

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: P251550

Luminaire Tested: **LD4B30D010 EU4B30509030 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251550
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: LD4B30D010 EU4B30509030 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2299.0 lumens
Efficiency: N/A
Efficacy: 82.1 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

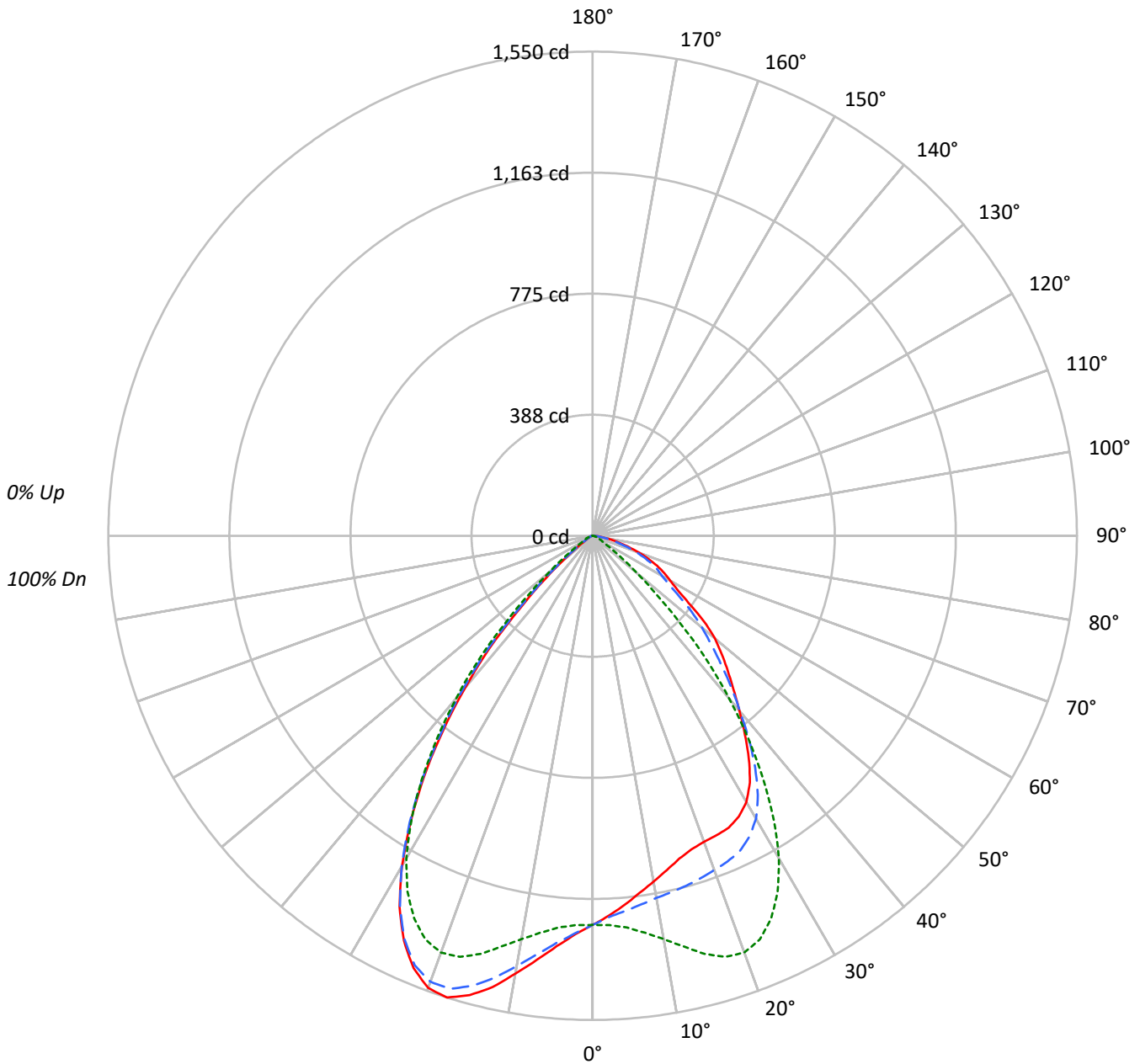
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	121413	121413	121413
5°	115988	123149	129038
10°	111213	129729	140832
15°	107979	139812	153594
20°	108121	147251	159738
25°	110877	145331	153729
30°	110734	134164	137270
35°	103722	113394	111848
40°	92911	86486	80697
45°	84281	54924	45055
50°	77431	27867	19240
55°	63564	12438	6355
60°	55785	6978	3489
65°	52509	5258	2629
70°	44965	4160	2308
75°	34304	3050	1845
80°	24638	1852	898
85°	18227	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.0	5.3
10°-20°	377.1	16.4
20°-30°	583.5	25.4
30°-40°	574.9	25.0
40°-50°	353.0	15.4
50°-60°	157.0	6.8
60°-70°	87.7	3.8
70°-80°	38.0	1.7
80°-90°	6.8	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°	1081.7	47.0
0°-40°	1656.6	72.1
0°-60°	2166.6	94.2
0°-90°	2299.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2299.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1246	1246	1246	1246	1246	
5°	1186	1205	1259	1308	1319	111
15°	1070	1160	1386	1491	1522	304
25°	1031	1114	1352	1425	1430	473
35°	872	908	953	950	940	541
45°	612	581	398	348	327	474
55°	374	338	73	42	37	344
65°	228	205	23	13	11	223
75°	91	78	8	5	5	100
85°	16	13	0	0	0	20
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°	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8
2.5°	1216.5	1216.5	1216.5	1216.5	1219.8	1214.9	1219.8	1219.8	1224.7	1226.3	1221.4
5°	1185.6	1184.0	1185.6	1185.6	1188.9	1187.3	1192.2	1195.4	1201.9	1205.2	1205.2
7.5°	1153.1	1153.1	1153.1	1156.4	1161.2	1159.6	1164.5	1169.4	1179.1	1185.6	1190.5
10°	1123.8	1122.2	1127.1	1128.7	1133.6	1133.6	1141.7	1146.6	1158.0	1171.0	1177.5
12.5°	1096.2	1094.6	1097.8	1102.7	1110.8	1110.8	1117.3	1125.5	1141.7	1156.4	1167.8
15°	1070.2	1071.8	1076.7	1079.9	1089.7	1089.7	1097.8	1107.6	1125.5	1143.4	1159.6
17.5°	1052.3	1053.9	1057.2	1062.0	1071.8	1071.8	1079.9	1091.3	1110.8	1130.3	1149.9
20°	1042.5	1044.1	1047.4	1052.3	1060.4	1062.0	1068.5	1081.6	1099.4	1120.6	1138.5
22.5°	1037.6	1040.9	1044.1	1047.4	1055.5	1055.5	1063.7	1073.4	1091.3	1112.5	1128.7
25°	1031.1	1034.4	1036.0	1040.9	1047.4	1047.4	1052.3	1063.7	1079.9	1097.8	1114.1
27.5°	1013.2	1016.5	1018.1	1023.0	1029.5	1027.9	1034.4	1042.5	1057.2	1073.4	1086.4
30°	984.0	985.6	988.9	990.5	995.4	995.4	1000.2	1008.4	1018.1	1032.8	1045.8
32.5°	936.8	940.1	941.7	943.3	948.2	946.6	948.2	953.1	962.8	975.8	984.0
35°	871.8	878.3	878.3	881.5	883.1	881.5	881.5	888.0	892.9	902.7	907.5
37.5°	800.2	805.1	803.4	806.7	808.3	803.4	806.7	808.3	814.8	819.7	821.3
40°	730.3	731.9	731.9	731.9	731.9	730.3	731.9	733.5	738.4	738.4	733.5
42.5°	666.8	668.5	668.5	665.2	668.5	666.8	666.8	666.8	666.8	660.3	655.4
45°	611.5	613.2	613.2	611.5	611.5	608.3	606.6	605.0	600.1	592.0	580.6
47.5°	559.5	562.7	564.4	561.1	559.5	556.2	556.2	546.5	540.0	530.2	513.9
50°	510.7	513.9	513.9	510.7	510.7	505.8	500.9	497.7	487.9	476.5	457.0
52.5°	448.9	453.8	453.8	452.1	452.1	445.6	444.0	437.5	429.4	416.4	400.1
55°	374.1	380.6	379.0	377.3	374.1	374.1	374.1	369.2	364.3	354.6	338.3
57.5°	320.4	322.0	322.0	320.4	320.4	317.1	317.1	312.3	310.6	300.9	287.9
60°	286.2	286.2	287.9	286.2	284.6	283.0	281.4	278.1	273.2	266.7	257.0
62.5°	258.6	260.2	260.2	258.6	257.0	255.3	253.7	250.5	247.2	242.3	232.6
65°	227.7	230.9	229.3	227.7	226.1	224.4	224.4	221.2	217.9	214.7	204.9
67.5°	193.5	195.2	196.8	193.5	193.5	191.9	191.9	188.7	187.0	180.5	174.0
70°	157.8	159.4	159.4	157.8	157.8	156.1	156.1	154.5	152.9	148.0	141.5
72.5°	123.6	125.2	123.6	122.0	122.0	122.0	120.4	118.7	117.1	113.8	109.0
75°	91.1	91.1	92.7	91.1	89.5	89.5	87.8	87.8	84.6	82.9	78.1
77.5°	65.1	66.7	65.1	65.1	63.4	61.8	61.8	60.2	60.2	58.6	55.3
80°	43.9	43.9	45.5	43.9	42.3	43.9	42.3	40.7	40.7	39.0	35.8
82.5°	27.6	29.3	27.6	27.6	27.6	27.6	27.6	26.0	26.0	24.4	22.8
85°	16.3	16.3	16.3	16.3	16.3	16.3	16.3	14.6	14.6	14.6	13.0
87.5°	8.1	8.1	6.5	6.5	8.1	8.1	8.1	6.5	6.5	6.5	6.5
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°	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8
2.5°	1227.9	1229.6	1232.8	1237.7	1237.7	1234.4	1242.6	1242.6	1245.8	1247.4	1254.0
5°	1214.9	1218.2	1224.7	1232.8	1234.4	1232.8	1244.2	1249.1	1254.0	1258.8	1268.6
7.5°	1203.5	1210.0	1221.4	1232.8	1237.7	1237.7	1255.6	1262.1	1271.8	1281.6	1293.0
10°	1197.0	1206.8	1223.1	1240.9	1245.8	1250.7	1271.8	1284.9	1297.9	1310.9	1327.1
12.5°	1188.9	1206.8	1227.9	1250.7	1260.5	1267.0	1296.2	1312.5	1330.4	1346.7	1367.8
15°	1187.3	1208.4	1236.1	1265.3	1278.4	1288.1	1320.6	1343.4	1364.5	1385.7	1406.8
17.5°	1180.8	1206.8	1240.9	1273.5	1289.7	1302.7	1340.2	1367.8	1392.2	1413.3	1437.7
20°	1172.6	1201.9	1239.3	1275.1	1293.0	1306.0	1346.7	1372.7	1400.3	1419.8	1442.6
22.5°	1161.2	1190.5	1227.9	1263.7	1280.0	1291.4	1332.0	1354.8	1379.2	1398.7	1419.8
25°	1141.7	1169.4	1201.9	1231.2	1247.4	1257.2	1293.0	1314.1	1332.0	1351.5	1371.1
27.5°	1114.1	1135.2	1162.9	1184.0	1193.8	1203.5	1232.8	1250.7	1267.0	1283.2	1296.2
30°	1065.3	1081.6	1101.1	1119.0	1128.7	1130.3	1158.0	1167.8	1180.8	1192.2	1201.9
32.5°	1000.2	1013.2	1024.6	1034.4	1040.9	1042.5	1063.7	1066.9	1079.9	1079.9	1094.6
35°	917.3	923.8	931.9	931.9	936.8	931.9	946.6	949.8	951.4	953.1	964.5
37.5°	823.0	826.2	831.1	821.3	821.3	816.5	821.3	824.6	818.1	818.1	826.2
40°	733.5	727.0	720.5	710.7	705.9	696.1	696.1	688.0	683.1	679.8	681.5
42.5°	647.3	632.7	618.0	596.9	587.1	577.4	567.6	556.2	553.0	544.8	540.0
45°	564.4	543.2	523.7	489.5	470.0	460.3	439.1	416.4	401.7	398.5	385.5
47.5°	494.4	463.5	431.0	390.3	370.8	352.9	322.0	302.5	283.0	273.2	265.1
50°	432.6	405.0	362.7	318.8	294.4	276.5	242.3	219.6	198.4	183.8	174.0
52.5°	379.0	348.0	309.0	258.6	234.2	214.7	177.3	151.3	133.4	118.7	107.3
55°	318.8	294.4	255.3	208.2	183.8	161.0	128.5	100.8	82.9	73.2	65.1
57.5°	274.9	253.7	216.3	170.8	148.0	126.9	94.3	71.6	56.9	47.2	42.3
60°	245.6	226.1	193.5	149.6	128.5	109.0	78.1	56.9	43.9	35.8	32.5
62.5°	221.2	201.7	172.4	131.7	113.8	94.3	66.7	47.2	35.8	29.3	24.4
65°	193.5	175.7	149.6	113.8	97.6	81.3	56.9	39.0	29.3	22.8	19.5
67.5°	164.3	148.0	125.2	94.3	81.3	68.3	45.5	32.5	24.4	19.5	16.3
70°	133.4	120.4	99.2	76.4	65.1	53.7	37.4	26.0	17.9	14.6	13.0
72.5°	102.5	91.1	76.4	58.6	48.8	40.7	27.6	19.5	14.6	11.4	9.8
75°	73.2	65.1	53.7	42.3	35.8	29.3	21.1	14.6	9.8	8.1	6.5
77.5°	50.4	45.5	37.4	29.3	24.4	21.1	14.6	9.8	8.1	6.5	4.9
80°	32.5	29.3	24.4	17.9	14.6	13.0	8.1	6.5	4.9	3.3	3.3
82.5°	19.5	17.9	14.6	9.8	8.1	6.5	4.9	3.3	3.3	1.6	1.6
85°	11.4	9.8	6.5	4.9	4.9	3.3	3.3	1.6	1.6	0.0	0.0
87.5°	4.9	3.3	3.3	1.6	1.6	1.6	1.6	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8
2.5°	1250.7	1258.8	1257.2	1262.1	1260.5	1260.5	1268.6	1265.3	1273.5	1273.5	1275.1
5°	1268.6	1280.0	1280.0	1288.1	1286.5	1289.7	1297.9	1297.9	1307.6	1310.9	1310.9
7.5°	1294.6	1309.3	1312.5	1320.6	1322.3	1328.8	1335.3	1336.9	1349.9	1353.2	1354.8
10°	1330.4	1348.3	1353.2	1361.3	1364.5	1371.1	1379.2	1382.4	1398.7	1400.3	1406.8
12.5°	1374.3	1393.8	1398.7	1408.5	1410.1	1418.2	1429.6	1432.9	1449.1	1454.0	1458.9
15°	1416.6	1434.5	1442.6	1452.4	1454.0	1463.8	1473.5	1476.8	1491.4	1497.9	1502.8
17.5°	1445.9	1467.0	1471.9	1484.9	1484.9	1493.0	1502.8	1506.0	1520.7	1525.6	1528.8
20°	1452.4	1471.9	1478.4	1488.2	1489.8	1494.7	1502.8	1506.0	1519.1	1520.7	1525.6
22.5°	1428.0	1447.5	1450.7	1460.5	1462.1	1467.0	1473.5	1471.9	1488.2	1486.5	1488.2
25°	1375.9	1393.8	1393.8	1405.2	1403.6	1408.5	1411.7	1410.1	1424.7	1424.7	1424.7
27.5°	1301.1	1317.4	1319.0	1327.1	1322.3	1323.9	1327.1	1325.5	1335.3	1335.3	1335.3
30°	1208.4	1221.4	1216.5	1223.1	1219.8	1223.1	1219.8	1218.2	1221.4	1224.7	1223.1
32.5°	1092.9	1102.7	1102.7	1104.3	1104.3	1094.6	1091.3	1091.3	1089.7	1088.1	1088.1
35°	959.6	967.7	964.5	964.5	962.8	953.1	948.2	944.9	949.8	940.1	946.6
37.5°	823.0	824.6	819.7	818.1	809.9	809.9	801.8	795.3	798.6	796.9	790.4
40°	673.3	679.8	670.1	666.8	671.7	665.2	657.1	648.9	655.4	647.3	650.6
42.5°	527.0	525.3	522.1	522.1	522.1	512.3	510.7	509.1	510.7	504.2	499.3
45°	380.6	375.7	370.8	370.8	364.3	361.1	361.1	356.2	348.0	348.0	338.3
47.5°	257.0	245.6	242.3	240.7	237.5	237.5	234.2	230.9	229.3	221.2	221.2
50°	167.5	156.1	152.9	151.3	152.9	149.6	146.4	143.1	139.9	138.2	135.0
52.5°	100.8	96.0	92.7	91.1	87.8	86.2	84.6	81.3	79.7	79.7	78.1
55°	60.2	55.3	48.8	48.8	48.8	47.2	45.5	43.9	42.3	42.3	40.7
57.5°	37.4	34.2	30.9	29.3	29.3	29.3	27.6	27.6	27.6	27.6	26.0
60°	27.6	24.4	22.8	22.8	22.8	21.1	21.1	21.1	21.1	19.5	19.5
62.5°	21.1	19.5	17.9	17.9	16.3	16.3	16.3	16.3	16.3	16.3	14.6
65°	17.9	14.6	14.6	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
67.5°	13.0	11.4	11.4	11.4	11.4	9.8	9.8	9.8	9.8	9.8	9.8
70°	9.8	9.8	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
72.5°	8.1	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	6.5	6.5	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	4.9	4.9	4.9	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	3.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	1.6	1.6	1.6	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: P251550

CATALOG NUMBER: LD4B30D010 EU4B30509030 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8	1245.8
2.5°	1275.1	1283.2	1275.1	1275.1	1280.0	1278.4	1281.6	1276.7
5°	1312.5	1323.9	1315.8	1314.1	1322.3	1320.6	1322.3	1319.0
7.5°	1358.0	1369.4	1361.3	1361.3	1369.4	1367.8	1372.7	1369.4
10°	1410.1	1423.1	1411.7	1413.3	1424.7	1423.1	1423.1	1423.1
12.5°	1463.8	1476.8	1470.3	1470.3	1478.4	1480.0	1481.7	1480.0
15°	1507.7	1520.7	1512.6	1512.6	1523.9	1522.3	1523.9	1522.3
17.5°	1533.7	1546.7	1536.9	1536.9	1546.7	1546.7	1548.3	1550.0
20°	1527.2	1541.8	1533.7	1530.4	1541.8	1541.8	1540.2	1540.2
22.5°	1489.8	1502.8	1496.3	1493.0	1501.2	1497.9	1496.3	1497.9
25°	1424.7	1437.7	1424.7	1424.7	1431.2	1429.6	1431.2	1429.6
27.5°	1336.9	1346.7	1333.6	1332.0	1338.5	1335.3	1333.6	1338.5
30°	1219.8	1229.6	1223.1	1218.2	1226.3	1221.4	1218.2	1219.8
32.5°	1086.4	1092.9	1089.7	1081.6	1086.4	1083.2	1081.6	1083.2
35°	940.1	948.2	935.2	933.6	941.7	935.2	931.9	940.1
37.5°	788.8	798.6	787.2	788.8	783.9	785.6	782.3	787.2
40°	645.7	644.1	640.8	639.2	640.8	635.9	639.2	634.3
42.5°	491.2	494.4	492.8	491.2	492.8	486.3	483.0	489.5
45°	341.5	339.9	336.7	333.4	333.4	331.8	331.8	326.9
47.5°	219.6	217.9	211.4	213.1	216.3	213.1	208.2	214.7
50°	133.4	131.7	131.7	130.1	133.4	130.1	126.9	126.9
52.5°	74.8	74.8	73.2	73.2	73.2	73.2	71.6	69.9
55°	40.7	39.0	39.0	39.0	37.4	37.4	37.4	37.4
57.5°	26.0	26.0	26.0	26.0	26.0	26.0	24.4	24.4
60°	19.5	19.5	19.5	19.5	17.9	19.5	17.9	17.9
62.5°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
65°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
67.5°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
70°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
72.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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)