

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: P251730

Luminaire Tested: **LD4B50D010TE EU4B30509024 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251730
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30509024 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3040.0 lumens
Efficiency: N/A
Efficacy: 51.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

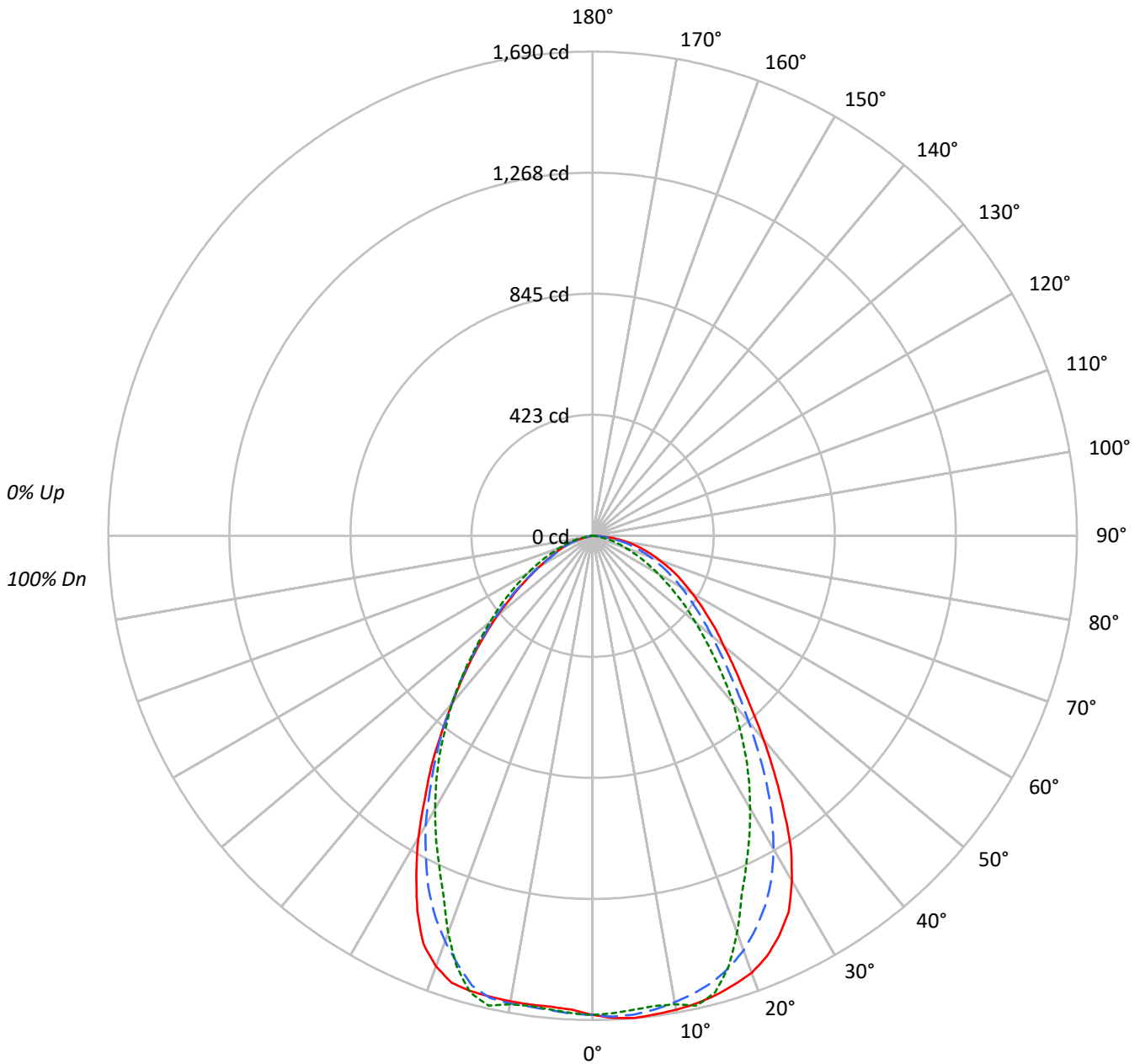
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	105	102	99	101	98	96	97	95	93	93	91	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60																			
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53																			
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48																			
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43																			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39																			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36																			
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	162989	162989	162989
5°	165294	162418	161459
10°	166236	164296	163326
15°	167508	166519	166014
20°	168367	152852	165826
25°	165601	136330	155579
30°	156469	123631	136876
35°	137998	110575	116702
40°	117923	97020	96715
45°	101054	82806	80780
50°	90349	70639	65802
55°	83325	60421	52078
60°	77908	51146	41108
65°	74647	42408	33922
70°	70582	34251	28637
75°	68344	27714	20296
80°	66058	15153	5500
85°	57588	8275	2796



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.9	5.2
10°-20°	457.1	15.0
20°-30°	634.0	20.9
30°-40°	625.8	20.6
40°-50°	490.9	16.1
50°-60°	340.0	11.2
60°-70°	208.4	6.9
70°-80°	104.1	3.4
80°-90°	20.9	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°	1250.0	41.1
0°-40°	1875.8	61.7
0°-60°	2706.7	89.0
0°-90°	3040.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3040.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1672	1672	1672	1672	1672	
5°	1690	1677	1660	1663	1650	161
15°	1660	1614	1650	1626	1645	469
25°	1540	1425	1268	1356	1447	705
35°	1160	1059	929	959	981	724
45°	733	672	601	593	586	573
55°	490	439	356	316	306	442
65°	324	280	184	137	147	320
75°	182	152	74	56	54	192
85°	52	29	7	2	2	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°	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4
2.5°	1684.7	1679.8	1677.3	1684.7	1682.2	1687.1	1684.7	1682.2	1677.3	1679.8	1679.8
5°	1689.6	1682.2	1679.8	1684.7	1684.7	1689.6	1687.1	1682.2	1677.3	1679.8	1677.3
7.5°	1684.7	1679.8	1679.8	1682.2	1679.8	1684.7	1679.8	1674.9	1670.0	1672.4	1667.5
10°	1679.8	1672.4	1672.4	1672.4	1672.4	1677.3	1672.4	1665.1	1657.7	1657.7	1652.8
12.5°	1672.4	1665.1	1665.1	1667.5	1662.6	1667.5	1662.6	1650.4	1643.0	1640.5	1635.6
15°	1660.2	1652.8	1652.8	1652.8	1647.9	1650.4	1643.0	1630.7	1620.9	1620.9	1613.6
17.5°	1643.0	1635.6	1633.2	1633.2	1625.8	1628.3	1620.9	1608.7	1594.0	1589.0	1581.7
20°	1623.4	1613.6	1608.7	1608.7	1601.3	1603.8	1594.0	1579.2	1559.6	1552.3	1540.0
22.5°	1589.0	1584.1	1576.8	1574.3	1567.0	1564.5	1554.7	1535.1	1517.9	1505.7	1486.1
25°	1540.0	1537.6	1530.2	1527.7	1517.9	1513.0	1503.2	1481.1	1464.0	1444.4	1424.7
27.5°	1481.1	1471.3	1466.4	1459.1	1449.3	1446.8	1434.6	1414.9	1388.0	1375.7	1351.2
30°	1390.4	1385.5	1380.6	1373.3	1363.4	1358.5	1351.2	1329.1	1307.0	1285.0	1262.9
32.5°	1287.4	1277.6	1270.3	1272.7	1260.4	1255.5	1243.3	1223.7	1204.0	1189.3	1164.8
35°	1159.9	1157.5	1155.0	1150.1	1140.3	1137.8	1128.0	1113.3	1091.2	1074.1	1059.4
37.5°	1039.7	1032.4	1027.5	1027.5	1017.7	1017.7	1010.3	993.2	980.9	968.6	949.0
40°	926.9	914.7	914.7	914.7	904.9	907.3	902.4	885.3	873.0	858.3	846.0
42.5°	821.5	816.6	814.1	809.2	804.3	804.3	799.4	789.6	777.4	767.5	755.3
45°	733.2	730.8	728.3	725.9	721.0	718.5	716.1	701.3	694.0	684.2	671.9
47.5°	662.1	657.2	654.7	652.3	647.4	644.9	640.0	630.2	622.9	613.1	603.2
50°	595.9	593.4	591.0	591.0	586.1	583.6	578.7	571.4	559.1	554.2	541.9
52.5°	544.4	539.5	534.6	534.6	529.7	529.7	522.3	515.0	502.7	497.8	488.0
55°	490.4	488.0	485.5	485.5	480.6	478.2	475.7	465.9	456.1	448.8	438.9
57.5°	443.9	441.4	438.9	438.9	434.0	431.6	429.1	421.8	412.0	407.1	394.8
60°	399.7	399.7	397.3	394.8	392.4	389.9	387.5	380.1	372.7	365.4	355.6
62.5°	360.5	358.0	355.6	353.1	353.1	350.7	348.2	338.4	333.5	326.1	316.3
65°	323.7	318.8	318.8	316.3	316.3	313.9	311.4	301.6	296.7	289.4	279.6
67.5°	284.5	282.0	279.6	279.6	277.1	277.1	274.7	267.3	259.9	255.0	245.2
70°	247.7	247.7	245.2	245.2	242.8	240.3	240.3	235.4	228.1	220.7	210.9
72.5°	215.8	213.3	210.9	210.9	208.4	208.4	206.0	201.1	196.2	191.3	179.0
75°	181.5	179.0	179.0	179.0	176.6	176.6	174.1	169.2	164.3	159.4	152.0
77.5°	149.6	149.6	147.1	147.1	144.7	144.7	144.7	139.8	134.9	130.0	120.2
80°	117.7	117.7	117.7	115.3	112.8	112.8	112.8	107.9	103.0	98.1	90.7
82.5°	85.8	83.4	83.4	80.9	78.5	78.5	78.5	73.6	71.1	63.8	58.9
85°	51.5	49.0	49.0	46.6	44.1	44.1	44.1	41.7	36.8	34.3	29.4
87.5°	19.6	19.6	19.6	19.6	19.6	17.2	17.2	14.7	14.7	12.3	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°	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4
2.5°	1679.8	1677.3	1677.3	1674.9	1677.3	1672.4	1672.4	1672.4	1672.4	1667.5	1667.5
5°	1674.9	1674.9	1672.4	1670.0	1672.4	1667.5	1670.0	1667.5	1667.5	1660.2	1660.2
7.5°	1665.1	1662.6	1657.7	1655.3	1657.7	1655.3	1655.3	1655.3	1660.2	1655.3	1655.3
10°	1647.9	1645.4	1640.5	1638.1	1638.1	1635.6	1640.5	1645.4	1655.3	1660.2	1670.0
12.5°	1630.7	1625.8	1623.4	1623.4	1625.8	1625.8	1635.6	1647.9	1672.4	1679.8	1689.6
15°	1608.7	1606.2	1606.2	1613.6	1623.4	1630.7	1650.4	1657.7	1660.2	1650.4	1645.4
17.5°	1579.2	1579.2	1581.7	1589.0	1596.4	1596.4	1598.9	1594.0	1589.0	1576.8	1562.1
20°	1530.2	1527.7	1522.8	1522.8	1522.8	1513.0	1517.9	1500.8	1488.5	1473.8	1451.7
22.5°	1468.9	1456.6	1439.5	1427.2	1419.8	1414.9	1402.7	1383.1	1368.3	1358.5	1348.7
25°	1402.7	1383.1	1358.5	1338.9	1326.7	1324.2	1307.0	1289.9	1280.1	1267.8	1262.9
27.5°	1326.7	1304.6	1275.2	1255.5	1245.7	1238.4	1223.7	1206.5	1194.2	1184.4	1177.1
30°	1238.4	1216.3	1191.8	1167.3	1157.5	1145.2	1130.5	1118.2	1106.0	1098.6	1093.7
32.5°	1140.3	1118.2	1093.7	1076.5	1064.3	1054.5	1042.2	1029.9	1020.1	1015.2	1010.3
35°	1039.7	1017.7	998.1	980.9	971.1	963.7	953.9	939.2	931.8	929.4	924.5
37.5°	931.8	917.1	900.0	885.3	877.9	868.1	863.2	850.9	850.9	841.1	841.1
40°	831.3	821.5	804.3	792.1	787.2	779.8	772.5	767.5	765.1	762.6	760.2
42.5°	743.0	728.3	718.5	708.7	701.3	696.4	696.4	689.1	686.6	679.3	676.8
45°	662.1	654.7	637.6	630.2	627.8	620.4	618.0	613.1	605.7	600.8	598.3
47.5°	591.0	583.6	573.8	564.0	559.1	554.2	549.3	541.9	537.0	529.7	527.2
50°	532.1	519.9	510.1	502.7	495.4	492.9	488.0	478.2	473.3	465.9	465.9
52.5°	478.2	468.4	456.1	448.8	441.4	436.5	429.1	421.8	414.4	412.0	404.6
55°	431.6	419.3	407.1	397.3	389.9	382.5	380.1	370.3	360.5	355.6	350.7
57.5°	387.5	375.2	360.5	348.2	343.3	338.4	331.1	321.2	313.9	306.5	301.6
60°	343.3	333.5	318.8	306.5	301.6	294.3	286.9	277.1	269.7	262.4	257.5
62.5°	306.5	291.8	279.6	267.3	259.9	255.0	245.2	237.9	228.1	220.7	213.3
65°	269.7	255.0	242.8	230.5	225.6	218.2	210.9	201.1	191.3	183.9	174.1
67.5°	233.0	220.7	208.4	196.2	191.3	186.4	176.6	166.8	156.9	149.6	139.8
70°	201.1	188.8	176.6	166.8	161.8	156.9	147.1	137.3	130.0	120.2	112.8
72.5°	171.7	161.8	149.6	139.8	134.9	130.0	120.2	112.8	103.0	98.1	90.7
75°	142.2	132.4	122.6	112.8	107.9	103.0	95.6	88.3	80.9	73.6	68.7
77.5°	112.8	103.0	93.2	85.8	80.9	78.5	71.1	63.8	56.4	51.5	44.1
80°	83.4	73.6	66.2	58.9	53.9	51.5	44.1	39.2	34.3	27.0	24.5
82.5°	51.5	44.1	39.2	34.3	31.9	29.4	24.5	19.6	17.2	14.7	12.3
85°	27.0	24.5	19.6	17.2	14.7	14.7	12.3	9.8	7.4	7.4	4.9
87.5°	9.8	7.4	7.4	4.9	4.9	4.9	4.9	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	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°	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4
2.5°	1662.6	1665.1	1667.5	1670.0	1667.5	1667.5	1672.4	1662.6	1670.0	1670.0	1660.2
5°	1657.7	1662.6	1660.2	1665.1	1660.2	1660.2	1662.6	1657.7	1662.6	1662.6	1655.3
7.5°	1652.8	1657.7	1657.7	1660.2	1657.7	1657.7	1660.2	1652.8	1657.7	1657.7	1650.4
10°	1674.9	1679.8	1677.3	1674.9	1667.5	1662.6	1665.1	1652.8	1657.7	1657.7	1650.4
12.5°	1682.2	1679.8	1670.0	1665.1	1660.2	1655.3	1657.7	1647.9	1652.8	1652.8	1647.9
15°	1633.2	1628.3	1620.9	1623.4	1618.5	1616.0	1620.9	1616.0	1625.8	1630.7	1625.8
17.5°	1549.8	1547.4	1542.5	1542.5	1542.5	1544.9	1552.3	1552.3	1567.0	1576.8	1581.7
20°	1441.9	1439.5	1441.9	1446.8	1449.3	1459.1	1476.2	1486.1	1505.7	1522.8	1535.1
22.5°	1343.8	1348.7	1356.1	1365.9	1368.3	1380.6	1402.7	1412.5	1437.0	1456.6	1468.9
25°	1260.4	1267.8	1272.7	1280.1	1282.5	1297.2	1316.8	1329.1	1356.1	1370.8	1385.5
27.5°	1177.1	1186.9	1189.3	1199.1	1199.1	1213.9	1231.0	1243.3	1260.4	1275.2	1287.4
30°	1096.1	1098.6	1106.0	1108.4	1113.3	1128.0	1137.8	1145.2	1164.8	1172.2	1179.5
32.5°	1007.9	1017.7	1022.6	1025.0	1022.6	1034.8	1044.7	1049.6	1056.9	1066.7	1071.6
35°	924.5	929.4	931.8	936.8	939.2	941.7	946.6	949.0	958.8	961.3	963.7
37.5°	841.1	848.5	846.0	848.5	848.5	850.9	855.8	853.4	860.7	863.2	860.7
40°	757.7	757.7	762.6	760.2	762.6	760.2	765.1	765.1	765.1	767.5	765.1
42.5°	674.4	676.8	674.4	679.3	674.4	676.8	676.8	674.4	676.8	674.4	674.4
45°	598.3	598.3	598.3	598.3	593.4	593.4	598.3	595.9	593.4	591.0	588.5
47.5°	524.8	527.2	522.3	524.8	522.3	519.9	517.4	517.4	515.0	510.1	507.6
50°	463.5	458.6	456.1	458.6	456.1	453.7	451.2	446.3	443.9	438.9	436.5
52.5°	402.2	397.3	392.4	392.4	389.9	385.0	382.5	377.6	375.2	370.3	370.3
55°	348.2	343.3	338.4	336.0	331.1	326.1	323.7	318.8	316.3	311.4	306.5
57.5°	296.7	289.4	284.5	282.0	279.6	272.2	269.7	264.8	259.9	255.0	252.6
60°	250.1	242.8	235.4	233.0	230.5	223.2	220.7	213.3	210.9	206.0	203.5
62.5°	206.0	201.1	191.3	188.8	183.9	179.0	171.7	169.2	166.8	169.2	169.2
65°	166.8	159.4	152.0	149.6	144.7	139.8	137.3	134.9	137.3	137.3	139.8
67.5°	132.4	125.1	117.7	117.7	115.3	110.4	110.4	110.4	112.8	112.8	115.3
70°	105.4	100.5	95.6	93.2	93.2	90.7	93.2	93.2	95.6	95.6	95.6
72.5°	83.4	80.9	78.5	76.0	76.0	76.0	76.0	76.0	76.0	76.0	78.5
75°	63.8	61.3	58.9	58.9	56.4	56.4	56.4	56.4	56.4	56.4	53.9
77.5°	41.7	39.2	36.8	36.8	34.3	31.9	31.9	29.4	29.4	29.4	29.4
80°	22.1	19.6	17.2	14.7	14.7	12.3	12.3	12.3	12.3	9.8	9.8
82.5°	9.8	7.4	7.4	7.4	7.4	4.9	4.9	4.9	4.9	4.9	4.9
85°	4.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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: P251730

CATALOG NUMBER: LD4B50D010TE EU4B30509024 4LBLWW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4	1672.4
2.5°	1665.1	1660.2	1665.1	1667.5	1662.6	1660.2	1665.1	1655.3
5°	1662.6	1655.3	1657.7	1660.2	1655.3	1652.8	1657.7	1650.4
7.5°	1657.7	1655.3	1657.7	1660.2	1652.8	1652.8	1657.7	1650.4
10°	1657.7	1652.8	1655.3	1660.2	1655.3	1655.3	1660.2	1650.4
12.5°	1655.3	1647.9	1655.3	1657.7	1652.8	1652.8	1657.7	1647.9
15°	1638.1	1638.1	1640.5	1645.4	1643.0	1645.4	1652.8	1645.4
17.5°	1601.3	1606.2	1616.0	1623.4	1628.3	1633.2	1640.5	1635.6
20°	1557.2	1564.5	1576.8	1584.1	1594.0	1596.4	1608.7	1598.9
22.5°	1488.5	1503.2	1513.0	1520.4	1527.7	1535.1	1544.9	1542.5
25°	1405.1	1414.9	1422.3	1429.7	1439.5	1444.4	1449.3	1446.8
27.5°	1304.6	1309.5	1319.3	1324.2	1329.1	1334.0	1343.8	1331.6
30°	1194.2	1196.7	1201.6	1209.0	1209.0	1213.9	1218.8	1216.3
32.5°	1081.4	1081.4	1086.3	1091.2	1088.8	1091.2	1101.1	1088.8
35°	971.1	968.6	976.0	978.4	978.4	976.0	983.3	980.9
37.5°	863.2	865.6	868.1	870.5	865.6	870.5	870.5	865.6
40°	765.1	762.6	767.5	770.0	767.5	770.0	770.0	760.2
42.5°	676.8	671.9	674.4	676.8	674.4	676.8	674.4	669.5
45°	591.0	588.5	588.5	591.0	586.1	586.1	586.1	586.1
47.5°	510.1	507.6	510.1	510.1	505.2	505.2	507.6	505.2
50°	436.5	434.0	434.0	434.0	431.6	431.6	434.0	434.0
52.5°	370.3	365.4	365.4	365.4	365.4	365.4	367.8	362.9
55°	304.1	304.1	304.1	304.1	306.5	306.5	306.5	306.5
57.5°	250.1	252.6	252.6	255.0	252.6	255.0	255.0	252.6
60°	208.4	206.0	208.4	208.4	210.9	210.9	210.9	210.9
62.5°	171.7	171.7	171.7	174.1	174.1	174.1	176.6	174.1
65°	142.2	142.2	144.7	144.7	144.7	147.1	147.1	147.1
67.5°	117.7	117.7	117.7	117.7	120.2	120.2	122.6	120.2
70°	98.1	98.1	98.1	98.1	98.1	100.5	100.5	100.5
72.5°	78.5	78.5	78.5	78.5	80.9	80.9	80.9	80.9
75°	53.9	53.9	53.9	56.4	53.9	53.9	53.9	53.9
77.5°	27.0	27.0	27.0	27.0	27.0	24.5	24.5	24.5
80°	9.8	9.8	9.8	9.8	9.8	9.8	7.4	9.8
82.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	2.5
85°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)