

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: P251937

Luminaire Tested: **LD4B30D010 EU4B30508050 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251937  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B30D010 EU4B30508050 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2608.0 lumens  
Efficiency: N/A  
Efficacy: 93.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

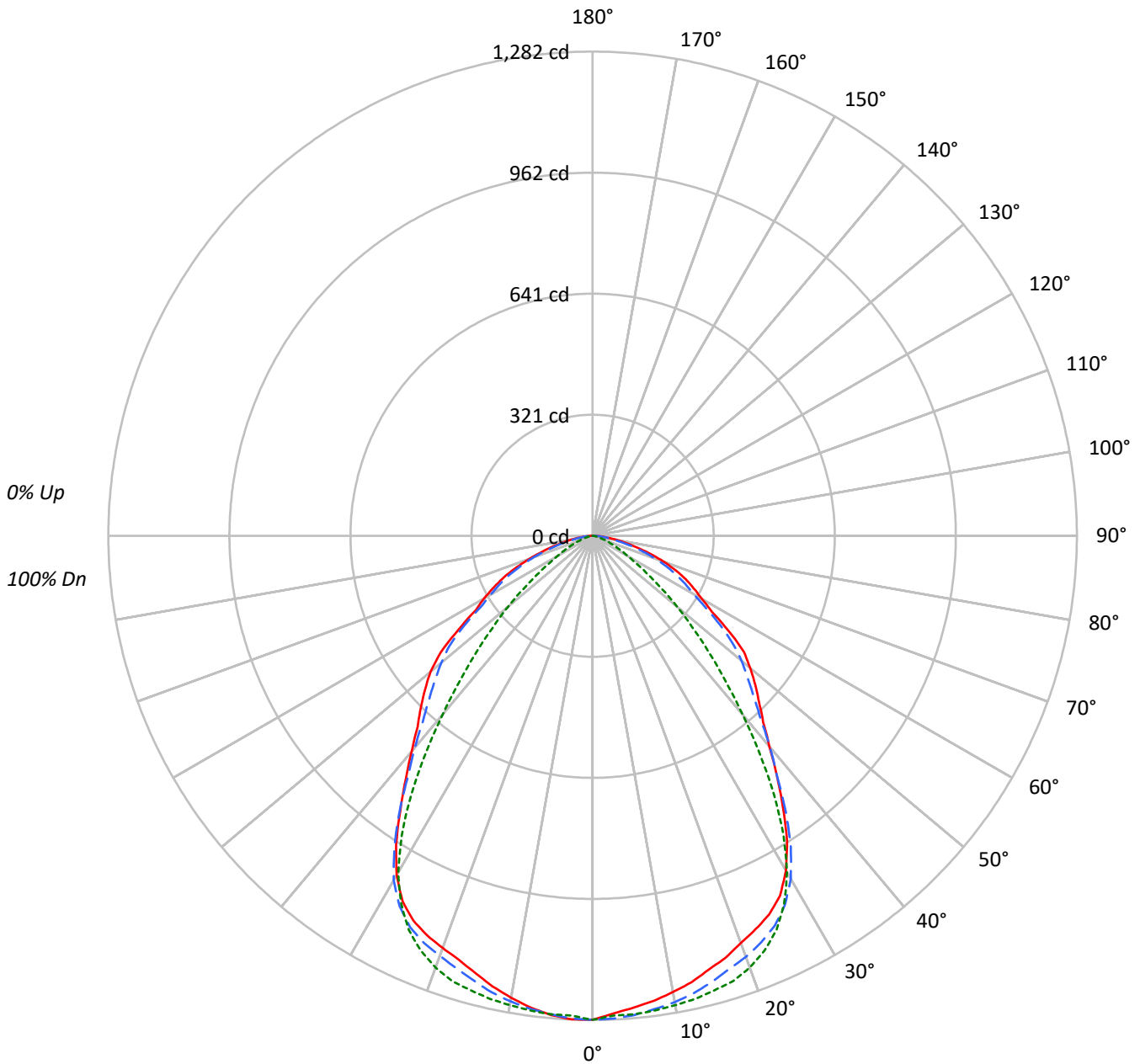
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

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

	0°	90°	180°
0°	124893	124893	124893
5°	122669	124401	124597
10°	121357	124870	122910
15°	119945	125716	120944
20°	119000	126156	120431
25°	118932	123814	120846
30°	115146	115810	116699
35°	104614	99689	105554
40°	92554	78509	94806
45°	85866	59775	88581
50°	82495	44242	84891
55°	74694	30482	73691
60°	64946	20759	64556
65°	62748	15012	59565
70°	56733	10116	50550
75°	46767	6665	40102
80°	37603	4434	29858
85°	30862	2236	19792



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.0	4.6
10°-20°	345.9	13.3
20°-30°	522.5	20.0
30°-40°	546.9	21.0
40°-50°	442.9	17.0
50°-60°	322.2	12.4
60°-70°	198.7	7.6
70°-80°	89.8	3.4
80°-90°	18.2	0.7
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°	989.4	37.9
0°-40°	1536.2	58.9
0°-60°	2301.3	88.2
0°-90°	2608.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2608.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1282	1282	1282	1282	1282	
5°	1254	1274	1272	1272	1274	119
15°	1189	1222	1246	1218	1199	336
25°	1106	1140	1151	1144	1124	507
35°	879	891	838	891	887	548
45°	623	603	434	611	643	484
55°	440	412	179	416	434	392
65°	272	244	65	240	258	266
75°	124	106	18	93	106	135
85°	28	22	2	16	18	32
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°	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5
2.5°	1265.7	1265.7	1277.5	1291.3	1279.5	1267.7	1275.6	1271.6	1285.4	1285.4	1279.5
5°	1253.9	1257.8	1267.7	1279.5	1269.6	1257.8	1267.7	1263.7	1277.5	1277.5	1273.6
7.5°	1242.0	1244.0	1255.8	1269.6	1259.8	1248.0	1255.8	1253.9	1265.7	1267.7	1263.7
10°	1226.3	1228.2	1240.1	1253.9	1244.0	1234.2	1242.0	1240.1	1255.8	1255.8	1253.9
12.5°	1210.5	1212.5	1224.3	1236.1	1226.3	1216.4	1224.3	1224.3	1240.1	1242.0	1240.1
15°	1188.8	1192.8	1202.6	1214.4	1208.5	1196.7	1204.6	1204.6	1218.4	1222.3	1222.3
17.5°	1171.1	1173.0	1182.9	1194.7	1186.8	1177.0	1184.9	1184.9	1198.7	1202.6	1202.6
20°	1147.4	1151.4	1161.2	1173.0	1167.1	1159.2	1165.2	1165.2	1180.9	1184.9	1186.8
22.5°	1127.7	1131.6	1139.5	1155.3	1145.4	1139.5	1147.4	1145.4	1163.2	1165.2	1165.2
25°	1106.0	1109.9	1119.8	1129.7	1123.8	1117.8	1123.8	1123.8	1137.6	1139.5	1139.5
27.5°	1074.5	1076.4	1086.3	1096.1	1090.2	1082.3	1090.2	1088.3	1102.1	1104.0	1102.1
30°	1023.2	1027.1	1031.1	1044.9	1039.0	1033.1	1040.9	1037.0	1050.8	1050.8	1048.8
32.5°	958.1	958.1	966.0	975.9	968.0	964.1	970.0	971.9	981.8	981.8	975.9
35°	879.3	883.2	889.1	895.1	889.1	885.2	891.1	889.1	901.0	897.0	891.1
37.5°	800.4	802.4	808.3	816.2	808.3	802.4	804.4	802.4	812.3	812.3	802.4
40°	727.5	731.4	735.4	743.3	735.4	731.4	733.4	727.5	739.3	735.4	729.5
42.5°	668.3	670.3	676.2	680.2	672.3	670.3	672.3	668.3	674.3	670.3	658.5
45°	623.0	623.0	625.0	630.9	623.0	621.0	621.0	617.1	623.0	615.1	603.3
47.5°	583.6	585.5	587.5	591.4	585.5	579.6	581.6	573.7	577.6	571.7	556.0
50°	544.1	548.1	550.0	554.0	548.1	544.1	546.1	538.2	538.2	528.4	514.6
52.5°	504.7	506.7	504.7	508.6	504.7	498.8	500.8	492.9	492.9	481.0	467.2
55°	439.6	441.6	443.6	447.5	443.6	437.7	441.6	435.7	435.7	427.8	412.0
57.5°	374.6	376.6	378.5	380.5	380.5	376.6	378.5	374.6	372.6	366.7	354.9
60°	333.2	333.2	333.2	335.2	333.2	331.2	331.2	327.3	327.3	319.4	307.6
62.5°	301.6	303.6	303.6	305.6	303.6	301.6	299.7	295.7	293.8	285.9	276.0
65°	272.1	272.1	270.1	274.0	272.1	270.1	270.1	266.2	262.2	254.3	244.5
67.5°	236.6	238.6	236.6	238.6	238.6	236.6	234.6	230.7	228.7	222.8	210.9
70°	199.1	199.1	199.1	201.1	199.1	199.1	201.1	195.2	193.2	185.3	175.5
72.5°	161.7	163.6	163.6	161.7	163.6	159.7	159.7	159.7	157.7	149.8	140.0
75°	124.2	126.2	126.2	128.1	126.2	124.2	124.2	122.2	120.3	114.3	106.5
77.5°	92.7	92.7	94.6	94.6	94.6	92.7	92.7	88.7	88.7	84.8	76.9
80°	67.0	67.0	65.1	67.0	67.0	65.1	65.1	63.1	63.1	59.1	53.2
82.5°	43.4	45.3	45.3	45.3	45.3	43.4	43.4	43.4	41.4	39.4	35.5
85°	27.6	27.6	27.6	27.6	29.6	27.6	29.6	27.6	27.6	23.7	21.7
87.5°	11.8	11.8	11.8	13.8	13.8	11.8	11.8	11.8	11.8	11.8	9.9
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°	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5
2.5°	1279.5	1281.5	1275.6	1283.4	1277.5	1279.5	1281.5	1279.5	1271.6	1271.6	1293.3
5°	1271.6	1275.6	1269.6	1279.5	1275.6	1275.6	1279.5	1277.5	1269.6	1271.6	1291.3
7.5°	1263.7	1269.6	1265.7	1275.6	1269.6	1269.6	1273.6	1273.6	1265.7	1267.7	1285.4
10°	1251.9	1259.8	1257.8	1267.7	1261.8	1261.8	1267.7	1267.7	1259.8	1261.8	1279.5
12.5°	1242.0	1249.9	1248.0	1257.8	1253.9	1255.8	1257.8	1261.8	1251.9	1255.8	1271.6
15°	1226.3	1234.2	1234.2	1244.0	1240.1	1244.0	1248.0	1253.9	1246.0	1246.0	1261.8
17.5°	1208.5	1218.4	1218.4	1226.3	1226.3	1228.2	1236.1	1242.0	1234.2	1236.1	1249.9
20°	1188.8	1200.6	1200.6	1210.5	1208.5	1212.5	1218.4	1224.3	1216.4	1216.4	1232.2
22.5°	1169.1	1179.0	1180.9	1186.8	1186.8	1188.8	1194.7	1198.7	1188.8	1188.8	1204.6
25°	1141.5	1151.4	1153.3	1157.3	1153.3	1153.3	1157.3	1161.2	1151.4	1151.4	1165.2
27.5°	1104.0	1113.9	1113.9	1111.9	1108.0	1109.9	1108.0	1109.9	1100.1	1098.1	1111.9
30°	1048.8	1054.7	1054.7	1052.8	1046.9	1046.9	1040.9	1042.9	1029.1	1029.1	1040.9
32.5°	973.9	979.8	975.9	971.9	964.1	960.1	956.2	954.2	940.4	940.4	954.2
35°	885.2	889.1	883.2	875.3	865.5	859.6	853.7	845.8	835.9	837.9	845.8
37.5°	794.5	794.5	786.6	770.9	763.0	753.1	743.3	743.3	727.5	725.5	731.4
40°	717.6	709.7	695.9	674.3	660.4	650.6	636.8	628.9	617.1	617.1	626.9
42.5°	648.6	632.8	615.1	585.5	571.7	559.9	542.2	534.3	520.5	518.5	524.4
45°	587.5	571.7	546.1	514.6	496.8	483.0	457.4	447.5	435.7	433.7	437.7
47.5°	538.2	520.5	488.9	447.5	429.8	412.0	386.4	372.6	362.8	356.8	362.8
50°	494.8	471.2	437.7	394.3	370.6	354.9	323.3	309.5	295.7	291.8	293.8
52.5°	447.5	423.9	388.4	343.0	321.4	297.7	268.1	248.4	236.6	230.7	236.6
55°	396.3	372.6	337.1	291.8	268.1	246.4	214.9	199.1	185.3	179.4	185.3
57.5°	341.1	319.4	287.8	242.5	220.8	201.1	171.5	155.7	141.9	138.0	141.9
60°	293.8	276.0	244.5	201.1	183.3	161.7	136.0	120.3	108.4	106.5	108.4
62.5°	262.2	242.5	212.9	171.5	153.8	136.0	112.4	96.6	86.7	84.8	86.7
65°	230.7	209.0	181.4	145.9	128.1	114.3	90.7	76.9	67.0	65.1	67.0
67.5°	195.2	175.5	151.8	120.3	106.5	92.7	72.9	59.1	51.3	49.3	51.3
70°	161.7	143.9	120.3	96.6	82.8	72.9	55.2	45.3	37.5	35.5	37.5
72.5°	128.1	112.4	92.7	72.9	65.1	55.2	43.4	33.5	27.6	25.6	27.6
75°	98.6	86.7	71.0	53.2	47.3	41.4	29.6	23.7	19.7	17.7	19.7
77.5°	69.0	61.1	49.3	39.4	33.5	29.6	21.7	15.8	13.8	11.8	13.8
80°	47.3	41.4	33.5	25.6	21.7	17.7	13.8	9.9	7.9	7.9	7.9
82.5°	31.5	25.6	19.7	15.8	13.8	11.8	7.9	5.9	5.9	3.9	3.9
85°	17.7	15.8	11.8	9.9	7.9	5.9	3.9	3.9	2.0	2.0	2.0
87.5°	7.9	5.9	3.9	3.9	2.0	2.0	2.0	2.0	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°	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5
2.5°	1287.4	1281.5	1289.4	1281.5	1277.5	1281.5	1277.5	1289.4	1279.5	1271.6	1279.5
5°	1285.4	1277.5	1285.4	1279.5	1273.6	1275.6	1271.6	1283.4	1271.6	1265.7	1269.6
7.5°	1281.5	1275.6	1279.5	1273.6	1267.7	1269.6	1265.7	1275.6	1263.7	1257.8	1261.8
10°	1275.6	1269.6	1271.6	1267.7	1261.8	1261.8	1257.8	1265.7	1251.9	1244.0	1248.0
12.5°	1267.7	1259.8	1263.7	1257.8	1249.9	1249.9	1246.0	1251.9	1238.1	1230.2	1232.2
15°	1257.8	1249.9	1249.9	1244.0	1236.1	1236.1	1228.2	1234.2	1218.4	1210.5	1210.5
17.5°	1246.0	1236.1	1236.1	1230.2	1220.4	1218.4	1212.5	1218.4	1200.6	1192.8	1192.8
20°	1228.2	1220.4	1218.4	1214.4	1204.6	1202.6	1194.7	1196.7	1182.9	1177.0	1175.0
22.5°	1204.6	1196.7	1198.7	1192.8	1184.9	1182.9	1175.0	1180.9	1167.1	1161.2	1163.2
25°	1163.2	1159.2	1163.2	1161.2	1155.3	1155.3	1151.4	1155.3	1143.5	1139.5	1141.5
27.5°	1115.9	1113.9	1115.9	1115.9	1111.9	1111.9	1111.9	1117.8	1106.0	1104.0	1104.0
30°	1046.9	1046.9	1048.8	1050.8	1050.8	1054.7	1052.8	1060.7	1052.8	1048.8	1052.8
32.5°	956.2	964.1	970.0	970.0	970.0	973.9	977.9	983.8	975.9	977.9	977.9
35°	853.7	859.6	863.5	873.4	867.5	881.3	885.2	893.1	891.1	895.1	893.1
37.5°	739.3	747.2	755.1	768.9	766.9	782.7	790.6	806.3	802.4	810.3	814.2
40°	632.8	644.7	656.5	666.4	674.3	690.0	705.8	725.5	731.4	737.3	739.3
42.5°	530.3	542.2	561.9	575.7	587.5	613.1	634.8	658.5	664.4	676.2	680.2
45°	447.5	457.4	481.0	498.8	508.6	546.1	571.7	601.3	611.2	625.0	630.9
47.5°	370.6	388.4	412.0	433.7	447.5	487.0	520.5	552.0	565.8	581.6	589.5
50°	303.6	323.3	354.9	374.6	394.3	437.7	475.1	508.6	522.4	540.2	548.1
52.5°	248.4	270.1	299.7	321.4	343.0	388.4	427.8	459.4	477.1	488.9	500.8
55°	195.2	218.8	248.4	272.1	289.8	339.1	372.6	404.2	416.0	425.8	431.8
57.5°	151.8	169.5	199.1	218.8	240.5	283.9	317.4	341.1	350.9	362.8	366.7
60°	118.3	136.0	163.6	183.3	203.1	244.5	278.0	301.6	311.5	321.4	327.3
62.5°	94.6	112.4	138.0	155.7	173.5	210.9	240.5	264.2	276.0	285.9	291.8
65°	74.9	90.7	112.4	130.1	143.9	177.4	207.0	228.7	240.5	250.4	256.3
67.5°	59.1	72.9	92.7	104.5	118.3	145.9	171.5	191.2	201.1	212.9	218.8
70°	45.3	55.2	72.9	82.8	92.7	116.3	136.0	155.7	165.6	173.5	177.4
72.5°	33.5	41.4	55.2	63.1	69.0	88.7	104.5	118.3	126.2	134.1	138.0
75°	23.7	29.6	39.4	45.3	49.3	63.1	76.9	86.7	92.7	98.6	104.5
77.5°	15.8	19.7	25.6	29.6	33.5	43.4	51.3	59.1	65.1	71.0	72.9
80°	9.9	13.8	17.7	19.7	21.7	27.6	35.5	39.4	43.4	47.3	49.3
82.5°	5.9	7.9	9.9	11.8	13.8	17.7	21.7	25.6	27.6	31.5	33.5
85°	2.0	3.9	3.9	5.9	5.9	9.9	11.8	13.8	15.8	17.7	19.7
87.5°	0.0	0.0	2.0	2.0	2.0	2.0	3.9	3.9	3.9	3.9	3.9
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: P251937

CATALOG NUMBER: LD4B30D010 EU4B30508050 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5	1281.5
2.5°	1287.4	1281.5	1277.5	1275.6	1289.4	1271.6	1279.5	1281.5
5°	1279.5	1273.6	1269.6	1267.7	1279.5	1263.7	1269.6	1273.6
7.5°	1267.7	1263.7	1257.8	1255.8	1267.7	1249.9	1257.8	1259.8
10°	1253.9	1248.0	1244.0	1242.0	1251.9	1234.2	1242.0	1242.0
12.5°	1236.1	1232.2	1224.3	1224.3	1232.2	1216.4	1222.3	1222.3
15°	1212.5	1208.5	1200.6	1200.6	1208.5	1192.8	1198.7	1198.7
17.5°	1192.8	1188.8	1182.9	1180.9	1188.8	1173.0	1179.0	1177.0
20°	1177.0	1173.0	1165.2	1165.2	1171.1	1155.3	1161.2	1161.2
22.5°	1163.2	1161.2	1153.3	1153.3	1161.2	1145.4	1149.4	1145.4
25°	1141.5	1139.5	1131.6	1133.6	1137.6	1121.8	1127.7	1123.8
27.5°	1106.0	1106.0	1098.1	1096.1	1102.1	1088.3	1092.2	1090.2
30°	1050.8	1052.8	1042.9	1042.9	1044.9	1033.1	1039.0	1037.0
32.5°	975.9	977.9	970.0	968.0	973.9	964.1	968.0	968.0
35°	893.1	895.1	889.1	889.1	895.1	889.1	889.1	887.2
37.5°	810.3	814.2	810.3	812.3	816.2	810.3	814.2	812.3
40°	743.3	747.2	741.3	745.2	749.2	743.3	749.2	745.2
42.5°	682.1	688.1	684.1	688.1	692.0	688.1	692.0	686.1
45°	636.8	640.7	638.8	640.7	644.7	642.7	644.7	642.7
47.5°	593.4	601.3	597.4	601.3	607.2	603.3	607.2	601.3
50°	554.0	559.9	557.9	561.9	563.8	561.9	565.8	559.9
52.5°	502.7	508.6	506.7	506.7	510.6	506.7	510.6	506.7
55°	435.7	437.7	437.7	439.6	437.7	435.7	437.7	433.7
57.5°	370.6	374.6	368.7	374.6	372.6	370.6	370.6	366.7
60°	329.2	335.2	331.2	335.2	333.2	333.2	333.2	331.2
62.5°	295.7	299.7	295.7	297.7	297.7	297.7	295.7	293.8
65°	258.3	264.2	260.2	262.2	260.2	258.3	260.2	258.3
67.5°	220.8	222.8	222.8	220.8	220.8	220.8	220.8	216.9
70°	179.4	181.4	179.4	183.3	181.4	179.4	181.4	177.4
72.5°	140.0	141.9	140.0	141.9	140.0	140.0	140.0	140.0
75°	104.5	106.5	106.5	106.5	106.5	106.5	102.5	106.5
77.5°	74.9	74.9	74.9	76.9	74.9	74.9	74.9	74.9
80°	51.3	51.3	51.3	53.2	51.3	53.2	51.3	53.2
82.5°	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
85°	17.7	19.7	19.7	17.7	17.7	17.7	17.7	17.7
87.5°	3.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)