

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: P274351

Luminaire Tested: **LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274351  
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: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, LENSED WALLWASH WITH HAZE FINISH  
Light Source: W2N 2700K-6500K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1256.6 lumens  
Efficiency: N/A  
Efficacy: 44.9 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

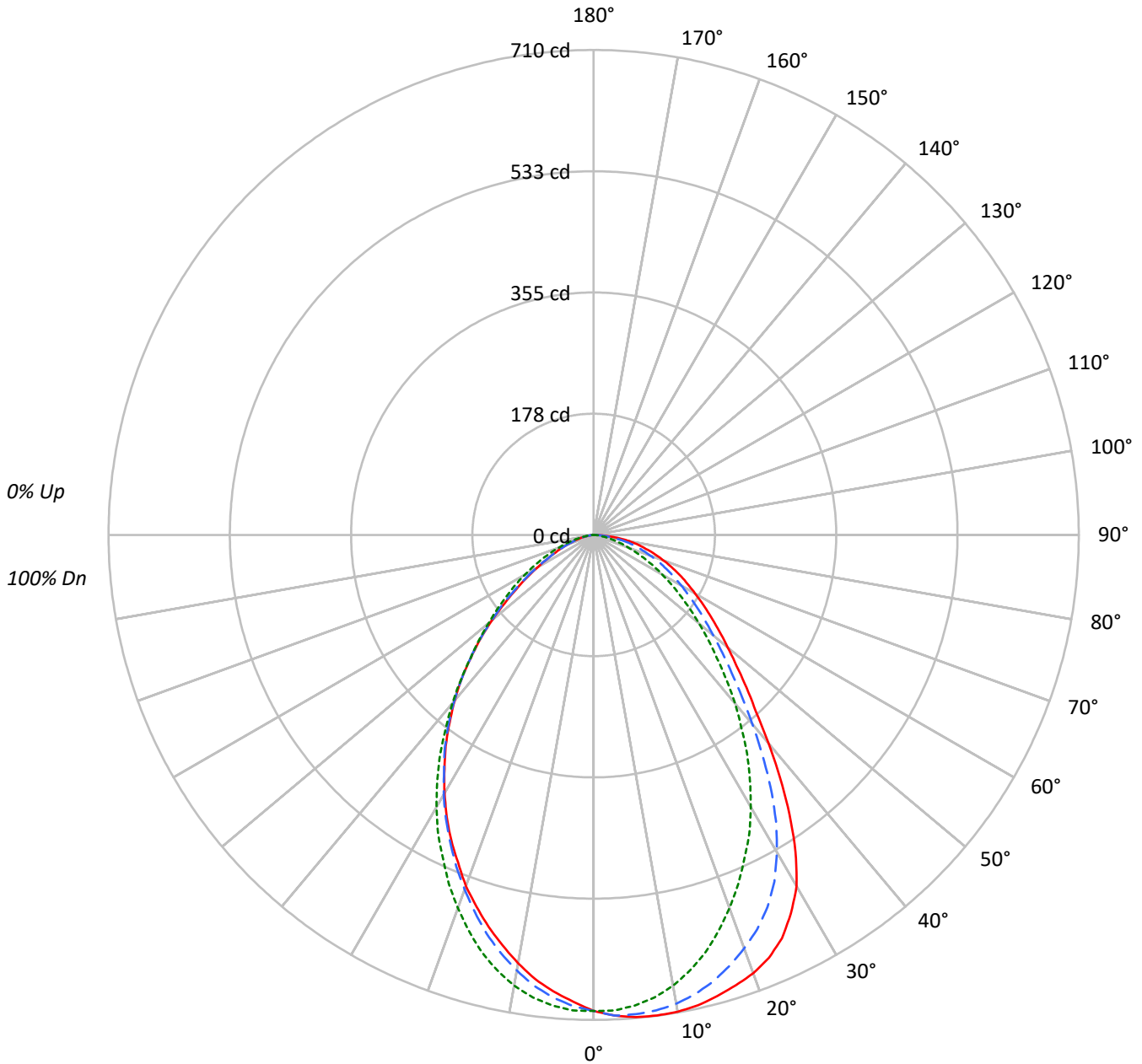
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

### Luminous Intensity Polar Plot





TEST NUMBER: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

**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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88																			
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67																			
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	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	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	67919	67919	67919
5°	69332	67650	65654
10°	70134	66314	63019
15°	70526	63817	59932
20°	70825	60267	56710
25°	70090	56143	53035
30°	66846	51755	49110
35°	59440	46555	44901
40°	50609	40915	40240
45°	43595	35173	35022
50°	38844	30399	29429
55°	35699	26235	23499
60°	33428	22571	18381
65°	32146	19048	14344
70°	30860	15273	11597
75°	29860	12125	8887
80°	30082	8419	5388
85°	25160	6038	2348



TEST NUMBER: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.2	5.2
10°-20°	179.3	14.3
20°-30°	250.8	20.0
30°-40°	257.8	20.5
40°-50°	209.3	16.7
50°-60°	147.3	11.7
60°-70°	90.7	7.2
70°-80°	45.3	3.6
80°-90°	10.8	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°	495.4	39.4
0°-40°	753.2	59.9
0°-60°	1109.8	88.3
0°-90°	1256.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1256.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	697	697	697	697	697	
5°	709	704	692	680	671	68
15°	699	676	632	605	594	197
25°	652	602	522	496	493	298
35°	500	451	391	380	377	311
45°	316	285	255	255	254	246
55°	210	184	154	142	138	189
65°	139	117	83	63	62	138
75°	79	62	32	24	24	85
85°	22	15	5	3	2	26
90°	0	0	0	0	0	



TEST NUMBER: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9
2.5°	704.4	705.5	702.2	705.5	701.2	703.3	704.4	702.2	700.1	704.4	704.4
5°	708.7	708.7	705.5	709.7	704.4	705.5	707.6	704.4	701.2	705.5	704.4
7.5°	709.7	709.7	705.5	709.7	704.4	705.5	706.5	703.3	700.1	703.3	702.2
10°	708.7	707.6	704.4	708.7	703.3	703.3	704.4	701.2	695.8	699.0	696.9
12.5°	705.5	705.5	701.2	705.5	697.9	697.9	699.0	694.7	690.4	690.4	688.3
15°	699.0	699.0	694.7	697.9	691.5	691.5	690.4	686.2	680.8	680.8	676.5
17.5°	691.5	691.5	687.2	690.4	682.9	682.9	681.9	675.4	667.9	666.9	661.5
20°	682.9	682.9	677.6	679.7	671.1	671.1	670.1	662.6	654.0	651.8	644.3
22.5°	670.1	670.1	664.7	665.8	657.2	656.1	655.1	646.5	637.9	634.7	625.0
25°	651.8	650.8	646.5	646.5	637.9	635.8	633.6	625.0	616.5	610.0	601.5
27.5°	625.0	626.1	620.8	621.8	611.1	609.0	607.9	597.2	587.5	581.1	572.5
30°	594.0	590.7	585.4	585.4	576.8	575.7	573.6	563.9	553.2	545.7	536.1
32.5°	550.0	548.9	543.6	543.6	533.9	533.9	529.6	520.0	510.3	506.0	496.4
35°	499.6	498.5	494.2	494.2	485.7	486.7	482.5	474.9	465.3	458.9	451.4
37.5°	448.1	447.1	442.8	443.9	436.4	436.4	433.1	425.6	418.1	414.9	405.3
40°	397.8	396.7	391.3	394.5	388.1	386.0	384.9	379.5	371.0	366.7	361.3
42.5°	351.7	352.7	347.4	349.5	344.1	342.0	340.9	336.6	330.2	325.9	320.6
45°	316.3	314.1	312.0	312.0	306.6	305.6	304.5	299.1	294.8	290.5	285.2
47.5°	283.0	280.9	278.7	279.8	275.5	274.5	272.3	268.0	262.7	260.5	255.2
50°	256.2	255.2	251.9	251.9	247.7	246.6	244.4	241.2	235.9	232.6	228.4
52.5°	231.6	231.6	228.4	227.3	224.1	223.0	221.9	217.6	213.4	209.1	204.8
55°	210.1	209.1	206.9	206.9	202.6	201.6	200.5	196.2	191.9	188.7	184.4
57.5°	189.8	189.8	187.6	187.6	184.4	182.3	182.3	178.0	172.6	170.5	165.1
60°	171.5	171.5	169.4	169.4	166.2	166.2	164.0	159.7	156.5	152.2	148.0
62.5°	154.4	155.5	153.3	152.2	149.0	148.0	148.0	144.7	139.4	136.2	131.9
65°	139.4	138.3	137.2	136.2	132.9	131.9	131.9	127.6	124.4	120.1	116.9
67.5°	123.3	123.3	121.1	121.1	119.0	117.9	115.8	112.6	109.4	106.1	102.9
70°	108.3	108.3	107.2	107.2	104.0	102.9	101.9	98.6	95.4	92.2	87.9
72.5°	94.3	93.3	92.2	92.2	90.1	89.0	87.9	84.7	81.5	78.3	75.0
75°	79.3	79.3	78.3	78.3	76.1	75.0	75.0	72.9	68.6	66.5	62.2
77.5°	66.5	66.5	65.4	65.4	63.3	63.3	62.2	59.0	56.8	53.6	51.5
80°	53.6	52.5	52.5	51.5	49.3	49.3	48.2	47.2	44.0	41.8	38.6
82.5°	37.5	37.5	37.5	36.5	35.4	35.4	34.3	32.2	30.0	28.9	25.7
85°	22.5	22.5	21.4	20.4	21.4	20.4	19.3	18.2	17.2	16.1	15.0
87.5°	9.6	9.6	8.6	8.6	8.6	8.6	8.6	7.5	6.4	6.4	5.4
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: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9
2.5°	697.9	701.2	700.1	699.0	696.9	696.9	696.9	695.8	696.9	696.9	694.7
5°	697.9	700.1	699.0	696.9	694.7	694.7	693.7	691.5	691.5	691.5	687.2
7.5°	694.7	696.9	693.7	691.5	689.4	687.2	687.2	684.0	684.0	682.9	678.6
10°	688.3	689.4	685.1	682.9	679.7	678.6	676.5	672.2	671.1	670.1	665.8
12.5°	678.6	679.7	674.4	670.1	665.8	664.7	662.6	657.2	655.1	652.9	647.6
15°	664.7	664.7	658.3	652.9	648.6	647.6	642.2	636.8	634.7	632.5	625.0
17.5°	648.6	647.6	639.0	633.6	628.3	626.1	620.8	614.3	610.0	607.9	601.5
20°	631.5	628.3	618.6	613.2	606.8	603.6	598.2	589.7	585.4	581.1	574.7
22.5°	611.1	606.8	596.1	588.6	582.2	578.9	571.4	563.9	557.5	553.2	545.7
25°	586.4	581.1	569.3	559.6	554.3	551.1	543.6	535.0	528.6	522.1	515.7
27.5°	557.5	551.1	539.3	529.6	524.3	518.9	513.5	503.9	498.5	493.2	485.7
30°	522.1	514.6	503.9	495.3	488.9	484.6	478.2	469.6	463.2	459.9	452.4
32.5°	483.5	474.9	465.3	456.7	453.5	448.1	442.8	434.2	428.8	425.6	420.3
35°	440.6	434.2	423.5	417.1	411.7	409.5	405.3	396.7	394.5	391.3	384.9
37.5°	395.6	390.2	382.7	377.4	373.1	371.0	366.7	361.3	358.1	354.9	351.7
40°	353.8	349.5	343.1	338.8	333.4	330.2	330.2	323.8	321.6	321.6	318.4
42.5°	313.1	310.9	305.6	299.1	298.0	294.8	293.8	290.5	288.4	287.3	286.3
45°	278.7	275.5	270.2	267.0	263.7	263.7	260.5	257.3	256.2	255.2	254.1
47.5°	248.7	244.4	240.2	236.9	234.8	233.7	230.5	228.4	227.3	227.3	226.2
50°	221.9	218.7	214.4	211.2	209.1	206.9	204.8	202.6	201.6	200.5	200.5
52.5°	199.4	195.1	190.8	187.6	184.4	183.3	181.2	179.0	178.0	176.9	175.8
55°	179.0	175.8	170.5	167.2	164.0	164.0	160.8	157.6	155.5	154.4	153.3
57.5°	159.7	156.5	151.2	148.0	145.8	143.7	141.5	139.4	137.2	135.1	132.9
60°	142.6	139.4	134.0	129.7	128.7	126.5	124.4	120.1	117.9	115.8	113.6
62.5°	126.5	122.2	117.9	113.6	112.6	110.4	107.2	104.0	100.8	98.6	95.4
65°	111.5	108.3	102.9	99.7	96.5	95.4	92.2	87.9	84.7	82.6	79.3
67.5°	97.6	93.3	87.9	84.7	82.6	80.4	77.2	74.0	70.8	67.5	64.3
70°	83.6	80.4	75.0	71.8	69.7	67.5	64.3	60.0	56.8	53.6	51.5
72.5°	70.8	66.5	62.2	59.0	56.8	54.7	51.5	48.2	45.0	42.9	39.7
75°	59.0	54.7	51.5	47.2	46.1	44.0	40.7	37.5	34.3	32.2	30.0
77.5°	47.2	44.0	39.7	37.5	35.4	33.2	31.1	27.9	25.7	22.5	20.4
80°	35.4	32.2	28.9	26.8	24.7	23.6	21.4	19.3	17.2	15.0	13.9
82.5°	23.6	21.4	18.2	17.2	16.1	15.0	12.9	11.8	10.7	9.6	8.6
85°	12.9	11.8	10.7	8.6	8.6	7.5	6.4	6.4	5.4	5.4	4.3
87.5°	5.4	4.3	4.3	3.2	3.2	3.2	2.1	2.1	2.1	1.1	1.1
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: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9
2.5°	695.8	691.5	691.5	691.5	688.3	689.4	690.4	691.5	690.4	687.2	690.4
5°	688.3	684.0	684.0	681.9	679.7	679.7	679.7	680.8	679.7	676.5	677.6
7.5°	678.6	673.3	672.2	670.1	667.9	666.9	666.9	666.9	665.8	661.5	663.6
10°	663.6	658.3	656.1	655.1	651.8	650.8	649.7	648.6	647.6	643.3	645.4
12.5°	645.4	641.1	636.8	635.8	632.5	630.4	629.3	629.3	627.2	622.9	625.0
15°	624.0	617.5	614.3	612.2	609.0	606.8	604.7	605.7	604.7	600.4	601.5
17.5°	598.2	591.8	588.6	587.5	583.2	581.1	580.0	580.0	578.9	574.7	575.7
20°	570.4	563.9	561.8	559.6	557.5	555.4	554.3	553.2	552.1	547.9	551.1
22.5°	542.5	535.0	531.8	531.8	527.5	526.4	525.3	526.4	525.3	521.0	523.2
25°	513.5	506.0	503.9	500.7	498.5	497.5	497.5	497.5	496.4	494.2	496.4
27.5°	481.4	476.0	472.8	471.7	469.6	468.5	467.4	468.5	468.5	465.3	467.4
30°	449.2	444.9	442.8	441.7	438.5	437.4	438.5	438.5	438.5	435.3	438.5
32.5°	417.1	413.8	412.8	409.5	407.4	407.4	407.4	408.5	407.4	405.3	408.5
35°	384.9	380.6	379.5	378.5	378.5	376.3	378.5	377.4	379.5	376.3	378.5
37.5°	350.6	348.4	347.4	347.4	345.2	346.3	346.3	346.3	348.4	345.2	347.4
40°	318.4	316.3	316.3	316.3	315.2	315.2	315.2	316.3	317.3	315.2	317.3
42.5°	286.3	285.2	285.2	284.1	283.0	284.1	285.2	285.2	286.3	284.1	285.2
45°	255.2	254.1	255.2	254.1	254.1	253.0	254.1	255.2	255.2	254.1	254.1
47.5°	226.2	226.2	225.1	225.1	225.1	225.1	225.1	225.1	225.1	223.0	225.1
50°	200.5	198.3	199.4	198.3	198.3	197.3	197.3	196.2	195.1	194.1	194.1
52.5°	175.8	173.7	173.7	172.6	171.5	171.5	170.5	169.4	168.3	166.2	166.2
55°	152.2	150.1	149.0	148.0	146.9	145.8	144.7	143.7	141.5	140.4	140.4
57.5°	130.8	128.7	126.5	126.5	124.4	123.3	121.1	119.0	117.9	115.8	115.8
60°	111.5	109.4	106.1	105.1	104.0	101.9	98.6	97.6	96.5	94.3	95.4
62.5°	93.3	90.1	86.8	85.8	84.7	82.6	80.4	78.3	77.2	78.3	78.3
65°	76.1	72.9	70.8	68.6	67.5	65.4	64.3	63.3	63.3	63.3	64.3
67.5°	61.1	57.9	55.7	54.7	52.5	51.5	51.5	51.5	51.5	51.5	51.5
70°	48.2	46.1	44.0	41.8	41.8	40.7	40.7	40.7	40.7	40.7	40.7
72.5°	36.5	34.3	33.2	33.2	32.2	32.2	32.2	32.2	31.1	31.1	32.2
75°	26.8	25.7	24.7	24.7	24.7	23.6	23.6	23.6	23.6	23.6	23.6
77.5°	19.3	18.2	18.2	17.2	17.2	17.2	17.2	17.2	17.2	16.1	16.1
80°	12.9	11.8	11.8	11.8	11.8	10.7	10.7	10.7	10.7	10.7	10.7
82.5°	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
85°	4.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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: P274351

CATALOG NUMBER: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBLWW0H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	696.9	696.9	696.9	696.9	696.9	696.9	696.9	696.9
2.5°	684.0	688.3	689.4	686.2	687.2	685.1	686.2	684.0
5°	672.2	675.4	676.5	674.4	674.4	672.2	673.3	671.1
7.5°	657.2	660.4	661.5	659.4	659.4	657.2	657.2	656.1
10°	640.1	641.1	643.3	640.1	641.1	639.0	639.0	636.8
12.5°	618.6	620.8	622.9	619.7	619.7	618.6	618.6	615.4
15°	596.1	598.2	599.3	597.2	597.2	596.1	595.0	594.0
17.5°	572.5	573.6	575.7	572.5	574.7	572.5	572.5	570.4
20°	545.7	548.9	550.0	546.8	547.9	546.8	546.8	546.8
22.5°	520.0	522.1	523.2	521.0	522.1	520.0	521.0	518.9
25°	493.2	494.2	495.3	493.2	495.3	494.2	493.2	493.2
27.5°	465.3	466.4	467.4	465.3	467.4	466.4	467.4	465.3
30°	435.3	437.4	439.6	437.4	438.5	437.4	437.4	436.4
32.5°	405.3	407.4	409.5	407.4	409.5	407.4	408.5	406.3
35°	377.4	378.5	379.5	377.4	378.5	378.5	378.5	377.4
37.5°	346.3	348.4	348.4	347.4	349.5	348.4	348.4	346.3
40°	316.3	317.3	318.4	316.3	317.3	316.3	317.3	316.3
42.5°	285.2	287.3	288.4	286.3	286.3	286.3	285.2	286.3
45°	253.0	255.2	257.3	254.1	255.2	255.2	255.2	254.1
47.5°	224.1	224.1	225.1	224.1	225.1	223.0	225.1	224.1
50°	194.1	194.1	196.2	194.1	194.1	194.1	194.1	194.1
52.5°	165.1	166.2	166.2	164.0	165.1	164.0	165.1	164.0
55°	138.3	138.3	139.4	138.3	138.3	138.3	138.3	138.3
57.5°	114.7	115.8	115.8	114.7	115.8	114.7	114.7	114.7
60°	95.4	95.4	95.4	94.3	95.4	94.3	95.4	94.3
62.5°	77.2	78.3	78.3	77.2	78.3	77.2	77.2	77.2
65°	63.3	63.3	63.3	63.3	63.3	63.3	63.3	62.2
67.5°	50.4	50.4	51.5	50.4	51.5	51.5	51.5	51.5
70°	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7
72.5°	31.1	31.1	32.2	31.1	31.1	31.1	31.1	31.1
75°	23.6	23.6	23.6	23.6	23.6	22.5	22.5	23.6
77.5°	16.1	16.1	16.1	16.1	16.1	16.1	16.1	17.2
80°	10.7	10.7	10.7	10.7	9.6	9.6	10.7	9.6
82.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
85°	3.2	3.2	2.1	2.1	2.1	2.1	2.1	2.1
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)