

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: P274330

Luminaire Tested: **LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P274330
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH HAZE FINISH
Light Source: W2N 2000K-5000K CCT TUNING RANGE
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1359.5 lumens
Efficiency: N/A
Efficacy: 48.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

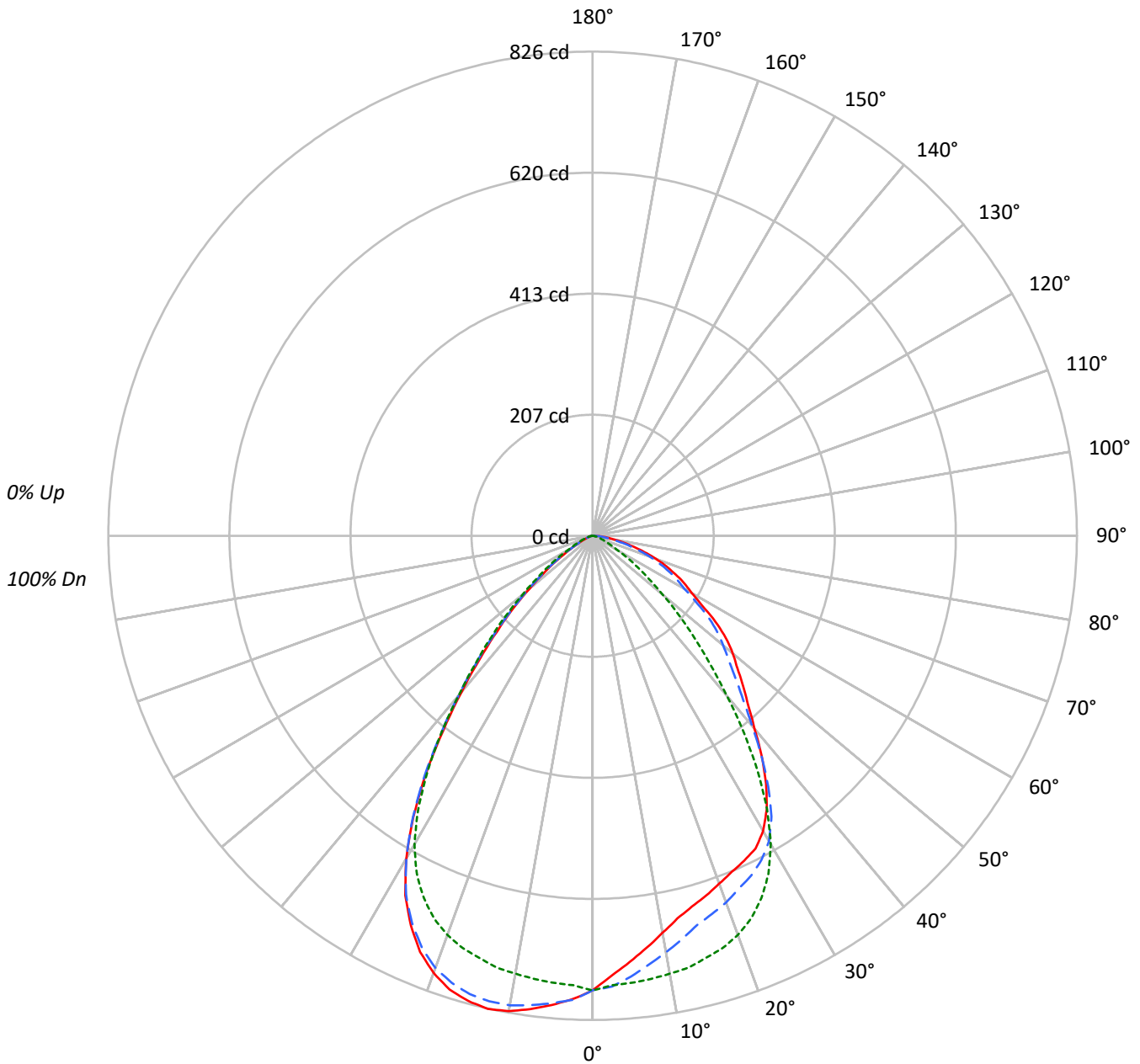
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

Luminous Intensity Polar Plot





TEST NUMBER: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	75579	75579	75579
5°	71377	74889	78607
10°	68046	75072	81495
15°	66047	75228	82886
20°	65505	75150	82296
25°	65767	73295	78886
30°	65462	68376	71527
35°	61355	58381	58976
40°	54668	45266	44248
45°	50003	33754	31686
50°	47274	23637	21363
55°	43464	15955	13423
60°	37989	9356	7407
65°	35951	5996	4151
70°	32741	4274	2565
75°	27112	3012	1883
80°	21327	1684	1122
85°	19010	1118	0



TEST NUMBER: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.3	5.4
10°-20°	210.2	15.5
20°-30°	311.6	22.9
30°-40°	312.1	23.0
40°-50°	218.1	16.0
50°-60°	129.8	9.5
60°-70°	67.7	5.0
70°-80°	30.1	2.2
80°-90°	6.6	0.5
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°	595.1	43.8
0°-40°	907.2	66.7
0°-60°	1255.0	92.3
0°-90°	1359.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1359.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	776	776	776	776	776	
5°	730	755	766	800	804	68
15°	655	688	746	810	822	185
25°	612	640	682	729	734	282
35°	516	522	491	500	496	320
45°	363	345	245	237	230	282
55°	256	240	94	82	79	227
65°	156	143	26	19	18	154
75°	72	63	8	5	5	78
85°	17	13	1	1	0	19
90°	0	0	0	0	0	



TEST NUMBER: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5
2.5°	750.6	759.6	750.6	753.6	765.5	754.6	760.6	760.6	757.6	764.5	769.5
5°	729.6	738.6	729.6	733.6	746.6	735.6	742.6	740.6	741.6	747.6	754.6
7.5°	708.6	715.6	707.6	712.6	724.6	715.6	721.6	721.6	722.6	731.6	737.6
10°	687.6	693.6	687.6	691.6	704.6	696.6	700.6	701.6	704.6	712.6	721.6
12.5°	668.6	673.6	667.6	673.6	684.6	676.6	681.6	682.6	685.6	694.6	704.6
15°	654.6	659.6	653.6	658.6	668.6	662.6	666.6	668.6	670.6	678.6	687.6
17.5°	643.6	647.6	642.6	648.6	656.6	649.6	655.6	655.6	658.6	666.6	676.6
20°	631.6	635.6	631.6	636.6	645.6	639.6	644.6	644.6	647.6	656.6	665.6
22.5°	620.6	622.6	620.6	624.6	633.6	628.6	631.6	632.6	635.6	643.6	651.6
25°	611.6	615.6	613.6	617.6	623.6	618.6	621.6	622.6	625.6	632.6	639.6
27.5°	601.6	603.6	601.6	606.6	611.6	607.6	610.6	609.6	611.6	617.6	623.6
30°	581.7	583.7	583.7	586.7	590.7	588.7	591.7	588.7	590.7	595.6	601.6
32.5°	552.7	553.7	554.7	557.7	560.7	557.7	559.7	559.7	559.7	563.7	567.7
35°	515.7	517.7	516.7	518.7	521.7	520.7	520.7	519.7	517.7	519.7	521.7
37.5°	473.7	470.7	470.7	473.7	475.7	471.7	473.7	471.7	471.7	472.7	472.7
40°	429.7	426.7	429.7	430.7	431.7	429.7	428.7	426.7	423.7	424.7	422.8
42.5°	392.8	390.8	391.8	391.8	392.8	390.8	391.8	387.8	384.8	382.8	379.8
45°	362.8	359.8	362.8	360.8	360.8	359.8	358.8	356.8	352.8	349.8	344.8
47.5°	334.8	334.8	335.8	335.8	335.8	333.8	333.8	329.8	325.8	321.8	314.8
50°	311.8	309.8	313.8	313.8	310.8	309.8	310.8	305.8	302.8	297.8	290.8
52.5°	286.8	286.8	287.8	287.8	286.8	284.8	285.8	281.8	278.8	273.8	266.8
55°	255.8	253.8	256.8	256.8	255.8	254.8	255.8	252.9	249.9	245.9	239.9
57.5°	220.9	219.9	221.9	222.9	220.9	220.9	221.9	218.9	217.9	213.9	207.9
60°	194.9	193.9	195.9	196.9	194.9	194.9	194.9	190.9	188.9	184.9	180.9
62.5°	176.9	175.9	177.9	176.9	175.9	174.9	175.9	171.9	169.9	165.9	161.9
65°	155.9	156.9	157.9	157.9	156.9	155.9	155.9	153.9	151.9	147.9	142.9
67.5°	135.9	135.9	136.9	137.9	136.9	136.9	136.9	133.9	131.9	128.9	122.9
70°	114.9	113.9	116.9	116.9	114.9	115.9	114.9	113.9	111.9	107.9	102.9
72.5°	92.9	92.9	93.9	93.9	92.9	92.9	92.9	91.9	88.9	86.9	82.0
75°	72.0	72.0	73.0	74.0	72.0	72.0	73.0	71.0	69.0	66.0	63.0
77.5°	54.0	53.0	54.0	54.0	53.0	53.0	53.0	52.0	51.0	48.0	45.0
80°	38.0	37.0	38.0	38.0	38.0	37.0	37.0	36.0	36.0	34.0	31.0
82.5°	26.0	25.0	26.0	26.0	26.0	25.0	25.0	25.0	24.0	23.0	21.0
85°	17.0	16.0	16.0	17.0	16.0	16.0	16.0	16.0	15.0	14.0	13.0
87.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0
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: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5
2.5°	765.5	763.5	769.5	767.5	768.5	763.5	771.5	767.5	772.5	767.5	777.5
5°	752.6	750.6	759.6	758.6	759.6	755.6	764.5	763.5	769.5	765.5	776.5
7.5°	738.6	736.6	746.6	747.6	749.6	745.6	757.6	757.6	763.5	762.5	774.5
10°	722.6	723.6	733.6	735.6	739.6	737.6	748.6	751.6	759.6	758.6	773.5
12.5°	707.6	707.6	720.6	724.6	727.6	726.6	739.6	743.6	752.6	754.6	768.5
15°	692.6	693.6	705.6	711.6	715.6	714.6	728.6	733.6	744.6	745.6	762.5
17.5°	680.6	679.6	692.6	697.6	703.6	702.6	717.6	723.6	734.6	737.6	753.6
20°	670.6	669.6	681.6	687.6	691.6	690.6	705.6	712.6	722.6	724.6	740.6
22.5°	658.6	656.6	668.6	673.6	677.6	676.6	689.6	694.6	704.6	706.6	721.6
25°	644.6	642.6	653.6	656.6	659.6	657.6	668.6	671.6	679.6	681.6	696.6
27.5°	628.6	623.6	632.6	632.6	634.6	631.6	639.6	642.6	649.6	649.6	663.6
30°	603.6	596.6	601.6	600.6	601.6	597.6	602.6	603.6	608.6	607.6	617.6
32.5°	568.7	558.7	561.7	558.7	555.7	549.7	555.7	553.7	557.7	553.7	562.7
35°	520.7	510.7	509.7	505.7	502.7	497.7	497.7	492.7	493.7	490.7	496.7
37.5°	468.7	455.7	453.7	445.7	440.7	434.7	434.7	430.7	425.7	423.7	428.7
40°	417.8	403.8	398.8	385.8	380.8	374.8	370.8	365.8	363.8	355.8	359.8
42.5°	373.8	358.8	347.8	333.8	328.8	319.8	313.8	307.8	304.8	295.8	299.8
45°	336.8	318.8	306.8	288.8	281.8	271.8	262.8	255.8	248.9	244.9	242.9
47.5°	305.8	286.8	270.8	250.9	239.9	230.9	218.9	211.9	202.9	197.9	194.9
50°	279.8	258.8	240.9	217.9	206.9	196.9	182.9	171.9	163.9	155.9	153.9
52.5°	256.8	234.9	214.9	188.9	175.9	163.9	148.9	136.9	129.9	120.9	119.9
55°	229.9	210.9	188.9	161.9	148.9	136.9	120.9	108.9	99.9	93.9	91.9
57.5°	200.9	182.9	161.9	134.9	121.9	108.9	93.9	83.0	75.0	70.0	69.0
60°	173.9	156.9	136.9	109.9	96.9	85.9	70.0	59.0	52.0	48.0	46.0
62.5°	153.9	137.9	118.9	93.9	82.0	71.0	56.0	46.0	40.0	36.0	34.0
65°	134.9	118.9	101.9	79.0	69.0	59.0	45.0	36.0	30.0	26.0	24.0
67.5°	114.9	100.9	84.9	66.0	56.0	48.0	36.0	28.0	23.0	20.0	18.0
70°	94.9	82.0	69.0	53.0	46.0	38.0	28.0	22.0	17.0	15.0	13.0
72.5°	75.0	65.0	54.0	41.0	35.0	30.0	22.0	16.0	13.0	11.0	9.0
75°	56.0	49.0	40.0	31.0	26.0	22.0	16.0	12.0	10.0	8.0	7.0
77.5°	40.0	34.0	28.0	21.0	19.0	16.0	11.0	9.0	7.0	5.0	4.0
80°	27.0	24.0	19.0	15.0	12.0	11.0	8.0	6.0	4.0	3.0	3.0
82.5°	18.0	15.0	12.0	9.0	8.0	7.0	5.0	4.0	3.0	2.0	2.0
85°	11.0	9.0	7.0	5.0	5.0	4.0	3.0	2.0	1.0	1.0	1.0
87.5°	5.0	4.0	3.0	2.0	2.0	1.0	1.0	1.0	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: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5
2.5°	785.5	779.5	775.5	780.5	782.5	779.5	782.5	787.5	792.5	793.5	779.5
5°	786.5	780.5	778.5	784.5	785.5	784.5	787.5	794.5	800.5	802.5	788.5
7.5°	786.5	782.5	781.5	788.5	789.5	788.5	793.5	801.5	807.5	811.5	797.5
10°	784.5	782.5	783.5	789.5	791.5	791.5	798.5	807.5	813.5	817.5	803.5
12.5°	781.5	781.5	781.5	788.5	790.5	791.5	797.5	809.5	813.5	819.5	805.5
15°	776.5	776.5	776.5	783.5	786.5	786.5	793.5	804.5	809.5	815.5	801.5
17.5°	767.5	767.5	768.5	774.5	777.5	777.5	784.5	796.5	799.5	806.5	792.5
20°	754.6	754.6	755.6	761.5	764.5	762.5	771.5	781.5	784.5	790.5	776.5
22.5°	735.6	735.6	735.6	741.6	743.6	742.6	751.6	760.6	760.6	768.5	753.6
25°	707.6	709.6	707.6	713.6	715.6	714.6	722.6	730.6	728.6	737.6	722.6
27.5°	673.6	672.6	672.6	677.6	677.6	676.6	682.6	691.6	689.6	695.6	681.6
30°	626.6	629.6	624.6	631.6	628.6	626.6	630.6	638.6	635.6	640.6	629.6
32.5°	572.7	568.7	568.7	568.7	570.7	565.7	569.7	573.7	570.7	575.7	563.7
35°	501.7	502.7	499.7	500.7	501.7	495.7	499.7	503.7	499.7	502.7	491.7
37.5°	430.7	431.7	424.7	428.7	424.7	422.8	426.7	428.7	424.7	427.7	415.8
40°	359.8	357.8	356.8	356.8	357.8	352.8	355.8	358.8	355.8	357.8	346.8
42.5°	297.8	296.8	294.8	295.8	292.8	291.8	292.8	295.8	292.8	294.8	286.8
45°	243.9	241.9	238.9	239.9	239.9	234.9	237.9	239.9	236.9	237.9	230.9
47.5°	193.9	190.9	190.9	189.9	189.9	187.9	190.9	189.9	186.9	188.9	181.9
50°	150.9	148.9	148.9	148.9	148.9	145.9	146.9	148.9	145.9	145.9	141.9
52.5°	117.9	114.9	112.9	112.9	112.9	111.9	111.9	112.9	109.9	109.9	108.9
55°	88.9	87.9	84.9	84.9	84.9	82.0	83.0	83.0	82.0	82.0	79.0
57.5°	66.0	63.0	61.0	61.0	59.0	59.0	58.0	59.0	57.0	57.0	55.0
60°	44.0	42.0	41.0	40.0	40.0	39.0	40.0	39.0	39.0	38.0	37.0
62.5°	32.0	30.0	28.0	28.0	28.0	27.0	27.0	27.0	27.0	27.0	26.0
65°	23.0	21.0	21.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	18.0
67.5°	16.0	15.0	14.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	13.0
70°	12.0	11.0	10.0	10.0	10.0	10.0	10.0	9.0	10.0	10.0	9.0
72.5°	8.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
75°	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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



TEST NUMBER: P274330

CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBSW0H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	775.5	775.5	775.5	775.5	775.5	775.5	775.5	775.5
2.5°	794.5	793.5	791.5	794.5	786.5	783.5	782.5	791.5
5°	805.5	803.5	803.5	806.5	797.5	795.5	793.5	803.5
7.5°	815.5	813.5	813.5	816.5	808.5	806.5	804.5	814.5
10°	821.5	821.5	821.5	823.5	816.5	814.5	813.5	823.5
12.5°	824.5	824.5	823.5	827.5	818.5	818.5	816.5	826.5
15°	820.5	820.5	820.5	823.5	815.5	813.5	813.5	821.5
17.5°	810.5	810.5	809.5	812.5	803.5	803.5	802.5	811.5
20°	795.5	795.5	793.5	797.5	788.5	785.5	784.5	793.5
22.5°	771.5	770.5	769.5	771.5	763.5	761.5	760.6	768.5
25°	740.6	739.6	737.6	739.6	730.6	727.6	727.6	733.6
27.5°	696.6	696.6	693.6	696.6	686.6	685.6	684.6	691.6
30°	642.6	638.6	636.6	640.6	630.6	630.6	628.6	635.6
32.5°	575.7	571.7	570.7	572.7	563.7	560.7	564.7	568.7
35°	498.7	499.7	495.7	495.7	487.7	488.7	489.7	495.7
37.5°	424.7	422.8	421.8	422.8	416.8	414.8	412.8	418.8
40°	355.8	350.8	349.8	349.8	344.8	343.8	344.8	347.8
42.5°	290.8	289.8	285.8	287.8	282.8	284.8	283.8	283.8
45°	234.9	235.9	231.9	234.9	230.9	227.9	227.9	229.9
47.5°	185.9	185.9	184.9	184.9	181.9	182.9	180.9	183.9
50°	143.9	143.9	141.9	142.9	140.9	140.9	139.9	140.9
52.5°	109.9	108.9	108.9	107.9	105.9	106.9	107.9	105.9
55°	80.0	81.0	79.0	80.0	78.0	79.0	78.0	79.0
57.5°	55.0	56.0	54.0	56.0	54.0	55.0	54.0	54.0
60°	38.0	38.0	37.0	38.0	37.0	37.0	36.0	38.0
62.5°	26.0	26.0	26.0	26.0	26.0	25.0	26.0	26.0
65°	19.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
67.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
70°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
72.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
75°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)