

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: P242397

Luminaire Tested: **S122RDR-S290D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242397
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-S290D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1085.8 lumens
Efficiency: N/A
Efficacy: 93.6 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

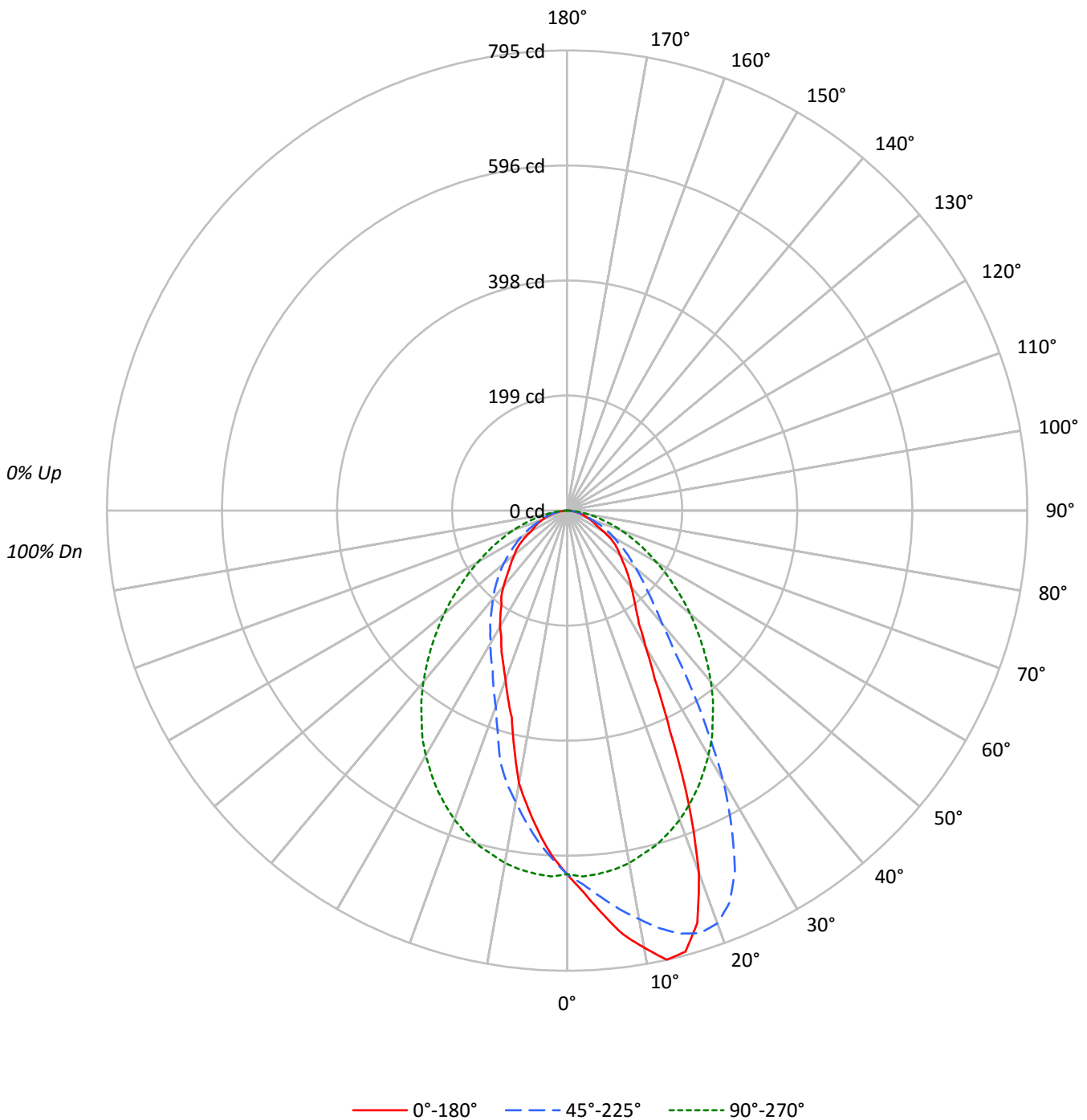
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11968	11968	11968
5°	13367	12044	10679
10°	14831	11959	9257
15°	15559	11784	7292
20°	13490	11524	6310
25°	8846	11168	5635
30°	5954	10738	5101
35°	4823	10194	4599
40°	4289	9603	4257
45°	3882	8911	3798
50°	3532	8223	3520
55°	3321	7462	3278
60°	2777	6762	2743
65°	2344	6139	2655
70°	2166	5486	2506
75°	2024	4769	2311
80°	1865	3927	2062
85°	1727	3103	1814



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.6	5.5
10°-20°	166.3	15.3
20°-30°	214.1	19.7
30°-40°	203.1	18.7
40°-50°	174.0	16.0
50°-60°	132.6	12.2
60°-70°	83.6	7.7
70°-80°	41.7	3.8
80°-90°	10.7	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°	440.0	40.5
0°-40°	643.1	59.2
0°-60°	949.7	87.5
0°-90°	1085.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1085.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	628	628	628	628	628	
5°	699	670	630	574	558	69
15°	789	757	598	447	370	215
25°	421	686	531	304	268	199
35°	207	373	438	231	198	132
45°	144	196	331	170	141	111
55°	100	122	225	116	99	88
65°	52	70	136	69	59	53
75°	28	31	65	35	31	29
85°	8	8	14	8	8	9
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°	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3
2.5°	660.2	660.9	661.5	660.0	660.0	658.7	655.8	653.7	647.5	646.7	646.7
5°	699.1	698.6	699.5	696.7	692.7	691.9	687.7	682.3	676.6	670.3	668.9
7.5°	738.4	735.8	734.7	736.0	731.8	726.1	719.2	712.6	702.8	694.7	689.7
10°	766.8	774.0	769.6	761.9	763.5	753.2	747.8	738.4	730.5	716.8	713.7
12.5°	794.7	796.4	795.8	792.3	789.5	783.1	775.3	767.4	751.3	739.2	726.6
15°	789.0	793.2	794.3	793.0	794.0	793.6	789.7	782.9	770.2	756.7	744.9
17.5°	747.1	751.9	755.8	759.3	764.8	775.5	778.8	780.1	774.8	765.2	755.4
20°	665.5	660.6	680.7	691.0	699.7	721.6	740.3	747.5	759.1	758.9	756.7
22.5°	549.7	552.4	571.1	583.8	613.5	635.3	657.4	689.5	714.6	733.1	744.5
25°	420.9	429.2	448.2	464.8	493.2	533.8	570.7	613.5	653.9	685.8	716.1
27.5°	327.5	328.6	345.8	362.6	380.1	415.3	464.6	515.9	573.5	615.0	667.4
30°	270.7	269.4	275.7	285.1	299.5	325.3	360.2	410.4	467.9	539.5	603.2
32.5°	230.5	231.0	235.4	241.7	253.0	268.3	289.5	327.9	381.4	451.5	529.0
35°	207.4	207.2	210.7	215.7	220.7	231.9	248.2	269.6	307.0	372.7	449.1
37.5°	188.2	189.3	190.8	194.1	200.2	206.8	217.0	232.1	260.5	301.3	369.8
40°	172.5	172.9	175.3	177.9	181.2	186.0	194.1	205.7	225.1	256.1	303.0
42.5°	158.1	158.5	160.0	162.4	164.8	169.6	176.0	185.6	200.4	222.9	259.6
45°	144.1	144.1	145.6	146.7	149.6	153.9	159.4	167.7	178.6	196.5	222.3
47.5°	130.6	130.6	131.6	133.6	135.6	139.1	144.7	151.7	159.6	174.2	197.1
50°	119.2	119.4	120.1	121.6	122.7	125.8	129.9	135.8	144.1	154.8	173.1
52.5°	110.0	109.8	110.7	111.1	111.8	113.7	116.6	121.6	128.8	137.8	152.2
55°	100.0	99.1	100.4	101.5	102.2	103.0	104.8	108.1	114.4	122.3	133.6
57.5°	88.2	87.8	88.4	89.5	91.5	93.7	94.8	96.9	100.2	106.3	118.3
60°	72.9	72.9	74.9	75.5	77.9	81.0	84.1	85.8	89.1	92.8	101.1
62.5°	59.4	59.6	60.3	60.9	62.0	65.9	70.5	74.9	77.9	81.4	86.2
65°	52.0	52.4	52.4	52.8	53.7	54.6	56.3	59.4	64.8	69.9	74.0
67.5°	45.4	45.4	45.6	46.1	46.3	47.4	48.0	49.6	50.7	56.3	62.0
70°	38.9	39.5	39.3	39.7	40.0	40.4	41.3	41.9	43.9	45.0	48.0
72.5°	32.7	33.2	33.2	33.4	34.1	34.1	34.7	35.4	36.5	37.3	38.6
75°	27.5	27.3	27.5	27.9	28.2	28.4	28.4	29.3	29.9	30.8	31.9
77.5°	22.3	22.5	22.5	22.5	22.5	22.9	22.9	23.4	24.0	24.5	25.1
80°	17.0	17.2	17.0	17.2	17.5	17.7	17.5	17.7	18.3	18.8	18.8
82.5°	12.2	12.2	12.4	12.4	12.4	12.4	12.9	12.9	13.3	13.1	13.3
85°	7.9	7.6	7.6	7.6	7.9	8.1	7.9	7.9	8.1	8.1	8.1
87.5°	3.5	3.7	3.7	3.7	3.7	3.7	3.7	3.9	3.7	3.9	3.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3
2.5°	647.1	645.4	643.8	639.9	637.9	633.6	632.9	632.7	627.0	621.6	620.0
5°	665.5	662.0	656.7	650.6	644.3	637.7	633.4	629.9	621.1	612.8	608.0
7.5°	683.6	677.2	668.9	658.5	649.5	639.0	631.8	625.3	613.3	602.4	595.1
10°	704.3	692.1	680.1	664.1	651.7	639.5	628.1	618.3	604.3	588.6	577.5
12.5°	717.2	703.4	685.8	670.3	653.2	636.8	620.7	607.4	590.3	574.0	560.2
15°	728.5	714.1	694.1	671.8	651.0	630.7	613.3	597.6	576.2	556.7	540.6
17.5°	739.0	719.2	698.4	672.7	649.7	625.1	603.0	583.4	560.0	537.1	518.7
20°	743.6	724.0	699.1	673.3	644.9	614.6	590.3	568.5	543.0	517.4	495.6
22.5°	740.8	726.6	698.2	666.1	636.8	604.8	576.6	550.4	521.4	495.2	469.0
25°	725.9	720.7	694.5	660.9	627.7	590.8	559.1	531.4	499.1	471.1	443.6
27.5°	698.6	706.3	687.7	651.3	615.5	575.7	541.2	510.0	477.0	445.8	418.3
30°	655.4	681.4	674.4	641.2	600.0	561.1	521.1	488.2	452.4	420.1	393.0
32.5°	596.2	643.4	653.7	627.2	584.2	540.6	498.2	465.5	427.7	393.2	367.0
35°	532.7	596.9	626.4	608.7	565.9	519.8	476.6	438.4	400.8	367.2	341.0
37.5°	457.4	543.0	588.4	586.4	545.6	498.7	451.7	413.9	375.3	342.1	314.8
40°	384.5	479.2	543.2	557.4	524.2	472.5	424.9	386.2	348.7	316.4	283.8
42.5°	319.0	413.3	495.6	522.9	498.2	446.9	399.1	358.3	322.0	291.9	258.5
45°	268.5	351.1	437.7	481.8	467.2	419.6	369.2	330.8	296.5	270.1	238.2
47.5°	232.5	292.6	379.7	437.3	435.6	390.4	340.1	303.3	270.9	246.5	219.4
50°	202.6	253.3	324.2	391.9	397.6	361.1	313.9	277.5	247.8	221.8	201.1
52.5°	175.8	215.3	277.3	341.5	360.2	329.9	284.5	251.5	222.9	199.5	182.5
55°	153.0	185.4	233.8	294.5	319.0	296.7	256.1	224.7	201.3	181.2	165.9
57.5°	133.2	158.5	198.9	249.8	277.5	262.4	227.7	201.7	181.0	162.2	150.0
60°	114.6	134.5	167.5	208.3	239.7	229.9	201.3	177.5	160.5	144.7	133.4
62.5°	97.2	113.5	140.6	171.8	200.0	197.4	175.3	156.3	141.9	127.9	118.8
65°	81.0	93.4	115.5	141.5	164.6	166.6	149.8	136.2	122.9	111.6	103.0
67.5°	67.0	75.5	92.1	115.1	132.7	138.9	127.5	116.6	105.7	96.5	88.9
70°	54.4	60.9	72.3	89.9	105.9	112.4	106.5	98.5	89.3	82.1	75.8
72.5°	41.5	47.8	55.5	67.2	80.3	87.5	86.5	81.2	74.2	68.6	62.7
75°	33.2	35.2	40.8	49.6	60.3	66.4	67.9	64.8	58.9	54.4	50.9
77.5°	25.8	27.1	30.1	35.4	42.8	48.2	50.7	50.2	45.8	42.8	39.5
80°	19.6	20.3	21.6	23.6	28.8	34.3	35.8	35.8	33.0	31.9	28.6
82.5°	13.8	14.2	14.8	15.7	17.5	22.1	23.8	24.2	22.7	21.2	18.8
85°	8.5	8.3	8.7	9.4	9.8	11.1	13.8	14.2	13.8	12.0	11.4
87.5°	3.7	3.9	3.9	3.7	3.9	4.1	5.2	6.3	5.5	4.8	4.4
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°	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3	628.3
2.5°	617.2	615.7	612.8	608.5	605.8	601.3	598.2	600.0	600.4	600.0	599.5
5°	602.8	598.2	591.9	585.8	580.1	574.0	570.5	569.0	565.9	564.1	563.3
7.5°	586.4	579.6	570.7	560.9	551.7	543.0	539.0	536.0	530.3	527.3	524.4
10°	567.6	555.2	546.2	532.3	523.8	511.3	502.8	503.0	494.5	489.7	486.2
12.5°	546.9	532.9	516.6	504.3	491.7	482.3	471.6	466.3	457.2	452.6	441.7
15°	523.5	507.6	491.9	474.9	462.8	447.3	432.5	414.4	399.8	387.1	383.6
17.5°	498.7	479.0	463.5	446.0	427.3	399.1	380.8	369.6	360.9	354.3	349.1
20°	472.9	452.8	436.0	405.9	378.1	360.5	347.8	339.7	330.5	323.3	319.4
22.5°	445.8	424.6	400.2	365.7	345.6	332.3	321.4	311.8	306.3	301.1	297.6
25°	420.5	397.6	359.8	336.7	319.2	304.3	296.5	290.8	284.3	276.6	273.1
27.5°	394.1	357.6	329.0	312.2	294.3	284.9	278.1	268.8	262.9	260.0	256.1
30°	363.7	327.3	306.1	287.3	275.5	264.8	256.5	251.7	246.1	240.2	237.8
32.5°	329.9	302.6	282.5	267.7	255.7	246.9	240.8	232.3	228.6	225.5	219.9
35°	303.0	281.0	262.4	249.8	238.4	231.0	223.3	218.8	211.3	208.3	206.3
37.5°	278.6	259.4	245.4	231.4	222.7	214.0	209.6	201.9	199.1	194.3	190.4
40°	258.5	239.7	226.4	215.5	205.4	199.3	193.4	187.5	182.7	180.8	175.8
42.5°	238.0	223.6	210.2	198.0	192.1	185.6	177.7	173.8	168.8	165.3	162.7
45°	219.4	205.9	194.5	184.7	177.3	170.5	165.7	158.5	155.7	149.3	146.7
47.5°	203.0	189.9	179.0	169.4	162.0	158.1	151.1	144.7	140.8	136.5	132.7
50°	185.4	174.9	164.4	156.1	149.6	143.2	136.0	133.2	126.2	124.2	122.3
52.5°	169.2	159.4	150.0	141.9	135.4	129.2	123.1	119.2	115.1	113.1	111.8
55°	154.4	144.7	135.6	128.4	121.8	115.5	111.6	107.0	104.8	103.3	101.5
57.5°	139.1	130.3	123.1	115.7	109.2	103.9	99.1	96.5	94.3	92.6	90.2
60°	124.7	116.4	110.0	103.3	96.5	92.4	88.9	85.6	83.0	79.9	79.0
62.5°	109.4	102.4	96.7	90.2	84.5	80.8	77.5	74.4	71.2	66.4	65.1
65°	95.6	89.9	83.8	78.4	73.1	69.4	64.6	61.1	59.8	59.4	59.2
67.5°	83.0	77.5	72.3	66.6	61.8	57.6	54.8	54.4	53.5	53.3	52.6
70°	70.3	65.3	60.0	54.8	50.2	49.6	48.7	47.8	46.7	46.3	45.8
72.5°	58.9	53.7	48.5	44.5	43.2	42.4	41.5	40.6	40.0	39.5	39.3
75°	46.9	42.1	38.6	37.1	36.0	35.4	34.1	33.4	33.0	32.3	32.1
77.5°	35.8	32.7	31.0	30.1	28.8	28.2	27.3	26.6	26.0	26.0	25.5
80°	25.8	24.5	23.4	22.1	21.6	20.7	20.5	19.9	20.1	19.4	19.4
82.5°	18.6	16.8	15.9	15.5	15.1	14.4	14.2	14.0	14.0	13.5	13.5
85°	10.3	9.8	9.4	9.0	9.0	8.3	8.5	8.3	8.3	7.9	7.6
87.5°	4.1	3.9	3.5	3.5	3.5	3.3	3.3	3.1	3.1	3.1	2.8
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):

	165°	170°	175°	180°
0°	628.3	628.3	628.3	628.3
2.5°	597.1	597.6	596.9	597.3
5°	562.2	559.6	559.1	558.5
7.5°	520.9	520.7	519.4	517.9
10°	481.4	480.3	480.1	478.6
12.5°	435.1	426.6	425.7	421.4
15°	378.4	377.0	372.7	369.8
17.5°	346.7	342.3	340.8	340.1
20°	316.4	312.4	311.8	311.3
22.5°	295.4	291.2	289.3	287.8
25°	270.9	269.4	268.5	268.1
27.5°	251.7	247.8	247.4	246.3
30°	235.8	234.7	233.2	231.9
32.5°	217.0	216.1	214.8	214.4
35°	204.1	201.1	199.8	197.8
37.5°	189.9	188.2	186.0	186.9
40°	172.9	171.8	171.4	171.2
42.5°	159.4	155.9	154.6	154.6
45°	145.6	142.8	140.8	141.0
47.5°	130.8	131.0	129.7	130.1
50°	120.7	119.4	118.5	118.8
52.5°	111.1	110.0	109.4	110.5
55°	100.4	99.1	98.9	98.7
57.5°	88.9	88.2	87.1	86.5
60°	76.2	74.4	72.3	72.0
62.5°	64.6	64.6	64.6	64.6
65°	58.7	58.5	58.7	58.9
67.5°	52.6	52.2	51.7	52.0
70°	45.4	45.2	45.0	45.0
72.5°	38.4	38.4	38.2	38.0
75°	31.9	31.4	31.4	31.4
77.5°	25.5	25.3	25.1	24.9
80°	19.2	19.0	18.8	18.8
82.5°	13.5	13.3	13.3	13.1
85°	7.9	8.1	7.9	8.3
87.5°	2.8	2.6	2.8	2.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)