

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: P251815

Luminaire Tested: **LD4B50D010TE EU4B30509730 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251815
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 EU4B30509730 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2968.0 lumens
Efficiency: N/A
Efficacy: 50.5 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

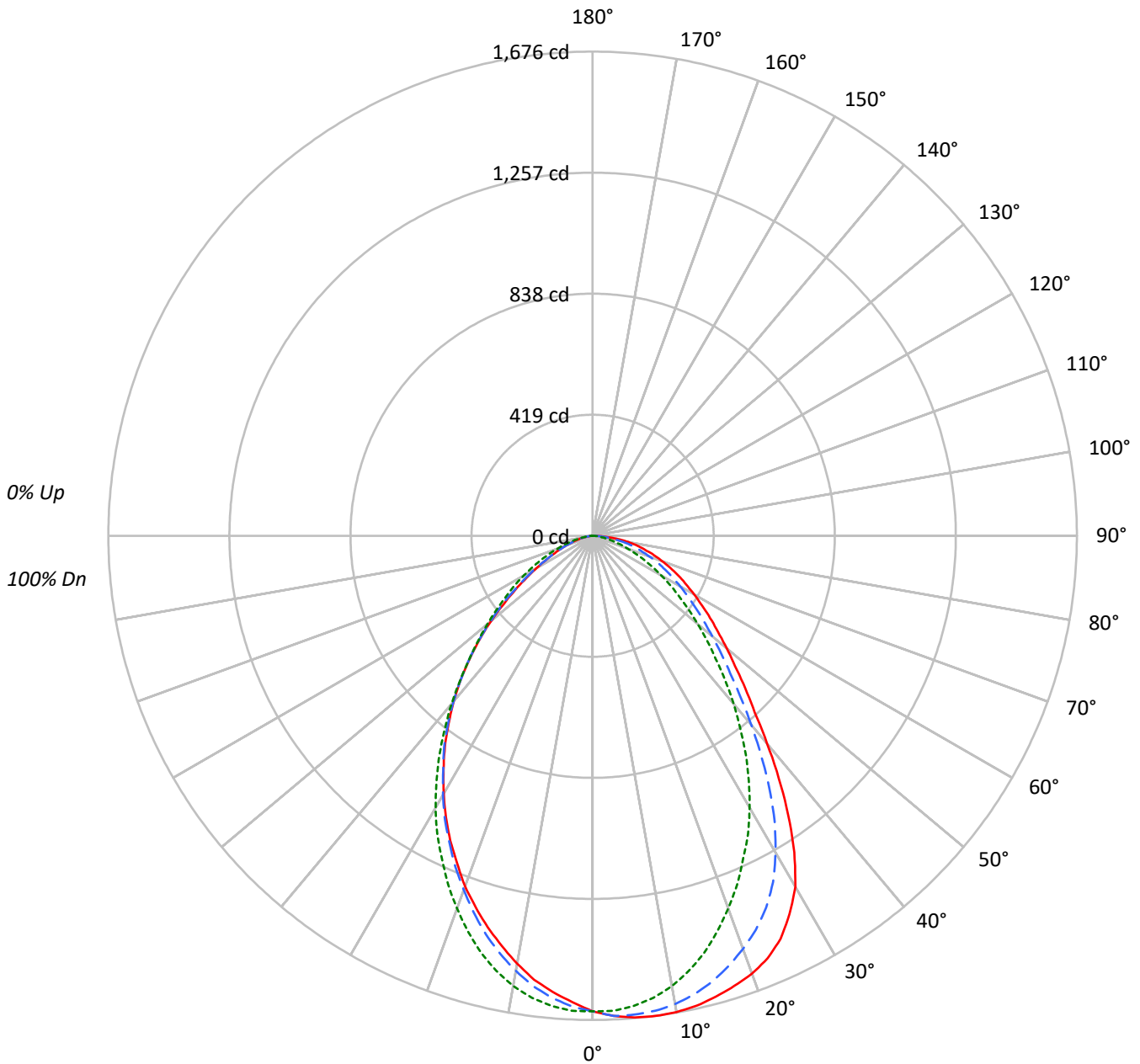
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88			88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76			76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67			67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59			59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	160416	160416	160416
5°	163758	159796	155090
10°	165652	156626	148858
15°	166589	150749	141547
20°	167299	142346	133945
25°	165569	132621	125265
30°	157875	122258	115990
35°	140402	109968	106054
40°	119526	96651	95035
45°	102956	83068	82723
50°	91759	71806	69502
55°	84328	61967	55511
60°	78980	53310	43427
65°	75915	44968	33876
70°	72890	36074	27412
75°	70565	28618	20974
80°	71053	19924	12796
85°	59489	14201	5703



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.1	5.2
10°-20°	423.6	14.3
20°-30°	592.4	20.0
30°-40°	608.9	20.5
40°-50°	494.3	16.7
50°-60°	348.0	11.7
60°-70°	214.3	7.2
70°-80°	107.0	3.6
80°-90°	25.4	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°	1170.1	39.4
0°-40°	1779.1	59.9
0°-60°	2621.3	88.3
0°-90°	2968.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2968.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1646	1646	1646	1646	1646	
5°	1674	1664	1633	1606	1585	160
15°	1651	1598	1494	1428	1403	466
25°	1540	1421	1233	1172	1165	704
35°	1180	1066	924	896	891	734
45°	747	674	603	603	600	581
55°	496	436	365	334	327	446
65°	329	276	195	149	147	326
75°	187	147	76	56	56	200
85°	53	36	13	8	5	62
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°	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0
2.5°	1663.8	1666.3	1658.7	1666.3	1656.2	1661.2	1663.8	1658.7	1653.6	1663.8	1663.8
5°	1673.9	1673.9	1666.3	1676.4	1663.8	1666.3	1671.4	1663.8	1656.2	1666.3	1663.8
7.5°	1676.4	1676.4	1666.3	1676.4	1663.8	1666.3	1668.8	1661.2	1653.6	1661.2	1658.7
10°	1673.9	1671.4	1663.8	1673.9	1661.2	1661.2	1663.8	1656.2	1643.5	1651.1	1646.0
12.5°	1666.3	1666.3	1656.2	1666.3	1648.6	1648.6	1651.1	1641.0	1630.8	1630.8	1625.8
15°	1651.1	1651.1	1641.0	1648.6	1633.4	1633.4	1630.8	1620.7	1608.0	1608.0	1597.9
17.5°	1633.4	1633.4	1623.2	1630.8	1613.1	1613.1	1610.6	1595.4	1577.7	1575.1	1562.5
20°	1613.1	1613.1	1600.4	1605.5	1585.3	1585.3	1582.7	1565.0	1544.7	1539.7	1521.9
22.5°	1582.7	1582.7	1570.1	1572.6	1552.3	1549.8	1547.3	1527.0	1506.8	1499.2	1476.4
25°	1539.7	1537.1	1527.0	1527.0	1506.8	1501.7	1496.6	1476.4	1456.1	1440.9	1420.7
27.5°	1476.4	1478.9	1466.2	1468.8	1443.4	1438.4	1435.8	1410.5	1387.7	1372.5	1352.3
30°	1402.9	1395.3	1382.7	1382.7	1362.4	1359.9	1354.8	1332.0	1306.7	1289.0	1266.2
32.5°	1299.1	1296.6	1283.9	1283.9	1261.1	1261.1	1251.0	1228.2	1205.4	1195.3	1172.5
35°	1180.1	1177.5	1167.4	1167.4	1147.2	1149.7	1139.6	1121.8	1099.0	1083.8	1066.1
37.5°	1058.5	1056.0	1045.9	1048.4	1030.7	1030.7	1023.1	1005.3	987.6	980.0	957.2
40°	939.5	937.0	924.3	931.9	916.7	911.6	909.1	896.5	876.2	866.1	853.4
42.5°	830.6	833.1	820.5	825.5	812.9	807.8	805.3	795.2	780.0	769.8	757.2
45°	747.0	742.0	736.9	736.9	724.3	721.7	719.2	706.5	696.4	686.3	673.6
47.5°	668.5	663.5	658.4	660.9	650.8	648.3	643.2	633.1	620.4	615.4	602.7
50°	605.2	602.7	595.1	595.1	585.0	582.4	577.4	569.8	557.1	549.5	539.4
52.5°	547.0	547.0	539.4	536.9	529.3	526.7	524.2	514.1	503.9	493.8	483.7
55°	496.3	493.8	488.7	488.7	478.6	476.1	473.6	463.4	453.3	445.7	435.6
57.5°	448.2	448.2	443.2	443.2	435.6	430.5	430.5	420.4	407.7	402.6	390.0
60°	405.2	405.2	400.1	400.1	392.5	392.5	387.5	377.3	369.7	359.6	349.5
62.5°	364.7	367.2	362.1	359.6	352.0	349.5	349.5	341.9	329.2	321.6	311.5
65°	329.2	326.7	324.1	321.6	314.0	311.5	311.5	301.4	293.8	283.6	276.0
67.5°	291.2	291.2	286.2	286.2	281.1	278.6	273.5	265.9	258.3	250.7	243.1
70°	255.8	255.8	253.2	253.2	245.6	243.1	240.6	233.0	225.4	217.8	207.7
72.5°	222.8	220.3	217.8	217.8	212.7	210.2	207.7	200.1	192.5	184.9	177.3
75°	187.4	187.4	184.9	184.9	179.8	177.3	177.3	172.2	162.1	157.0	146.9
77.5°	157.0	157.0	154.5	154.5	149.4	149.4	146.9	139.3	134.2	126.6	121.6
80°	126.6	124.1	124.1	121.6	116.5	116.5	114.0	111.4	103.8	98.8	91.2
82.5°	88.6	88.6	88.6	86.1	83.6	83.6	81.0	76.0	70.9	68.4	60.8
85°	53.2	53.2	50.6	48.1	50.6	48.1	45.6	43.1	40.5	38.0	35.5
87.5°	22.8	22.8	20.3	20.3	20.3	20.3	20.3	17.7	15.2	15.2	12.7
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°	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0
2.5°	1648.6	1656.2	1653.6	1651.1	1646.0	1646.0	1646.0	1643.5	1646.0	1646.0	1641.0
5°	1648.6	1653.6	1651.1	1646.0	1641.0	1641.0	1638.4	1633.4	1633.4	1633.4	1623.2
7.5°	1641.0	1646.0	1638.4	1633.4	1628.3	1623.2	1623.2	1615.6	1615.6	1613.1	1603.0
10°	1625.8	1628.3	1618.2	1613.1	1605.5	1603.0	1597.9	1587.8	1585.3	1582.7	1572.6
12.5°	1603.0	1605.5	1592.9	1582.7	1572.6	1570.1	1565.0	1552.3	1547.3	1542.2	1529.5
15°	1570.1	1570.1	1554.9	1542.2	1532.1	1529.5	1516.9	1504.2	1499.2	1494.1	1476.4
17.5°	1532.1	1529.5	1509.3	1496.6	1484.0	1478.9	1466.2	1451.0	1440.9	1435.8	1420.7
20°	1491.6	1484.0	1461.2	1448.5	1433.3	1425.7	1413.1	1392.8	1382.7	1372.5	1357.3
22.5°	1443.4	1433.3	1408.0	1390.3	1375.1	1367.5	1349.7	1332.0	1316.8	1306.7	1289.0
25°	1385.2	1372.5	1344.7	1321.9	1309.2	1301.6	1283.9	1263.6	1248.5	1233.3	1218.1
27.5°	1316.8	1301.6	1273.8	1251.0	1238.3	1225.7	1213.0	1190.2	1177.5	1164.9	1147.2
30°	1233.3	1215.5	1190.2	1169.9	1154.8	1144.6	1129.4	1109.2	1094.0	1086.4	1068.7
32.5°	1142.1	1121.8	1099.0	1078.8	1071.2	1058.5	1045.9	1025.6	1012.9	1005.3	992.7
35°	1040.8	1025.6	1000.3	985.1	972.4	967.4	957.2	937.0	931.9	924.3	909.1
37.5°	934.4	921.8	904.1	891.4	881.3	876.2	866.1	853.4	845.8	838.2	830.6
40°	835.7	825.5	810.4	800.2	787.6	780.0	780.0	764.8	759.7	759.7	752.1
42.5°	739.4	734.4	721.7	706.5	704.0	696.4	693.9	686.3	681.2	678.7	676.1
45°	658.4	650.8	638.2	630.6	623.0	623.0	615.4	607.8	605.2	602.7	600.2
47.5°	587.5	577.4	567.2	559.7	554.6	552.1	544.5	539.4	536.9	536.9	534.3
50°	524.2	516.6	506.5	498.9	493.8	488.7	483.7	478.6	476.1	473.6	473.6
52.5°	471.0	460.9	450.8	443.2	435.6	433.0	428.0	422.9	420.4	417.8	415.3
55°	422.9	415.3	402.6	395.0	387.5	387.5	379.9	372.3	367.2	364.7	362.1
57.5°	377.3	369.7	357.1	349.5	344.4	339.3	334.3	329.2	324.1	319.1	314.0
60°	336.8	329.2	316.5	306.4	303.9	298.8	293.8	283.6	278.6	273.5	268.4
62.5°	298.8	288.7	278.6	268.4	265.9	260.8	253.2	245.6	238.0	233.0	225.4
65°	263.4	255.8	243.1	235.5	227.9	225.4	217.8	207.7	200.1	195.0	187.4
67.5°	230.4	220.3	207.7	200.1	195.0	189.9	182.3	174.7	167.1	159.5	151.9
70°	197.5	189.9	177.3	169.7	164.6	159.5	151.9	141.8	134.2	126.6	121.6
72.5°	167.1	157.0	146.9	139.3	134.2	129.2	121.6	114.0	106.4	101.3	93.7
75°	139.3	129.2	121.6	111.4	108.9	103.8	96.2	88.6	81.0	76.0	70.9
77.5°	111.4	103.8	93.7	88.6	83.6	78.5	73.4	65.8	60.8	53.2	48.1
80°	83.6	76.0	68.4	63.3	58.2	55.7	50.6	45.6	40.5	35.5	32.9
82.5°	55.7	50.6	43.1	40.5	38.0	35.5	30.4	27.9	25.3	22.8	20.3
85°	30.4	27.9	25.3	20.3	20.3	17.7	15.2	15.2	12.7	12.7	10.1
87.5°	12.7	10.1	10.1	7.6	7.6	7.6	5.1	5.1	5.1	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°	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0
2.5°	1643.5	1633.4	1633.4	1633.4	1625.8	1628.3	1630.8	1633.4	1630.8	1623.2	1630.8
5°	1625.8	1615.6	1615.6	1610.6	1605.5	1605.5	1605.5	1608.0	1605.5	1597.9	1600.4
7.5°	1603.0	1590.3	1587.8	1582.7	1577.7	1575.1	1575.1	1575.1	1572.6	1562.5	1567.5
10°	1567.5	1554.9	1549.8	1547.3	1539.7	1537.1	1534.6	1532.1	1529.5	1519.4	1524.5
12.5°	1524.5	1514.3	1504.2	1501.7	1494.1	1489.0	1486.5	1486.5	1481.4	1471.3	1476.4
15°	1473.8	1458.6	1451.0	1446.0	1438.4	1433.3	1428.2	1430.8	1428.2	1418.1	1420.7
17.5°	1413.1	1397.9	1390.3	1387.7	1377.6	1372.5	1370.0	1370.0	1367.5	1357.3	1359.9
20°	1347.2	1332.0	1327.0	1321.9	1316.8	1311.8	1309.2	1306.7	1304.2	1294.0	1301.6
22.5°	1281.4	1263.6	1256.0	1256.0	1245.9	1243.4	1240.9	1243.4	1240.9	1230.7	1235.8
25°	1213.0	1195.3	1190.2	1182.6	1177.5	1175.0	1175.0	1175.0	1172.5	1167.4	1172.5
27.5°	1137.0	1124.4	1116.8	1114.2	1109.2	1106.6	1104.1	1106.6	1106.6	1099.0	1104.1
30°	1061.1	1050.9	1045.9	1043.3	1035.7	1033.2	1035.7	1035.7	1035.7	1028.1	1035.7
32.5°	985.1	977.5	975.0	967.4	962.3	962.3	962.3	964.8	962.3	957.2	964.8
35°	909.1	899.0	896.5	893.9	893.9	888.9	893.9	891.4	896.5	888.9	893.9
37.5°	828.1	823.0	820.5	820.5	815.4	818.0	818.0	818.0	823.0	815.4	820.5
40°	752.1	747.0	747.0	747.0	744.5	744.5	744.5	747.0	749.6	744.5	749.6
42.5°	676.1	673.6	673.6	671.1	668.5	671.1	673.6	673.6	676.1	671.1	673.6
45°	602.7	600.2	602.7	600.2	600.2	597.6	600.2	602.7	602.7	600.2	600.2
47.5°	534.3	534.3	531.8	531.8	531.8	531.8	531.8	531.8	531.8	526.7	531.8
50°	473.6	468.5	471.0	468.5	468.5	466.0	466.0	463.4	460.9	458.4	458.4
52.5°	415.3	410.2	410.2	407.7	405.2	405.2	402.6	400.1	397.6	392.5	392.5
55°	359.6	354.5	352.0	349.5	346.9	344.4	341.9	339.3	334.3	331.7	331.7
57.5°	308.9	303.9	298.8	298.8	293.8	291.2	286.2	281.1	278.6	273.5	273.5
60°	263.4	258.3	250.7	248.2	245.6	240.6	233.0	230.4	227.9	222.8	225.4
62.5°	220.3	212.7	205.1	202.6	200.1	195.0	189.9	184.9	182.3	184.9	184.9
65°	179.8	172.2	167.1	162.1	159.5	154.5	151.9	149.4	149.4	149.4	151.9
67.5°	144.3	136.7	131.7	129.2	124.1	121.6	121.6	121.6	121.6	121.6	121.6
70°	114.0	108.9	103.8	98.8	98.8	96.2	96.2	96.2	96.2	96.2	96.2
72.5°	86.1	81.0	78.5	78.5	76.0	76.0	76.0	76.0	73.4	73.4	76.0
75°	63.3	60.8	58.2	58.2	58.2	55.7	55.7	55.7	55.7	55.7	55.7
77.5°	45.6	43.1	43.1	40.5	40.5	40.5	40.5	40.5	40.5	38.0	38.0
80°	30.4	27.9	27.9	27.9	27.9	25.3	25.3	25.3	25.3	25.3	25.3
82.5°	17.7	17.7	17.7	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
85°	10.1	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	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: P251815

CATALOG NUMBER: LD4B50D010TE EU4B30509730 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0	1646.0
2.5°	1615.6	1625.8	1628.3	1620.7	1623.2	1618.2	1620.7	1615.6
5°	1587.8	1595.4	1597.9	1592.9	1592.9	1587.8	1590.3	1585.3
7.5°	1552.3	1559.9	1562.5	1557.4	1557.4	1552.3	1552.3	1549.8
10°	1511.8	1514.3	1519.4	1511.8	1514.3	1509.3	1509.3	1504.2
12.5°	1461.2	1466.2	1471.3	1463.7	1463.7	1461.2	1461.2	1453.6
15°	1408.0	1413.1	1415.6	1410.5	1410.5	1408.0	1405.5	1402.9
17.5°	1352.3	1354.8	1359.9	1352.3	1357.3	1352.3	1352.3	1347.2
20°	1289.0	1296.6	1299.1	1291.5	1294.0	1291.5	1291.5	1291.5
22.5°	1228.2	1233.3	1235.8	1230.7	1233.3	1228.2	1230.7	1225.7
25°	1164.9	1167.4	1169.9	1164.9	1169.9	1167.4	1164.9	1164.9
27.5°	1099.0	1101.6	1104.1	1099.0	1104.1	1101.6	1104.1	1099.0
30°	1028.1	1033.2	1038.3	1033.2	1035.7	1033.2	1033.2	1030.7
32.5°	957.2	962.3	967.4	962.3	967.4	962.3	964.8	959.8
35°	891.4	893.9	896.5	891.4	893.9	893.9	893.9	891.4
37.5°	818.0	823.0	823.0	820.5	825.5	823.0	823.0	818.0
40°	747.0	749.6	752.1	747.0	749.6	747.0	749.6	747.0
42.5°	673.6	678.7	681.2	676.1	676.1	676.1	673.6	676.1
45°	597.6	602.7	607.8	600.2	602.7	602.7	602.7	600.2
47.5°	529.3	529.3	531.8	529.3	531.8	526.7	531.8	529.3
50°	458.4	458.4	463.4	458.4	458.4	458.4	458.4	458.4
52.5°	390.0	392.5	392.5	387.5	390.0	387.5	390.0	387.5
55°	326.7	326.7	329.2	326.7	326.7	326.7	326.7	326.7
57.5°	271.0	273.5	273.5	271.0	273.5	271.0	271.0	271.0
60°	225.4	225.4	225.4	222.8	225.4	222.8	225.4	222.8
62.5°	182.3	184.9	184.9	182.3	184.9	182.3	182.3	182.3
65°	149.4	149.4	149.4	149.4	149.4	149.4	149.4	146.9
67.5°	119.0	119.0	121.6	119.0	121.6	121.6	121.6	121.6
70°	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2
72.5°	73.4	73.4	76.0	73.4	73.4	73.4	73.4	73.4
75°	55.7	55.7	55.7	55.7	55.7	53.2	53.2	55.7
77.5°	38.0	38.0	38.0	38.0	38.0	38.0	38.0	40.5
80°	25.3	25.3	25.3	25.3	22.8	22.8	25.3	22.8
82.5°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
85°	7.6	7.6	5.1	5.1	5.1	5.1	5.1	5.1
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)