

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: P251553

Luminaire Tested: **LD4B30D010 EU4B30509050 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251553  
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 EU4B30509050 4LBSW1LI  
Description: PORTFOLIO 4 INCH 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: 2346.0 lumens  
Efficiency: N/A  
Efficacy: 83.8 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

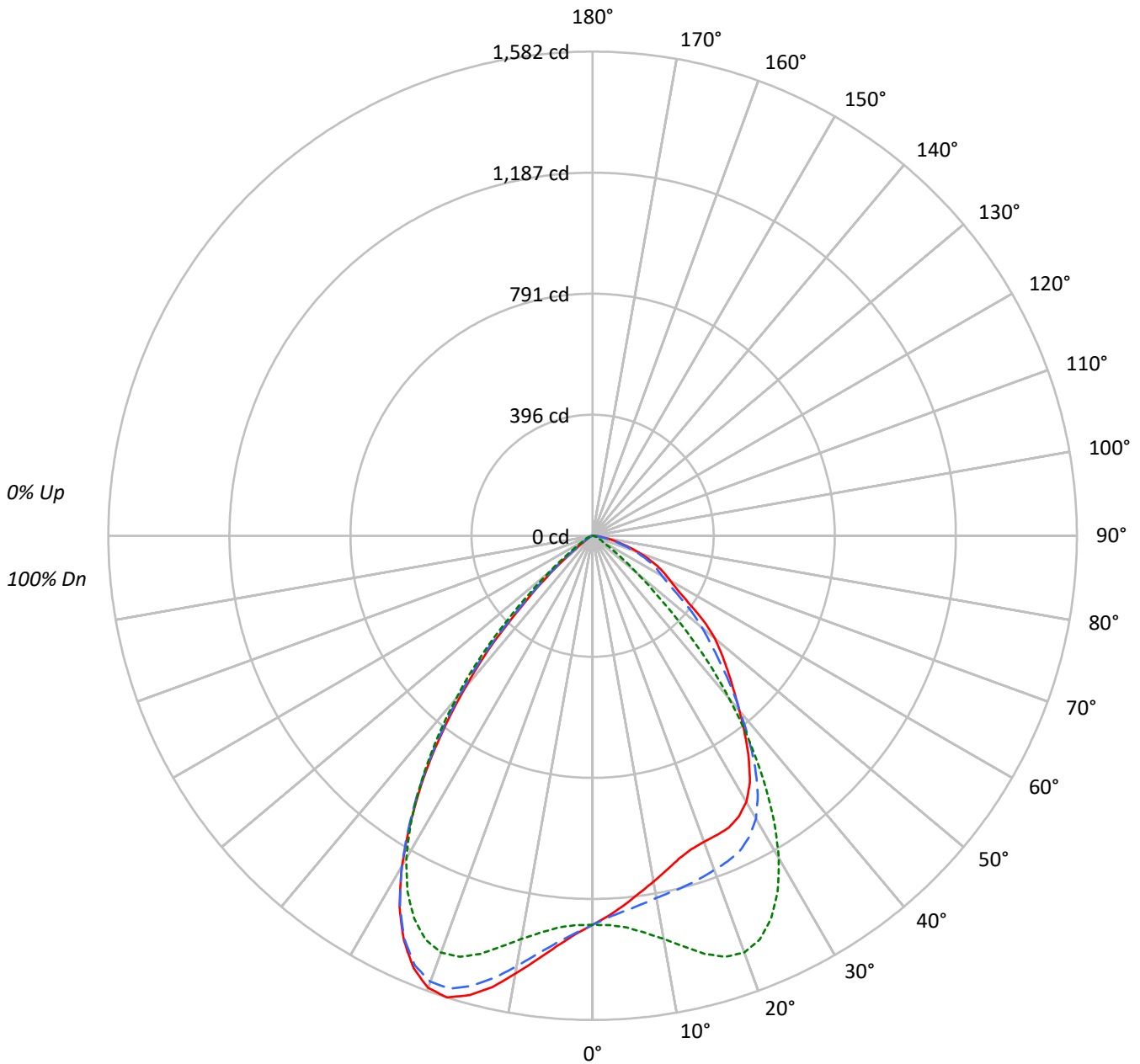
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P251553

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1LI

### 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°	123898	123898	123898
5°	118365	125673	131680
10°	113489	132381	143712
15°	110178	142667	156732
20°	110330	150269	163005
25°	113146	148310	156869
30°	112996	136899	140072
35°	105840	115714	114132
40°	94806	88254	82351
45°	86004	56040	45979
50°	79008	28428	19635
55°	64856	12692	6491
60°	56935	7114	3567
65°	53593	5350	2675
70°	45877	4246	2365
75°	34981	3125	1883
80°	25143	1852	954
85°	18562	0	0



TEST NUMBER: P251553

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1LI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	123.5	5.3
10°-20°	384.9	16.4
20°-30°	595.4	25.4
30°-40°	586.7	25.0
40°-50°	360.2	15.4
50°-60°	160.2	6.8
60°-70°	89.5	3.8
70°-80°	38.7	1.7
80°-90°	6.9	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°	1103.8	47.0
0°-40°	1690.5	72.1
0°-60°	2210.9	94.2
0°-90°	2346.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2346.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1271	1271	1271	1271	1271	
5°	1210	1230	1285	1334	1346	114
15°	1092	1183	1414	1522	1553	310
25°	1052	1137	1379	1454	1459	483
35°	890	926	973	969	959	552
45°	624	592	407	355	334	483
55°	382	345	75	43	38	351
65°	232	209	23	13	12	228
75°	93	80	8	5	5	102
85°	17	13	0	0	0	21
90°	0	0	0	0	0	



TEST NUMBER: P251553

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3
2.5°	1241.4	1241.4	1241.4	1241.4	1244.7	1239.8	1244.7	1244.7	1249.7	1251.4	1246.4
5°	1209.9	1208.2	1209.9	1209.9	1213.2	1211.5	1216.5	1219.8	1226.5	1229.8	1229.8
7.5°	1176.7	1176.7	1176.7	1180.0	1185.0	1183.3	1188.3	1193.3	1203.2	1209.9	1214.9
10°	1146.8	1145.2	1150.1	1151.8	1156.8	1156.8	1165.1	1170.1	1181.7	1194.9	1201.6
12.5°	1118.6	1116.9	1120.3	1125.2	1133.5	1133.5	1140.2	1148.5	1165.1	1180.0	1191.6
15°	1092.0	1093.7	1098.7	1102.0	1112.0	1112.0	1120.3	1130.2	1148.5	1166.7	1183.3
17.5°	1073.8	1075.5	1078.8	1083.8	1093.7	1093.7	1102.0	1113.6	1133.5	1153.5	1173.4
20°	1063.8	1065.5	1068.8	1073.8	1082.1	1083.8	1090.4	1103.7	1121.9	1143.5	1161.8
22.5°	1058.9	1062.2	1065.5	1068.8	1077.1	1077.1	1085.4	1095.4	1113.6	1135.2	1151.8
25°	1052.2	1055.5	1057.2	1062.2	1068.8	1068.8	1073.8	1085.4	1102.0	1120.3	1136.9
27.5°	1034.0	1037.3	1038.9	1043.9	1050.6	1048.9	1055.5	1063.8	1078.8	1095.4	1108.6
30°	1004.1	1005.7	1009.1	1010.7	1015.7	1015.7	1020.7	1029.0	1038.9	1053.9	1067.2
32.5°	956.0	959.3	960.9	962.6	967.6	965.9	967.6	972.6	982.5	995.8	1004.1
35°	889.6	896.2	896.2	899.5	901.2	899.5	899.5	906.2	911.1	921.1	926.1
37.5°	816.5	821.5	819.9	823.2	824.8	819.9	823.2	824.8	831.5	836.5	838.1
40°	745.2	746.8	746.8	746.8	746.8	745.2	746.8	748.5	753.5	753.5	748.5
42.5°	680.5	682.1	682.1	678.8	682.1	680.5	680.5	680.5	680.5	673.8	668.8
45°	624.0	625.7	625.7	624.0	624.0	620.7	619.0	617.4	612.4	604.1	592.5
47.5°	570.9	574.2	575.9	572.6	570.9	567.6	567.6	557.6	551.0	541.0	524.4
50°	521.1	524.4	524.4	521.1	521.1	516.2	511.2	507.9	497.9	486.3	466.4
52.5°	458.1	463.0	463.0	461.4	461.4	454.7	453.1	446.4	438.1	424.9	408.3
55°	381.7	388.4	386.7	385.0	381.7	381.7	381.7	376.7	371.8	361.8	345.2
57.5°	327.0	328.6	328.6	327.0	327.0	323.6	323.6	318.7	317.0	307.0	293.8
60°	292.1	292.1	293.8	292.1	290.4	288.8	287.1	283.8	278.8	272.2	262.2
62.5°	263.9	265.5	265.5	263.9	262.2	260.6	258.9	255.6	252.3	247.3	237.3
65°	232.4	235.7	234.0	232.4	230.7	229.0	229.0	225.7	222.4	219.1	209.1
67.5°	197.5	199.2	200.8	197.5	197.5	195.8	195.8	192.5	190.9	184.2	177.6
70°	161.0	162.6	162.6	161.0	161.0	159.3	159.3	157.7	156.0	151.0	144.4
72.5°	126.1	127.8	126.1	124.5	124.5	124.5	122.8	121.2	119.5	116.2	111.2
75°	92.9	92.9	94.6	92.9	91.3	91.3	89.6	89.6	86.3	84.6	79.7
77.5°	66.4	68.0	66.4	66.4	64.7	63.1	63.1	61.4	61.4	59.7	56.4
80°	44.8	44.8	46.5	44.8	43.2	44.8	43.2	41.5	41.5	39.8	36.5
82.5°	28.2	29.9	28.2	28.2	28.2	28.2	28.2	26.6	26.6	24.9	23.2
85°	16.6	16.6	16.6	16.6	16.6	16.6	16.6	14.9	14.9	14.9	13.3
87.5°	8.3	8.3	6.6	6.6	8.3	8.3	8.3	6.6	6.6	6.6	6.6
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: P251553

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3
2.5°	1253.0	1254.7	1258.0	1263.0	1263.0	1259.7	1268.0	1268.0	1271.3	1273.0	1279.6
5°	1239.8	1243.1	1249.7	1258.0	1259.7	1258.0	1269.6	1274.6	1279.6	1284.6	1294.5
7.5°	1228.1	1234.8	1246.4	1258.0	1263.0	1263.0	1281.2	1287.9	1297.8	1307.8	1319.4
10°	1221.5	1231.5	1248.1	1266.3	1271.3	1276.3	1297.8	1311.1	1324.4	1337.7	1354.3
12.5°	1213.2	1231.5	1253.0	1276.3	1286.2	1292.9	1322.7	1339.3	1357.6	1374.2	1395.8
15°	1211.5	1233.1	1261.3	1291.2	1304.5	1314.4	1347.6	1370.9	1392.4	1414.0	1435.6
17.5°	1204.9	1231.5	1266.3	1299.5	1316.1	1329.4	1367.6	1395.8	1420.7	1442.2	1467.1
20°	1196.6	1226.5	1264.7	1301.2	1319.4	1332.7	1374.2	1400.7	1429.0	1448.9	1472.1
22.5°	1185.0	1214.9	1253.0	1289.5	1306.1	1317.8	1359.3	1382.5	1407.4	1427.3	1448.9
25°	1165.1	1193.3	1226.5	1256.4	1273.0	1282.9	1319.4	1341.0	1359.3	1379.2	1399.1
27.5°	1136.9	1158.4	1186.6	1208.2	1218.2	1228.1	1258.0	1276.3	1292.9	1309.5	1322.7
30°	1087.1	1103.7	1123.6	1141.8	1151.8	1153.5	1181.7	1191.6	1204.9	1216.5	1226.5
32.5°	1020.7	1034.0	1045.6	1055.5	1062.2	1063.8	1085.4	1088.7	1102.0	1102.0	1116.9
35°	936.0	942.7	951.0	951.0	956.0	951.0	965.9	969.2	970.9	972.6	984.2
37.5°	839.8	843.1	848.1	838.1	838.1	833.1	838.1	841.4	834.8	834.8	843.1
40°	748.5	741.9	735.2	725.3	720.3	710.3	710.3	702.0	697.1	693.7	695.4
42.5°	660.5	645.6	630.7	609.1	599.1	589.2	579.2	567.6	564.3	556.0	551.0
45°	575.9	554.3	534.4	499.6	479.6	469.7	448.1	424.9	409.9	406.6	393.3
47.5°	504.5	473.0	439.8	398.3	378.4	360.1	328.6	308.7	288.8	278.8	270.5
50°	441.5	413.3	370.1	325.3	300.4	282.1	247.3	224.1	202.5	187.5	177.6
52.5°	386.7	355.2	315.3	263.9	239.0	219.1	180.9	154.3	136.1	121.2	109.5
55°	325.3	300.4	260.6	212.4	187.5	164.3	131.1	102.9	84.6	74.7	66.4
57.5°	280.5	258.9	220.7	174.3	151.0	129.5	96.3	73.0	58.1	48.1	43.2
60°	250.6	230.7	197.5	152.7	131.1	111.2	79.7	58.1	44.8	36.5	33.2
62.5°	225.7	205.8	175.9	134.4	116.2	96.3	68.0	48.1	36.5	29.9	24.9
65°	197.5	179.2	152.7	116.2	99.6	83.0	58.1	39.8	29.9	23.2	19.9
67.5°	167.6	151.0	127.8	96.3	83.0	69.7	46.5	33.2	24.9	19.9	16.6
70°	136.1	122.8	101.2	78.0	66.4	54.8	38.2	26.6	18.3	14.9	13.3
72.5°	104.6	92.9	78.0	59.7	49.8	41.5	28.2	19.9	14.9	11.6	10.0
75°	74.7	66.4	54.8	43.2	36.5	29.9	21.6	14.9	10.0	8.3	6.6
77.5°	51.4	46.5	38.2	29.9	24.9	21.6	14.9	10.0	8.3	6.6	5.0
80°	33.2	29.9	24.9	18.3	14.9	13.3	8.3	6.6	5.0	3.3	3.3
82.5°	19.9	18.3	14.9	10.0	8.3	6.6	5.0	3.3	3.3	1.7	1.7
85°	11.6	10.0	6.6	5.0	5.0	3.3	3.3	1.7	1.7	0.0	0.0
87.5°	5.0	3.3	3.3	1.7	1.7	1.7	1.7	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: P251553

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3
2.5°	1276.3	1284.6	1282.9	1287.9	1286.2	1286.2	1294.5	1291.2	1299.5	1299.5	1301.2
5°	1294.5	1306.1	1306.1	1314.4	1312.8	1316.1	1324.4	1324.4	1334.4	1337.7	1337.7
7.5°	1321.1	1336.0	1339.3	1347.6	1349.3	1355.9	1362.6	1364.2	1377.5	1380.8	1382.5
10°	1357.6	1375.8	1380.8	1389.1	1392.4	1399.1	1407.4	1410.7	1427.3	1429.0	1435.6
12.5°	1402.4	1422.3	1427.3	1437.3	1438.9	1447.2	1458.8	1462.2	1478.7	1483.7	1488.7
15°	1445.6	1463.8	1472.1	1482.1	1483.7	1493.7	1503.6	1507.0	1521.9	1528.5	1533.5
17.5°	1475.4	1497.0	1502.0	1515.3	1515.3	1523.6	1533.5	1536.8	1551.8	1556.8	1560.1
20°	1482.1	1502.0	1508.6	1518.6	1520.2	1525.2	1533.5	1536.8	1550.1	1551.8	1556.8
22.5°	1457.2	1477.1	1480.4	1490.4	1492.0	1497.0	1503.6	1502.0	1518.6	1516.9	1518.6
25°	1404.1	1422.3	1422.3	1433.9	1432.3	1437.3	1440.6	1438.9	1453.9	1453.9	1453.9
27.5°	1327.7	1344.3	1346.0	1354.3	1349.3	1351.0	1354.3	1352.6	1362.6	1362.6	1362.6
30°	1233.1	1246.4	1241.4	1248.1	1244.7	1248.1	1244.7	1243.1	1246.4	1249.7	1248.1
32.5°	1115.3	1125.2	1125.2	1126.9	1126.9	1116.9	1113.6	1113.6	1112.0	1110.3	1110.3
35°	979.2	987.5	984.2	984.2	982.5	972.6	967.6	964.3	969.2	959.3	965.9
37.5°	839.8	841.4	836.5	834.8	826.5	826.5	818.2	811.6	814.9	813.2	806.6
40°	687.1	693.7	683.8	680.5	685.4	678.8	670.5	662.2	668.8	660.5	663.9
42.5°	537.7	536.1	532.7	532.7	532.7	522.8	521.1	519.5	521.1	514.5	509.5
45°	388.4	383.4	378.4	378.4	371.8	368.4	368.4	363.5	355.2	355.2	345.2
47.5°	262.2	250.6	247.3	245.6	242.3	242.3	239.0	235.7	234.0	225.7	225.7
50°	170.9	159.3	156.0	154.3	156.0	152.7	149.4	146.0	142.7	141.1	137.8
52.5°	102.9	97.9	94.6	92.9	89.6	88.0	86.3	83.0	81.3	81.3	79.7
55°	61.4	56.4	49.8	49.8	49.8	48.1	46.5	44.8	43.2	43.2	41.5
57.5°	38.2	34.9	31.5	29.9	29.9	29.9	28.2	28.2	28.2	28.2	26.6
60°	28.2	24.9	23.2	23.2	23.2	21.6	21.6	21.6	21.6	19.9	19.9
62.5°	21.6	19.9	18.3	18.3	16.6	16.6	16.6	16.6	16.6	16.6	14.9
65°	18.3	14.9	14.9	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
67.5°	13.3	11.6	11.6	11.6	11.6	10.0	10.0	10.0	10.0	10.0	10.0
70°	10.0	10.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
72.5°	8.3	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
75°	6.6	6.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	5.0	5.0	5.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	1.7	1.7	1.7	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: P251553

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3	1271.3
2.5°	1301.2	1309.5	1301.2	1301.2	1306.1	1304.5	1307.8	1302.8
5°	1339.3	1351.0	1342.7	1341.0	1349.3	1347.6	1349.3	1346.0
7.5°	1385.8	1397.4	1389.1	1389.1	1397.4	1395.8	1400.7	1397.4
10°	1438.9	1452.2	1440.6	1442.2	1453.9	1452.2	1452.2	1452.2
12.5°	1493.7	1507.0	1500.3	1500.3	1508.6	1510.3	1511.9	1510.3
15°	1538.5	1551.8	1543.5	1543.5	1555.1	1553.4	1555.1	1553.4
17.5°	1565.0	1578.3	1568.4	1568.4	1578.3	1578.3	1580.0	1581.6
20°	1558.4	1573.3	1565.0	1561.7	1573.3	1573.3	1571.7	1571.7
22.5°	1520.2	1533.5	1526.9	1523.6	1531.9	1528.5	1526.9	1528.5
25°	1453.9	1467.1	1453.9	1453.9	1460.5	1458.8	1460.5	1458.8
27.5°	1364.2	1374.2	1360.9	1359.3	1365.9	1362.6	1360.9	1365.9
30°	1244.7	1254.7	1248.1	1243.1	1251.4	1246.4	1243.1	1244.7
32.5°	1108.6	1115.3	1112.0	1103.7	1108.6	1105.3	1103.7	1105.3
35°	959.3	967.6	954.3	952.6	960.9	954.3	951.0	959.3
37.5°	804.9	814.9	803.3	804.9	800.0	801.6	798.3	803.3
40°	658.9	657.2	653.9	652.2	653.9	648.9	652.2	647.3
42.5°	501.2	504.5	502.9	501.2	502.9	496.2	492.9	499.6
45°	348.5	346.9	343.5	340.2	340.2	338.6	338.6	333.6
47.5°	224.1	222.4	215.8	217.4	220.7	217.4	212.4	219.1
50°	136.1	134.4	134.4	132.8	136.1	132.8	129.5	129.5
52.5°	76.3	76.3	74.7	74.7	74.7	74.7	73.0	71.4
55°	41.5	39.8	39.8	39.8	38.2	38.2	38.2	38.2
57.5°	26.6	26.6	26.6	26.6	26.6	26.6	24.9	24.9
60°	19.9	19.9	19.9	19.9	18.3	19.9	18.3	18.3
62.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
65°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
67.5°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
70°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
72.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
75°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)