

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: P251809

Luminaire Tested: **LD4B50D010TE EU4B30509027 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251809
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 EU4B30509027 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3266.0 lumens
Efficiency: N/A
Efficacy: 55.6 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

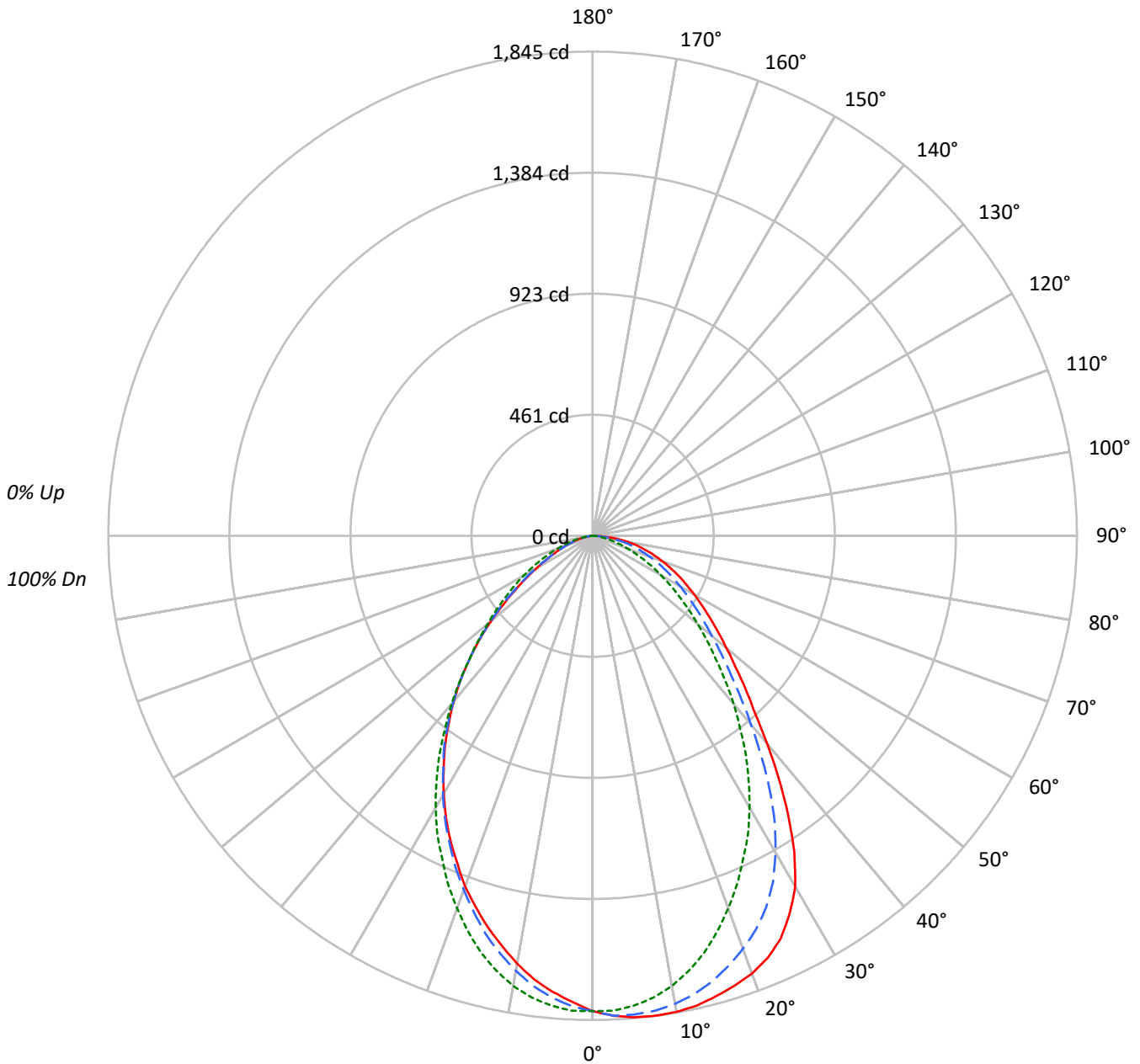
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	176526	176526	176526
5°	180204	175840	170655
10°	182287	172351	163811
15°	183318	165883	155763
20°	184100	156637	147397
25°	182193	145933	137836
30°	173731	134535	127637
35°	154500	121009	116702
40°	131523	106358	104590
45°	113307	91407	91021
50°	100977	79008	76476
55°	92806	68186	61084
60°	86913	58670	47793
65°	83548	49488	37266
70°	80184	39693	30176
75°	77644	31480	23082
80°	78181	21888	14087
85°	65415	15543	6262



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	5.2
10°-20°	466.2	14.3
20°-30°	651.9	20.0
30°-40°	670.1	20.5
40°-50°	543.9	16.7
50°-60°	382.9	11.7
60°-70°	235.8	7.2
70°-80°	117.8	3.6
80°-90°	28.0	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°	1287.6	39.4
0°-40°	1957.7	59.9
0°-60°	2884.5	88.3
0°-90°	3266.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3266.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1811	1811	1811	1811	1811	
5°	1842	1831	1797	1767	1744	176
15°	1817	1758	1644	1572	1544	513
25°	1694	1563	1357	1290	1282	774
35°	1299	1173	1017	986	981	807
45°	822	741	663	663	660	639
55°	546	479	401	368	360	491
65°	362	304	215	164	162	358
75°	206	162	84	61	61	220
85°	58	39	14	8	6	68
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°	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3
2.5°	1830.8	1833.6	1825.2	1833.6	1822.4	1828.0	1830.8	1825.2	1819.7	1830.8	1830.8
5°	1842.0	1842.0	1833.6	1844.7	1830.8	1833.6	1839.2	1830.8	1822.4	1833.6	1830.8
7.5°	1844.7	1844.7	1833.6	1844.7	1830.8	1833.6	1836.4	1828.0	1819.7	1828.0	1825.2
10°	1842.0	1839.2	1830.8	1842.0	1828.0	1828.0	1830.8	1822.4	1808.5	1816.9	1811.3
12.5°	1833.6	1833.6	1822.4	1833.6	1814.1	1814.1	1816.9	1805.7	1794.6	1794.6	1789.0
15°	1816.9	1816.9	1805.7	1814.1	1797.4	1797.4	1794.6	1783.4	1769.5	1769.5	1758.4
17.5°	1797.4	1797.4	1786.2	1794.6	1775.1	1775.1	1772.3	1755.6	1736.1	1733.3	1719.3
20°	1775.1	1775.1	1761.1	1766.7	1744.4	1744.4	1741.6	1722.1	1699.8	1694.3	1674.8
22.5°	1741.6	1741.6	1727.7	1730.5	1708.2	1705.4	1702.6	1680.3	1658.0	1649.7	1624.6
25°	1694.3	1691.5	1680.3	1680.3	1658.0	1652.5	1646.9	1624.6	1602.3	1585.6	1563.3
27.5°	1624.6	1627.4	1613.5	1616.2	1588.4	1582.8	1580.0	1552.1	1527.1	1510.3	1488.1
30°	1543.8	1535.4	1521.5	1521.5	1499.2	1496.4	1490.8	1465.8	1437.9	1418.4	1393.3
32.5°	1429.5	1426.7	1412.8	1412.8	1387.7	1387.7	1376.6	1351.5	1326.4	1315.3	1290.2
35°	1298.6	1295.8	1284.6	1284.6	1262.3	1265.1	1254.0	1234.5	1209.4	1192.7	1173.2
37.5°	1164.8	1162.0	1150.9	1153.7	1134.2	1134.2	1125.8	1106.3	1086.8	1078.4	1053.3
40°	1033.8	1031.0	1017.1	1025.5	1008.8	1003.2	1000.4	986.5	964.2	953.0	939.1
42.5°	914.0	916.8	902.9	908.4	894.5	888.9	886.1	875.0	858.3	847.1	833.2
45°	822.1	816.5	810.9	810.9	797.0	794.2	791.4	777.5	766.3	755.2	741.2
47.5°	735.7	730.1	724.5	727.3	716.2	713.4	707.8	696.7	682.7	677.1	663.2
50°	666.0	663.2	654.9	654.9	643.7	640.9	635.3	627.0	613.1	604.7	593.5
52.5°	601.9	601.9	593.5	590.8	582.4	579.6	576.8	565.7	554.5	543.4	532.2
55°	546.2	543.4	537.8	537.8	526.7	523.9	521.1	510.0	498.8	490.4	479.3
57.5°	493.2	493.2	487.7	487.7	479.3	473.7	473.7	462.6	448.6	443.1	429.1
60°	445.9	445.9	440.3	440.3	431.9	431.9	426.4	415.2	406.8	395.7	384.6
62.5°	401.3	404.1	398.5	395.7	387.3	384.6	384.6	376.2	362.3	353.9	342.8
65°	362.3	359.5	356.7	353.9	345.5	342.8	342.8	331.6	323.2	312.1	303.7
67.5°	320.5	320.5	314.9	314.9	309.3	306.5	301.0	292.6	284.2	275.9	267.5
70°	281.4	281.4	278.7	278.7	270.3	267.5	264.7	256.4	248.0	239.6	228.5
72.5°	245.2	242.4	239.6	239.6	234.1	231.3	228.5	220.1	211.8	203.4	195.1
75°	206.2	206.2	203.4	203.4	197.8	195.1	195.1	189.5	178.3	172.8	161.6
77.5°	172.8	172.8	170.0	170.0	164.4	164.4	161.6	153.3	147.7	139.3	133.8
80°	139.3	136.5	136.5	133.8	128.2	128.2	125.4	122.6	114.3	108.7	100.3
82.5°	97.5	97.5	97.5	94.7	92.0	92.0	89.2	83.6	78.0	75.2	66.9
85°	58.5	58.5	55.7	52.9	55.7	52.9	50.2	47.4	44.6	41.8	39.0
87.5°	25.1	25.1	22.3	22.3	22.3	22.3	22.3	19.5	16.7	16.7	13.9
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°	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3
2.5°	1814.1	1822.4	1819.7	1816.9	1811.3	1811.3	1811.3	1808.5	1811.3	1811.3	1805.7
5°	1814.1	1819.7	1816.9	1811.3	1805.7	1805.7	1802.9	1797.4	1797.4	1797.4	1786.2
7.5°	1805.7	1811.3	1802.9	1797.4	1791.8	1786.2	1786.2	1777.9	1777.9	1775.1	1763.9
10°	1789.0	1791.8	1780.6	1775.1	1766.7	1763.9	1758.4	1747.2	1744.4	1741.6	1730.5
12.5°	1763.9	1766.7	1752.8	1741.6	1730.5	1727.7	1722.1	1708.2	1702.6	1697.0	1683.1
15°	1727.7	1727.7	1711.0	1697.0	1685.9	1683.1	1669.2	1655.3	1649.7	1644.1	1624.6
17.5°	1685.9	1683.1	1660.8	1646.9	1633.0	1627.4	1613.5	1596.7	1585.6	1580.0	1563.3
20°	1641.3	1633.0	1607.9	1593.9	1577.2	1568.9	1554.9	1532.6	1521.5	1510.3	1493.6
22.5°	1588.4	1577.2	1549.4	1529.9	1513.1	1504.8	1485.3	1465.8	1449.0	1437.9	1418.4
25°	1524.3	1510.3	1479.7	1454.6	1440.7	1432.3	1412.8	1390.5	1373.8	1357.1	1340.4
27.5°	1449.0	1432.3	1401.7	1376.6	1362.7	1348.7	1334.8	1309.7	1295.8	1281.8	1262.3
30°	1357.1	1337.6	1309.7	1287.4	1270.7	1259.6	1242.8	1220.5	1203.8	1195.5	1176.0
32.5°	1256.8	1234.5	1209.4	1187.1	1178.7	1164.8	1150.9	1128.6	1114.6	1106.3	1092.4
35°	1145.3	1128.6	1100.7	1084.0	1070.1	1064.5	1053.3	1031.0	1025.5	1017.1	1000.4
37.5°	1028.3	1014.3	994.8	980.9	969.7	964.2	953.0	939.1	930.7	922.4	914.0
40°	919.6	908.4	891.7	880.6	866.6	858.3	858.3	841.6	836.0	836.0	827.6
42.5°	813.7	808.1	794.2	777.5	774.7	766.3	763.5	755.2	749.6	746.8	744.0
45°	724.5	716.2	702.2	693.9	685.5	685.5	677.1	668.8	666.0	663.2	660.4
47.5°	646.5	635.3	624.2	615.8	610.3	607.5	599.1	593.5	590.8	590.8	588.0
50°	576.8	568.5	557.3	549.0	543.4	537.8	532.2	526.7	523.9	521.1	521.1
52.5°	518.3	507.2	496.0	487.7	479.3	476.5	470.9	465.4	462.6	459.8	457.0
55°	465.4	457.0	443.1	434.7	426.4	426.4	418.0	409.6	404.1	401.3	398.5
57.5°	415.2	406.8	392.9	384.6	379.0	373.4	367.8	362.3	356.7	351.1	345.5
60°	370.6	362.3	348.3	337.2	334.4	328.8	323.2	312.1	306.5	301.0	295.4
62.5°	328.8	317.7	306.5	295.4	292.6	287.0	278.7	270.3	261.9	256.4	248.0
65°	289.8	281.4	267.5	259.2	250.8	248.0	239.6	228.5	220.1	214.6	206.2
67.5°	253.6	242.4	228.5	220.1	214.6	209.0	200.6	192.3	183.9	175.6	167.2
70°	217.4	209.0	195.1	186.7	181.1	175.6	167.2	156.1	147.7	139.3	133.8
72.5°	183.9	172.8	161.6	153.3	147.7	142.1	133.8	125.4	117.0	111.5	103.1
75°	153.3	142.1	133.8	122.6	119.8	114.3	105.9	97.5	89.2	83.6	78.0
77.5°	122.6	114.3	103.1	97.5	92.0	86.4	80.8	72.5	66.9	58.5	52.9
80°	92.0	83.6	75.2	69.7	64.1	61.3	55.7	50.2	44.6	39.0	36.2
82.5°	61.3	55.7	47.4	44.6	41.8	39.0	33.4	30.7	27.9	25.1	22.3
85°	33.4	30.7	27.9	22.3	22.3	19.5	16.7	16.7	13.9	13.9	11.1
87.5°	13.9	11.1	11.1	8.4	8.4	8.4	5.6	5.6	5.6	2.8	2.8
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°	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3
2.5°	1808.5	1797.4	1797.4	1797.4	1789.0	1791.8	1794.6	1797.4	1794.6	1786.2	1794.6
5°	1789.0	1777.9	1777.9	1772.3	1766.7	1766.7	1766.7	1769.5	1766.7	1758.4	1761.1
7.5°	1763.9	1750.0	1747.2	1741.6	1736.1	1733.3	1733.3	1733.3	1730.5	1719.3	1724.9
10°	1724.9	1711.0	1705.4	1702.6	1694.3	1691.5	1688.7	1685.9	1683.1	1672.0	1677.5
12.5°	1677.5	1666.4	1655.3	1652.5	1644.1	1638.5	1635.7	1635.7	1630.2	1619.0	1624.6
15°	1621.8	1605.1	1596.7	1591.2	1582.8	1577.2	1571.7	1574.4	1571.7	1560.5	1563.3
17.5°	1554.9	1538.2	1529.9	1527.1	1515.9	1510.3	1507.6	1507.6	1504.8	1493.6	1496.4
20°	1482.5	1465.8	1460.2	1454.6	1449.0	1443.5	1440.7	1437.9	1435.1	1424.0	1432.3
22.5°	1410.0	1390.5	1382.2	1382.2	1371.0	1368.2	1365.4	1368.2	1365.4	1354.3	1359.9
25°	1334.8	1315.3	1309.7	1301.4	1295.8	1293.0	1293.0	1293.0	1290.2	1284.6	1290.2
27.5°	1251.2	1237.3	1228.9	1226.1	1220.5	1217.8	1215.0	1217.8	1217.8	1209.4	1215.0
30°	1167.6	1156.4	1150.9	1148.1	1139.7	1136.9	1139.7	1139.7	1139.7	1131.4	1139.7
32.5°	1084.0	1075.6	1072.8	1064.5	1058.9	1058.9	1058.9	1061.7	1058.9	1053.3	1061.7
35°	1000.4	989.2	986.5	983.7	983.7	978.1	983.7	980.9	986.5	978.1	983.7
37.5°	911.2	905.7	902.9	902.9	897.3	900.1	900.1	900.1	905.7	897.3	902.9
40°	827.6	822.1	822.1	822.1	819.3	819.3	819.3	822.1	824.8	819.3	824.8
42.5°	744.0	741.2	741.2	738.5	735.7	738.5	741.2	741.2	744.0	738.5	741.2
45°	663.2	660.4	663.2	660.4	660.4	657.6	660.4	663.2	663.2	660.4	660.4
47.5°	588.0	588.0	585.2	585.2	585.2	585.2	585.2	585.2	585.2	579.6	585.2
50°	521.1	515.5	518.3	515.5	515.5	512.7	512.7	510.0	507.2	504.4	504.4
52.5°	457.0	451.4	451.4	448.6	445.9	445.9	443.1	440.3	437.5	431.9	431.9
55°	395.7	390.1	387.3	384.6	381.8	379.0	376.2	373.4	367.8	365.0	365.0
57.5°	340.0	334.4	328.8	328.8	323.2	320.5	314.9	309.3	306.5	301.0	301.0
60°	289.8	284.2	275.9	273.1	270.3	264.7	256.4	253.6	250.8	245.2	248.0
62.5°	242.4	234.1	225.7	222.9	220.1	214.6	209.0	203.4	200.6	203.4	203.4
65°	197.8	189.5	183.9	178.3	175.6	170.0	167.2	164.4	164.4	164.4	167.2
67.5°	158.8	150.5	144.9	142.1	136.5	133.8	133.8	133.8	133.8	133.8	133.8
70°	125.4	119.8	114.3	108.7	108.7	105.9	105.9	105.9	105.9	105.9	105.9
72.5°	94.7	89.2	86.4	86.4	83.6	83.6	83.6	83.6	80.8	80.8	83.6
75°	69.7	66.9	64.1	64.1	64.1	61.3	61.3	61.3	61.3	61.3	61.3
77.5°	50.2	47.4	47.4	44.6	44.6	44.6	44.6	44.6	44.6	41.8	41.8
80°	33.4	30.7	30.7	30.7	30.7	27.9	27.9	27.9	27.9	27.9	27.9
82.5°	19.5	19.5	19.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7
85°	11.1	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
87.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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: P251809

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3	1811.3
2.5°	1777.9	1789.0	1791.8	1783.4	1786.2	1780.6	1783.4	1777.9
5°	1747.2	1755.6	1758.4	1752.8	1752.8	1747.2	1750.0	1744.4
7.5°	1708.2	1716.6	1719.3	1713.8	1713.8	1708.2	1708.2	1705.4
10°	1663.6	1666.4	1672.0	1663.6	1666.4	1660.8	1660.8	1655.3
12.5°	1607.9	1613.5	1619.0	1610.7	1610.7	1607.9	1607.9	1599.5
15°	1549.4	1554.9	1557.7	1552.1	1552.1	1549.4	1546.6	1543.8
17.5°	1488.1	1490.8	1496.4	1488.1	1493.6	1488.1	1488.1	1482.5
20°	1418.4	1426.7	1429.5	1421.2	1424.0	1421.2	1421.2	1421.2
22.5°	1351.5	1357.1	1359.9	1354.3	1357.1	1351.5	1354.3	1348.7
25°	1281.8	1284.6	1287.4	1281.8	1287.4	1284.6	1281.8	1281.8
27.5°	1209.4	1212.2	1215.0	1209.4	1215.0	1212.2	1215.0	1209.4
30°	1131.4	1136.9	1142.5	1136.9	1139.7	1136.9	1136.9	1134.2
32.5°	1053.3	1058.9	1064.5	1058.9	1064.5	1058.9	1061.7	1056.1
35°	980.9	983.7	986.5	980.9	983.7	983.7	983.7	980.9
37.5°	900.1	905.7	905.7	902.9	908.4	905.7	905.7	900.1
40°	822.1	824.8	827.6	822.1	824.8	822.1	824.8	822.1
42.5°	741.2	746.8	749.6	744.0	744.0	744.0	741.2	744.0
45°	657.6	663.2	668.8	660.4	663.2	663.2	663.2	660.4
47.5°	582.4	582.4	585.2	582.4	585.2	579.6	585.2	582.4
50°	504.4	504.4	510.0	504.4	504.4	504.4	504.4	504.4
52.5°	429.1	431.9	431.9	426.4	429.1	426.4	429.1	426.4
55°	359.5	359.5	362.3	359.5	359.5	359.5	359.5	359.5
57.5°	298.2	301.0	301.0	298.2	301.0	298.2	298.2	298.2
60°	248.0	248.0	248.0	245.2	248.0	245.2	248.0	245.2
62.5°	200.6	203.4	203.4	200.6	203.4	200.6	200.6	200.6
65°	164.4	164.4	164.4	164.4	164.4	164.4	164.4	161.6
67.5°	131.0	131.0	133.8	131.0	133.8	133.8	133.8	133.8
70°	105.9	105.9	105.9	105.9	105.9	105.9	105.9	105.9
72.5°	80.8	80.8	83.6	80.8	80.8	80.8	80.8	80.8
75°	61.3	61.3	61.3	61.3	61.3	58.5	58.5	61.3
77.5°	41.8	41.8	41.8	41.8	41.8	41.8	41.8	44.6
80°	27.9	27.9	27.9	27.9	25.1	25.1	27.9	25.1
82.5°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
85°	8.4	8.4	5.6	5.6	5.6	5.6	5.6	5.6
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)