

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: P251530

Luminaire Tested: **LD4B20D010 EU4B10208027 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251530
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208027 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1788.0 lumens
Efficiency: N/A
Efficacy: 86.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

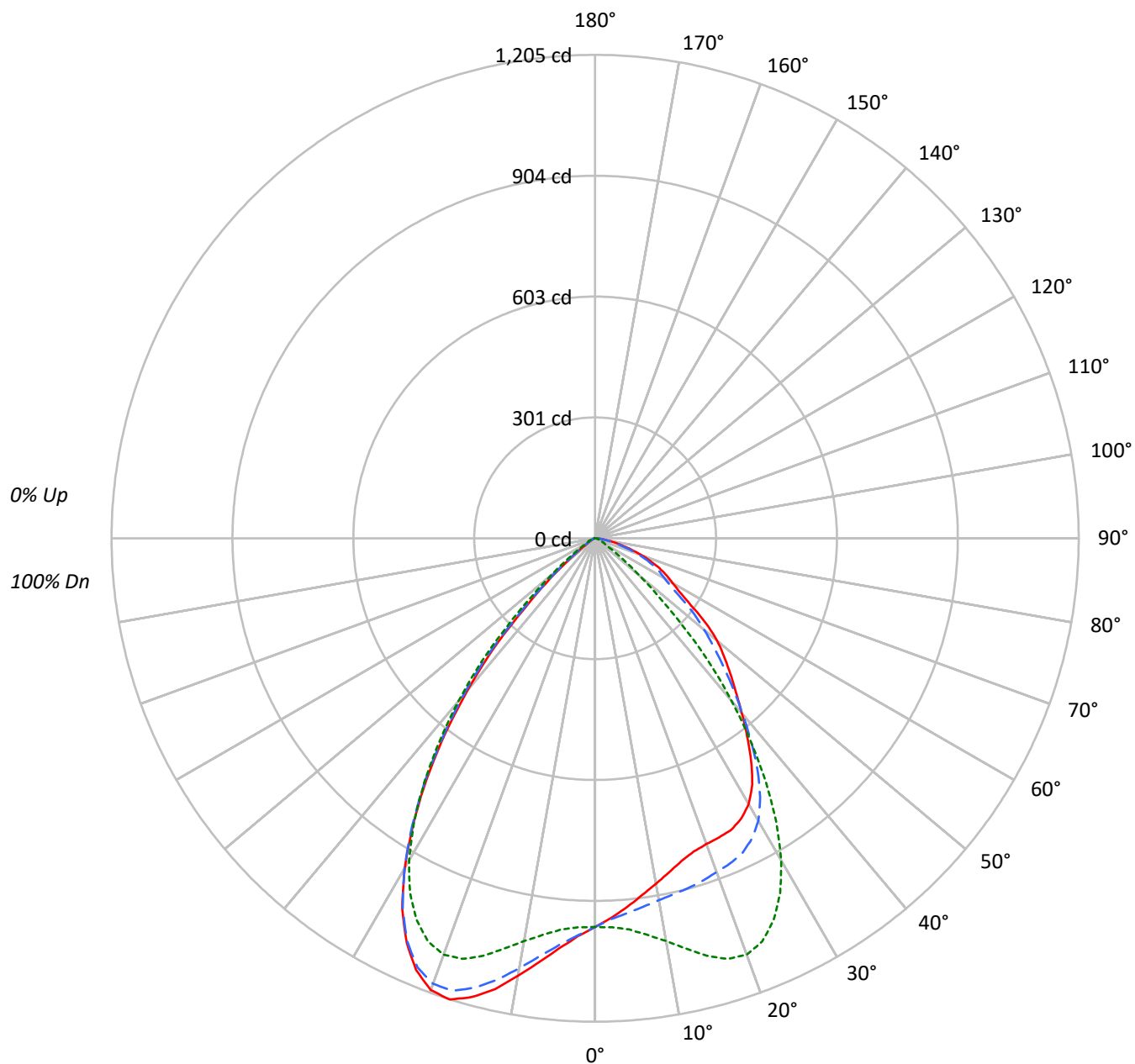
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

Luminous Intensity Polar Plot





TEST NUMBER: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	108	105	102	109	106	103	101	102	100	98		98	96	95		95
2	104	98	93	89	102	96	92	88	93	89	86		90	87	84		87
3	97	89	83	78	95	88	82	77	85	80	76		82	78	75		80
4	91	81	75	69	89	80	74	69	78	72	68		76	71	67		74
5	85	75	67	62	83	74	67	62	72	66	61		70	65	60		68
6	79	69	61	56	78	68	61	56	66	60	55		64	59	55		63
7	75	63	56	51	73	62	55	51	61	55	50		60	54	50		58
8	70	58	51	46	69	58	51	46	57	50	46		55	50	46		54
9	66	54	47	42	65	54	47	42	53	46	42		52	46	42		51
10	62	51	44	39	61	50	43	39	49	43	39		48	43	39		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	94427	94427	94427
5°	90209	95776	100354
10°	86492	100891	109531
15°	83976	108736	119451
20°	84090	114530	124237
25°	86231	113028	119555
30°	86123	104342	106762
35°	80665	88184	86982
40°	72250	67263	62759
45°	65550	42712	35036
50°	60223	21666	14965
55°	49428	9668	4944
60°	43388	5419	2709
65°	40840	4082	2052
70°	34963	3248	1795
75°	26660	2372	1431
80°	19194	1403	730
85°	14089	0	0



TEST NUMBER: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.1	5.3
10°-20°	293.3	16.4
20°-30°	453.8	25.4
30°-40°	447.1	25.0
40°-50°	274.6	15.4
50°-60°	122.1	6.8
60°-70°	68.2	3.8
70°-80°	29.5	1.7
80°-90°	5.3	0.3
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°	841.3	47.0
0°-40°	1288.4	72.1
0°-60°	1685.0	94.2
0°-90°	1788.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1788.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	969	969	969	969	969	
5°	922	937	979	1017	1026	87
15°	832	902	1078	1160	1184	236
25°	802	866	1051	1108	1112	368
35°	678	706	741	739	731	421
45°	476	452	310	271	254	368
55°	291	263	57	33	29	267
65°	177	159	18	10	9	173
75°	71	61	6	4	4	78
85°	13	10	0	0	0	16
90°	0	0	0	0	0	



TEST NUMBER: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9
2.5°	946.1	946.1	946.1	946.1	948.7	944.9	948.7	948.7	952.5	953.7	949.9
5°	922.1	920.8	922.1	922.1	924.6	923.4	927.2	929.7	934.8	937.3	937.3
7.5°	896.8	896.8	896.8	899.3	903.1	901.9	905.7	909.5	917.1	922.1	925.9
10°	874.0	872.8	876.6	877.8	881.6	881.6	888.0	891.8	900.6	910.7	915.8
12.5°	852.5	851.3	853.8	857.6	863.9	863.9	869.0	875.3	888.0	899.3	908.2
15°	832.3	833.6	837.4	839.9	847.5	847.5	853.8	861.4	875.3	889.2	901.9
17.5°	818.4	819.7	822.2	826.0	833.6	833.6	839.9	848.7	863.9	879.1	894.3
20°	810.8	812.1	814.6	818.4	824.7	826.0	831.0	841.2	855.1	871.5	885.4
22.5°	807.0	809.5	812.1	814.6	820.9	820.9	827.2	834.8	848.7	865.2	877.8
25°	801.9	804.5	805.7	809.5	814.6	814.6	818.4	827.2	839.9	853.8	866.5
27.5°	788.0	790.6	791.8	795.6	800.7	799.4	804.5	810.8	822.2	834.8	845.0
30°	765.3	766.5	769.1	770.3	774.1	774.1	777.9	784.2	791.8	803.2	813.3
32.5°	728.6	731.1	732.4	733.6	737.4	736.2	737.4	741.2	748.8	758.9	765.3
35°	678.0	683.0	683.0	685.6	686.8	685.6	685.6	690.6	694.4	702.0	705.8
37.5°	622.3	626.1	624.9	627.4	628.7	624.9	627.4	628.7	633.7	637.5	638.8
40°	567.9	569.2	569.2	569.2	569.2	567.9	569.2	570.5	574.3	574.3	570.5
42.5°	518.6	519.9	519.9	517.3	519.9	518.6	518.6	518.6	518.6	513.5	509.8
45°	475.6	476.9	476.9	475.6	475.6	473.1	471.8	470.5	466.7	460.4	451.6
47.5°	435.1	437.7	438.9	436.4	435.1	432.6	432.6	425.0	419.9	412.4	399.7
50°	397.2	399.7	399.7	397.2	397.2	393.4	389.6	387.1	379.5	370.6	355.4
52.5°	349.1	352.9	352.9	351.6	351.6	346.6	345.3	340.3	333.9	323.8	311.2
55°	290.9	296.0	294.7	293.5	290.9	290.9	290.9	287.1	283.3	275.7	263.1
57.5°	249.2	250.5	250.5	249.2	249.2	246.7	246.7	242.9	241.6	234.0	223.9
60°	222.6	222.6	223.9	222.6	221.4	220.1	218.8	216.3	212.5	207.4	199.9
62.5°	201.1	202.4	202.4	201.1	199.9	198.6	197.3	194.8	192.3	188.5	180.9
65°	177.1	179.6	178.4	177.1	175.8	174.6	174.6	172.0	169.5	167.0	159.4
67.5°	150.5	151.8	153.1	150.5	150.5	149.3	149.3	146.7	145.5	140.4	135.3
70°	122.7	124.0	124.0	122.7	122.7	121.4	121.4	120.2	118.9	115.1	110.0
72.5°	96.1	97.4	96.1	94.9	94.9	94.9	93.6	92.3	91.1	88.5	84.7
75°	70.8	70.8	72.1	70.8	69.6	69.6	68.3	68.3	65.8	64.5	60.7
77.5°	50.6	51.9	50.6	50.6	49.3	48.1	48.1	46.8	46.8	45.5	43.0
80°	34.2	34.2	35.4	34.2	32.9	34.2	32.9	31.6	31.6	30.4	27.8
82.5°	21.5	22.8	21.5	21.5	21.5	21.5	21.5	20.2	20.2	19.0	17.7
85°	12.6	12.6	12.6	12.6	12.6	12.6	12.6	11.4	11.4	11.4	10.1
87.5°	6.3	6.3	5.1	5.1	6.3	6.3	6.3	5.1	5.1	5.1	5.1
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: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9
2.5°	955.0	956.3	958.8	962.6	962.6	960.1	966.4	966.4	968.9	970.2	975.2
5°	944.9	947.4	952.5	958.8	960.1	958.8	967.6	971.4	975.2	979.0	986.6
7.5°	936.0	941.1	949.9	958.8	962.6	962.6	976.5	981.6	989.2	996.7	1005.6
10°	931.0	938.6	951.2	965.1	968.9	972.7	989.2	999.3	1009.4	1019.5	1032.2
12.5°	924.6	938.6	955.0	972.7	980.3	985.4	1008.1	1020.8	1034.7	1047.3	1063.8
15°	923.4	939.8	961.3	984.1	994.2	1001.8	1027.1	1044.8	1061.3	1077.7	1094.1
17.5°	918.3	938.6	965.1	990.4	1003.1	1013.2	1042.3	1063.8	1082.8	1099.2	1118.2
20°	912.0	934.8	963.9	991.7	1005.6	1015.7	1047.3	1067.6	1089.1	1104.3	1122.0
22.5°	903.1	925.9	955.0	982.8	995.5	1004.3	1036.0	1053.7	1072.6	1087.8	1104.3
25°	888.0	909.5	934.8	957.5	970.2	977.8	1005.6	1022.0	1036.0	1051.1	1066.3
27.5°	866.5	882.9	904.4	920.8	928.4	936.0	958.8	972.7	985.4	998.0	1008.1
30°	828.5	841.2	856.3	870.3	877.8	879.1	900.6	908.2	918.3	927.2	934.8
32.5°	777.9	788.0	796.9	804.5	809.5	810.8	827.2	829.8	839.9	839.9	851.3
35°	713.4	718.5	724.8	724.8	728.6	724.8	736.2	738.7	740.0	741.2	750.1
37.5°	640.0	642.6	646.4	638.8	638.8	635.0	638.8	641.3	636.2	636.2	642.6
40°	570.5	565.4	560.4	552.8	549.0	541.4	541.4	535.1	531.3	528.7	530.0
42.5°	503.4	492.0	480.7	464.2	456.6	449.0	441.4	432.6	430.1	423.7	419.9
45°	438.9	422.5	407.3	380.7	365.6	358.0	341.5	323.8	312.4	309.9	299.8
47.5°	384.5	360.5	335.2	303.6	288.4	274.5	250.5	235.3	220.1	212.5	206.2
50°	336.5	315.0	282.1	247.9	228.9	215.0	188.5	170.8	154.3	142.9	135.3
52.5°	294.7	270.7	240.3	201.1	182.1	167.0	137.9	117.6	103.7	92.3	83.5
55°	247.9	228.9	198.6	161.9	142.9	125.2	99.9	78.4	64.5	56.9	50.6
57.5°	213.8	197.3	168.2	132.8	115.1	98.7	73.4	55.7	44.3	36.7	32.9
60°	191.0	175.8	150.5	116.4	99.9	84.7	60.7	44.3	34.2	27.8	25.3
62.5°	172.0	156.8	134.1	102.5	88.5	73.4	51.9	36.7	27.8	22.8	19.0
65°	150.5	136.6	116.4	88.5	75.9	63.2	44.3	30.4	22.8	17.7	15.2
67.5°	127.8	115.1	97.4	73.4	63.2	53.1	35.4	25.3	19.0	15.2	12.6
70°	103.7	93.6	77.2	59.5	50.6	41.7	29.1	20.2	13.9	11.4	10.1
72.5°	79.7	70.8	59.5	45.5	37.9	31.6	21.5	15.2	11.4	8.9	7.6
75°	56.9	50.6	41.7	32.9	27.8	22.8	16.4	11.4	7.6	6.3	5.1
77.5°	39.2	35.4	29.1	22.8	19.0	16.4	11.4	7.6	6.3	5.1	3.8
80°	25.3	22.8	19.0	13.9	11.4	10.1	6.3	5.1	3.8	2.5	2.5
82.5°	15.2	13.9	11.4	7.6	6.3	5.1	3.8	2.5	2.5	1.3	1.3
85°	8.9	7.6	5.1	3.8	3.8	2.5	2.5	1.3	1.3	0.0	0.0
87.5°	3.8	2.5	2.5	1.3	1.3	1.3	1.3	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: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9
2.5°	972.7	979.0	977.8	981.6	980.3	980.3	986.6	984.1	990.4	990.4	991.7
5°	986.6	995.5	995.5	1001.8	1000.5	1003.1	1009.4	1009.4	1017.0	1019.5	1019.5
7.5°	1006.9	1018.2	1020.8	1027.1	1028.4	1033.4	1038.5	1039.7	1049.9	1052.4	1053.7
10°	1034.7	1048.6	1052.4	1058.7	1061.3	1066.3	1072.6	1075.2	1087.8	1089.1	1094.1
12.5°	1068.8	1084.0	1087.8	1095.4	1096.7	1103.0	1111.8	1114.4	1127.0	1130.8	1134.6
15°	1101.7	1115.6	1122.0	1129.6	1130.8	1138.4	1146.0	1148.5	1159.9	1165.0	1168.8
17.5°	1124.5	1140.9	1144.7	1154.9	1154.9	1161.2	1168.8	1171.3	1182.7	1186.5	1189.0
20°	1129.6	1144.7	1149.8	1157.4	1158.6	1162.4	1168.8	1171.3	1181.4	1182.7	1186.5
22.5°	1110.6	1125.8	1128.3	1135.9	1137.1	1140.9	1146.0	1144.7	1157.4	1156.1	1157.4
25°	1070.1	1084.0	1084.0	1092.9	1091.6	1095.4	1097.9	1096.7	1108.1	1108.1	1108.1
27.5°	1011.9	1024.6	1025.8	1032.2	1028.4	1029.6	1032.2	1030.9	1038.5	1038.5	1038.5
30°	939.8	949.9	946.1	951.2	948.7	951.2	948.7	947.4	949.9	952.5	951.2
32.5°	850.0	857.6	857.6	858.9	858.9	851.3	848.7	848.7	847.5	846.2	846.2
35°	746.3	752.6	750.1	750.1	748.8	741.2	737.4	734.9	738.7	731.1	736.2
37.5°	640.0	641.3	637.5	636.2	629.9	629.9	623.6	618.5	621.1	619.8	614.7
40°	523.7	528.7	521.1	518.6	522.4	517.3	511.0	504.7	509.8	503.4	506.0
42.5°	409.8	408.6	406.0	406.0	406.0	398.4	397.2	395.9	397.2	392.1	388.3
45°	296.0	292.2	288.4	288.4	283.3	280.8	280.8	277.0	270.7	270.7	263.1
47.5°	199.9	191.0	188.5	187.2	184.7	184.7	182.1	179.6	178.4	172.0	172.0
50°	130.3	121.4	118.9	117.6	118.9	116.4	113.8	111.3	108.8	107.5	105.0
52.5°	78.4	74.6	72.1	70.8	68.3	67.0	65.8	63.2	62.0	62.0	60.7
55°	46.8	43.0	37.9	37.9	37.9	36.7	35.4	34.2	32.9	32.9	31.6
57.5°	29.1	26.6	24.0	22.8	22.8	22.8	21.5	21.5	21.5	21.5	20.2
60°	21.5	19.0	17.7	17.7	17.7	16.4	16.4	16.4	16.4	15.2	15.2
62.5°	16.4	15.2	13.9	13.9	12.6	12.6	12.6	12.6	12.6	12.6	11.4
65°	13.9	11.4	11.4	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
67.5°	10.1	8.9	8.9	8.9	8.9	7.6	7.6	7.6	7.6	7.6	7.6
70°	7.6	7.6	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
72.5°	6.3	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
75°	5.1	5.1	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
77.5°	3.8	3.8	3.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	1.3	1.3	1.3	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	0.0	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: P251530

CATALOG NUMBER: LD4B20D010 EU4B10208027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	968.9	968.9	968.9	968.9	968.9	968.9	968.9	968.9
2.5°	991.7	998.0	991.7	991.7	995.5	994.2	996.7	992.9
5°	1020.8	1029.6	1023.3	1022.0	1028.4	1027.1	1028.4	1025.8
7.5°	1056.2	1065.0	1058.7	1058.7	1065.0	1063.8	1067.6	1065.0
10°	1096.7	1106.8	1097.9	1099.2	1108.1	1106.8	1106.8	1106.8
12.5°	1138.4	1148.5	1143.5	1143.5	1149.8	1151.1	1152.3	1151.1
15°	1172.6	1182.7	1176.4	1176.4	1185.2	1183.9	1185.2	1183.9
17.5°	1192.8	1202.9	1195.3	1195.3	1202.9	1202.9	1204.2	1205.4
20°	1187.7	1199.1	1192.8	1190.3	1199.1	1199.1	1197.9	1197.9
22.5°	1158.6	1168.8	1163.7	1161.2	1167.5	1165.0	1163.7	1165.0
25°	1108.1	1118.2	1108.1	1108.1	1113.1	1111.8	1113.1	1111.8
27.5°	1039.7	1047.3	1037.2	1036.0	1041.0	1038.5	1037.2	1041.0
30°	948.7	956.3	951.2	947.4	953.7	949.9	947.4	948.7
32.5°	845.0	850.0	847.5	841.2	845.0	842.4	841.2	842.4
35°	731.1	737.4	727.3	726.1	732.4	727.3	724.8	731.1
37.5°	613.5	621.1	612.2	613.5	609.7	610.9	608.4	612.2
40°	502.2	500.9	498.4	497.1	498.4	494.6	497.1	493.3
42.5°	382.0	384.5	383.3	382.0	383.3	378.2	375.7	380.7
45°	265.6	264.4	261.8	259.3	259.3	258.0	258.0	254.2
47.5°	170.8	169.5	164.4	165.7	168.2	165.7	161.9	167.0
50°	103.7	102.5	102.5	101.2	103.7	101.2	98.7	98.7
52.5°	58.2	58.2	56.9	56.9	56.9	56.9	55.7	54.4
55°	31.6	30.4	30.4	30.4	29.1	29.1	29.1	29.1
57.5°	20.2	20.2	20.2	20.2	20.2	20.2	19.0	19.0
60°	15.2	15.2	15.2	15.2	13.9	15.2	13.9	13.9
62.5°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
65°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
67.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
70°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
72.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
75°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)