

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: P251631

Luminaire Tested: **LD4B30D010 EU4B30509050 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251631
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B30D010 EU4B30509050 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2257.0 lumens
Efficiency: N/A
Efficacy: 80.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

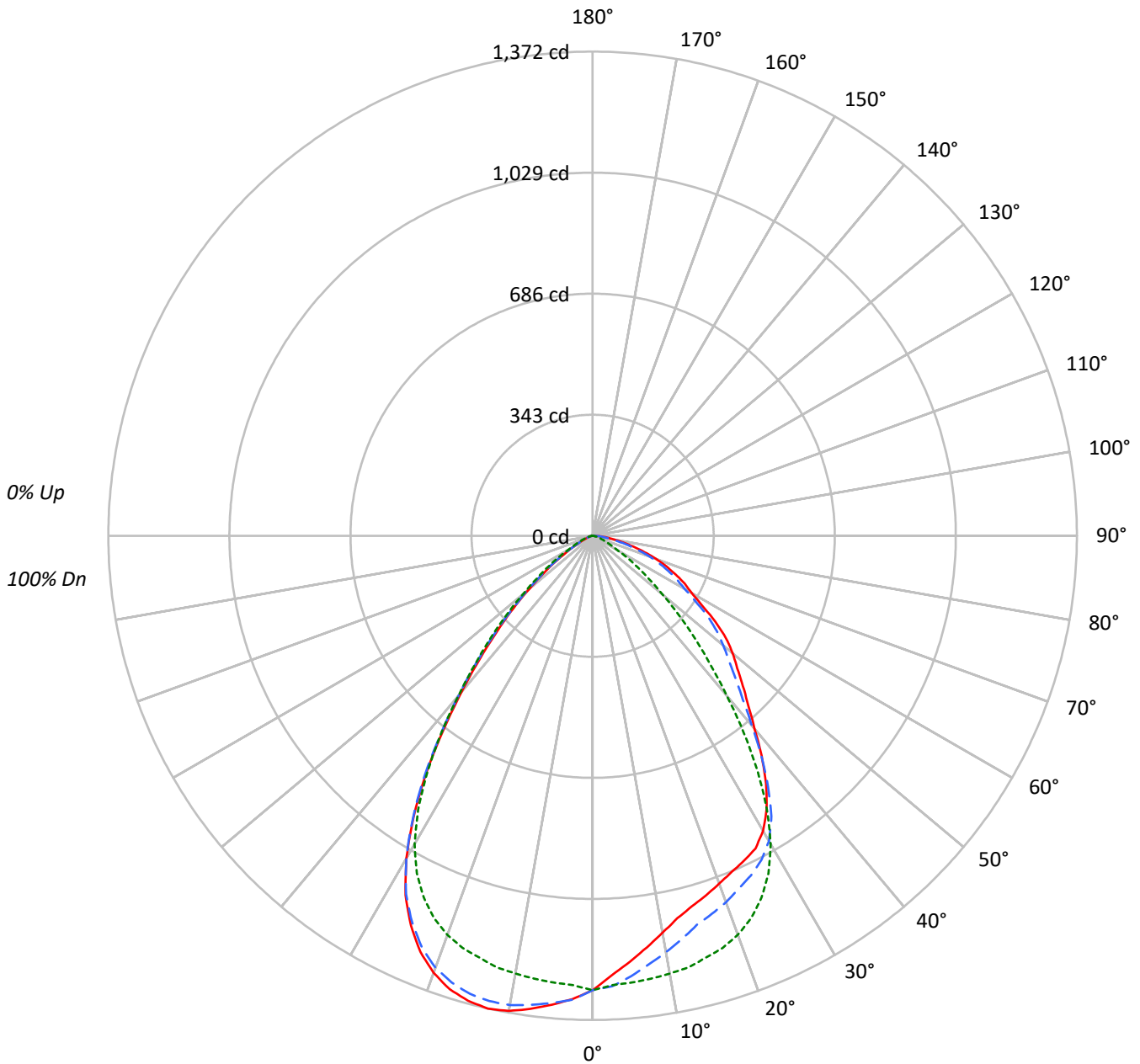
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89				
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79				
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70				
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62				
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56				
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50				
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46				
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42				
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38				
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	125487	125487	125487
5°	118502	124342	130506
10°	112974	124632	135300
15°	109654	124889	137612
20°	108764	124766	136642
25°	109200	121684	130965
30°	108675	113525	118758
35°	101866	96928	97916
40°	90773	75150	73458
45°	83013	56026	52595
50°	78493	39239	35479
55°	72179	26506	22276
60°	63075	15515	12299
65°	59681	9939	6895
70°	54368	7095	4246
75°	44998	5008	3125
80°	35414	2806	1852
85°	31533	1901	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.7	5.4
10°-20°	349.0	15.5
20°-30°	517.4	22.9
30°-40°	518.1	23.0
40°-50°	362.1	16.0
50°-60°	215.5	9.5
60°-70°	112.4	5.0
70°-80°	50.0	2.2
80°-90°	10.9	0.5
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°	988.0	43.8
0°-40°	1506.1	66.7
0°-60°	2083.7	92.3
0°-90°	2257.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2257.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1288	1288	1288	1288	1288	
5°	1211	1253	1271	1329	1334	114
15°	1087	1142	1238	1344	1364	308
25°	1016	1062	1132	1210	1218	468
35°	856	866	815	830	823	531
45°	602	572	406	393	382	468
55°	425	398	156	136	131	377
65°	259	237	43	32	30	256
75°	120	104	13	8	8	129
85°	28	22	2	2	0	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°	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6
2.5°	1246.1	1261.0	1246.1	1251.1	1271.0	1252.7	1262.7	1262.7	1257.7	1269.3	1277.6
5°	1211.3	1226.2	1211.3	1217.9	1239.5	1221.2	1232.8	1229.5	1231.2	1241.1	1252.7
7.5°	1176.4	1188.0	1174.8	1183.1	1203.0	1188.0	1198.0	1198.0	1199.6	1214.6	1224.5
10°	1141.6	1151.5	1141.6	1148.2	1169.8	1156.5	1163.1	1164.8	1169.8	1183.1	1198.0
12.5°	1110.0	1118.3	1108.4	1118.3	1136.6	1123.3	1131.6	1133.3	1138.3	1153.2	1169.8
15°	1086.8	1095.1	1085.2	1093.5	1110.0	1100.1	1106.7	1110.0	1113.4	1126.6	1141.6
17.5°	1068.6	1075.2	1066.9	1076.9	1090.1	1078.5	1088.5	1088.5	1093.5	1106.7	1123.3
20°	1048.7	1055.3	1048.7	1057.0	1071.9	1061.9	1070.2	1070.2	1075.2	1090.1	1105.1
22.5°	1030.4	1033.7	1030.4	1037.0	1052.0	1043.7	1048.7	1050.3	1055.3	1068.6	1081.8
25°	1015.5	1022.1	1018.8	1025.4	1035.4	1027.1	1032.1	1033.7	1038.7	1050.3	1061.9
27.5°	998.9	1002.2	998.9	1007.2	1015.5	1008.8	1013.8	1012.2	1015.5	1025.4	1035.4
30°	965.7	969.0	969.0	974.0	980.6	977.3	982.3	977.3	980.6	988.9	998.9
32.5°	917.6	919.2	920.9	925.9	930.8	925.9	929.2	929.2	929.2	935.8	942.5
35°	856.2	859.5	857.8	861.2	866.1	864.5	864.5	862.8	859.5	862.8	866.1
37.5°	786.5	781.5	781.5	786.5	789.8	783.2	786.5	783.2	783.2	784.8	784.8
40°	713.5	708.5	713.5	715.1	716.8	713.5	711.8	708.5	703.5	705.2	701.9
42.5°	652.1	648.8	650.4	650.4	652.1	648.8	650.4	643.8	638.8	635.5	630.5
45°	602.3	597.3	602.3	599.0	599.0	597.3	595.7	592.4	585.7	580.7	572.4
47.5°	555.9	555.9	557.5	557.5	557.5	554.2	554.2	547.6	540.9	534.3	522.7
50°	517.7	514.4	521.0	521.0	516.0	514.4	516.0	507.7	502.8	494.5	482.8
52.5°	476.2	476.2	477.9	477.9	476.2	472.9	474.5	467.9	462.9	454.6	443.0
55°	424.8	421.5	426.4	426.4	424.8	423.1	424.8	419.8	414.8	408.2	398.2
57.5°	366.7	365.0	368.4	370.0	366.7	366.7	368.4	363.4	361.7	355.1	345.1
60°	323.6	321.9	325.2	326.9	323.6	323.6	323.6	316.9	313.6	307.0	300.3
62.5°	293.7	292.0	295.3	293.7	292.0	290.4	292.0	285.4	282.1	275.4	268.8
65°	258.8	260.5	262.2	262.2	260.5	258.8	258.8	255.5	252.2	245.6	237.3
67.5°	225.7	225.7	227.3	229.0	227.3	227.3	227.3	222.3	219.0	214.0	204.1
70°	190.8	189.2	194.1	194.1	190.8	192.5	190.8	189.2	185.8	179.2	170.9
72.5°	154.3	154.3	156.0	156.0	154.3	154.3	154.3	152.7	147.7	144.4	136.1
75°	119.5	119.5	121.1	122.8	119.5	119.5	121.1	117.8	114.5	109.5	104.5
77.5°	89.6	87.9	89.6	89.6	87.9	87.9	87.9	86.3	84.6	79.6	74.7
80°	63.1	61.4	63.1	63.1	63.1	61.4	61.4	59.7	59.7	56.4	51.4
82.5°	43.1	41.5	43.1	43.1	43.1	41.5	41.5	41.5	39.8	38.2	34.8
85°	28.2	26.5	26.5	28.2	26.5	26.5	26.5	26.5	24.9	23.2	21.6
87.5°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	11.6	11.6	11.6	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°	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6
2.5°	1271.0	1267.7	1277.6	1274.3	1276.0	1267.7	1281.0	1274.3	1282.6	1274.3	1290.9
5°	1249.4	1246.1	1261.0	1259.4	1261.0	1254.4	1269.3	1267.7	1277.6	1271.0	1289.2
7.5°	1226.2	1222.9	1239.5	1241.1	1244.4	1237.8	1257.7	1257.7	1267.7	1266.0	1285.9
10°	1199.6	1201.3	1217.9	1221.2	1227.9	1224.5	1242.8	1247.8	1261.0	1259.4	1284.3
12.5°	1174.8	1174.8	1196.3	1203.0	1207.9	1206.3	1227.9	1234.5	1249.4	1252.7	1276.0
15°	1149.9	1151.5	1171.4	1181.4	1188.0	1186.4	1209.6	1217.9	1236.2	1237.8	1266.0
17.5°	1130.0	1128.3	1149.9	1158.2	1168.1	1166.5	1191.4	1201.3	1219.6	1224.5	1251.1
20°	1113.4	1111.7	1131.6	1141.6	1148.2	1146.6	1171.4	1183.1	1199.6	1203.0	1229.5
22.5°	1093.5	1090.1	1110.0	1118.3	1125.0	1123.3	1144.9	1153.2	1169.8	1173.1	1198.0
25°	1070.2	1066.9	1085.2	1090.1	1095.1	1091.8	1110.0	1115.0	1128.3	1131.6	1156.5
27.5°	1043.7	1035.4	1050.3	1050.3	1053.6	1048.7	1061.9	1066.9	1078.5	1078.5	1101.8
30°	1002.2	990.6	998.9	997.2	998.9	992.2	1000.5	1002.2	1010.5	1008.8	1025.4
32.5°	944.1	927.5	932.5	927.5	922.6	912.6	922.6	919.2	925.9	919.2	934.2
35°	864.5	847.9	846.2	839.6	834.6	826.3	826.3	818.0	819.7	814.7	824.7
37.5°	778.2	756.6	753.3	740.0	731.7	721.8	721.8	715.1	706.8	703.5	711.8
40°	693.6	670.3	662.0	640.5	632.2	622.2	615.6	607.3	604.0	590.7	597.3
42.5°	620.6	595.7	577.4	554.2	545.9	531.0	521.0	511.1	506.1	491.1	497.8
45°	559.2	529.3	509.4	479.5	467.9	451.3	436.4	424.8	413.2	406.5	403.2
47.5°	507.7	476.2	449.7	416.5	398.2	383.3	363.4	351.8	336.8	328.5	323.6
50°	464.6	429.7	399.9	361.7	343.5	326.9	303.6	285.4	272.1	258.8	255.5
52.5°	426.4	389.9	356.7	313.6	292.0	272.1	247.2	227.3	215.7	200.8	199.1
55°	381.6	350.1	313.6	268.8	247.2	227.3	200.8	180.9	165.9	156.0	152.7
57.5°	333.5	303.6	268.8	224.0	202.4	180.9	156.0	137.7	124.4	116.1	114.5
60°	288.7	260.5	227.3	182.5	160.9	142.7	116.1	97.9	86.3	79.6	76.3
62.5°	255.5	229.0	197.5	156.0	136.1	117.8	92.9	76.3	66.4	59.7	56.4
65°	224.0	197.5	169.2	131.1	114.5	97.9	74.7	59.7	49.8	43.1	39.8
67.5°	190.8	167.6	141.0	109.5	92.9	79.6	59.7	46.5	38.2	33.2	29.9
70°	157.6	136.1	114.5	87.9	76.3	63.1	46.5	36.5	28.2	24.9	21.6
72.5°	124.4	107.9	89.6	68.0	58.1	49.8	36.5	26.5	21.6	18.3	14.9
75°	92.9	81.3	66.4	51.4	43.1	36.5	26.5	19.9	16.6	13.3	11.6
77.5°	66.4	56.4	46.5	34.8	31.5	26.5	18.3	14.9	11.6	8.3	6.6
80°	44.8	39.8	31.5	24.9	19.9	18.3	13.3	10.0	6.6	5.0	5.0
82.5°	29.9	24.9	19.9	14.9	13.3	11.6	8.3	6.6	5.0	3.3	3.3
85°	18.3	14.9	11.6	8.3	8.3	6.6	5.0	3.3	1.7	1.7	1.7
87.5°	8.3	6.6	5.0	3.3	3.3	1.7	1.7	1.7	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°	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6
2.5°	1304.2	1294.2	1287.6	1295.9	1299.2	1294.2	1299.2	1307.5	1315.8	1317.5	1294.2
5°	1305.8	1295.9	1292.6	1302.5	1304.2	1302.5	1307.5	1319.1	1329.1	1332.4	1309.2
7.5°	1305.8	1299.2	1297.5	1309.2	1310.8	1309.2	1317.5	1330.7	1340.7	1347.3	1324.1
10°	1302.5	1299.2	1300.9	1310.8	1314.1	1314.1	1325.8	1340.7	1350.6	1357.3	1334.0
12.5°	1297.5	1297.5	1297.5	1309.2	1312.5	1314.1	1324.1	1344.0	1350.6	1360.6	1337.4
15°	1289.2	1289.2	1289.2	1300.9	1305.8	1305.8	1317.5	1335.7	1344.0	1354.0	1330.7
17.5°	1274.3	1274.3	1276.0	1285.9	1290.9	1290.9	1302.5	1322.4	1327.4	1339.0	1315.8
20°	1252.7	1252.7	1254.4	1264.4	1269.3	1266.0	1281.0	1297.5	1302.5	1312.5	1289.2
22.5°	1221.2	1221.2	1221.2	1231.2	1234.5	1232.8	1247.8	1262.7	1262.7	1276.0	1251.1
25°	1174.8	1178.1	1174.8	1184.7	1188.0	1186.4	1199.6	1212.9	1209.6	1224.5	1199.6
27.5°	1118.3	1116.7	1116.7	1125.0	1125.0	1123.3	1133.3	1148.2	1144.9	1154.8	1131.6
30°	1040.4	1045.3	1037.0	1048.7	1043.7	1040.4	1047.0	1060.3	1055.3	1063.6	1045.3
32.5°	950.8	944.1	944.1	944.1	947.4	939.1	945.8	952.4	947.4	955.7	935.8
35°	833.0	834.6	829.6	831.3	833.0	823.0	829.6	836.3	829.6	834.6	816.4
37.5°	715.1	716.8	705.2	711.8	705.2	701.9	708.5	711.8	705.2	710.2	690.3
40°	597.3	594.0	592.4	592.4	594.0	585.7	590.7	595.7	590.7	594.0	575.8
42.5°	494.5	492.8	489.5	491.1	486.2	484.5	486.2	491.1	486.2	489.5	476.2
45°	404.9	401.5	396.6	398.2	398.2	389.9	394.9	398.2	393.2	394.9	383.3
47.5°	321.9	316.9	316.9	315.3	315.3	311.9	316.9	315.3	310.3	313.6	302.0
50°	250.5	247.2	247.2	247.2	247.2	242.3	243.9	247.2	242.3	242.3	235.6
52.5°	195.8	190.8	187.5	187.5	187.5	185.8	185.8	187.5	182.5	182.5	180.9
55°	147.7	146.0	141.0	141.0	141.0	136.1	137.7	137.7	136.1	136.1	131.1
57.5°	109.5	104.5	101.2	101.2	97.9	97.9	96.2	97.9	94.6	94.6	91.3
60°	73.0	69.7	68.0	66.4	66.4	64.7	66.4	64.7	64.7	63.1	61.4
62.5°	53.1	49.8	46.5	46.5	46.5	44.8	44.8	44.8	44.8	44.8	43.1
65°	38.2	34.8	34.8	33.2	33.2	31.5	31.5	31.5	31.5	31.5	29.9
67.5°	26.5	24.9	23.2	23.2	23.2	23.2	23.2	23.2	21.6	21.6	21.6
70°	19.9	18.3	16.6	16.6	16.6	16.6	16.6	14.9	16.6	16.6	14.9
72.5°	13.3	13.3	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
75°	10.0	10.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
77.5°	6.6	6.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
80°	5.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	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: P251631

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6	1287.6
2.5°	1319.1	1317.5	1314.1	1319.1	1305.8	1300.9	1299.2	1314.1
5°	1337.4	1334.0	1334.0	1339.0	1324.1	1320.8	1317.5	1334.0
7.5°	1354.0	1350.6	1350.6	1355.6	1342.3	1339.0	1335.7	1352.3
10°	1363.9	1363.9	1363.9	1367.2	1355.6	1352.3	1350.6	1367.2
12.5°	1368.9	1368.9	1367.2	1373.9	1358.9	1358.9	1355.6	1372.2
15°	1362.3	1362.3	1362.3	1367.2	1354.0	1350.6	1350.6	1363.9
17.5°	1345.7	1345.7	1344.0	1349.0	1334.0	1334.0	1332.4	1347.3
20°	1320.8	1320.8	1317.5	1324.1	1309.2	1304.2	1302.5	1317.5
22.5°	1281.0	1279.3	1277.6	1281.0	1267.7	1264.4	1262.7	1276.0
25°	1229.5	1227.9	1224.5	1227.9	1212.9	1207.9	1207.9	1217.9
27.5°	1156.5	1156.5	1151.5	1156.5	1139.9	1138.3	1136.6	1148.2
30°	1066.9	1060.3	1057.0	1063.6	1047.0	1047.0	1043.7	1055.3
32.5°	955.7	949.1	947.4	950.8	935.8	930.8	937.5	944.1
35°	828.0	829.6	823.0	823.0	809.7	811.4	813.0	823.0
37.5°	705.2	701.9	700.2	701.9	691.9	688.6	685.3	695.2
40°	590.7	582.4	580.7	580.7	572.4	570.8	572.4	577.4
42.5°	482.8	481.2	474.5	477.9	469.6	472.9	471.2	471.2
45°	389.9	391.6	384.9	389.9	383.3	378.3	378.3	381.6
47.5°	308.6	308.6	307.0	307.0	302.0	303.6	300.3	305.3
50°	238.9	238.9	235.6	237.3	234.0	234.0	232.3	234.0
52.5°	182.5	180.9	180.9	179.2	175.9	177.5	179.2	175.9
55°	132.7	134.4	131.1	132.7	129.4	131.1	129.4	131.1
57.5°	91.3	92.9	89.6	92.9	89.6	91.3	89.6	89.6
60°	63.1	63.1	61.4	63.1	61.4	61.4	59.7	63.1
62.5°	43.1	43.1	43.1	43.1	43.1	41.5	43.1	43.1
65°	31.5	29.9	29.9	29.9	29.9	29.9	29.9	29.9
67.5°	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6
70°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
72.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
75°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
77.5°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	1.7	1.7	1.7	0.0	1.7	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)