

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P212713

Luminaire Tested: **LD4B15D010 EU4B10209035 4LBSWLI1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P212713  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29201)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B15D010 EU4B10209035 4LBSWLI1  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1175.6 lumens  
Efficiency: N/A  
Efficacy: 81.7 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 1.3 / 1.21  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

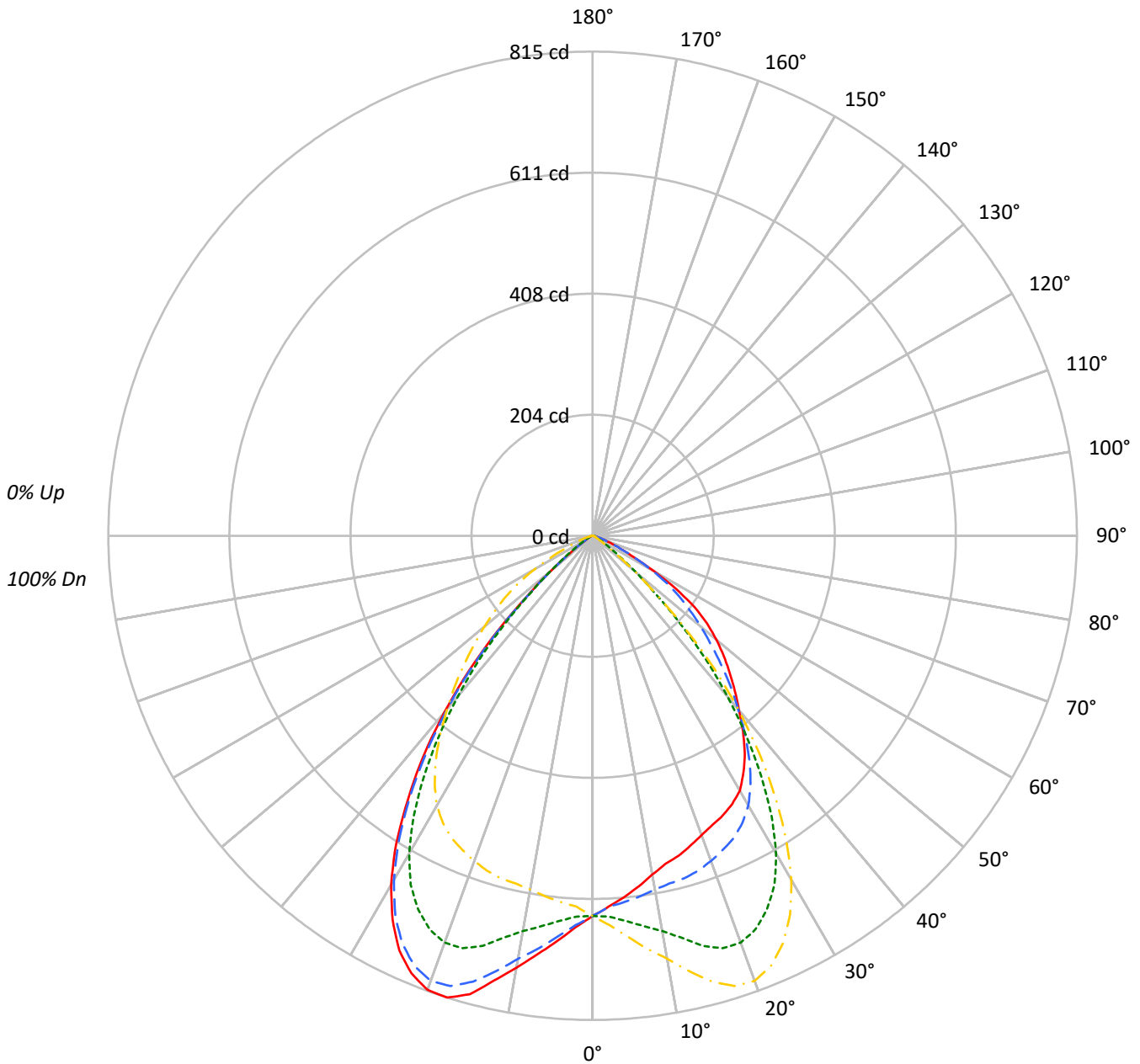
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	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	112	109	106	103	110	107	104	102	103	100	99	99	97	96	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	82																			
3	98	90	84	80	96	89	83	79	86	81	78	84	80	76	81	78	75	73																			
4	92	83	76	71	90	81	75	70	79	74	69	77	72	69	75	71	68	66																			
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60																			
6	80	70	62	57	79	69	62	57	67	61	56	66	60	56	64	59	56	54																			
7	75	64	57	52	74	63	57	52	62	56	51	61	55	51	59	55	51	49																			
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45																			
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	52	46	43	41																			
10	63	51	44	40	62	51	44	40	50	44	40	49	43	39	48	43	39	38																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	78941	78941	78941	78941
5°	75578	80605	84790	80605
10°	72531	84605	92446	84605
15°	71255	91227	102017	91227
20°	70356	95664	106755	95664
25°	70648	94465	104822	94465
30°	70558	87906	96566	87906
35°	67218	74596	81598	74596
40°	61669	56758	62619	56758
45°	56919	36126	38934	36126
50°	52079	17520	17040	17520
55°	45095	7634	5462	7634
60°	29208	3750	2492	3750
65°	15293	2481	1985	2481
70°	8223	1839	1515	1839
75°	4432	1620	1191	1620
80°	2983	1208	568	1208
85°	2406	1132	0	1132



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.4	5.3
10°-20°	195.2	16.6
20°-30°	303.4	25.8
30°-40°	306.5	26.1
40°-50°	194.1	16.5
50°-60°	81.4	6.9
60°-70°	25.8	2.2
70°-80°	5.9	0.5
80°-90°	0.8	0.1
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°	561.0	47.7
0°-40°	867.5	73.8
0°-60°	1143.0	97.2
0°-90°	1175.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1175.6	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	640	640	640	640	640	
5°	610	651	685	651	610	57
15°	558	714	799	714	558	157
25°	519	694	770	694	519	239
35°	446	495	542	495	446	277
45°	326	207	223	207	326	252
55°	210	36	25	36	210	181
65°	52	8	7	8	52	58
75°	9	3	2	3	9	11
85°	2	1	0	1	2	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	624.8	618.9	623.9	625.6	625.6	624.8	626.5	624.8	622.2	632.4	624.8
5°	610.4	606.2	610.4	612.1	612.9	613.8	615.5	615.5	614.6	623.9	618.9
7.5°	595.2	592.6	596.0	598.6	601.9	601.1	603.6	604.5	606.2	617.2	612.1
10°	579.1	576.6	580.8	582.5	586.7	587.6	589.3	591.8	595.2	606.2	604.5
12.5°	565.6	564.7	567.3	570.7	574.9	575.7	577.4	581.7	586.7	598.6	599.4
15°	558.0	557.1	559.7	563.1	566.4	568.1	569.8	575.7	580.8	593.5	596.9
17.5°	547.0	547.0	549.5	552.9	557.1	558.8	561.4	567.3	574.0	586.7	591.0
20°	536.0	536.8	538.5	541.9	546.1	547.8	550.4	556.3	563.9	576.6	582.5
22.5°	526.7	529.2	530.1	532.6	536.8	539.4	540.2	547.0	553.8	564.7	572.4
25°	519.1	522.5	522.5	524.2	529.2	530.1	530.9	537.7	543.6	553.8	561.4
27.5°	508.9	512.3	512.3	514.9	518.2	519.9	519.9	525.9	531.8	539.4	545.3
30°	495.4	498.0	498.0	498.8	502.2	503.9	503.0	508.9	513.2	518.2	524.2
32.5°	472.6	476.8	475.1	477.7	479.4	481.0	479.4	484.4	487.8	492.9	494.6
35°	446.4	449.8	447.2	448.9	452.3	452.3	451.5	454.8	456.5	459.1	459.9
37.5°	415.9	418.5	416.8	417.6	419.3	420.2	418.5	421.9	421.9	422.7	421.0
40°	383.0	387.2	384.7	384.7	386.4	387.2	384.7	386.4	388.0	383.8	380.4
42.5°	354.2	358.5	355.9	355.9	355.9	356.8	353.4	354.2	354.2	348.3	343.2
45°	326.3	329.7	327.2	324.6	325.5	326.3	323.0	322.1	319.6	312.8	305.2
47.5°	299.3	302.7	299.3	297.6	297.6	297.6	293.4	290.8	287.4	278.1	268.8
50°	271.4	274.8	272.2	270.5	268.8	268.8	265.5	262.1	257.0	247.7	237.6
52.5°	242.6	245.2	242.6	240.9	239.3	239.3	235.0	232.5	226.6	217.3	206.3
55°	209.7	211.4	208.8	207.1	206.3	206.3	202.9	200.4	195.3	187.7	177.5
57.5°	165.7	169.1	164.9	166.5	166.5	165.7	163.2	162.3	160.6	153.9	146.3
60°	118.4	118.4	117.5	120.9	120.1	121.7	120.1	120.9	121.7	116.7	111.6
62.5°	77.8	80.3	78.6	80.3	82.0	82.0	81.2	82.9	84.5	82.0	79.5
65°	52.4	52.4	52.4	53.3	53.3	54.1	53.3	54.1	55.0	54.1	52.4
67.5°	34.7	35.5	34.7	35.5	34.7	35.5	35.5	35.5	36.4	35.5	34.7
70°	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	23.7	22.8	22.0
72.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
75°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
77.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.4	4.2	3.4	3.4
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.8	1.7	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	629.0	626.5	639.1	628.1	634.1	633.2	634.1	639.1	639.1	641.7	640.8
5°	625.6	623.1	637.4	629.0	635.8	635.8	638.3	645.9	645.9	651.0	651.8
7.5°	620.5	621.4	636.6	631.5	639.1	640.0	644.2	653.5	656.0	662.8	666.2
10°	614.6	618.0	634.1	632.4	642.5	643.4	651.8	662.8	666.2	675.5	681.4
12.5°	612.1	618.0	636.6	638.3	648.4	652.7	662.0	676.3	682.3	693.2	701.7
15°	611.2	619.7	640.0	645.9	657.7	663.7	676.3	693.2	700.0	714.4	724.5
17.5°	607.0	618.0	640.0	649.3	662.0	667.9	683.9	703.4	711.8	727.9	739.7
20°	599.4	611.2	633.2	645.1	658.6	667.0	683.1	703.4	711.8	728.8	742.3
22.5°	589.3	601.1	622.2	635.8	647.6	656.9	673.8	693.2	700.9	716.9	730.4
25°	576.6	588.4	606.2	619.7	630.7	639.1	653.5	673.8	678.9	694.1	708.5
27.5°	558.8	569.8	583.3	596.0	606.2	612.9	625.6	643.4	647.6	662.8	674.6
30°	535.2	541.9	553.8	562.2	569.8	576.6	585.9	601.9	603.6	617.2	628.1
32.5°	503.0	506.4	514.9	519.1	525.9	528.4	536.0	549.5	547.8	560.5	569.8
35°	464.1	465.8	465.8	470.9	472.6	473.4	479.4	487.0	484.4	495.4	502.2
37.5°	421.9	421.0	415.9	415.9	416.8	414.3	416.8	420.2	416.8	425.2	431.2
40°	378.7	373.7	364.4	359.3	356.8	355.9	350.9	355.1	346.6	352.5	356.8
42.5°	337.3	328.9	314.5	304.4	300.1	295.9	287.4	287.4	276.5	280.7	281.5
45°	295.1	280.7	261.2	251.9	240.9	234.2	223.2	212.2	204.6	207.1	204.6
47.5°	256.2	239.3	216.4	200.4	187.7	178.4	163.2	150.5	142.9	139.5	136.1
50°	222.3	205.4	179.2	158.9	146.3	135.3	120.1	105.7	96.4	91.3	88.8
52.5°	191.9	174.2	148.8	127.7	114.1	104.0	87.1	72.7	62.6	56.6	53.3
55°	163.2	147.1	123.4	104.0	91.3	81.2	64.3	50.7	41.4	35.5	31.3
57.5°	134.4	120.1	100.6	82.0	71.0	61.7	47.3	35.5	27.9	22.8	19.4
60°	103.1	92.2	76.1	61.7	52.4	44.8	33.8	24.5	19.4	15.2	13.5
62.5°	72.7	65.9	54.1	44.0	38.0	32.1	23.7	17.8	13.5	11.0	10.1
65°	49.0	44.0	37.2	29.6	25.4	22.0	16.9	12.7	10.1	8.5	7.6
67.5°	32.1	29.6	24.5	20.3	17.8	15.2	11.8	9.3	7.6	6.8	5.9
70°	21.1	19.4	16.1	13.5	12.7	11.0	8.5	6.8	5.9	5.1	5.1
72.5°	13.5	11.8	11.0	9.3	8.5	7.6	5.9	5.1	4.2	4.2	4.2
75°	8.5	7.6	6.8	5.9	5.9	5.1	4.2	4.2	3.4	3.4	3.4
77.5°	5.1	5.1	4.2	4.2	3.4	3.4	3.4	2.5	2.5	2.5	2.5
80°	3.4	3.4	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.8	0.8	0.8
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	645.1	646.7	645.1	650.1	641.7	651.0	647.6	649.3	656.0	653.5	656.0
5°	657.7	661.1	661.1	667.0	659.4	670.4	667.0	670.4	677.2	677.2	680.6
7.5°	673.8	678.0	679.7	685.6	678.0	691.6	688.2	692.4	700.9	700.9	703.4
10°	690.7	695.8	699.2	705.9	697.5	712.7	709.3	715.2	722.8	723.7	727.9
12.5°	711.8	718.6	722.8	728.8	722.8	738.1	734.7	740.6	750.7	751.6	756.7
15°	735.5	744.0	749.0	755.8	749.0	766.0	762.6	769.3	776.9	780.3	785.4
17.5°	750.7	760.9	765.1	772.7	766.0	782.9	778.6	787.9	794.7	796.4	802.3
20°	753.3	762.6	768.5	774.4	768.5	785.4	781.2	788.8	797.2	798.9	803.2
22.5°	742.3	749.9	756.7	761.7	756.7	773.6	767.6	776.1	783.7	785.4	788.8
25°	716.9	726.2	733.0	737.2	732.1	748.2	743.1	750.7	757.5	760.9	761.7
27.5°	681.4	689.9	696.6	699.2	695.8	711.0	704.2	713.5	719.5	721.1	723.7
30°	633.2	640.8	647.6	649.3	646.7	657.7	654.4	662.8	668.7	670.4	672.1
32.5°	574.0	581.7	585.9	587.6	585.0	596.0	592.6	599.4	606.2	606.2	606.2
35°	507.3	514.0	516.6	521.6	515.7	526.7	523.3	529.2	535.2	535.2	536.0
37.5°	435.4	440.5	442.2	447.2	441.3	451.5	448.9	454.0	459.1	458.2	459.9
40°	358.5	363.5	365.2	369.5	364.4	372.8	371.1	376.2	380.4	380.4	380.4
42.5°	284.1	287.4	287.4	291.7	286.6	294.2	294.2	297.6	301.8	301.0	301.0
45°	206.3	205.4	207.1	206.3	206.3	213.0	213.0	214.7	218.1	216.4	217.3
47.5°	137.0	137.8	134.4	137.0	133.6	139.5	139.5	139.5	142.0	140.3	142.0
50°	87.1	84.5	82.9	82.9	82.0	86.2	84.5	85.4	87.1	85.4	87.1
52.5°	49.0	48.2	46.5	47.3	45.7	46.5	46.5	46.5	47.3	46.5	48.2
55°	28.7	26.2	25.4	25.4	24.5	25.4	24.5	24.5	24.5	23.7	24.5
57.5°	16.9	16.1	15.2	15.2	14.4	14.4	14.4	14.4	14.4	14.4	14.4
60°	11.8	11.0	11.0	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
62.5°	9.3	8.5	8.5	8.5	7.6	7.6	7.6	7.6	7.6	8.5	7.6
65°	6.8	6.8	6.8	6.8	6.8	6.8	5.9	6.8	6.8	6.8	6.8
67.5°	5.9	5.9	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	150°	155°	157.5°	160°	165°	170°	175°	180°	185°	190°	195°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	658.6	655.2	647.6	652.7	653.5	650.1	654.4	659.4	654.4	650.1	653.5
5°	683.1	680.6	673.8	678.0	678.9	678.0	680.6	684.8	680.6	678.0	678.9
7.5°	707.6	705.9	698.3	703.4	705.1	703.4	705.9	710.2	705.9	703.4	705.1
10°	731.3	730.4	722.8	729.6	730.4	728.8	731.3	738.1	731.3	728.8	730.4
12.5°	758.3	760.0	751.6	759.2	760.0	758.3	761.7	766.8	761.7	758.3	760.0
15°	789.6	788.8	782.0	787.9	789.6	787.9	792.2	798.9	792.2	787.9	789.6
17.5°	804.8	804.8	799.8	805.7	806.5	806.5	809.9	815.0	809.9	806.5	806.5
20°	805.7	806.5	800.6	807.4	807.4	807.4	810.8	813.3	810.8	807.4	807.4
22.5°	792.2	793.0	787.1	793.0	793.0	793.9	795.5	797.2	795.5	793.9	793.0
25°	766.0	766.8	761.7	766.8	766.0	766.0	767.6	770.2	767.6	766.0	766.0
27.5°	727.1	727.9	721.1	727.1	726.2	725.4	727.9	728.8	727.9	725.4	726.2
30°	675.5	676.3	670.4	675.5	674.6	673.8	677.2	678.0	677.2	673.8	674.6
32.5°	613.8	612.1	607.9	612.1	611.2	611.2	612.9	615.5	612.9	611.2	611.2
35°	539.4	539.4	536.8	540.2	537.7	541.1	541.1	541.9	541.1	541.1	537.7
37.5°	463.3	463.3	461.6	463.3	462.4	465.8	465.8	468.4	465.8	465.8	462.4
40°	383.8	383.8	382.1	383.8	386.4	386.4	385.5	388.9	385.5	386.4	386.4
42.5°	303.5	303.5	302.7	306.9	306.9	306.9	304.4	307.7	304.4	306.9	306.9
45°	220.7	219.0	218.1	218.1	219.0	222.3	219.0	223.2	219.0	222.3	219.0
47.5°	140.3	141.2	142.0	144.6	142.9	142.0	142.0	144.6	142.0	142.0	142.9
50°	86.2	87.1	87.1	88.8	86.2	87.9	87.1	88.8	87.1	87.9	86.2
52.5°	47.3	47.3	47.3	49.0	47.3	48.2	47.3	49.0	47.3	48.2	47.3
55°	24.5	24.5	24.5	25.4	24.5	24.5	24.5	25.4	24.5	24.5	24.5
57.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
60°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
62.5°	8.5	7.6	7.6	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
65°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
67.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	200°	202.5°	205°	210°	215°	220°	225°	230°	235°	240°	245°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	652.7	647.6	655.2	658.6	656.0	653.5	656.0	649.3	647.6	651.0	641.7
5°	678.0	673.8	680.6	683.1	680.6	677.2	677.2	670.4	667.0	670.4	659.4
7.5°	703.4	698.3	705.9	707.6	703.4	700.9	700.9	692.4	688.2	691.6	678.0
10°	729.6	722.8	730.4	731.3	727.9	723.7	722.8	715.2	709.3	712.7	697.5
12.5°	759.2	751.6	760.0	758.3	756.7	751.6	750.7	740.6	734.7	738.1	722.8
15°	787.9	782.0	788.8	789.6	785.4	780.3	776.9	769.3	762.6	766.0	749.0
17.5°	805.7	799.8	804.8	804.8	802.3	796.4	794.7	787.9	778.6	782.9	766.0
20°	807.4	800.6	806.5	805.7	803.2	798.9	797.2	788.8	781.2	785.4	768.5
22.5°	793.0	787.1	793.0	792.2	788.8	785.4	783.7	776.1	767.6	773.6	756.7
25°	766.8	761.7	766.8	766.0	761.7	760.9	757.5	750.7	743.1	748.2	732.1
27.5°	727.1	721.1	727.9	727.1	723.7	721.1	719.5	713.5	704.2	711.0	695.8
30°	675.5	670.4	676.3	675.5	672.1	670.4	668.7	662.8	654.4	657.7	646.7
32.5°	612.1	607.9	612.1	613.8	606.2	606.2	606.2	599.4	592.6	596.0	585.0
35°	540.2	536.8	539.4	539.4	536.0	535.2	535.2	529.2	523.3	526.7	515.7
37.5°	463.3	461.6	463.3	463.3	459.9	458.2	459.1	454.0	448.9	451.5	441.3
40°	383.8	382.1	383.8	383.8	380.4	380.4	380.4	376.2	371.1	372.8	364.4
42.5°	306.9	302.7	303.5	303.5	301.0	301.0	301.8	297.6	294.2	294.2	286.6
45°	218.1	218.1	219.0	220.7	217.3	216.4	218.1	214.7	213.0	213.0	206.3
47.5°	144.6	142.0	141.2	140.3	142.0	140.3	142.0	139.5	139.5	139.5	133.6
50°	88.8	87.1	87.1	86.2	87.1	85.4	87.1	85.4	84.5	86.2	82.0
52.5°	49.0	47.3	47.3	47.3	48.2	46.5	47.3	46.5	46.5	46.5	45.7
55°	25.4	24.5	24.5	24.5	24.5	23.7	24.5	24.5	24.5	25.4	24.5
57.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
60°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
62.5°	8.5	7.6	7.6	8.5	7.6	8.5	7.6	7.6	7.6	7.6	7.6
65°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	6.8	6.8
67.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	247.5°	250°	255°	260°	265°	270°	275°	280°	285°	290°	292.5°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	650.1	645.1	646.7	645.1	640.8	641.7	639.1	639.1	634.1	633.2	634.1
5°	667.0	661.1	661.1	657.7	651.8	651.0	645.9	645.9	638.3	635.8	635.8
7.5°	685.6	679.7	678.0	673.8	666.2	662.8	656.0	653.5	644.2	640.0	639.1
10°	705.9	699.2	695.8	690.7	681.4	675.5	666.2	662.8	651.8	643.4	642.5
12.5°	728.8	722.8	718.6	711.8	701.7	693.2	682.3	676.3	662.0	652.7	648.4
15°	755.8	749.0	744.0	735.5	724.5	714.4	700.0	693.2	676.3	663.7	657.7
17.5°	772.7	765.1	760.9	750.7	739.7	727.9	711.8	703.4	683.9	667.9	662.0
20°	774.4	768.5	762.6	753.3	742.3	728.8	711.8	703.4	683.1	667.0	658.6
22.5°	761.7	756.7	749.9	742.3	730.4	716.9	700.9	693.2	673.8	656.9	647.6
25°	737.2	733.0	726.2	716.9	708.5	694.1	678.9	673.8	653.5	639.1	630.7
27.5°	699.2	696.6	689.9	681.4	674.6	662.8	647.6	643.4	625.6	612.9	606.2
30°	649.3	647.6	640.8	633.2	628.1	617.2	603.6	601.9	585.9	576.6	569.8
32.5°	587.6	585.9	581.7	574.0	569.8	560.5	547.8	549.5	536.0	528.4	525.9
35°	521.6	516.6	514.0	507.3	502.2	495.4	484.4	487.0	479.4	473.4	472.6
37.5°	447.2	442.2	440.5	435.4	431.2	425.2	416.8	420.2	416.8	414.3	416.8
40°	369.5	365.2	363.5	358.5	356.8	352.5	346.6	355.1	350.9	355.9	356.8
42.5°	291.7	287.4	287.4	284.1	281.5	280.7	276.5	287.4	287.4	295.9	300.1
45°	206.3	207.1	205.4	206.3	204.6	207.1	204.6	212.2	223.2	234.2	240.9
47.5°	137.0	134.4	137.8	137.0	136.1	139.5	142.9	150.5	163.2	178.4	187.7
50°	82.9	82.9	84.5	87.1	88.8	91.3	96.4	105.7	120.1	135.3	146.3
52.5°	47.3	46.5	48.2	49.0	53.3	56.6	62.6	72.7	87.1	104.0	114.1
55°	25.4	25.4	26.2	28.7	31.3	35.5	41.4	50.7	64.3	81.2	91.3
57.5°	15.2	15.2	16.1	16.9	19.4	22.8	27.9	35.5	47.3	61.7	71.0
60°	10.1	11.0	11.0	11.8	13.5	15.2	19.4	24.5	33.8	44.8	52.4
62.5°	8.5	8.5	8.5	9.3	10.1	11.0	13.5	17.8	23.7	32.1	38.0
65°	6.8	6.8	6.8	6.8	7.6	8.5	10.1	12.7	16.9	22.0	25.4
67.5°	5.1	5.1	5.9	5.9	5.9	6.8	7.6	9.3	11.8	15.2	17.8
70°	4.2	4.2	4.2	4.2	5.1	5.1	5.9	6.8	8.5	11.0	12.7
72.5°	3.4	3.4	3.4	3.4	4.2	4.2	4.2	5.1	5.9	7.6	8.5
75°	2.5	2.5	2.5	2.5	3.4	3.4	3.4	4.2	4.2	5.1	5.9
77.5°	1.7	1.7	1.7	1.7	2.5	2.5	2.5	2.5	3.4	3.4	3.4
80°	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7	1.7	2.5	2.5
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.7	1.7
85°	0.0	0.0	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	295°	300°	305°	310°	315°	320°	325°	330°	335°	337.5°	340°
0°	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0	640.0
2.5°	628.1	639.1	626.5	629.0	624.8	632.4	622.2	624.8	626.5	624.8	625.6
5°	629.0	637.4	623.1	625.6	618.9	623.9	614.6	615.5	615.5	613.8	612.9
7.5°	631.5	636.6	621.4	620.5	612.1	617.2	606.2	604.5	603.6	601.1	601.9
10°	632.4	634.1	618.0	614.6	604.5	606.2	595.2	591.8	589.3	587.6	586.7
12.5°	638.3	636.6	618.0	612.1	599.4	598.6	586.7	581.7	577.4	575.7	574.9
15°	645.9	640.0	619.7	611.2	596.9	593.5	580.8	575.7	569.8	568.1	566.4
17.5°	649.3	640.0	618.0	607.0	591.0	586.7	574.0	567.3	561.4	558.8	557.1
20°	645.1	633.2	611.2	599.4	582.5	576.6	563.9	556.3	550.4	547.8	546.1
22.5°	635.8	622.2	601.1	589.3	572.4	564.7	553.8	547.0	540.2	539.4	536.8
25°	619.7	606.2	588.4	576.6	561.4	553.8	543.6	537.7	530.9	530.1	529.2
27.5°	596.0	583.3	569.8	558.8	545.3	539.4	531.8	525.9	519.9	519.9	518.2
30°	562.2	553.8	541.9	535.2	524.2	518.2	513.2	508.9	503.0	503.9	502.2
32.5°	519.1	514.9	506.4	503.0	494.6	492.9	487.8	484.4	479.4	481.0	479.4
35°	470.9	465.8	465.8	464.1	459.9	459.1	456.5	454.8	451.5	452.3	452.3
37.5°	415.9	415.9	421.0	421.9	421.0	422.7	421.9	421.9	418.5	420.2	419.3
40°	359.3	364.4	373.7	378.7	380.4	383.8	388.0	386.4	384.7	387.2	386.4
42.5°	304.4	314.5	328.9	337.3	343.2	348.3	354.2	354.2	353.4	356.8	355.9
45°	251.9	261.2	280.7	295.1	305.2	312.8	319.6	322.1	323.0	326.3	325.5
47.5°	200.4	216.4	239.3	256.2	268.8	278.1	287.4	290.8	293.4	297.6	297.6
50°	158.9	179.2	205.4	222.3	237.6	247.7	257.0	262.1	265.5	268.8	268.8
52.5°	127.7	148.8	174.2	191.9	206.3	217.3	226.6	232.5	235.0	239.3	239.3
55°	104.0	123.4	147.1	163.2	177.5	187.7	195.3	200.4	202.9	206.3	206.3
57.5°	82.0	100.6	120.1	134.4	146.3	153.9	160.6	162.3	163.2	165.7	166.5
60°	61.7	76.1	92.2	103.1	111.6	116.7	121.7	120.9	120.1	121.7	120.1
62.5°	44.0	54.1	65.9	72.7	79.5	82.0	84.5	82.9	81.2	82.0	82.0
65°	29.6	37.2	44.0	49.0	52.4	54.1	55.0	54.1	53.3	54.1	53.3
67.5°	20.3	24.5	29.6	32.1	34.7	35.5	36.4	35.5	35.5	35.5	34.7
70°	13.5	16.1	19.4	21.1	22.0	22.8	23.7	22.8	22.8	22.8	22.8
72.5°	9.3	11.0	11.8	13.5	14.4	14.4	14.4	14.4	14.4	14.4	14.4
75°	5.9	6.8	7.6	8.5	9.3	9.3	9.3	9.3	9.3	9.3	9.3
77.5°	4.2	4.2	5.1	5.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	2.5	2.5	3.4	3.4	3.4	3.4	4.2	3.4	4.2	4.2	4.2
82.5°	1.7	1.7	1.7	1.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	0.8	0.8	0.8	0.8	0.8	0.8	1.7	0.8	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):**

	345°	350°	355°	360°
0°	640.0	640.0	640.0	640.0
2.5°	625.6	623.9	618.9	624.8
5°	612.1	610.4	606.2	610.4
7.5°	598.6	596.0	592.6	595.2
10°	582.5	580.8	576.6	579.1
12.5°	570.7	567.3	564.7	565.6
15°	563.1	559.7	557.1	558.0
17.5°	552.9	549.5	547.0	547.0
20°	541.9	538.5	536.8	536.0
22.5°	532.6	530.1	529.2	526.7
25°	524.2	522.5	522.5	519.1
27.5°	514.9	512.3	512.3	508.9
30°	498.8	498.0	498.0	495.4
32.5°	477.7	475.1	476.8	472.6
35°	448.9	447.2	449.8	446.4
37.5°	417.6	416.8	418.5	415.9
40°	384.7	384.7	387.2	383.0
42.5°	355.9	355.9	358.5	354.2
45°	324.6	327.2	329.7	326.3
47.5°	297.6	299.3	302.7	299.3
50°	270.5	272.2	274.8	271.4
52.5°	240.9	242.6	245.2	242.6
55°	207.1	208.8	211.4	209.7
57.5°	166.5	164.9	169.1	165.7
60°	120.9	117.5	118.4	118.4
62.5°	80.3	78.6	80.3	77.8
65°	53.3	52.4	52.4	52.4
67.5°	35.5	34.7	35.5	34.7
70°	22.8	22.8	22.8	22.8
72.5°	14.4	14.4	14.4	14.4
75°	9.3	9.3	9.3	9.3
77.5°	5.9	5.9	5.9	5.9
80°	4.2	4.2	4.2	4.2
82.5°	2.5	2.5	2.5	2.5
85°	1.7	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - · 135°-315°

























(END OF REPORT)