

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: P251658

Luminaire Tested: **LD4B50D010TE EU4B30509727 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251658
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30509727 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 3296.0 lumens
Efficiency: N/A
Efficacy: 56.1 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

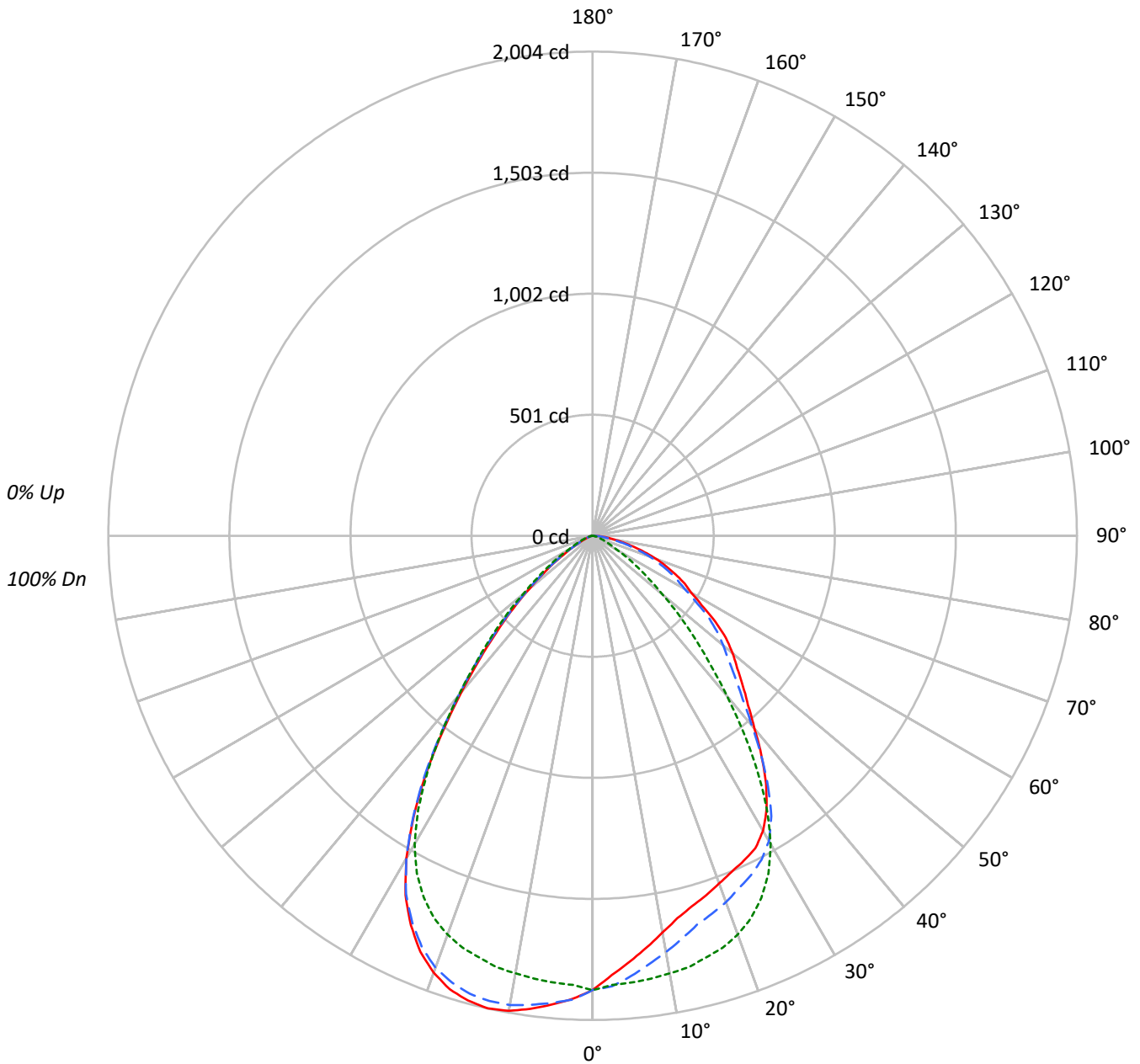
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	183250	183250	183250
5°	173052	181583	190593
10°	164979	182000	197587
15°	160132	182380	200965
20°	158826	182192	199533
25°	159461	177709	191258
30°	158697	165786	173428
35°	148754	141544	142995
40°	132553	109742	107274
45°	121232	81828	76811
50°	114623	57312	51808
55°	105397	38706	32521
60°	92098	22669	17952
65°	87169	14528	10054
70°	79415	10344	6212
75°	65708	7305	4556
80°	51690	4097	2694
85°	46070	2684	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.7	5.4
10°-20°	509.7	15.5
20°-30°	755.6	22.9
30°-40°	756.6	23.0
40°-50°	528.8	16.0
50°-60°	314.6	9.5
60°-70°	164.2	5.0
70°-80°	73.0	2.2
80°-90°	15.9	0.5
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°	1442.9	43.8
0°-40°	2199.5	66.7
0°-60°	3042.9	92.3
0°-90°	3296.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3296.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1880	1880	1880	1880	1880	
5°	1769	1829	1856	1941	1948	166
15°	1587	1667	1808	1963	1992	449
25°	1483	1551	1653	1766	1779	683
35°	1250	1265	1190	1212	1202	775
45°	880	836	594	574	557	683
55°	620	582	228	199	191	550
65°	378	346	63	46	44	374
75°	174	153	19	12	12	189
85°	41	32	2	2	0	46
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°	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3
2.5°	1819.7	1841.6	1819.7	1827.0	1856.1	1829.4	1844.0	1844.0	1836.7	1853.7	1865.8
5°	1768.9	1790.7	1768.9	1778.6	1810.1	1783.4	1800.4	1795.5	1797.9	1812.5	1829.4
7.5°	1718.0	1734.9	1715.6	1727.7	1756.7	1734.9	1749.5	1749.5	1751.9	1773.7	1788.2
10°	1667.1	1681.6	1667.1	1676.8	1708.3	1688.9	1698.6	1701.0	1708.3	1727.7	1749.5
12.5°	1621.1	1633.2	1618.6	1633.2	1659.8	1640.4	1652.6	1655.0	1662.2	1684.1	1708.3
15°	1587.1	1599.2	1584.7	1596.8	1621.1	1606.5	1616.2	1621.1	1625.9	1645.3	1667.1
17.5°	1560.5	1570.2	1558.1	1572.6	1592.0	1575.0	1589.6	1589.6	1596.8	1616.2	1640.4
20°	1531.4	1541.1	1531.4	1543.5	1565.3	1550.8	1562.9	1562.9	1570.2	1592.0	1613.8
22.5°	1504.7	1509.6	1504.7	1514.4	1536.2	1524.1	1531.4	1533.8	1541.1	1560.5	1579.9
25°	1482.9	1492.6	1487.8	1497.5	1512.0	1499.9	1507.2	1509.6	1516.9	1533.8	1550.8
27.5°	1458.7	1463.6	1458.7	1470.8	1482.9	1473.2	1480.5	1478.1	1482.9	1497.5	1512.0
30°	1410.2	1415.1	1415.1	1422.4	1432.1	1427.2	1434.5	1427.2	1432.1	1444.2	1458.7
32.5°	1340.0	1342.4	1344.8	1352.1	1359.4	1352.1	1356.9	1356.9	1356.9	1366.6	1376.3
35°	1250.3	1255.2	1252.7	1257.6	1264.9	1262.4	1262.4	1260.0	1255.2	1260.0	1264.9
37.5°	1148.5	1141.3	1141.3	1148.5	1153.4	1143.7	1148.5	1143.7	1143.7	1146.1	1146.1
40°	1041.9	1034.7	1041.9	1044.4	1046.8	1041.9	1039.5	1034.7	1027.4	1029.8	1025.0
42.5°	952.3	947.4	949.9	949.9	952.3	947.4	949.9	940.2	932.9	928.0	920.8
45°	879.6	872.3	879.6	874.7	874.7	872.3	869.9	865.0	855.4	848.1	836.0
47.5°	811.7	811.7	814.2	814.2	814.2	809.3	809.3	799.6	789.9	780.2	763.3
50°	756.0	751.2	760.9	760.9	753.6	751.2	753.6	741.5	734.2	722.1	705.1
52.5°	695.4	695.4	697.9	697.9	695.4	690.6	693.0	683.3	676.0	663.9	647.0
55°	620.3	615.5	622.7	622.7	620.3	617.9	620.3	613.0	605.8	596.1	581.5
57.5°	535.5	533.1	537.9	540.4	535.5	535.5	537.9	530.7	528.2	518.5	504.0
60°	472.5	470.1	474.9	477.4	472.5	472.5	472.5	462.8	458.0	448.3	438.6
62.5°	428.9	426.5	431.3	428.9	426.5	424.0	426.5	416.8	411.9	402.2	392.5
65°	378.0	380.4	382.8	382.8	380.4	378.0	378.0	373.2	368.3	358.6	346.5
67.5°	329.5	329.5	332.0	334.4	332.0	332.0	332.0	324.7	319.8	312.6	298.0
70°	278.7	276.2	283.5	283.5	278.7	281.1	278.7	276.2	271.4	261.7	249.6
72.5°	225.3	225.3	227.8	227.8	225.3	225.3	225.3	222.9	215.7	210.8	198.7
75°	174.5	174.5	176.9	179.3	174.5	174.5	176.9	172.0	167.2	159.9	152.7
77.5°	130.8	128.4	130.8	130.8	128.4	128.4	128.4	126.0	123.6	116.3	109.0
80°	92.1	89.7	92.1	92.1	92.1	89.7	89.7	87.2	87.2	82.4	75.1
82.5°	63.0	60.6	63.0	63.0	63.0	60.6	60.6	60.6	58.2	55.7	50.9
85°	41.2	38.8	38.8	41.2	38.8	38.8	38.8	38.8	36.3	33.9	31.5
87.5°	19.4	19.4	19.4	19.4	19.4	19.4	19.4	17.0	17.0	17.0	14.5
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3
2.5°	1856.1	1851.2	1865.8	1860.9	1863.4	1851.2	1870.6	1860.9	1873.1	1860.9	1885.2
5°	1824.6	1819.7	1841.6	1839.1	1841.6	1831.9	1853.7	1851.2	1865.8	1856.1	1882.7
7.5°	1790.7	1785.8	1810.1	1812.5	1817.3	1807.6	1836.7	1836.7	1851.2	1848.8	1877.9
10°	1751.9	1754.3	1778.6	1783.4	1793.1	1788.2	1814.9	1822.2	1841.6	1839.1	1875.5
12.5°	1715.6	1715.6	1747.1	1756.7	1764.0	1761.6	1793.1	1802.8	1824.6	1829.4	1863.4
15°	1679.2	1681.6	1710.7	1725.2	1734.9	1732.5	1766.4	1778.6	1805.2	1807.6	1848.8
17.5°	1650.1	1647.7	1679.2	1691.3	1705.9	1703.4	1739.8	1754.3	1781.0	1788.2	1827.0
20°	1625.9	1623.5	1652.6	1667.1	1676.8	1674.4	1710.7	1727.7	1751.9	1756.7	1795.5
22.5°	1596.8	1592.0	1621.1	1633.2	1642.9	1640.4	1671.9	1684.1	1708.3	1713.1	1749.5
25°	1562.9	1558.1	1584.7	1592.0	1599.2	1594.4	1621.1	1628.3	1647.7	1652.6	1688.9
27.5°	1524.1	1512.0	1533.8	1533.8	1538.7	1531.4	1550.8	1558.1	1575.0	1575.0	1608.9
30°	1463.6	1446.6	1458.7	1456.3	1458.7	1449.0	1461.1	1463.6	1475.7	1473.2	1497.5
32.5°	1378.7	1354.5	1361.8	1354.5	1347.2	1332.7	1347.2	1342.4	1352.1	1342.4	1364.2
35°	1262.4	1238.2	1235.8	1226.1	1218.8	1206.7	1206.7	1194.6	1197.0	1189.7	1204.3
37.5°	1136.4	1104.9	1100.1	1080.7	1068.6	1054.0	1054.0	1044.4	1032.2	1027.4	1039.5
40°	1012.9	978.9	966.8	935.3	923.2	908.7	899.0	886.9	882.0	862.6	872.3
42.5°	906.2	869.9	843.2	809.3	797.2	775.4	760.9	746.3	739.0	717.2	726.9
45°	816.6	773.0	743.9	700.3	683.3	659.1	637.3	620.3	603.4	593.7	588.8
47.5°	741.5	695.4	656.7	608.2	581.5	559.7	530.7	513.7	491.9	479.8	472.5
50°	678.5	627.6	584.0	528.2	501.6	477.4	443.4	416.8	397.4	378.0	373.2
52.5°	622.7	569.4	521.0	458.0	426.5	397.4	361.0	332.0	315.0	293.2	290.8
55°	557.3	511.3	458.0	392.5	361.0	332.0	293.2	264.1	242.3	227.8	222.9
57.5°	487.0	443.4	392.5	327.1	295.6	264.1	227.8	201.1	181.7	169.6	167.2
60°	421.6	380.4	332.0	266.5	235.0	208.4	169.6	143.0	126.0	116.3	111.5
62.5°	373.2	334.4	288.3	227.8	198.7	172.0	135.7	111.5	96.9	87.2	82.4
65°	327.1	288.3	247.2	191.4	167.2	143.0	109.0	87.2	72.7	63.0	58.2
67.5°	278.7	244.7	206.0	159.9	135.7	116.3	87.2	67.8	55.7	48.5	43.6
70°	230.2	198.7	167.2	128.4	111.5	92.1	67.8	53.3	41.2	36.3	31.5
72.5°	181.7	157.5	130.8	99.3	84.8	72.7	53.3	38.8	31.5	26.7	21.8
75°	135.7	118.7	96.9	75.1	63.0	53.3	38.8	29.1	24.2	19.4	17.0
77.5°	96.9	82.4	67.8	50.9	46.0	38.8	26.7	21.8	17.0	12.1	9.7
80°	65.4	58.2	46.0	36.3	29.1	26.7	19.4	14.5	9.7	7.3	7.3
82.5°	43.6	36.3	29.1	21.8	19.4	17.0	12.1	9.7	7.3	4.8	4.8
85°	26.7	21.8	17.0	12.1	12.1	9.7	7.3	4.8	2.4	2.4	2.4
87.5°	12.1	9.7	7.3	4.8	4.8	2.4	2.4	2.4	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°	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3
2.5°	1904.6	1890.0	1880.3	1892.4	1897.3	1890.0	1897.3	1909.4	1921.5	1923.9	1890.0
5°	1907.0	1892.4	1887.6	1902.1	1904.6	1902.1	1909.4	1926.4	1940.9	1945.7	1911.8
7.5°	1907.0	1897.3	1894.9	1911.8	1914.2	1911.8	1923.9	1943.3	1957.9	1967.6	1933.6
10°	1902.1	1897.3	1899.7	1914.2	1919.1	1919.1	1936.1	1957.9	1972.4	1982.1	1948.2
12.5°	1894.9	1894.9	1894.9	1911.8	1916.7	1919.1	1933.6	1962.7	1972.4	1986.9	1953.0
15°	1882.7	1882.7	1882.7	1899.7	1907.0	1907.0	1923.9	1950.6	1962.7	1977.2	1943.3
17.5°	1860.9	1860.9	1863.4	1877.9	1885.2	1885.2	1902.1	1931.2	1938.5	1955.4	1921.5
20°	1829.4	1829.4	1831.9	1846.4	1853.7	1848.8	1870.6	1894.9	1902.1	1916.7	1882.7
22.5°	1783.4	1783.4	1783.4	1797.9	1802.8	1800.4	1822.2	1844.0	1844.0	1863.4	1827.0
25°	1715.6	1720.4	1715.6	1730.1	1734.9	1732.5	1751.9	1771.3	1766.4	1788.2	1751.9
27.5°	1633.2	1630.7	1630.7	1642.9	1642.9	1640.4	1655.0	1676.8	1671.9	1686.5	1652.6
30°	1519.3	1526.6	1514.4	1531.4	1524.1	1519.3	1529.0	1548.4	1541.1	1553.2	1526.6
32.5°	1388.4	1378.7	1378.7	1378.7	1383.6	1371.5	1381.2	1390.9	1383.6	1395.7	1366.6
35°	1216.4	1218.8	1211.6	1214.0	1216.4	1201.9	1211.6	1221.2	1211.6	1218.8	1192.2
37.5°	1044.4	1046.8	1029.8	1039.5	1029.8	1025.0	1034.7	1039.5	1029.8	1037.1	1008.0
40°	872.3	867.5	865.0	865.0	867.5	855.4	862.6	869.9	862.6	867.5	840.8
42.5°	722.1	719.7	714.8	717.2	710.0	707.5	710.0	717.2	710.0	714.8	695.4
45°	591.2	586.4	579.1	581.5	581.5	569.4	576.7	581.5	574.3	576.7	559.7
47.5°	470.1	462.8	462.8	460.4	460.4	455.5	462.8	460.4	453.1	458.0	441.0
50°	365.9	361.0	361.0	361.0	361.0	353.8	356.2	361.0	353.8	353.8	344.1
52.5°	285.9	278.7	273.8	273.8	273.8	271.4	271.4	273.8	266.5	266.5	264.1
55°	215.7	213.2	206.0	206.0	206.0	198.7	201.1	201.1	198.7	198.7	191.4
57.5°	159.9	152.7	147.8	147.8	143.0	143.0	140.5	143.0	138.1	138.1	133.3
60°	106.6	101.8	99.3	96.9	96.9	94.5	96.9	94.5	94.5	92.1	89.7
62.5°	77.5	72.7	67.8	67.8	67.8	65.4	65.4	65.4	65.4	65.4	63.0
65°	55.7	50.9	50.9	48.5	48.5	46.0	46.0	46.0	46.0	46.0	43.6
67.5°	38.8	36.3	33.9	33.9	33.9	33.9	33.9	33.9	31.5	31.5	31.5
70°	29.1	26.7	24.2	24.2	24.2	24.2	24.2	21.8	24.2	24.2	21.8
72.5°	19.4	19.4	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
75°	14.5	14.5	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
77.5°	9.7	9.7	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
80°	7.3	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
82.5°	4.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	0.0
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: P251658

CATALOG NUMBER: LD4B50D010TE EU4B30509727 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3	1880.3
2.5°	1926.4	1923.9	1919.1	1926.4	1907.0	1899.7	1897.3	1919.1
5°	1953.0	1948.2	1948.2	1955.4	1933.6	1928.8	1923.9	1948.2
7.5°	1977.2	1972.4	1972.4	1979.7	1960.3	1955.4	1950.6	1974.8
10°	1991.8	1991.8	1991.8	1996.6	1979.7	1974.8	1972.4	1996.6
12.5°	1999.1	1999.1	1996.6	2006.3	1984.5	1984.5	1979.7	2003.9
15°	1989.4	1989.4	1989.4	1996.6	1977.2	1972.4	1972.4	1991.8
17.5°	1965.1	1965.1	1962.7	1970.0	1948.2	1948.2	1945.7	1967.6
20°	1928.8	1928.8	1923.9	1933.6	1911.8	1904.6	1902.1	1923.9
22.5°	1870.6	1868.2	1865.8	1870.6	1851.2	1846.4	1844.0	1863.4
25°	1795.5	1793.1	1788.2	1793.1	1771.3	1764.0	1764.0	1778.6
27.5°	1688.9	1688.9	1681.6	1688.9	1664.7	1662.2	1659.8	1676.8
30°	1558.1	1548.4	1543.5	1553.2	1529.0	1529.0	1524.1	1541.1
32.5°	1395.7	1386.0	1383.6	1388.4	1366.6	1359.4	1369.1	1378.7
35°	1209.1	1211.6	1201.9	1201.9	1182.5	1184.9	1187.3	1201.9
37.5°	1029.8	1025.0	1022.5	1025.0	1010.4	1005.6	1000.7	1015.3
40°	862.6	850.5	848.1	848.1	836.0	833.5	836.0	843.2
42.5°	705.1	702.7	693.0	697.9	685.7	690.6	688.2	688.2
45°	569.4	571.9	562.2	569.4	559.7	552.5	552.5	557.3
47.5°	450.7	450.7	448.3	448.3	441.0	443.4	438.6	445.9
50°	348.9	348.9	344.1	346.5	341.7	341.7	339.2	341.7
52.5°	266.5	264.1	264.1	261.7	256.8	259.3	261.7	256.8
55°	193.8	196.3	191.4	193.8	189.0	191.4	189.0	191.4
57.5°	133.3	135.7	130.8	135.7	130.8	133.3	130.8	130.8
60°	92.1	92.1	89.7	92.1	89.7	89.7	87.2	92.1
62.5°	63.0	63.0	63.0	63.0	63.0	60.6	63.0	63.0
65°	46.0	43.6	43.6	43.6	43.6	43.6	43.6	43.6
67.5°	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
70°	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8
72.5°	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
75°	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
77.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
80°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	2.4	2.4	2.4	0.0	2.4	0.0	0.0	0.0
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)