

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: P243095

Luminaire Tested: **S121RDR-H305D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243095
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-67)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121RDR-H305D930-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 797.9 lumens
Efficiency: N/A
Efficacy: 71.2 lumens/watt
Spacing Criteria (0/90/45): 0.89 / 1.21 / 1.07
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')
CIE Type: Direct

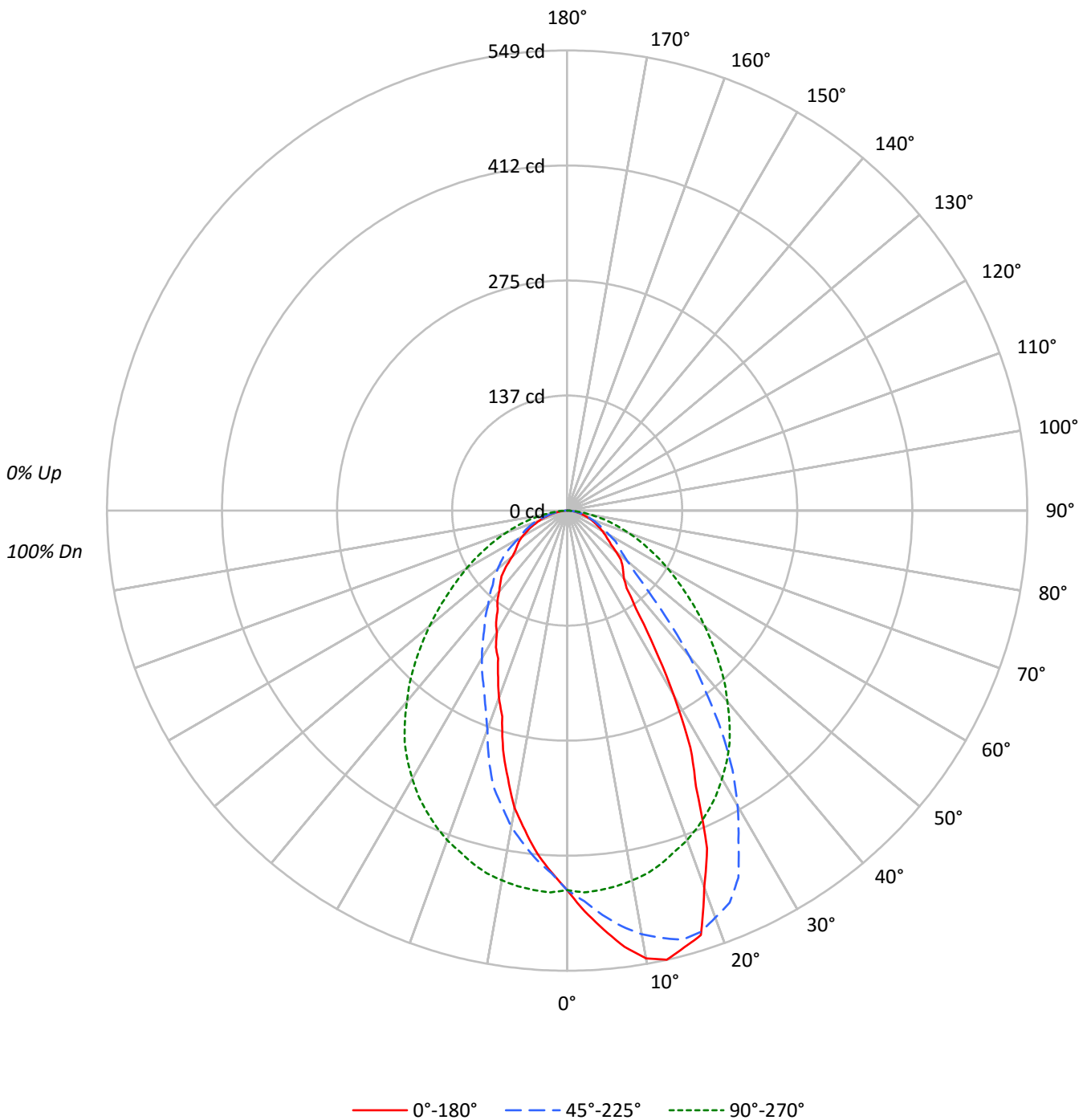
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	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	73	92	84	77	72	81	75	71	78	73	70	76	72	68	66
4	87	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	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	55	50	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	46	41	51	45	41	50	44	40	39
9	62	50	43	38	61	50	42	38	49	42	37	48	42	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°	13410	13410	13410
5°	14925	13518	12212
10°	16319	13479	10843
15°	16552	13365	9058
20°	15088	13196	7492
25°	11884	12956	6372
30°	8687	12642	5744
35°	5187	12222	5223
40°	4065	11499	4874
45°	3918	10735	4634
50°	3494	9874	3932
55°	3053	8983	3756
60°	2850	8225	3639
65°	2657	7481	3372
70°	2512	6740	3075
75°	2301	5999	2736
80°	2099	4863	2389
85°	1972	3706	1734



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.2	5.4
10°-20°	120.5	15.1
20°-30°	160.3	20.1
30°-40°	152.9	19.2
40°-50°	126.9	15.9
50°-60°	94.4	11.8
60°-70°	61.1	7.7
70°-80°	31.1	3.9
80°-90°	7.6	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°	324.0	40.6
0°-40°	476.9	59.8
0°-60°	698.1	87.5
0°-90°	797.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	797.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	453	453	453	453	453	
5°	502	484	454	418	411	49
15°	540	530	436	341	295	150
25°	364	483	396	234	195	169
35°	143	321	338	172	144	98
45°	94	138	256	126	111	71
55°	59	75	174	91	73	54
65°	38	43	107	55	48	38
75°	20	22	52	27	24	21
85°	6	6	11	6	5	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°	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6
2.5°	478.5	477.3	478.7	478.2	476.0	476.5	473.8	472.1	468.0	466.4	466.4
5°	501.8	503.5	502.4	502.8	500.6	499.2	496.3	493.1	487.9	484.2	482.8
7.5°	525.0	525.5	526.0	524.6	522.1	519.7	515.6	510.8	505.2	500.4	496.6
10°	542.4	543.6	542.9	540.8	539.0	535.4	530.9	525.8	519.7	513.4	508.8
12.5°	548.9	549.9	551.4	550.2	550.1	548.3	543.9	537.6	530.1	522.2	516.9
15°	539.6	539.0	543.1	542.0	541.7	541.0	542.2	540.8	536.9	530.1	523.6
17.5°	531.1	530.8	534.9	535.9	534.4	532.1	530.8	529.1	527.2	527.4	526.5
20°	478.5	489.0	491.0	496.5	508.1	515.7	523.4	523.1	517.6	516.8	516.4
22.5°	436.2	440.1	438.3	447.1	453.5	467.3	480.8	497.8	509.3	506.4	504.5
25°	363.5	375.8	381.4	392.5	408.6	426.2	433.8	451.9	469.5	483.2	493.6
27.5°	318.5	321.2	324.8	336.2	342.2	358.2	386.9	411.5	427.9	442.7	470.2
30°	253.9	255.1	267.6	273.9	291.5	307.2	332.1	351.9	384.8	406.9	428.0
32.5°	193.9	192.9	206.5	213.8	231.3	252.4	280.2	298.7	330.9	366.9	392.2
35°	143.4	143.2	150.5	155.6	174.8	191.0	226.3	250.4	285.7	321.0	353.6
37.5°	116.7	116.6	118.1	122.5	130.6	148.8	165.9	201.6	236.0	270.8	311.6
40°	105.1	106.0	106.3	108.4	111.1	116.6	127.0	151.9	185.7	227.2	268.1
42.5°	99.0	99.0	99.3	99.8	101.2	102.7	109.1	118.6	145.7	178.9	224.8
45°	93.5	93.7	94.0	94.4	94.0	94.9	97.8	101.7	112.3	138.4	182.8
47.5°	87.0	86.9	87.7	88.2	88.9	89.9	90.1	92.2	96.8	110.4	142.7
50°	75.8	75.9	76.8	78.8	81.1	82.9	84.1	85.5	87.0	93.5	110.6
52.5°	65.5	65.7	66.2	67.8	69.8	72.2	75.9	79.0	80.2	82.3	91.8
55°	59.1	59.1	59.7	60.6	61.1	62.8	65.4	68.8	73.2	74.9	79.0
57.5°	53.6	53.6	53.9	53.9	54.6	55.5	57.2	58.9	62.6	68.1	70.7
60°	48.1	48.1	48.5	48.5	49.3	49.7	50.9	51.9	53.9	57.7	62.8
62.5°	43.0	42.7	43.0	43.2	43.7	44.2	45.1	46.3	47.4	49.7	53.4
65°	37.9	37.7	38.1	38.4	38.7	39.4	39.9	40.8	41.8	43.0	44.9
67.5°	33.5	33.3	33.5	34.0	33.8	34.1	35.0	35.3	36.4	37.5	39.1
70°	29.0	28.7	29.0	29.0	29.2	29.7	29.7	30.5	31.4	32.1	33.5
72.5°	24.2	24.4	24.2	24.4	24.7	24.9	25.3	25.8	26.3	27.0	27.8
75°	20.1	20.1	20.3	20.5	20.8	20.8	21.0	21.3	21.7	22.0	23.0
77.5°	16.0	16.2	16.4	16.6	16.6	16.7	16.9	17.1	17.6	17.7	18.3
80°	12.3	12.5	12.5	12.5	12.8	12.5	12.8	13.1	13.1	13.3	13.7
82.5°	8.9	9.0	8.9	9.0	9.2	9.2	9.0	9.2	9.2	9.6	9.6
85°	5.8	5.5	5.5	5.5	5.5	5.5	5.6	5.8	5.6	5.6	5.8
87.5°	2.4	2.4	2.4	2.4	2.6	2.4	2.6	2.6	2.6	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°	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6
2.5°	467.3	465.9	464.7	462.7	460.1	456.4	455.8	456.0	451.4	447.0	446.3
5°	479.9	477.7	473.9	469.5	465.4	459.1	456.4	454.5	447.5	441.5	439.1
7.5°	493.4	488.1	483.0	476.0	469.2	461.0	455.8	451.9	442.7	434.9	430.8
10°	504.0	497.5	490.1	481.3	471.9	461.8	454.1	448.0	436.9	427.2	422.1
12.5°	511.5	504.1	495.4	484.9	474.1	460.8	451.4	443.2	429.7	418.1	412.0
15°	515.4	507.6	496.8	485.2	474.1	460.1	447.7	435.7	422.4	407.9	400.2
17.5°	519.0	508.8	496.6	483.3	472.1	457.4	442.0	426.5	411.5	397.8	385.4
20°	516.4	507.7	494.2	480.4	467.8	450.7	434.5	418.5	399.7	383.8	371.4
22.5°	504.5	502.9	488.4	473.6	459.1	442.7	423.9	408.1	387.9	369.1	354.1
25°	490.5	488.6	480.8	464.9	448.5	431.4	414.5	396.3	373.1	353.6	336.4
27.5°	478.7	474.4	468.8	454.0	436.4	419.3	401.9	384.2	359.4	337.7	318.1
30°	454.8	458.9	452.6	442.4	422.1	405.5	388.8	369.5	344.9	320.0	299.9
32.5°	416.9	441.7	435.4	427.2	407.2	389.1	373.2	354.3	327.2	302.6	281.8
35°	383.5	404.8	419.2	409.3	391.7	370.7	354.5	337.9	309.6	284.5	264.5
37.5°	351.1	373.8	397.6	388.6	374.1	351.6	334.5	318.1	291.8	266.6	246.6
40°	308.6	341.7	364.7	368.3	353.4	330.7	314.2	297.3	274.1	249.0	227.7
42.5°	267.8	310.3	328.9	347.3	332.1	310.8	292.3	278.0	255.7	233.6	210.4
45°	225.1	273.4	300.9	315.0	309.6	290.1	270.0	256.2	237.4	216.9	194.9
47.5°	188.1	234.0	273.2	281.3	286.5	267.4	248.7	234.7	218.5	201.6	180.6
50°	149.2	196.8	238.8	253.3	263.3	245.9	226.3	214.2	200.5	185.3	166.7
52.5°	116.1	160.6	204.6	229.4	232.8	223.7	205.7	193.7	182.8	169.1	152.2
55°	92.2	126.6	170.7	199.5	202.7	200.5	184.3	173.9	165.9	154.5	140.3
57.5°	76.5	98.5	138.2	171.5	176.3	178.3	165.0	155.6	148.5	139.4	126.6
60°	66.0	77.7	108.0	140.6	153.8	157.4	145.6	138.8	132.8	124.6	112.6
62.5°	58.4	63.7	82.6	114.0	130.9	134.0	128.0	122.9	117.9	110.1	99.5
65°	48.6	54.3	63.7	88.1	108.9	110.4	111.6	106.7	102.7	96.3	86.9
67.5°	40.8	45.2	51.4	67.6	87.4	91.8	94.9	92.7	88.9	82.4	74.4
70°	34.6	37.2	41.6	50.7	66.7	76.3	79.5	77.8	75.9	68.9	62.1
72.5°	28.8	30.9	33.5	38.9	50.3	60.6	65.4	64.5	62.5	57.2	51.5
75°	23.9	24.7	26.8	29.9	36.5	46.1	51.7	52.4	50.0	45.1	40.6
77.5°	18.8	19.6	20.8	22.7	27.0	33.5	38.1	39.8	38.2	34.6	30.2
80°	14.3	14.8	15.7	16.6	18.3	22.7	27.5	28.5	27.6	24.7	22.0
82.5°	9.6	9.9	10.6	11.3	12.1	14.2	18.3	18.9	18.8	16.2	14.3
85°	5.8	5.8	6.0	6.5	6.8	7.7	9.9	10.9	10.4	8.7	7.9
87.5°	2.4	2.6	2.4	2.4	2.4	2.6	3.2	4.4	3.4	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6	452.6
2.5°	444.4	443.7	441.2	438.8	436.0	432.8	433.0	433.5	432.3	432.0	433.1
5°	435.7	433.3	429.4	425.5	422.4	418.3	415.9	417.1	416.3	414.7	413.7
7.5°	426.5	423.1	417.4	412.5	408.4	400.7	399.0	397.0	395.3	391.8	391.2
10°	415.6	410.6	403.5	396.5	388.9	383.0	377.3	375.0	370.3	367.3	366.4
12.5°	404.3	396.1	388.1	377.9	369.3	360.6	355.7	352.3	347.6	340.1	336.6
15°	392.7	380.2	369.5	358.2	352.4	340.6	331.3	320.7	315.0	302.4	295.1
17.5°	377.2	362.8	348.3	339.1	327.0	310.6	294.9	289.4	280.9	272.7	264.5
20°	356.2	343.0	329.2	315.4	297.0	278.0	272.0	262.7	253.3	248.3	244.1
22.5°	336.9	322.7	306.3	288.1	269.1	254.3	246.4	239.6	233.8	229.4	224.4
25°	318.6	304.0	280.6	262.0	245.4	234.5	230.6	221.7	215.5	212.3	208.0
27.5°	298.5	278.4	259.6	240.3	225.6	219.5	210.4	203.4	196.9	190.6	189.1
30°	279.4	257.0	238.4	222.7	212.0	203.4	194.2	186.0	181.8	179.4	175.4
32.5°	260.4	237.7	220.3	208.0	196.4	187.4	178.7	174.4	167.9	162.6	159.2
35°	240.1	220.3	206.5	192.2	181.1	172.2	167.8	158.0	154.5	152.9	149.3
37.5°	222.2	204.6	190.6	179.7	167.6	160.4	151.7	149.5	144.7	140.6	139.4
40°	207.4	190.8	177.7	163.5	156.0	146.6	142.3	136.4	134.7	133.1	130.4
42.5°	191.1	177.0	162.0	152.4	141.3	137.0	130.4	128.7	124.6	123.0	122.0
45°	177.3	164.2	149.8	138.2	131.9	125.6	123.0	118.8	116.9	115.0	113.2
47.5°	163.8	150.2	138.8	127.8	120.8	117.9	113.3	110.2	108.2	106.3	104.4
50°	151.4	137.6	124.8	116.9	112.0	107.9	105.0	102.4	99.5	95.4	91.1
52.5°	137.9	125.4	115.0	107.3	102.9	99.0	96.4	92.0	86.4	81.9	79.9
55°	124.4	112.6	103.6	97.4	94.4	90.6	84.8	78.3	74.8	74.1	73.6
57.5°	113.0	101.9	93.5	88.7	85.2	78.5	72.4	70.0	68.9	68.6	68.3
60°	100.2	90.3	84.3	79.2	73.2	66.9	65.0	64.7	63.7	63.1	62.8
62.5°	88.4	79.9	74.4	68.3	62.0	60.8	59.4	58.5	58.0	56.8	56.3
65°	77.0	70.1	64.2	57.7	55.5	54.6	53.4	52.2	50.9	50.0	49.3
67.5°	66.0	59.4	53.1	50.7	49.5	48.1	46.6	44.9	44.2	43.0	42.8
70°	55.3	49.2	45.7	44.2	42.0	40.8	39.1	38.4	37.2	36.7	36.2
72.5°	45.1	40.6	39.3	37.0	35.5	33.6	32.8	32.1	31.4	30.5	30.5
75°	35.2	34.0	31.4	29.7	28.2	27.1	26.8	25.6	25.4	24.9	24.6
77.5°	28.0	25.6	24.7	22.9	21.8	21.3	21.0	20.3	19.6	19.5	19.3
80°	19.8	18.6	17.6	16.7	15.9	15.5	15.2	15.0	14.7	14.3	14.2
82.5°	13.0	12.3	11.6	11.1	10.9	10.4	10.1	9.9	9.6	9.6	9.6
85°	7.0	6.8	6.5	6.1	5.8	5.8	5.6	5.5	5.5	4.9	4.9
87.5°	2.2	2.2	2.0	2.0	1.7	1.9	1.7	1.7	1.5	1.7	1.7
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°	452.6	452.6	452.6	452.6
2.5°	431.8	431.8	431.1	431.8
5°	413.0	411.5	411.0	410.6
7.5°	389.1	387.8	386.4	385.0
10°	364.7	362.7	361.5	360.4
12.5°	333.0	330.4	325.6	327.0
15°	293.9	294.1	283.0	295.3
17.5°	262.0	262.8	258.4	257.7
20°	241.7	241.3	239.6	237.6
22.5°	220.8	219.3	218.6	215.4
25°	201.4	198.7	199.5	194.9
27.5°	187.2	185.0	184.3	184.0
30°	173.1	168.4	166.9	167.9
32.5°	158.7	158.4	157.9	158.0
35°	146.6	145.9	144.4	144.4
37.5°	138.2	138.4	137.6	136.9
40°	128.0	127.1	127.0	126.0
42.5°	120.7	119.0	118.3	118.4
45°	112.1	111.1	110.2	110.6
47.5°	102.1	101.0	99.2	98.6
50°	88.4	87.0	86.2	85.3
52.5°	78.2	78.0	77.7	77.5
55°	73.2	72.7	72.7	72.7
57.5°	68.1	67.8	67.6	67.9
60°	62.5	62.1	61.4	61.4
62.5°	55.5	55.1	55.0	54.3
65°	48.5	48.3	48.0	48.1
67.5°	42.0	41.8	41.8	41.3
70°	35.7	35.7	35.2	35.5
72.5°	29.9	29.7	29.7	29.7
75°	24.2	24.1	23.9	23.9
77.5°	19.1	19.1	18.8	18.8
80°	13.8	13.8	13.7	14.0
82.5°	9.2	9.6	9.2	9.2
85°	4.9	5.1	5.1	5.1
87.5°	1.5	1.4	1.4	1.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)