

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: P274352

Luminaire Tested: **LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P274352
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: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, LENSED WALLWASH WITH HAZE FINISH
Light Source: W2N 2000K-5000K CCT TUNING RANGE
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 657.3 lumens
Efficiency: N/A
Efficacy: 46.9 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

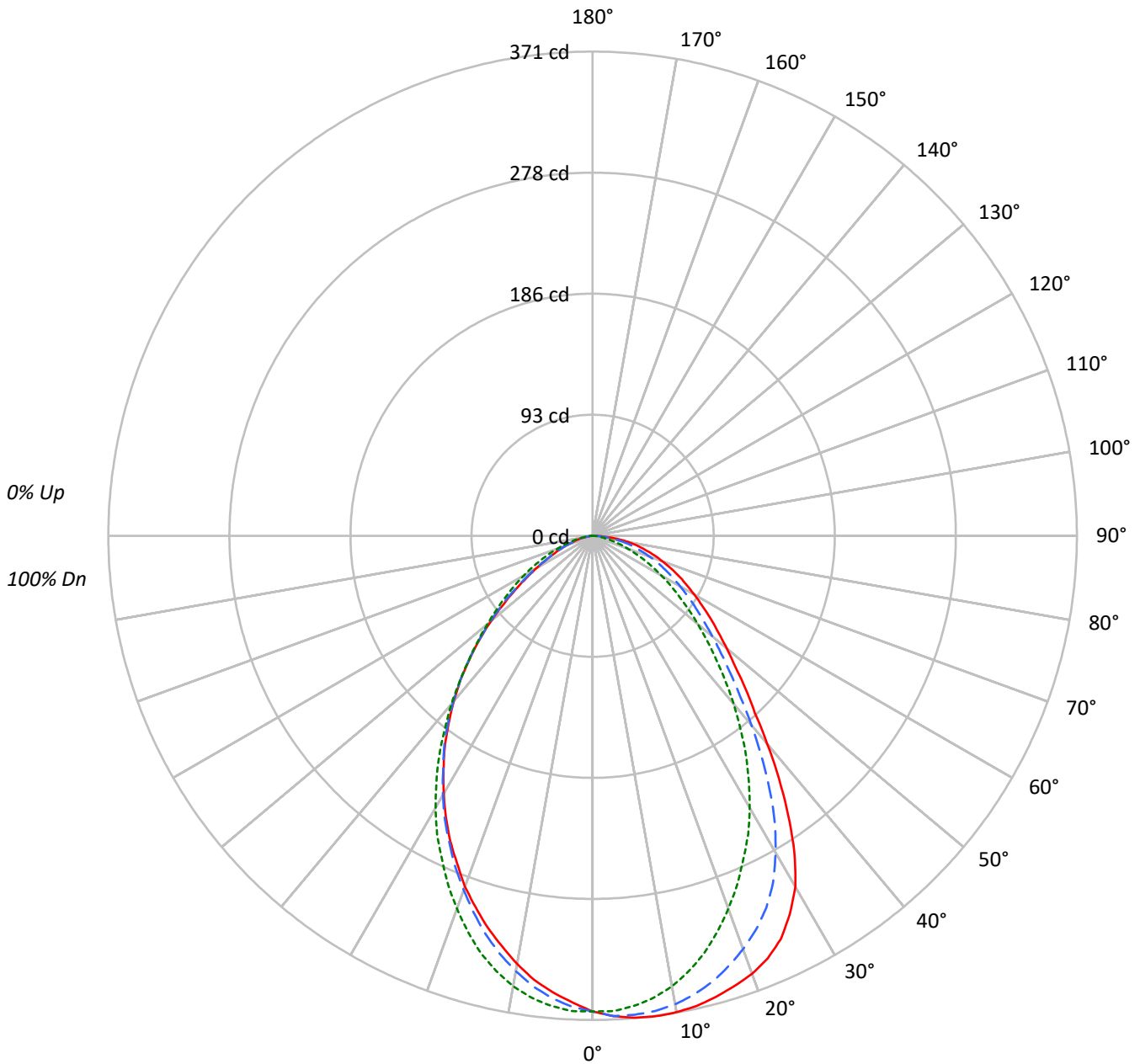
Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H

Luminous Intensity Polar Plot





TEST NUMBER: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 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°	35523	35523	35523
5°	36266	35385	34348
10°	36685	34686	32964
15°	36888	33386	31348
20°	37046	31529	29662
25°	36669	29367	27744
30°	34965	27076	25680
35°	31088	24354	23486
40°	26475	21399	21043
45°	22797	18400	18317
50°	20317	15905	15389
55°	18673	13729	12285
60°	17484	11812	9629
65°	16811	9962	7495
70°	16128	7979	6069
75°	15627	6326	4632
80°	15715	4434	2806
85°	13195	3131	1230



TEST NUMBER: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.1	5.2
10°-20°	93.8	14.3
20°-30°	131.2	20.0
30°-40°	134.9	20.5
40°-50°	109.5	16.7
50°-60°	77.1	11.7
60°-70°	47.4	7.2
70°-80°	23.7	3.6
80°-90°	5.6	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°	259.1	39.4
0°-40°	394.0	59.9
0°-60°	580.5	88.3
0°-90°	657.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	657.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	364	364	364	364	364	
5°	371	368	362	356	351	35
15°	366	354	331	316	311	103
25°	341	315	273	260	258	156
35°	261	236	205	198	197	162
45°	165	149	134	134	133	129
55°	110	96	81	74	72	99
65°	73	61	43	33	32	72
75°	42	32	17	12	12	44
85°	12	8	3	2	1	14
90°	0	0	0	0	0	



TEST NUMBER: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5
2.5°	368.4	369.0	367.3	369.0	366.8	367.9	368.4	367.3	366.2	368.4	368.4
5°	370.7	370.7	369.0	371.3	368.4	369.0	370.1	368.4	366.8	369.0	368.4
7.5°	371.3	371.3	369.0	371.3	368.4	369.0	369.6	367.9	366.2	367.9	367.3
10°	370.7	370.1	368.4	370.7	367.9	367.9	368.4	366.8	364.0	365.6	364.5
12.5°	369.0	369.0	366.8	369.0	365.1	365.1	365.6	363.4	361.2	361.2	360.0
15°	365.6	365.6	363.4	365.1	361.7	361.7	361.2	358.9	356.1	356.1	353.9
17.5°	361.7	361.7	359.5	361.2	357.2	357.2	356.7	353.3	349.4	348.8	346.0
20°	357.2	357.2	354.4	355.6	351.1	351.1	350.5	346.6	342.1	341.0	337.0
22.5°	350.5	350.5	347.7	348.3	343.8	343.2	342.7	338.2	333.7	332.0	326.9
25°	341.0	340.4	338.2	338.2	333.7	332.6	331.4	326.9	322.5	319.1	314.6
27.5°	326.9	327.5	324.7	325.3	319.7	318.5	318.0	312.4	307.3	304.0	299.5
30°	310.7	309.0	306.2	306.2	301.7	301.2	300.0	295.0	289.4	285.5	280.4
32.5°	287.7	287.1	284.3	284.3	279.3	279.3	277.0	272.0	266.9	264.7	259.7
35°	261.3	260.8	258.5	258.5	254.0	254.6	252.4	248.4	243.4	240.0	236.1
37.5°	234.4	233.9	231.6	232.2	228.2	228.2	226.6	222.6	218.7	217.0	212.0
40°	208.1	207.5	204.7	206.4	203.0	201.9	201.3	198.5	194.0	191.8	189.0
42.5°	183.9	184.5	181.7	182.8	180.0	178.9	178.3	176.1	172.7	170.5	167.7
45°	165.4	164.3	163.2	163.2	160.4	159.8	159.3	156.5	154.2	152.0	149.2
47.5°	148.1	146.9	145.8	146.4	144.1	143.6	142.4	140.2	137.4	136.3	133.5
50°	134.0	133.5	131.8	131.8	129.5	129.0	127.9	126.2	123.4	121.7	119.5
52.5°	121.1	121.1	119.5	118.9	117.2	116.6	116.1	113.8	111.6	109.4	107.1
55°	109.9	109.4	108.2	108.2	106.0	105.4	104.9	102.6	100.4	98.7	96.5
57.5°	99.3	99.3	98.1	98.1	96.5	95.3	95.3	93.1	90.3	89.2	86.4
60°	89.7	89.7	88.6	88.6	86.9	86.9	85.8	83.6	81.9	79.6	77.4
62.5°	80.8	81.3	80.2	79.6	78.0	77.4	77.4	75.7	72.9	71.2	69.0
65°	72.9	72.3	71.8	71.2	69.5	69.0	69.0	66.7	65.1	62.8	61.1
67.5°	64.5	64.5	63.4	63.4	62.2	61.7	60.6	58.9	57.2	55.5	53.8
70°	56.6	56.6	56.1	56.1	54.4	53.8	53.3	51.6	49.9	48.2	46.0
72.5°	49.4	48.8	48.2	48.2	47.1	46.5	46.0	44.3	42.6	40.9	39.3
75°	41.5	41.5	40.9	40.9	39.8	39.3	39.3	38.1	35.9	34.8	32.5
77.5°	34.8	34.8	34.2	34.2	33.1	33.1	32.5	30.8	29.7	28.0	26.9
80°	28.0	27.5	27.5	26.9	25.8	25.8	25.2	24.7	23.0	21.9	20.2
82.5°	19.6	19.6	19.6	19.1	18.5	18.5	17.9	16.8	15.7	15.1	13.5
85°	11.8	11.8	11.2	10.7	11.2	10.7	10.1	9.5	9.0	8.4	7.9
87.5°	5.0	5.0	4.5	4.5	4.5	4.5	4.5	3.9	3.4	3.4	2.8
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: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5
2.5°	365.1	366.8	366.2	365.6	364.5	364.5	364.5	364.0	364.5	364.5	363.4
5°	365.1	366.2	365.6	364.5	363.4	363.4	362.8	361.7	361.7	361.7	359.5
7.5°	363.4	364.5	362.8	361.7	360.6	359.5	359.5	357.8	357.8	357.2	355.0
10°	360.0	360.6	358.4	357.2	355.6	355.0	353.9	351.6	351.1	350.5	348.3
12.5°	355.0	355.6	352.7	350.5	348.3	347.7	346.6	343.8	342.7	341.5	338.7
15°	347.7	347.7	344.3	341.5	339.3	338.7	335.9	333.1	332.0	330.9	326.9
17.5°	339.3	338.7	334.2	331.4	328.6	327.5	324.7	321.3	319.1	318.0	314.6
20°	330.3	328.6	323.6	320.8	317.4	315.7	312.9	308.4	306.2	304.0	300.6
22.5°	319.7	317.4	311.8	307.9	304.5	302.8	298.9	295.0	291.6	289.4	285.5
25°	306.8	304.0	297.8	292.7	289.9	288.3	284.3	279.8	276.5	273.1	269.7
27.5°	291.6	288.3	282.1	277.0	274.2	271.4	268.6	263.6	260.8	258.0	254.0
30°	273.1	269.2	263.6	259.1	255.7	253.5	250.1	245.6	242.3	240.6	236.7
32.5°	252.9	248.4	243.4	238.9	237.2	234.4	231.6	227.1	224.3	222.6	219.8
35°	230.5	227.1	221.5	218.2	215.3	214.2	212.0	207.5	206.4	204.7	201.3
37.5°	206.9	204.1	200.2	197.4	195.2	194.0	191.8	189.0	187.3	185.6	183.9
40°	185.1	182.8	179.5	177.2	174.4	172.7	172.7	169.4	168.2	168.2	166.6
42.5°	163.8	162.6	159.8	156.5	155.9	154.2	153.7	152.0	150.9	150.3	149.7
45°	145.8	144.1	141.3	139.6	138.0	138.0	136.3	134.6	134.0	133.5	132.9
47.5°	130.1	127.9	125.6	123.9	122.8	122.3	120.6	119.5	118.9	118.9	118.3
50°	116.1	114.4	112.2	110.5	109.4	108.2	107.1	106.0	105.4	104.9	104.9
52.5°	104.3	102.1	99.8	98.1	96.5	95.9	94.8	93.7	93.1	92.5	92.0
55°	93.7	92.0	89.2	87.5	85.8	85.8	84.1	82.4	81.3	80.8	80.2
57.5°	83.6	81.9	79.1	77.4	76.3	75.1	74.0	72.9	71.8	70.7	69.5
60°	74.6	72.9	70.1	67.9	67.3	66.2	65.1	62.8	61.7	60.6	59.4
62.5°	66.2	63.9	61.7	59.4	58.9	57.8	56.1	54.4	52.7	51.6	49.9
65°	58.3	56.6	53.8	52.2	50.5	49.9	48.2	46.0	44.3	43.2	41.5
67.5°	51.0	48.8	46.0	44.3	43.2	42.1	40.4	38.7	37.0	35.3	33.6
70°	43.7	42.1	39.3	37.6	36.5	35.3	33.6	31.4	29.7	28.0	26.9
72.5°	37.0	34.8	32.5	30.8	29.7	28.6	26.9	25.2	23.6	22.4	20.7
75°	30.8	28.6	26.9	24.7	24.1	23.0	21.3	19.6	17.9	16.8	15.7
77.5°	24.7	23.0	20.7	19.6	18.5	17.4	16.3	14.6	13.5	11.8	10.7
80°	18.5	16.8	15.1	14.0	12.9	12.3	11.2	10.1	9.0	7.9	7.3
82.5°	12.3	11.2	9.5	9.0	8.4	7.9	6.7	6.2	5.6	5.0	4.5
85°	6.7	6.2	5.6	4.5	4.5	3.9	3.4	3.4	2.8	2.8	2.2
87.5°	2.8	2.2	2.2	1.7	1.7	1.7	1.1	1.1	1.1	0.6	0.6
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: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5
2.5°	364.0	361.7	361.7	361.7	360.0	360.6	361.2	361.7	361.2	359.5	361.2
5°	360.0	357.8	357.8	356.7	355.6	355.6	355.6	356.1	355.6	353.9	354.4
7.5°	355.0	352.2	351.6	350.5	349.4	348.8	348.8	348.8	348.3	346.0	347.1
10°	347.1	344.3	343.2	342.7	341.0	340.4	339.8	339.3	338.7	336.5	337.6
12.5°	337.6	335.4	333.1	332.6	330.9	329.8	329.2	329.2	328.1	325.8	326.9
15°	326.4	323.0	321.3	320.2	318.5	317.4	316.3	316.9	316.3	314.1	314.6
17.5°	312.9	309.6	307.9	307.3	305.1	304.0	303.4	303.4	302.8	300.6	301.2
20°	298.3	295.0	293.9	292.7	291.6	290.5	289.9	289.4	288.8	286.6	288.3
22.5°	283.8	279.8	278.2	278.2	275.9	275.4	274.8	275.4	274.8	272.6	273.7
25°	268.6	264.7	263.6	261.9	260.8	260.2	260.2	260.2	259.7	258.5	259.7
27.5°	251.8	249.0	247.3	246.8	245.6	245.1	244.5	245.1	245.1	243.4	244.5
30°	235.0	232.7	231.6	231.1	229.4	228.8	229.4	229.4	229.4	227.7	229.4
32.5°	218.2	216.5	215.9	214.2	213.1	213.1	213.1	213.7	213.1	212.0	213.7
35°	201.3	199.1	198.5	198.0	198.0	196.8	198.0	197.4	198.5	196.8	198.0
37.5°	183.4	182.3	181.7	181.7	180.6	181.1	181.1	181.1	182.3	180.6	181.7
40°	166.6	165.4	165.4	165.4	164.9	164.9	164.9	165.4	166.0	164.9	166.0
42.5°	149.7	149.2	149.2	148.6	148.1	148.6	149.2	149.2	149.7	148.6	149.2
45°	133.5	132.9	133.5	132.9	132.9	132.4	132.9	133.5	133.5	132.9	132.9
47.5°	118.3	118.3	117.8	117.8	117.8	117.8	117.8	117.8	117.8	116.6	117.8
50°	104.9	103.7	104.3	103.7	103.7	103.2	103.2	102.6	102.1	101.5	101.5
52.5°	92.0	90.9	90.9	90.3	89.7	89.7	89.2	88.6	88.0	86.9	86.9
55°	79.6	78.5	78.0	77.4	76.8	76.3	75.7	75.1	74.0	73.5	73.5
57.5°	68.4	67.3	66.2	66.2	65.1	64.5	63.4	62.2	61.7	60.6	60.6
60°	58.3	57.2	55.5	55.0	54.4	53.3	51.6	51.0	50.5	49.4	49.9
62.5°	48.8	47.1	45.4	44.9	44.3	43.2	42.1	40.9	40.4	40.9	40.9
65°	39.8	38.1	37.0	35.9	35.3	34.2	33.6	33.1	33.1	33.1	33.6
67.5°	32.0	30.3	29.2	28.6	27.5	26.9	26.9	26.9	26.9	26.9	26.9
70°	25.2	24.1	23.0	21.9	21.9	21.3	21.3	21.3	21.3	21.3	21.3
72.5°	19.1	17.9	17.4	17.4	16.8	16.8	16.8	16.8	16.3	16.3	16.8
75°	14.0	13.5	12.9	12.9	12.9	12.3	12.3	12.3	12.3	12.3	12.3
77.5°	10.1	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	8.4	8.4
80°	6.7	6.2	6.2	6.2	6.2	5.6	5.6	5.6	5.6	5.6	5.6
82.5°	3.9	3.9	3.9	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
85°	2.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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: P274352

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	364.5	364.5	364.5	364.5	364.5	364.5	364.5	364.5
2.5°	357.8	360.0	360.6	358.9	359.5	358.4	358.9	357.8
5°	351.6	353.3	353.9	352.7	352.7	351.6	352.2	351.1
7.5°	343.8	345.5	346.0	344.9	344.9	343.8	343.8	343.2
10°	334.8	335.4	336.5	334.8	335.4	334.2	334.2	333.1
12.5°	323.6	324.7	325.8	324.1	324.1	323.6	323.6	321.9
15°	311.8	312.9	313.5	312.4	312.4	311.8	311.2	310.7
17.5°	299.5	300.0	301.2	299.5	300.6	299.5	299.5	298.3
20°	285.5	287.1	287.7	286.0	286.6	286.0	286.0	286.0
22.5°	272.0	273.1	273.7	272.6	273.1	272.0	272.6	271.4
25°	258.0	258.5	259.1	258.0	259.1	258.5	258.0	258.0
27.5°	243.4	244.0	244.5	243.4	244.5	244.0	244.5	243.4
30°	227.7	228.8	229.9	228.8	229.4	228.8	228.8	228.2
32.5°	212.0	213.1	214.2	213.1	214.2	213.1	213.7	212.5
35°	197.4	198.0	198.5	197.4	198.0	198.0	198.0	197.4
37.5°	181.1	182.3	182.3	181.7	182.8	182.3	182.3	181.1
40°	165.4	166.0	166.6	165.4	166.0	165.4	166.0	165.4
42.5°	149.2	150.3	150.9	149.7	149.7	149.7	149.2	149.7
45°	132.4	133.5	134.6	132.9	133.5	133.5	133.5	132.9
47.5°	117.2	117.2	117.8	117.2	117.8	116.6	117.8	117.2
50°	101.5	101.5	102.6	101.5	101.5	101.5	101.5	101.5
52.5°	86.4	86.9	86.9	85.8	86.4	85.8	86.4	85.8
55°	72.3	72.3	72.9	72.3	72.3	72.3	72.3	72.3
57.5°	60.0	60.6	60.6	60.0	60.6	60.0	60.0	60.0
60°	49.9	49.9	49.9	49.4	49.9	49.4	49.9	49.4
62.5°	40.4	40.9	40.9	40.4	40.9	40.4	40.4	40.4
65°	33.1	33.1	33.1	33.1	33.1	33.1	33.1	32.5
67.5°	26.4	26.4	26.9	26.4	26.9	26.9	26.9	26.9
70°	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
72.5°	16.3	16.3	16.8	16.3	16.3	16.3	16.3	16.3
75°	12.3	12.3	12.3	12.3	12.3	11.8	11.8	12.3
77.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	9.0
80°	5.6	5.6	5.6	5.6	5.0	5.0	5.6	5.0
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	1.7	1.7	1.1	1.1	1.1	1.1	1.1	1.1
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)