

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: P251958

Luminaire Tested: **LD4B40D010 EU4B30509730 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251958  
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: LD4B40D010 EU4B30509730 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE 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: 2634.0 lumens  
Efficiency: N/A  
Efficacy: 61.2 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

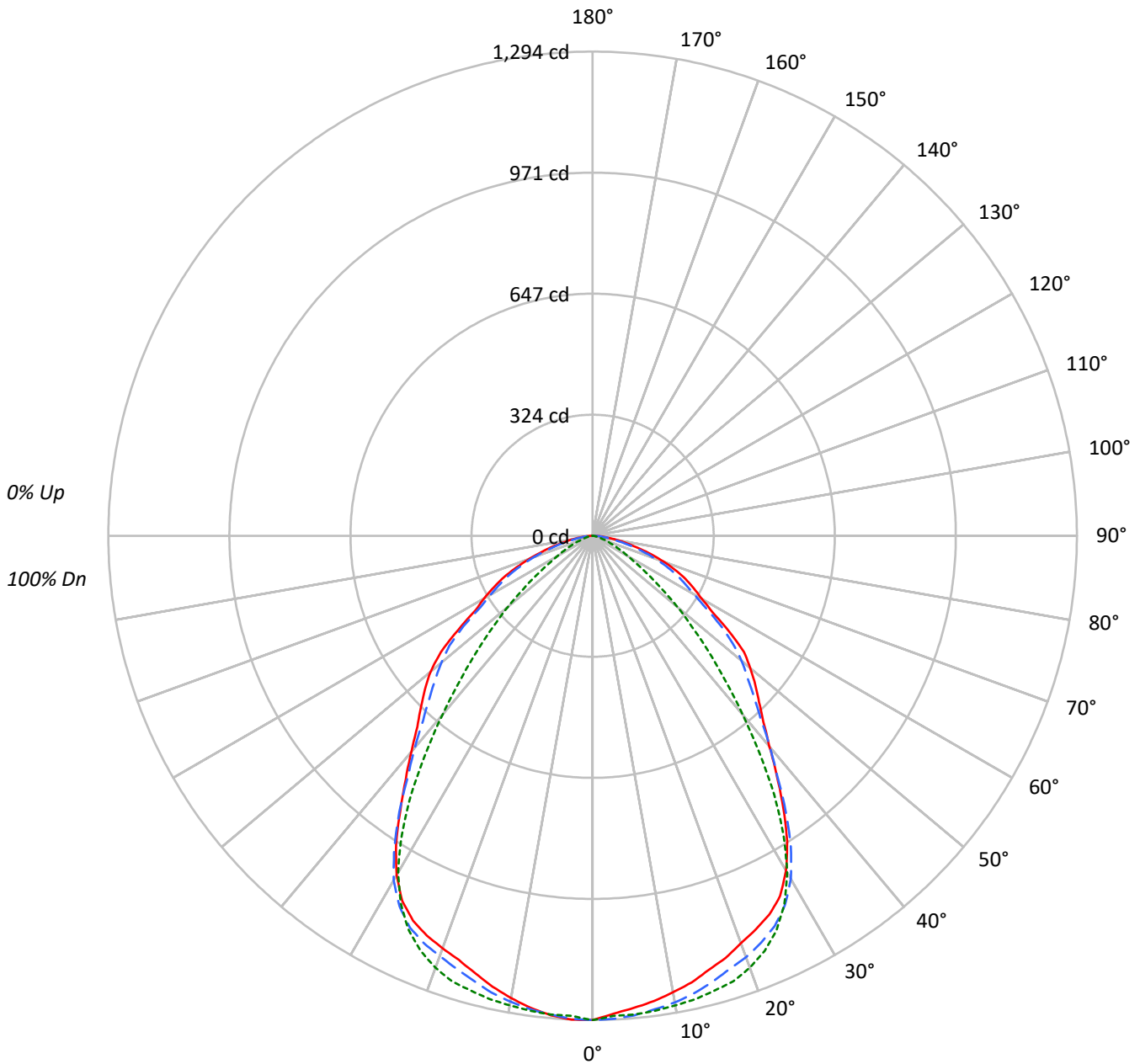
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
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°	126130	126130	126130
5°	123892	125644	125839
10°	122564	126107	124137
15°	121146	126968	122145
20°	120182	127411	121634
25°	120114	125039	122050
30°	116294	116969	117858
35°	105661	100676	106601
40°	93470	79285	95760
45°	86720	60382	89463
50°	83329	44682	85740
55°	75441	30788	74439
60°	65589	20953	65199
65°	63370	15151	60142
70°	57303	10201	51063
75°	47219	6740	40479
80°	37996	4490	30195
85°	31198	2236	20016



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.2	4.6
10°-20°	349.3	13.3
20°-30°	527.8	20.0
30°-40°	552.3	21.0
40°-50°	447.3	17.0
50°-60°	325.4	12.4
60°-70°	200.7	7.6
70°-80°	90.7	3.4
80°-90°	18.4	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°	999.3	37.9
0°-40°	1551.6	58.9
0°-60°	2324.2	88.2
0°-90°	2634.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2634.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1294	1294	1294	1294	1294	
5°	1266	1286	1284	1284	1286	120
15°	1201	1234	1258	1230	1211	339
25°	1117	1151	1163	1155	1135	512
35°	888	900	846	900	896	553
45°	629	609	438	617	649	489
55°	444	416	181	420	438	396
65°	275	247	66	243	261	269
75°	125	108	18	94	108	136
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°	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2
2.5°	1278.3	1278.3	1290.3	1304.2	1292.3	1280.3	1288.3	1284.3	1298.2	1298.2	1292.3
5°	1266.4	1270.4	1280.3	1292.3	1282.3	1270.4	1280.3	1276.3	1290.3	1290.3	1286.3
7.5°	1254.4	1256.4	1268.4	1282.3	1272.3	1260.4	1268.4	1266.4	1278.3	1280.3	1276.3
10°	1238.5	1240.5	1252.4	1266.4	1256.4	1246.5	1254.4	1252.4	1268.4	1268.4	1266.4
12.5°	1222.6	1224.6	1236.5	1248.4	1238.5	1228.5	1236.5	1236.5	1252.4	1254.4	1252.4
15°	1200.7	1204.6	1214.6	1226.5	1220.6	1208.6	1216.6	1216.6	1230.5	1234.5	1234.5
17.5°	1182.7	1184.7	1194.7	1206.6	1198.7	1188.7	1196.7	1196.7	1210.6	1214.6	1214.6
20°	1158.8	1162.8	1172.8	1184.7	1178.8	1170.8	1176.8	1176.8	1192.7	1196.7	1198.7
22.5°	1138.9	1142.9	1150.9	1166.8	1156.9	1150.9	1158.8	1156.9	1174.8	1176.8	1176.8
25°	1117.0	1121.0	1131.0	1140.9	1135.0	1129.0	1135.0	1135.0	1148.9	1150.9	1150.9
27.5°	1085.2	1087.2	1097.1	1107.1	1101.1	1093.1	1101.1	1099.1	1113.1	1115.0	1113.1
30°	1033.4	1037.4	1041.4	1055.3	1049.3	1043.4	1051.3	1047.3	1061.3	1061.3	1059.3
32.5°	967.7	967.7	975.7	985.6	977.7	973.7	979.6	981.6	991.6	991.6	985.6
35°	888.1	892.0	898.0	904.0	898.0	894.0	900.0	898.0	910.0	906.0	900.0
37.5°	808.4	810.4	816.4	824.3	816.4	810.4	812.4	810.4	820.4	820.4	810.4
40°	734.7	738.7	742.7	750.7	742.7	738.7	740.7	734.7	746.7	742.7	736.7
42.5°	675.0	677.0	683.0	686.9	679.0	677.0	679.0	675.0	681.0	677.0	665.0
45°	629.2	629.2	631.2	637.2	629.2	627.2	627.2	623.2	629.2	621.2	609.3
47.5°	589.4	591.4	593.4	597.3	591.4	585.4	587.4	579.4	583.4	577.4	561.5
50°	549.6	553.5	555.5	559.5	553.5	549.6	551.5	543.6	543.6	533.6	519.7
52.5°	509.7	511.7	509.7	513.7	509.7	503.8	505.8	497.8	497.8	485.8	471.9
55°	444.0	446.0	448.0	452.0	448.0	442.0	446.0	440.0	440.0	432.1	416.1
57.5°	378.3	380.3	382.3	384.3	384.3	380.3	382.3	378.3	376.3	370.4	358.4
60°	336.5	336.5	336.5	338.5	336.5	334.5	334.5	330.5	330.5	322.6	310.6
62.5°	304.6	306.6	306.6	308.6	306.6	304.6	302.7	298.7	296.7	288.7	278.8
65°	274.8	274.8	272.8	276.8	274.8	272.8	272.8	268.8	264.8	256.9	246.9
67.5°	238.9	240.9	238.9	240.9	240.9	238.9	236.9	233.0	231.0	225.0	213.1
70°	201.1	201.1	201.1	203.1	201.1	201.1	203.1	197.1	195.1	187.2	177.2
72.5°	163.3	165.3	165.3	163.3	165.3	161.3	161.3	161.3	159.3	151.3	141.4
75°	125.4	127.4	127.4	129.4	127.4	125.4	125.4	123.5	121.5	115.5	107.5
77.5°	93.6	93.6	95.6	95.6	95.6	93.6	93.6	89.6	89.6	85.6	77.7
80°	67.7	67.7	65.7	67.7	67.7	65.7	65.7	63.7	63.7	59.7	53.8
82.5°	43.8	45.8	45.8	45.8	45.8	43.8	43.8	43.8	41.8	39.8	35.8
85°	27.9	27.9	27.9	27.9	29.9	27.9	29.9	27.9	27.9	23.9	21.9
87.5°	11.9	11.9	11.9	13.9	13.9	11.9	11.9	11.9	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2
2.5°	1292.3	1294.2	1288.3	1296.2	1290.3	1292.3	1294.2	1292.3	1284.3	1284.3	1306.2
5°	1284.3	1288.3	1282.3	1292.3	1288.3	1288.3	1292.3	1290.3	1282.3	1284.3	1304.2
7.5°	1276.3	1282.3	1278.3	1288.3	1282.3	1282.3	1286.3	1286.3	1278.3	1280.3	1298.2
10°	1264.4	1272.3	1270.4	1280.3	1274.3	1274.3	1280.3	1280.3	1272.3	1274.3	1292.3
12.5°	1254.4	1262.4	1260.4	1270.4	1266.4	1268.4	1270.4	1274.3	1264.4	1268.4	1284.3
15°	1238.5	1246.5	1246.5	1256.4	1252.4	1256.4	1260.4	1266.4	1258.4	1258.4	1274.3
17.5°	1220.6	1230.5	1230.5	1238.5	1238.5	1240.5	1248.4	1254.4	1246.5	1248.4	1262.4
20°	1200.7	1212.6	1212.6	1222.6	1220.6	1224.6	1230.5	1236.5	1228.5	1228.5	1244.5
22.5°	1180.7	1190.7	1192.7	1198.7	1198.7	1200.7	1206.6	1210.6	1200.7	1200.7	1216.6
25°	1152.9	1162.8	1164.8	1168.8	1164.8	1164.8	1168.8	1172.8	1162.8	1162.8	1176.8
27.5°	1115.0	1125.0	1125.0	1123.0	1119.0	1121.0	1119.0	1121.0	1111.1	1109.1	1123.0
30°	1059.3	1065.3	1065.3	1063.3	1057.3	1057.3	1051.3	1053.3	1039.4	1039.4	1051.3
32.5°	983.6	989.6	985.6	981.6	973.7	969.7	965.7	963.7	949.8	949.8	963.7
35°	894.0	898.0	892.0	884.1	874.1	868.1	862.2	854.2	844.2	846.2	854.2
37.5°	802.4	802.4	794.5	778.5	770.6	760.6	750.7	750.7	734.7	732.7	738.7
40°	724.8	716.8	702.9	681.0	667.0	657.1	643.1	635.2	623.2	623.2	633.2
42.5°	655.1	639.2	621.2	591.4	577.4	565.5	547.6	539.6	525.7	523.7	529.6
45°	593.4	577.4	551.5	519.7	501.8	487.8	461.9	452.0	440.0	438.1	442.0
47.5°	543.6	525.7	493.8	452.0	434.1	416.1	390.3	376.3	366.4	360.4	366.4
50°	499.8	475.9	442.0	398.2	374.3	358.4	326.5	312.6	298.7	294.7	296.7
52.5°	452.0	428.1	392.3	346.5	324.6	300.7	270.8	250.9	238.9	233.0	238.9
55°	400.2	376.3	340.5	294.7	270.8	248.9	217.0	201.1	187.2	181.2	187.2
57.5°	344.5	322.6	290.7	244.9	223.0	203.1	173.2	157.3	143.4	139.4	143.4
60°	296.7	278.8	246.9	203.1	185.2	163.3	137.4	121.5	109.5	107.5	109.5
62.5°	264.8	244.9	215.0	173.2	155.3	137.4	113.5	97.6	87.6	85.6	87.6
65°	233.0	211.1	183.2	147.3	129.4	115.5	91.6	77.7	67.7	65.7	67.7
67.5°	197.1	177.2	153.3	121.5	107.5	93.6	73.7	59.7	51.8	49.8	51.8
70°	163.3	145.4	121.5	97.6	83.6	73.7	55.8	45.8	37.8	35.8	37.8
72.5°	129.4	113.5	93.6	73.7	65.7	55.8	43.8	33.8	27.9	25.9	27.9
75°	99.6	87.6	71.7	53.8	47.8	41.8	29.9	23.9	19.9	17.9	19.9
77.5°	69.7	61.7	49.8	39.8	33.8	29.9	21.9	15.9	13.9	11.9	13.9
80°	47.8	41.8	33.8	25.9	21.9	17.9	13.9	10.0	8.0	8.0	8.0
82.5°	31.9	25.9	19.9	15.9	13.9	11.9	8.0	6.0	6.0	4.0	4.0
85°	17.9	15.9	11.9	10.0	8.0	6.0	4.0	4.0	2.0	2.0	2.0
87.5°	8.0	6.0	4.0	4.0	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°	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2
2.5°	1300.2	1294.2	1302.2	1294.2	1290.3	1294.2	1290.3	1302.2	1292.3	1284.3	1292.3
5°	1298.2	1290.3	1298.2	1292.3	1286.3	1288.3	1284.3	1296.2	1284.3	1278.3	1282.3
7.5°	1294.2	1288.3	1292.3	1286.3	1280.3	1282.3	1278.3	1288.3	1276.3	1270.4	1274.3
10°	1288.3	1282.3	1284.3	1280.3	1274.3	1274.3	1270.4	1278.3	1264.4	1256.4	1260.4
12.5°	1280.3	1272.3	1276.3	1270.4	1262.4	1262.4	1258.4	1264.4	1250.4	1242.5	1244.5
15°	1270.4	1262.4	1262.4	1256.4	1248.4	1248.4	1240.5	1246.5	1230.5	1222.6	1222.6
17.5°	1258.4	1248.4	1248.4	1242.5	1232.5	1230.5	1224.6	1230.5	1212.6	1204.6	1204.6
20°	1240.5	1232.5	1230.5	1226.5	1216.6	1214.6	1206.6	1208.6	1194.7	1188.7	1186.7
22.5°	1216.6	1208.6	1210.6	1204.6	1196.7	1194.7	1186.7	1192.7	1178.8	1172.8	1174.8
25°	1174.8	1170.8	1174.8	1172.8	1166.8	1166.8	1162.8	1166.8	1154.9	1150.9	1152.9
27.5°	1127.0	1125.0	1127.0	1127.0	1123.0	1123.0	1123.0	1129.0	1117.0	1115.0	1115.0
30°	1057.3	1057.3	1059.3	1061.3	1061.3	1065.3	1063.3	1071.2	1063.3	1059.3	1063.3
32.5°	965.7	973.7	979.6	979.6	979.6	983.6	987.6	993.6	985.6	987.6	987.6
35°	862.2	868.1	872.1	882.1	876.1	890.0	894.0	902.0	900.0	904.0	902.0
37.5°	746.7	754.6	762.6	776.5	774.6	790.5	798.4	814.4	810.4	818.4	822.3
40°	639.2	651.1	663.1	673.0	681.0	696.9	712.8	732.7	738.7	744.7	746.7
42.5°	535.6	547.6	567.5	581.4	593.4	619.2	641.1	665.0	671.0	683.0	686.9
45°	452.0	461.9	485.8	503.8	513.7	551.5	577.4	607.3	617.3	631.2	637.2
47.5°	374.3	392.3	416.1	438.1	452.0	491.8	525.7	557.5	571.5	587.4	595.4
50°	306.6	326.5	358.4	378.3	398.2	442.0	479.9	513.7	527.7	545.6	553.5
52.5°	250.9	272.8	302.7	324.6	346.5	392.3	432.1	463.9	481.9	493.8	505.8
55°	197.1	221.0	250.9	274.8	292.7	342.5	376.3	408.2	420.1	430.1	436.1
57.5°	153.3	171.2	201.1	221.0	242.9	286.7	320.6	344.5	354.4	366.4	370.4
60°	119.5	137.4	165.3	185.2	205.1	246.9	280.8	304.6	314.6	324.6	330.5
62.5°	95.6	113.5	139.4	157.3	175.2	213.1	242.9	266.8	278.8	288.7	294.7
65°	75.7	91.6	113.5	131.4	145.4	179.2	209.1	231.0	242.9	252.9	258.8
67.5°	59.7	73.7	93.6	105.5	119.5	147.3	173.2	193.1	203.1	215.0	221.0
70°	45.8	55.8	73.7	83.6	93.6	117.5	137.4	157.3	167.3	175.2	179.2
72.5°	33.8	41.8	55.8	63.7	69.7	89.6	105.5	119.5	127.4	135.4	139.4
75°	23.9	29.9	39.8	45.8	49.8	63.7	77.7	87.6	93.6	99.6	105.5
77.5°	15.9	19.9	25.9	29.9	33.8	43.8	51.8	59.7	65.7	71.7	73.7
80°	10.0	13.9	17.9	19.9	21.9	27.9	35.8	39.8	43.8	47.8	49.8
82.5°	6.0	8.0	10.0	11.9	13.9	17.9	21.9	25.9	27.9	31.9	33.8
85°	2.0	4.0	4.0	6.0	6.0	10.0	11.9	13.9	15.9	17.9	19.9
87.5°	0.0	0.0	2.0	2.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0
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: P251958

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2	1294.2
2.5°	1300.2	1294.2	1290.3	1288.3	1302.2	1284.3	1292.3	1294.2
5°	1292.3	1286.3	1282.3	1280.3	1292.3	1276.3	1282.3	1286.3
7.5°	1280.3	1276.3	1270.4	1268.4	1280.3	1262.4	1270.4	1272.3
10°	1266.4	1260.4	1256.4	1254.4	1264.4	1246.5	1254.4	1254.4
12.5°	1248.4	1244.5	1236.5	1236.5	1244.5	1228.5	1234.5	1234.5
15°	1224.6	1220.6	1212.6	1212.6	1220.6	1204.6	1210.6	1210.6
17.5°	1204.6	1200.7	1194.7	1192.7	1200.7	1184.7	1190.7	1188.7
20°	1188.7	1184.7	1176.8	1176.8	1182.7	1166.8	1172.8	1172.8
22.5°	1174.8	1172.8	1164.8	1164.8	1172.8	1156.9	1160.8	1156.9
25°	1152.9	1150.9	1142.9	1144.9	1148.9	1133.0	1138.9	1135.0
27.5°	1117.0	1117.0	1109.1	1107.1	1113.1	1099.1	1103.1	1101.1
30°	1061.3	1063.3	1053.3	1053.3	1055.3	1043.4	1049.3	1047.3
32.5°	985.6	987.6	979.6	977.7	983.6	973.7	977.7	977.7
35°	902.0	904.0	898.0	898.0	904.0	898.0	898.0	896.0
37.5°	818.4	822.3	818.4	820.4	824.3	818.4	822.3	820.4
40°	750.7	754.6	748.7	752.7	756.6	750.7	756.6	752.7
42.5°	688.9	694.9	690.9	694.9	698.9	694.9	698.9	692.9
45°	643.1	647.1	645.1	647.1	651.1	649.1	651.1	649.1
47.5°	599.3	607.3	603.3	607.3	613.3	609.3	613.3	607.3
50°	559.5	565.5	563.5	567.5	569.5	567.5	571.5	565.5
52.5°	507.7	513.7	511.7	511.7	515.7	511.7	515.7	511.7
55°	440.0	442.0	442.0	444.0	442.0	440.0	442.0	438.1
57.5°	374.3	378.3	372.3	378.3	376.3	374.3	374.3	370.4
60°	332.5	338.5	334.5	338.5	336.5	336.5	336.5	334.5
62.5°	298.7	302.7	298.7	300.7	300.7	300.7	298.7	296.7
65°	260.8	266.8	262.8	264.8	262.8	260.8	262.8	260.8
67.5°	223.0	225.0	225.0	223.0	223.0	223.0	223.0	219.0
70°	181.2	183.2	181.2	185.2	183.2	181.2	183.2	179.2
72.5°	141.4	143.4	141.4	143.4	141.4	141.4	141.4	141.4
75°	105.5	107.5	107.5	107.5	107.5	107.5	103.5	107.5
77.5°	75.7	75.7	75.7	77.7	75.7	75.7	75.7	75.7
80°	51.8	51.8	51.8	53.8	51.8	53.8	51.8	53.8
82.5°	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8
85°	17.9	19.9	19.9	17.9	17.9	17.9	17.9	17.9
87.5°	4.0	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)