

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: P242407

Luminaire Tested: **S122RDR-S290D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242407
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-S290D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 885.2 lumens
Efficiency: N/A
Efficacy: 76.3 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

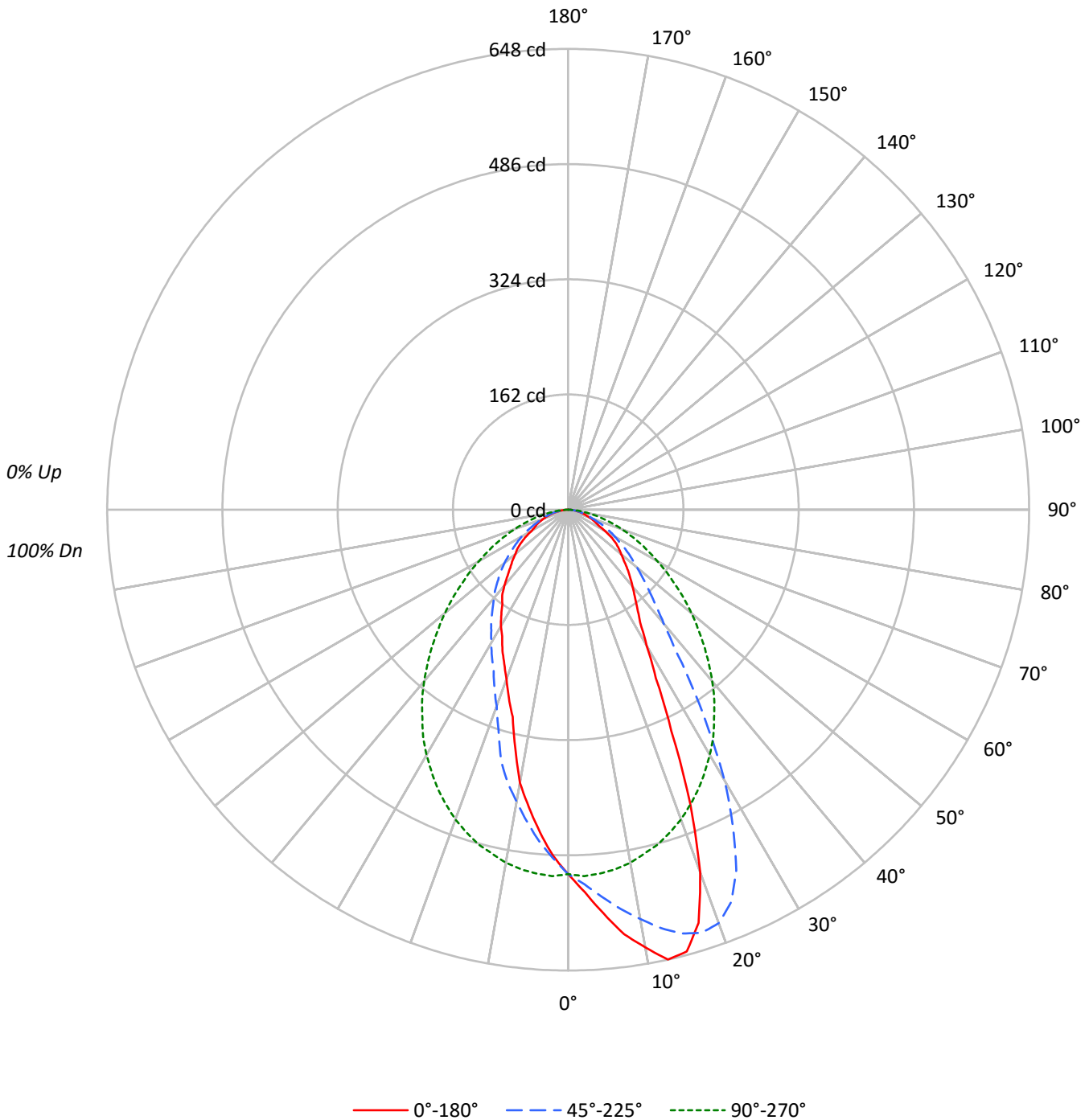
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	9758	9758	9758
5°	10899	9818	8706
10°	12090	9750	7547
15°	12686	9607	5945
20°	10997	9395	5145
25°	7213	9104	4594
30°	4854	8754	4157
35°	3932	8311	3751
40°	3496	7830	3471
45°	3165	7265	3098
50°	2880	6703	2868
55°	2707	6084	2673
60°	2267	5512	2236
65°	1911	5007	2168
70°	1765	4472	2044
75°	1649	3893	1884
80°	1525	3203	1678
85°	1399	2535	1486



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.6	5.5
10°-20°	135.6	15.3
20°-30°	174.5	19.7
30°-40°	165.6	18.7
40°-50°	141.9	16.0
50°-60°	108.1	12.2
60°-70°	68.2	7.7
70°-80°	34.0	3.8
80°-90°	8.7	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°	358.8	40.5
0°-40°	524.3	59.2
0°-60°	774.3	87.5
0°-90°	885.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	885.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	512	512	512	512	512	
5°	570	546	514	468	455	56
15°	643	617	487	365	302	175
25°	343	559	433	248	219	162
35°	169	304	357	188	161	108
45°	118	160	270	139	115	91
55°	82	100	183	94	80	72
65°	42	57	111	57	48	43
75°	22	25	53	29	26	24
85°	6	7	12	7	7	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°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	538.3	538.8	539.3	538.1	538.1	537.0	534.7	532.9	527.9	527.2	527.2
5°	570.0	569.6	570.3	568.0	564.8	564.1	560.7	556.2	551.6	546.5	545.4
7.5°	602.0	599.9	599.0	600.0	596.7	592.0	586.3	581.0	573.0	566.4	562.3
10°	625.1	631.0	627.4	621.2	622.5	614.1	609.6	602.0	595.6	584.4	581.9
12.5°	647.9	649.3	648.8	646.0	643.6	638.5	632.1	625.7	612.5	602.7	592.4
15°	643.3	646.7	647.6	646.5	647.4	647.0	643.8	638.3	628.0	616.9	607.3
17.5°	609.1	613.0	616.2	619.1	623.5	632.3	634.9	636.0	631.7	623.9	615.9
20°	542.5	538.6	555.0	563.4	570.5	588.3	603.6	609.5	618.9	618.7	616.9
22.5°	448.2	450.3	465.6	476.0	500.2	518.0	536.0	562.1	582.6	597.7	607.0
25°	343.2	349.9	365.4	379.0	402.1	435.2	465.3	500.2	533.1	559.1	583.8
27.5°	267.0	267.9	282.0	295.7	309.9	338.6	378.8	420.6	467.6	501.4	544.1
30°	220.7	219.7	224.8	232.5	244.2	265.2	293.7	334.6	381.5	439.8	491.8
32.5°	188.0	188.3	191.9	197.0	206.3	218.8	236.0	267.4	311.0	368.1	431.3
35°	169.1	168.9	171.8	175.9	180.0	189.0	202.4	219.8	250.3	303.8	366.1
37.5°	153.4	154.3	155.6	158.2	163.2	168.6	176.9	189.2	212.4	245.6	301.5
40°	140.6	141.0	142.9	145.1	147.7	151.7	158.2	167.7	183.5	208.8	247.1
42.5°	128.9	129.2	130.5	132.4	134.4	138.3	143.5	151.3	163.4	181.7	211.6
45°	117.5	117.5	118.7	119.6	121.9	125.5	129.9	136.7	145.6	160.2	181.2
47.5°	106.4	106.4	107.3	108.9	110.5	113.4	118.0	123.7	130.1	142.0	160.7
50°	97.2	97.4	97.9	99.1	100.0	102.5	105.9	110.7	117.5	126.2	141.2
52.5°	89.7	89.5	90.2	90.6	91.1	92.7	95.1	99.1	105.0	112.3	124.1
55°	81.5	80.8	81.9	82.8	83.3	84.0	85.4	88.1	93.3	99.7	108.9
57.5°	71.9	71.6	72.1	73.0	74.6	76.4	77.3	79.0	81.7	86.7	96.5
60°	59.5	59.5	61.1	61.6	63.5	66.0	68.5	70.0	72.6	75.6	82.4
62.5°	48.4	48.6	49.1	49.7	50.6	53.8	57.5	61.1	63.5	66.4	70.3
65°	42.4	42.7	42.7	43.1	43.8	44.5	45.9	48.4	52.9	57.0	60.3
67.5°	37.0	37.0	37.2	37.6	37.7	38.6	39.2	40.4	41.3	45.9	50.6
70°	31.7	32.2	32.0	32.4	32.6	32.9	33.6	34.2	35.8	36.7	39.2
72.5°	26.7	27.1	27.1	27.2	27.8	27.8	28.3	28.8	29.7	30.4	31.5
75°	22.4	22.2	22.4	22.8	23.0	23.1	23.1	23.9	24.4	25.1	26.0
77.5°	18.2	18.3	18.3	18.3	18.3	18.7	18.7	19.0	19.6	19.9	20.5
80°	13.9	14.1	13.9	14.1	14.2	14.4	14.2	14.4	15.0	15.3	15.3
82.5°	10.0	10.0	10.1	10.1	10.1	10.1	10.5	10.5	10.9	10.7	10.9
85°	6.4	6.2	6.2	6.2	6.4	6.6	6.4	6.4	6.6	6.6	6.6
87.5°	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.0	3.2	3.0
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°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	527.6	526.2	524.9	521.7	520.1	516.6	516.0	515.8	511.2	506.8	505.5
5°	542.5	539.7	535.4	530.4	525.3	519.9	516.4	513.5	506.4	499.6	495.7
7.5°	557.3	552.2	545.4	536.8	529.5	521.0	515.1	509.8	500.0	491.1	485.2
10°	574.2	564.3	554.5	541.5	531.3	521.4	512.1	504.1	492.7	479.9	470.8
12.5°	584.7	573.5	559.1	546.5	532.6	519.2	506.1	495.2	481.3	468.0	456.7
15°	594.0	582.2	565.9	547.7	530.8	514.2	500.0	487.2	469.7	453.9	440.7
17.5°	602.5	586.3	569.4	548.4	529.7	509.6	491.6	475.6	456.6	437.9	422.9
20°	606.3	590.2	570.0	548.9	525.8	501.1	481.3	463.5	442.7	421.9	404.1
22.5°	604.0	592.4	569.2	543.1	519.2	493.1	470.1	448.7	425.1	403.7	382.3
25°	591.8	587.6	566.2	538.8	511.7	481.7	455.9	433.2	406.9	384.1	361.7
27.5°	569.6	575.8	560.7	531.0	501.8	469.4	441.3	415.8	388.9	363.5	341.0
30°	534.4	555.5	549.8	522.8	489.1	457.5	424.9	398.0	368.8	342.5	320.4
32.5°	486.1	524.6	532.9	511.4	476.3	440.7	406.2	379.5	348.7	320.6	299.2
35°	434.3	486.6	510.7	496.3	461.4	423.8	388.6	357.4	326.8	299.4	278.0
37.5°	372.9	442.7	479.7	478.1	444.8	406.5	368.3	337.5	306.0	278.9	256.7
40°	313.5	390.7	442.9	454.4	427.4	385.2	346.4	314.9	284.3	257.9	231.4
42.5°	260.1	337.0	404.1	426.3	406.2	364.4	325.4	292.1	262.5	238.0	210.8
45°	218.9	286.2	356.9	392.8	380.9	342.1	301.0	269.7	241.7	220.2	194.2
47.5°	189.6	238.5	309.5	356.5	355.1	318.3	277.3	247.2	220.9	201.0	178.9
50°	165.2	206.5	264.3	319.5	324.1	294.4	256.0	226.2	202.0	180.8	163.9
52.5°	143.3	175.5	226.1	278.4	293.7	269.0	231.9	205.1	181.7	162.7	148.8
55°	124.8	151.1	190.6	240.1	260.1	241.9	208.8	183.2	164.1	147.7	135.3
57.5°	108.6	129.2	162.2	203.6	226.2	214.0	185.7	164.5	147.6	132.3	122.3
60°	93.4	109.6	136.5	169.8	195.4	187.4	164.1	144.7	130.8	118.0	108.8
62.5°	79.2	92.6	114.6	140.1	163.0	160.9	142.9	127.4	115.7	104.3	96.8
65°	66.0	76.2	94.2	115.3	134.2	135.8	122.1	111.1	100.2	91.0	84.0
67.5°	54.6	61.6	75.1	93.8	108.2	113.2	104.0	95.1	86.2	78.7	72.4
70°	44.3	49.7	58.9	73.3	86.3	91.7	86.9	80.3	72.8	66.9	61.8
72.5°	33.8	39.0	45.2	54.8	65.5	71.4	70.5	66.2	60.5	55.9	51.1
75°	27.1	28.7	33.3	40.4	49.1	54.1	55.4	52.9	48.1	44.3	41.5
77.5°	21.0	22.1	24.6	28.8	34.9	39.3	41.3	40.9	37.4	34.9	32.2
80°	16.0	16.6	17.6	19.2	23.5	27.9	29.2	29.2	26.9	26.0	23.3
82.5°	11.2	11.6	12.1	12.8	14.2	18.0	19.4	19.8	18.5	17.3	15.3
85°	6.9	6.8	7.1	7.7	8.0	9.1	11.2	11.6	11.2	9.8	9.3
87.5°	3.0	3.2	3.2	3.0	3.2	3.4	4.3	5.2	4.4	3.9	3.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	503.2	502.0	499.6	496.1	493.9	490.2	487.7	489.1	489.5	489.1	488.8
5°	491.5	487.7	482.6	477.6	472.9	468.0	465.1	463.9	461.4	459.9	459.2
7.5°	478.1	472.6	465.3	457.3	449.8	442.7	439.5	437.0	432.4	429.9	427.6
10°	462.8	452.7	445.4	434.0	427.0	416.9	409.9	410.1	403.2	399.3	396.4
12.5°	445.9	434.5	421.1	411.2	400.9	393.2	384.5	380.2	372.7	369.0	360.1
15°	426.8	413.8	401.0	387.1	377.4	364.7	352.6	337.8	325.9	315.6	312.7
17.5°	406.5	390.5	377.9	363.7	348.3	325.4	310.4	301.4	294.2	288.9	284.6
20°	385.5	369.2	355.5	330.9	308.3	293.9	283.6	277.0	269.5	263.6	260.4
22.5°	363.5	346.2	326.3	298.1	281.8	270.9	262.0	254.2	249.7	245.5	242.6
25°	342.8	324.1	293.3	274.5	260.2	248.1	241.7	237.1	231.8	225.5	222.7
27.5°	321.3	291.6	268.2	254.5	239.9	232.3	226.8	219.1	214.3	212.0	208.8
30°	296.5	266.8	249.6	234.2	224.6	215.9	209.1	205.2	200.6	195.8	193.8
32.5°	269.0	246.7	230.3	218.2	208.4	201.3	196.3	189.4	186.4	183.9	179.2
35°	247.1	229.1	214.0	203.6	194.4	188.3	182.1	178.4	172.3	169.8	168.2
37.5°	227.1	211.5	200.1	188.7	181.6	174.4	170.9	164.6	162.3	158.4	155.2
40°	210.8	195.4	184.6	175.7	167.5	162.5	157.7	152.9	149.0	147.4	143.3
42.5°	194.0	182.3	171.4	161.4	156.6	151.3	144.9	141.7	137.6	134.7	132.6
45°	178.9	167.9	158.6	150.6	144.5	139.0	135.1	129.2	126.9	121.8	119.6
47.5°	165.5	154.9	146.0	138.1	132.1	128.9	123.2	118.0	114.8	111.2	108.2
50°	151.1	142.6	134.0	127.3	121.9	116.8	110.9	108.6	102.9	101.3	99.7
52.5°	137.9	129.9	122.3	115.7	110.4	105.4	100.4	97.2	93.8	92.2	91.1
55°	125.8	118.0	110.5	104.7	99.3	94.2	91.0	87.2	85.4	84.2	82.8
57.5°	113.4	106.3	100.4	94.3	89.0	84.7	80.8	78.7	76.9	75.5	73.5
60°	101.6	94.9	89.7	84.2	78.7	75.3	72.4	69.8	67.6	65.1	64.4
62.5°	89.2	83.5	78.9	73.5	68.9	65.9	63.2	60.7	58.0	54.1	53.0
65°	78.0	73.3	68.4	63.9	59.6	56.6	52.7	49.8	48.8	48.4	48.2
67.5°	67.6	63.2	58.9	54.3	50.4	47.0	44.7	44.3	43.6	43.4	42.9
70°	57.3	53.2	48.9	44.7	40.9	40.4	39.7	39.0	38.1	37.7	37.4
72.5°	48.1	43.8	39.5	36.3	35.2	34.5	33.8	33.1	32.6	32.2	32.0
75°	38.3	34.4	31.5	30.3	29.4	28.8	27.8	27.2	26.9	26.3	26.2
77.5°	29.2	26.7	25.3	24.6	23.5	23.0	22.2	21.7	21.2	21.2	20.8
80°	21.0	19.9	19.0	18.0	17.6	16.9	16.7	16.2	16.4	15.8	15.8
82.5°	15.1	13.7	13.0	12.6	12.3	11.7	11.6	11.4	11.4	11.0	11.0
85°	8.4	8.0	7.7	7.3	7.3	6.8	6.9	6.8	6.8	6.4	6.2
87.5°	3.4	3.2	2.8	2.8	2.8	2.7	2.7	2.5	2.5	2.5	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):

	165°	170°	175°	180°
0°	512.3	512.3	512.3	512.3
2.5°	486.8	487.2	486.6	487.0
5°	458.3	456.2	455.9	455.3
7.5°	424.7	424.5	423.5	422.2
10°	392.5	391.6	391.4	390.2
12.5°	354.8	347.8	347.1	343.5
15°	308.5	307.4	303.8	301.5
17.5°	282.7	279.1	277.9	277.3
20°	257.9	254.7	254.2	253.8
22.5°	240.8	237.5	235.8	234.6
25°	220.9	219.7	218.9	218.6
27.5°	205.2	202.0	201.7	200.8
30°	192.2	191.3	190.1	189.0
32.5°	176.9	176.2	175.2	174.8
35°	166.4	163.9	162.9	161.3
37.5°	154.9	153.4	151.7	152.4
40°	141.0	140.1	139.7	139.6
42.5°	129.9	127.1	126.0	126.0
45°	118.7	116.4	114.8	115.0
47.5°	106.6	106.8	105.7	106.1
50°	98.4	97.4	96.7	96.8
52.5°	90.6	89.7	89.2	90.1
55°	81.9	80.8	80.6	80.5
57.5°	72.4	71.9	71.0	70.5
60°	62.1	60.7	58.9	58.7
62.5°	52.7	52.7	52.7	52.7
65°	47.9	47.7	47.9	48.1
67.5°	42.9	42.5	42.2	42.4
70°	37.0	36.8	36.7	36.7
72.5°	31.3	31.3	31.1	31.0
75°	26.0	25.6	25.6	25.6
77.5°	20.8	20.6	20.5	20.3
80°	15.7	15.5	15.3	15.3
82.5°	11.0	10.9	10.9	10.7
85°	6.4	6.6	6.4	6.8
87.5°	2.3	2.1	2.3	2.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)