

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: P251551

Luminaire Tested: **LD4B30D010 EU4B30509035 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251551  
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 EU4B30509035 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2331.9 lumens  
Efficiency: N/A  
Efficacy: 83.3 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

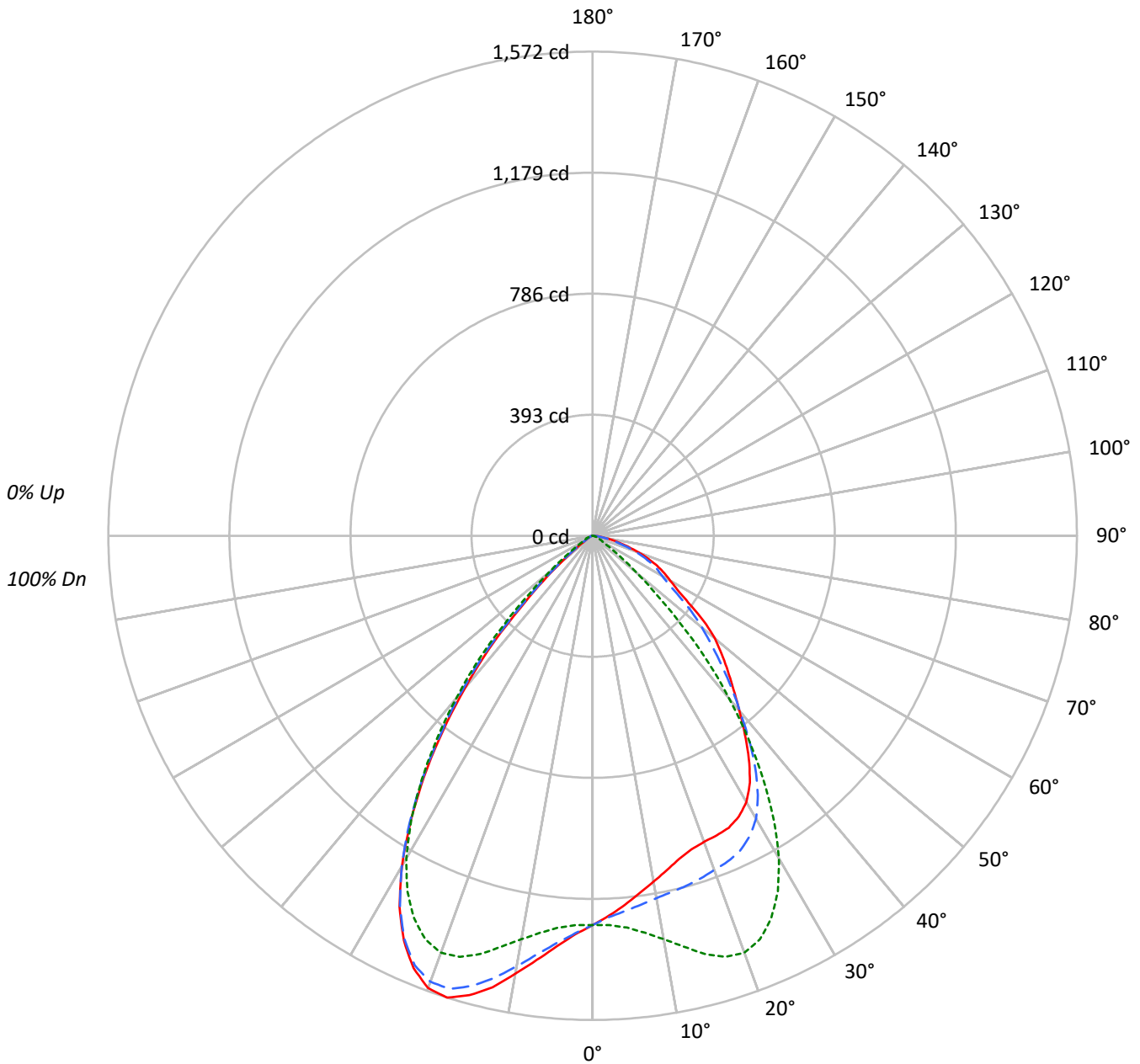
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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			
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°	123158	123158	123158
5°	117661	124920	130887
10°	112816	131589	142851
15°	109523	141819	155804
20°	109676	149367	162030
25°	112469	147417	155934
30°	112321	136088	139239
35°	105209	115024	113454
40°	94234	87733	81855
45°	85494	55709	45703
50°	78538	28262	19513
55°	64465	12608	6440
60°	56604	7075	3528
65°	53270	5327	2652
70°	45592	4217	2337
75°	34793	3088	1845
80°	24975	1852	898
85°	18450	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.8	5.3
10°-20°	382.6	16.4
20°-30°	591.9	25.4
30°-40°	583.2	25.0
40°-50°	358.1	15.4
50°-60°	159.2	6.8
60°-70°	88.9	3.8
70°-80°	38.5	1.6
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°	1097.2	47.1
0°-40°	1680.4	72.1
0°-60°	2197.7	94.2
0°-90°	2331.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2331.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1264	1264	1264	1264	1264	
5°	1203	1222	1277	1326	1338	113
15°	1086	1176	1406	1513	1544	308
25°	1046	1130	1371	1445	1450	480
35°	884	921	967	964	954	549
45°	620	589	404	353	332	480
55°	379	343	74	43	38	349
65°	231	208	23	13	12	226
75°	92	79	8	5	5	102
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°	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7
2.5°	1234.0	1234.0	1234.0	1234.0	1237.3	1232.4	1237.3	1237.3	1242.3	1243.9	1239.0
5°	1202.7	1201.0	1202.7	1202.7	1206.0	1204.3	1209.3	1212.6	1219.2	1222.5	1222.5
7.5°	1169.7	1169.7	1169.7	1173.0	1177.9	1176.3	1181.2	1186.2	1196.1	1202.7	1207.6
10°	1140.0	1138.3	1143.3	1144.9	1149.9	1149.9	1158.1	1163.1	1174.6	1187.8	1194.4
12.5°	1111.9	1110.3	1113.6	1118.5	1126.8	1126.8	1133.4	1141.6	1158.1	1173.0	1184.5
15°	1085.5	1087.2	1092.1	1095.4	1105.3	1105.3	1113.6	1123.5	1141.6	1159.8	1176.3
17.5°	1067.4	1069.0	1072.3	1077.3	1087.2	1087.2	1095.4	1107.0	1126.8	1146.6	1166.4
20°	1057.5	1059.1	1062.4	1067.4	1075.6	1077.3	1083.9	1097.1	1115.2	1136.7	1154.8
22.5°	1052.5	1055.8	1059.1	1062.4	1070.7	1070.7	1078.9	1088.8	1107.0	1128.4	1144.9
25°	1045.9	1049.2	1050.9	1055.8	1062.4	1062.4	1067.4	1078.9	1095.4	1113.6	1130.1
27.5°	1027.8	1031.1	1032.7	1037.7	1044.3	1042.6	1049.2	1057.5	1072.3	1088.8	1102.0
30°	998.1	999.7	1003.0	1004.7	1009.6	1009.6	1014.6	1022.8	1032.7	1047.6	1060.8
32.5°	950.3	953.6	955.2	956.9	961.8	960.2	961.8	966.8	976.6	989.8	998.1
35°	884.3	890.9	890.9	894.2	895.8	894.2	894.2	900.8	905.7	915.6	920.6
37.5°	811.7	816.6	815.0	818.3	819.9	815.0	818.3	819.9	826.5	831.5	833.1
40°	740.7	742.4	742.4	742.4	742.4	740.7	742.4	744.0	749.0	749.0	744.0
42.5°	676.4	678.0	678.0	674.7	678.0	676.4	676.4	676.4	676.4	669.8	664.8
45°	620.3	622.0	622.0	620.3	620.3	617.0	615.4	613.7	608.8	600.5	589.0
47.5°	567.5	570.8	572.5	569.2	567.5	564.2	564.2	554.3	547.7	537.8	521.3
50°	518.0	521.3	521.3	518.0	518.0	513.1	508.1	504.8	494.9	483.4	463.6
52.5°	455.3	460.3	460.3	458.6	458.6	452.0	450.4	443.8	435.5	422.3	405.8
55°	379.4	386.0	384.4	382.7	379.4	379.4	379.4	374.5	369.5	359.6	343.1
57.5°	325.0	326.6	326.6	325.0	325.0	321.7	321.7	316.8	315.1	305.2	292.0
60°	290.4	290.4	292.0	290.4	288.7	287.1	285.4	282.1	277.2	270.6	260.7
62.5°	262.3	264.0	264.0	262.3	260.7	259.0	257.4	254.1	250.8	245.8	235.9
65°	231.0	234.3	232.6	231.0	229.3	227.7	227.7	224.4	221.1	217.8	207.9
67.5°	196.3	198.0	199.6	196.3	196.3	194.7	194.7	191.4	189.7	183.1	176.5
70°	160.0	161.7	161.7	160.0	160.0	158.4	158.4	156.7	155.1	150.1	143.5
72.5°	125.4	127.0	125.4	123.7	123.7	123.7	122.1	120.4	118.8	115.5	110.5
75°	92.4	92.4	94.0	92.4	90.7	90.7	89.1	89.1	85.8	84.1	79.2
77.5°	66.0	67.6	66.0	66.0	64.3	62.7	62.7	61.0	61.0	59.4	56.1
80°	44.5	44.5	46.2	44.5	42.9	44.5	42.9	41.2	41.2	39.6	36.3
82.5°	28.0	29.7	28.0	28.0	28.0	28.0	28.0	26.4	26.4	24.7	23.1
85°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	14.8	14.8	14.8	13.2
87.5°	8.2	8.2	6.6	6.6	8.2	8.2	8.2	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7
2.5°	1245.6	1247.2	1250.5	1255.5	1255.5	1252.2	1260.4	1260.4	1263.7	1265.4	1272.0
5°	1232.4	1235.7	1242.3	1250.5	1252.2	1250.5	1262.1	1267.0	1272.0	1276.9	1286.8
7.5°	1220.8	1227.4	1239.0	1250.5	1255.5	1255.5	1273.6	1280.2	1290.1	1300.0	1311.5
10°	1214.2	1224.1	1240.6	1258.8	1263.7	1268.7	1290.1	1303.3	1316.5	1329.7	1346.2
12.5°	1206.0	1224.1	1245.6	1268.7	1278.6	1285.2	1314.8	1331.3	1349.5	1366.0	1387.4
15°	1204.3	1225.8	1253.8	1283.5	1296.7	1306.6	1339.6	1362.7	1384.1	1405.6	1427.0
17.5°	1197.7	1224.1	1258.8	1291.8	1308.2	1321.4	1359.4	1387.4	1412.2	1433.6	1458.4
20°	1189.5	1219.2	1257.1	1293.4	1311.5	1324.7	1366.0	1392.4	1420.4	1440.2	1463.3
22.5°	1177.9	1207.6	1245.6	1281.9	1298.4	1309.9	1351.1	1374.2	1399.0	1418.8	1440.2
25°	1158.1	1186.2	1219.2	1248.9	1265.4	1275.3	1311.5	1333.0	1351.1	1370.9	1390.7
27.5°	1130.1	1151.5	1179.6	1201.0	1210.9	1220.8	1250.5	1268.7	1285.2	1301.6	1314.8
30°	1080.6	1097.1	1116.9	1135.0	1144.9	1146.6	1174.6	1184.5	1197.7	1209.3	1219.2
32.5°	1014.6	1027.8	1039.3	1049.2	1055.8	1057.5	1078.9	1082.2	1095.4	1095.4	1110.3
35°	930.5	937.1	945.3	945.3	950.3	945.3	960.2	963.5	965.1	966.8	978.3
37.5°	834.8	838.1	843.0	833.1	833.1	828.2	833.1	836.4	829.8	829.8	838.1
40°	744.0	737.4	730.8	720.9	716.0	706.1	706.1	697.8	692.9	689.6	691.2
42.5°	656.6	641.8	626.9	605.5	595.6	585.7	575.8	564.2	560.9	552.7	547.7
45°	572.5	551.0	531.2	496.6	476.8	466.9	445.4	422.3	407.5	404.2	391.0
47.5°	501.5	470.2	437.2	395.9	376.1	358.0	326.6	306.9	287.1	277.2	268.9
50°	438.8	410.8	367.9	323.4	298.6	280.5	245.8	222.7	201.3	186.4	176.5
52.5°	384.4	353.0	313.5	262.3	237.6	217.8	179.8	153.4	135.3	120.4	108.9
55°	323.4	298.6	259.0	211.2	186.4	163.3	130.3	102.3	84.1	74.2	66.0
57.5°	278.8	257.4	219.4	173.2	150.1	128.7	95.7	72.6	57.7	47.8	42.9
60°	249.1	229.3	196.3	151.8	130.3	110.5	79.2	57.7	44.5	36.3	33.0
62.5°	224.4	204.6	174.9	133.6	115.5	95.7	67.6	47.8	36.3	29.7	24.7
65°	196.3	178.2	151.8	115.5	99.0	82.5	57.7	39.6	29.7	23.1	19.8
67.5°	166.6	150.1	127.0	95.7	82.5	69.3	46.2	33.0	24.7	19.8	16.5
70°	135.3	122.1	100.6	77.5	66.0	54.4	37.9	26.4	18.1	14.8	13.2
72.5°	103.9	92.4	77.5	59.4	49.5	41.2	28.0	19.8	14.8	11.5	9.9
75°	74.2	66.0	54.4	42.9	36.3	29.7	21.4	14.8	9.9	8.2	6.6
77.5°	51.1	46.2	37.9	29.7	24.7	21.4	14.8	9.9	8.2	6.6	4.9
80°	33.0	29.7	24.7	18.1	14.8	13.2	8.2	6.6	4.9	3.3	3.3
82.5°	19.8	18.1	14.8	9.9	8.2	6.6	4.9	3.3	3.3	1.6	1.6
85°	11.5	9.9	6.6	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°	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7
2.5°	1268.7	1276.9	1275.3	1280.2	1278.6	1278.6	1286.8	1283.5	1291.8	1291.8	1293.4
5°	1286.8	1298.4	1298.4	1306.6	1304.9	1308.2	1316.5	1316.5	1326.4	1329.7	1329.7
7.5°	1313.2	1328.0	1331.3	1339.6	1341.2	1347.8	1354.4	1356.1	1369.3	1372.6	1374.2
10°	1349.5	1367.6	1372.6	1380.8	1384.1	1390.7	1399.0	1402.3	1418.8	1420.4	1427.0
12.5°	1394.0	1413.8	1418.8	1428.7	1430.3	1438.6	1450.1	1453.4	1469.9	1474.9	1479.8
15°	1436.9	1455.1	1463.3	1473.2	1474.9	1484.8	1494.7	1498.0	1512.8	1519.4	1524.4
17.5°	1466.6	1488.1	1493.0	1506.2	1506.2	1514.5	1524.4	1527.7	1542.5	1547.5	1550.8
20°	1473.2	1493.0	1499.6	1509.5	1511.2	1516.1	1524.4	1527.7	1540.9	1542.5	1547.5
22.5°	1448.5	1468.3	1471.6	1481.5	1483.1	1488.1	1494.7	1493.0	1509.5	1507.9	1509.5
25°	1395.7	1413.8	1413.8	1425.4	1423.7	1428.7	1432.0	1430.3	1445.2	1445.2	1445.2
27.5°	1319.8	1336.3	1337.9	1346.2	1341.2	1342.9	1346.2	1344.5	1354.4	1354.4	1354.4
30°	1225.8	1239.0	1234.0	1240.6	1237.3	1240.6	1237.3	1235.7	1239.0	1242.3	1240.6
32.5°	1108.6	1118.5	1118.5	1120.2	1120.2	1110.3	1107.0	1107.0	1105.3	1103.7	1103.7
35°	973.4	981.6	978.3	978.3	976.6	966.8	961.8	958.5	963.5	953.6	960.2
37.5°	834.8	836.4	831.5	829.8	821.6	821.6	813.3	806.7	810.0	808.4	801.8
40°	683.0	689.6	679.7	676.4	681.3	674.7	666.5	658.2	664.8	656.6	659.9
42.5°	534.5	532.9	529.6	529.6	529.6	519.7	518.0	516.4	518.0	511.4	506.5
45°	386.0	381.1	376.1	376.1	369.5	366.2	366.2	361.3	353.0	353.0	343.1
47.5°	260.7	249.1	245.8	244.2	240.9	240.9	237.6	234.3	232.6	224.4	224.4
50°	169.9	158.4	155.1	153.4	155.1	151.8	148.5	145.2	141.9	140.2	136.9
52.5°	102.3	97.3	94.0	92.4	89.1	87.4	85.8	82.5	80.8	80.8	79.2
55°	61.0	56.1	49.5	49.5	49.5	47.8	46.2	44.5	42.9	42.9	41.2
57.5°	37.9	34.6	31.3	29.7	29.7	29.7	28.0	28.0	28.0	28.0	26.4
60°	28.0	24.7	23.1	23.1	23.1	21.4	21.4	21.4	21.4	19.8	19.8
62.5°	21.4	19.8	18.1	18.1	16.5	16.5	16.5	16.5	16.5	16.5	14.8
65°	18.1	14.8	14.8	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
67.5°	13.2	11.5	11.5	11.5	11.5	9.9	9.9	9.9	9.9	9.9	9.9
70°	9.9	9.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
72.5°	8.2	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	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: P251551

CATALOG NUMBER: LD4B30D010 EU4B30509035 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7	1263.7
2.5°	1293.4	1301.6	1293.4	1293.4	1298.4	1296.7	1300.0	1295.1
5°	1331.3	1342.9	1334.6	1333.0	1341.2	1339.6	1341.2	1337.9
7.5°	1377.5	1389.1	1380.8	1380.8	1389.1	1387.4	1392.4	1389.1
10°	1430.3	1443.5	1432.0	1433.6	1445.2	1443.5	1443.5	1443.5
12.5°	1484.8	1498.0	1491.4	1491.4	1499.6	1501.3	1502.9	1501.3
15°	1529.3	1542.5	1534.3	1534.3	1545.8	1544.2	1545.8	1544.2
17.5°	1555.7	1568.9	1559.0	1559.0	1568.9	1568.9	1570.6	1572.2
20°	1549.1	1564.0	1555.7	1552.4	1564.0	1564.0	1562.3	1562.3
22.5°	1511.2	1524.4	1517.8	1514.5	1522.7	1519.4	1517.8	1519.4
25°	1445.2	1458.4	1445.2	1445.2	1451.8	1450.1	1451.8	1450.1
27.5°	1356.1	1366.0	1352.8	1351.1	1357.7	1354.4	1352.8	1357.7
30°	1237.3	1247.2	1240.6	1235.7	1243.9	1239.0	1235.7	1237.3
32.5°	1102.0	1108.6	1105.3	1097.1	1102.0	1098.7	1097.1	1098.7
35°	953.6	961.8	948.6	947.0	955.2	948.6	945.3	953.6
37.5°	800.1	810.0	798.5	800.1	795.2	796.8	793.5	798.5
40°	654.9	653.3	650.0	648.4	650.0	645.1	648.4	643.4
42.5°	498.2	501.5	499.9	498.2	499.9	493.3	490.0	496.6
45°	346.4	344.8	341.5	338.2	338.2	336.5	336.5	331.6
47.5°	222.7	221.1	214.5	216.1	219.4	216.1	211.2	217.8
50°	135.3	133.6	133.6	132.0	135.3	132.0	128.7	128.7
52.5°	75.9	75.9	74.2	74.2	74.2	74.2	72.6	70.9
55°	41.2	39.6	39.6	39.6	37.9	37.9	37.9	37.9
57.5°	26.4	26.4	26.4	26.4	26.4	26.4	24.7	24.7
60°	19.8	19.8	19.8	19.8	18.1	19.8	18.1	18.1
62.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
65°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
67.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
70°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
72.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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



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















(END OF REPORT)