

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: P251629

Luminaire Tested: **LD4B30D010 EU4B30509035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251629
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 EU4B30509035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2243.0 lumens
Efficiency: N/A
Efficacy: 80.1 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

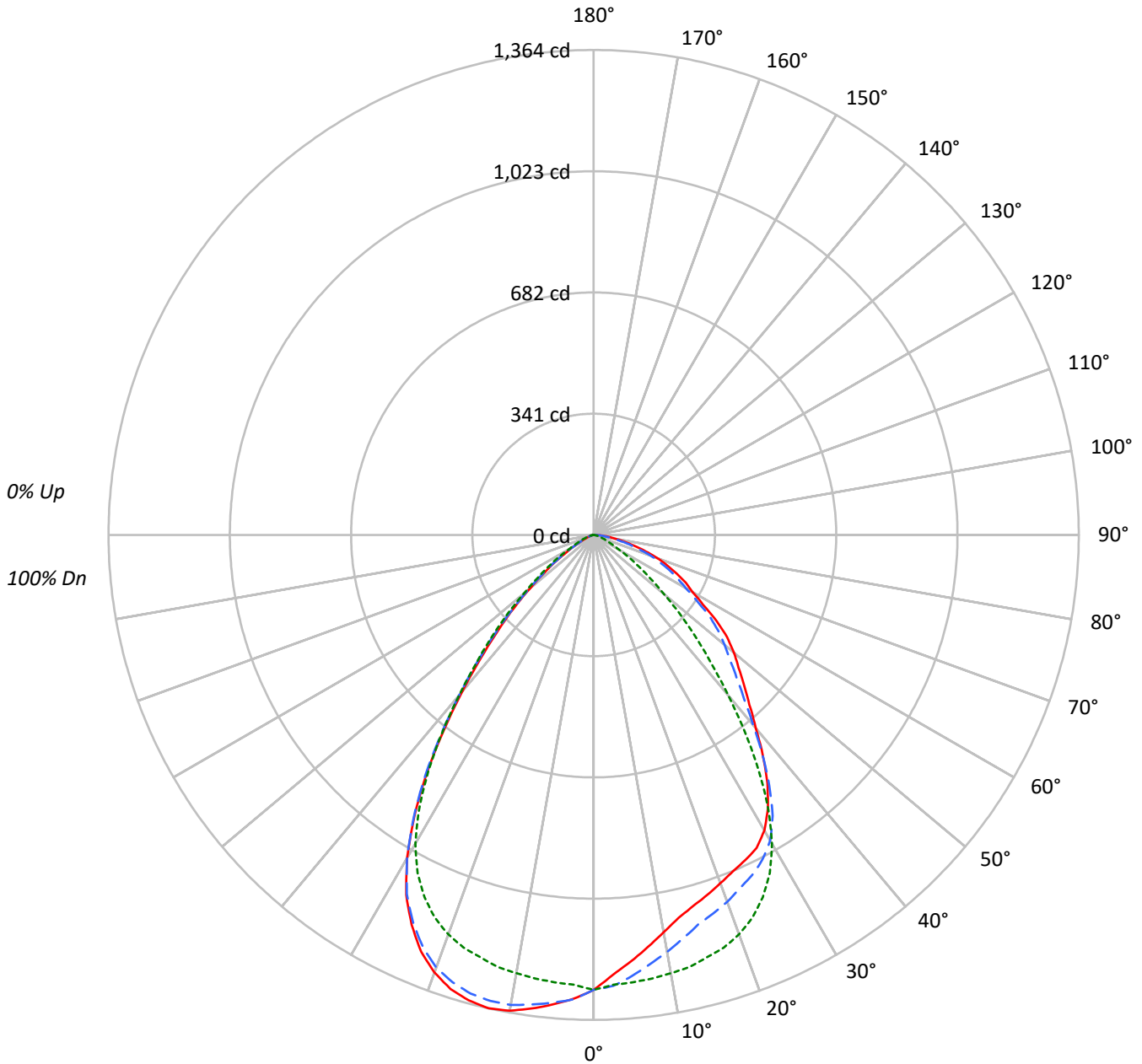
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	124707	124707	124707
5°	117768	123570	129703
10°	112272	123860	134469
15°	108978	124112	136765
20°	108089	123989	135791
25°	108522	120932	130147
30°	108000	112827	118015
35°	101235	96322	97309
40°	90213	74680	73000
45°	82503	55682	52278
50°	78007	38996	35251
55°	71720	26337	22140
60°	62666	15437	12221
65°	59312	9893	6849
70°	54026	7038	4217
75°	44696	4970	3088
80°	35190	2750	1852
85°	31310	1789	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.9	5.4
10°-20°	346.8	15.5
20°-30°	514.2	22.9
30°-40°	514.9	23.0
40°-50°	359.8	16.0
50°-60°	214.1	9.5
60°-70°	111.7	5.0
70°-80°	49.7	2.2
80°-90°	10.8	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°	981.9	43.8
0°-40°	1496.8	66.7
0°-60°	2070.7	92.3
0°-90°	2243.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2243.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1280	1280	1280	1280	1280	
5°	1204	1245	1263	1321	1326	113
15°	1080	1134	1230	1336	1356	306
25°	1009	1055	1125	1202	1210	465
35°	851	861	810	824	818	528
45°	599	569	404	391	379	465
55°	422	396	155	135	130	375
65°	257	236	43	31	30	254
75°	119	104	13	8	8	128
85°	28	21	2	2	0	31
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°	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6
2.5°	1238.4	1253.2	1238.4	1243.3	1263.1	1245.0	1254.9	1254.9	1249.9	1261.5	1269.7
5°	1203.8	1218.6	1203.8	1210.3	1231.8	1213.6	1225.2	1221.9	1223.5	1233.4	1245.0
7.5°	1169.1	1180.7	1167.5	1175.7	1195.5	1180.7	1190.6	1190.6	1192.2	1207.0	1216.9
10°	1134.5	1144.4	1134.5	1141.1	1162.5	1149.3	1155.9	1157.6	1162.5	1175.7	1190.6
12.5°	1103.2	1111.4	1101.5	1111.4	1129.5	1116.4	1124.6	1126.2	1131.2	1146.0	1162.5
15°	1080.1	1088.3	1078.4	1086.7	1103.2	1093.3	1099.9	1103.2	1106.5	1119.7	1134.5
17.5°	1061.9	1068.5	1060.3	1070.2	1083.4	1071.8	1081.7	1081.7	1086.7	1099.9	1116.4
20°	1042.2	1048.7	1042.2	1050.4	1065.2	1055.3	1063.6	1063.6	1068.5	1083.4	1098.2
22.5°	1024.0	1027.3	1024.0	1030.6	1045.4	1037.2	1042.2	1043.8	1048.7	1061.9	1075.1
25°	1009.2	1015.8	1012.5	1019.1	1029.0	1020.7	1025.7	1027.3	1032.3	1043.8	1055.3
27.5°	992.7	996.0	992.7	1000.9	1009.2	1002.6	1007.5	1005.9	1009.2	1019.1	1029.0
30°	959.7	963.0	963.0	967.9	974.5	971.2	976.2	971.2	974.5	982.8	992.7
32.5°	911.9	913.5	915.2	920.1	925.1	920.1	923.4	923.4	923.4	930.0	936.6
35°	850.9	854.2	852.5	855.8	860.8	859.1	859.1	857.5	854.2	857.5	860.8
37.5°	781.6	776.7	776.7	781.6	784.9	778.3	781.6	778.3	778.3	780.0	780.0
40°	709.1	704.1	709.1	710.7	712.4	709.1	707.4	704.1	699.2	700.8	697.5
42.5°	648.0	644.7	646.4	646.4	648.0	644.7	646.4	639.8	634.9	631.6	626.6
45°	598.6	593.6	598.6	595.3	595.3	593.6	592.0	588.7	582.1	577.1	568.9
47.5°	552.4	552.4	554.1	554.1	554.1	550.8	550.8	544.2	537.6	531.0	519.4
50°	514.5	511.2	517.8	517.8	512.8	511.2	512.8	504.6	499.6	491.4	479.9
52.5°	473.3	473.3	474.9	474.9	473.3	470.0	471.6	465.0	460.1	451.8	440.3
55°	422.1	418.8	423.8	423.8	422.1	420.5	422.1	417.2	412.2	405.6	395.8
57.5°	364.4	362.8	366.1	367.7	364.4	364.4	366.1	361.1	359.5	352.9	343.0
60°	321.5	319.9	323.2	324.8	321.5	321.5	321.5	315.0	311.7	305.1	298.5
62.5°	291.9	290.2	293.5	291.9	290.2	288.6	290.2	283.6	280.3	273.7	267.1
65°	257.2	258.9	260.5	260.5	258.9	257.2	257.2	253.9	250.6	244.0	235.8
67.5°	224.3	224.3	225.9	227.6	225.9	225.9	225.9	221.0	217.7	212.7	202.8
70°	189.6	188.0	192.9	192.9	189.6	191.3	189.6	188.0	184.7	178.1	169.8
72.5°	153.4	153.4	155.0	155.0	153.4	153.4	153.4	151.7	146.8	143.5	135.2
75°	118.7	118.7	120.4	122.0	118.7	118.7	120.4	117.1	113.8	108.8	103.9
77.5°	89.0	87.4	89.0	89.0	87.4	87.4	87.4	85.7	84.1	79.2	74.2
80°	62.7	61.0	62.7	62.7	62.7	61.0	61.0	59.4	59.4	56.1	51.1
82.5°	42.9	41.2	42.9	42.9	42.9	41.2	41.2	41.2	39.6	37.9	34.6
85°	28.0	26.4	26.4	28.0	26.4	26.4	26.4	26.4	24.7	23.1	21.4
87.5°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	11.5	11.5	11.5	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°	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6
2.5°	1263.1	1259.8	1269.7	1266.4	1268.1	1259.8	1273.0	1266.4	1274.7	1266.4	1282.9
5°	1241.7	1238.4	1253.2	1251.6	1253.2	1246.6	1261.5	1259.8	1269.7	1263.1	1281.3
7.5°	1218.6	1215.3	1231.8	1233.4	1236.7	1230.1	1249.9	1249.9	1259.8	1258.2	1278.0
10°	1192.2	1193.9	1210.3	1213.6	1220.2	1216.9	1235.1	1240.0	1253.2	1251.6	1276.3
12.5°	1167.5	1167.5	1188.9	1195.5	1200.5	1198.8	1220.2	1226.8	1241.7	1245.0	1268.1
15°	1142.7	1144.4	1164.2	1174.1	1180.7	1179.0	1202.1	1210.3	1228.5	1230.1	1258.2
17.5°	1123.0	1121.3	1142.7	1151.0	1160.9	1159.2	1184.0	1193.9	1212.0	1216.9	1243.3
20°	1106.5	1104.8	1124.6	1134.5	1141.1	1139.4	1164.2	1175.7	1192.2	1195.5	1221.9
22.5°	1086.7	1083.4	1103.2	1111.4	1118.0	1116.4	1137.8	1146.0	1162.5	1165.8	1190.6
25°	1063.6	1060.3	1078.4	1083.4	1088.3	1085.0	1103.2	1108.1	1121.3	1124.6	1149.3
27.5°	1037.2	1029.0	1043.8	1043.8	1047.1	1042.2	1055.3	1060.3	1071.8	1071.8	1094.9
30°	996.0	984.4	992.7	991.0	992.7	986.1	994.3	996.0	1004.2	1002.6	1019.1
32.5°	938.3	921.8	926.7	921.8	916.8	906.9	916.8	913.5	920.1	913.5	928.4
35°	859.1	842.6	841.0	834.4	829.4	821.2	821.2	812.9	814.6	809.6	819.5
37.5°	773.4	751.9	748.6	735.4	727.2	717.3	717.3	710.7	702.5	699.2	707.4
40°	689.3	666.2	657.9	636.5	628.3	618.4	611.8	603.5	600.2	587.0	593.6
42.5°	616.7	592.0	573.8	550.8	542.5	527.7	517.8	507.9	502.9	488.1	494.7
45°	555.7	526.0	506.2	476.6	465.0	448.5	433.7	422.1	410.6	404.0	400.7
47.5°	504.6	473.3	446.9	413.9	395.8	380.9	361.1	349.6	334.7	326.5	321.5
50°	461.7	427.1	397.4	359.5	341.3	324.8	301.8	283.6	270.4	257.2	253.9
52.5°	423.8	387.5	354.5	311.7	290.2	270.4	245.7	225.9	214.4	199.5	197.9
55°	379.3	347.9	311.7	267.1	245.7	225.9	199.5	179.7	164.9	155.0	151.7
57.5°	331.4	301.8	267.1	222.6	201.2	179.7	155.0	136.9	123.7	115.4	113.8
60°	286.9	258.9	225.9	181.4	160.0	141.8	115.4	97.3	85.7	79.2	75.9
62.5°	253.9	227.6	196.2	155.0	135.2	117.1	92.3	75.9	66.0	59.4	56.1
65°	222.6	196.2	168.2	130.3	113.8	97.3	74.2	59.4	49.5	42.9	39.6
67.5°	189.6	166.5	140.2	108.8	92.3	79.2	59.4	46.2	37.9	33.0	29.7
70°	156.7	135.2	113.8	87.4	75.9	62.7	46.2	36.3	28.0	24.7	21.4
72.5°	123.7	107.2	89.0	67.6	57.7	49.5	36.3	26.4	21.4	18.1	14.8
75°	92.3	80.8	66.0	51.1	42.9	36.3	26.4	19.8	16.5	13.2	11.5
77.5°	66.0	56.1	46.2	34.6	31.3	26.4	18.1	14.8	11.5	8.2	6.6
80°	44.5	39.6	31.3	24.7	19.8	18.1	13.2	9.9	6.6	4.9	4.9
82.5°	29.7	24.7	19.8	14.8	13.2	11.5	8.2	6.6	4.9	3.3	3.3
85°	18.1	14.8	11.5	8.2	8.2	6.6	4.9	3.3	1.6	1.6	1.6
87.5°	8.2	6.6	4.9	3.3	3.3	1.6	1.6	1.6	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°	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6
2.5°	1296.1	1286.2	1279.6	1287.8	1291.1	1286.2	1291.1	1299.4	1307.6	1309.3	1286.2
5°	1297.7	1287.8	1284.5	1294.4	1296.1	1294.4	1299.4	1310.9	1320.8	1324.1	1301.0
7.5°	1297.7	1291.1	1289.5	1301.0	1302.7	1301.0	1309.3	1322.5	1332.4	1339.0	1315.9
10°	1294.4	1291.1	1292.8	1302.7	1306.0	1306.0	1317.5	1332.4	1342.3	1348.9	1325.8
12.5°	1289.5	1289.5	1289.5	1301.0	1304.3	1306.0	1315.9	1335.7	1342.3	1352.2	1329.1
15°	1281.3	1281.3	1281.3	1292.8	1297.7	1297.7	1309.3	1327.4	1335.7	1345.6	1322.5
17.5°	1266.4	1266.4	1268.1	1278.0	1282.9	1282.9	1294.4	1314.2	1319.2	1330.7	1307.6
20°	1245.0	1245.0	1246.6	1256.5	1261.5	1258.2	1273.0	1289.5	1294.4	1304.3	1281.3
22.5°	1213.6	1213.6	1213.6	1223.5	1226.8	1225.2	1240.0	1254.9	1254.9	1268.1	1243.3
25°	1167.5	1170.8	1167.5	1177.4	1180.7	1179.0	1192.2	1205.4	1202.1	1216.9	1192.2
27.5°	1111.4	1109.8	1109.8	1118.0	1118.0	1116.4	1126.2	1141.1	1137.8	1147.7	1124.6
30°	1033.9	1038.9	1030.6	1042.2	1037.2	1033.9	1040.5	1053.7	1048.7	1057.0	1038.9
32.5°	944.9	938.3	938.3	938.3	941.6	933.3	939.9	946.5	941.6	949.8	930.0
35°	827.8	829.4	824.5	826.1	827.8	817.9	824.5	831.1	824.5	829.4	811.3
37.5°	710.7	712.4	700.8	707.4	700.8	697.5	704.1	707.4	700.8	705.8	686.0
40°	593.6	590.3	588.7	588.7	590.3	582.1	587.0	592.0	587.0	590.3	572.2
42.5°	491.4	489.7	486.4	488.1	483.1	481.5	483.1	488.1	483.1	486.4	473.3
45°	402.3	399.1	394.1	395.8	395.8	387.5	392.5	395.8	390.8	392.5	380.9
47.5°	319.9	315.0	315.0	313.3	313.3	310.0	315.0	313.3	308.4	311.7	300.1
50°	249.0	245.7	245.7	245.7	245.7	240.8	242.4	245.7	240.8	240.8	234.2
52.5°	194.6	189.6	186.3	186.3	186.3	184.7	184.7	186.3	181.4	181.4	179.7
55°	146.8	145.1	140.2	140.2	140.2	135.2	136.9	136.9	135.2	135.2	130.3
57.5°	108.8	103.9	100.6	100.6	97.3	97.3	95.6	97.3	94.0	94.0	90.7
60°	72.6	69.3	67.6	66.0	66.0	64.3	66.0	64.3	64.3	62.7	61.0
62.5°	52.8	49.5	46.2	46.2	46.2	44.5	44.5	44.5	44.5	44.5	42.9
65°	37.9	34.6	34.6	33.0	33.0	31.3	31.3	31.3	31.3	31.3	29.7
67.5°	26.4	24.7	23.1	23.1	23.1	23.1	23.1	23.1	21.4	21.4	21.4
70°	19.8	18.1	16.5	16.5	16.5	16.5	16.5	14.8	16.5	16.5	14.8
72.5°	13.2	13.2	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
75°	9.9	9.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
77.5°	6.6	6.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
80°	4.9	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	3.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	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: P251629

CATALOG NUMBER: LD4B30D010 EU4B30509035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6	1279.6
2.5°	1310.9	1309.3	1306.0	1310.9	1297.7	1292.8	1291.1	1306.0
5°	1329.1	1325.8	1325.8	1330.7	1315.9	1312.6	1309.3	1325.8
7.5°	1345.6	1342.3	1342.3	1347.2	1334.0	1330.7	1327.4	1343.9
10°	1355.5	1355.5	1355.5	1358.8	1347.2	1343.9	1342.3	1358.8
12.5°	1360.4	1360.4	1358.8	1365.3	1350.5	1350.5	1347.2	1363.7
15°	1353.8	1353.8	1353.8	1358.8	1345.6	1342.3	1342.3	1355.5
17.5°	1337.3	1337.3	1335.7	1340.6	1325.8	1325.8	1324.1	1339.0
20°	1312.6	1312.6	1309.3	1315.9	1301.0	1296.1	1294.4	1309.3
22.5°	1273.0	1271.4	1269.7	1273.0	1259.8	1256.5	1254.9	1268.1
25°	1221.9	1220.2	1216.9	1220.2	1205.4	1200.5	1200.5	1210.3
27.5°	1149.3	1149.3	1144.4	1149.3	1132.8	1131.2	1129.5	1141.1
30°	1060.3	1053.7	1050.4	1057.0	1040.5	1040.5	1037.2	1048.7
32.5°	949.8	943.2	941.6	944.9	930.0	925.1	931.7	938.3
35°	822.8	824.5	817.9	817.9	804.7	806.3	808.0	817.9
37.5°	700.8	697.5	695.9	697.5	687.6	684.3	681.0	690.9
40°	587.0	578.8	577.1	577.1	568.9	567.2	568.9	573.8
42.5°	479.9	478.2	471.6	474.9	466.7	470.0	468.3	468.3
45°	387.5	389.2	382.6	387.5	380.9	376.0	376.0	379.3
47.5°	306.7	306.7	305.1	305.1	300.1	301.8	298.5	303.4
50°	237.5	237.5	234.2	235.8	232.5	232.5	230.9	232.5
52.5°	181.4	179.7	179.7	178.1	174.8	176.4	178.1	174.8
55°	131.9	133.6	130.3	131.9	128.6	130.3	128.6	130.3
57.5°	90.7	92.3	89.0	92.3	89.0	90.7	89.0	89.0
60°	62.7	62.7	61.0	62.7	61.0	61.0	59.4	62.7
62.5°	42.9	42.9	42.9	42.9	42.9	41.2	42.9	42.9
65°	31.3	29.7	29.7	29.7	29.7	29.7	29.7	29.7
67.5°	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
70°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
72.5°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
75°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
77.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	1.6	1.6	1.6	0.0	1.6	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)