

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: P251814

Luminaire Tested: **LD4B50D010TE EU4B30509727 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251814
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30509727 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2840.0 lumens
Efficiency: N/A
Efficacy: 48.3 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

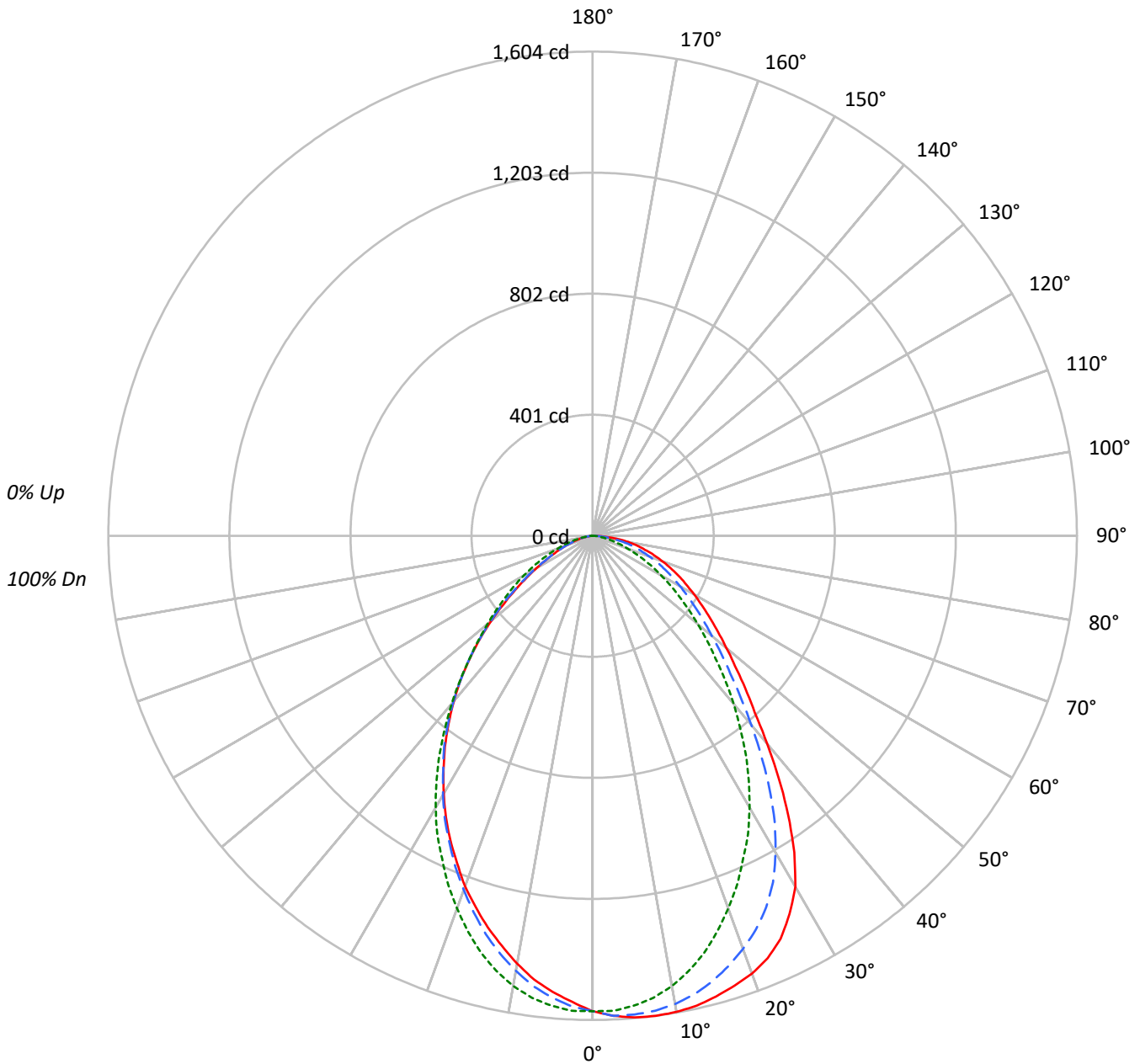
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76	76	76	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67	67	67	67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59	59	59	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38	38	38	38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35	35	35	35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32	32	32	32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	153496	153496	153496
5°	156695	152899	148399
10°	158507	149877	142435
15°	159406	144251	135443
20°	160081	136206	128168
25°	158429	126900	119856
30°	151067	116980	110982
35°	134346	105221	101473
40°	114373	92478	90939
45°	98518	79485	79154
50°	87802	68698	66500
55°	80692	59283	53115
60°	75569	51010	41556
65°	72641	43031	32400
70°	69727	34536	26244
75°	67515	27375	20070
80°	68022	19026	12235
85°	56917	13530	5367



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.5	5.2
10°-20°	405.4	14.3
20°-30°	566.9	20.0
30°-40°	582.7	20.5
40°-50°	472.9	16.7
50°-60°	333.0	11.7
60°-70°	205.0	7.2
70°-80°	102.4	3.6
80°-90°	24.3	0.9
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°	1119.7	39.4
0°-40°	1702.3	59.9
0°-60°	2508.3	88.3
0°-90°	2840.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2840.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1575	1575	1575	1575	1575	
5°	1602	1592	1563	1536	1517	153
15°	1580	1529	1430	1367	1342	446
25°	1473	1359	1180	1122	1115	673
35°	1129	1020	884	858	853	702
45°	715	645	577	577	574	556
55°	475	417	349	320	313	427
65°	315	264	187	143	140	311
75°	179	140	73	53	53	191
85°	51	34	12	7	5	59
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°	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0
2.5°	1592.0	1594.4	1587.2	1594.4	1584.7	1589.6	1592.0	1587.2	1582.3	1592.0	1592.0
5°	1601.7	1601.7	1594.4	1604.1	1592.0	1594.4	1599.3	1592.0	1584.7	1594.4	1592.0
7.5°	1604.1	1604.1	1594.4	1604.1	1592.0	1594.4	1596.9	1589.6	1582.3	1589.6	1587.2
10°	1601.7	1599.3	1592.0	1601.7	1589.6	1589.6	1592.0	1584.7	1572.6	1579.9	1575.0
12.5°	1594.4	1594.4	1584.7	1594.4	1577.5	1577.5	1579.9	1570.2	1560.5	1560.5	1555.7
15°	1579.9	1579.9	1570.2	1577.5	1562.9	1562.9	1560.5	1550.8	1538.7	1538.7	1529.0
17.5°	1562.9	1562.9	1553.2	1560.5	1543.5	1543.5	1541.1	1526.6	1509.6	1507.2	1495.1
20°	1543.5	1543.5	1531.4	1536.3	1516.9	1516.9	1514.5	1497.5	1478.1	1473.3	1456.3
22.5°	1514.5	1514.5	1502.4	1504.8	1485.4	1483.0	1480.5	1461.2	1441.8	1434.5	1412.7
25°	1473.3	1470.8	1461.2	1461.2	1441.8	1436.9	1432.1	1412.7	1393.3	1378.8	1359.4
27.5°	1412.7	1415.1	1403.0	1405.4	1381.2	1376.3	1373.9	1349.7	1327.9	1313.3	1294.0
30°	1342.4	1335.2	1323.0	1323.0	1303.7	1301.2	1296.4	1274.6	1250.3	1233.4	1211.6
32.5°	1243.1	1240.7	1228.5	1228.5	1206.7	1206.7	1197.0	1175.2	1153.4	1143.7	1121.9
35°	1129.2	1126.8	1117.1	1117.1	1097.7	1100.1	1090.4	1073.5	1051.6	1037.1	1020.1
37.5°	1012.9	1010.5	1000.8	1003.2	986.2	986.2	979.0	962.0	945.0	937.8	915.9
40°	899.0	896.6	884.4	891.7	877.2	872.3	869.9	857.8	838.4	828.7	816.6
42.5°	794.8	797.2	785.1	789.9	777.8	773.0	770.6	760.9	746.3	736.6	724.5
45°	714.8	710.0	705.1	705.1	693.0	690.6	688.2	676.1	666.4	656.7	644.6
47.5°	639.7	634.9	630.0	632.4	622.7	620.3	615.5	605.8	593.7	588.8	576.7
50°	579.1	576.7	569.4	569.4	559.7	557.3	552.5	545.2	533.1	525.8	516.1
52.5°	523.4	523.4	516.1	513.7	506.4	504.0	501.6	491.9	482.2	472.5	462.8
55°	474.9	472.5	467.7	467.7	458.0	455.6	453.1	443.4	433.7	426.5	416.8
57.5°	428.9	428.9	424.1	424.1	416.8	411.9	411.9	402.2	390.1	385.3	373.2
60°	387.7	387.7	382.9	382.9	375.6	375.6	370.7	361.0	353.8	344.1	334.4
62.5°	348.9	351.4	346.5	344.1	336.8	334.4	334.4	327.1	315.0	307.7	298.0
65°	315.0	312.6	310.2	307.7	300.5	298.0	298.0	288.4	281.1	271.4	264.1
67.5°	278.7	278.7	273.8	273.8	269.0	266.5	261.7	254.4	247.2	239.9	232.6
70°	244.7	244.7	242.3	242.3	235.0	232.6	230.2	222.9	215.7	208.4	198.7
72.5°	213.2	210.8	208.4	208.4	203.5	201.1	198.7	191.4	184.2	176.9	169.6
75°	179.3	179.3	176.9	176.9	172.0	169.6	169.6	164.8	155.1	150.2	140.5
77.5°	150.2	150.2	147.8	147.8	143.0	143.0	140.5	133.3	128.4	121.2	116.3
80°	121.2	118.7	118.7	116.3	111.5	111.5	109.0	106.6	99.3	94.5	87.2
82.5°	84.8	84.8	84.8	82.4	80.0	80.0	77.5	72.7	67.8	65.4	58.2
85°	50.9	50.9	48.5	46.0	48.5	46.0	43.6	41.2	38.8	36.3	33.9
87.5°	21.8	21.8	19.4	19.4	19.4	19.4	19.4	17.0	14.5	14.5	12.1
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°	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0
2.5°	1577.5	1584.7	1582.3	1579.9	1575.0	1575.0	1575.0	1572.6	1575.0	1575.0	1570.2
5°	1577.5	1582.3	1579.9	1575.0	1570.2	1570.2	1567.8	1562.9	1562.9	1562.9	1553.2
7.5°	1570.2	1575.0	1567.8	1562.9	1558.1	1553.2	1553.2	1546.0	1546.0	1543.5	1533.9
10°	1555.7	1558.1	1548.4	1543.5	1536.3	1533.9	1529.0	1519.3	1516.9	1514.5	1504.8
12.5°	1533.9	1536.3	1524.2	1514.5	1504.8	1502.4	1497.5	1485.4	1480.5	1475.7	1463.6
15°	1502.4	1502.4	1487.8	1475.7	1466.0	1463.6	1451.5	1439.3	1434.5	1429.7	1412.7
17.5°	1466.0	1463.6	1444.2	1432.1	1420.0	1415.1	1403.0	1388.5	1378.8	1373.9	1359.4
20°	1427.2	1420.0	1398.2	1386.0	1371.5	1364.2	1352.1	1332.7	1323.0	1313.3	1298.8
22.5°	1381.2	1371.5	1347.3	1330.3	1315.8	1308.5	1291.5	1274.6	1260.0	1250.3	1233.4
25°	1325.5	1313.3	1286.7	1264.9	1252.8	1245.5	1228.5	1209.1	1194.6	1180.1	1165.5
27.5°	1260.0	1245.5	1218.8	1197.0	1184.9	1172.8	1160.7	1138.9	1126.8	1114.6	1097.7
30°	1180.1	1163.1	1138.9	1119.5	1105.0	1095.3	1080.7	1061.3	1046.8	1039.5	1022.6
32.5°	1092.8	1073.5	1051.6	1032.3	1025.0	1012.9	1000.8	981.4	969.3	962.0	949.9
35°	995.9	981.4	957.1	942.6	930.5	925.6	915.9	896.6	891.7	884.4	869.9
37.5°	894.1	882.0	865.1	852.9	843.3	838.4	828.7	816.6	809.3	802.1	794.8
40°	799.6	789.9	775.4	765.7	753.6	746.3	746.3	731.8	726.9	726.9	719.7
42.5°	707.6	702.7	690.6	676.1	673.6	666.4	663.9	656.7	651.8	649.4	647.0
45°	630.0	622.7	610.6	603.4	596.1	596.1	588.8	581.6	579.1	576.7	574.3
47.5°	562.2	552.5	542.8	535.5	530.7	528.2	521.0	516.1	513.7	513.7	511.3
50°	501.6	494.3	484.6	477.4	472.5	467.7	462.8	458.0	455.6	453.1	453.1
52.5°	450.7	441.0	431.3	424.1	416.8	414.4	409.5	404.7	402.2	399.8	397.4
55°	404.7	397.4	385.3	378.0	370.7	370.7	363.5	356.2	351.4	348.9	346.5
57.5°	361.0	353.8	341.7	334.4	329.5	324.7	319.9	315.0	310.2	305.3	300.5
60°	322.3	315.0	302.9	293.2	290.8	285.9	281.1	271.4	266.5	261.7	256.9
62.5°	285.9	276.2	266.5	256.9	254.4	249.6	242.3	235.0	227.8	222.9	215.7
65°	252.0	244.7	232.6	225.4	218.1	215.7	208.4	198.7	191.4	186.6	179.3
67.5°	220.5	210.8	198.7	191.4	186.6	181.7	174.5	167.2	159.9	152.7	145.4
70°	189.0	181.7	169.6	162.4	157.5	152.7	145.4	135.7	128.4	121.2	116.3
72.5°	159.9	150.2	140.5	133.3	128.4	123.6	116.3	109.0	101.8	96.9	89.7
75°	133.3	123.6	116.3	106.6	104.2	99.3	92.1	84.8	77.5	72.7	67.8
77.5°	106.6	99.3	89.7	84.8	80.0	75.1	70.3	63.0	58.2	50.9	46.0
80°	80.0	72.7	65.4	60.6	55.7	53.3	48.5	43.6	38.8	33.9	31.5
82.5°	53.3	48.5	41.2	38.8	36.3	33.9	29.1	26.7	24.2	21.8	19.4
85°	29.1	26.7	24.2	19.4	19.4	17.0	14.5	14.5	12.1	12.1	9.7
87.5°	12.1	9.7	9.7	7.3	7.3	7.3	4.8	4.8	4.8	2.4	2.4
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°	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0
2.5°	1572.6	1562.9	1562.9	1562.9	1555.7	1558.1	1560.5	1562.9	1560.5	1553.2	1560.5
5°	1555.7	1546.0	1546.0	1541.1	1536.3	1536.3	1536.3	1538.7	1536.3	1529.0	1531.4
7.5°	1533.9	1521.7	1519.3	1514.5	1509.6	1507.2	1507.2	1507.2	1504.8	1495.1	1499.9
10°	1499.9	1487.8	1483.0	1480.5	1473.3	1470.8	1468.4	1466.0	1463.6	1453.9	1458.7
12.5°	1458.7	1449.0	1439.3	1436.9	1429.7	1424.8	1422.4	1422.4	1417.5	1407.8	1412.7
15°	1410.3	1395.7	1388.5	1383.6	1376.3	1371.5	1366.7	1369.1	1366.7	1357.0	1359.4
17.5°	1352.1	1337.6	1330.3	1327.9	1318.2	1313.3	1310.9	1310.9	1308.5	1298.8	1301.2
20°	1289.1	1274.6	1269.7	1264.9	1260.0	1255.2	1252.8	1250.3	1247.9	1238.2	1245.5
22.5°	1226.1	1209.1	1201.9	1201.9	1192.2	1189.8	1187.3	1189.8	1187.3	1177.6	1182.5
25°	1160.7	1143.7	1138.9	1131.6	1126.8	1124.3	1124.3	1124.3	1121.9	1117.1	1121.9
27.5°	1088.0	1075.9	1068.6	1066.2	1061.3	1058.9	1056.5	1058.9	1058.9	1051.6	1056.5
30°	1015.3	1005.6	1000.8	998.3	991.1	988.6	991.1	991.1	991.1	983.8	991.1
32.5°	942.6	935.3	932.9	925.6	920.8	920.8	920.8	923.2	920.8	915.9	923.2
35°	869.9	860.2	857.8	855.4	855.4	850.5	855.4	852.9	857.8	850.5	855.4
37.5°	792.4	787.5	785.1	785.1	780.3	782.7	782.7	782.7	787.5	780.3	785.1
40°	719.7	714.8	714.8	714.8	712.4	712.4	712.4	714.8	717.3	712.4	717.3
42.5°	647.0	644.6	644.6	642.1	639.7	642.1	644.6	644.6	647.0	642.1	644.6
45°	576.7	574.3	576.7	574.3	574.3	571.9	574.3	576.7	576.7	574.3	574.3
47.5°	511.3	511.3	508.9	508.9	508.9	508.9	508.9	508.9	508.9	504.0	508.9
50°	453.1	448.3	450.7	448.3	448.3	445.9	445.9	443.4	441.0	438.6	438.6
52.5°	397.4	392.5	392.5	390.1	387.7	387.7	385.3	382.9	380.4	375.6	375.6
55°	344.1	339.2	336.8	334.4	332.0	329.5	327.1	324.7	319.9	317.4	317.4
57.5°	295.6	290.8	285.9	285.9	281.1	278.7	273.8	269.0	266.5	261.7	261.7
60°	252.0	247.2	239.9	237.5	235.0	230.2	222.9	220.5	218.1	213.2	215.7
62.5°	210.8	203.5	196.3	193.9	191.4	186.6	181.7	176.9	174.5	176.9	176.9
65°	172.0	164.8	159.9	155.1	152.7	147.8	145.4	143.0	143.0	143.0	145.4
67.5°	138.1	130.8	126.0	123.6	118.7	116.3	116.3	116.3	116.3	116.3	116.3
70°	109.0	104.2	99.3	94.5	94.5	92.1	92.1	92.1	92.1	92.1	92.1
72.5°	82.4	77.5	75.1	75.1	72.7	72.7	72.7	72.7	70.3	70.3	72.7
75°	60.6	58.2	55.7	55.7	55.7	53.3	53.3	53.3	53.3	53.3	53.3
77.5°	43.6	41.2	41.2	38.8	38.8	38.8	38.8	38.8	38.8	36.3	36.3
80°	29.1	26.7	26.7	26.7	26.7	24.2	24.2	24.2	24.2	24.2	24.2
82.5°	17.0	17.0	17.0	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
85°	9.7	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	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: P251814

CATALOG NUMBER: LD4B50D010TE EU4B30509727 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0	1575.0
2.5°	1546.0	1555.7	1558.1	1550.8	1553.2	1548.4	1550.8	1546.0
5°	1519.3	1526.6	1529.0	1524.2	1524.2	1519.3	1521.7	1516.9
7.5°	1485.4	1492.7	1495.1	1490.2	1490.2	1485.4	1485.4	1483.0
10°	1446.6	1449.0	1453.9	1446.6	1449.0	1444.2	1444.2	1439.3
12.5°	1398.2	1403.0	1407.8	1400.6	1400.6	1398.2	1398.2	1390.9
15°	1347.3	1352.1	1354.5	1349.7	1349.7	1347.3	1344.8	1342.4
17.5°	1294.0	1296.4	1301.2	1294.0	1298.8	1294.0	1294.0	1289.1
20°	1233.4	1240.7	1243.1	1235.8	1238.2	1235.8	1235.8	1235.8
22.5°	1175.2	1180.1	1182.5	1177.6	1180.1	1175.2	1177.6	1172.8
25°	1114.6	1117.1	1119.5	1114.6	1119.5	1117.1	1114.6	1114.6
27.5°	1051.6	1054.1	1056.5	1051.6	1056.5	1054.1	1056.5	1051.6
30°	983.8	988.6	993.5	988.6	991.1	988.6	988.6	986.2
32.5°	915.9	920.8	925.6	920.8	925.6	920.8	923.2	918.4
35°	852.9	855.4	857.8	852.9	855.4	855.4	855.4	852.9
37.5°	782.7	787.5	787.5	785.1	789.9	787.5	787.5	782.7
40°	714.8	717.3	719.7	714.8	717.3	714.8	717.3	714.8
42.5°	644.6	649.4	651.8	647.0	647.0	647.0	644.6	647.0
45°	571.9	576.7	581.6	574.3	576.7	576.7	576.7	574.3
47.5°	506.4	506.4	508.9	506.4	508.9	504.0	508.9	506.4
50°	438.6	438.6	443.4	438.6	438.6	438.6	438.6	438.6
52.5°	373.2	375.6	375.6	370.7	373.2	370.7	373.2	370.7
55°	312.6	312.6	315.0	312.6	312.6	312.6	312.6	312.6
57.5°	259.3	261.7	261.7	259.3	261.7	259.3	259.3	259.3
60°	215.7	215.7	215.7	213.2	215.7	213.2	215.7	213.2
62.5°	174.5	176.9	176.9	174.5	176.9	174.5	174.5	174.5
65°	143.0	143.0	143.0	143.0	143.0	143.0	143.0	140.5
67.5°	113.9	113.9	116.3	113.9	116.3	116.3	116.3	116.3
70°	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1
72.5°	70.3	70.3	72.7	70.3	70.3	70.3	70.3	70.3
75°	53.3	53.3	53.3	53.3	53.3	50.9	50.9	53.3
77.5°	36.3	36.3	36.3	36.3	36.3	36.3	36.3	38.8
80°	24.2	24.2	24.2	24.2	21.8	21.8	24.2	21.8
82.5°	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
85°	7.3	7.3	4.8	4.8	4.8	4.8	4.8	4.8
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)