

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: P242392

Luminaire Tested: **S122RDR-S290D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242392
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-S290D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1023.4 lumens
Efficiency: N/A
Efficacy: 88.2 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

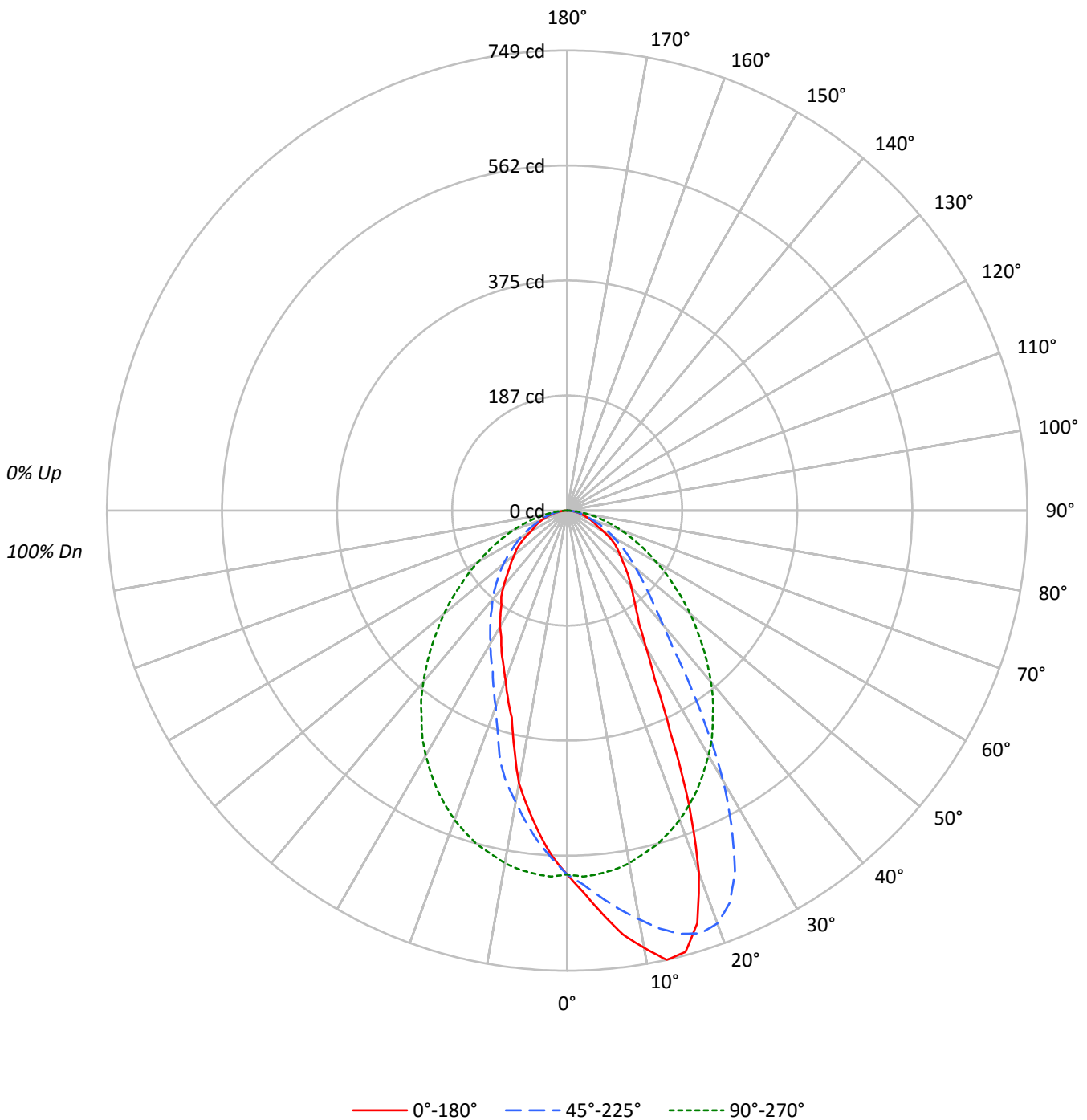
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11280	11280	11280
5°	12598	11352	10065
10°	13978	11272	8725
15°	14665	11106	6874
20°	12713	10861	5947
25°	8337	10527	5311
30°	5613	10120	4806
35°	4546	9608	4334
40°	4043	9051	4011
45°	3658	8399	3580
50°	3331	7749	3316
55°	3128	7030	3088
60°	2617	6373	2587
65°	2208	5787	2506
70°	2038	5168	2361
75°	1906	4497	2178
80°	1766	3697	1942
85°	1617	2929	1705



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.2	5.5
10°-20°	156.8	15.3
20°-30°	201.8	19.7
30°-40°	191.4	18.7
40°-50°	164.0	16.0
50°-60°	124.9	12.2
60°-70°	78.8	7.7
70°-80°	39.3	3.8
80°-90°	10.1	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°	414.7	40.5
0°-40°	606.2	59.2
0°-60°	895.2	87.5
0°-90°	1023.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1023.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	592	592	592	592	592	
5°	659	632	594	541	526	65
15°	744	713	563	422	349	202
25°	397	646	501	287	253	187
35°	196	351	413	218	186	124
45°	136	185	312	161	133	105
55°	94	115	212	109	93	83
65°	49	66	128	65	56	50
75°	26	29	61	33	30	27
85°	7	8	13	8	8	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°	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2
2.5°	622.3	622.9	623.5	622.1	622.1	620.8	618.2	616.1	610.3	609.5	609.5
5°	658.9	658.5	659.3	656.6	652.9	652.1	648.2	643.1	637.7	631.7	630.5
7.5°	695.9	693.5	692.4	693.7	689.8	684.4	677.8	671.7	662.4	654.8	650.1
10°	722.7	729.5	725.4	718.2	719.6	709.9	704.8	695.9	688.5	675.6	672.7
12.5°	749.0	750.7	750.1	746.8	744.1	738.1	730.7	723.3	708.1	696.8	684.8
15°	743.7	747.6	748.6	747.4	748.4	748.0	744.3	737.9	726.0	713.2	702.1
17.5°	704.2	708.7	712.4	715.7	720.8	730.9	734.0	735.2	730.3	721.3	712.0
20°	627.2	622.7	641.6	651.3	659.5	680.1	697.8	704.6	715.5	715.3	713.2
22.5°	518.2	520.6	538.3	550.3	578.2	598.8	619.6	649.9	673.5	691.0	701.7
25°	396.7	404.6	422.5	438.1	464.9	503.1	537.9	578.2	616.3	646.4	675.0
27.5°	308.7	309.7	326.0	341.8	358.3	391.4	437.9	486.3	540.6	579.7	629.1
30°	255.2	253.9	259.9	268.7	282.3	306.6	339.5	386.9	441.0	508.5	568.6
32.5°	217.3	217.7	221.8	227.8	238.5	252.9	272.9	309.1	359.5	425.6	498.6
35°	195.5	195.3	198.6	203.3	208.0	218.5	234.0	254.1	289.3	351.3	423.3
37.5°	177.4	178.4	179.9	182.9	188.7	194.9	204.5	218.7	245.5	284.0	348.6
40°	162.6	163.0	165.2	167.7	170.8	175.3	182.9	193.8	212.2	241.4	285.6
42.5°	149.0	149.4	150.8	153.1	155.4	159.9	165.9	174.9	188.9	210.1	244.7
45°	135.8	135.8	137.3	138.3	141.0	145.1	150.2	158.0	168.3	185.2	209.5
47.5°	123.1	123.1	124.1	125.9	127.8	131.1	136.4	143.0	150.4	164.2	185.8
50°	112.4	112.6	113.2	114.6	115.6	118.5	122.4	128.0	135.8	145.9	163.2
52.5°	103.7	103.5	104.3	104.7	105.4	107.2	109.9	114.6	121.4	129.8	143.4
55°	94.2	93.4	94.7	95.7	96.3	97.1	98.8	101.9	107.8	115.2	125.9
57.5°	83.1	82.7	83.3	84.4	86.2	88.3	89.3	91.4	94.5	100.2	111.5
60°	68.7	68.7	70.6	71.2	73.5	76.3	79.2	80.9	84.0	87.5	95.3
62.5°	56.0	56.2	56.8	57.4	58.4	62.1	66.5	70.6	73.5	76.8	81.3
65°	49.0	49.4	49.4	49.8	50.6	51.4	53.1	56.0	61.1	65.8	69.8
67.5°	42.8	42.8	43.0	43.4	43.6	44.7	45.3	46.7	47.7	53.1	58.4
70°	36.6	37.2	37.0	37.5	37.7	38.1	38.9	39.5	41.4	42.4	45.3
72.5°	30.9	31.3	31.3	31.5	32.1	32.1	32.7	33.3	34.4	35.2	36.4
75°	25.9	25.7	25.9	26.3	26.5	26.8	26.8	27.6	28.2	29.0	30.0
77.5°	21.0	21.2	21.2	21.2	21.2	21.6	21.6	22.0	22.6	23.0	23.7
80°	16.1	16.3	16.1	16.3	16.5	16.7	16.5	16.7	17.3	17.7	17.7
82.5°	11.5	11.5	11.7	11.7	11.7	11.7	12.1	12.1	12.6	12.3	12.6
85°	7.4	7.2	7.2	7.2	7.4	7.6	7.4	7.4	7.6	7.6	7.6
87.5°	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.7	3.5	3.7	3.5
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2
2.5°	609.9	608.3	606.8	603.1	601.3	597.2	596.6	596.3	591.0	585.9	584.4
5°	627.2	623.9	619.0	613.2	607.3	601.1	597.0	593.7	585.4	577.6	573.1
7.5°	644.3	638.3	630.5	620.6	612.2	602.3	595.5	589.4	578.0	567.7	561.0
10°	663.8	652.3	641.0	626.0	614.3	602.7	592.0	582.8	569.6	554.8	544.3
12.5°	676.0	663.0	646.4	631.7	615.7	600.3	585.0	572.5	556.4	541.0	528.0
15°	686.7	673.1	654.2	633.2	613.6	594.5	578.0	563.2	543.1	524.7	509.5
17.5°	696.6	677.8	658.3	634.0	612.4	589.1	568.4	549.8	527.8	506.2	488.9
20°	700.9	682.4	658.9	634.6	607.9	579.3	556.4	535.8	511.8	487.7	467.1
22.5°	698.2	684.8	658.1	627.8	600.3	570.0	543.5	518.8	491.4	466.7	442.0
25°	684.2	679.3	654.6	622.9	591.6	556.8	527.0	500.9	470.4	444.1	418.1
27.5°	658.5	665.7	648.2	613.8	580.1	542.6	510.1	480.7	449.6	420.2	394.3
30°	617.7	642.2	635.7	604.4	565.5	528.9	491.2	460.1	426.4	395.9	370.4
32.5°	562.0	606.4	616.1	591.2	550.7	509.5	469.6	438.7	403.1	370.6	345.9
35°	502.1	562.6	590.4	573.7	533.4	490.0	449.2	413.2	377.8	346.1	321.4
37.5°	431.1	511.8	554.6	552.7	514.2	470.0	425.8	390.2	353.7	322.5	296.7
40°	362.4	451.7	512.0	525.4	494.1	445.3	400.4	364.0	328.6	298.2	267.5
42.5°	300.6	389.5	467.1	492.8	469.6	421.2	376.2	337.7	303.5	275.1	243.6
45°	253.1	330.9	412.6	454.2	440.4	395.5	348.0	311.8	279.4	254.5	224.5
47.5°	219.2	275.7	357.9	412.2	410.5	367.9	320.6	285.8	255.4	232.3	206.8
50°	191.0	238.7	305.6	369.4	374.7	340.4	295.9	261.5	233.6	209.1	189.5
52.5°	165.7	202.9	261.3	321.8	339.5	310.9	268.1	237.1	210.1	188.1	172.0
55°	144.3	174.7	220.4	277.6	300.6	279.7	241.4	211.7	189.7	170.8	156.4
57.5°	125.5	149.4	187.5	235.4	261.5	247.3	214.6	190.1	170.6	152.9	141.4
60°	108.0	126.8	157.8	196.3	225.9	216.7	189.7	167.3	151.2	136.4	125.7
62.5°	91.6	107.0	132.5	161.9	188.5	186.0	165.2	147.3	133.8	120.6	111.9
65°	76.3	88.1	108.9	133.3	155.2	157.0	141.2	128.4	115.9	105.2	97.1
67.5°	63.2	71.2	86.8	108.4	125.1	130.9	120.2	109.9	99.6	91.0	83.8
70°	51.2	57.4	68.1	84.8	99.8	106.0	100.4	92.8	84.2	77.4	71.4
72.5°	39.1	45.1	52.3	63.4	75.7	82.5	81.5	76.5	70.0	64.6	59.1
75°	31.3	33.1	38.5	46.7	56.8	62.6	64.0	61.1	55.6	51.2	47.9
77.5°	24.3	25.5	28.4	33.3	40.3	45.5	47.7	47.3	43.2	40.3	37.2
80°	18.5	19.1	20.4	22.2	27.2	32.3	33.7	33.7	31.1	30.0	27.0
82.5°	13.0	13.4	14.0	14.8	16.5	20.8	22.4	22.8	21.4	20.0	17.7
85°	8.0	7.8	8.2	8.8	9.3	10.5	13.0	13.4	13.0	11.3	10.7
87.5°	3.5	3.7	3.7	3.5	3.7	3.9	4.9	6.0	5.1	4.5	4.1
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°	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2	592.2
2.5°	581.7	580.3	577.6	573.5	571.0	566.7	563.8	565.5	565.9	565.5	565.1
5°	568.2	563.8	557.9	552.1	546.8	541.0	537.7	536.3	533.4	531.7	530.9
7.5°	552.7	546.3	537.9	528.6	520.0	511.8	508.1	505.2	499.8	497.0	494.3
10°	535.0	523.3	514.9	501.7	493.7	481.9	473.9	474.1	466.1	461.6	458.3
12.5°	515.5	502.3	486.9	475.4	463.4	454.6	444.5	439.5	430.9	426.6	416.3
15°	493.5	478.4	463.6	447.6	436.3	421.6	407.6	390.6	376.8	364.8	361.6
17.5°	470.0	451.5	436.9	420.4	402.7	376.2	358.9	348.4	340.2	334.0	329.0
20°	445.7	426.8	410.9	382.5	356.4	339.7	327.8	320.2	311.5	304.8	301.1
22.5°	420.2	400.2	377.2	344.7	325.7	313.2	302.9	293.9	288.7	283.8	280.5
25°	396.3	374.7	339.1	317.3	300.8	286.9	279.4	274.1	267.9	260.7	257.4
27.5°	371.4	337.1	310.1	294.3	277.4	268.5	262.2	253.3	247.8	245.1	241.4
30°	342.8	308.5	288.5	270.8	259.7	249.6	241.8	237.3	231.9	226.4	224.1
32.5°	310.9	285.2	266.3	252.3	241.0	232.7	227.0	218.9	215.5	212.6	207.2
35°	285.6	264.8	247.3	235.4	224.7	217.7	210.5	206.2	199.2	196.3	194.5
37.5°	262.6	244.5	231.3	218.1	209.9	201.7	197.5	190.3	187.7	183.1	179.4
40°	243.6	225.9	213.4	203.1	193.6	187.9	182.3	176.8	172.2	170.4	165.7
42.5°	224.3	210.7	198.2	186.6	181.1	174.9	167.5	163.8	159.1	155.8	153.3
45°	206.8	194.0	183.3	174.1	167.1	160.7	156.2	149.4	146.7	140.8	138.3
47.5°	191.4	179.0	168.7	159.7	152.7	149.0	142.4	136.4	132.7	128.6	125.1
50°	174.7	164.8	155.0	147.1	141.0	135.0	128.2	125.5	118.9	117.1	115.2
52.5°	159.5	150.2	141.4	133.8	127.6	121.8	116.1	112.4	108.4	106.6	105.4
55°	145.5	136.4	127.8	121.0	114.8	108.9	105.2	100.8	98.8	97.3	95.7
57.5°	131.1	122.9	116.1	109.1	102.9	98.0	93.4	91.0	88.9	87.3	85.0
60°	117.5	109.7	103.7	97.3	91.0	87.0	83.8	80.7	78.2	75.3	74.5
62.5°	103.1	96.5	91.2	85.0	79.6	76.1	73.1	70.2	67.1	62.6	61.3
65°	90.1	84.8	79.0	73.9	68.9	65.4	60.9	57.6	56.4	56.0	55.8
67.5°	78.2	73.1	68.1	62.8	58.2	54.3	51.7	51.2	50.4	50.2	49.6
70°	66.3	61.5	56.6	51.7	47.3	46.7	45.9	45.1	44.0	43.6	43.2
72.5°	55.6	50.6	45.7	42.0	40.7	39.9	39.1	38.3	37.7	37.2	37.0
75°	44.2	39.7	36.4	35.0	34.0	33.3	32.1	31.5	31.1	30.5	30.2
77.5°	33.7	30.9	29.2	28.4	27.2	26.5	25.7	25.1	24.5	24.5	24.1
80°	24.3	23.0	22.0	20.8	20.4	19.5	19.3	18.7	18.9	18.3	18.3
82.5°	17.5	15.8	15.0	14.6	14.2	13.6	13.4	13.2	13.2	12.8	12.8
85°	9.7	9.3	8.8	8.4	8.4	7.8	8.0	7.8	7.8	7.4	7.2
87.5°	3.9	3.7	3.3	3.3	3.3	3.1	3.1	2.9	2.9	2.9	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):

	165°	170°	175°	180°
0°	592.2	592.2	592.2	592.2
2.5°	562.8	563.2	562.6	563.0
5°	529.9	527.4	527.0	526.4
7.5°	491.0	490.8	489.5	488.1
10°	453.7	452.7	452.5	451.1
12.5°	410.1	402.1	401.3	397.2
15°	356.6	355.4	351.3	348.6
17.5°	326.8	322.7	321.2	320.6
20°	298.2	294.5	293.9	293.4
22.5°	278.4	274.5	272.7	271.2
25°	255.4	253.9	253.1	252.7
27.5°	237.3	233.6	233.1	232.1
30°	222.2	221.2	219.8	218.5
32.5°	204.5	203.7	202.5	202.1
35°	192.4	189.5	188.3	186.4
37.5°	179.0	177.4	175.3	176.1
40°	163.0	161.9	161.5	161.3
42.5°	150.2	146.9	145.7	145.7
45°	137.3	134.6	132.7	132.9
47.5°	123.3	123.5	122.2	122.6
50°	113.8	112.6	111.7	111.9
52.5°	104.7	103.7	103.1	104.1
55°	94.7	93.4	93.2	93.0
57.5°	83.8	83.1	82.1	81.5
60°	71.8	70.2	68.1	67.9
62.5°	60.9	60.9	60.9	60.9
65°	55.4	55.1	55.4	55.6
67.5°	49.6	49.2	48.8	49.0
70°	42.8	42.6	42.4	42.4
72.5°	36.2	36.2	36.0	35.8
75°	30.0	29.6	29.6	29.6
77.5°	24.1	23.9	23.7	23.5
80°	18.1	17.9	17.7	17.7
82.5°	12.8	12.6	12.6	12.3
85°	7.4	7.6	7.4	7.8
87.5°	2.7	2.5	2.7	2.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)