

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: P219500

Luminaire Tested: **LDSQ4B15D010 EU4B10209050 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219500
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1016.5 lumens
Efficiency: N/A
Efficacy: 70.6 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

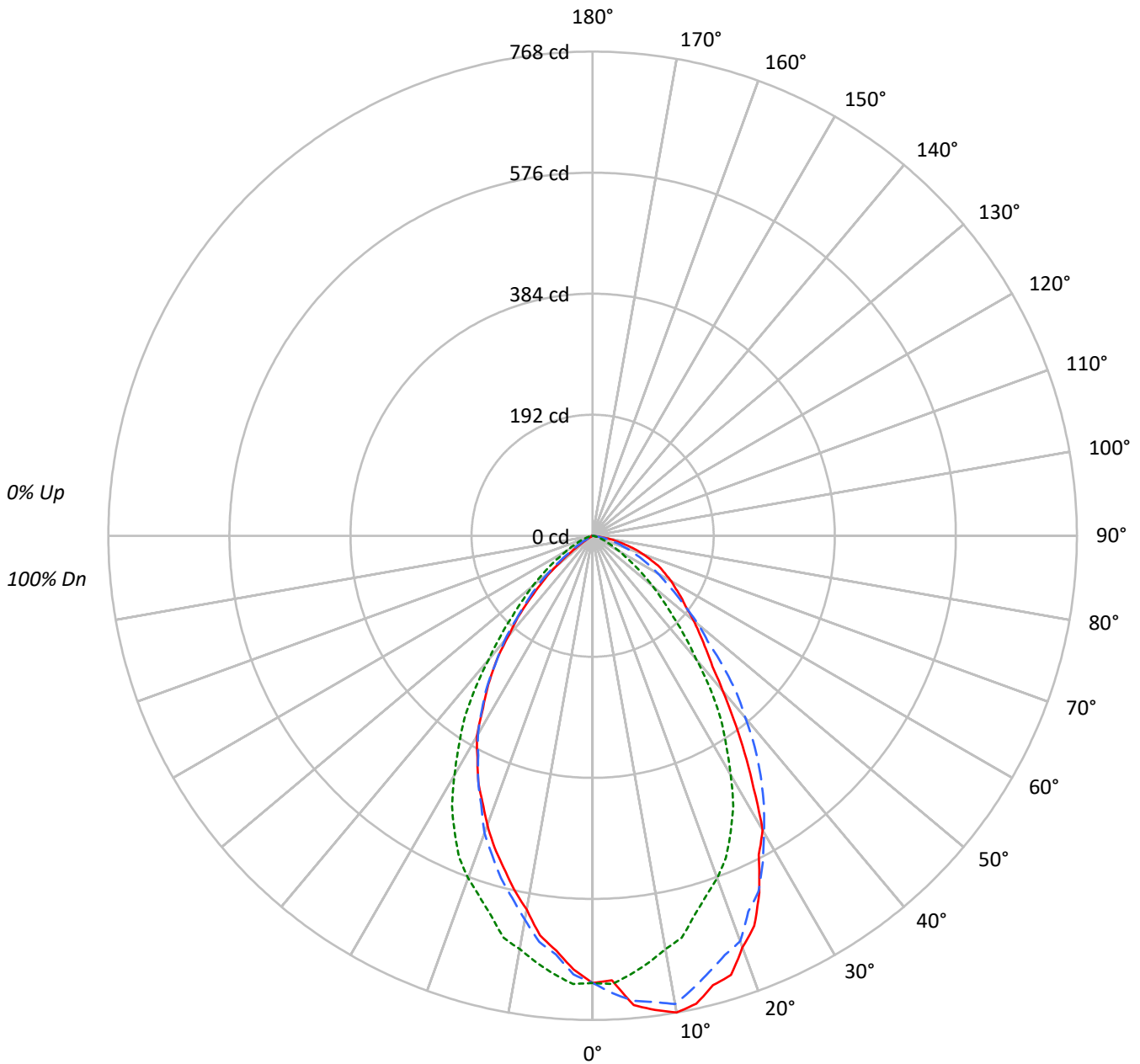
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

Luminous Intensity Polar Plot





TEST NUMBER: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53				53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48				48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44				44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41				41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38				38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	68704	68704	68704
5°	72681	67887	64250
10°	75528	65495	59219
15°	74026	62513	54660
20°	71618	59526	50320
25°	66806	55348	45899
30°	60305	48984	41087
35°	49682	41936	34095
40°	40544	32362	26241
45°	34826	24578	18879
50°	31529	18703	11921
55°	29017	13495	4307
60°	27842	9223	659
65°	26888	6235	206
70°	24076	4334	255
75°	19726	2246	0
80°	12329	948	0
85°	0	0	0



TEST NUMBER: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.4	6.5
10°-20°	179.0	17.6
20°-30°	239.0	23.5
30°-40°	226.9	22.3
40°-50°	156.8	15.4
50°-60°	86.7	8.5
60°-70°	43.0	4.2
70°-80°	17.0	1.7
80°-90°	1.6	0.2
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°	484.5	47.7
0°-40°	711.4	70.0
0°-60°	954.9	93.9
0°-90°	1016.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1016.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	709	709	709	709	709	
5°	747	741	698	667	661	72
15°	738	716	623	562	545	209
25°	625	622	518	429	429	285
35°	420	464	355	292	288	263
45°	254	292	179	147	138	198
55°	172	162	80	41	26	155
65°	117	85	27	1	1	114
75°	53	32	6	0	0	56
85°	0	1	0	0	0	5
90°	0	0	0	0	0	



TEST NUMBER: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2
2.5°	705.8	725.3	727.0	725.3	727.9	727.0	731.3	727.0	732.1	724.5	726.2
5°	747.4	739.8	755.9	747.4	747.4	746.6	744.0	743.2	746.6	735.5	740.6
7.5°	758.5	769.5	784.0	766.1	767.0	767.0	761.9	760.2	760.2	739.8	745.7
10°	767.8	761.0	768.7	761.9	767.8	767.0	770.4	759.3	767.0	755.1	754.2
12.5°	760.2	757.6	767.8	756.8	753.4	754.2	750.0	747.4	750.0	736.4	735.5
15°	738.1	740.6	755.9	744.0	742.3	740.6	735.5	727.0	733.8	715.1	716.0
17.5°	730.4	726.2	728.7	718.5	721.1	719.4	718.5	710.9	709.2	697.3	697.3
20°	694.7	704.1	704.1	697.3	697.3	696.4	685.3	692.2	684.5	681.1	684.5
22.5°	670.0	670.9	670.9	664.9	665.8	662.4	656.4	652.2	656.4	652.2	645.4
25°	625.0	626.7	636.9	625.8	624.1	627.5	622.4	619.9	619.0	608.8	622.4
27.5°	570.6	587.6	586.7	582.5	587.6	580.8	578.2	579.1	581.6	580.8	584.2
30°	539.1	541.6	544.2	540.8	541.6	539.1	539.1	539.9	546.7	544.2	543.3
32.5°	475.3	483.8	490.6	490.6	491.5	494.0	493.2	511.0	515.3	506.8	505.1
35°	420.1	426.0	432.0	432.8	443.9	444.7	445.6	450.7	462.6	465.1	464.3
37.5°	367.3	373.3	375.0	382.6	388.6	394.5	401.3	408.1	418.4	426.9	422.6
40°	320.6	323.1	327.4	330.8	342.7	342.7	346.1	359.7	370.7	377.5	376.7
42.5°	281.5	282.3	285.7	291.7	302.7	300.2	302.7	312.1	328.2	329.1	338.4
45°	254.2	253.4	255.9	256.8	263.6	267.0	268.7	275.5	289.1	290.8	291.7
47.5°	229.6	228.7	233.0	234.7	237.2	240.6	240.6	241.5	246.6	250.8	247.4
50°	209.2	209.2	209.2	210.9	215.1	214.3	215.1	218.5	221.1	219.4	218.5
52.5°	187.1	190.5	193.0	193.9	194.7	194.7	195.6	193.9	193.0	190.5	185.4
55°	171.8	175.2	175.2	175.2	175.2	178.6	174.3	175.2	175.2	168.4	161.6
57.5°	156.5	159.9	162.4	159.0	162.4	159.0	157.3	156.5	154.8	148.0	137.8
60°	143.7	145.4	144.6	143.7	145.4	142.9	141.2	137.8	136.0	126.7	119.9
62.5°	129.2	130.1	130.9	129.2	127.5	126.7	123.3	118.2	114.8	107.1	101.2
65°	117.3	114.8	113.9	113.1	111.4	108.8	106.3	100.3	97.8	91.0	85.0
67.5°	99.5	98.6	100.3	97.8	93.5	93.5	91.0	85.9	79.9	75.7	69.7
70°	85.0	84.2	82.5	79.9	79.1	75.7	75.7	69.7	68.0	60.4	55.3
72.5°	69.7	69.7	67.2	64.6	62.1	60.4	59.5	55.3	52.7	48.5	44.2
75°	52.7	52.7	51.9	49.3	47.6	45.9	45.1	41.7	39.1	34.9	32.3
77.5°	37.4	37.4	34.0	32.3	33.2	31.5	29.8	28.9	28.1	25.5	22.1
80°	22.1	21.3	18.7	19.6	18.7	18.7	17.9	17.0	15.3	13.6	11.9
82.5°	6.0	6.8	6.8	6.8	7.7	6.0	6.0	6.0	6.8	6.8	4.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9
87.5°	0.9	1.7	3.4	3.4	3.4	3.4	3.4	2.6	2.6	2.6	1.7
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: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2
2.5°	717.7	716.8	717.7	711.7	725.3	715.1	713.4	711.7	717.7	711.7	703.2
5°	733.0	724.5	721.9	719.4	727.0	715.1	712.6	713.4	709.2	698.1	699.0
7.5°	738.1	730.4	722.8	706.6	713.4	710.9	704.1	699.0	692.2	682.8	681.1
10°	739.8	731.3	720.2	715.1	704.9	701.5	699.0	690.5	681.9	665.8	661.5
12.5°	734.7	724.5	710.9	706.6	699.0	687.9	681.9	673.4	665.8	653.0	643.7
15°	712.6	704.1	699.8	685.3	681.9	675.1	663.2	651.3	640.3	623.3	618.2
17.5°	687.0	683.6	679.4	668.3	667.5	660.7	649.6	639.4	625.0	598.6	590.1
20°	660.7	660.7	647.1	642.8	651.3	637.7	629.2	619.9	590.1	577.4	562.1
22.5°	641.1	631.8	624.1	617.3	618.2	609.7	597.8	579.1	568.0	552.7	534.8
25°	602.9	606.3	589.3	586.7	589.3	569.7	563.8	548.4	532.3	517.8	504.2
27.5°	579.1	569.7	558.7	549.3	549.3	541.6	524.6	521.2	496.6	483.0	466.0
30°	543.3	536.5	527.2	513.6	511.9	505.9	492.3	483.8	458.3	437.9	428.6
32.5°	498.3	495.7	488.1	472.8	467.7	460.9	443.9	429.4	417.5	394.5	383.5
35°	466.0	456.6	440.5	427.7	423.5	411.5	397.9	387.7	375.0	354.6	340.1
37.5°	417.5	408.1	392.8	377.5	377.5	365.6	346.9	336.7	318.9	307.0	295.1
40°	375.0	363.1	347.8	329.9	327.4	310.4	302.7	285.7	274.6	255.9	254.2
42.5°	327.4	316.3	302.7	289.1	278.9	270.4	250.8	238.1	226.2	216.8	214.3
45°	284.0	269.5	257.6	240.6	230.4	220.2	207.5	199.0	189.6	179.4	173.5
47.5°	246.6	234.7	217.7	202.4	192.2	187.1	172.6	163.3	155.6	148.8	144.6
50°	208.3	193.9	184.5	167.5	165.8	153.9	142.0	134.3	130.1	124.1	118.2
52.5°	179.4	165.8	153.1	140.3	133.5	129.2	118.2	110.5	104.6	100.3	96.9
55°	151.4	139.5	129.2	116.5	112.2	106.3	93.5	91.8	85.9	79.9	75.7
57.5°	130.1	119.0	107.1	98.6	91.0	86.7	76.5	69.7	66.3	61.2	57.0
60°	110.5	98.6	89.3	79.1	75.7	69.7	62.1	56.1	51.9	47.6	43.4
62.5°	92.7	82.5	72.3	63.8	58.7	55.3	49.3	44.2	40.0	36.6	33.2
65°	76.5	67.2	58.7	50.2	47.6	43.4	39.1	34.9	31.5	27.2	23.8
67.5°	62.9	54.4	45.9	40.0	37.4	35.7	30.6	26.4	23.8	21.3	17.9
70°	49.3	43.4	36.6	31.5	28.9	26.4	23.0	20.4	17.0	15.3	12.8
72.5°	38.3	33.2	27.2	23.0	21.3	19.6	16.2	13.6	11.9	10.2	8.5
75°	27.2	23.0	19.6	15.3	14.5	13.6	11.1	9.4	7.7	6.0	5.1
77.5°	18.7	15.3	11.9	10.2	9.4	7.7	6.8	5.1	4.3	3.4	2.6
80°	10.2	7.7	6.0	5.1	4.3	3.4	3.4	2.6	1.7	1.7	0.9
82.5°	3.4	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	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: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2
2.5°	708.3	699.0	701.5	701.5	699.8	699.8	698.1	695.6	696.4	691.3	680.2
5°	700.7	688.8	687.0	688.8	681.9	680.2	676.8	681.9	666.6	672.6	665.8
7.5°	678.5	667.5	664.9	670.9	662.4	657.3	656.4	663.2	649.6	642.8	635.2
10°	653.9	649.6	642.0	637.7	635.2	636.0	629.2	620.7	618.2	616.5	609.7
12.5°	631.8	622.4	615.6	610.5	608.8	608.8	597.8	596.1	588.4	586.7	576.5
15°	605.4	594.4	590.1	583.3	577.4	580.8	568.0	564.6	562.1	551.0	552.7
17.5°	582.5	570.6	560.4	556.1	551.0	545.9	534.0	536.5	530.6	530.6	515.3
20°	552.7	539.9	532.3	523.8	523.8	517.0	508.5	509.3	501.7	494.0	480.4
22.5°	521.2	507.6	498.3	494.9	486.4	484.7	474.5	471.9	461.7	462.6	450.7
25°	488.1	474.5	461.7	462.6	454.9	451.5	445.6	433.7	429.4	424.3	420.9
27.5°	449.0	439.6	428.6	427.7	413.3	414.1	406.4	403.0	392.8	395.4	387.7
30°	413.3	399.6	389.4	386.9	380.9	379.2	367.3	362.2	363.9	357.1	352.9
32.5°	376.7	356.3	352.0	346.9	343.5	339.3	330.8	334.2	326.5	328.2	321.4
35°	328.2	319.7	308.7	308.7	305.3	301.9	295.9	299.3	291.7	288.3	281.5
37.5°	287.4	279.8	268.7	272.1	266.1	261.0	255.9	256.8	250.0	249.1	242.3
40°	243.2	238.9	231.3	231.3	227.0	227.0	224.5	221.9	217.7	212.6	204.9
42.5°	201.5	198.1	194.7	195.6	189.6	194.7	187.9	192.2	178.6	177.7	172.6
45°	170.9	163.3	164.1	160.7	157.3	159.0	153.1	154.8	147.1	145.4	140.3
47.5°	138.6	136.0	130.9	129.2	129.2	126.7	124.1	123.3	119.9	115.6	108.8
50°	113.9	104.6	102.9	100.3	98.6	98.6	95.2	90.1	91.0	86.7	79.9
52.5°	89.3	81.6	78.2	77.4	74.0	72.3	68.0	64.6	62.1	60.4	56.1
55°	68.9	62.1	57.8	57.8	52.7	52.7	46.8	44.2	40.8	37.4	34.9
57.5°	51.9	48.5	44.2	40.8	39.1	34.9	31.5	27.2	24.7	19.6	16.2
60°	39.1	35.7	31.5	28.9	27.2	23.0	18.7	15.3	9.4	7.7	6.8
62.5°	28.9	25.5	21.3	19.6	17.9	14.5	10.2	5.1	2.6	2.6	2.6
65°	21.3	17.0	13.6	11.9	10.2	7.7	3.4	1.7	0.9	0.9	0.9
67.5°	14.5	11.1	7.7	6.8	5.1	2.6	0.9	0.9	0.9	0.9	0.9
70°	9.4	6.8	3.4	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	6.0	3.4	1.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9
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: P219500

CATALOG NUMBER: LDSQ4B15D010 EU4B10209050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	709.2	709.2	709.2	709.2	709.2	709.2	709.2	709.2
2.5°	692.2	686.2	689.6	681.9	685.3	691.3	687.0	688.8
5°	668.3	664.9	660.7	649.6	658.1	664.9	661.5	660.7
7.5°	642.8	630.9	636.9	633.5	631.8	638.6	630.9	639.4
10°	616.5	608.0	607.1	601.2	601.2	606.3	607.1	602.0
12.5°	577.4	573.1	573.1	572.3	571.4	576.5	577.4	574.8
15°	549.3	547.6	543.3	542.5	537.4	545.0	545.9	545.0
17.5°	515.3	516.1	511.9	511.9	515.3	517.8	511.0	517.8
20°	492.3	488.1	486.4	478.7	483.0	487.2	487.2	488.1
22.5°	459.2	452.4	454.9	450.7	448.1	454.1	454.1	456.6
25°	421.8	421.8	423.5	420.9	422.6	426.0	423.5	429.4
27.5°	386.0	389.4	389.4	386.0	387.7	397.9	402.2	395.4
30°	352.9	353.7	356.3	354.6	359.7	363.1	362.2	367.3
32.5°	315.5	319.7	321.4	318.9	320.6	328.2	324.0	323.1
35°	286.6	278.9	278.1	278.9	282.3	284.0	282.3	288.3
37.5°	244.9	242.3	238.9	239.8	242.3	245.7	247.4	251.7
40°	204.9	201.5	201.5	200.7	198.1	207.5	207.5	207.5
42.5°	170.1	169.2	165.0	165.0	168.4	170.9	169.2	175.2
45°	139.5	136.0	133.5	133.5	136.0	136.0	138.6	137.8
47.5°	109.7	106.3	107.1	104.6	107.1	110.5	106.3	107.1
50°	82.5	82.5	80.8	82.5	81.6	82.5	80.8	79.1
52.5°	56.1	63.8	64.6	61.2	53.6	46.8	42.5	45.9
55°	32.3	28.9	28.9	28.1	26.4	25.5	23.0	25.5
57.5°	16.2	14.5	14.5	14.5	13.6	12.8	11.1	11.1
60°	6.8	6.0	6.0	5.1	4.3	3.4	2.6	3.4
62.5°	2.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
65°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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)