

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: P251743

Luminaire Tested: **LD4B10D010 EU4B10209024 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251743  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B10D010 EU4B10209024 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 593.0 lumens  
Efficiency: N/A  
Efficacy: 59.0 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

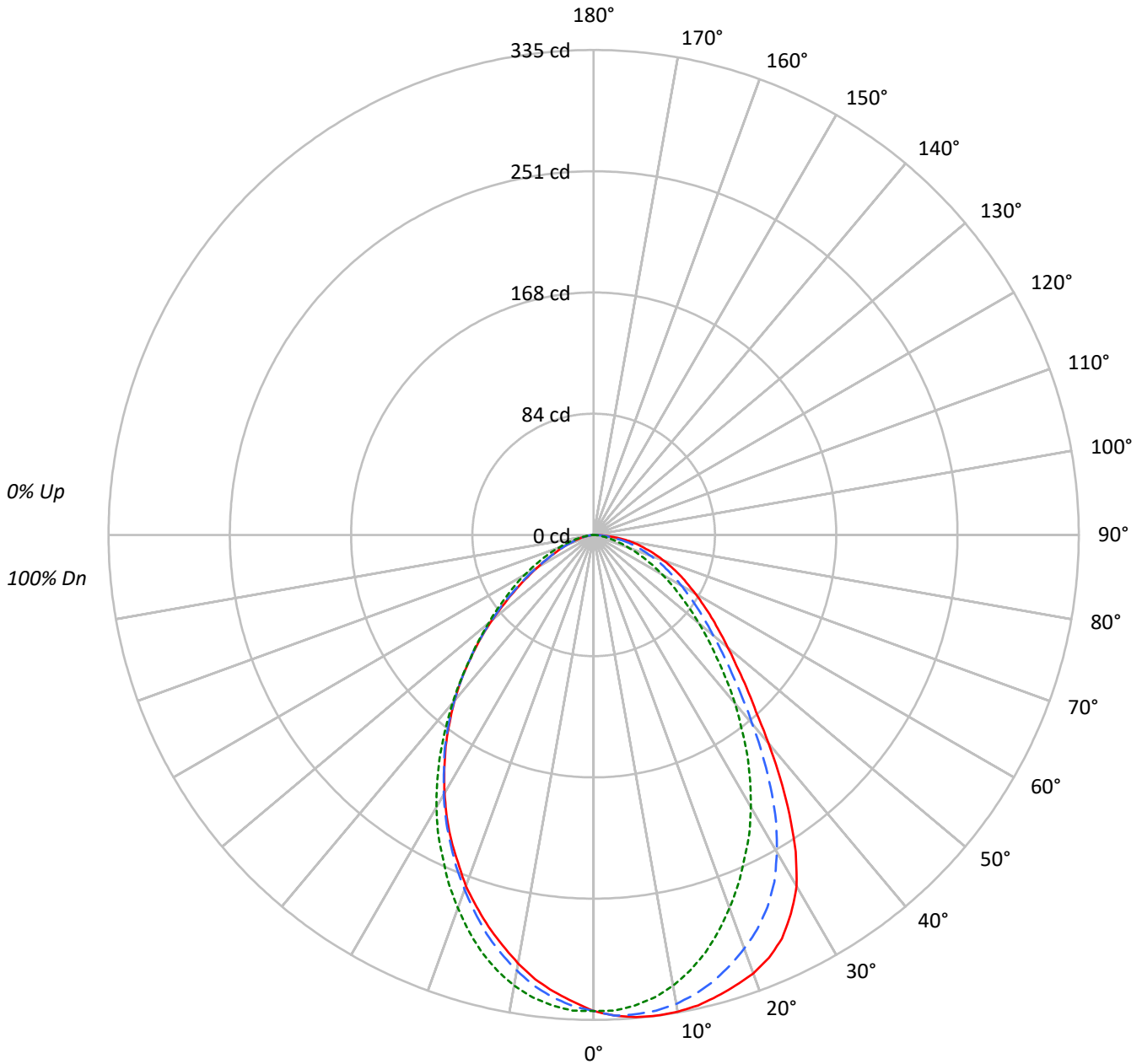
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

### Luminous Intensity Polar Plot





TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

**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	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88				88				
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76				76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67				67				
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59				59				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52				52				
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47				
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42				42				
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38				38				
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35				35				
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32				32				

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

	0°	90°	180°
0°	32054	32054	32054
5°	32714	31922	30983
10°	33093	31292	29738
15°	33286	30117	28281
20°	33427	28438	26758
25°	33077	26496	25023
30°	31544	24431	23171
35°	28054	21975	21189
40°	23880	19312	18994
45°	20578	16594	16525
50°	18331	14343	13888
55°	16855	12387	11095
60°	15788	10642	8674
65°	15174	8994	6757
70°	14561	7209	5471
75°	14083	5724	4180
80°	14199	3985	2582
85°	11853	2796	1118



TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.8	5.2
10°-20°	84.6	14.3
20°-30°	118.4	20.0
30°-40°	121.7	20.5
40°-50°	98.8	16.7
50°-60°	69.5	11.7
60°-70°	42.8	7.2
70°-80°	21.4	3.6
80°-90°	5.1	0.9
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°	233.8	39.4
0°-40°	355.5	59.9
0°-60°	523.7	88.3
0°-90°	593.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	593.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	329	329	329	329	329	
5°	334	332	326	321	317	32
15°	330	319	298	285	280	93
25°	308	284	246	234	233	141
35°	236	213	185	179	178	147
45°	149	135	120	120	120	116
55°	99	87	73	67	65	89
65°	66	55	39	30	29	65
75°	37	29	15	11	11	40
85°	11	7	2	2	1	12
90°	0	0	0	0	0	



TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9
2.5°	332.4	332.9	331.4	332.9	330.9	331.9	332.4	331.4	330.4	332.4	332.4
5°	334.4	334.4	332.9	334.9	332.4	332.9	333.9	332.4	330.9	332.9	332.4
7.5°	334.9	334.9	332.9	334.9	332.4	332.9	333.4	331.9	330.4	331.9	331.4
10°	334.4	333.9	332.4	334.4	331.9	331.9	332.4	330.9	328.4	329.9	328.9
12.5°	332.9	332.9	330.9	332.9	329.4	329.4	329.9	327.9	325.8	325.8	324.8
15°	329.9	329.9	327.9	329.4	326.3	326.3	325.8	323.8	321.3	321.3	319.3
17.5°	326.3	326.3	324.3	325.8	322.3	322.3	321.8	318.8	315.2	314.7	312.2
20°	322.3	322.3	319.8	320.8	316.7	316.7	316.2	312.7	308.6	307.6	304.1
22.5°	316.2	316.2	313.7	314.2	310.2	309.6	309.1	305.1	301.0	299.5	295.0
25°	307.6	307.1	305.1	305.1	301.0	300.0	299.0	295.0	290.9	287.9	283.8
27.5°	295.0	295.5	293.0	293.5	288.4	287.4	286.9	281.8	277.3	274.2	270.2
30°	280.3	278.8	276.3	276.3	272.2	271.7	270.7	266.1	261.1	257.5	253.0
32.5°	259.6	259.1	256.5	256.5	252.0	252.0	249.9	245.4	240.8	238.8	234.3
35°	235.8	235.3	233.2	233.2	229.2	229.7	227.7	224.1	219.6	216.6	213.0
37.5°	211.5	211.0	209.0	209.5	205.9	205.9	204.4	200.9	197.3	195.8	191.3
40°	187.7	187.2	184.7	186.2	183.2	182.1	181.6	179.1	175.1	173.0	170.5
42.5°	166.0	166.5	163.9	164.9	162.4	161.4	160.9	158.9	155.8	153.8	151.3
45°	149.3	148.2	147.2	147.2	144.7	144.2	143.7	141.2	139.1	137.1	134.6
47.5°	133.6	132.6	131.5	132.1	130.0	129.5	128.5	126.5	124.0	122.9	120.4
50°	120.9	120.4	118.9	118.9	116.9	116.4	115.4	113.8	111.3	109.8	107.8
52.5°	109.3	109.3	107.8	107.3	105.7	105.2	104.7	102.7	100.7	98.7	96.6
55°	99.2	98.7	97.7	97.7	95.6	95.1	94.6	92.6	90.6	89.0	87.0
57.5°	89.6	89.6	88.5	88.5	87.0	86.0	86.0	84.0	81.5	80.4	77.9
60°	81.0	81.0	79.9	79.9	78.4	78.4	77.4	75.4	73.9	71.8	69.8
62.5°	72.9	73.4	72.4	71.8	70.3	69.8	69.8	68.3	65.8	64.3	62.2
65°	65.8	65.3	64.8	64.3	62.7	62.2	62.2	60.2	58.7	56.7	55.1
67.5°	58.2	58.2	57.2	57.2	56.2	55.7	54.6	53.1	51.6	50.1	48.6
70°	51.1	51.1	50.6	50.6	49.1	48.6	48.1	46.5	45.0	43.5	41.5
72.5°	44.5	44.0	43.5	43.5	42.5	42.0	41.5	40.0	38.5	36.9	35.4
75°	37.4	37.4	36.9	36.9	35.9	35.4	35.4	34.4	32.4	31.4	29.3
77.5°	31.4	31.4	30.9	30.9	29.9	29.9	29.3	27.8	26.8	25.3	24.3
80°	25.3	24.8	24.8	24.3	23.3	23.3	22.8	22.3	20.7	19.7	18.2
82.5°	17.7	17.7	17.7	17.2	16.7	16.7	16.2	15.2	14.2	13.7	12.1
85°	10.6	10.6	10.1	9.6	10.1	9.6	9.1	8.6	8.1	7.6	7.1
87.5°	4.6	4.6	4.0	4.0	4.0	4.0	4.0	3.5	3.0	3.0	2.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9
2.5°	329.4	330.9	330.4	329.9	328.9	328.9	328.9	328.4	328.9	328.9	327.9
5°	329.4	330.4	329.9	328.9	327.9	327.9	327.4	326.3	326.3	326.3	324.3
7.5°	327.9	328.9	327.4	326.3	325.3	324.3	324.3	322.8	322.8	322.3	320.3
10°	324.8	325.3	323.3	322.3	320.8	320.3	319.3	317.2	316.7	316.2	314.2
12.5°	320.3	320.8	318.2	316.2	314.2	313.7	312.7	310.2	309.1	308.1	305.6
15°	313.7	313.7	310.7	308.1	306.1	305.6	303.1	300.5	299.5	298.5	295.0
17.5°	306.1	305.6	301.6	299.0	296.5	295.5	293.0	289.9	287.9	286.9	283.8
20°	298.0	296.5	291.9	289.4	286.4	284.9	282.3	278.3	276.3	274.2	271.2
22.5°	288.4	286.4	281.3	277.8	274.7	273.2	269.7	266.1	263.1	261.1	257.5
25°	276.8	274.2	268.7	264.1	261.6	260.1	256.5	252.5	249.4	246.4	243.4
27.5°	263.1	260.1	254.5	249.9	247.4	244.9	242.4	237.8	235.3	232.7	229.2
30°	246.4	242.9	237.8	233.8	230.7	228.7	225.7	221.6	218.6	217.1	213.5
32.5°	228.2	224.1	219.6	215.5	214.0	211.5	209.0	204.9	202.4	200.9	198.3
35°	207.9	204.9	199.9	196.8	194.3	193.3	191.3	187.2	186.2	184.7	181.6
37.5°	186.7	184.2	180.6	178.1	176.1	175.1	173.0	170.5	169.0	167.5	166.0
40°	167.0	164.9	161.9	159.9	157.4	155.8	155.8	152.8	151.8	151.8	150.3
42.5°	147.7	146.7	144.2	141.2	140.7	139.1	138.6	137.1	136.1	135.6	135.1
45°	131.5	130.0	127.5	126.0	124.5	124.5	122.9	121.4	120.9	120.4	119.9
47.5°	117.4	115.4	113.3	111.8	110.8	110.3	108.8	107.8	107.3	107.3	106.8
50°	104.7	103.2	101.2	99.7	98.7	97.7	96.6	95.6	95.1	94.6	94.6
52.5°	94.1	92.1	90.1	88.5	87.0	86.5	85.5	84.5	84.0	83.5	83.0
55°	84.5	83.0	80.4	78.9	77.4	77.4	75.9	74.4	73.4	72.9	72.4
57.5°	75.4	73.9	71.3	69.8	68.8	67.8	66.8	65.8	64.8	63.8	62.7
60°	67.3	65.8	63.2	61.2	60.7	59.7	58.7	56.7	55.7	54.6	53.6
62.5°	59.7	57.7	55.7	53.6	53.1	52.1	50.6	49.1	47.6	46.5	45.0
65°	52.6	51.1	48.6	47.1	45.5	45.0	43.5	41.5	40.0	39.0	37.4
67.5°	46.0	44.0	41.5	40.0	39.0	37.9	36.4	34.9	33.4	31.9	30.4
70°	39.5	37.9	35.4	33.9	32.9	31.9	30.4	28.3	26.8	25.3	24.3
72.5°	33.4	31.4	29.3	27.8	26.8	25.8	24.3	22.8	21.3	20.2	18.7
75°	27.8	25.8	24.3	22.3	21.8	20.7	19.2	17.7	16.2	15.2	14.2
77.5°	22.3	20.7	18.7	17.7	16.7	15.7	14.7	13.2	12.1	10.6	9.6
80°	16.7	15.2	13.7	12.6	11.6	11.1	10.1	9.1	8.1	7.1	6.6
82.5°	11.1	10.1	8.6	8.1	7.6	7.1	6.1	5.6	5.1	4.6	4.0
85°	6.1	5.6	5.1	4.0	4.0	3.5	3.0	3.0	2.5	2.5	2.0
87.5°	2.5	2.0	2.0	1.5	1.5	1.5	1.0	1.0	1.0	0.5	0.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9
2.5°	328.4	326.3	326.3	326.3	324.8	325.3	325.8	326.3	325.8	324.3	325.8
5°	324.8	322.8	322.8	321.8	320.8	320.8	320.8	321.3	320.8	319.3	319.8
7.5°	320.3	317.7	317.2	316.2	315.2	314.7	314.7	314.7	314.2	312.2	313.2
10°	313.2	310.7	309.6	309.1	307.6	307.1	306.6	306.1	305.6	303.6	304.6
12.5°	304.6	302.6	300.5	300.0	298.5	297.5	297.0	297.0	296.0	294.0	295.0
15°	294.5	291.4	289.9	288.9	287.4	286.4	285.4	285.9	285.4	283.3	283.8
17.5°	282.3	279.3	277.8	277.3	275.2	274.2	273.7	273.7	273.2	271.2	271.7
20°	269.2	266.1	265.1	264.1	263.1	262.1	261.6	261.1	260.6	258.5	260.1
22.5°	256.0	252.5	251.0	251.0	248.9	248.4	247.9	248.4	247.9	245.9	246.9
25°	242.4	238.8	237.8	236.3	235.3	234.8	234.8	234.8	234.3	233.2	234.3
27.5°	227.2	224.6	223.1	222.6	221.6	221.1	220.6	221.1	221.1	219.6	220.6
30°	212.0	210.0	209.0	208.5	206.9	206.4	206.9	206.9	206.9	205.4	206.9
32.5°	196.8	195.3	194.8	193.3	192.3	192.3	192.3	192.8	192.3	191.3	192.8
35°	181.6	179.6	179.1	178.6	178.6	177.6	178.6	178.1	179.1	177.6	178.6
37.5°	165.4	164.4	163.9	163.9	162.9	163.4	163.4	163.4	164.4	162.9	163.9
40°	150.3	149.3	149.3	149.3	148.8	148.8	148.8	149.3	149.8	148.8	149.8
42.5°	135.1	134.6	134.6	134.1	133.6	134.1	134.6	134.6	135.1	134.1	134.6
45°	120.4	119.9	120.4	119.9	119.9	119.4	119.9	120.4	120.4	119.9	119.9
47.5°	106.8	106.8	106.3	106.3	106.3	106.3	106.3	106.3	106.3	105.2	106.3
50°	94.6	93.6	94.1	93.6	93.6	93.1	93.1	92.6	92.1	91.6	91.6
52.5°	83.0	82.0	82.0	81.5	81.0	81.0	80.4	79.9	79.4	78.4	78.4
55°	71.8	70.8	70.3	69.8	69.3	68.8	68.3	67.8	66.8	66.3	66.3
57.5°	61.7	60.7	59.7	59.7	58.7	58.2	57.2	56.2	55.7	54.6	54.6
60°	52.6	51.6	50.1	49.6	49.1	48.1	46.5	46.0	45.5	44.5	45.0
62.5°	44.0	42.5	41.0	40.5	40.0	39.0	37.9	36.9	36.4	36.9	36.9
65°	35.9	34.4	33.4	32.4	31.9	30.9	30.4	29.9	29.9	29.9	30.4
67.5°	28.8	27.3	26.3	25.8	24.8	24.3	24.3	24.3	24.3	24.3	24.3
70°	22.8	21.8	20.7	19.7	19.7	19.2	19.2	19.2	19.2	19.2	19.2
72.5°	17.2	16.2	15.7	15.7	15.2	15.2	15.2	15.2	14.7	14.7	15.2
75°	12.6	12.1	11.6	11.6	11.6	11.1	11.1	11.1	11.1	11.1	11.1
77.5°	9.1	8.6	8.6	8.1	8.1	8.1	8.1	8.1	8.1	7.6	7.6
80°	6.1	5.6	5.6	5.6	5.6	5.1	5.1	5.1	5.1	5.1	5.1
82.5°	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
87.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	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





TEST NUMBER: P251743

CATALOG NUMBER: LD4B10D010 EU4B10209024 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	328.9	328.9	328.9	328.9	328.9	328.9	328.9	328.9
2.5°	322.8	324.8	325.3	323.8	324.3	323.3	323.8	322.8
5°	317.2	318.8	319.3	318.2	318.2	317.2	317.7	316.7
7.5°	310.2	311.7	312.2	311.2	311.2	310.2	310.2	309.6
10°	302.1	302.6	303.6	302.1	302.6	301.6	301.6	300.5
12.5°	291.9	293.0	294.0	292.4	292.4	291.9	291.9	290.4
15°	281.3	282.3	282.8	281.8	281.8	281.3	280.8	280.3
17.5°	270.2	270.7	271.7	270.2	271.2	270.2	270.2	269.2
20°	257.5	259.1	259.6	258.0	258.5	258.0	258.0	258.0
22.5°	245.4	246.4	246.9	245.9	246.4	245.4	245.9	244.9
25°	232.7	233.2	233.8	232.7	233.8	233.2	232.7	232.7
27.5°	219.6	220.1	220.6	219.6	220.6	220.1	220.6	219.6
30°	205.4	206.4	207.4	206.4	206.9	206.4	206.4	205.9
32.5°	191.3	192.3	193.3	192.3	193.3	192.3	192.8	191.8
35°	178.1	178.6	179.1	178.1	178.6	178.6	178.6	178.1
37.5°	163.4	164.4	164.4	163.9	164.9	164.4	164.4	163.4
40°	149.3	149.8	150.3	149.3	149.8	149.3	149.8	149.3
42.5°	134.6	135.6	136.1	135.1	135.1	135.1	134.6	135.1
45°	119.4	120.4	121.4	119.9	120.4	120.4	120.4	119.9
47.5°	105.7	105.7	106.3	105.7	106.3	105.2	106.3	105.7
50°	91.6	91.6	92.6	91.6	91.6	91.6	91.6	91.6
52.5°	77.9	78.4	78.4	77.4	77.9	77.4	77.9	77.4
55°	65.3	65.3	65.8	65.3	65.3	65.3	65.3	65.3
57.5°	54.1	54.6	54.6	54.1	54.6	54.1	54.1	54.1
60°	45.0	45.0	45.0	44.5	45.0	44.5	45.0	44.5
62.5°	36.4	36.9	36.9	36.4	36.9	36.4	36.4	36.4
65°	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.3
67.5°	23.8	23.8	24.3	23.8	24.3	24.3	24.3	24.3
70°	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
72.5°	14.7	14.7	15.2	14.7	14.7	14.7	14.7	14.7
75°	11.1	11.1	11.1	11.1	11.1	10.6	10.6	11.1
77.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.1
80°	5.1	5.1	5.1	5.1	4.6	4.6	5.1	4.6
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	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



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)