

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: P251802

Luminaire Tested: **LD4B40D010 EU4B30509730 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251802  
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 EU4B30509730 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2333.0 lumens  
Efficiency: N/A  
Efficacy: 54.2 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

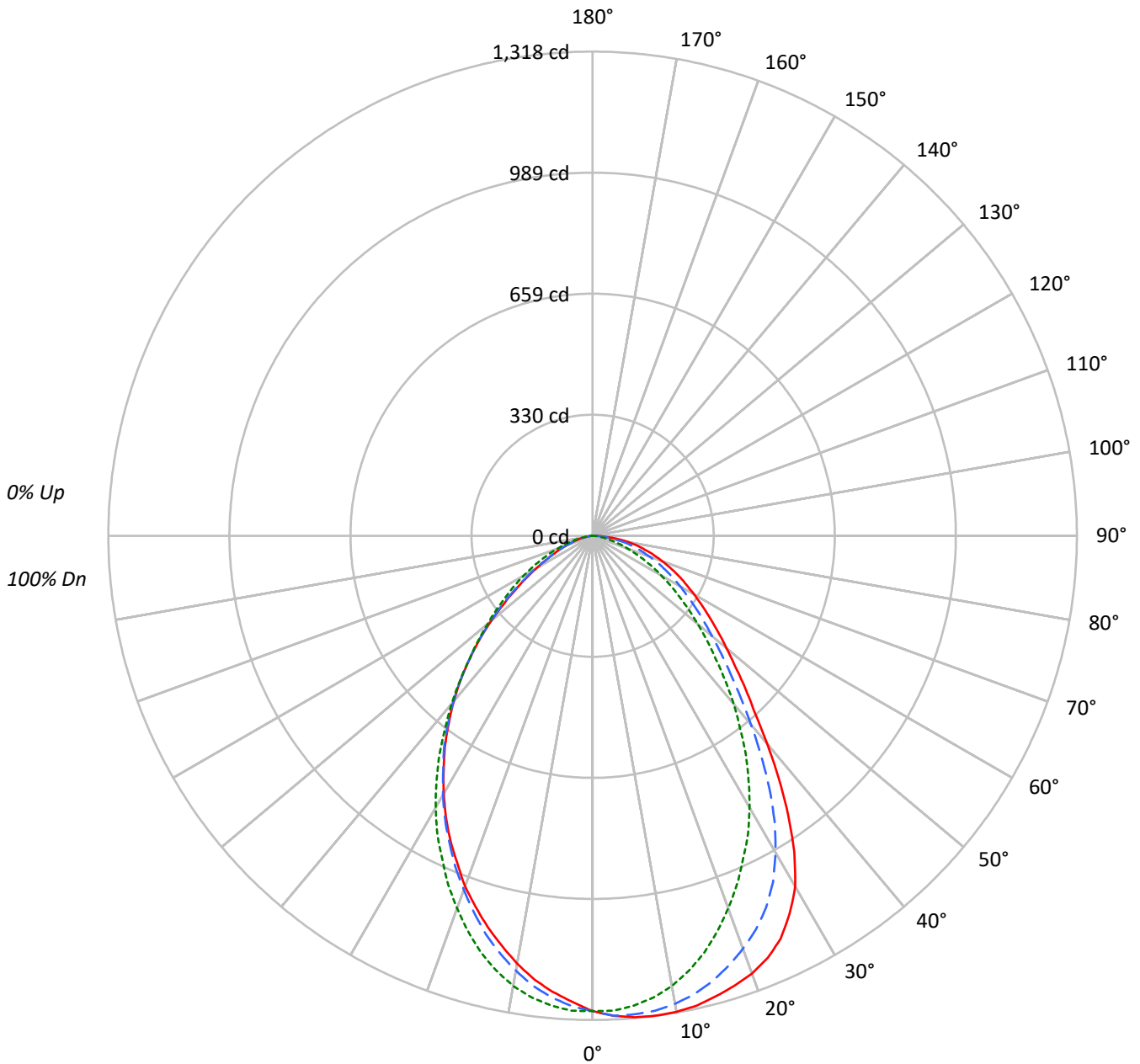
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P251802

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBLWW1H

### Luminous Intensity Polar Plot





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

RF	20				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°	126101	126101	126101
5°	128725	125604	121906
10°	130214	123118	117012
15°	130943	118492	111268
20°	131508	111896	105289
25°	130147	104243	98468
30°	124103	96105	91176
35°	110361	86447	83365
40°	93954	75977	74705
45°	80932	65302	65027
50°	72125	56432	54628
55°	66300	48697	43634
60°	62081	41907	34149
65°	59681	35352	26635
70°	57275	28352	21542
75°	55466	22480	16493
80°	55843	15659	10046
85°	46741	11182	4473



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CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBLWW1H

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.1	5.2
10°-20°	333.0	14.3
20°-30°	465.7	20.0
30°-40°	478.7	20.5
40°-50°	388.5	16.7
50°-60°	273.6	11.7
60°-70°	168.4	7.2
70°-80°	84.1	3.6
80°-90°	20.0	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°	919.8	39.4
0°-40°	1398.4	59.9
0°-60°	2060.5	88.3
0°-90°	2333.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2333.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1294	1294	1294	1294	1294	
5°	1316	1308	1284	1262	1246	126
15°	1298	1256	1174	1123	1103	367
25°	1210	1117	969	922	916	553
35°	928	838	727	705	701	577
45°	587	530	474	474	472	457
55°	390	342	287	263	257	351
65°	259	217	153	117	116	256
75°	147	116	60	44	44	157
85°	42	28	10	6	4	49
90°	0	0	0	0	0	



TEST NUMBER: P251802

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBLWW1H

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9
2.5°	1307.8	1309.8	1303.8	1309.8	1301.8	1305.8	1307.8	1303.8	1299.8	1307.8	1307.8
5°	1315.8	1315.8	1309.8	1317.8	1307.8	1309.8	1313.8	1307.8	1301.8	1309.8	1307.8
7.5°	1317.8	1317.8	1309.8	1317.8	1307.8	1309.8	1311.8	1305.8	1299.8	1305.8	1303.8
10°	1315.8	1313.8	1307.8	1315.8	1305.8	1305.8	1307.8	1301.8	1291.9	1297.8	1293.9
12.5°	1309.8	1309.8	1301.8	1309.8	1295.9	1295.9	1297.8	1289.9	1281.9	1281.9	1277.9
15°	1297.8	1297.8	1289.9	1295.9	1283.9	1283.9	1281.9	1274.0	1264.0	1264.0	1256.0
17.5°	1283.9	1283.9	1276.0	1281.9	1268.0	1268.0	1266.0	1254.1	1240.1	1238.1	1228.2
20°	1268.0	1268.0	1258.0	1262.0	1246.1	1246.1	1244.1	1230.2	1214.2	1210.3	1196.3
22.5°	1244.1	1244.1	1234.1	1236.1	1220.2	1218.2	1216.2	1200.3	1184.4	1178.4	1160.5
25°	1210.3	1208.3	1200.3	1200.3	1184.4	1180.4	1176.4	1160.5	1144.6	1132.6	1116.7
27.5°	1160.5	1162.5	1152.5	1154.5	1134.6	1130.6	1128.6	1108.7	1090.8	1078.9	1063.0
30°	1102.8	1096.8	1086.8	1086.8	1070.9	1068.9	1065.0	1047.0	1027.1	1013.2	995.3
32.5°	1021.2	1019.2	1009.2	1009.2	991.3	991.3	983.3	965.4	947.5	939.5	921.6
35°	927.6	925.6	917.6	917.6	901.7	903.7	895.8	881.8	863.9	852.0	838.0
37.5°	832.1	830.1	822.1	824.1	810.2	810.2	804.2	790.3	776.3	770.3	752.4
40°	738.5	736.5	726.6	732.5	720.6	716.6	714.6	704.7	688.7	680.8	670.8
42.5°	652.9	654.9	644.9	648.9	639.0	635.0	633.0	625.0	613.1	605.1	595.2
45°	587.2	583.2	579.3	579.3	569.3	567.3	565.3	555.4	547.4	539.4	529.5
47.5°	525.5	521.5	517.5	519.5	511.6	509.6	505.6	497.6	487.7	483.7	473.8
50°	475.7	473.8	467.8	467.8	459.8	457.8	453.8	447.9	437.9	432.0	424.0
52.5°	430.0	430.0	424.0	422.0	416.0	414.0	412.0	404.1	396.1	388.2	380.2
55°	390.2	388.2	384.2	384.2	376.2	374.2	372.2	364.3	356.3	350.3	342.4
57.5°	352.3	352.3	348.3	348.3	342.4	338.4	338.4	330.4	320.5	316.5	306.5
60°	318.5	318.5	314.5	314.5	308.5	308.5	304.6	296.6	290.6	282.7	274.7
62.5°	286.6	288.6	284.7	282.7	276.7	274.7	274.7	268.7	258.8	252.8	244.8
65°	258.8	256.8	254.8	252.8	246.8	244.8	244.8	236.9	230.9	222.9	217.0
67.5°	228.9	228.9	224.9	224.9	221.0	219.0	215.0	209.0	203.0	197.1	191.1
70°	201.0	201.0	199.1	199.1	193.1	191.1	189.1	183.1	177.2	171.2	163.2
72.5°	175.2	173.2	171.2	171.2	167.2	165.2	163.2	157.3	151.3	145.3	139.3
75°	147.3	147.3	145.3	145.3	141.3	139.3	139.3	135.4	127.4	123.4	115.5
77.5°	123.4	123.4	121.4	121.4	117.4	117.4	115.5	109.5	105.5	99.5	95.5
80°	99.5	97.5	97.5	95.5	91.6	91.6	89.6	87.6	81.6	77.6	71.7
82.5°	69.7	69.7	69.7	67.7	65.7	65.7	63.7	59.7	55.7	53.7	47.8
85°	41.8	41.8	39.8	37.8	39.8	37.8	35.8	33.8	31.8	29.9	27.9
87.5°	17.9	17.9	15.9	15.9	15.9	15.9	15.9	13.9	11.9	11.9	10.0
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: P251802

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9
2.5°	1295.9	1301.8	1299.8	1297.8	1293.9	1293.9	1293.9	1291.9	1293.9	1293.9	1289.9
5°	1295.9	1299.8	1297.8	1293.9	1289.9	1289.9	1287.9	1283.9	1283.9	1283.9	1276.0
7.5°	1289.9	1293.9	1287.9	1283.9	1279.9	1276.0	1276.0	1270.0	1270.0	1268.0	1260.0
10°	1277.9	1279.9	1272.0	1268.0	1262.0	1260.0	1256.0	1248.1	1246.1	1244.1	1236.1
12.5°	1260.0	1262.0	1252.1	1244.1	1236.1	1234.1	1230.2	1220.2	1216.2	1212.3	1202.3
15°	1234.1	1234.1	1222.2	1212.3	1204.3	1202.3	1192.3	1182.4	1178.4	1174.4	1160.5
17.5°	1204.3	1202.3	1186.4	1176.4	1166.5	1162.5	1152.5	1140.6	1132.6	1128.6	1116.7
20°	1172.4	1166.5	1148.6	1138.6	1126.7	1120.7	1110.7	1094.8	1086.8	1078.9	1066.9
22.5°	1134.6	1126.7	1106.8	1092.8	1080.9	1074.9	1061.0	1047.0	1035.1	1027.1	1013.2
25°	1088.8	1078.9	1057.0	1039.1	1029.1	1023.1	1009.2	993.3	981.3	969.4	957.5
27.5°	1035.1	1023.1	1001.3	983.3	973.4	963.4	953.5	935.6	925.6	915.7	901.7
30°	969.4	955.5	935.6	919.6	907.7	899.7	887.8	871.9	859.9	854.0	840.0
32.5°	897.7	881.8	863.9	848.0	842.0	832.1	822.1	806.2	796.2	790.3	780.3
35°	818.1	806.2	786.3	774.3	764.4	760.4	752.4	736.5	732.5	726.6	714.6
37.5°	734.5	724.6	710.6	700.7	692.7	688.7	680.8	670.8	664.8	658.9	652.9
40°	656.9	648.9	637.0	629.0	619.1	613.1	613.1	601.1	597.2	597.2	591.2
42.5°	581.2	577.3	567.3	555.4	553.4	547.4	545.4	539.4	535.5	533.5	531.5
45°	517.5	511.6	501.6	495.7	489.7	489.7	483.7	477.7	475.7	473.8	471.8
47.5°	461.8	453.8	445.9	439.9	435.9	433.9	428.0	424.0	422.0	422.0	420.0
50°	412.0	406.1	398.1	392.1	388.2	384.2	380.2	376.2	374.2	372.2	372.2
52.5°	370.2	362.3	354.3	348.3	342.4	340.4	336.4	332.4	330.4	328.4	326.5
55°	332.4	326.5	316.5	310.5	304.6	304.6	298.6	292.6	288.6	286.6	284.7
57.5°	296.6	290.6	280.7	274.7	270.7	266.7	262.8	258.8	254.8	250.8	246.8
60°	264.7	258.8	248.8	240.9	238.9	234.9	230.9	222.9	219.0	215.0	211.0
62.5°	234.9	226.9	219.0	211.0	209.0	205.0	199.1	193.1	187.1	183.1	177.2
65°	207.0	201.0	191.1	185.1	179.2	177.2	171.2	163.2	157.3	153.3	147.3
67.5°	181.1	173.2	163.2	157.3	153.3	149.3	143.3	137.3	131.4	125.4	119.4
70°	155.3	149.3	139.3	133.4	129.4	125.4	119.4	111.5	105.5	99.5	95.5
72.5°	131.4	123.4	115.5	109.5	105.5	101.5	95.5	89.6	83.6	79.6	73.7
75°	109.5	101.5	95.5	87.6	85.6	81.6	75.6	69.7	63.7	59.7	55.7
77.5°	87.6	81.6	73.7	69.7	65.7	61.7	57.7	51.8	47.8	41.8	37.8
80°	65.7	59.7	53.7	49.8	45.8	43.8	39.8	35.8	31.8	27.9	25.9
82.5°	43.8	39.8	33.8	31.8	29.9	27.9	23.9	21.9	19.9	17.9	15.9
85°	23.9	21.9	19.9	15.9	15.9	13.9	11.9	11.9	10.0	10.0	8.0
87.5°	10.0	8.0	8.0	6.0	6.0	6.0	4.0	4.0	4.0	2.0	2.0
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: P251802

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9
2.5°	1291.9	1283.9	1283.9	1283.9	1277.9	1279.9	1281.9	1283.9	1281.9	1276.0	1281.9
5°	1277.9	1270.0	1270.0	1266.0	1262.0	1262.0	1262.0	1264.0	1262.0	1256.0	1258.0
7.5°	1260.0	1250.1	1248.1	1244.1	1240.1	1238.1	1238.1	1238.1	1236.1	1228.2	1232.2
10°	1232.2	1222.2	1218.2	1216.2	1210.3	1208.3	1206.3	1204.3	1202.3	1194.3	1198.3
12.5°	1198.3	1190.4	1182.4	1180.4	1174.4	1170.5	1168.5	1168.5	1164.5	1156.5	1160.5
15°	1158.5	1146.6	1140.6	1136.6	1130.6	1126.7	1122.7	1124.7	1122.7	1114.7	1116.7
17.5°	1110.7	1098.8	1092.8	1090.8	1082.9	1078.9	1076.9	1076.9	1074.9	1066.9	1068.9
20°	1059.0	1047.0	1043.1	1039.1	1035.1	1031.1	1029.1	1027.1	1025.1	1017.2	1023.1
22.5°	1007.2	993.3	987.3	987.3	979.4	977.4	975.4	977.4	975.4	967.4	971.4
25°	953.5	939.5	935.6	929.6	925.6	923.6	923.6	923.6	921.6	917.6	921.6
27.5°	893.8	883.8	877.8	875.8	871.9	869.9	867.9	869.9	869.9	863.9	867.9
30°	834.0	826.1	822.1	820.1	814.1	812.1	814.1	814.1	814.1	808.2	814.1
32.5°	774.3	768.4	766.4	760.4	756.4	756.4	756.4	758.4	756.4	752.4	758.4
35°	714.6	706.6	704.7	702.7	702.7	698.7	702.7	700.7	704.7	698.7	702.7
37.5°	650.9	646.9	644.9	644.9	641.0	643.0	643.0	643.0	646.9	641.0	644.9
40°	591.2	587.2	587.2	587.2	585.2	585.2	585.2	587.2	589.2	585.2	589.2
42.5°	531.5	529.5	529.5	527.5	525.5	527.5	529.5	529.5	531.5	527.5	529.5
45°	473.8	471.8	473.8	471.8	471.8	469.8	471.8	473.8	473.8	471.8	471.8
47.5°	420.0	420.0	418.0	418.0	418.0	418.0	418.0	418.0	418.0	414.0	418.0
50°	372.2	368.3	370.2	368.3	368.3	366.3	366.3	364.3	362.3	360.3	360.3
52.5°	326.5	322.5	322.5	320.5	318.5	318.5	316.5	314.5	312.5	308.5	308.5
55°	282.7	278.7	276.7	274.7	272.7	270.7	268.7	266.7	262.8	260.8	260.8
57.5°	242.8	238.9	234.9	234.9	230.9	228.9	224.9	221.0	219.0	215.0	215.0
60°	207.0	203.0	197.1	195.1	193.1	189.1	183.1	181.1	179.2	175.2	177.2
62.5°	173.2	167.2	161.2	159.2	157.3	153.3	149.3	145.3	143.3	145.3	145.3
65°	141.3	135.4	131.4	127.4	125.4	121.4	119.4	117.4	117.4	117.4	119.4
67.5°	113.5	107.5	103.5	101.5	97.5	95.5	95.5	95.5	95.5	95.5	95.5
70°	89.6	85.6	81.6	77.6	77.6	75.6	75.6	75.6	75.6	75.6	75.6
72.5°	67.7	63.7	61.7	61.7	59.7	59.7	59.7	59.7	57.7	57.7	59.7
75°	49.8	47.8	45.8	45.8	45.8	43.8	43.8	43.8	43.8	43.8	43.8
77.5°	35.8	33.8	33.8	31.8	31.8	31.8	31.8	31.8	31.8	29.9	29.9
80°	23.9	21.9	21.9	21.9	21.9	19.9	19.9	19.9	19.9	19.9	19.9
82.5°	13.9	13.9	13.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
85°	8.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
87.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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: P251802

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9	1293.9
2.5°	1270.0	1277.9	1279.9	1274.0	1276.0	1272.0	1274.0	1270.0
5°	1248.1	1254.1	1256.0	1252.1	1252.1	1248.1	1250.1	1246.1
7.5°	1220.2	1226.2	1228.2	1224.2	1224.2	1220.2	1220.2	1218.2
10°	1188.4	1190.4	1194.3	1188.4	1190.4	1186.4	1186.4	1182.4
12.5°	1148.6	1152.5	1156.5	1150.5	1150.5	1148.6	1148.6	1142.6
15°	1106.8	1110.7	1112.7	1108.7	1108.7	1106.8	1104.8	1102.8
17.5°	1063.0	1065.0	1068.9	1063.0	1066.9	1063.0	1063.0	1059.0
20°	1013.2	1019.2	1021.2	1015.2	1017.2	1015.2	1015.2	1015.2
22.5°	965.4	969.4	971.4	967.4	969.4	965.4	967.4	963.4
25°	915.7	917.6	919.6	915.7	919.6	917.6	915.7	915.7
27.5°	863.9	865.9	867.9	863.9	867.9	865.9	867.9	863.9
30°	808.2	812.1	816.1	812.1	814.1	812.1	812.1	810.2
32.5°	752.4	756.4	760.4	756.4	760.4	756.4	758.4	754.4
35°	700.7	702.7	704.7	700.7	702.7	702.7	702.7	700.7
37.5°	643.0	646.9	646.9	644.9	648.9	646.9	646.9	643.0
40°	587.2	589.2	591.2	587.2	589.2	587.2	589.2	587.2
42.5°	529.5	533.5	535.5	531.5	531.5	531.5	529.5	531.5
45°	469.8	473.8	477.7	471.8	473.8	473.8	473.8	471.8
47.5°	416.0	416.0	418.0	416.0	418.0	414.0	418.0	416.0
50°	360.3	360.3	364.3	360.3	360.3	360.3	360.3	360.3
52.5°	306.5	308.5	308.5	304.6	306.5	304.6	306.5	304.6
55°	256.8	256.8	258.8	256.8	256.8	256.8	256.8	256.8
57.5°	213.0	215.0	215.0	213.0	215.0	213.0	213.0	213.0
60°	177.2	177.2	177.2	175.2	177.2	175.2	177.2	175.2
62.5°	143.3	145.3	145.3	143.3	145.3	143.3	143.3	143.3
65°	117.4	117.4	117.4	117.4	117.4	117.4	117.4	115.5
67.5°	93.6	93.6	95.5	93.6	95.5	95.5	95.5	95.5
70°	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6
72.5°	57.7	57.7	59.7	57.7	57.7	57.7	57.7	57.7
75°	43.8	43.8	43.8	43.8	43.8	41.8	41.8	43.8
77.5°	29.9	29.9	29.9	29.9	29.9	29.9	29.9	31.8
80°	19.9	19.9	19.9	19.9	17.9	17.9	19.9	17.9
82.5°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
85°	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
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)