

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: P251699

Luminaire Tested: **LD4B30D010 EU4B30508027 4LBLWW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251699  
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: LD4B30D010 EU4B30508027 4LBLWW1LI  
Description: PORTFOLIO 4 INCH LENS 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: 2259.0 lumens  
Efficiency: N/A  
Efficacy: 80.7 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

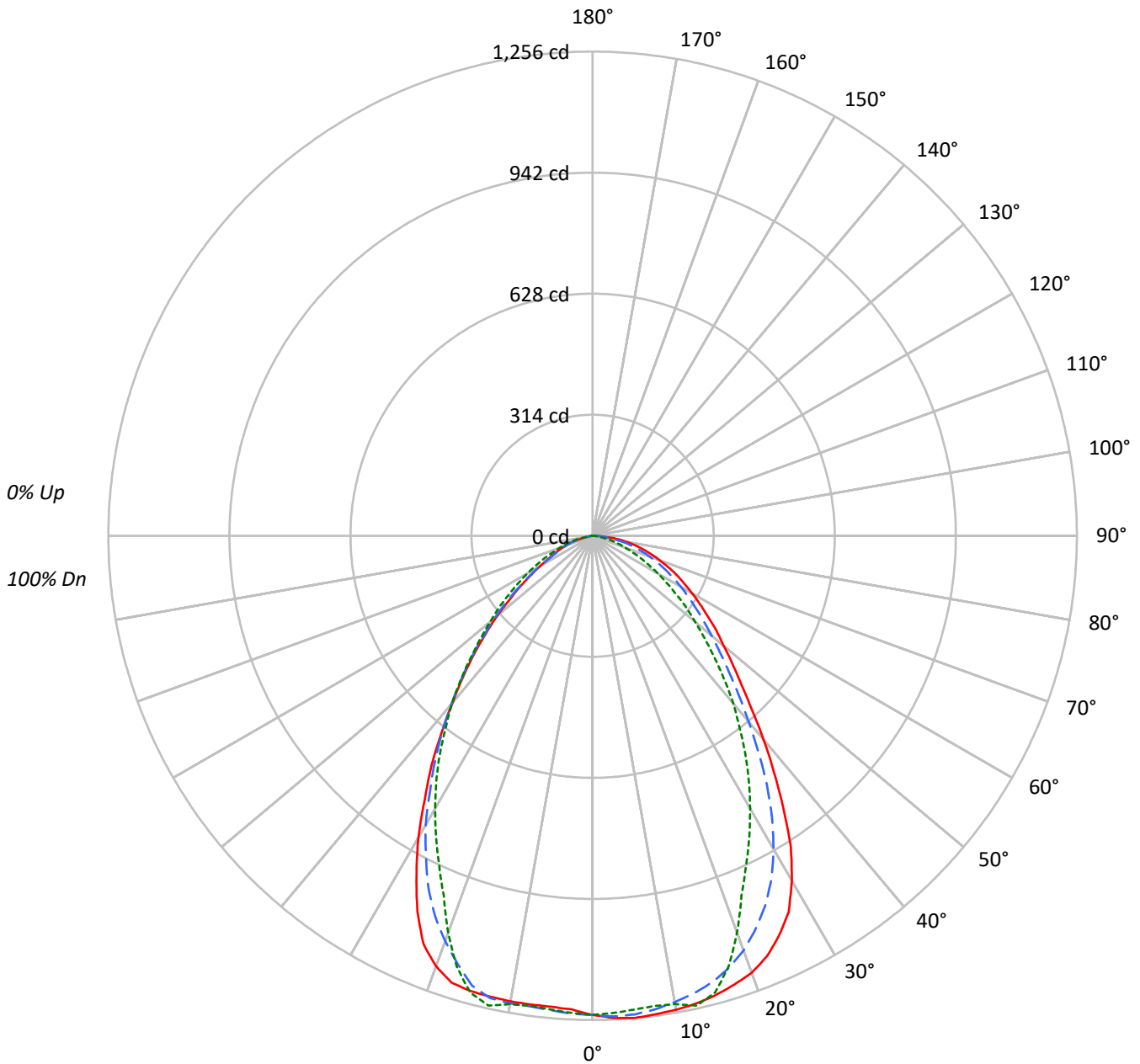
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P251699

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBLWW1LI

### Luminous Intensity Polar Plot





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**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	102	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°	121121	121121	121121
5°	122826	120693	119979
10°	123524	122089	121366
15°	124475	123739	123366
20°	125109	113586	123221
25°	123061	101307	115609
30°	116271	91873	101709
35°	102544	82164	86720
40°	87631	72097	71868
45°	75088	61526	60023
50°	67136	52490	48897
55°	61916	44891	38706
60°	57890	38009	30543
65°	55461	31524	25205
70°	52430	25446	21286
75°	50759	20597	15100
80°	49108	11225	4097
85°	42827	6150	2013



TEST NUMBER: P251699

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBLWW1LI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.1	5.2
10°-20°	339.7	15.0
20°-30°	471.1	20.9
30°-40°	465.0	20.6
40°-50°	364.8	16.1
50°-60°	252.6	11.2
60°-70°	154.8	6.9
70°-80°	77.4	3.4
80°-90°	15.5	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°	928.9	41.1
0°-40°	1393.9	61.7
0°-60°	2011.3	89.0
0°-90°	2259.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2259.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1243	1243	1243	1243	1243	
5°	1256	1246	1234	1236	1226	119
15°	1234	1199	1226	1208	1223	348
25°	1144	1059	942	1008	1075	524
35°	862	787	691	712	729	538
45°	545	499	446	441	436	426
55°	364	326	264	235	228	328
65°	240	208	137	102	109	238
75°	135	113	55	42	40	143
85°	38	22	6	2	2	44
90°	0	0	0	0	0	



TEST NUMBER: P251699

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBLWW1LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8
2.5°	1251.9	1248.2	1246.4	1251.9	1250.1	1253.7	1251.9	1250.1	1246.4	1248.2	1248.2
5°	1255.5	1250.1	1248.2	1251.9	1251.9	1255.5	1253.7	1250.1	1246.4	1248.2	1246.4
7.5°	1251.9	1248.2	1248.2	1250.1	1248.2	1251.9	1248.2	1244.6	1240.9	1242.8	1239.1
10°	1248.2	1242.8	1242.8	1242.8	1242.8	1246.4	1242.8	1237.3	1231.8	1231.8	1228.2
12.5°	1242.8	1237.3	1237.3	1239.1	1235.5	1239.1	1235.5	1226.4	1220.9	1219.1	1215.4
15°	1233.7	1228.2	1228.2	1228.2	1224.5	1226.4	1220.9	1211.8	1204.5	1204.5	1199.0
17.5°	1220.9	1215.4	1213.6	1213.6	1208.1	1210.0	1204.5	1195.4	1184.5	1180.8	1175.3
20°	1206.3	1199.0	1195.4	1195.4	1189.9	1191.7	1184.5	1173.5	1158.9	1153.5	1144.4
22.5°	1180.8	1177.2	1171.7	1169.9	1164.4	1162.6	1155.3	1140.7	1128.0	1118.9	1104.3
25°	1144.4	1142.5	1137.1	1135.3	1128.0	1124.3	1117.0	1100.6	1087.9	1073.3	1058.7
27.5°	1100.6	1093.3	1089.7	1084.2	1076.9	1075.1	1066.0	1051.4	1031.4	1022.3	1004.1
30°	1033.2	1029.6	1025.9	1020.5	1013.2	1009.5	1004.1	987.7	971.3	954.9	938.5
32.5°	956.7	949.4	943.9	945.7	936.6	933.0	923.9	909.3	894.7	883.8	865.6
35°	861.9	860.1	858.3	854.6	847.3	845.5	838.2	827.3	810.9	798.1	787.2
37.5°	772.6	767.2	763.5	763.5	756.2	756.2	750.8	738.0	728.9	719.8	705.2
40°	688.8	679.7	679.7	679.7	672.4	674.2	670.6	657.8	648.7	637.8	628.7
42.5°	610.4	606.8	605.0	601.3	597.7	597.7	594.0	586.8	577.6	570.4	561.2
45°	544.8	543.0	541.2	539.4	535.7	533.9	532.1	521.2	515.7	508.4	499.3
47.5°	492.0	488.4	486.5	484.7	481.1	479.2	475.6	468.3	462.8	455.6	448.3
50°	442.8	441.0	439.2	439.2	435.5	433.7	430.0	424.6	415.5	411.8	402.7
52.5°	404.5	400.9	397.2	397.2	393.6	393.6	388.1	382.7	373.6	369.9	362.6
55°	364.4	362.6	360.8	360.8	357.2	355.3	353.5	346.2	338.9	333.5	326.2
57.5°	329.8	328.0	326.2	326.2	322.5	320.7	318.9	313.4	306.1	302.5	293.4
60°	297.0	297.0	295.2	293.4	291.6	289.7	287.9	282.4	277.0	271.5	264.2
62.5°	267.9	266.0	264.2	262.4	262.4	260.6	258.8	251.5	247.8	242.4	235.1
65°	240.5	236.9	236.9	235.1	235.1	233.2	231.4	224.1	220.5	215.0	207.7
67.5°	211.4	209.6	207.7	207.7	205.9	205.9	204.1	198.6	193.2	189.5	182.2
70°	184.0	184.0	182.2	182.2	180.4	178.6	178.6	174.9	169.5	164.0	156.7
72.5°	160.4	158.5	156.7	156.7	154.9	154.9	153.1	149.4	145.8	142.1	133.0
75°	134.8	133.0	133.0	133.0	131.2	131.2	129.4	125.7	122.1	118.4	113.0
77.5°	111.2	111.2	109.3	109.3	107.5	107.5	107.5	103.9	100.2	96.6	89.3
80°	87.5	87.5	87.5	85.6	83.8	83.8	83.8	80.2	76.5	72.9	67.4
82.5°	63.8	62.0	62.0	60.1	58.3	58.3	58.3	54.7	52.8	47.4	43.7
85°	38.3	36.4	36.4	34.6	32.8	32.8	32.8	31.0	27.3	25.5	21.9
87.5°	14.6	14.6	14.6	14.6	14.6	12.8	12.8	10.9	10.9	9.1	9.1
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: P251699

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBLWW1LI

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8
2.5°	1248.2	1246.4	1246.4	1244.6	1246.4	1242.8	1242.8	1242.8	1242.8	1239.1	1239.1
5°	1244.6	1244.6	1242.8	1240.9	1242.8	1239.1	1240.9	1239.1	1239.1	1233.7	1233.7
7.5°	1237.3	1235.5	1231.8	1230.0	1231.8	1230.0	1230.0	1230.0	1233.7	1230.0	1230.0
10°	1224.5	1222.7	1219.1	1217.3	1217.3	1215.4	1219.1	1222.7	1230.0	1233.7	1240.9
12.5°	1211.8	1208.1	1206.3	1206.3	1208.1	1208.1	1215.4	1224.5	1242.8	1248.2	1255.5
15°	1195.4	1193.6	1193.6	1199.0	1206.3	1211.8	1226.4	1231.8	1233.7	1226.4	1222.7
17.5°	1173.5	1173.5	1175.3	1180.8	1186.3	1186.3	1188.1	1184.5	1180.8	1171.7	1160.8
20°	1137.1	1135.3	1131.6	1131.6	1131.6	1124.3	1128.0	1115.2	1106.1	1095.2	1078.8
22.5°	1091.5	1082.4	1069.7	1060.5	1055.1	1051.4	1042.3	1027.7	1016.8	1009.5	1002.2
25°	1042.3	1027.7	1009.5	994.9	985.8	984.0	971.3	958.5	951.2	942.1	938.5
27.5°	985.8	969.4	947.6	933.0	925.7	920.2	909.3	896.5	887.4	880.1	874.7
30°	920.2	903.8	885.6	867.4	860.1	851.0	840.1	830.9	821.8	816.4	812.7
32.5°	847.3	830.9	812.7	800.0	790.9	783.6	774.5	765.3	758.1	754.4	750.8
35°	772.6	756.2	741.6	728.9	721.6	716.1	708.8	697.9	692.4	690.6	687.0
37.5°	692.4	681.5	668.8	657.8	652.4	645.1	641.4	632.3	632.3	625.0	625.0
40°	617.7	610.4	597.7	588.6	584.9	579.5	574.0	570.4	568.5	566.7	564.9
42.5°	552.1	541.2	533.9	526.6	521.2	517.5	517.5	512.0	510.2	504.8	502.9
45°	492.0	486.5	473.8	468.3	466.5	461.0	459.2	455.6	450.1	446.4	444.6
47.5°	439.2	433.7	426.4	419.1	415.5	411.8	408.2	402.7	399.1	393.6	391.8
50°	395.4	386.3	379.0	373.6	368.1	366.3	362.6	355.3	351.7	346.2	346.2
52.5°	355.3	348.0	338.9	333.5	328.0	324.4	318.9	313.4	308.0	306.1	300.7
55°	320.7	311.6	302.5	295.2	289.7	284.3	282.4	275.2	267.9	264.2	260.6
57.5°	287.9	278.8	267.9	258.8	255.1	251.5	246.0	238.7	233.2	227.8	224.1
60°	255.1	247.8	236.9	227.8	224.1	218.7	213.2	205.9	200.4	195.0	191.3
62.5°	227.8	216.8	207.7	198.6	193.2	189.5	182.2	176.8	169.5	164.0	158.5
65°	200.4	189.5	180.4	171.3	167.6	162.2	156.7	149.4	142.1	136.7	129.4
67.5°	173.1	164.0	154.9	145.8	142.1	138.5	131.2	123.9	116.6	111.2	103.9
70°	149.4	140.3	131.2	123.9	120.3	116.6	109.3	102.0	96.6	89.3	83.8
72.5°	127.6	120.3	111.2	103.9	100.2	96.6	89.3	83.8	76.5	72.9	67.4
75°	105.7	98.4	91.1	83.8	80.2	76.5	71.1	65.6	60.1	54.7	51.0
77.5°	83.8	76.5	69.2	63.8	60.1	58.3	52.8	47.4	41.9	38.3	32.8
80°	62.0	54.7	49.2	43.7	40.1	38.3	32.8	29.2	25.5	20.0	18.2
82.5°	38.3	32.8	29.2	25.5	23.7	21.9	18.2	14.6	12.8	10.9	9.1
85°	20.0	18.2	14.6	12.8	10.9	10.9	9.1	7.3	5.5	5.5	3.6
87.5°	7.3	5.5	5.5	3.6	3.6	3.6	3.6	1.8	1.8	1.8	1.8
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: P251699

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBLWW1LI

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8
2.5°	1235.5	1237.3	1239.1	1240.9	1239.1	1239.1	1242.8	1235.5	1240.9	1240.9	1233.7
5°	1231.8	1235.5	1233.7	1237.3	1233.7	1233.7	1235.5	1231.8	1235.5	1235.5	1230.0
7.5°	1228.2	1231.8	1231.8	1233.7	1231.8	1231.8	1233.7	1228.2	1231.8	1231.8	1226.4
10°	1244.6	1248.2	1246.4	1244.6	1239.1	1235.5	1237.3	1228.2	1231.8	1231.8	1226.4
12.5°	1250.1	1248.2	1240.9	1237.3	1233.7	1230.0	1231.8	1224.5	1228.2	1228.2	1224.5
15°	1213.6	1210.0	1204.5	1206.3	1202.7	1200.9	1204.5	1200.9	1208.1	1211.8	1208.1
17.5°	1151.7	1149.8	1146.2	1146.2	1146.2	1148.0	1153.5	1153.5	1164.4	1171.7	1175.3
20°	1071.5	1069.7	1071.5	1075.1	1076.9	1084.2	1097.0	1104.3	1118.9	1131.6	1140.7
22.5°	998.6	1002.2	1007.7	1015.0	1016.8	1025.9	1042.3	1049.6	1067.8	1082.4	1091.5
25°	936.6	942.1	945.7	951.2	953.0	964.0	978.5	987.7	1007.7	1018.6	1029.6
27.5°	874.7	882.0	883.8	891.1	891.1	902.0	914.8	923.9	936.6	947.6	956.7
30°	814.5	816.4	821.8	823.7	827.3	838.2	845.5	851.0	865.6	871.0	876.5
32.5°	748.9	756.2	759.9	761.7	759.9	769.0	776.3	779.9	785.4	792.7	796.3
35°	687.0	690.6	692.4	696.1	697.9	699.7	703.4	705.2	712.5	714.3	716.1
37.5°	625.0	630.5	628.7	630.5	630.5	632.3	636.0	634.1	639.6	641.4	639.6
40°	563.1	563.1	566.7	564.9	566.7	564.9	568.5	568.5	568.5	570.4	568.5
42.5°	501.1	502.9	501.1	504.8	501.1	502.9	502.9	501.1	502.9	501.1	501.1
45°	444.6	444.6	444.6	444.6	441.0	441.0	444.6	442.8	441.0	439.2	437.3
47.5°	390.0	391.8	388.1	390.0	388.1	386.3	384.5	384.5	382.7	379.0	377.2
50°	344.4	340.8	338.9	340.8	338.9	337.1	335.3	331.6	329.8	326.2	324.4
52.5°	298.8	295.2	291.6	291.6	289.7	286.1	284.3	280.6	278.8	275.2	275.2
55°	258.8	255.1	251.5	249.6	246.0	242.4	240.5	236.9	235.1	231.4	227.8
57.5°	220.5	215.0	211.4	209.6	207.7	202.3	200.4	196.8	193.2	189.5	187.7
60°	185.9	180.4	174.9	173.1	171.3	165.8	164.0	158.5	156.7	153.1	151.2
62.5°	153.1	149.4	142.1	140.3	136.7	133.0	127.6	125.7	123.9	125.7	125.7
65°	123.9	118.4	113.0	111.2	107.5	103.9	102.0	100.2	102.0	102.0	103.9
67.5°	98.4	92.9	87.5	87.5	85.6	82.0	82.0	82.0	83.8	83.8	85.6
70°	78.4	74.7	71.1	69.2	69.2	67.4	69.2	69.2	71.1	71.1	71.1
72.5°	62.0	60.1	58.3	56.5	56.5	56.5	56.5	56.5	56.5	56.5	58.3
75°	47.4	45.6	43.7	43.7	41.9	41.9	41.9	41.9	41.9	41.9	40.1
77.5°	31.0	29.2	27.3	27.3	25.5	23.7	23.7	21.9	21.9	21.9	21.9
80°	16.4	14.6	12.8	10.9	10.9	9.1	9.1	9.1	9.1	7.3	7.3
82.5°	7.3	5.5	5.5	5.5	5.5	3.6	3.6	3.6	3.6	3.6	3.6
85°	3.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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: P251699

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBLWW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8	1242.8
2.5°	1237.3	1233.7	1237.3	1239.1	1235.5	1233.7	1237.3	1230.0
5°	1235.5	1230.0	1231.8	1233.7	1230.0	1228.2	1231.8	1226.4
7.5°	1231.8	1230.0	1231.8	1233.7	1228.2	1228.2	1231.8	1226.4
10°	1231.8	1228.2	1230.0	1233.7	1230.0	1230.0	1233.7	1226.4
12.5°	1230.0	1224.5	1230.0	1231.8	1228.2	1228.2	1231.8	1224.5
15°	1217.3	1217.3	1219.1	1222.7	1220.9	1222.7	1228.2	1222.7
17.5°	1189.9	1193.6	1200.9	1206.3	1210.0	1213.6	1219.1	1215.4
20°	1157.1	1162.6	1171.7	1177.2	1184.5	1186.3	1195.4	1188.1
22.5°	1106.1	1117.0	1124.3	1129.8	1135.3	1140.7	1148.0	1146.2
25°	1044.1	1051.4	1056.9	1062.4	1069.7	1073.3	1076.9	1075.1
27.5°	969.4	973.1	980.4	984.0	987.7	991.3	998.6	989.5
30°	887.4	889.3	892.9	898.4	898.4	902.0	905.7	903.8
32.5°	803.6	803.6	807.3	810.9	809.1	810.9	818.2	809.1
35°	721.6	719.8	725.2	727.1	727.1	725.2	730.7	728.9
37.5°	641.4	643.2	645.1	646.9	643.2	646.9	646.9	643.2
40°	568.5	566.7	570.4	572.2	570.4	572.2	572.2	564.9
42.5°	502.9	499.3	501.1	502.9	501.1	502.9	501.1	497.5
45°	439.2	437.3	437.3	439.2	435.5	435.5	435.5	435.5
47.5°	379.0	377.2	379.0	379.0	375.4	375.4	377.2	375.4
50°	324.4	322.5	322.5	322.5	320.7	320.7	322.5	322.5
52.5°	275.2	271.5	271.5	271.5	271.5	271.5	273.3	269.7
55°	226.0	226.0	226.0	226.0	227.8	227.8	227.8	227.8
57.5°	185.9	187.7	187.7	189.5	187.7	189.5	189.5	187.7
60°	154.9	153.1	154.9	154.9	156.7	156.7	156.7	156.7
62.5°	127.6	127.6	127.6	129.4	129.4	129.4	131.2	129.4
65°	105.7	105.7	107.5	107.5	107.5	109.3	109.3	109.3
67.5°	87.5	87.5	87.5	87.5	89.3	89.3	91.1	89.3
70°	72.9	72.9	72.9	72.9	72.9	74.7	74.7	74.7
72.5°	58.3	58.3	58.3	58.3	60.1	60.1	60.1	60.1
75°	40.1	40.1	40.1	41.9	40.1	40.1	40.1	40.1
77.5°	20.0	20.0	20.0	20.0	20.0	18.2	18.2	18.2
80°	7.3	7.3	7.3	7.3	7.3	7.3	5.5	7.3
82.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	1.8
85°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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)