

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: P251628

Luminaire Tested: **LD4B30D010 EU4B30509030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251628
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 EU4B30509030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2212.0 lumens
Efficiency: N/A
Efficacy: 79.0 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

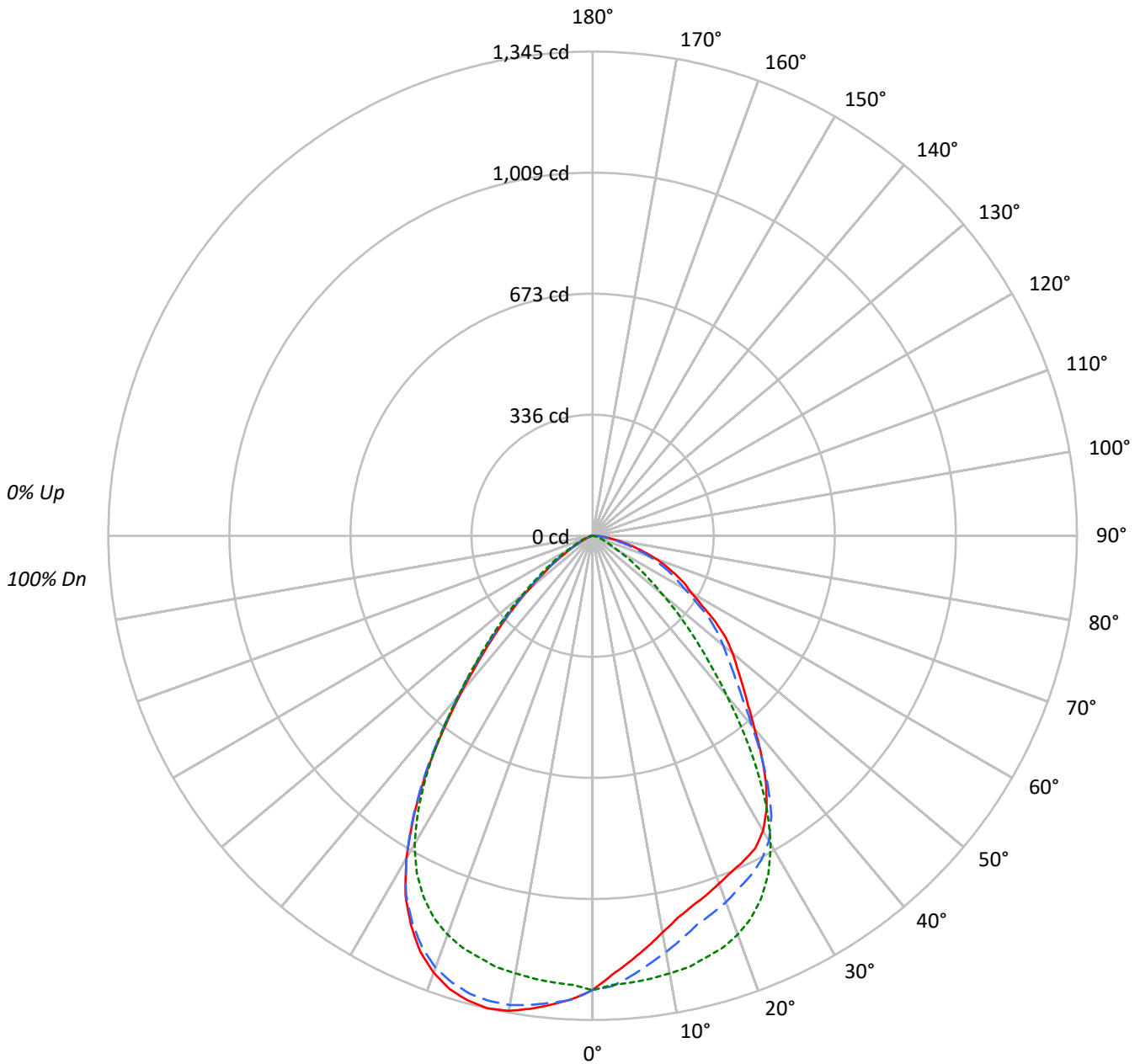
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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°	122982	122982	122982
5°	116134	121867	127913
10°	110718	122148	132608
15°	107464	122397	134868
20°	106586	122277	133914
25°	107017	119265	128351
30°	106503	111263	116395
35°	99831	95001	95965
40°	88967	73649	71995
45°	81359	54910	51547
50°	76931	38465	34766
55°	70735	25980	21834
60°	61808	15223	12046
65°	58505	9755	6757
70°	53285	6953	4160
75°	44094	4895	3050
80°	34685	2750	1852
85°	30862	1789	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.2	5.4
10°-20°	342.1	15.5
20°-30°	507.1	22.9
30°-40°	507.8	23.0
40°-50°	354.9	16.0
50°-60°	211.2	9.5
60°-70°	110.2	5.0
70°-80°	49.0	2.2
80°-90°	10.7	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°	968.3	43.8
0°-40°	1476.1	66.7
0°-60°	2042.1	92.3
0°-90°	2212.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2212.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1262	1262	1262	1262	1262	
5°	1187	1228	1246	1303	1308	111
15°	1065	1119	1213	1317	1337	302
25°	995	1041	1109	1186	1194	459
35°	839	849	798	813	807	520
45°	590	561	398	385	374	458
55°	416	390	153	133	128	369
65°	254	232	42	31	29	251
75°	117	102	13	8	8	127
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°	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9
2.5°	1221.3	1235.9	1221.3	1226.1	1245.7	1227.8	1237.5	1237.5	1232.6	1244.0	1252.2
5°	1187.1	1201.7	1187.1	1193.6	1214.8	1196.9	1208.3	1205.0	1206.6	1216.4	1227.8
7.5°	1153.0	1164.3	1151.3	1159.5	1179.0	1164.3	1174.1	1174.1	1175.7	1190.4	1200.1
10°	1118.8	1128.6	1118.8	1125.3	1146.5	1133.4	1140.0	1141.6	1146.5	1159.5	1174.1
12.5°	1087.9	1096.0	1086.3	1096.0	1113.9	1100.9	1109.1	1110.7	1115.6	1130.2	1146.5
15°	1065.1	1073.3	1063.5	1071.7	1087.9	1078.2	1084.7	1087.9	1091.2	1104.2	1118.8
17.5°	1047.3	1053.8	1045.6	1055.4	1068.4	1057.0	1066.8	1066.8	1071.7	1084.7	1100.9
20°	1027.7	1034.3	1027.7	1035.9	1050.5	1040.8	1048.9	1048.9	1053.8	1068.4	1083.0
22.5°	1009.9	1013.1	1009.9	1016.4	1031.0	1022.9	1027.7	1029.4	1034.3	1047.3	1060.3
25°	995.2	1001.7	998.5	1005.0	1014.7	1006.6	1011.5	1013.1	1018.0	1029.4	1040.8
27.5°	979.0	982.2	979.0	987.1	995.2	988.7	993.6	992.0	995.2	1005.0	1014.7
30°	946.4	949.7	949.7	954.6	961.1	957.8	962.7	957.8	961.1	969.2	979.0
32.5°	899.3	900.9	902.5	907.4	912.3	907.4	910.7	910.7	910.7	917.2	923.7
35°	839.1	842.4	840.7	844.0	848.9	847.2	847.2	845.6	842.4	845.6	848.9
37.5°	770.8	765.9	765.9	770.8	774.1	767.6	770.8	767.6	767.6	769.2	769.2
40°	699.3	694.4	699.3	700.9	702.5	699.3	697.6	694.4	689.5	691.1	687.9
42.5°	639.1	635.8	637.5	637.5	639.1	635.8	637.5	631.0	626.1	622.8	617.9
45°	590.3	585.4	590.3	587.1	587.1	585.4	583.8	580.5	574.0	569.2	561.0
47.5°	544.8	544.8	546.4	546.4	546.4	543.1	543.1	536.6	530.1	523.6	512.2
50°	507.4	504.1	510.6	510.6	505.7	504.1	505.7	497.6	492.7	484.6	473.2
52.5°	466.7	466.7	468.3	468.3	466.7	463.5	465.1	458.6	453.7	445.6	434.2
55°	416.3	413.1	417.9	417.9	416.3	414.7	416.3	411.4	406.5	400.0	390.3
57.5°	359.4	357.8	361.0	362.6	359.4	359.4	361.0	356.1	354.5	348.0	338.2
60°	317.1	315.5	318.7	320.4	317.1	317.1	317.1	310.6	307.3	300.8	294.3
62.5°	287.8	286.2	289.5	287.8	286.2	284.6	286.2	279.7	276.5	269.9	263.4
65°	253.7	255.3	256.9	256.9	255.3	253.7	253.7	250.4	247.2	240.7	232.5
67.5°	221.2	221.2	222.8	224.4	222.8	222.8	222.8	217.9	214.7	209.8	200.0
70°	187.0	185.4	190.3	190.3	187.0	188.6	187.0	185.4	182.1	175.6	167.5
72.5°	151.2	151.2	152.9	152.9	151.2	151.2	151.2	149.6	144.7	141.5	133.3
75°	117.1	117.1	118.7	120.3	117.1	117.1	118.7	115.5	112.2	107.3	102.4
77.5°	87.8	86.2	87.8	87.8	86.2	86.2	86.2	84.6	82.9	78.1	73.2
80°	61.8	60.2	61.8	61.8	61.8	60.2	60.2	58.5	58.5	55.3	50.4
82.5°	42.3	40.7	42.3	42.3	42.3	40.7	40.7	40.7	39.0	37.4	34.1
85°	27.6	26.0	26.0	27.6	26.0	26.0	26.0	26.0	24.4	22.8	21.1
87.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	11.4	11.4	11.4	9.8
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°	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9
2.5°	1245.7	1242.4	1252.2	1248.9	1250.5	1242.4	1255.4	1248.9	1257.0	1248.9	1265.2
5°	1224.5	1221.3	1235.9	1234.3	1235.9	1229.4	1244.0	1242.4	1252.2	1245.7	1263.5
7.5°	1201.7	1198.5	1214.8	1216.4	1219.6	1213.1	1232.6	1232.6	1242.4	1240.8	1260.3
10°	1175.7	1177.4	1193.6	1196.9	1203.4	1200.1	1218.0	1222.9	1235.9	1234.3	1258.7
12.5°	1151.3	1151.3	1172.5	1179.0	1183.9	1182.2	1203.4	1209.9	1224.5	1227.8	1250.5
15°	1126.9	1128.6	1148.1	1157.8	1164.3	1162.7	1185.5	1193.6	1211.5	1213.1	1240.8
17.5°	1107.4	1105.8	1126.9	1135.1	1144.8	1143.2	1167.6	1177.4	1195.2	1200.1	1226.1
20°	1091.2	1089.5	1109.1	1118.8	1125.3	1123.7	1148.1	1159.5	1175.7	1179.0	1205.0
22.5°	1071.7	1068.4	1087.9	1096.0	1102.6	1100.9	1122.1	1130.2	1146.5	1149.7	1174.1
25°	1048.9	1045.6	1063.5	1068.4	1073.3	1070.0	1087.9	1092.8	1105.8	1109.1	1133.4
27.5°	1022.9	1014.7	1029.4	1029.4	1032.6	1027.7	1040.8	1045.6	1057.0	1057.0	1079.8
30°	982.2	970.8	979.0	977.3	979.0	972.5	980.6	982.2	990.3	988.7	1005.0
32.5°	925.3	909.0	913.9	909.0	904.2	894.4	904.2	900.9	907.4	900.9	915.5
35°	847.2	831.0	829.4	822.8	818.0	809.8	809.8	801.7	803.3	798.5	808.2
37.5°	762.7	741.5	738.3	725.3	717.1	707.4	707.4	700.9	692.8	689.5	697.6
40°	679.7	657.0	648.8	627.7	619.6	609.8	603.3	595.2	591.9	578.9	585.4
42.5°	608.2	583.8	565.9	543.1	535.0	520.4	510.6	500.9	496.0	481.4	487.9
45°	548.0	518.8	499.2	470.0	458.6	442.3	427.7	416.3	404.9	398.4	395.2
47.5°	497.6	466.7	440.7	408.2	390.3	375.6	356.1	344.8	330.1	322.0	317.1
50°	455.3	421.2	391.9	354.5	336.6	320.4	297.6	279.7	266.7	253.7	250.4
52.5°	417.9	382.2	349.6	307.3	286.2	266.7	242.3	222.8	211.4	196.8	195.1
55°	374.0	343.1	307.3	263.4	242.3	222.8	196.8	177.3	162.6	152.9	149.6
57.5°	326.9	297.6	263.4	219.5	198.4	177.3	152.9	135.0	122.0	113.8	112.2
60°	283.0	255.3	222.8	178.9	157.7	139.9	113.8	95.9	84.6	78.1	74.8
62.5°	250.4	224.4	193.5	152.9	133.3	115.5	91.1	74.8	65.0	58.5	55.3
65°	219.5	193.5	165.9	128.5	112.2	95.9	73.2	58.5	48.8	42.3	39.0
67.5°	187.0	164.2	138.2	107.3	91.1	78.1	58.5	45.5	37.4	32.5	29.3
70°	154.5	133.3	112.2	86.2	74.8	61.8	45.5	35.8	27.6	24.4	21.1
72.5°	122.0	105.7	87.8	66.7	56.9	48.8	35.8	26.0	21.1	17.9	14.6
75°	91.1	79.7	65.0	50.4	42.3	35.8	26.0	19.5	16.3	13.0	11.4
77.5°	65.0	55.3	45.5	34.1	30.9	26.0	17.9	14.6	11.4	8.1	6.5
80°	43.9	39.0	30.9	24.4	19.5	17.9	13.0	9.8	6.5	4.9	4.9
82.5°	29.3	24.4	19.5	14.6	13.0	11.4	8.1	6.5	4.9	3.3	3.3
85°	17.9	14.6	11.4	8.1	8.1	6.5	4.9	3.3	1.6	1.6	1.6
87.5°	8.1	6.5	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°	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9
2.5°	1278.2	1268.4	1261.9	1270.0	1273.3	1268.4	1273.3	1281.4	1289.6	1291.2	1268.4
5°	1279.8	1270.0	1266.8	1276.6	1278.2	1276.6	1281.4	1292.8	1302.6	1305.8	1283.1
7.5°	1279.8	1273.3	1271.7	1283.1	1284.7	1283.1	1291.2	1304.2	1314.0	1320.5	1297.7
10°	1276.6	1273.3	1274.9	1284.7	1287.9	1287.9	1299.3	1314.0	1323.7	1330.2	1307.5
12.5°	1271.7	1271.7	1271.7	1283.1	1286.3	1287.9	1297.7	1317.2	1323.7	1333.5	1310.7
15°	1263.5	1263.5	1263.5	1274.9	1279.8	1279.8	1291.2	1309.1	1317.2	1327.0	1304.2
17.5°	1248.9	1248.9	1250.5	1260.3	1265.2	1265.2	1276.6	1296.1	1300.9	1312.3	1289.6
20°	1227.8	1227.8	1229.4	1239.2	1244.0	1240.8	1255.4	1271.7	1276.6	1286.3	1263.5
22.5°	1196.9	1196.9	1196.9	1206.6	1209.9	1208.3	1222.9	1237.5	1237.5	1250.5	1226.1
25°	1151.3	1154.6	1151.3	1161.1	1164.3	1162.7	1175.7	1188.7	1185.5	1200.1	1175.7
27.5°	1096.0	1094.4	1094.4	1102.6	1102.6	1100.9	1110.7	1125.3	1122.1	1131.8	1109.1
30°	1019.6	1024.5	1016.4	1027.7	1022.9	1019.6	1026.1	1039.1	1034.3	1042.4	1024.5
32.5°	931.8	925.3	925.3	925.3	928.6	920.4	926.9	933.4	928.6	936.7	917.2
35°	816.3	818.0	813.1	814.7	816.3	806.6	813.1	819.6	813.1	818.0	800.1
37.5°	700.9	702.5	691.1	697.6	691.1	687.9	694.4	697.6	691.1	696.0	676.5
40°	585.4	582.2	580.5	580.5	582.2	574.0	578.9	583.8	578.9	582.2	564.3
42.5°	484.6	483.0	479.7	481.4	476.5	474.8	476.5	481.4	476.5	479.7	466.7
45°	396.8	393.5	388.7	390.3	390.3	382.2	387.0	390.3	385.4	387.0	375.6
47.5°	315.5	310.6	310.6	309.0	309.0	305.7	310.6	309.0	304.1	307.3	296.0
50°	245.6	242.3	242.3	242.3	242.3	237.4	239.0	242.3	237.4	237.4	230.9
52.5°	191.9	187.0	183.8	183.8	183.8	182.1	182.1	183.8	178.9	178.9	177.3
55°	144.7	143.1	138.2	138.2	138.2	133.3	135.0	135.0	133.3	133.3	128.5
57.5°	107.3	102.4	99.2	99.2	95.9	95.9	94.3	95.9	92.7	92.7	89.4
60°	71.6	68.3	66.7	65.0	65.0	63.4	65.0	63.4	63.4	61.8	60.2
62.5°	52.0	48.8	45.5	45.5	45.5	43.9	43.9	43.9	43.9	43.9	42.3
65°	37.4	34.1	34.1	32.5	32.5	30.9	30.9	30.9	30.9	30.9	29.3
67.5°	26.0	24.4	22.8	22.8	22.8	22.8	22.8	22.8	21.1	21.1	21.1
70°	19.5	17.9	16.3	16.3	16.3	16.3	16.3	14.6	16.3	16.3	14.6
72.5°	13.0	13.0	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
75°	9.8	9.8	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
77.5°	6.5	6.5	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: P251628

CATALOG NUMBER: LD4B30D010 EU4B30509030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9
2.5°	1292.8	1291.2	1287.9	1292.8	1279.8	1274.9	1273.3	1287.9
5°	1310.7	1307.5	1307.5	1312.3	1297.7	1294.4	1291.2	1307.5
7.5°	1327.0	1323.7	1323.7	1328.6	1315.6	1312.3	1309.1	1325.3
10°	1336.7	1336.7	1336.7	1340.0	1328.6	1325.3	1323.7	1340.0
12.5°	1341.6	1341.6	1340.0	1346.5	1331.8	1331.8	1328.6	1344.9
15°	1335.1	1335.1	1335.1	1340.0	1327.0	1323.7	1323.7	1336.7
17.5°	1318.8	1318.8	1317.2	1322.1	1307.5	1307.5	1305.8	1320.5
20°	1294.4	1294.4	1291.2	1297.7	1283.1	1278.2	1276.6	1291.2
22.5°	1255.4	1253.8	1252.2	1255.4	1242.4	1239.2	1237.5	1250.5
25°	1205.0	1203.4	1200.1	1203.4	1188.7	1183.9	1183.9	1193.6
27.5°	1133.4	1133.4	1128.6	1133.4	1117.2	1115.6	1113.9	1125.3
30°	1045.6	1039.1	1035.9	1042.4	1026.1	1026.1	1022.9	1034.3
32.5°	936.7	930.2	928.6	931.8	917.2	912.3	918.8	925.3
35°	811.5	813.1	806.6	806.6	793.6	795.2	796.8	806.6
37.5°	691.1	687.9	686.2	687.9	678.1	674.9	671.6	681.4
40°	578.9	570.8	569.2	569.2	561.0	559.4	561.0	565.9
42.5°	473.2	471.6	465.1	468.3	460.2	463.5	461.8	461.8
45°	382.2	383.8	377.3	382.2	375.6	370.8	370.8	374.0
47.5°	302.5	302.5	300.8	300.8	296.0	297.6	294.3	299.2
50°	234.2	234.2	230.9	232.5	229.3	229.3	227.7	229.3
52.5°	178.9	177.3	177.3	175.6	172.4	174.0	175.6	172.4
55°	130.1	131.7	128.5	130.1	126.8	128.5	126.8	128.5
57.5°	89.4	91.1	87.8	91.1	87.8	89.4	87.8	87.8
60°	61.8	61.8	60.2	61.8	60.2	60.2	58.5	61.8
62.5°	42.3	42.3	42.3	42.3	42.3	40.7	42.3	42.3
65°	30.9	29.3	29.3	29.3	29.3	29.3	29.3	29.3
67.5°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
70°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
72.5°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
75°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
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)