

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: P251532

Luminaire Tested: **LD4B20D010 EU4B10208035 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251532
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208035 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1915.0 lumens
Efficiency: N/A
Efficacy: 92.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

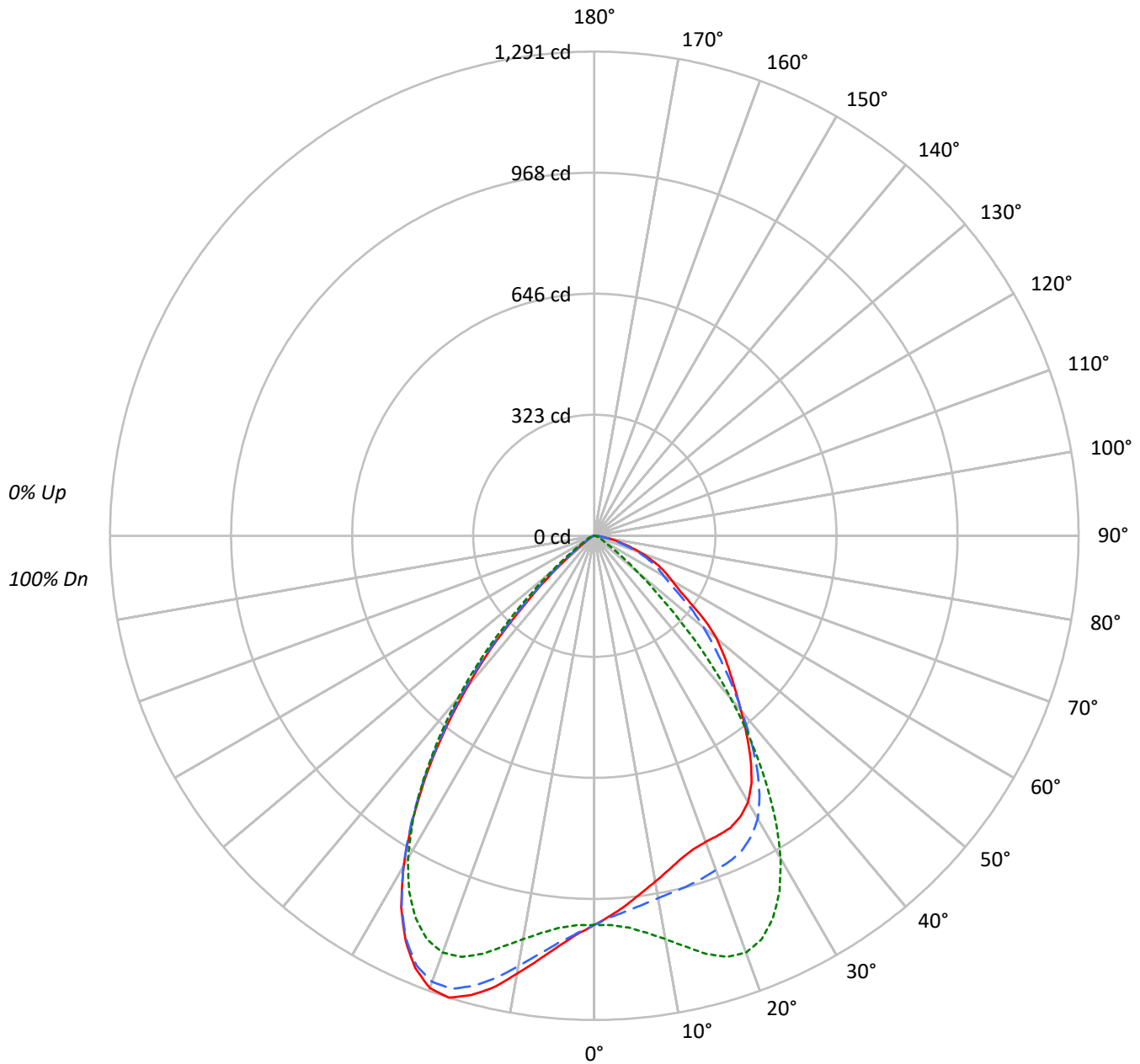
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251532

CATALOG NUMBER: LD4B20D010 EU4B10208035 4LBSW1LI

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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90		
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80		
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72		
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64		
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58		
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53		
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48		
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44		
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40		
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	101132	101132	101132
5°	96617	102585	107486
10°	92638	108056	117309
15°	89939	116454	127936
20°	90064	122661	133053
25°	92360	121061	128050
30°	92234	111747	114347
35°	86387	94454	93157
40°	77389	72046	67224
45°	70209	45745	37530
50°	64498	23213	16026
55°	52945	10365	5301
60°	46468	5809	2904
65°	43746	4382	2191
70°	37442	3476	1938
75°	28580	2561	1544
80°	20541	1515	786
85°	15096	0	0



TEST NUMBER: P251532

CATALOG NUMBER: LD4B20D010 EU4B10208035 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.8	5.3
10°-20°	314.2	16.4
20°-30°	486.0	25.4
30°-40°	478.9	25.0
40°-50°	294.1	15.4
50°-60°	130.8	6.8
60°-70°	73.0	3.8
70°-80°	31.6	1.7
80°-90°	5.7	0.3
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°	901.0	47.0
0°-40°	1379.9	72.1
0°-60°	1804.7	94.2
0°-90°	1915.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1915.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1038	1038	1038	1038	1038	
5°	988	1004	1049	1089	1099	93
15°	891	966	1154	1242	1268	253
25°	859	928	1126	1187	1191	394
35°	726	756	794	791	783	451
45°	509	484	332	290	272	395
55°	312	282	61	35	31	286
65°	190	171	19	11	10	186
75°	76	65	7	4	4	83
85°	14	11	0	0	0	17
90°	0	0	0	0	0	



TEST NUMBER: P251532

CATALOG NUMBER: LD4B20D010 EU4B10208035 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7
2.5°	1013.3	1013.3	1013.3	1013.3	1016.1	1012.0	1016.1	1016.1	1020.1	1021.5	1017.4
5°	987.6	986.3	987.6	987.6	990.3	989.0	993.0	995.7	1001.2	1003.9	1003.9
7.5°	960.5	960.5	960.5	963.2	967.3	965.9	970.0	974.1	982.2	987.6	991.7
10°	936.1	934.8	938.8	940.2	944.3	944.3	951.0	955.1	964.6	975.4	980.8
12.5°	913.1	911.7	914.5	918.5	925.3	925.3	930.7	937.5	951.0	963.2	972.7
15°	891.4	892.8	896.8	899.6	907.7	907.7	914.5	922.6	937.5	952.4	965.9
17.5°	876.5	877.9	880.6	884.6	892.8	892.8	899.6	909.0	925.3	941.5	957.8
20°	868.4	869.7	872.5	876.5	883.3	884.6	890.1	900.9	915.8	933.4	948.3
22.5°	864.3	867.0	869.7	872.5	879.2	879.2	886.0	894.1	909.0	926.6	940.2
25°	858.9	861.6	863.0	867.0	872.5	872.5	876.5	886.0	899.6	914.5	928.0
27.5°	844.0	846.7	848.1	852.1	857.6	856.2	861.6	868.4	880.6	894.1	905.0
30°	819.6	821.0	823.7	825.0	829.1	829.1	833.2	839.9	848.1	860.3	871.1
32.5°	780.3	783.0	784.4	785.8	789.8	788.5	789.8	793.9	802.0	812.8	819.6
35°	726.1	731.6	731.6	734.3	735.6	734.3	734.3	739.7	743.8	751.9	755.9
37.5°	666.5	670.6	669.2	672.0	673.3	669.2	672.0	673.3	678.7	682.8	684.1
40°	608.3	609.6	609.6	609.6	609.6	608.3	609.6	611.0	615.1	615.1	611.0
42.5°	555.4	556.8	556.8	554.1	556.8	555.4	555.4	555.4	555.4	550.0	546.0
45°	509.4	510.7	510.7	509.4	509.4	506.7	505.3	504.0	499.9	493.1	483.6
47.5°	466.0	468.7	470.1	467.4	466.0	463.3	463.3	455.2	449.8	441.6	428.1
50°	425.4	428.1	428.1	425.4	425.4	421.3	417.3	414.6	406.4	396.9	380.7
52.5°	373.9	378.0	378.0	376.6	376.6	371.2	369.8	364.4	357.7	346.8	333.3
55°	311.6	317.0	315.7	314.3	311.6	311.6	311.6	307.5	303.5	295.3	281.8
57.5°	266.9	268.2	268.2	266.9	266.9	264.2	264.2	260.1	258.8	250.6	239.8
60°	238.4	238.4	239.8	238.4	237.1	235.7	234.4	231.7	227.6	222.2	214.0
62.5°	215.4	216.8	216.8	215.4	214.0	212.7	211.3	208.6	205.9	201.9	193.7
65°	189.7	192.4	191.0	189.7	188.3	187.0	187.0	184.2	181.5	178.8	170.7
67.5°	161.2	162.6	163.9	161.2	161.2	159.9	159.9	157.2	155.8	150.4	145.0
70°	131.4	132.8	132.8	131.4	131.4	130.1	130.1	128.7	127.3	123.3	117.9
72.5°	103.0	104.3	103.0	101.6	101.6	101.6	100.3	98.9	97.5	94.8	90.8
75°	75.9	75.9	77.2	75.9	74.5	74.5	73.2	73.2	70.4	69.1	65.0
77.5°	54.2	55.5	54.2	54.2	52.8	51.5	51.5	50.1	50.1	48.8	46.1
80°	36.6	36.6	37.9	36.6	35.2	36.6	35.2	33.9	33.9	32.5	29.8
82.5°	23.0	24.4	23.0	23.0	23.0	23.0	23.0	21.7	21.7	20.3	19.0
85°	13.5	13.5	13.5	13.5	13.5	13.5	13.5	12.2	12.2	12.2	10.8
87.5°	6.8	6.8	5.4	5.4	6.8	6.8	6.8	5.4	5.4	5.4	5.4
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: P251532

CATALOG NUMBER: LD4B20D010 EU4B10208035 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7
2.5°	1022.8	1024.2	1026.9	1031.0	1031.0	1028.3	1035.0	1035.0	1037.7	1039.1	1044.5
5°	1012.0	1014.7	1020.1	1026.9	1028.3	1026.9	1036.4	1040.4	1044.5	1048.6	1056.7
7.5°	1002.5	1007.9	1017.4	1026.9	1031.0	1031.0	1045.9	1051.3	1059.4	1067.5	1077.0
10°	997.1	1005.2	1018.8	1033.7	1037.7	1041.8	1059.4	1070.2	1081.1	1091.9	1105.5
12.5°	990.3	1005.2	1022.8	1041.8	1049.9	1055.3	1079.7	1093.3	1108.2	1121.7	1139.3
15°	989.0	1006.6	1029.6	1054.0	1064.8	1073.0	1100.1	1119.0	1136.6	1154.2	1171.9
17.5°	983.5	1005.2	1033.7	1060.8	1074.3	1085.2	1116.3	1139.3	1159.7	1177.3	1197.6
20°	976.8	1001.2	1032.3	1062.1	1077.0	1087.9	1121.7	1143.4	1166.4	1182.7	1201.7
22.5°	967.3	991.7	1022.8	1052.6	1066.2	1075.7	1109.5	1128.5	1148.8	1165.1	1182.7
25°	951.0	974.1	1001.2	1025.5	1039.1	1047.2	1077.0	1094.6	1109.5	1125.8	1142.0
27.5°	928.0	945.6	968.6	986.3	994.4	1002.5	1026.9	1041.8	1055.3	1068.9	1079.7
30°	887.4	900.9	917.2	932.1	940.2	941.5	964.6	972.7	983.5	993.0	1001.2
32.5°	833.2	844.0	853.5	861.6	867.0	868.4	886.0	888.7	899.6	899.6	911.7
35°	764.1	769.5	776.3	776.3	780.3	776.3	788.5	791.2	792.5	793.9	803.4
37.5°	685.5	688.2	692.3	684.1	684.1	680.1	684.1	686.9	681.4	681.4	688.2
40°	611.0	605.6	600.2	592.0	588.0	579.8	579.8	573.1	569.0	566.3	567.6
42.5°	539.2	527.0	514.8	497.2	489.1	480.9	472.8	463.3	460.6	453.8	449.8
45°	470.1	452.5	436.2	407.8	391.5	383.4	365.8	346.8	334.6	331.9	321.1
47.5°	411.8	386.1	359.0	325.1	308.9	294.0	268.2	252.0	235.7	227.6	220.8
50°	360.4	337.3	302.1	265.5	245.2	230.3	201.9	182.9	165.3	153.1	145.0
52.5°	315.7	289.9	257.4	215.4	195.1	178.8	147.7	126.0	111.1	98.9	89.4
55°	265.5	245.2	212.7	173.4	153.1	134.1	107.0	84.0	69.1	61.0	54.2
57.5°	229.0	211.3	180.2	142.2	123.3	105.7	78.6	59.6	47.4	39.3	35.2
60°	204.6	188.3	161.2	124.6	107.0	90.8	65.0	47.4	36.6	29.8	27.1
62.5°	184.2	168.0	143.6	109.7	94.8	78.6	55.5	39.3	29.8	24.4	20.3
65°	161.2	146.3	124.6	94.8	81.3	67.7	47.4	32.5	24.4	19.0	16.3
67.5°	136.8	123.3	104.3	78.6	67.7	56.9	37.9	27.1	20.3	16.3	13.5
70°	111.1	100.3	82.6	63.7	54.2	44.7	31.2	21.7	14.9	12.2	10.8
72.5°	85.3	75.9	63.7	48.8	40.6	33.9	23.0	16.3	12.2	9.5	8.1
75°	61.0	54.2	44.7	35.2	29.8	24.4	17.6	12.2	8.1	6.8	5.4
77.5°	42.0	37.9	31.2	24.4	20.3	17.6	12.2	8.1	6.8	5.4	4.1
80°	27.1	24.4	20.3	14.9	12.2	10.8	6.8	5.4	4.1	2.7	2.7
82.5°	16.3	14.9	12.2	8.1	6.8	5.4	4.1	2.7	2.7	1.4	1.4
85°	9.5	8.1	5.4	4.1	4.1	2.7	2.7	1.4	1.4	0.0	0.0
87.5°	4.1	2.7	2.7	1.4	1.4	1.4	1.4	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: P251532

CATALOG NUMBER: LD4B20D010 EU4B10208035 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7
2.5°	1041.8	1048.6	1047.2	1051.3	1049.9	1049.9	1056.7	1054.0	1060.8	1060.8	1062.1
5°	1056.7	1066.2	1066.2	1073.0	1071.6	1074.3	1081.1	1081.1	1089.2	1091.9	1091.9
7.5°	1078.4	1090.6	1093.3	1100.1	1101.4	1106.8	1112.2	1113.6	1124.4	1127.1	1128.5
10°	1108.2	1123.1	1127.1	1133.9	1136.6	1142.0	1148.8	1151.5	1165.1	1166.4	1171.9
12.5°	1144.8	1161.0	1165.1	1173.2	1174.6	1181.3	1190.8	1193.5	1207.1	1211.1	1215.2
15°	1180.0	1194.9	1201.7	1209.8	1211.1	1219.3	1227.4	1230.1	1242.3	1247.7	1251.8
17.5°	1204.4	1222.0	1226.0	1236.9	1236.9	1243.7	1251.8	1254.5	1266.7	1270.8	1273.5
20°	1209.8	1226.0	1231.5	1239.6	1240.9	1245.0	1251.8	1254.5	1265.3	1266.7	1270.8
22.5°	1189.5	1205.7	1208.4	1216.6	1217.9	1222.0	1227.4	1226.0	1239.6	1238.2	1239.6
25°	1146.1	1161.0	1161.0	1170.5	1169.1	1173.2	1175.9	1174.6	1186.8	1186.8	1186.8
27.5°	1083.8	1097.3	1098.7	1105.5	1101.4	1102.8	1105.5	1104.1	1112.2	1112.2	1112.2
30°	1006.6	1017.4	1013.3	1018.8	1016.1	1018.8	1016.1	1014.7	1017.4	1020.1	1018.8
32.5°	910.4	918.5	918.5	919.9	919.9	911.7	909.0	909.0	907.7	906.3	906.3
35°	799.3	806.1	803.4	803.4	802.0	793.9	789.8	787.1	791.2	783.0	788.5
37.5°	685.5	686.9	682.8	681.4	674.7	674.7	667.9	662.5	665.2	663.8	658.4
40°	560.9	566.3	558.2	555.4	559.5	554.1	547.3	540.5	546.0	539.2	541.9
42.5°	438.9	437.6	434.9	434.9	434.9	426.7	425.4	424.0	425.4	420.0	415.9
45°	317.0	312.9	308.9	308.9	303.5	300.8	300.8	296.7	289.9	289.9	281.8
47.5°	214.0	204.6	201.9	200.5	197.8	197.8	195.1	192.4	191.0	184.2	184.2
50°	139.5	130.1	127.3	126.0	127.3	124.6	121.9	119.2	116.5	115.2	112.4
52.5°	84.0	79.9	77.2	75.9	73.2	71.8	70.4	67.7	66.4	66.4	65.0
55°	50.1	46.1	40.6	40.6	40.6	39.3	37.9	36.6	35.2	35.2	33.9
57.5°	31.2	28.4	25.7	24.4	24.4	24.4	23.0	23.0	23.0	23.0	21.7
60°	23.0	20.3	19.0	19.0	19.0	17.6	17.6	17.6	17.6	16.3	16.3
62.5°	17.6	16.3	14.9	14.9	13.5	13.5	13.5	13.5	13.5	13.5	12.2
65°	14.9	12.2	12.2	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
67.5°	10.8	9.5	9.5	9.5	9.5	8.1	8.1	8.1	8.1	8.1	8.1
70°	8.1	8.1	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
72.5°	6.8	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
75°	5.4	5.4	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
77.5°	4.1	4.1	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
80°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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: P251532

CATALOG NUMBER: LD4B20D010 EU4B10208035 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7
2.5°	1062.1	1068.9	1062.1	1062.1	1066.2	1064.8	1067.5	1063.5
5°	1093.3	1102.8	1096.0	1094.6	1101.4	1100.1	1101.4	1098.7
7.5°	1131.2	1140.7	1133.9	1133.9	1140.7	1139.3	1143.4	1140.7
10°	1174.6	1185.4	1175.9	1177.3	1186.8	1185.4	1185.4	1185.4
12.5°	1219.3	1230.1	1224.7	1224.7	1231.5	1232.8	1234.2	1232.8
15°	1255.8	1266.7	1259.9	1259.9	1269.4	1268.0	1269.4	1268.0
17.5°	1277.5	1288.4	1280.2	1280.2	1288.4	1288.4	1289.7	1291.1
20°	1272.1	1284.3	1277.5	1274.8	1284.3	1284.3	1282.9	1282.9
22.5°	1240.9	1251.8	1246.4	1243.7	1250.4	1247.7	1246.4	1247.7
25°	1186.8	1197.6	1186.8	1186.8	1192.2	1190.8	1192.2	1190.8
27.5°	1113.6	1121.7	1110.9	1109.5	1115.0	1112.2	1110.9	1115.0
30°	1016.1	1024.2	1018.8	1014.7	1021.5	1017.4	1014.7	1016.1
32.5°	905.0	910.4	907.7	900.9	905.0	902.3	900.9	902.3
35°	783.0	789.8	779.0	777.6	784.4	779.0	776.3	783.0
37.5°	657.1	665.2	655.7	657.1	653.0	654.3	651.6	655.7
40°	537.8	536.5	533.8	532.4	533.8	529.7	532.4	528.4
42.5°	409.1	411.8	410.5	409.1	410.5	405.1	402.4	407.8
45°	284.5	283.1	280.4	277.7	277.7	276.4	276.4	272.3
47.5°	182.9	181.5	176.1	177.5	180.2	177.5	173.4	178.8
50°	111.1	109.7	109.7	108.4	111.1	108.4	105.7	105.7
52.5°	62.3	62.3	61.0	61.0	61.0	61.0	59.6	58.3
55°	33.9	32.5	32.5	32.5	31.2	31.2	31.2	31.2
57.5°	21.7	21.7	21.7	21.7	21.7	21.7	20.3	20.3
60°	16.3	16.3	16.3	16.3	14.9	16.3	14.9	14.9
62.5°	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
65°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
67.5°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
70°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
72.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
75°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
77.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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)