

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: P243277

Luminaire Tested: **S122RDR-H290D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243277  
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-H290D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

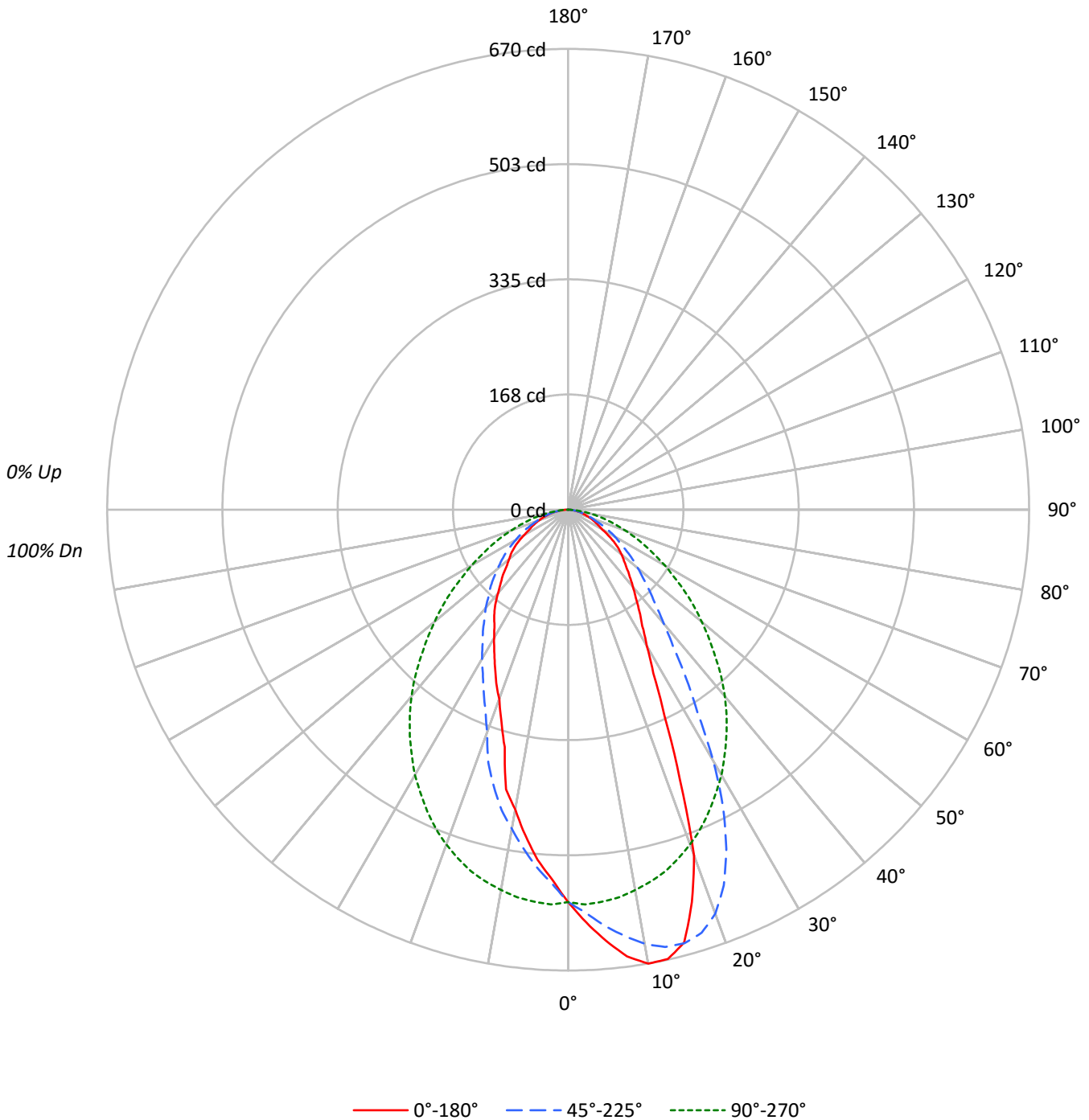
Lumens per Lamp: N/A  
Luminaire Lumens: 961.3 lumens  
Efficiency: N/A  
Efficacy: 85.8 lumens/watt  
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.2  
Input Voltage (V): 120  
Input Current (Ain): 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



TEST NUMBER: P243277

CATALOG NUMBER: S122RDR-H290D940-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P243277

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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°	10865	10865	10865
5°	12027	10939	9765
10°	12961	10862	8563
15°	12845	10737	7038
20°	10836	10500	5939
25°	6967	10176	5288
30°	5032	9799	4738
35°	4193	9327	4358
40°	3638	8810	3946
45°	3249	8151	3610
50°	2999	7506	3319
55°	2690	6854	3161
60°	2149	6171	2846
65°	1970	5544	2623
70°	1810	4895	2495
75°	1649	4283	2362
80°	1437	3565	2216
85°	1136	2863	2032



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.0	5.6
10°-20°	147.7	15.4
20°-30°	186.2	19.4
30°-40°	178.8	18.6
40°-50°	154.0	16.0
50°-60°	117.7	12.2
60°-70°	74.9	7.8
70°-80°	38.0	3.9
80°-90°	10.0	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°	388.0	40.4
0°-40°	566.7	59.0
0°-60°	838.4	87.2
0°-90°	961.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	961.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	570	570	570	570	570	
5°	629	607	572	522	511	61
15°	651	653	544	417	357	177
25°	332	544	484	291	252	158
35°	180	298	401	216	187	114
45°	121	167	303	160	134	94
55°	81	102	206	111	95	71
65°	44	56	123	68	58	44
75°	22	25	58	35	32	24
85°	5	6	13	10	9	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°	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4
2.5°	600.7	601.4	601.8	600.8	598.8	599.0	597.1	593.9	590.0	586.5	588.5
5°	629.0	630.0	629.8	628.1	626.0	624.2	621.0	616.5	611.9	607.0	606.1
7.5°	655.2	657.2	656.7	653.5	652.0	649.4	644.0	638.9	631.8	624.9	622.1
10°	670.1	671.8	670.8	670.1	668.4	665.8	660.9	656.1	648.3	641.0	636.9
12.5°	669.0	670.5	671.2	672.0	671.4	670.5	668.4	664.3	658.0	651.2	646.0
15°	651.4	649.0	647.3	652.0	653.7	660.0	661.5	662.1	657.8	652.7	651.4
17.5°	598.0	598.8	611.7	609.6	612.4	627.9	634.1	642.5	646.0	644.9	647.1
20°	534.6	525.8	532.2	541.5	550.3	572.8	587.8	601.0	616.3	624.9	633.1
22.5°	424.1	424.3	439.6	454.9	474.7	499.1	521.9	547.3	574.5	591.1	610.4
25°	331.5	340.5	347.2	353.9	382.6	406.2	444.1	474.9	512.4	543.9	576.2
27.5°	268.0	277.4	278.5	293.6	310.6	329.6	354.5	403.0	441.4	487.7	527.7
30°	228.8	230.7	234.6	238.5	251.1	268.8	295.5	325.9	368.6	421.5	475.0
32.5°	200.5	200.1	204.0	210.2	217.1	229.0	244.1	269.3	308.0	350.0	412.5
35°	180.3	179.7	182.5	184.8	188.9	198.6	212.2	228.8	256.7	298.5	347.0
37.5°	161.3	162.4	164.1	166.5	171.9	178.1	187.2	201.0	223.1	250.7	297.2
40°	146.3	147.6	149.5	151.2	155.3	160.3	166.5	177.5	192.3	216.3	252.0
42.5°	132.9	133.5	135.0	137.4	140.4	144.8	150.8	159.2	171.5	188.3	219.5
45°	120.6	120.6	122.3	124.5	126.4	130.7	135.3	143.4	152.9	167.2	189.5
47.5°	110.1	110.3	111.2	111.6	113.7	117.6	122.6	129.0	136.8	147.8	168.6
50°	101.2	101.9	102.3	102.8	103.6	105.6	109.2	114.0	122.6	132.3	146.2
52.5°	91.8	92.8	93.5	94.6	95.8	95.9	98.6	101.7	107.7	117.8	129.0
55°	81.0	81.8	83.2	84.2	85.7	87.0	89.0	91.3	95.2	101.9	113.5
57.5°	68.7	68.9	70.4	71.3	74.3	77.3	79.1	81.6	84.4	89.0	97.8
60°	56.4	56.9	57.1	57.9	60.5	63.6	67.4	71.1	74.1	78.2	84.4
62.5°	49.7	49.8	50.4	51.1	51.3	52.8	53.9	58.4	63.6	67.8	71.9
65°	43.7	43.9	43.9	44.4	45.2	45.9	46.5	48.2	50.4	56.2	61.2
67.5°	38.1	37.9	38.3	38.8	39.0	39.6	40.5	41.4	42.9	44.6	49.8
70°	32.5	32.5	32.3	32.9	33.4	33.6	34.2	35.1	36.0	37.5	39.2
72.5°	26.9	27.3	27.3	27.6	27.8	28.6	28.9	29.3	30.6	31.4	32.7
75°	22.4	22.2	22.8	22.6	23.0	23.1	23.7	24.3	24.6	25.4	26.5
77.5°	17.9	17.5	17.9	17.7	18.1	18.5	18.5	19.0	19.4	20.2	20.7
80°	13.1	13.1	13.3	13.6	13.6	13.8	14.2	14.0	14.7	14.9	15.5
82.5°	9.0	9.1	9.1	9.3	9.3	9.3	9.7	9.7	9.9	10.3	10.5
85°	5.2	5.0	5.2	5.2	5.2	5.4	5.6	5.4	5.8	6.2	6.2
87.5°	1.5	1.5	1.7	1.9	1.9	2.1	2.1	2.1	2.2	2.2	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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4
2.5°	588.5	587.6	585.2	582.9	578.8	575.5	574.3	574.5	569.5	564.3	562.8
5°	604.8	601.4	596.6	591.5	585.4	579.2	575.3	572.1	564.3	556.4	551.9
7.5°	618.2	612.8	605.7	597.7	589.6	580.5	574.2	568.2	557.4	546.7	540.9
10°	630.5	622.9	613.2	602.7	592.1	580.1	571.0	561.6	548.0	536.1	526.2
12.5°	642.3	630.1	620.3	605.1	593.4	577.1	564.6	553.8	537.8	522.8	511.8
15°	643.4	634.8	621.6	605.9	588.0	572.8	557.2	544.5	526.2	509.6	490.7
17.5°	643.2	636.5	622.7	606.6	585.2	565.4	548.4	531.8	510.9	491.5	475.2
20°	636.5	631.8	619.9	600.8	579.2	556.4	537.6	518.0	493.5	473.5	455.8
22.5°	620.6	621.8	612.4	595.4	572.1	546.7	524.9	502.3	477.3	454.3	431.9
25°	593.8	605.7	602.9	587.0	562.2	534.4	509.6	484.2	457.3	432.9	412.1
27.5°	560.3	582.7	587.6	575.3	551.6	520.4	492.2	464.6	437.1	410.8	389.6
30°	520.8	554.2	566.5	559.8	537.9	505.3	472.6	445.5	415.5	387.5	365.1
32.5°	470.9	517.8	539.4	541.5	523.6	488.5	452.3	423.1	392.4	365.8	341.8
35°	415.3	472.8	508.1	517.6	504.7	470.0	431.9	401.1	368.3	341.6	317.3
37.5°	359.3	426.9	473.2	491.7	483.1	449.5	409.1	378.0	345.5	318.2	295.5
40°	307.8	372.0	432.1	461.0	458.4	427.3	386.6	354.3	321.2	296.0	271.0
42.5°	261.7	323.7	389.7	428.6	430.6	403.4	361.7	329.3	297.5	272.5	246.4
45°	225.3	279.8	345.3	391.6	400.6	378.2	336.0	302.6	273.6	250.1	224.0
47.5°	196.2	238.5	299.4	353.7	369.6	350.0	309.7	277.9	250.7	230.5	205.9
50°	171.0	210.7	262.4	312.6	336.0	321.2	283.5	253.3	228.7	209.2	187.6
52.5°	148.6	179.4	224.2	272.3	303.7	290.2	258.1	230.3	207.2	189.1	171.0
55°	130.1	155.9	195.4	238.4	267.3	259.8	231.3	206.4	186.1	168.9	154.2
57.5°	111.1	132.7	164.6	202.9	231.3	230.1	206.6	182.7	166.7	150.4	139.8
60°	94.4	112.0	137.9	170.4	199.0	199.2	180.9	162.0	148.2	134.2	124.1
62.5°	79.7	93.7	116.3	142.4	165.2	171.0	157.4	140.9	129.7	118.9	110.3
65°	67.0	77.5	94.4	118.2	136.1	143.9	135.0	123.0	113.7	104.0	96.3
67.5°	55.3	62.9	75.4	94.1	112.0	117.8	114.0	104.9	98.2	90.2	84.4
70°	43.5	50.0	58.8	72.8	87.5	95.6	94.4	87.9	82.3	76.5	71.1
72.5°	34.5	38.3	45.0	55.1	66.8	75.8	76.2	72.8	68.1	63.3	59.7
75°	27.8	29.5	32.7	40.5	49.8	57.3	59.9	58.2	54.5	51.5	49.1
77.5°	21.5	23.0	25.0	28.7	36.0	41.8	45.0	45.2	42.9	40.3	38.5
80°	16.1	16.6	18.1	20.0	23.7	28.7	32.5	32.5	31.2	29.9	28.7
82.5°	11.0	11.6	12.3	13.3	15.1	18.1	21.5	22.0	21.3	20.9	19.4
85°	6.2	6.7	7.1	7.7	8.4	9.9	12.3	13.1	13.3	12.1	11.4
87.5°	2.4	2.4	2.6	2.8	3.0	3.5	4.5	5.6	5.6	5.0	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4
2.5°	560.9	558.3	554.9	551.9	547.8	543.7	543.0	544.5	544.8	543.0	543.5
5°	547.6	542.8	538.7	532.0	527.7	522.1	518.3	518.3	518.3	515.5	512.9
7.5°	533.8	527.3	519.5	513.1	504.3	497.1	493.5	491.8	488.5	485.7	482.5
10°	517.8	508.6	498.9	489.0	481.4	471.3	465.3	461.6	455.8	453.4	448.7
12.5°	498.9	489.8	478.0	462.0	459.7	447.4	439.0	432.1	425.0	419.2	417.2
15°	483.8	467.9	452.3	440.9	424.3	417.0	404.7	403.5	397.8	380.8	367.5
17.5°	459.4	445.2	427.8	415.1	401.9	385.6	372.6	359.7	347.4	335.4	335.0
20°	437.7	421.1	404.7	390.9	367.7	344.6	336.5	324.8	317.5	308.0	305.2
22.5°	414.0	396.6	376.1	356.0	328.9	314.3	305.6	296.2	288.9	284.6	280.4
25°	390.1	372.8	345.5	320.7	302.2	290.8	283.3	273.3	268.0	264.3	258.7
27.5°	366.8	344.8	316.0	296.2	281.3	268.4	261.7	253.5	247.7	242.8	239.3
30°	343.6	313.4	288.9	273.6	258.3	250.3	241.5	235.4	231.1	226.6	220.8
32.5°	318.2	286.5	270.7	251.8	242.8	231.3	224.9	218.6	213.0	209.8	207.7
35°	288.8	263.2	249.0	235.2	223.8	216.1	207.2	203.3	200.3	194.1	191.5
37.5°	263.7	245.3	230.3	218.0	207.6	199.3	195.2	188.5	184.2	182.2	179.4
40°	243.0	226.6	213.7	201.2	192.4	186.5	179.2	175.6	170.0	168.0	165.8
42.5°	225.1	210.0	196.5	187.0	179.4	171.2	167.4	161.5	159.0	154.0	152.1
45°	207.0	193.6	181.8	172.5	165.2	160.2	153.4	149.7	145.4	142.8	137.8
47.5°	188.9	176.9	167.2	159.4	153.1	146.9	141.3	138.1	132.7	129.9	127.3
50°	174.9	163.3	154.2	146.3	139.8	133.6	130.1	124.9	120.0	116.8	115.9
52.5°	158.3	148.2	139.8	133.8	127.3	122.8	118.0	112.2	109.8	106.6	105.8
55°	143.5	135.3	128.2	121.9	116.3	111.2	105.6	101.5	99.7	98.2	97.1
57.5°	129.7	121.9	115.4	109.6	104.7	99.5	94.8	92.4	90.7	89.0	87.9
60°	116.1	109.0	103.0	98.2	93.1	88.1	84.7	82.7	81.4	79.0	78.2
62.5°	104.0	97.4	91.3	86.8	82.1	78.2	75.4	72.6	70.6	68.7	64.8
65°	90.7	84.9	80.3	75.8	71.3	68.3	65.1	62.0	59.4	59.4	59.4
67.5°	79.0	73.9	69.1	65.1	61.2	57.7	54.5	54.3	53.4	53.0	52.5
70°	67.0	63.5	59.0	54.7	50.8	49.1	48.5	47.6	46.5	46.3	45.5
72.5°	56.2	52.1	48.0	44.2	43.5	42.7	41.6	40.7	39.9	39.4	39.0
75°	45.9	41.8	38.5	37.5	36.6	35.3	34.3	33.6	33.2	33.2	33.0
77.5°	35.1	32.7	31.2	29.7	28.9	28.2	27.6	27.3	26.7	26.9	26.5
80°	25.8	25.0	23.7	22.8	22.4	21.7	21.3	21.1	20.7	20.7	20.5
82.5°	18.5	17.2	16.6	16.1	15.7	15.3	15.5	15.3	15.1	14.9	15.1
85°	10.6	10.5	10.1	10.1	10.1	9.9	9.9	9.9	9.7	9.5	9.5
87.5°	4.7	4.9	4.9	4.5	5.0	5.0	4.9	4.9	4.7	5.0	4.7
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°	570.4	570.4	570.4	570.4
2.5°	541.1	540.9	539.8	537.9
5°	511.8	511.1	509.2	510.7
7.5°	480.5	478.4	476.5	477.5
10°	446.9	446.1	445.0	442.7
12.5°	409.7	412.7	409.5	416.6
15°	354.6	367.9	351.3	356.9
17.5°	327.2	327.4	325.2	322.5
20°	301.4	294.9	297.3	293.0
22.5°	276.6	275.1	274.4	272.9
25°	254.4	251.6	250.7	251.6
27.5°	238.0	236.7	233.1	232.6
30°	217.5	216.9	215.8	215.4
32.5°	204.6	202.1	201.6	199.3
35°	190.2	188.9	188.0	187.4
37.5°	175.8	175.1	173.4	174.3
40°	164.1	160.3	158.8	158.7
42.5°	151.2	149.1	146.2	145.2
45°	136.3	135.3	134.4	134.0
47.5°	123.2	122.6	121.5	121.0
50°	113.9	112.4	112.2	112.0
52.5°	104.9	104.3	103.8	104.5
55°	96.5	95.8	95.2	95.2
57.5°	87.4	86.0	84.9	85.1
60°	76.7	76.0	75.0	74.7
62.5°	64.4	64.4	64.2	64.2
65°	58.6	58.2	58.0	58.2
67.5°	52.3	51.9	51.3	51.5
70°	45.0	44.8	45.0	44.8
72.5°	38.5	38.3	38.5	38.8
75°	32.5	32.3	32.1	32.1
77.5°	26.3	26.1	25.8	26.1
80°	20.5	20.3	20.2	20.2
82.5°	14.6	14.7	14.6	14.6
85°	9.5	9.7	9.5	9.3
87.5°	4.9	5.0	4.7	4.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)