

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: P243621

Luminaire Tested: **S124RDR-H350D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243621
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H350D940-X4F0-XX-UDD-A-W
Description: DEFINE 4 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: 1237.1 lumens
Efficiency: N/A
Efficacy: 110.5 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

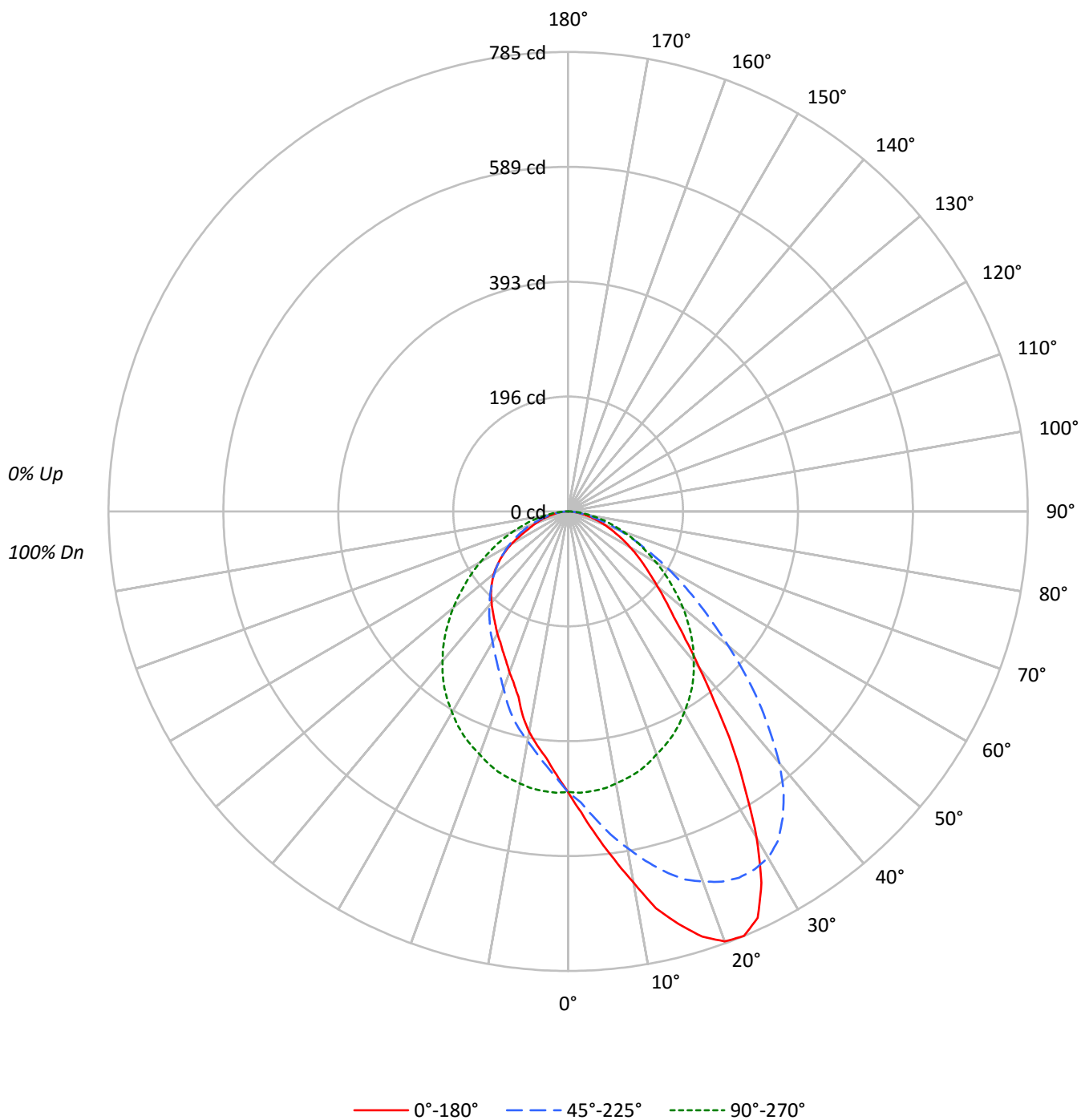
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86		
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73		
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65	63		
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55		
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48		
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44	42		
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40	38		
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34		
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31		
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30	28		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4260	4260	4260
5°	4963	4279	3777
10°	5812	4260	3453
15°	6716	4239	3017
20°	7394	4179	2765
25°	7513	4141	2584
30°	6613	4068	2479
35°	5306	3998	2398
40°	4037	3870	2360
45°	3206	3729	2332
50°	2752	3544	2291
55°	2430	3315	2180
60°	2176	3076	1998
65°	1916	2842	1681
70°	1708	2581	1513
75°	1487	2346	1346
80°	1259	2017	1244
85°	1101	1734	1254

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.5	3.8
10°-20°	141.0	11.4
20°-30°	220.1	17.8
30°-40°	245.5	19.8
40°-50°	220.6	17.8
50°-60°	174.3	14.1
60°-70°	115.8	9.4
70°-80°	58.1	4.7
80°-90°	15.1	1.2
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°	407.7	33.0
0°-40°	653.1	52.8
0°-60°	1048.1	84.7
0°-90°	1237.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1237.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	479	479	479	479	479	
5°	556	526	480	435	423	56
15°	730	637	461	365	328	207
25°	766	690	422	287	264	343
35°	489	639	368	233	221	304
45°	255	460	297	186	186	202
55°	157	270	214	141	141	141
65°	91	138	135	93	80	91
75°	43	55	68	46	39	46
85°	11	12	17	13	12	12
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°	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3
2.5°	514.8	512.9	512.7	510.3	510.1	507.7	506.9	504.9	500.8	497.6	497.8
5°	556.2	554.7	554.5	552.1	551.4	548.4	543.7	538.1	531.6	526.2	522.6
7.5°	598.8	601.4	598.6	598.6	593.2	589.6	580.5	575.8	564.6	556.8	548.6
10°	643.9	646.4	645.2	643.0	635.9	628.6	619.1	610.0	596.3	584.0	575.8
12.5°	694.3	687.1	691.7	684.8	679.0	667.5	658.3	640.0	629.2	611.3	595.2
15°	729.8	727.0	726.8	722.1	715.8	703.1	693.2	674.2	655.7	636.8	618.7
17.5°	761.5	761.9	759.3	751.8	743.6	731.3	717.9	700.9	679.8	658.9	637.4
20°	781.7	781.9	780.0	776.1	767.1	755.9	742.1	719.9	696.0	672.9	651.4
22.5°	784.7	785.2	784.7	782.2	776.1	766.9	754.2	735.4	711.3	684.8	659.2
25°	766.0	767.9	768.1	771.4	768.2	764.7	755.4	739.5	717.3	690.4	662.6
27.5°	714.9	720.1	724.9	730.9	736.3	741.2	741.9	733.5	714.5	689.5	663.0
30°	644.3	650.5	660.2	666.5	683.3	694.0	708.3	711.5	702.4	683.1	657.6
32.5°	562.2	568.7	572.5	593.4	617.4	634.8	658.7	672.9	676.4	667.3	646.4
35°	489.0	490.1	492.9	516.6	540.5	566.9	596.5	621.2	638.0	638.9	628.6
37.5°	410.6	411.9	422.9	441.1	461.8	490.7	524.9	559.9	590.7	604.9	601.9
40°	347.9	347.5	359.3	375.0	395.1	425.2	460.5	498.7	531.6	561.3	568.3
42.5°	297.1	298.5	308.5	317.7	337.1	358.2	395.9	435.6	477.8	510.3	531.9
45°	255.0	258.3	265.2	273.8	288.4	307.8	338.6	378.2	421.3	460.3	486.2
47.5°	225.8	226.8	230.3	241.0	250.7	266.3	292.7	326.3	364.5	408.2	442.4
50°	199.0	201.2	202.5	208.9	218.4	233.3	253.7	278.7	316.6	356.7	399.4
52.5°	175.8	177.1	179.6	185.3	192.8	203.3	219.3	241.3	272.9	310.0	350.3
55°	156.8	157.0	159.4	163.5	169.3	177.3	192.6	208.5	236.5	270.3	306.9
57.5°	139.6	138.5	140.7	143.2	148.8	155.7	165.6	181.8	203.6	232.4	265.4
60°	122.4	123.4	123.2	126.0	129.0	135.9	144.3	154.9	172.8	199.2	227.2
62.5°	106.4	106.2	108.1	109.7	111.8	117.4	124.3	133.1	147.1	166.5	193.6
65°	91.1	91.5	93.0	94.3	96.5	100.0	105.3	112.4	123.6	138.5	161.3
67.5°	77.3	78.6	79.3	79.7	81.8	84.4	88.8	94.6	102.3	114.2	133.3
70°	65.7	66.1	66.4	67.8	68.7	70.2	73.5	76.7	83.6	92.4	106.2
72.5°	54.9	54.5	55.6	56.0	56.4	57.9	59.9	61.6	66.1	73.5	82.1
75°	43.3	43.5	43.7	44.2	45.7	45.9	46.8	48.7	51.9	54.9	60.7
77.5°	32.5	33.0	32.9	33.4	34.0	34.5	34.9	36.6	38.8	41.2	44.0
80°	24.6	24.6	24.6	25.0	24.6	25.9	25.9	26.5	27.1	28.2	30.2
82.5°	16.8	17.2	17.4	17.5	17.7	17.7	17.9	18.3	19.0	19.4	20.0
85°	10.8	10.5	10.6	10.6	10.6	10.6	11.0	11.4	11.4	11.6	12.1
87.5°	4.9	4.9	4.9	4.9	4.7	4.9	5.0	5.0	5.2	5.2	5.6
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°	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3
2.5°	496.7	496.1	493.3	490.3	487.5	484.7	483.8	481.0	477.6	474.6	471.3
5°	518.9	514.4	508.2	501.9	495.4	489.4	484.7	479.5	473.5	466.4	460.8
7.5°	541.3	533.1	523.0	513.7	502.5	493.5	484.5	477.1	468.5	458.4	450.8
10°	563.1	549.5	537.2	522.4	508.2	495.9	484.5	472.0	460.6	449.8	439.2
12.5°	580.5	566.9	549.1	531.0	512.7	496.7	481.4	466.6	452.4	439.4	427.6
15°	600.3	580.7	558.8	538.9	513.8	494.1	476.5	460.6	444.4	428.5	415.7
17.5°	614.8	591.7	564.6	541.7	517.6	492.9	471.8	451.9	433.2	416.6	403.3
20°	626.0	598.6	571.5	542.4	513.7	488.5	464.8	441.8	422.9	404.8	390.8
22.5°	630.9	601.9	571.9	540.3	509.7	481.2	456.5	432.8	411.6	392.9	376.7
25°	632.9	601.2	570.0	534.2	503.2	474.1	446.7	422.2	400.4	379.3	363.2
27.5°	631.2	597.3	561.4	527.7	492.6	464.0	434.9	410.1	387.3	367.0	349.0
30°	626.8	588.3	552.7	514.8	481.0	450.9	422.6	396.3	373.3	352.6	334.8
32.5°	615.2	578.2	537.7	500.8	464.4	434.7	408.9	383.0	359.7	338.0	320.8
35°	600.8	564.6	522.2	483.6	447.6	417.5	391.6	368.4	345.5	322.5	305.0
37.5°	582.7	545.9	505.1	463.4	428.2	399.1	375.4	352.0	329.2	308.2	288.6
40°	558.3	524.7	483.6	441.8	406.3	378.3	355.0	333.5	313.4	292.7	271.6
42.5°	527.8	502.3	459.9	418.7	383.9	356.1	335.4	316.2	296.8	275.5	256.5
45°	495.4	473.5	435.1	393.5	360.4	333.4	313.6	296.6	278.3	259.4	239.5
47.5°	458.8	442.5	409.3	368.1	333.4	310.2	291.9	276.4	259.8	243.0	223.6
50°	417.5	407.6	379.3	341.8	308.7	285.2	270.1	256.3	242.1	225.3	208.7
52.5°	376.3	374.4	347.9	314.9	283.7	261.9	247.1	234.4	222.9	207.0	193.0
55°	333.0	338.6	316.6	286.1	258.3	237.2	224.2	213.9	203.8	190.4	176.9
57.5°	294.5	300.9	285.8	257.8	231.8	213.9	202.7	193.4	184.6	172.3	163.3
60°	252.0	263.5	255.5	230.0	207.0	190.9	180.5	173.0	165.7	155.1	147.3
62.5°	218.4	226.4	221.7	202.7	182.4	169.3	160.0	153.1	147.3	139.1	131.4
65°	182.4	192.4	190.0	177.5	159.6	147.6	140.5	135.1	129.2	122.6	116.3
67.5°	149.9	160.3	159.8	151.2	137.9	128.0	121.3	117.4	112.5	106.2	102.3
70°	120.6	130.3	130.7	126.4	117.0	107.7	102.8	99.3	95.6	90.9	88.1
72.5°	93.7	102.5	104.0	101.9	95.9	89.8	85.5	83.1	79.9	76.0	73.5
75°	70.0	76.3	79.9	79.0	76.5	72.4	70.0	68.3	65.1	62.3	60.3
77.5°	49.8	54.9	58.4	59.9	58.8	57.1	54.9	53.6	50.2	48.9	47.8
80°	33.4	37.9	41.1	42.0	42.6	42.2	40.1	39.4	37.7	37.1	36.0
82.5°	20.5	23.0	25.2	27.6	28.7	28.7	27.6	27.8	26.3	25.6	25.2
85°	12.5	13.1	13.4	15.3	16.8	17.4	16.8	17.0	16.4	15.9	15.3
87.5°	5.8	5.8	6.0	6.3	6.7	7.8	8.2	8.8	8.0	8.0	6.7
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3	479.3
2.5°	469.2	466.8	464.9	462.0	459.5	455.6	454.3	454.3	455.1	454.1	455.1
5°	456.9	452.4	447.6	443.3	438.6	435.3	431.9	431.2	430.8	428.5	428.7
7.5°	444.6	438.6	432.5	426.9	421.1	415.9	412.3	410.8	409.5	408.0	406.3
10°	431.3	424.4	417.2	410.8	405.2	398.1	394.6	393.5	389.7	389.0	386.4
12.5°	417.3	410.3	403.0	394.8	389.3	382.4	377.2	374.8	371.2	368.6	364.7
15°	406.3	397.4	387.7	379.6	372.6	364.9	357.8	353.1	348.5	341.2	337.6
17.5°	392.7	382.4	374.0	365.5	355.2	344.0	335.6	328.7	323.6	317.7	314.1
20°	378.0	368.4	358.0	345.9	335.0	322.3	314.7	308.9	305.0	301.4	299.6
22.5°	364.9	353.9	339.5	327.9	312.8	302.7	296.6	292.9	289.1	285.4	283.5
25°	350.7	337.8	320.3	306.1	294.7	286.9	280.9	277.4	273.4	271.2	268.4
27.5°	336.7	320.1	302.6	289.7	280.7	271.6	266.5	263.7	260.7	257.6	255.3
30°	319.7	300.9	286.3	274.6	265.6	257.9	254.2	250.1	247.5	245.6	244.3
32.5°	302.0	283.9	270.6	260.6	251.8	246.0	241.3	238.7	236.5	234.4	232.9
35°	285.4	267.8	256.6	246.9	239.7	233.1	229.6	227.2	225.3	223.6	222.9
37.5°	269.0	254.0	241.9	234.2	226.6	221.4	218.0	215.8	214.6	213.0	213.2
40°	252.7	239.3	229.6	220.8	213.7	209.2	206.6	205.7	204.0	203.4	204.0
42.5°	238.2	225.8	216.5	208.3	202.1	197.8	195.8	194.5	193.9	193.7	193.9
45°	224.0	212.4	203.4	196.7	190.4	186.5	184.8	183.8	183.3	184.2	184.4
47.5°	209.8	199.3	191.3	183.5	178.2	175.4	173.8	173.0	173.6	174.0	175.3
50°	195.8	186.1	177.7	170.8	166.7	164.1	163.5	162.2	163.1	163.7	164.6
52.5°	181.6	172.8	165.4	158.8	154.5	152.9	151.6	151.0	152.3	152.3	153.2
55°	167.2	159.6	152.7	146.7	143.3	141.3	140.4	139.6	140.4	140.5	140.4
57.5°	153.8	146.5	139.2	134.2	131.4	129.2	128.2	127.9	127.7	128.4	128.2
60°	139.6	132.7	126.9	121.7	118.9	117.6	115.5	115.9	115.9	115.9	114.0
62.5°	125.4	118.5	113.5	109.9	106.6	104.3	104.0	103.4	102.3	102.1	99.7
65°	110.9	105.6	101.4	97.8	94.4	92.6	92.0	90.3	89.0	86.6	84.9
67.5°	97.4	93.7	88.7	85.7	82.9	80.6	78.6	77.3	74.7	72.2	70.7
70°	84.0	80.1	76.7	73.5	70.7	68.7	66.3	63.8	62.2	60.7	59.5
72.5°	70.6	67.2	64.4	61.4	58.4	56.4	54.5	52.6	51.9	51.1	50.6
75°	58.0	54.9	52.3	49.8	48.2	45.7	44.8	44.0	43.3	42.4	41.2
77.5°	45.9	43.5	41.4	39.4	37.9	36.6	35.8	33.6	31.7	31.4	31.0
80°	34.2	32.3	31.0	29.5	27.8	25.9	25.4	24.6	24.3	24.3	24.5
82.5°	23.9	22.8	21.3	20.0	19.4	18.7	18.7	18.5	18.3	18.5	18.5
85°	14.6	13.1	12.7	12.5	12.7	12.7	12.7	12.7	12.5	12.7	12.3
87.5°	6.3	6.9	7.1	6.5	6.7	6.3	6.5	6.5	6.5	6.7	6.5
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°	479.3	479.3	479.3	479.3
2.5°	453.9	453.9	452.1	450.6
5°	428.4	425.9	425.6	423.3
7.5°	404.5	404.1	403.2	403.2
10°	385.4	384.1	382.8	382.6
12.5°	358.6	360.4	358.2	357.6
15°	335.0	333.5	331.7	327.8
17.5°	313.2	310.4	309.7	308.0
20°	296.0	294.0	293.2	292.3
22.5°	279.8	279.4	277.2	276.6
25°	267.8	266.0	264.5	263.5
27.5°	254.8	253.5	252.7	251.2
30°	242.8	242.5	241.5	241.5
32.5°	232.0	230.9	230.9	230.7
35°	222.1	222.5	221.4	221.0
37.5°	212.8	212.2	212.4	212.0
40°	203.6	203.3	203.3	203.4
42.5°	194.3	194.5	194.9	194.9
45°	185.0	185.2	185.5	185.5
47.5°	176.2	175.8	176.2	175.8
50°	165.0	166.1	165.9	165.7
52.5°	153.6	153.2	154.0	153.8
55°	141.3	140.7	141.5	140.7
57.5°	127.5	127.7	127.7	127.3
60°	113.7	113.1	112.4	112.4
62.5°	97.6	95.9	94.8	95.6
65°	82.1	80.8	80.4	79.9
67.5°	69.8	68.3	67.8	67.6
70°	59.2	58.4	58.2	58.2
72.5°	50.2	50.2	49.6	49.3
75°	40.9	40.1	39.2	39.2
77.5°	30.6	30.4	30.2	30.2
80°	23.9	23.9	24.1	24.3
82.5°	17.9	18.1	18.3	18.3
85°	12.1	12.1	12.3	12.3
87.5°	6.5	6.5	6.5	6.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)