

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: P251627

Luminaire Tested: **LD4B30D010 EU4B30509027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251627
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: LD4B30D010 EU4B30509027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2127.0 lumens
Efficiency: N/A
Efficacy: 76.0 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

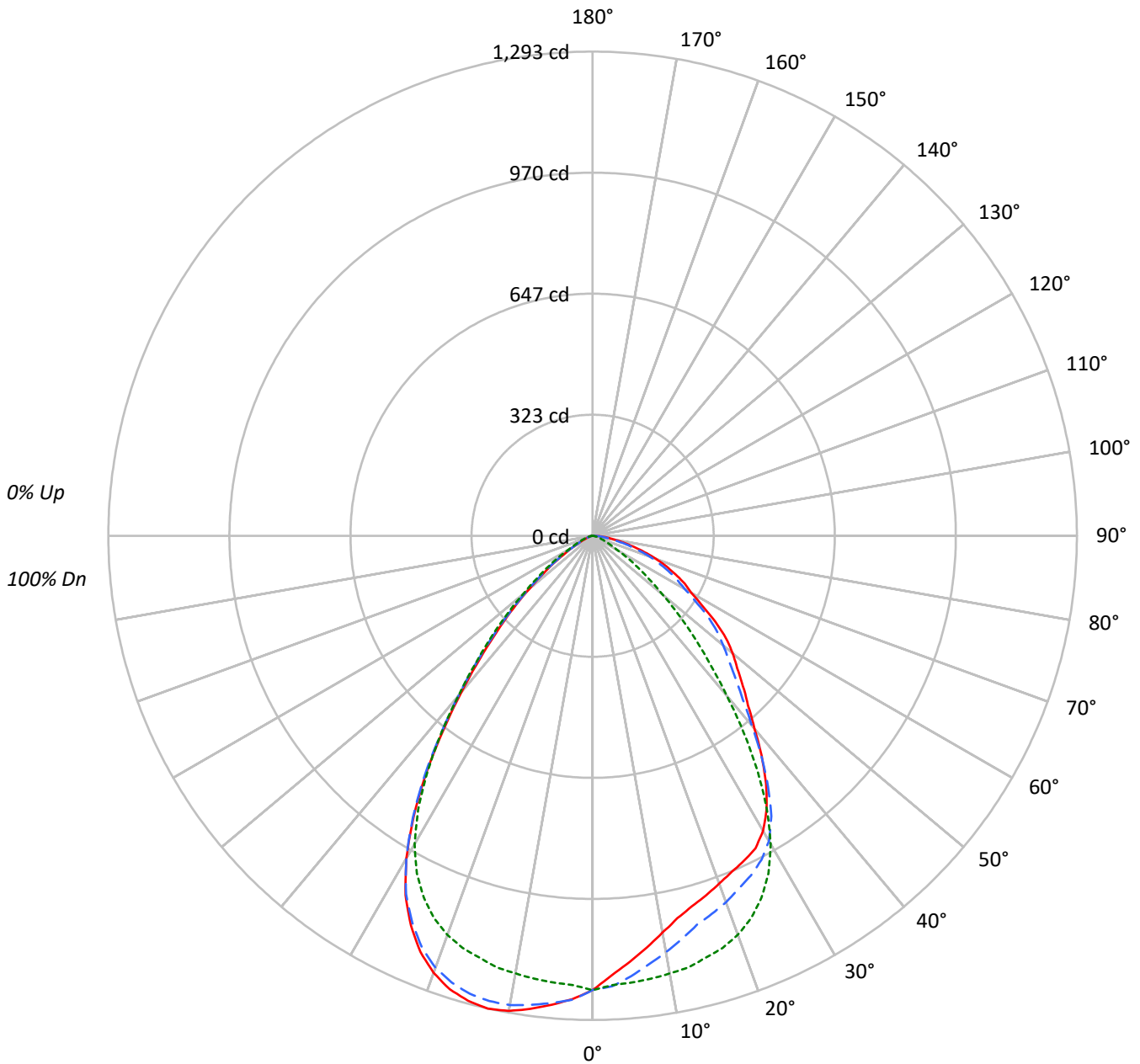
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	118256	118256	118256
5°	111673	117181	122992
10°	106463	117448	127512
15°	103338	117695	129692
20°	102499	117579	128770
25°	102909	114673	123426
30°	102418	106987	111916
35°	96000	91349	92277
40°	85544	70825	69234
45°	78230	52801	49562
50°	73974	36980	33432
55°	68016	24977	20984
60°	59430	14638	11578
65°	56245	9386	6480
70°	51234	6696	4018
75°	42399	4707	2937
80°	33338	2638	1740
85°	29744	1789	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.6	5.4
10°-20°	328.9	15.5
20°-30°	487.6	22.9
30°-40°	488.2	23.0
40°-50°	341.2	16.0
50°-60°	203.0	9.5
60°-70°	106.0	5.0
70°-80°	47.1	2.2
80°-90°	10.3	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°	931.1	43.8
0°-40°	1419.4	66.7
0°-60°	1963.7	92.3
0°-90°	2127.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2127.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1213	1213	1213	1213	1213	
5°	1142	1181	1198	1252	1257	107
15°	1024	1076	1166	1267	1285	290
25°	957	1001	1066	1140	1148	441
35°	807	816	768	782	776	500
45°	568	540	383	371	360	441
55°	400	375	147	128	124	355
65°	244	224	41	30	28	241
75°	113	98	12	8	8	122
85°	27	20	2	2	0	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4
2.5°	1174.3	1188.4	1174.3	1179.0	1197.8	1180.6	1190.0	1190.0	1185.3	1196.2	1204.0
5°	1141.5	1155.6	1141.5	1147.8	1168.1	1150.9	1161.8	1158.7	1160.3	1169.6	1180.6
7.5°	1108.7	1119.6	1107.1	1114.9	1133.7	1119.6	1129.0	1129.0	1130.6	1144.6	1154.0
10°	1075.8	1085.2	1075.8	1082.1	1102.4	1089.9	1096.1	1097.7	1102.4	1114.9	1129.0
12.5°	1046.1	1053.9	1044.5	1053.9	1071.1	1058.6	1066.4	1068.0	1072.7	1086.8	1102.4
15°	1024.2	1032.0	1022.7	1030.5	1046.1	1036.7	1043.0	1046.1	1049.2	1061.7	1075.8
17.5°	1007.0	1013.3	1005.5	1014.8	1027.3	1016.4	1025.8	1025.8	1030.5	1043.0	1058.6
20°	988.3	994.5	988.3	996.1	1010.1	1000.8	1008.6	1008.6	1013.3	1027.3	1041.4
22.5°	971.1	974.2	971.1	977.3	991.4	983.6	988.3	989.8	994.5	1007.0	1019.5
25°	957.0	963.2	960.1	966.4	975.7	967.9	972.6	974.2	978.9	989.8	1000.8
27.5°	941.3	944.5	941.3	949.2	957.0	950.7	955.4	953.9	957.0	966.4	975.7
30°	910.1	913.2	913.2	917.9	924.1	921.0	925.7	921.0	924.1	932.0	941.3
32.5°	864.7	866.3	867.9	872.5	877.2	872.5	875.7	875.7	875.7	881.9	888.2
35°	806.9	810.0	808.4	811.6	816.2	814.7	814.7	813.1	810.0	813.1	816.2
37.5°	741.2	736.5	736.5	741.2	744.3	738.1	741.2	738.1	738.1	739.6	739.6
40°	672.4	667.7	672.4	674.0	675.5	672.4	670.8	667.7	663.0	664.6	661.4
42.5°	614.5	611.4	613.0	613.0	614.5	611.4	613.0	606.7	602.0	598.9	594.2
45°	567.6	562.9	567.6	564.5	564.5	562.9	561.4	558.2	552.0	547.3	539.5
47.5°	523.8	523.8	525.4	525.4	525.4	522.3	522.3	516.0	509.8	503.5	492.6
50°	487.9	484.7	491.0	491.0	486.3	484.7	486.3	478.5	473.8	466.0	455.0
52.5°	448.8	448.8	450.3	450.3	448.8	445.7	447.2	441.0	436.3	428.5	417.5
55°	400.3	397.2	401.9	401.9	400.3	398.7	400.3	395.6	390.9	384.7	375.3
57.5°	345.6	344.0	347.1	348.7	345.6	345.6	347.1	342.4	340.9	334.6	325.2
60°	304.9	303.4	306.5	308.0	304.9	304.9	304.9	298.7	295.5	289.3	283.0
62.5°	276.8	275.2	278.3	276.8	275.2	273.6	275.2	269.0	265.8	259.6	253.3
65°	243.9	245.5	247.1	247.1	245.5	243.9	243.9	240.8	237.7	231.4	223.6
67.5°	212.7	212.7	214.2	215.8	214.2	214.2	214.2	209.5	206.4	201.7	192.3
70°	179.8	178.3	183.0	183.0	179.8	181.4	179.8	178.3	175.1	168.9	161.1
72.5°	145.4	145.4	147.0	147.0	145.4	145.4	145.4	143.9	139.2	136.0	128.2
75°	112.6	112.6	114.1	115.7	112.6	112.6	114.1	111.0	107.9	103.2	98.5
77.5°	84.4	82.9	84.4	84.4	82.9	82.9	82.9	81.3	79.7	75.1	70.4
80°	59.4	57.9	59.4	59.4	59.4	57.9	57.9	56.3	56.3	53.2	48.5
82.5°	40.7	39.1	40.7	40.7	40.7	39.1	39.1	39.1	37.5	36.0	32.8
85°	26.6	25.0	25.0	26.6	25.0	25.0	25.0	25.0	23.5	21.9	20.3
87.5°	12.5	12.5	12.5	12.5	12.5	12.5	12.5	10.9	10.9	10.9	9.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4
2.5°	1197.8	1194.7	1204.0	1200.9	1202.5	1194.7	1207.2	1200.9	1208.7	1200.9	1216.6
5°	1177.5	1174.3	1188.4	1186.8	1188.4	1182.2	1196.2	1194.7	1204.0	1197.8	1215.0
7.5°	1155.6	1152.4	1168.1	1169.6	1172.8	1166.5	1185.3	1185.3	1194.7	1193.1	1211.9
10°	1130.6	1132.1	1147.8	1150.9	1157.1	1154.0	1171.2	1175.9	1188.4	1186.8	1210.3
12.5°	1107.1	1107.1	1127.4	1133.7	1138.4	1136.8	1157.1	1163.4	1177.5	1180.6	1202.5
15°	1083.6	1085.2	1104.0	1113.3	1119.6	1118.0	1139.9	1147.8	1165.0	1166.5	1193.1
17.5°	1064.9	1063.3	1083.6	1091.5	1100.8	1099.3	1122.7	1132.1	1149.3	1154.0	1179.0
20°	1049.2	1047.7	1066.4	1075.8	1082.1	1080.5	1104.0	1114.9	1130.6	1133.7	1158.7
22.5°	1030.5	1027.3	1046.1	1053.9	1060.2	1058.6	1078.9	1086.8	1102.4	1105.5	1129.0
25°	1008.6	1005.5	1022.7	1027.3	1032.0	1028.9	1046.1	1050.8	1063.3	1066.4	1089.9
27.5°	983.6	975.7	989.8	989.8	992.9	988.3	1000.8	1005.5	1016.4	1016.4	1038.3
30°	944.5	933.5	941.3	939.8	941.3	935.1	942.9	944.5	952.3	950.7	966.4
32.5°	889.7	874.1	878.8	874.1	869.4	860.0	869.4	866.3	872.5	866.3	880.4
35°	814.7	799.0	797.5	791.2	786.5	778.7	778.7	770.9	772.5	767.8	777.2
37.5°	733.4	713.0	709.9	697.4	689.6	680.2	680.2	674.0	666.1	663.0	670.8
40°	653.6	631.7	623.9	603.6	595.8	586.4	580.1	572.3	569.2	556.7	562.9
42.5°	584.8	561.4	544.2	522.3	514.5	500.4	491.0	481.6	476.9	462.9	469.1
45°	527.0	498.8	480.1	451.9	441.0	425.3	411.3	400.3	389.4	383.1	380.0
47.5°	478.5	448.8	423.8	392.5	375.3	361.2	342.4	331.5	317.4	309.6	304.9
50°	437.8	405.0	376.9	340.9	323.7	308.0	286.2	269.0	256.4	243.9	240.8
52.5°	401.9	367.5	336.2	295.5	275.2	256.4	233.0	214.2	203.3	189.2	187.6
55°	359.6	329.9	295.5	253.3	233.0	214.2	189.2	170.4	156.4	147.0	143.9
57.5°	314.3	286.2	253.3	211.1	190.8	170.4	147.0	129.8	117.3	109.5	107.9
60°	272.1	245.5	214.2	172.0	151.7	134.5	109.5	92.3	81.3	75.1	71.9
62.5°	240.8	215.8	186.1	147.0	128.2	111.0	87.6	71.9	62.5	56.3	53.2
65°	211.1	186.1	159.5	123.5	107.9	92.3	70.4	56.3	46.9	40.7	37.5
67.5°	179.8	157.9	132.9	103.2	87.6	75.1	56.3	43.8	36.0	31.3	28.1
70°	148.6	128.2	107.9	82.9	71.9	59.4	43.8	34.4	26.6	23.5	20.3
72.5°	117.3	101.6	84.4	64.1	54.7	46.9	34.4	25.0	20.3	17.2	14.1
75°	87.6	76.6	62.5	48.5	40.7	34.4	25.0	18.8	15.6	12.5	10.9
77.5°	62.5	53.2	43.8	32.8	29.7	25.0	17.2	14.1	10.9	7.8	6.3
80°	42.2	37.5	29.7	23.5	18.8	17.2	12.5	9.4	6.3	4.7	4.7
82.5°	28.1	23.5	18.8	14.1	12.5	10.9	7.8	6.3	4.7	3.1	3.1
85°	17.2	14.1	10.9	7.8	7.8	6.3	4.7	3.1	1.6	1.6	1.6
87.5°	7.8	6.3	4.7	3.1	3.1	1.6	1.6	1.6	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4
2.5°	1229.1	1219.7	1213.4	1221.2	1224.4	1219.7	1224.4	1232.2	1240.0	1241.6	1219.7
5°	1230.6	1221.2	1218.1	1227.5	1229.1	1227.5	1232.2	1243.1	1252.5	1255.6	1233.8
7.5°	1230.6	1224.4	1222.8	1233.8	1235.3	1233.8	1241.6	1254.1	1263.5	1269.7	1247.8
10°	1227.5	1224.4	1225.9	1235.3	1238.4	1238.4	1249.4	1263.5	1272.8	1279.1	1257.2
12.5°	1222.8	1222.8	1222.8	1233.8	1236.9	1238.4	1247.8	1266.6	1272.8	1282.2	1260.3
15°	1215.0	1215.0	1215.0	1225.9	1230.6	1230.6	1241.6	1258.8	1266.6	1276.0	1254.1
17.5°	1200.9	1200.9	1202.5	1211.9	1216.6	1216.6	1227.5	1246.3	1251.0	1261.9	1240.0
20°	1180.6	1180.6	1182.2	1191.5	1196.2	1193.1	1207.2	1222.8	1227.5	1236.9	1215.0
22.5°	1150.9	1150.9	1150.9	1160.3	1163.4	1161.8	1175.9	1190.0	1190.0	1202.5	1179.0
25°	1107.1	1110.2	1107.1	1116.5	1119.6	1118.0	1130.6	1143.1	1139.9	1154.0	1130.6
27.5°	1053.9	1052.4	1052.4	1060.2	1060.2	1058.6	1068.0	1082.1	1078.9	1088.3	1066.4
30°	980.4	985.1	977.3	988.3	983.6	980.4	986.7	999.2	994.5	1002.3	985.1
32.5°	896.0	889.7	889.7	889.7	892.9	885.1	891.3	897.6	892.9	900.7	881.9
35°	785.0	786.5	781.8	783.4	785.0	775.6	781.8	788.1	781.8	786.5	769.3
37.5°	674.0	675.5	664.6	670.8	664.6	661.4	667.7	670.8	664.6	669.3	650.5
40°	562.9	559.8	558.2	558.2	559.8	552.0	556.7	561.4	556.7	559.8	542.6
42.5°	466.0	464.4	461.3	462.9	458.2	456.6	458.2	462.9	458.2	461.3	448.8
45°	381.5	378.4	373.7	375.3	375.3	367.5	372.2	375.3	370.6	372.2	361.2
47.5°	303.4	298.7	298.7	297.1	297.1	294.0	298.7	297.1	292.4	295.5	284.6
50°	236.1	233.0	233.0	233.0	233.0	228.3	229.9	233.0	228.3	228.3	222.0
52.5°	184.5	179.8	176.7	176.7	176.7	175.1	175.1	176.7	172.0	172.0	170.4
55°	139.2	137.6	132.9	132.9	132.9	128.2	129.8	129.8	128.2	128.2	123.5
57.5°	103.2	98.5	95.4	95.4	92.3	92.3	90.7	92.3	89.1	89.1	86.0
60°	68.8	65.7	64.1	62.5	62.5	61.0	62.5	61.0	61.0	59.4	57.9
62.5°	50.0	46.9	43.8	43.8	43.8	42.2	42.2	42.2	42.2	42.2	40.7
65°	36.0	32.8	32.8	31.3	31.3	29.7	29.7	29.7	29.7	29.7	28.1
67.5°	25.0	23.5	21.9	21.9	21.9	21.9	21.9	21.9	20.3	20.3	20.3
70°	18.8	17.2	15.6	15.6	15.6	15.6	15.6	14.1	15.6	15.6	14.1
72.5°	12.5	12.5	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
75°	9.4	9.4	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
77.5°	6.3	6.3	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
80°	4.7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
82.5°	3.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	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: P251627

CATALOG NUMBER: LD4B30D010 EU4B30509027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4	1213.4
2.5°	1243.1	1241.6	1238.4	1243.1	1230.6	1225.9	1224.4	1238.4
5°	1260.3	1257.2	1257.2	1261.9	1247.8	1244.7	1241.6	1257.2
7.5°	1276.0	1272.8	1272.8	1277.5	1265.0	1261.9	1258.8	1274.4
10°	1285.4	1285.4	1285.4	1288.5	1277.5	1274.4	1272.8	1288.5
12.5°	1290.0	1290.0	1288.5	1294.7	1280.7	1280.7	1277.5	1293.2
15°	1283.8	1283.8	1283.8	1288.5	1276.0	1272.8	1272.8	1285.4
17.5°	1268.2	1268.2	1266.6	1271.3	1257.2	1257.2	1255.6	1269.7
20°	1244.7	1244.7	1241.6	1247.8	1233.8	1229.1	1227.5	1241.6
22.5°	1207.2	1205.6	1204.0	1207.2	1194.7	1191.5	1190.0	1202.5
25°	1158.7	1157.1	1154.0	1157.1	1143.1	1138.4	1138.4	1147.8
27.5°	1089.9	1089.9	1085.2	1089.9	1074.3	1072.7	1071.1	1082.1
30°	1005.5	999.2	996.1	1002.3	986.7	986.7	983.6	994.5
32.5°	900.7	894.4	892.9	896.0	881.9	877.2	883.5	889.7
35°	780.3	781.8	775.6	775.6	763.1	764.6	766.2	775.6
37.5°	664.6	661.4	659.9	661.4	652.1	648.9	645.8	655.2
40°	556.7	548.9	547.3	547.3	539.5	537.9	539.5	544.2
42.5°	455.0	453.5	447.2	450.3	442.5	445.7	444.1	444.1
45°	367.5	369.0	362.8	367.5	361.2	356.5	356.5	359.6
47.5°	290.8	290.8	289.3	289.3	284.6	286.2	283.0	287.7
50°	225.2	225.2	222.0	223.6	220.5	220.5	218.9	220.5
52.5°	172.0	170.4	170.4	168.9	165.8	167.3	168.9	165.8
55°	125.1	126.7	123.5	125.1	122.0	123.5	122.0	123.5
57.5°	86.0	87.6	84.4	87.6	84.4	86.0	84.4	84.4
60°	59.4	59.4	57.9	59.4	57.9	57.9	56.3	59.4
62.5°	40.7	40.7	40.7	40.7	40.7	39.1	40.7	40.7
65°	29.7	28.1	28.1	28.1	28.1	28.1	28.1	28.1
67.5°	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
70°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
72.5°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
75°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
77.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
80°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	1.6	1.6	1.6	0.0	1.6	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)