

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: P251796

Luminaire Tested: **LD4B40D010 EU4B30509027 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251796  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B40D010 EU4B30509027 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS 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: 2568.0 lumens  
Efficiency: N/A  
Efficacy: 59.7 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

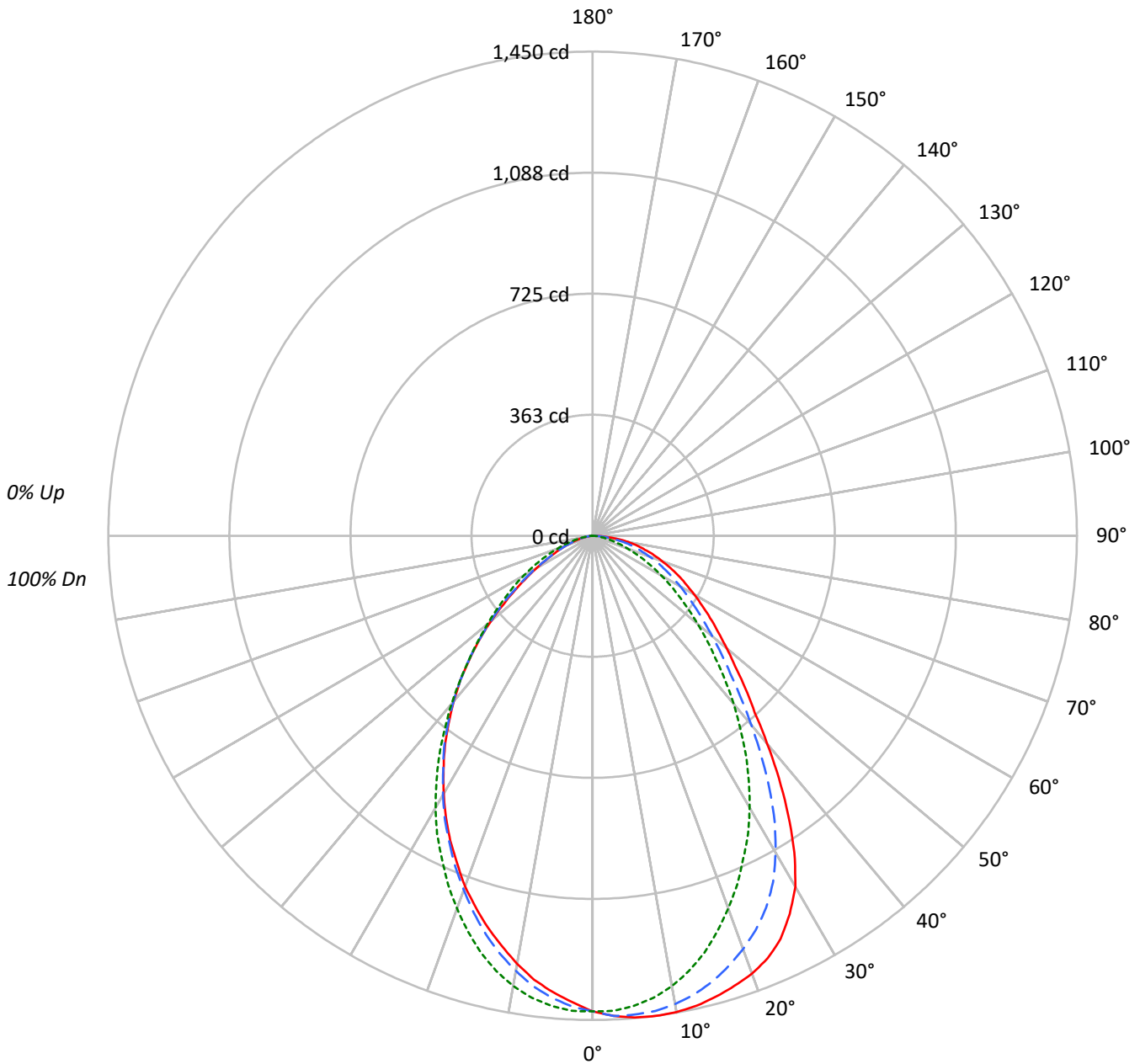
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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			100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88			88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76			76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67			67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59			59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	138800	138800	138800
5°	141688	138254	134184
10°	143326	135518	128798
15°	144140	130428	122478
20°	144752	123169	115889
25°	143256	114749	108383
30°	136606	105783	100359
35°	121473	95144	91765
40°	103419	83623	82237
45°	89091	71877	71573
50°	79402	62118	60132
55°	72961	53608	48017
60°	68338	46117	37580
65°	65676	38903	29310
70°	63059	31230	23736
75°	61039	24739	18150
80°	61512	17230	11056
85°	51437	12300	4920



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.3	5.2
10°-20°	366.5	14.3
20°-30°	512.6	20.0
30°-40°	526.9	20.5
40°-50°	427.6	16.7
50°-60°	301.1	11.7
60°-70°	185.4	7.2
70°-80°	92.6	3.6
80°-90°	22.0	0.9
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°	1012.4	39.4
0°-40°	1539.3	59.9
0°-60°	2268.0	88.3
0°-90°	2568.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2568.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1424	1424	1424	1424	1424	
5°	1448	1440	1413	1389	1372	138
15°	1429	1383	1293	1236	1214	404
25°	1332	1229	1067	1014	1008	609
35°	1021	922	800	776	771	635
45°	646	583	522	522	519	503
55°	429	377	316	289	283	386
65°	285	239	169	129	127	282
75°	162	127	66	48	48	173
85°	46	31	11	7	4	54
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°	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2
2.5°	1439.5	1441.7	1435.2	1441.7	1433.0	1437.3	1439.5	1435.2	1430.8	1439.5	1439.5
5°	1448.3	1448.3	1441.7	1450.5	1439.5	1441.7	1446.1	1439.5	1433.0	1441.7	1439.5
7.5°	1450.5	1450.5	1441.7	1450.5	1439.5	1441.7	1443.9	1437.3	1430.8	1437.3	1435.2
10°	1448.3	1446.1	1439.5	1448.3	1437.3	1437.3	1439.5	1433.0	1422.0	1428.6	1424.2
12.5°	1441.7	1441.7	1433.0	1441.7	1426.4	1426.4	1428.6	1419.8	1411.0	1411.0	1406.7
15°	1428.6	1428.6	1419.8	1426.4	1413.2	1413.2	1411.0	1402.3	1391.3	1391.3	1382.6
17.5°	1413.2	1413.2	1404.5	1411.0	1395.7	1395.7	1393.5	1380.4	1365.0	1362.8	1351.9
20°	1395.7	1395.7	1384.8	1389.1	1371.6	1371.6	1369.4	1354.1	1336.6	1332.2	1316.8
22.5°	1369.4	1369.4	1358.5	1360.7	1343.1	1340.9	1338.7	1321.2	1303.7	1297.1	1277.4
25°	1332.2	1330.0	1321.2	1321.2	1303.7	1299.3	1294.9	1277.4	1259.9	1246.7	1229.2
27.5°	1277.4	1279.6	1268.6	1270.8	1248.9	1244.5	1242.3	1220.4	1200.7	1187.6	1170.0
30°	1213.9	1207.3	1196.3	1196.3	1178.8	1176.6	1172.2	1152.5	1130.6	1115.3	1095.5
32.5°	1124.0	1121.8	1110.9	1110.9	1091.2	1091.2	1082.4	1062.7	1042.9	1034.2	1014.5
35°	1021.0	1018.8	1010.1	1010.1	992.6	994.7	986.0	970.6	950.9	937.8	922.4
37.5°	915.9	913.7	904.9	907.1	891.8	891.8	885.2	869.9	854.5	847.9	828.2
40°	812.9	810.7	799.7	806.3	793.2	788.8	786.6	775.6	758.1	749.3	738.4
42.5°	718.7	720.9	709.9	714.3	703.3	699.0	696.8	688.0	674.8	666.1	655.1
45°	646.4	642.0	637.6	637.6	626.6	624.5	622.3	611.3	602.5	593.8	582.8
47.5°	578.4	574.1	569.7	571.9	563.1	560.9	556.5	547.8	536.8	532.4	521.5
50°	523.7	521.5	514.9	514.9	506.1	503.9	499.6	493.0	482.0	475.5	466.7
52.5°	473.3	473.3	466.7	464.5	457.9	455.7	453.6	444.8	436.0	427.3	418.5
55°	429.4	427.3	422.9	422.9	414.1	411.9	409.7	401.0	392.2	385.6	376.9
57.5°	387.8	387.8	383.4	383.4	376.9	372.5	372.5	363.7	352.8	348.4	337.4
60°	350.6	350.6	346.2	346.2	339.6	339.6	335.2	326.5	319.9	311.1	302.4
62.5°	315.5	317.7	313.3	311.1	304.6	302.4	302.4	295.8	284.8	278.3	269.5
65°	284.8	282.6	280.5	278.3	271.7	269.5	269.5	260.7	254.2	245.4	238.8
67.5°	252.0	252.0	247.6	247.6	243.2	241.0	236.6	230.1	223.5	216.9	210.3
70°	221.3	221.3	219.1	219.1	212.5	210.3	208.2	201.6	195.0	188.4	179.7
72.5°	192.8	190.6	188.4	188.4	184.0	181.9	179.7	173.1	166.5	159.9	153.4
75°	162.1	162.1	159.9	159.9	155.6	153.4	153.4	149.0	140.2	135.8	127.1
77.5°	135.8	135.8	133.7	133.7	129.3	129.3	127.1	120.5	116.1	109.6	105.2
80°	109.6	107.4	107.4	105.2	100.8	100.8	98.6	96.4	89.8	85.5	78.9
82.5°	76.7	76.7	76.7	74.5	72.3	72.3	70.1	65.7	61.3	59.2	52.6
85°	46.0	46.0	43.8	41.6	43.8	41.6	39.4	37.2	35.1	32.9	30.7
87.5°	19.7	19.7	17.5	17.5	17.5	17.5	17.5	15.3	13.1	13.1	11.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2
2.5°	1426.4	1433.0	1430.8	1428.6	1424.2	1424.2	1424.2	1422.0	1424.2	1424.2	1419.8
5°	1426.4	1430.8	1428.6	1424.2	1419.8	1419.8	1417.6	1413.2	1413.2	1413.2	1404.5
7.5°	1419.8	1424.2	1417.6	1413.2	1408.9	1404.5	1404.5	1397.9	1397.9	1395.7	1386.9
10°	1406.7	1408.9	1400.1	1395.7	1389.1	1386.9	1382.6	1373.8	1371.6	1369.4	1360.7
12.5°	1386.9	1389.1	1378.2	1369.4	1360.7	1358.5	1354.1	1343.1	1338.7	1334.4	1323.4
15°	1358.5	1358.5	1345.3	1334.4	1325.6	1323.4	1312.5	1301.5	1297.1	1292.7	1277.4
17.5°	1325.6	1323.4	1305.9	1294.9	1284.0	1279.6	1268.6	1255.5	1246.7	1242.3	1229.2
20°	1290.5	1284.0	1264.2	1253.3	1240.1	1233.6	1222.6	1205.1	1196.3	1187.6	1174.4
22.5°	1248.9	1240.1	1218.2	1202.9	1189.8	1183.2	1167.8	1152.5	1139.4	1130.6	1115.3
25°	1198.5	1187.6	1163.5	1143.7	1132.8	1126.2	1110.9	1093.3	1080.2	1067.1	1053.9
27.5°	1139.4	1126.2	1102.1	1082.4	1071.4	1060.5	1049.5	1029.8	1018.8	1007.9	992.6
30°	1067.1	1051.7	1029.8	1012.3	999.1	990.4	977.2	959.7	946.5	940.0	924.6
32.5°	988.2	970.6	950.9	933.4	926.8	915.9	904.9	887.4	876.4	869.9	858.9
35°	900.5	887.4	865.5	852.3	841.4	837.0	828.2	810.7	806.3	799.7	786.6
37.5°	808.5	797.5	782.2	771.3	762.5	758.1	749.3	738.4	731.8	725.2	718.7
40°	723.1	714.3	701.1	692.4	681.4	674.8	674.8	661.7	657.3	657.3	650.7
42.5°	639.8	635.4	624.5	611.3	609.1	602.5	600.4	593.8	589.4	587.2	585.0
45°	569.7	563.1	552.1	545.6	539.0	539.0	532.4	525.9	523.7	521.5	519.3
47.5°	508.3	499.6	490.8	484.2	479.8	477.7	471.1	466.7	464.5	464.5	462.3
50°	453.6	447.0	438.2	431.6	427.3	422.9	418.5	414.1	411.9	409.7	409.7
52.5°	407.5	398.8	390.0	383.4	376.9	374.7	370.3	365.9	363.7	361.5	359.3
55°	365.9	359.3	348.4	341.8	335.2	335.2	328.7	322.1	317.7	315.5	313.3
57.5°	326.5	319.9	308.9	302.4	298.0	293.6	289.2	284.8	280.5	276.1	271.7
60°	291.4	284.8	273.9	265.1	262.9	258.5	254.2	245.4	241.0	236.6	232.3
62.5°	258.5	249.8	241.0	232.3	230.1	225.7	219.1	212.5	206.0	201.6	195.0
65°	227.9	221.3	210.3	203.8	197.2	195.0	188.4	179.7	173.1	168.7	162.1
67.5°	199.4	190.6	179.7	173.1	168.7	164.3	157.8	151.2	144.6	138.0	131.5
70°	170.9	164.3	153.4	146.8	142.4	138.0	131.5	122.7	116.1	109.6	105.2
72.5°	144.6	135.8	127.1	120.5	116.1	111.7	105.2	98.6	92.0	87.6	81.1
75°	120.5	111.7	105.2	96.4	94.2	89.8	83.3	76.7	70.1	65.7	61.3
77.5°	96.4	89.8	81.1	76.7	72.3	67.9	63.5	57.0	52.6	46.0	41.6
80°	72.3	65.7	59.2	54.8	50.4	48.2	43.8	39.4	35.1	30.7	28.5
82.5°	48.2	43.8	37.2	35.1	32.9	30.7	26.3	24.1	21.9	19.7	17.5
85°	26.3	24.1	21.9	17.5	17.5	15.3	13.1	13.1	11.0	11.0	8.8
87.5°	11.0	8.8	8.8	6.6	6.6	6.6	4.4	4.4	4.4	2.2	2.2
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°	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2
2.5°	1422.0	1413.2	1413.2	1413.2	1406.7	1408.9	1411.0	1413.2	1411.0	1404.5	1411.0
5°	1406.7	1397.9	1397.9	1393.5	1389.1	1389.1	1389.1	1391.3	1389.1	1382.6	1384.8
7.5°	1386.9	1376.0	1373.8	1369.4	1365.0	1362.8	1362.8	1362.8	1360.7	1351.9	1356.3
10°	1356.3	1345.3	1340.9	1338.7	1332.2	1330.0	1327.8	1325.6	1323.4	1314.6	1319.0
12.5°	1319.0	1310.3	1301.5	1299.3	1292.7	1288.3	1286.2	1286.2	1281.8	1273.0	1277.4
15°	1275.2	1262.1	1255.5	1251.1	1244.5	1240.1	1235.8	1238.0	1235.8	1227.0	1229.2
17.5°	1222.6	1209.5	1202.9	1200.7	1191.9	1187.6	1185.4	1185.4	1183.2	1174.4	1176.6
20°	1165.6	1152.5	1148.1	1143.7	1139.4	1135.0	1132.8	1130.6	1128.4	1119.6	1126.2
22.5°	1108.7	1093.3	1086.8	1086.8	1078.0	1075.8	1073.6	1075.8	1073.6	1064.9	1069.2
25°	1049.5	1034.2	1029.8	1023.2	1018.8	1016.7	1016.7	1016.7	1014.5	1010.1	1014.5
27.5°	983.8	972.8	966.3	964.1	959.7	957.5	955.3	957.5	957.5	950.9	955.3
30°	918.1	909.3	904.9	902.7	896.1	894.0	896.1	896.1	896.1	889.6	896.1
32.5°	852.3	845.8	843.6	837.0	832.6	832.6	832.6	834.8	832.6	828.2	834.8
35°	786.6	777.8	775.6	773.4	773.4	769.1	773.4	771.3	775.6	769.1	773.4
37.5°	716.5	712.1	709.9	709.9	705.5	707.7	707.7	707.7	712.1	705.5	709.9
40°	650.7	646.4	646.4	646.4	644.2	644.2	644.2	646.4	648.6	644.2	648.6
42.5°	585.0	582.8	582.8	580.6	578.4	580.6	582.8	582.8	585.0	580.6	582.8
45°	521.5	519.3	521.5	519.3	519.3	517.1	519.3	521.5	521.5	519.3	519.3
47.5°	462.3	462.3	460.1	460.1	460.1	460.1	460.1	460.1	460.1	455.7	460.1
50°	409.7	405.3	407.5	405.3	405.3	403.2	403.2	401.0	398.8	396.6	396.6
52.5°	359.3	355.0	355.0	352.8	350.6	350.6	348.4	346.2	344.0	339.6	339.6
55°	311.1	306.7	304.6	302.4	300.2	298.0	295.8	293.6	289.2	287.0	287.0
57.5°	267.3	262.9	258.5	258.5	254.2	252.0	247.6	243.2	241.0	236.6	236.6
60°	227.9	223.5	216.9	214.7	212.5	208.2	201.6	199.4	197.2	192.8	195.0
62.5°	190.6	184.0	177.5	175.3	173.1	168.7	164.3	159.9	157.8	159.9	159.9
65°	155.6	149.0	144.6	140.2	138.0	133.7	131.5	129.3	129.3	129.3	131.5
67.5°	124.9	118.3	113.9	111.7	107.4	105.2	105.2	105.2	105.2	105.2	105.2
70°	98.6	94.2	89.8	85.5	85.5	83.3	83.3	83.3	83.3	83.3	83.3
72.5°	74.5	70.1	67.9	67.9	65.7	65.7	65.7	65.7	63.5	63.5	65.7
75°	54.8	52.6	50.4	50.4	50.4	48.2	48.2	48.2	48.2	48.2	48.2
77.5°	39.4	37.2	37.2	35.1	35.1	35.1	35.1	35.1	35.1	32.9	32.9
80°	26.3	24.1	24.1	24.1	24.1	21.9	21.9	21.9	21.9	21.9	21.9
82.5°	15.3	15.3	15.3	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
85°	8.8	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	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: P251796

CATALOG NUMBER: LD4B40D010 EU4B30509027 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2	1424.2
2.5°	1397.9	1406.7	1408.9	1402.3	1404.5	1400.1	1402.3	1397.9
5°	1373.8	1380.4	1382.6	1378.2	1378.2	1373.8	1376.0	1371.6
7.5°	1343.1	1349.7	1351.9	1347.5	1347.5	1343.1	1343.1	1340.9
10°	1308.1	1310.3	1314.6	1308.1	1310.3	1305.9	1305.9	1301.5
12.5°	1264.2	1268.6	1273.0	1266.4	1266.4	1264.2	1264.2	1257.7
15°	1218.2	1222.6	1224.8	1220.4	1220.4	1218.2	1216.0	1213.9
17.5°	1170.0	1172.2	1176.6	1170.0	1174.4	1170.0	1170.0	1165.6
20°	1115.3	1121.8	1124.0	1117.4	1119.6	1117.4	1117.4	1117.4
22.5°	1062.7	1067.1	1069.2	1064.9	1067.1	1062.7	1064.9	1060.5
25°	1007.9	1010.1	1012.3	1007.9	1012.3	1010.1	1007.9	1007.9
27.5°	950.9	953.1	955.3	950.9	955.3	953.1	955.3	950.9
30°	889.6	894.0	898.3	894.0	896.1	894.0	894.0	891.8
32.5°	828.2	832.6	837.0	832.6	837.0	832.6	834.8	830.4
35°	771.3	773.4	775.6	771.3	773.4	773.4	773.4	771.3
37.5°	707.7	712.1	712.1	709.9	714.3	712.1	712.1	707.7
40°	646.4	648.6	650.7	646.4	648.6	646.4	648.6	646.4
42.5°	582.8	587.2	589.4	585.0	585.0	585.0	582.8	585.0
45°	517.1	521.5	525.9	519.3	521.5	521.5	521.5	519.3
47.5°	457.9	457.9	460.1	457.9	460.1	455.7	460.1	457.9
50°	396.6	396.6	401.0	396.6	396.6	396.6	396.6	396.6
52.5°	337.4	339.6	339.6	335.2	337.4	335.2	337.4	335.2
55°	282.6	282.6	284.8	282.6	282.6	282.6	282.6	282.6
57.5°	234.4	236.6	236.6	234.4	236.6	234.4	234.4	234.4
60°	195.0	195.0	195.0	192.8	195.0	192.8	195.0	192.8
62.5°	157.8	159.9	159.9	157.8	159.9	157.8	157.8	157.8
65°	129.3	129.3	129.3	129.3	129.3	129.3	129.3	127.1
67.5°	103.0	103.0	105.2	103.0	105.2	105.2	105.2	105.2
70°	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3
72.5°	63.5	63.5	65.7	63.5	63.5	63.5	63.5	63.5
75°	48.2	48.2	48.2	48.2	48.2	46.0	46.0	48.2
77.5°	32.9	32.9	32.9	32.9	32.9	32.9	32.9	35.1
80°	21.9	21.9	21.9	21.9	19.7	19.7	21.9	19.7
82.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
85°	6.6	6.6	4.4	4.4	4.4	4.4	4.4	4.4
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)