

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: P242456

Luminaire Tested: **S123DR-S340D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242456
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-S340D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1077.3 lumens
Efficiency: N/A
Efficacy: 92.9 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

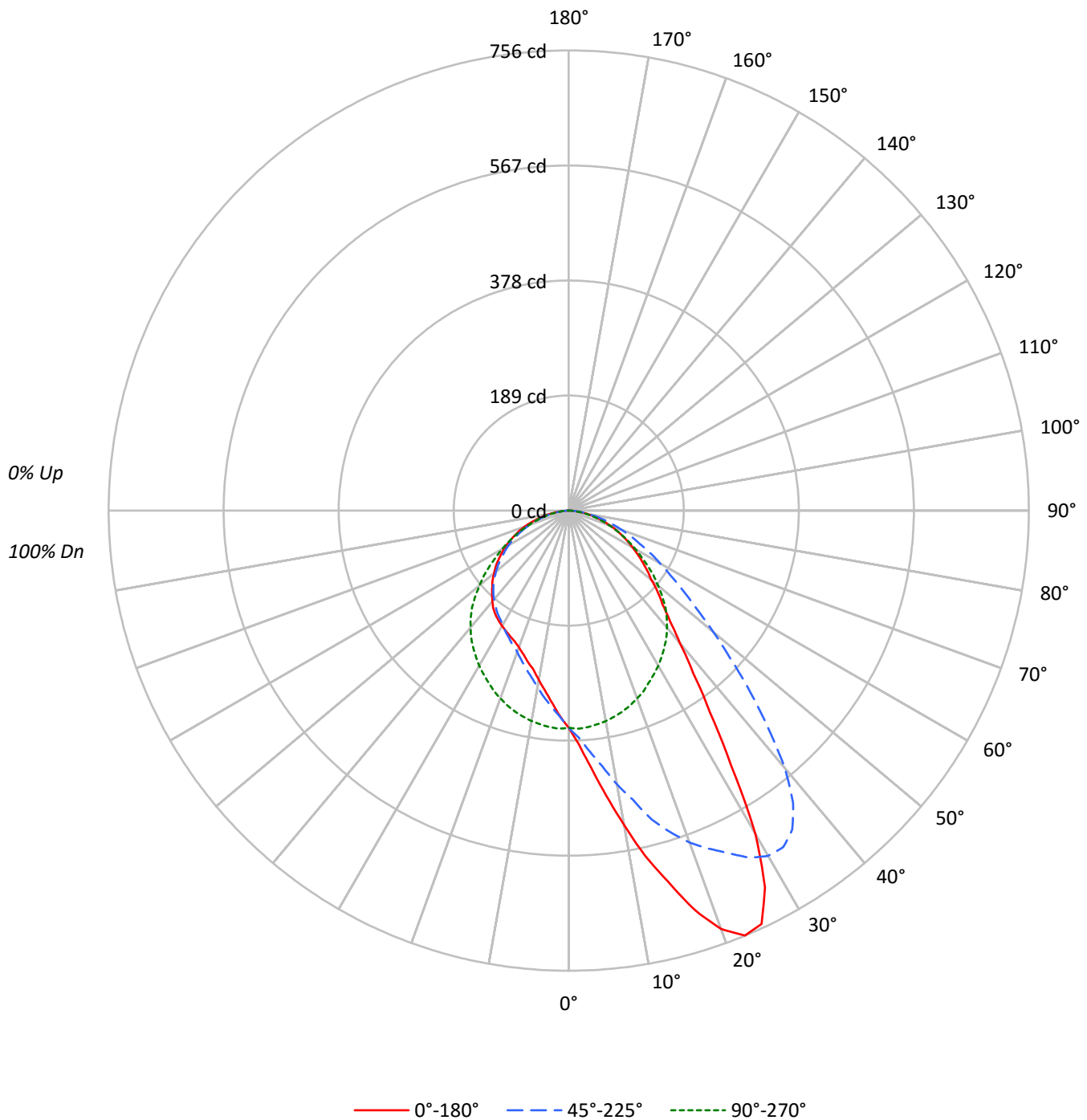
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72		72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53		53
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47		47
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41		41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36		36
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33		33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29		29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27		27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4326	4326	4326
5°	5159	4345	3851
10°	6458	4323	3478
15°	7921	4288	3238
20°	9436	4233	3083
25°	10020	4167	3048
30°	8588	4119	3064
35°	5972	4051	3097
40°	4499	3970	3087
45°	3735	3850	3048
50°	3345	3607	3019
55°	3128	3343	2982
60°	2936	3069	2950
65°	2759	2796	2857
70°	2587	2488	2722
75°	2318	2178	2496
80°	2031	1787	2150
85°	1585	1293	1446

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.1	3.3
10°-20°	112.8	10.5
20°-30°	189.7	17.6
30°-40°	214.4	19.9
40°-50°	192.0	17.8
50°-60°	155.0	14.4
60°-70°	108.0	10.0
70°-80°	56.7	5.3
80°-90°	13.6	1.3
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°	337.6	31.3
0°-40°	552.0	51.2
0°-60°	899.0	83.5
0°-90°	1077.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1077.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	357	357	357	357	357	
5°	424	397	357	323	316	44
15°	631	525	342	269	258	182
25°	749	621	312	232	228	331
35°	404	640	274	205	209	260
45°	218	422	225	175	178	172
55°	148	229	158	135	141	133
65°	96	128	98	92	100	96
75°	50	61	46	46	53	53
85°	11	13	9	9	10	14
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°	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9
2.5°	384.3	383.9	383.1	383.7	382.4	380.5	380.3	378.6	373.5	373.2	371.8
5°	424.0	422.7	422.5	422.3	419.9	416.6	410.4	409.9	401.6	397.4	392.4
7.5°	472.1	471.6	470.2	468.7	460.5	456.6	450.7	443.1	433.4	424.0	418.2
10°	524.7	530.4	523.3	518.5	514.0	505.5	495.6	483.4	471.1	456.7	445.8
12.5°	581.1	583.1	583.1	578.6	571.0	557.0	537.7	523.8	512.8	486.5	477.1
15°	631.2	641.8	635.0	619.5	619.8	607.5	584.7	559.6	546.3	525.4	496.8
17.5°	687.9	689.8	687.8	673.2	666.1	648.3	627.8	604.4	579.3	553.9	524.3
20°	731.5	730.5	724.4	717.7	702.8	689.7	666.7	639.9	605.3	580.4	547.3
22.5°	755.7	753.8	751.8	746.4	734.6	720.3	700.2	670.3	637.8	601.1	561.7
25°	749.2	751.4	751.8	750.2	745.9	737.4	721.1	697.8	664.9	620.8	581.1
27.5°	698.3	704.0	711.3	716.1	723.9	729.1	723.9	709.2	682.2	642.8	593.9
30°	613.6	606.7	623.8	645.4	660.1	686.0	700.6	701.4	687.8	655.1	607.7
32.5°	496.0	507.2	512.4	540.3	576.7	606.7	639.2	668.1	674.8	655.8	615.8
35°	403.6	413.1	427.0	440.8	475.4	505.1	556.0	600.3	635.5	640.2	614.8
37.5°	335.5	341.0	349.5	364.2	387.9	424.7	465.0	522.6	571.2	605.4	602.0
40°	284.3	285.7	295.5	306.1	324.4	353.5	388.9	438.4	499.6	552.7	574.8
42.5°	245.9	249.4	252.1	262.2	275.8	295.9	328.2	367.0	421.8	484.9	533.5
45°	217.9	221.4	224.0	230.7	241.1	255.8	278.8	316.1	358.8	422.0	480.2
47.5°	198.5	198.2	200.4	205.8	213.2	225.0	241.9	266.8	307.8	360.6	421.6
50°	177.4	180.2	180.9	184.9	190.4	198.5	212.0	232.4	264.6	309.6	364.5
52.5°	162.6	162.9	165.2	167.7	172.4	178.3	189.5	204.4	227.9	264.6	314.1
55°	148.0	148.0	149.9	152.2	155.0	160.7	168.4	180.2	199.4	229.1	271.0
57.5°	134.5	135.2	137.0	137.5	139.9	143.9	150.6	160.0	174.7	198.7	233.3
60°	121.1	122.6	122.4	123.8	125.9	128.8	134.4	141.6	154.4	172.8	200.8
62.5°	109.3	108.8	108.8	110.5	112.6	115.3	118.5	124.5	134.9	150.6	173.5
65°	96.2	95.8	97.0	98.1	98.7	100.8	103.6	109.1	116.4	128.5	147.0
67.5°	84.7	83.7	84.6	84.9	86.1	87.9	90.6	94.1	100.0	110.2	125.0
70°	73.0	72.1	71.9	72.3	73.3	74.5	76.4	79.7	85.1	92.9	103.1
72.5°	60.9	60.4	60.4	61.2	61.6	62.3	63.5	66.4	70.4	75.7	85.1
75°	49.5	49.5	49.5	49.6	50.2	50.8	51.9	53.4	56.7	60.9	67.3
77.5°	39.1	39.3	38.9	38.7	39.6	39.9	40.1	41.9	43.8	46.9	51.9
80°	29.1	28.2	28.5	29.1	29.4	29.6	30.1	30.4	32.0	33.5	36.8
82.5°	19.7	19.0	19.0	19.9	19.9	20.1	20.6	21.1	21.4	22.8	24.2
85°	11.4	11.4	11.6	11.6	11.8	11.6	12.1	12.3	12.3	13.1	14.2
87.5°	5.2	4.8	5.0	5.2	5.0	5.2	5.4	5.5	5.7	5.9	6.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9
2.5°	370.8	369.4	368.0	365.6	363.5	360.6	359.7	358.7	355.6	352.8	350.7
5°	390.5	386.3	380.3	374.8	370.3	364.2	360.7	357.1	351.9	347.3	343.5
7.5°	409.3	402.1	393.6	384.4	375.6	367.1	360.4	354.3	347.6	341.0	336.0
10°	432.7	420.9	407.8	393.6	381.5	369.7	359.9	351.2	341.9	333.8	327.0
12.5°	459.3	440.5	421.1	403.1	388.2	370.8	358.3	346.7	335.8	325.6	317.9
15°	479.2	457.1	435.6	411.9	390.1	369.7	355.6	341.7	329.4	319.4	309.7
17.5°	498.9	474.7	447.4	418.9	393.3	369.7	350.4	335.5	320.4	308.3	299.0
20°	515.2	486.6	454.6	424.7	395.7	368.7	346.9	328.2	311.6	298.7	287.8
22.5°	529.2	494.6	461.2	428.7	395.5	365.9	340.5	321.1	302.8	290.2	278.4
25°	538.0	498.1	464.9	427.3	391.2	361.1	333.4	311.6	293.6	278.8	266.8
27.5°	546.3	497.5	460.0	419.5	386.0	356.1	326.3	303.0	284.1	268.1	255.8
30°	554.6	498.4	451.5	411.6	377.7	346.6	317.9	294.3	274.3	257.8	246.4
32.5°	559.8	497.9	443.8	400.5	364.5	337.9	308.7	284.1	263.4	247.3	236.4
35°	561.2	494.9	434.6	384.4	350.2	323.4	299.0	273.8	252.1	237.1	224.6
37.5°	558.2	489.6	424.6	369.9	332.9	306.3	285.0	263.4	242.6	225.9	215.0
40°	548.7	484.4	412.5	354.3	314.9	289.5	272.0	250.9	230.5	214.8	204.8
42.5°	530.6	473.8	399.1	337.1	296.2	270.8	255.1	238.3	219.3	204.8	194.7
45°	498.7	457.6	385.8	319.8	277.9	251.6	237.4	224.6	207.2	192.8	184.2
47.5°	458.1	435.6	366.6	301.6	258.7	233.3	218.4	207.9	194.2	182.6	174.1
50°	415.4	407.3	347.1	282.9	239.5	214.8	200.6	191.3	182.1	170.5	162.9
52.5°	366.1	374.4	324.3	263.6	220.0	195.8	182.6	175.7	167.6	158.6	152.2
55°	320.4	338.6	297.3	241.4	200.6	177.4	164.8	158.2	153.4	146.3	140.6
57.5°	276.2	299.4	269.3	219.1	181.6	161.3	148.9	141.5	138.3	134.4	129.7
60°	237.6	260.4	238.8	196.6	162.4	143.4	132.6	126.6	123.5	120.9	117.1
62.5°	203.2	226.4	209.1	173.8	143.5	126.2	117.3	111.4	109.1	108.1	105.0
65°	172.2	192.1	180.0	149.9	125.7	110.2	101.7	97.5	95.3	94.8	92.7
67.5°	145.4	160.8	151.5	128.8	109.1	94.9	87.5	83.9	82.0	81.8	80.1
70°	119.2	133.3	126.6	106.5	90.1	79.6	73.3	70.2	69.2	69.0	68.1
72.5°	98.7	107.6	102.6	86.6	74.9	65.5	61.4	58.1	56.9	57.2	56.7
75°	76.1	83.5	80.4	68.8	58.6	52.4	48.6	46.5	45.5	46.0	45.3
77.5°	58.1	63.3	60.2	51.4	44.8	40.1	37.2	35.8	34.8	34.8	34.4
80°	41.3	44.1	42.5	37.7	32.5	28.7	26.5	25.6	25.1	24.9	24.7
82.5°	26.5	28.7	26.8	23.9	20.8	18.8	17.8	16.6	16.3	16.4	16.3
85°	14.9	15.7	15.0	13.0	11.6	10.5	9.9	9.3	9.0	9.2	8.8
87.5°	6.4	6.6	6.1	5.4	5.0	4.5	4.5	4.2	3.8	3.8	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°	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9
2.5°	349.5	348.3	346.6	344.0	341.9	338.6	338.6	339.1	339.1	339.0	338.6
5°	340.3	337.7	334.6	331.0	327.2	323.4	322.7	321.3	320.3	319.6	318.7
7.5°	331.0	326.7	322.4	317.3	313.0	309.4	306.8	304.5	303.2	301.6	300.4
10°	321.5	315.8	310.4	305.1	299.2	294.5	291.6	289.5	287.9	286.6	285.9
12.5°	310.2	303.5	297.4	292.4	285.9	281.0	278.3	277.6	275.7	272.4	270.6
15°	299.4	293.3	286.2	278.4	275.3	269.4	266.1	264.6	263.6	261.3	260.6
17.5°	290.4	282.2	274.1	268.4	262.7	258.0	256.1	254.0	252.7	250.6	250.1
20°	279.1	272.0	264.8	258.5	252.5	247.3	245.7	244.4	243.0	242.1	241.4
22.5°	267.7	260.6	254.9	249.2	242.6	239.7	238.0	236.4	235.5	235.0	234.3
25°	257.2	250.9	244.2	239.0	233.8	231.6	230.5	229.7	229.0	228.1	227.9
27.5°	247.8	240.9	235.2	230.2	226.4	224.5	223.3	222.7	222.7	223.1	223.3
30°	237.1	230.9	226.4	222.2	218.8	217.0	216.9	216.9	217.6	217.7	218.1
32.5°	227.2	222.4	217.9	213.9	211.5	210.5	211.3	211.3	211.8	212.4	213.1
35°	217.7	213.2	209.8	206.3	204.1	204.6	204.9	205.3	206.1	207.2	207.9
37.5°	208.7	204.6	201.0	198.2	196.8	197.8	198.7	199.4	200.4	201.3	202.0
40°	198.9	195.9	192.5	190.1	190.4	190.9	191.6	192.5	193.3	193.9	194.6
42.5°	189.7	186.6	184.2	182.3	182.8	183.5	183.8	184.2	185.2	186.3	186.6
45°	180.4	178.0	175.5	174.3	174.7	175.0	175.4	175.9	176.7	177.4	177.6
47.5°	169.8	168.1	166.5	165.2	165.8	165.7	166.2	167.2	167.6	167.9	169.0
50°	159.8	158.2	156.3	156.0	156.0	156.0	156.2	157.5	157.5	158.2	158.9
52.5°	148.7	147.9	146.8	146.1	145.8	145.8	146.6	147.2	147.5	148.6	149.2
55°	137.8	136.8	135.8	135.2	134.9	135.2	136.6	137.0	137.8	138.3	138.9
57.5°	126.4	125.7	124.9	124.5	124.5	124.7	125.7	126.6	126.8	128.5	129.2
60°	115.2	114.0	113.3	113.3	112.9	114.5	114.1	115.9	116.2	117.3	118.5
62.5°	103.6	101.9	101.7	101.7	102.4	102.6	103.2	103.8	104.8	106.2	107.0
65°	91.0	90.1	91.3	91.1	90.8	91.8	91.8	92.7	93.7	94.9	96.8
67.5°	79.2	78.5	78.9	78.7	79.2	79.9	80.4	81.1	82.3	83.7	84.9
70°	67.3	67.8	66.9	67.6	68.1	68.3	68.7	69.7	71.1	71.9	73.3
72.5°	55.7	55.5	55.9	56.0	56.5	56.9	57.2	58.5	60.0	60.7	61.7
75°	44.6	44.4	45.0	45.0	45.8	46.2	46.5	47.0	48.4	49.5	50.3
77.5°	34.6	34.8	34.6	35.3	34.9	35.1	36.1	36.7	36.8	39.1	39.4
80°	24.6	24.9	25.1	25.2	25.4	25.1	26.3	26.8	26.8	28.0	28.9
82.5°	15.9	16.1	16.6	16.8	16.8	17.3	17.1	17.5	18.0	18.3	19.5
85°	8.8	9.3	9.5	9.3	9.5	9.2	9.7	9.9	10.0	10.0	10.0
87.5°	3.5	3.6	3.5	3.6	3.5	3.6	3.6	3.3	3.3	3.8	3.1
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):

	165°	170°	175°	180°
0°	356.9	356.9	356.9	356.9
2.5°	337.4	337.2	338.4	337.6
5°	317.7	318.2	316.5	316.5
7.5°	299.9	299.2	299.4	298.1
10°	283.8	282.7	282.4	282.6
12.5°	270.5	270.5	267.7	267.7
15°	260.6	257.3	257.0	258.0
17.5°	249.7	247.8	248.0	247.6
20°	241.4	240.4	240.2	239.0
22.5°	233.8	233.6	233.8	232.4
25°	227.8	228.6	227.9	227.9
27.5°	223.6	223.6	223.1	223.1
30°	218.8	218.6	218.9	218.9
32.5°	213.9	214.3	214.3	214.4
35°	208.9	209.1	209.6	209.3
37.5°	202.3	203.2	203.0	203.4
40°	194.7	195.2	195.1	195.1
42.5°	186.9	187.3	186.8	186.4
45°	178.3	178.0	178.5	177.8
47.5°	168.8	169.0	169.1	169.8
50°	159.3	160.3	160.3	160.1
52.5°	149.9	150.3	151.1	151.1
55°	140.3	140.6	140.9	141.1
57.5°	130.4	130.2	130.9	131.1
60°	119.8	119.8	121.2	121.7
62.5°	108.6	109.3	110.7	109.6
65°	97.7	99.1	98.9	99.6
67.5°	86.3	87.2	88.5	88.5
70°	74.7	75.6	76.3	76.8
72.5°	63.5	63.8	65.7	64.7
75°	51.5	52.7	53.8	53.3
77.5°	40.1	41.7	42.0	41.5
80°	30.1	29.9	31.0	30.8
82.5°	20.1	19.9	20.2	20.4
85°	10.7	11.2	10.5	10.4
87.5°	3.1	3.1	2.9	2.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)