

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: P251964

Luminaire Tested: **LD4B50D010TE EU4B30509024 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251964
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30509024 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3243.0 lumens
Efficiency: N/A
Efficacy: 55.2 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

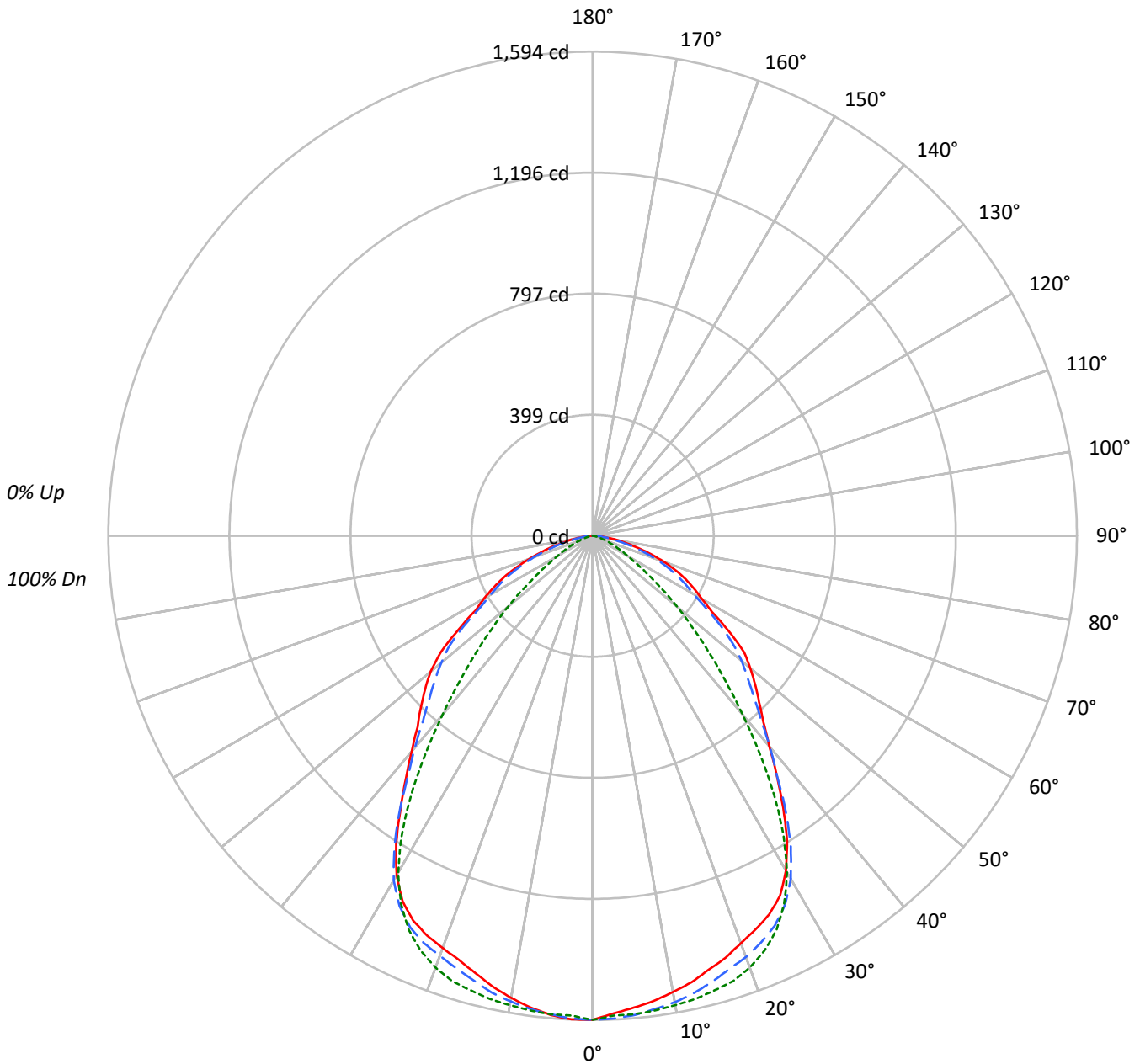
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	155299	155299	155299
5°	152537	154689	154934
10°	150897	155271	152846
15°	149155	156328	150386
20°	147977	156876	149751
25°	147890	153955	150267
30°	143178	144011	145114
35°	130087	123959	131252
40°	115085	97618	117897
45°	106774	74330	110151
50°	102585	55007	105556
55°	92891	37908	91634
60°	80754	25807	80286
65°	78014	18656	74047
70°	70553	12566	62860
75°	58139	8322	49855
80°	46807	5500	37154
85°	38354	2796	24712



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.4	4.6
10°-20°	430.1	13.3
20°-30°	649.8	20.0
30°-40°	680.0	21.0
40°-50°	550.7	17.0
50°-60°	400.6	12.4
60°-70°	247.1	7.6
70°-80°	111.6	3.4
80°-90°	22.7	0.7
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°	1230.3	37.9
0°-40°	1910.3	58.9
0°-60°	2861.6	88.2
0°-90°	3243.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3243.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1594	1594	1594	1594	1594	
5°	1559	1584	1581	1581	1584	148
15°	1478	1520	1549	1515	1490	418
25°	1375	1417	1432	1422	1397	630
35°	1093	1108	1042	1108	1103	681
45°	775	750	539	760	799	602
55°	547	512	223	517	539	488
65°	338	304	81	299	321	331
75°	154	132	22	115	132	168
85°	34	27	2	20	22	39
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°	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5
2.5°	1573.9	1573.9	1588.6	1605.7	1591.0	1576.3	1586.1	1581.2	1598.4	1598.4	1591.0
5°	1559.2	1564.1	1576.3	1591.0	1578.8	1564.1	1576.3	1571.4	1588.6	1588.6	1583.7
7.5°	1544.5	1546.9	1561.6	1578.8	1566.5	1551.8	1561.6	1559.2	1573.9	1576.3	1571.4
10°	1524.8	1527.3	1542.0	1559.2	1546.9	1534.6	1544.5	1542.0	1561.6	1561.6	1559.2
12.5°	1505.2	1507.7	1522.4	1537.1	1524.8	1512.6	1522.4	1522.4	1542.0	1544.5	1542.0
15°	1478.3	1483.2	1495.4	1510.1	1502.8	1488.1	1497.9	1497.9	1515.0	1519.9	1519.9
17.5°	1456.2	1458.7	1470.9	1485.6	1475.8	1463.6	1473.4	1473.4	1490.5	1495.4	1495.4
20°	1426.8	1431.7	1443.9	1458.7	1451.3	1441.5	1448.8	1448.8	1468.5	1473.4	1475.8
22.5°	1402.3	1407.2	1417.0	1436.6	1424.3	1417.0	1426.8	1424.3	1446.4	1448.8	1448.8
25°	1375.3	1380.2	1392.5	1404.7	1397.4	1390.0	1397.4	1397.4	1414.5	1417.0	1417.0
27.5°	1336.1	1338.5	1350.8	1363.0	1355.7	1345.9	1355.7	1353.2	1370.4	1372.8	1370.4
30°	1272.3	1277.2	1282.1	1299.3	1291.9	1284.6	1294.4	1289.5	1306.7	1306.7	1304.2
32.5°	1191.4	1191.4	1201.2	1213.5	1203.7	1198.8	1206.1	1208.6	1220.9	1220.9	1213.5
35°	1093.4	1098.3	1105.6	1113.0	1105.6	1100.7	1108.1	1105.6	1120.3	1115.4	1108.1
37.5°	995.3	997.8	1005.1	1014.9	1005.1	997.8	1000.2	997.8	1010.0	1010.0	997.8
40°	904.6	909.5	914.4	924.2	914.4	909.5	912.0	904.6	919.3	914.4	907.1
42.5°	831.1	833.5	840.9	845.8	836.0	833.5	836.0	831.1	838.4	833.5	818.8
45°	774.7	774.7	777.1	784.5	774.7	772.2	772.2	767.3	774.7	764.9	750.2
47.5°	725.6	728.1	730.6	735.5	728.1	720.7	723.2	713.4	718.3	710.9	691.3
50°	676.6	681.5	684.0	688.9	681.5	676.6	679.1	669.3	669.3	657.0	639.8
52.5°	627.6	630.0	627.6	632.5	627.6	620.2	622.7	612.9	612.9	598.2	581.0
55°	546.7	549.1	551.6	556.5	551.6	544.2	549.1	541.8	541.8	532.0	512.4
57.5°	465.8	468.2	470.7	473.1	473.1	468.2	470.7	465.8	463.3	456.0	441.3
60°	414.3	414.3	414.3	416.8	414.3	411.9	411.9	407.0	407.0	397.1	382.4
62.5°	375.1	377.5	377.5	380.0	377.5	375.1	372.6	367.7	365.3	355.5	343.2
65°	338.3	338.3	335.9	340.8	338.3	335.9	335.9	331.0	326.1	316.2	304.0
67.5°	294.2	296.6	294.2	296.6	296.6	294.2	291.7	286.8	284.4	277.0	262.3
70°	247.6	247.6	247.6	250.1	247.6	247.6	250.1	242.7	240.2	230.4	218.2
72.5°	201.0	203.5	203.5	201.0	203.5	198.6	198.6	198.6	196.1	186.3	174.1
75°	154.4	156.9	156.9	159.3	156.9	154.4	154.4	152.0	149.5	142.2	132.4
77.5°	115.2	115.2	117.7	117.7	117.7	115.2	115.2	110.3	110.3	105.4	95.6
80°	83.4	83.4	80.9	83.4	83.4	80.9	80.9	78.4	78.4	73.5	66.2
82.5°	53.9	56.4	56.4	56.4	56.4	53.9	53.9	53.9	51.5	49.0	44.1
85°	34.3	34.3	34.3	34.3	36.8	34.3	36.8	34.3	34.3	29.4	27.0
87.5°	14.7	14.7	14.7	17.2	17.2	14.7	14.7	14.7	14.7	14.7	12.3
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°	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5
2.5°	1591.0	1593.5	1586.1	1595.9	1588.6	1591.0	1593.5	1591.0	1581.2	1581.2	1608.2
5°	1581.2	1586.1	1578.8	1591.0	1586.1	1586.1	1591.0	1588.6	1578.8	1581.2	1605.7
7.5°	1571.4	1578.8	1573.9	1586.1	1578.8	1578.8	1583.7	1583.7	1573.9	1576.3	1598.4
10°	1556.7	1566.5	1564.1	1576.3	1569.0	1569.0	1576.3	1576.3	1566.5	1569.0	1591.0
12.5°	1544.5	1554.3	1551.8	1564.1	1559.2	1561.6	1564.1	1569.0	1556.7	1561.6	1581.2
15°	1524.8	1534.6	1534.6	1546.9	1542.0	1546.9	1551.8	1559.2	1549.4	1549.4	1569.0
17.5°	1502.8	1515.0	1515.0	1524.8	1524.8	1527.3	1537.1	1544.5	1534.6	1537.1	1554.3
20°	1478.3	1493.0	1493.0	1505.2	1502.8	1507.7	1515.0	1522.4	1512.6	1512.6	1532.2
22.5°	1453.7	1466.0	1468.5	1475.8	1475.8	1478.3	1485.6	1490.5	1478.3	1478.3	1497.9
25°	1419.4	1431.7	1434.1	1439.0	1434.1	1434.1	1439.0	1443.9	1431.7	1431.7	1448.8
27.5°	1372.8	1385.1	1385.1	1382.7	1377.8	1380.2	1377.8	1380.2	1367.9	1365.5	1382.7
30°	1304.2	1311.6	1311.6	1309.1	1301.8	1301.8	1294.4	1296.9	1279.7	1279.7	1294.4
32.5°	1211.0	1218.4	1213.5	1208.6	1198.8	1193.9	1189.0	1186.5	1169.4	1169.4	1186.5
35°	1100.7	1105.6	1098.3	1088.5	1076.2	1068.9	1061.5	1051.7	1039.4	1041.9	1051.7
37.5°	988.0	988.0	978.2	958.5	948.7	936.5	924.2	924.2	904.6	902.2	909.5
40°	892.4	882.5	865.4	838.4	821.3	809.0	791.8	782.0	767.3	767.3	779.6
42.5°	806.5	786.9	764.9	728.1	710.9	696.2	674.2	664.4	647.2	644.7	652.1
45°	730.6	710.9	679.1	639.8	617.8	600.6	568.8	556.5	541.8	539.3	544.2
47.5°	669.3	647.2	608.0	556.5	534.4	512.4	480.5	463.3	451.1	443.7	451.1
50°	615.3	585.9	544.2	490.3	460.9	441.3	402.0	384.9	367.7	362.8	365.3
52.5°	556.5	527.1	482.9	426.6	399.6	370.2	333.4	308.9	294.2	286.8	294.2
55°	492.8	463.3	419.2	362.8	333.4	306.4	267.2	247.6	230.4	223.1	230.4
57.5°	424.1	397.1	357.9	301.5	274.6	250.1	213.3	193.7	176.5	171.6	176.5
60°	365.3	343.2	304.0	250.1	228.0	201.0	169.2	149.5	134.8	132.4	134.8
62.5°	326.1	301.5	264.8	213.3	191.2	169.2	139.7	120.1	107.9	105.4	107.9
65°	286.8	259.9	225.5	181.4	159.3	142.2	112.8	95.6	83.4	80.9	83.4
67.5°	242.7	218.2	188.8	149.5	132.4	115.2	90.7	73.5	63.7	61.3	63.7
70°	201.0	179.0	149.5	120.1	103.0	90.7	68.6	56.4	46.6	44.1	46.6
72.5°	159.3	139.7	115.2	90.7	80.9	68.6	53.9	41.7	34.3	31.9	34.3
75°	122.6	107.9	88.3	66.2	58.8	51.5	36.8	29.4	24.5	22.1	24.5
77.5°	85.8	76.0	61.3	49.0	41.7	36.8	27.0	19.6	17.2	14.7	17.2
80°	58.8	51.5	41.7	31.9	27.0	22.1	17.2	12.3	9.8	9.8	9.8
82.5°	39.2	31.9	24.5	19.6	17.2	14.7	9.8	7.4	7.4	4.9	4.9
85°	22.1	19.6	14.7	12.3	9.8	7.4	4.9	4.9	2.5	2.5	2.5
87.5°	9.8	7.4	4.9	4.9	2.5	2.5	2.5	2.5	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°	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5
2.5°	1600.8	1593.5	1603.3	1593.5	1588.6	1593.5	1588.6	1603.3	1591.0	1581.2	1591.0
5°	1598.4	1588.6	1598.4	1591.0	1583.7	1586.1	1581.2	1595.9	1581.2	1573.9	1578.8
7.5°	1593.5	1586.1	1591.0	1583.7	1576.3	1578.8	1573.9	1586.1	1571.4	1564.1	1569.0
10°	1586.1	1578.8	1581.2	1576.3	1569.0	1569.0	1564.1	1573.9	1556.7	1546.9	1551.8
12.5°	1576.3	1566.5	1571.4	1564.1	1554.3	1554.3	1549.4	1556.7	1539.6	1529.7	1532.2
15°	1564.1	1554.3	1554.3	1546.9	1537.1	1537.1	1527.3	1534.6	1515.0	1505.2	1505.2
17.5°	1549.4	1537.1	1537.1	1529.7	1517.5	1515.0	1507.7	1515.0	1493.0	1483.2	1483.2
20°	1527.3	1517.5	1515.0	1510.1	1497.9	1495.4	1485.6	1488.1	1470.9	1463.6	1461.1
22.5°	1497.9	1488.1	1490.5	1483.2	1473.4	1470.9	1461.1	1468.5	1451.3	1443.9	1446.4
25°	1446.4	1441.5	1446.4	1443.9	1436.6	1436.6	1431.7	1436.6	1421.9	1417.0	1419.4
27.5°	1387.6	1385.1	1387.6	1387.6	1382.7	1382.7	1382.7	1390.0	1375.3	1372.8	1372.8
30°	1301.8	1301.8	1304.2	1306.7	1306.7	1311.6	1309.1	1318.9	1309.1	1304.2	1309.1
32.5°	1189.0	1198.8	1206.1	1206.1	1206.1	1211.0	1216.0	1223.3	1213.5	1216.0	1216.0
35°	1061.5	1068.9	1073.8	1086.0	1078.7	1095.8	1100.7	1110.5	1108.1	1113.0	1110.5
37.5°	919.3	929.1	938.9	956.1	953.6	973.3	983.1	1002.7	997.8	1007.6	1012.5
40°	786.9	801.6	816.4	828.6	838.4	858.0	877.6	902.2	909.5	916.9	919.3
42.5°	659.5	674.2	698.7	715.8	730.6	762.4	789.4	818.8	826.2	840.9	845.8
45°	556.5	568.8	598.2	620.2	632.5	679.1	710.9	747.7	760.0	777.1	784.5
47.5°	460.9	482.9	512.4	539.3	556.5	605.5	647.2	686.4	703.6	723.2	733.0
50°	377.5	402.0	441.3	465.8	490.3	544.2	590.8	632.5	649.7	671.7	681.5
52.5°	308.9	335.9	372.6	399.6	426.6	482.9	532.0	571.2	593.3	608.0	622.7
55°	242.7	272.1	308.9	338.3	360.4	421.7	463.3	502.6	517.3	529.5	536.9
57.5°	188.8	210.8	247.6	272.1	299.1	353.0	394.7	424.1	436.4	451.1	456.0
60°	147.1	169.2	203.5	228.0	252.5	304.0	345.7	375.1	387.3	399.6	407.0
62.5°	117.7	139.7	171.6	193.7	215.7	262.3	299.1	328.5	343.2	355.5	362.8
65°	93.2	112.8	139.7	161.8	179.0	220.6	257.4	284.4	299.1	311.3	318.7
67.5°	73.5	90.7	115.2	129.9	147.1	181.4	213.3	237.8	250.1	264.8	272.1
70°	56.4	68.6	90.7	103.0	115.2	144.6	169.2	193.7	205.9	215.7	220.6
72.5°	41.7	51.5	68.6	78.4	85.8	110.3	129.9	147.1	156.9	166.7	171.6
75°	29.4	36.8	49.0	56.4	61.3	78.4	95.6	107.9	115.2	122.6	129.9
77.5°	19.6	24.5	31.9	36.8	41.7	53.9	63.7	73.5	80.9	88.3	90.7
80°	12.3	17.2	22.1	24.5	27.0	34.3	44.1	49.0	53.9	58.8	61.3
82.5°	7.4	9.8	12.3	14.7	17.2	22.1	27.0	31.9	34.3	39.2	41.7
85°	2.5	4.9	4.9	7.4	7.4	12.3	14.7	17.2	19.6	22.1	24.5
87.5°	0.0	0.0	2.5	2.5	2.5	2.5	4.9	4.9	4.9	4.9	4.9
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: P251964

CATALOG NUMBER: LD4B50D010TE EU4B30509024 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5	1593.5
2.5°	1600.8	1593.5	1588.6	1586.1	1603.3	1581.2	1591.0	1593.5
5°	1591.0	1583.7	1578.8	1576.3	1591.0	1571.4	1578.8	1583.7
7.5°	1576.3	1571.4	1564.1	1561.6	1576.3	1554.3	1564.1	1566.5
10°	1559.2	1551.8	1546.9	1544.5	1556.7	1534.6	1544.5	1544.5
12.5°	1537.1	1532.2	1522.4	1522.4	1532.2	1512.6	1519.9	1519.9
15°	1507.7	1502.8	1493.0	1493.0	1502.8	1483.2	1490.5	1490.5
17.5°	1483.2	1478.3	1470.9	1468.5	1478.3	1458.7	1466.0	1463.6
20°	1463.6	1458.7	1448.8	1448.8	1456.2	1436.6	1443.9	1443.9
22.5°	1446.4	1443.9	1434.1	1434.1	1443.9	1424.3	1429.2	1424.3
25°	1419.4	1417.0	1407.2	1409.6	1414.5	1394.9	1402.3	1397.4
27.5°	1375.3	1375.3	1365.5	1363.0	1370.4	1353.2	1358.1	1355.7
30°	1306.7	1309.1	1296.9	1296.9	1299.3	1284.6	1291.9	1289.5
32.5°	1213.5	1216.0	1206.1	1203.7	1211.0	1198.8	1203.7	1203.7
35°	1110.5	1113.0	1105.6	1105.6	1113.0	1105.6	1105.6	1103.2
37.5°	1007.6	1012.5	1007.6	1010.0	1014.9	1007.6	1012.5	1010.0
40°	924.2	929.1	921.8	926.7	931.6	924.2	931.6	926.7
42.5°	848.2	855.6	850.7	855.6	860.5	855.6	860.5	853.1
45°	791.8	796.7	794.3	796.7	801.6	799.2	801.6	799.2
47.5°	737.9	747.7	742.8	747.7	755.1	750.2	755.1	747.7
50°	688.9	696.2	693.8	698.7	701.1	698.7	703.6	696.2
52.5°	625.1	632.5	630.0	630.0	634.9	630.0	634.9	630.0
55°	541.8	544.2	544.2	546.7	544.2	541.8	544.2	539.3
57.5°	460.9	465.8	458.4	465.8	463.3	460.9	460.9	456.0
60°	409.4	416.8	411.9	416.8	414.3	414.3	414.3	411.9
62.5°	367.7	372.6	367.7	370.2	370.2	370.2	367.7	365.3
65°	321.1	328.5	323.6	326.1	323.6	321.1	323.6	321.1
67.5°	274.6	277.0	277.0	274.6	274.6	274.6	274.6	269.7
70°	223.1	225.5	223.1	228.0	225.5	223.1	225.5	220.6
72.5°	174.1	176.5	174.1	176.5	174.1	174.1	174.1	174.1
75°	129.9	132.4	132.4	132.4	132.4	132.4	127.5	132.4
77.5°	93.2	93.2	93.2	95.6	93.2	93.2	93.2	93.2
80°	63.7	63.7	63.7	66.2	63.7	66.2	63.7	66.2
82.5°	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
85°	22.1	24.5	24.5	22.1	22.1	22.1	22.1	22.1
87.5°	4.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)