

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: P274346

Luminaire Tested: **LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWWOLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P274346
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, LENSED WALLWASH WITH SPECULAR FINISH
Light Source: W2N 2000K-5000K CCT TUNING RANGE
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 695.4 lumens
Efficiency: N/A
Efficacy: 49.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

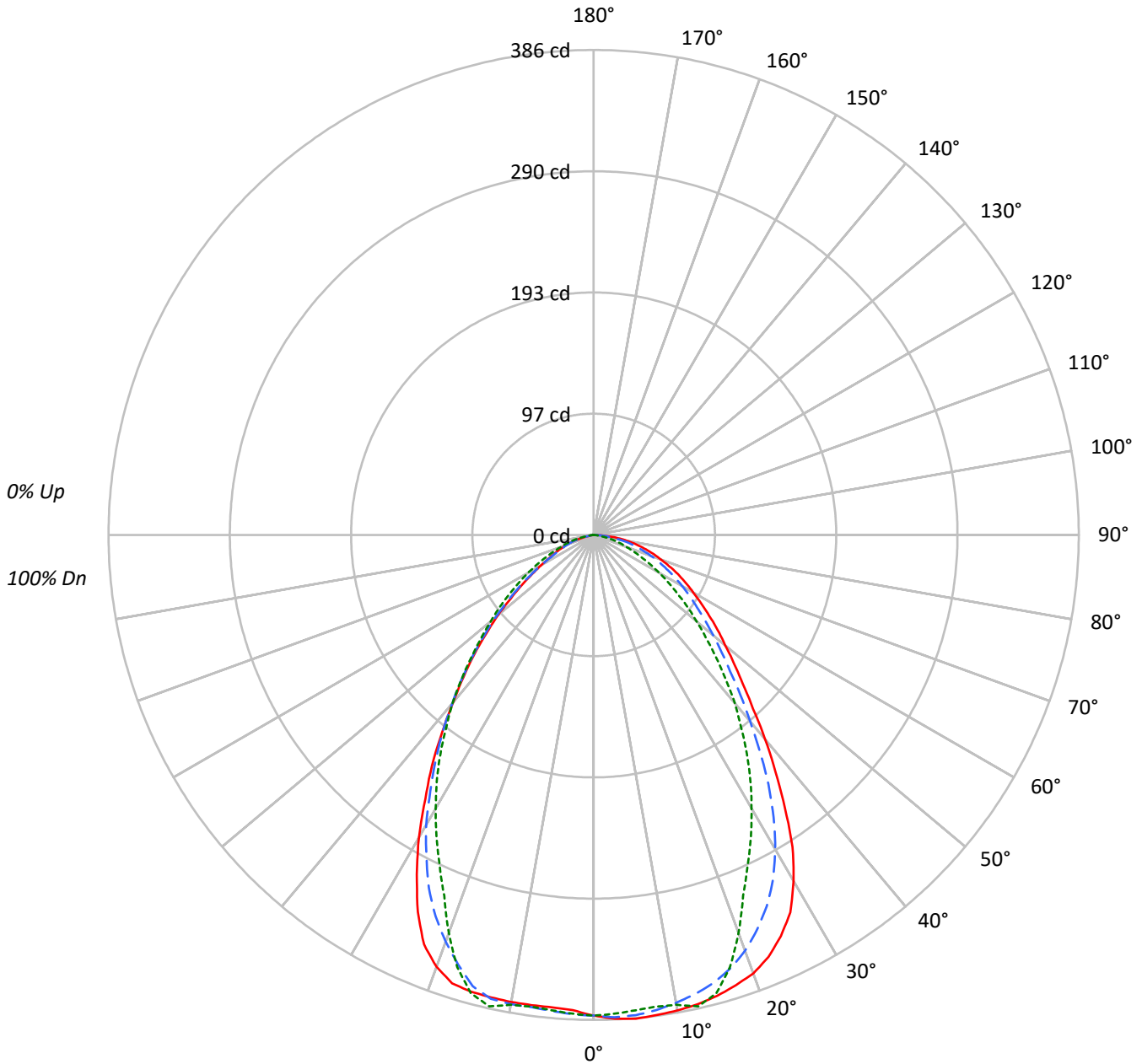
Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

Luminous Intensity Polar Plot





TEST NUMBER: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

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	105	101	99	101	98	96	97	95	93	93	91	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60																			
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53																			
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48																			
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43																			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39																			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36																			
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	37287	37287	37287
5°	37811	37156	36931
10°	38031	37586	37358
15°	38320	38088	37977
20°	38519	34962	37928
25°	37884	31185	35593
30°	35797	28280	31307
35°	31564	25294	26698
40°	26971	22200	22124
45°	23114	18937	18483
50°	20666	16162	15056
55°	19064	13814	11911
60°	17815	11695	9395
65°	17065	9708	7771
70°	16157	7836	6554
75°	15627	6326	4632
80°	15097	3480	1235
85°	13195	1901	671



TEST NUMBER: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.3	5.2
10°-20°	104.6	15.0
20°-30°	145.0	20.9
30°-40°	143.2	20.6
40°-50°	112.3	16.1
50°-60°	77.8	11.2
60°-70°	47.7	6.9
70°-80°	23.8	3.4
80°-90°	4.8	0.7
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°	285.9	41.1
0°-40°	429.1	61.7
0°-60°	619.2	89.0
0°-90°	695.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	695.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	383	383	383	383	383	
5°	386	384	380	380	378	37
15°	380	369	378	372	376	107
25°	352	326	290	310	331	161
35°	265	242	213	219	224	166
45°	168	154	137	136	134	131
55°	112	100	81	72	70	101
65°	74	64	42	31	34	73
75°	42	35	17	13	12	44
85°	12	7	2	1	1	13
90°	0	0	0	0	0	



TEST NUMBER: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	385.4	384.3	383.7	385.4	384.8	385.9	385.4	384.8	383.7	384.3	384.3
5°	386.5	384.8	384.3	385.4	385.4	386.5	385.9	384.8	383.7	384.3	383.7
7.5°	385.4	384.3	384.3	384.8	384.3	385.4	384.3	383.1	382.0	382.6	381.5
10°	384.3	382.6	382.6	382.6	382.6	383.7	382.6	380.9	379.2	379.2	378.1
12.5°	382.6	380.9	380.9	381.5	380.3	381.5	380.3	377.5	375.8	375.3	374.2
15°	379.8	378.1	378.1	378.1	377.0	377.5	375.8	373.0	370.8	370.8	369.1
17.5°	375.8	374.2	373.6	373.6	371.9	372.5	370.8	368.0	364.6	363.5	361.8
20°	371.4	369.1	368.0	368.0	366.3	366.9	364.6	361.3	356.8	355.1	352.3
22.5°	363.5	362.4	360.7	360.1	358.5	357.9	355.7	351.2	347.2	344.4	339.9
25°	352.3	351.7	350.0	349.5	347.2	346.1	343.9	338.8	334.9	330.4	325.9
27.5°	338.8	336.6	335.5	333.8	331.5	331.0	328.2	323.7	317.5	314.7	309.1
30°	318.1	316.9	315.8	314.1	311.9	310.8	309.1	304.0	299.0	293.9	288.9
32.5°	294.5	292.3	290.6	291.1	288.3	287.2	284.4	279.9	275.4	272.1	266.5
35°	265.3	264.8	264.2	263.1	260.8	260.3	258.0	254.7	249.6	245.7	242.3
37.5°	237.8	236.2	235.0	235.0	232.8	232.8	231.1	227.2	224.4	221.6	217.1
40°	212.0	209.2	209.2	209.2	207.0	207.6	206.4	202.5	199.7	196.3	193.5
42.5°	187.9	186.8	186.2	185.1	184.0	184.0	182.9	180.6	177.8	175.6	172.8
45°	167.7	167.2	166.6	166.0	164.9	164.4	163.8	160.4	158.8	156.5	153.7
47.5°	151.5	150.3	149.8	149.2	148.1	147.5	146.4	144.2	142.5	140.2	138.0
50°	136.3	135.8	135.2	135.2	134.1	133.5	132.4	130.7	127.9	126.8	124.0
52.5°	124.5	123.4	122.3	122.3	121.2	121.2	119.5	117.8	115.0	113.9	111.6
55°	112.2	111.6	111.1	111.1	109.9	109.4	108.8	106.6	104.3	102.7	100.4
57.5°	101.5	101.0	100.4	100.4	99.3	98.7	98.2	96.5	94.2	93.1	90.3
60°	91.4	91.4	90.9	90.3	89.8	89.2	88.6	86.9	85.3	83.6	81.3
62.5°	82.5	81.9	81.3	80.8	80.8	80.2	79.7	77.4	76.3	74.6	72.4
65°	74.0	72.9	72.9	72.4	72.4	71.8	71.2	69.0	67.9	66.2	63.9
67.5°	65.1	64.5	63.9	63.9	63.4	63.4	62.8	61.1	59.5	58.3	56.1
70°	56.7	56.7	56.1	56.1	55.5	55.0	55.0	53.9	52.2	50.5	48.2
72.5°	49.4	48.8	48.2	48.2	47.7	47.7	47.1	46.0	44.9	43.8	41.0
75°	41.5	41.0	41.0	41.0	40.4	40.4	39.8	38.7	37.6	36.5	34.8
77.5°	34.2	34.2	33.7	33.7	33.1	33.1	33.1	32.0	30.9	29.7	27.5
80°	26.9	26.9	26.9	26.4	25.8	25.8	25.8	24.7	23.6	22.4	20.8
82.5°	19.6	19.1	19.1	18.5	18.0	18.0	18.0	16.8	16.3	14.6	13.5
85°	11.8	11.2	11.2	10.7	10.1	10.1	10.1	9.5	8.4	7.9	6.7
87.5°	4.5	4.5	4.5	4.5	4.5	3.9	3.9	3.4	3.4	2.8	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: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	384.3	383.7	383.7	383.1	383.7	382.6	382.6	382.6	382.6	381.5	381.5
5°	383.1	383.1	382.6	382.0	382.6	381.5	382.0	381.5	381.5	379.8	379.8
7.5°	380.9	380.3	379.2	378.6	379.2	378.6	378.6	378.6	379.8	378.6	378.6
10°	377.0	376.4	375.3	374.7	374.7	374.2	375.3	376.4	378.6	379.8	382.0
12.5°	373.0	371.9	371.4	371.4	371.9	371.9	374.2	377.0	382.6	384.3	386.5
15°	368.0	367.4	367.4	369.1	371.4	373.0	377.5	379.2	379.8	377.5	376.4
17.5°	361.3	361.3	361.8	363.5	365.2	365.2	365.7	364.6	363.5	360.7	357.3
20°	350.0	349.5	348.4	348.4	348.4	346.1	347.2	343.3	340.5	337.1	332.1
22.5°	336.0	333.2	329.3	326.5	324.8	323.7	320.9	316.4	313.0	310.8	308.5
25°	320.9	316.4	310.8	306.3	303.5	302.9	299.0	295.1	292.8	290.0	288.9
27.5°	303.5	298.4	291.7	287.2	285.0	283.3	279.9	276.0	273.2	270.9	269.3
30°	283.3	278.2	272.6	267.0	264.8	262.0	258.6	255.8	253.0	251.3	250.2
32.5°	260.8	255.8	250.2	246.3	243.5	241.2	238.4	235.6	233.4	232.2	231.1
35°	237.8	232.8	228.3	224.4	222.1	220.5	218.2	214.8	213.2	212.6	211.5
37.5°	213.2	209.8	205.9	202.5	200.8	198.6	197.5	194.7	194.7	192.4	192.4
40°	190.2	187.9	184.0	181.2	180.1	178.4	176.7	175.6	175.0	174.5	173.9
42.5°	170.0	166.6	164.4	162.1	160.4	159.3	159.3	157.6	157.1	155.4	154.8
45°	151.5	149.8	145.9	144.2	143.6	141.9	141.4	140.2	138.6	137.4	136.9
47.5°	135.2	133.5	131.3	129.0	127.9	126.8	125.7	124.0	122.9	121.2	120.6
50°	121.7	118.9	116.7	115.0	113.3	112.8	111.6	109.4	108.3	106.6	106.6
52.5°	109.4	107.1	104.3	102.7	101.0	99.9	98.2	96.5	94.8	94.2	92.6
55°	98.7	95.9	93.1	90.9	89.2	87.5	86.9	84.7	82.5	81.3	80.2
57.5°	88.6	85.8	82.5	79.7	78.5	77.4	75.7	73.5	71.8	70.1	69.0
60°	78.5	76.3	72.9	70.1	69.0	67.3	65.6	63.4	61.7	60.0	58.9
62.5°	70.1	66.8	63.9	61.1	59.5	58.3	56.1	54.4	52.2	50.5	48.8
65°	61.7	58.3	55.5	52.7	51.6	49.9	48.2	46.0	43.8	42.1	39.8
67.5°	53.3	50.5	47.7	44.9	43.8	42.6	40.4	38.1	35.9	34.2	32.0
70°	46.0	43.2	40.4	38.1	37.0	35.9	33.7	31.4	29.7	27.5	25.8
72.5°	39.3	37.0	34.2	32.0	30.9	29.7	27.5	25.8	23.6	22.4	20.8
75°	32.5	30.3	28.0	25.8	24.7	23.6	21.9	20.2	18.5	16.8	15.7
77.5°	25.8	23.6	21.3	19.6	18.5	18.0	16.3	14.6	12.9	11.8	10.1
80°	19.1	16.8	15.1	13.5	12.3	11.8	10.1	9.0	7.9	6.2	5.6
82.5°	11.8	10.1	9.0	7.9	7.3	6.7	5.6	4.5	3.9	3.4	2.8
85°	6.2	5.6	4.5	3.9	3.4	3.4	2.8	2.2	1.7	1.7	1.1
87.5°	2.2	1.7	1.7	1.1	1.1	1.1	1.1	0.6	0.6	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: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	380.3	380.9	381.5	382.0	381.5	381.5	382.6	380.3	382.0	382.0	379.8
5°	379.2	380.3	379.8	380.9	379.8	379.8	380.3	379.2	380.3	380.3	378.6
7.5°	378.1	379.2	379.2	379.8	379.2	379.2	379.8	378.1	379.2	379.2	377.5
10°	383.1	384.3	383.7	383.1	381.5	380.3	380.9	378.1	379.2	379.2	377.5
12.5°	384.8	384.3	382.0	380.9	379.8	378.6	379.2	377.0	378.1	378.1	377.0
15°	373.6	372.5	370.8	371.4	370.2	369.7	370.8	369.7	371.9	373.0	371.9
17.5°	354.5	354.0	352.8	352.8	352.8	353.4	355.1	355.1	358.5	360.7	361.8
20°	329.8	329.3	329.8	331.0	331.5	333.8	337.7	339.9	344.4	348.4	351.2
22.5°	307.4	308.5	310.2	312.5	313.0	315.8	320.9	323.1	328.7	333.2	336.0
25°	288.3	290.0	291.1	292.8	293.4	296.7	301.2	304.0	310.2	313.6	316.9
27.5°	269.3	271.5	272.1	274.3	274.3	277.7	281.6	284.4	288.3	291.7	294.5
30°	250.8	251.3	253.0	253.6	254.7	258.0	260.3	262.0	266.5	268.1	269.8
32.5°	230.6	232.8	233.9	234.5	233.9	236.7	239.0	240.1	241.8	244.0	245.1
35°	211.5	212.6	213.2	214.3	214.8	215.4	216.5	217.1	219.3	219.9	220.5
37.5°	192.4	194.1	193.5	194.1	194.1	194.7	195.8	195.2	196.9	197.5	196.9
40°	173.3	173.3	174.5	173.9	174.5	173.9	175.0	175.0	175.0	175.6	175.0
42.5°	154.3	154.8	154.3	155.4	154.3	154.8	154.8	154.3	154.8	154.3	154.3
45°	136.9	136.9	136.9	136.9	135.8	135.8	136.9	136.3	135.8	135.2	134.6
47.5°	120.0	120.6	119.5	120.0	119.5	118.9	118.4	118.4	117.8	116.7	116.1
50°	106.0	104.9	104.3	104.9	104.3	103.8	103.2	102.1	101.5	100.4	99.9
52.5°	92.0	90.9	89.8	89.8	89.2	88.1	87.5	86.4	85.8	84.7	84.7
55°	79.7	78.5	77.4	76.9	75.7	74.6	74.0	72.9	72.4	71.2	70.1
57.5°	67.9	66.2	65.1	64.5	63.9	62.3	61.7	60.6	59.5	58.3	57.8
60°	57.2	55.5	53.9	53.3	52.7	51.0	50.5	48.8	48.2	47.1	46.6
62.5°	47.1	46.0	43.8	43.2	42.1	41.0	39.3	38.7	38.1	38.7	38.7
65°	38.1	36.5	34.8	34.2	33.1	32.0	31.4	30.9	31.4	31.4	32.0
67.5°	30.3	28.6	26.9	26.9	26.4	25.2	25.2	25.2	25.8	25.8	26.4
70°	24.1	23.0	21.9	21.3	21.3	20.8	21.3	21.3	21.9	21.9	21.9
72.5°	19.1	18.5	18.0	17.4	17.4	17.4	17.4	17.4	17.4	17.4	18.0
75°	14.6	14.0	13.5	13.5	12.9	12.9	12.9	12.9	12.9	12.9	12.3
77.5°	9.5	9.0	8.4	8.4	7.9	7.3	7.3	6.7	6.7	6.7	6.7
80°	5.0	4.5	3.9	3.4	3.4	2.8	2.8	2.8	2.8	2.2	2.2
82.5°	2.2	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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



TEST NUMBER: P274346

CATALOG NUMBER: LD4B10DE010W2N2050 EU4B1020W2N902050 4LBLWW0LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	380.9	379.8	380.9	381.5	380.3	379.8	380.9	378.6
5°	380.3	378.6	379.2	379.8	378.6	378.1	379.2	377.5
7.5°	379.2	378.6	379.2	379.8	378.1	378.1	379.2	377.5
10°	379.2	378.1	378.6	379.8	378.6	378.6	379.8	377.5
12.5°	378.6	377.0	378.6	379.2	378.1	378.1	379.2	377.0
15°	374.7	374.7	375.3	376.4	375.8	376.4	378.1	376.4
17.5°	366.3	367.4	369.7	371.4	372.5	373.6	375.3	374.2
20°	356.2	357.9	360.7	362.4	364.6	365.2	368.0	365.7
22.5°	340.5	343.9	346.1	347.8	349.5	351.2	353.4	352.8
25°	321.4	323.7	325.4	327.0	329.3	330.4	331.5	331.0
27.5°	298.4	299.6	301.8	302.9	304.0	305.2	307.4	304.6
30°	273.2	273.7	274.9	276.6	276.6	277.7	278.8	278.2
32.5°	247.4	247.4	248.5	249.6	249.1	249.6	251.9	249.1
35°	222.1	221.6	223.3	223.8	223.8	223.3	224.9	224.4
37.5°	197.5	198.0	198.6	199.1	198.0	199.1	199.1	198.0
40°	175.0	174.5	175.6	176.1	175.6	176.1	176.1	173.9
42.5°	154.8	153.7	154.3	154.8	154.3	154.8	154.3	153.1
45°	135.2	134.6	134.6	135.2	134.1	134.1	134.1	134.1
47.5°	116.7	116.1	116.7	116.7	115.6	115.6	116.1	115.6
50°	99.9	99.3	99.3	99.3	98.7	98.7	99.3	99.3
52.5°	84.7	83.6	83.6	83.6	83.6	83.6	84.1	83.0
55°	69.6	69.6	69.6	69.6	70.1	70.1	70.1	70.1
57.5°	57.2	57.8	57.8	58.3	57.8	58.3	58.3	57.8
60°	47.7	47.1	47.7	47.7	48.2	48.2	48.2	48.2
62.5°	39.3	39.3	39.3	39.8	39.8	39.8	40.4	39.8
65°	32.5	32.5	33.1	33.1	33.1	33.7	33.7	33.7
67.5°	26.9	26.9	26.9	26.9	27.5	27.5	28.0	27.5
70°	22.4	22.4	22.4	22.4	22.4	23.0	23.0	23.0
72.5°	18.0	18.0	18.0	18.0	18.5	18.5	18.5	18.5
75°	12.3	12.3	12.3	12.9	12.3	12.3	12.3	12.3
77.5°	6.2	6.2	6.2	6.2	6.2	5.6	5.6	5.6
80°	2.2	2.2	2.2	2.2	2.2	2.2	1.7	2.2
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)