	16.0
85°	11.2	11.0	10.7	10.7	10.7	10.5	10.5	10.5	10.3	10.1	10.1
87.5°	4.9	5.1	5.1	4.7	5.3	5.3	5.1	5.1	4.9	5.3	4.9
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°	602.9	602.9	602.9	602.9
2.5°	572.0	571.8	570.6	568.6
5°	541.0	540.2	538.2	539.8
7.5°	507.8	505.7	503.7	504.7
10°	472.3	471.5	470.4	468.0
12.5°	433.1	436.2	432.9	440.4
15°	374.9	388.9	371.3	377.2
17.5°	345.9	346.1	343.7	340.9
20°	318.6	311.7	314.3	309.8
22.5°	292.4	290.8	290.0	288.4
25°	268.9	266.0	265.0	266.0
27.5°	251.6	250.2	246.4	245.8
30°	229.8	229.3	228.1	227.7
32.5°	216.2	213.7	213.1	210.7
35°	201.0	199.7	198.7	198.1
37.5°	185.9	185.1	183.3	184.3
40°	173.4	169.5	167.9	167.7
42.5°	159.8	157.6	154.5	153.5
45°	144.0	143.0	142.1	141.7
47.5°	130.2	129.6	128.4	127.8
50°	120.4	118.8	118.6	118.4
52.5°	110.9	110.3	109.7	110.5
55°	102.0	101.2	100.6	100.6
57.5°	92.3	91.0	89.8	90.0
60°	81.1	80.3	79.3	78.9
62.5°	68.1	68.1	67.9	67.9
65°	62.0	61.6	61.4	61.6
67.5°	55.2	54.8	54.3	54.5
70°	47.5	47.4	47.5	47.4
72.5°	40.6	40.4	40.6	41.0
75°	34.3	34.1	33.9	33.9
77.5°	27.8	27.6	27.2	27.6
80°	21.7	21.5	21.3	21.3
82.5°	15.4	15.6	15.4	15.4
85°	10.1	10.3	10.1	9.9
87.5°	5.1	5.3	4.9	4.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)