

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: P251552

Luminaire Tested: **LD4B30D010 EU4B30509040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251552
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 EU4B30509040 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2336.0 lumens
Efficiency: N/A
Efficacy: 83.4 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

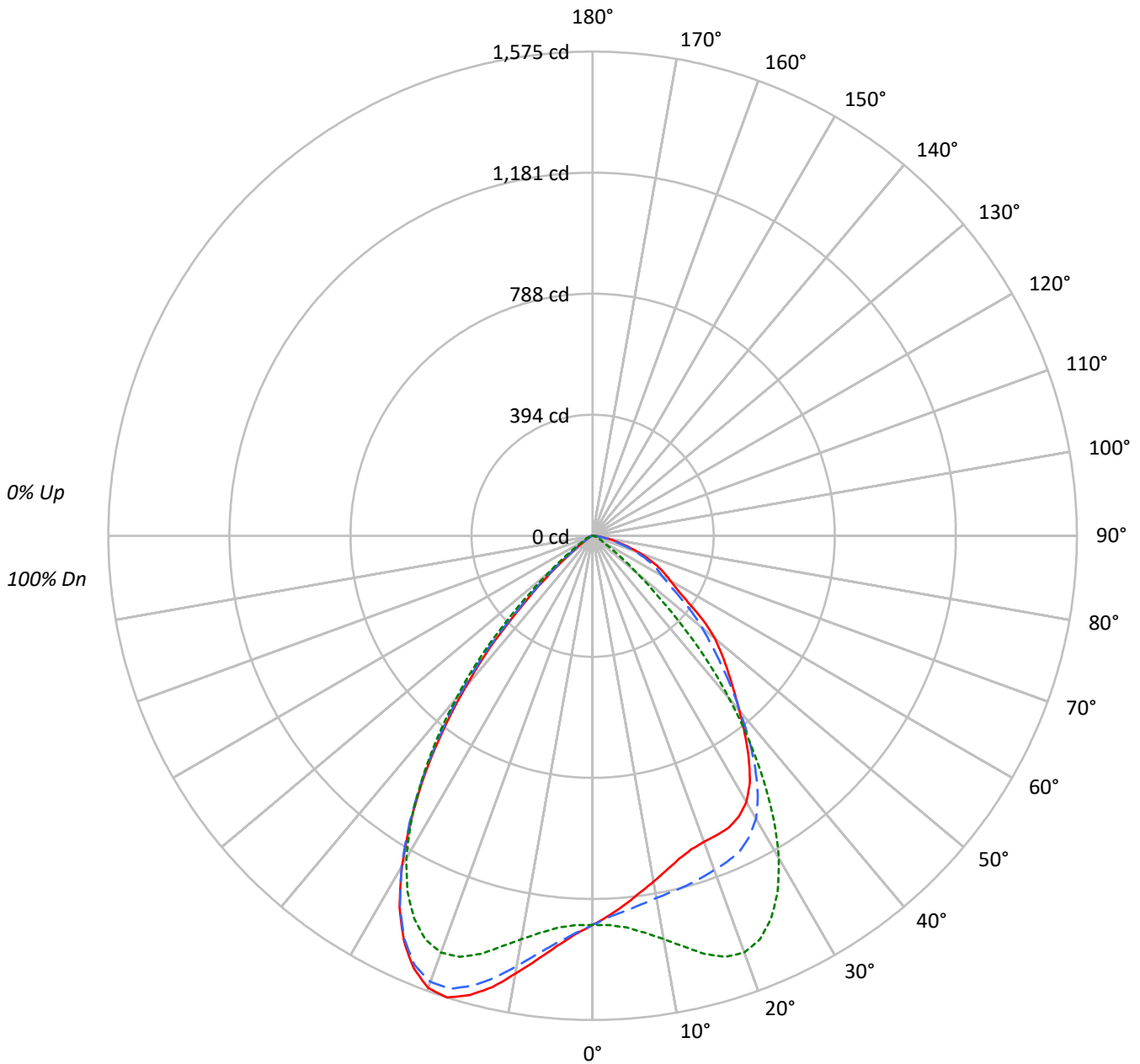
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251552

CATALOG NUMBER: LD4B30D010 EU4B30509040 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°	123372	123372	123372
5°	117856	125135	131112
10°	113004	131817	143098
15°	109714	142062	156066
20°	109863	149626	162310
25°	112662	147675	156203
30°	112512	136314	139476
35°	105387	115215	113644
40°	94399	87885	81995
45°	85645	55806	45786
50°	78675	28307	19544
55°	64584	12642	6457
60°	56701	7095	3547
65°	53362	5327	2675
70°	45677	4246	2365
75°	34831	3125	1883
80°	25031	1852	954
85°	18450	0	0



TEST NUMBER: P251552

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.0	5.3
10°-20°	383.2	16.4
20°-30°	592.9	25.4
30°-40°	584.2	25.0
40°-50°	358.7	15.4
50°-60°	159.5	6.8
60°-70°	89.1	3.8
70°-80°	38.6	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°	1099.1	47.0
0°-40°	1683.3	72.1
0°-60°	2201.5	94.2
0°-90°	2336.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2336.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1266	1266	1266	1266	1266	
5°	1205	1225	1279	1329	1340	113
15°	1087	1178	1408	1515	1547	309
25°	1048	1132	1373	1448	1453	481
35°	886	922	968	965	955	550
45°	621	590	405	354	332	481
55°	380	344	74	43	38	349
65°	231	208	23	13	12	227
75°	92	79	8	5	5	102
85°	16	13	0	0	0	20
90°	0	0	0	0	0	



TEST NUMBER: P251552

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9
2.5°	1236.1	1236.1	1236.1	1236.1	1239.4	1234.5	1239.4	1239.4	1244.4	1246.0	1241.1
5°	1204.7	1203.1	1204.7	1204.7	1208.0	1206.4	1211.3	1214.6	1221.3	1224.6	1224.6
7.5°	1171.7	1171.7	1171.7	1175.0	1179.9	1178.3	1183.2	1188.2	1198.1	1204.7	1209.7
10°	1141.9	1140.3	1145.2	1146.9	1151.8	1151.8	1160.1	1165.1	1176.6	1189.9	1196.5
12.5°	1113.8	1112.2	1115.5	1120.4	1128.7	1128.7	1135.3	1143.6	1160.1	1175.0	1186.5
15°	1087.4	1089.0	1094.0	1097.3	1107.2	1107.2	1115.5	1125.4	1143.6	1161.8	1178.3
17.5°	1069.2	1070.9	1074.2	1079.1	1089.0	1089.0	1097.3	1108.9	1128.7	1148.5	1168.4
20°	1059.3	1061.0	1064.3	1069.2	1077.5	1079.1	1085.7	1099.0	1117.1	1138.6	1156.8
22.5°	1054.3	1057.6	1061.0	1064.3	1072.5	1072.5	1080.8	1090.7	1108.9	1130.4	1146.9
25°	1047.7	1051.0	1052.7	1057.6	1064.3	1064.3	1069.2	1080.8	1097.3	1115.5	1132.0
27.5°	1029.6	1032.9	1034.5	1039.5	1046.1	1044.4	1051.0	1059.3	1074.2	1090.7	1103.9
30°	999.8	1001.5	1004.8	1006.4	1011.4	1011.4	1016.3	1024.6	1034.5	1049.4	1062.6
32.5°	951.9	955.2	956.8	958.5	963.5	961.8	963.5	968.4	978.3	991.5	999.8
35°	885.8	892.4	892.4	895.7	897.3	895.7	895.7	902.3	907.3	917.2	922.1
37.5°	813.1	818.0	816.4	819.7	821.3	816.4	819.7	821.3	827.9	832.9	834.6
40°	742.0	743.7	743.7	743.7	743.7	742.0	743.7	745.3	750.3	750.3	745.3
42.5°	677.6	679.2	679.2	675.9	679.2	677.6	677.6	677.6	677.6	670.9	666.0
45°	621.4	623.0	623.0	621.4	621.4	618.1	616.4	614.8	609.8	601.5	590.0
47.5°	568.5	571.8	573.4	570.1	568.5	565.2	565.2	555.3	548.7	538.7	522.2
50°	518.9	522.2	522.2	518.9	518.9	514.0	509.0	505.7	495.8	484.2	464.4
52.5°	456.1	461.1	461.1	459.4	459.4	452.8	451.2	444.5	436.3	423.1	406.5
55°	380.1	386.7	385.1	383.4	380.1	380.1	380.1	375.1	370.2	360.3	343.7
57.5°	325.6	327.2	327.2	325.6	325.6	322.3	322.3	317.3	315.6	305.7	292.5
60°	290.9	290.9	292.5	290.9	289.2	287.5	285.9	282.6	277.6	271.0	261.1
62.5°	262.8	264.4	264.4	262.8	261.1	259.5	257.8	254.5	251.2	246.2	236.3
65°	231.4	234.7	233.0	231.4	229.7	228.1	228.1	224.8	221.4	218.1	208.2
67.5°	196.7	198.3	200.0	196.7	196.7	195.0	195.0	191.7	190.0	183.4	176.8
70°	160.3	162.0	162.0	160.3	160.3	158.6	158.6	157.0	155.3	150.4	143.8
72.5°	125.6	127.2	125.6	123.9	123.9	123.9	122.3	120.6	119.0	115.7	110.7
75°	92.5	92.5	94.2	92.5	90.9	90.9	89.2	89.2	85.9	84.3	79.3
77.5°	66.1	67.8	66.1	66.1	64.5	62.8	62.8	61.1	61.1	59.5	56.2
80°	44.6	44.6	46.3	44.6	43.0	44.6	43.0	41.3	41.3	39.7	36.4
82.5°	28.1	29.7	28.1	28.1	28.1	28.1	28.1	26.4	26.4	24.8	23.1
85°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	14.9	14.9	14.9	13.2
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: P251552

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9
2.5°	1247.7	1249.3	1252.7	1257.6	1257.6	1254.3	1262.6	1262.6	1265.9	1267.5	1274.1
5°	1234.5	1237.8	1244.4	1252.7	1254.3	1252.7	1264.2	1269.2	1274.1	1279.1	1289.0
7.5°	1222.9	1229.5	1241.1	1252.7	1257.6	1257.6	1275.8	1282.4	1292.3	1302.2	1313.8
10°	1216.3	1226.2	1242.7	1260.9	1265.9	1270.8	1292.3	1305.5	1318.8	1332.0	1348.5
12.5°	1208.0	1226.2	1247.7	1270.8	1280.7	1287.4	1317.1	1333.6	1351.8	1368.3	1389.8
15°	1206.4	1227.9	1256.0	1285.7	1298.9	1308.8	1341.9	1365.0	1386.5	1408.0	1429.5
17.5°	1199.8	1226.2	1260.9	1294.0	1310.5	1323.7	1361.7	1389.8	1414.6	1436.1	1460.9
20°	1191.5	1221.3	1259.3	1295.6	1313.8	1327.0	1368.3	1394.8	1422.9	1442.7	1465.8
22.5°	1179.9	1209.7	1247.7	1284.1	1300.6	1312.1	1353.5	1376.6	1401.4	1421.2	1442.7
25°	1160.1	1188.2	1221.3	1251.0	1267.5	1277.4	1313.8	1335.3	1353.5	1373.3	1393.1
27.5°	1132.0	1153.5	1181.6	1203.1	1213.0	1222.9	1252.7	1270.8	1287.4	1303.9	1317.1
30°	1082.4	1099.0	1118.8	1137.0	1146.9	1148.5	1176.6	1186.5	1199.8	1211.3	1221.3
32.5°	1016.3	1029.6	1041.1	1051.0	1057.6	1059.3	1080.8	1084.1	1097.3	1097.3	1112.2
35°	932.1	938.7	946.9	946.9	951.9	946.9	961.8	965.1	966.8	968.4	980.0
37.5°	836.2	839.5	844.5	834.6	834.6	829.6	834.6	837.9	831.2	831.2	839.5
40°	745.3	738.7	732.1	722.2	717.2	707.3	707.3	699.0	694.1	690.8	692.4
42.5°	657.7	642.9	628.0	606.5	596.6	586.7	576.7	565.2	561.9	553.6	548.7
45°	573.4	552.0	532.1	497.4	477.6	467.7	446.2	423.1	408.2	404.9	391.7
47.5°	502.4	471.0	437.9	396.6	376.8	358.6	327.2	307.4	287.5	277.6	269.4
50°	439.6	411.5	368.5	323.9	299.1	280.9	246.2	223.1	201.6	186.7	176.8
52.5°	385.1	353.7	314.0	262.8	238.0	218.1	180.1	153.7	135.5	120.6	109.1
55°	323.9	299.1	259.5	211.5	186.7	163.6	130.6	102.5	84.3	74.4	66.1
57.5°	279.3	257.8	219.8	173.5	150.4	128.9	95.8	72.7	57.8	47.9	43.0
60°	249.5	229.7	196.7	152.0	130.6	110.7	79.3	57.8	44.6	36.4	33.1
62.5°	224.8	204.9	175.2	133.9	115.7	95.8	67.8	47.9	36.4	29.7	24.8
65°	196.7	178.5	152.0	115.7	99.2	82.6	57.8	39.7	29.7	23.1	19.8
67.5°	166.9	150.4	127.2	95.8	82.6	69.4	46.3	33.1	24.8	19.8	16.5
70°	135.5	122.3	100.8	77.7	66.1	54.5	38.0	26.4	18.2	14.9	13.2
72.5°	104.1	92.5	77.7	59.5	49.6	41.3	28.1	19.8	14.9	11.6	9.9
75°	74.4	66.1	54.5	43.0	36.4	29.7	21.5	14.9	9.9	8.3	6.6
77.5°	51.2	46.3	38.0	29.7	24.8	21.5	14.9	9.9	8.3	6.6	5.0
80°	33.1	29.7	24.8	18.2	14.9	13.2	8.3	6.6	5.0	3.3	3.3
82.5°	19.8	18.2	14.9	9.9	8.3	6.6	5.0	3.3	3.3	1.7	1.7
85°	11.6	9.9	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: P251552

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9
2.5°	1270.8	1279.1	1277.4	1282.4	1280.7	1280.7	1289.0	1285.7	1294.0	1294.0	1295.6
5°	1289.0	1300.6	1300.6	1308.8	1307.2	1310.5	1318.8	1318.8	1328.7	1332.0	1332.0
7.5°	1315.5	1330.3	1333.6	1341.9	1343.5	1350.2	1356.8	1358.4	1371.6	1374.9	1376.6
10°	1351.8	1370.0	1374.9	1383.2	1386.5	1393.1	1401.4	1404.7	1421.2	1422.9	1429.5
12.5°	1396.4	1416.3	1421.2	1431.1	1432.8	1441.0	1452.6	1455.9	1472.4	1477.4	1482.4
15°	1439.4	1457.6	1465.8	1475.8	1477.4	1487.3	1497.2	1500.5	1515.4	1522.0	1527.0
17.5°	1469.1	1490.6	1495.6	1508.8	1508.8	1517.1	1527.0	1530.3	1545.2	1550.1	1553.4
20°	1475.8	1495.6	1502.2	1512.1	1513.8	1518.7	1527.0	1530.3	1543.5	1545.2	1550.1
22.5°	1451.0	1470.8	1474.1	1484.0	1485.7	1490.6	1497.2	1495.6	1512.1	1510.5	1512.1
25°	1398.1	1416.3	1416.3	1427.8	1426.2	1431.1	1434.4	1432.8	1447.7	1447.7	1447.7
27.5°	1322.1	1338.6	1340.2	1348.5	1343.5	1345.2	1348.5	1346.8	1356.8	1356.8	1356.8
30°	1227.9	1241.1	1236.1	1242.7	1239.4	1242.7	1239.4	1237.8	1241.1	1244.4	1242.7
32.5°	1110.5	1120.4	1120.4	1122.1	1122.1	1112.2	1108.9	1108.9	1107.2	1105.6	1105.6
35°	975.0	983.3	980.0	980.0	978.3	968.4	963.5	960.1	965.1	955.2	961.8
37.5°	836.2	837.9	832.9	831.2	823.0	823.0	814.7	808.1	811.4	809.8	803.2
40°	684.2	690.8	680.9	677.6	682.5	675.9	667.6	659.4	666.0	657.7	661.0
42.5°	535.4	533.8	530.5	530.5	530.5	520.6	518.9	517.3	518.9	512.3	507.3
45°	386.7	381.7	376.8	376.8	370.2	366.9	366.9	361.9	353.7	353.7	343.7
47.5°	261.1	249.5	246.2	244.6	241.3	241.3	238.0	234.7	233.0	224.8	224.8
50°	170.2	158.6	155.3	153.7	155.3	152.0	148.7	145.4	142.1	140.5	137.2
52.5°	102.5	97.5	94.2	92.5	89.2	87.6	85.9	82.6	81.0	81.0	79.3
55°	61.1	56.2	49.6	49.6	49.6	47.9	46.3	44.6	43.0	43.0	41.3
57.5°	38.0	34.7	31.4	29.7	29.7	29.7	28.1	28.1	28.1	28.1	26.4
60°	28.1	24.8	23.1	23.1	23.1	21.5	21.5	21.5	21.5	19.8	19.8
62.5°	21.5	19.8	18.2	18.2	16.5	16.5	16.5	16.5	16.5	16.5	14.9
65°	18.2	14.9	14.9	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
67.5°	13.2	11.6	11.6	11.6	11.6	9.9	9.9	9.9	9.9	9.9	9.9
70°	9.9	9.9	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: P251552

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9	1265.9
2.5°	1295.6	1303.9	1295.6	1295.6	1300.6	1298.9	1302.2	1297.3
5°	1333.6	1345.2	1336.9	1335.3	1343.5	1341.9	1343.5	1340.2
7.5°	1379.9	1391.5	1383.2	1383.2	1391.5	1389.8	1394.8	1391.5
10°	1432.8	1446.0	1434.4	1436.1	1447.7	1446.0	1446.0	1446.0
12.5°	1487.3	1500.5	1493.9	1493.9	1502.2	1503.8	1505.5	1503.8
15°	1531.9	1545.2	1536.9	1536.9	1548.5	1546.8	1548.5	1546.8
17.5°	1558.4	1571.6	1561.7	1561.7	1571.6	1571.6	1573.3	1574.9
20°	1551.8	1566.6	1558.4	1555.1	1566.6	1566.6	1565.0	1565.0
22.5°	1513.8	1527.0	1520.4	1517.1	1525.3	1522.0	1520.4	1522.0
25°	1447.7	1460.9	1447.7	1447.7	1454.3	1452.6	1454.3	1452.6
27.5°	1358.4	1368.3	1355.1	1353.5	1360.1	1356.8	1355.1	1360.1
30°	1239.4	1249.3	1242.7	1237.8	1246.0	1241.1	1237.8	1239.4
32.5°	1103.9	1110.5	1107.2	1099.0	1103.9	1100.6	1099.0	1100.6
35°	955.2	963.5	950.2	948.6	956.8	950.2	946.9	955.2
37.5°	801.5	811.4	799.8	801.5	796.5	798.2	794.9	799.8
40°	656.1	654.4	651.1	649.5	651.1	646.2	649.5	644.5
42.5°	499.1	502.4	500.7	499.1	500.7	494.1	490.8	497.4
45°	347.0	345.4	342.1	338.8	338.8	337.1	337.1	332.2
47.5°	223.1	221.4	214.8	216.5	219.8	216.5	211.5	218.1
50°	135.5	133.9	133.9	132.2	135.5	132.2	128.9	128.9
52.5°	76.0	76.0	74.4	74.4	74.4	74.4	72.7	71.1
55°	41.3	39.7	39.7	39.7	38.0	38.0	38.0	38.0
57.5°	26.4	26.4	26.4	26.4	26.4	26.4	24.8	24.8
60°	19.8	19.8	19.8	19.8	18.2	19.8	18.2	18.2
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°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
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)