

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: P251966

Luminaire Tested: **LD4B50D010TE EU4B30509030 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251966
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 EU4B30509030 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3833.0 lumens
Efficiency: N/A
Efficacy: 65.2 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

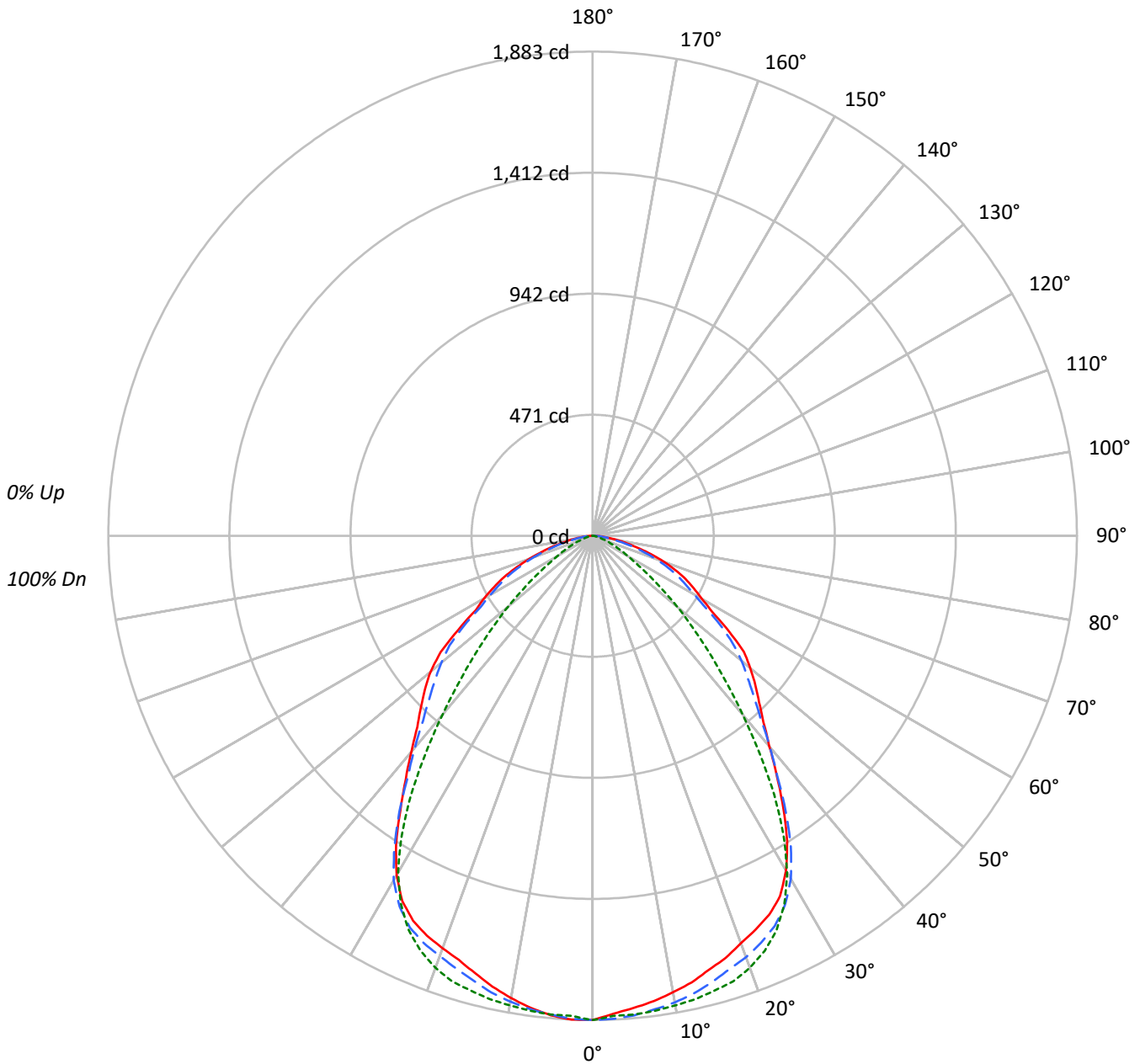
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251966

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBDW1H

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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								
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°	183553	183553	183553
5°	180282	182835	183119
10°	178358	183514	180644
15°	176286	184761	177749
20°	174901	185418	176996
25°	174795	181967	177602
30°	169230	170209	171514
35°	153751	146505	155131
40°	136026	115378	139347
45°	126194	87864	130191
50°	121249	65014	124766
55°	109781	44806	108320
60°	95450	30504	94885
65°	92219	22046	87538
70°	83376	14874	74315
75°	68720	9828	58930
80°	55282	6510	43889
85°	45399	3243	29185



TEST NUMBER: P251966

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.8	4.6
10°-20°	508.3	13.3
20°-30°	768.0	20.0
30°-40°	803.7	21.0
40°-50°	650.9	17.0
50°-60°	473.5	12.4
60°-70°	292.0	7.6
70°-80°	131.9	3.4
80°-90°	26.8	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°	1454.1	37.9
0°-40°	2257.8	58.9
0°-60°	3382.3	88.2
0°-90°	3833.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3833.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1883	1883	1883	1883	1883	
5°	1843	1872	1869	1869	1872	175
15°	1747	1796	1831	1791	1762	494
25°	1626	1675	1692	1681	1652	745
35°	1292	1310	1231	1310	1304	805
45°	916	887	638	898	945	712
55°	646	606	264	611	638	576
65°	400	359	96	354	380	391
75°	182	156	26	136	156	198
85°	41	32	3	23	26	47
90°	0	0	0	0	0	



TEST NUMBER: P251966

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1860.2	1860.2	1877.6	1897.9	1880.5	1863.1	1874.7	1868.9	1889.2	1889.2	1880.5
5°	1842.8	1848.6	1863.1	1880.5	1866.0	1848.6	1863.1	1857.3	1877.6	1877.6	1871.8
7.5°	1825.4	1828.3	1845.7	1866.0	1851.5	1834.1	1845.7	1842.8	1860.2	1863.1	1857.3
10°	1802.3	1805.2	1822.5	1842.8	1828.3	1813.8	1825.4	1822.5	1845.7	1845.7	1842.8
12.5°	1779.1	1782.0	1799.4	1816.7	1802.3	1787.8	1799.4	1799.4	1822.5	1825.4	1822.5
15°	1747.2	1753.0	1767.5	1784.9	1776.2	1758.8	1770.4	1770.4	1790.7	1796.5	1796.5
17.5°	1721.1	1724.0	1738.5	1755.9	1744.3	1729.8	1741.4	1741.4	1761.7	1767.5	1767.5
20°	1686.4	1692.2	1706.6	1724.0	1715.3	1703.7	1712.4	1712.4	1735.6	1741.4	1744.3
22.5°	1657.4	1663.2	1674.8	1697.9	1683.5	1674.8	1686.4	1683.5	1709.5	1712.4	1712.4
25°	1625.5	1631.3	1645.8	1660.3	1651.6	1642.9	1651.6	1651.6	1671.9	1674.8	1674.8
27.5°	1579.1	1582.0	1596.5	1611.0	1602.3	1590.7	1602.3	1599.4	1619.7	1622.6	1619.7
30°	1503.8	1509.6	1515.4	1535.7	1527.0	1518.3	1529.9	1524.1	1544.4	1544.4	1541.5
32.5°	1408.2	1408.2	1419.8	1434.3	1422.7	1416.9	1425.6	1428.5	1443.0	1443.0	1434.3
35°	1292.3	1298.1	1306.8	1315.5	1306.8	1301.0	1309.7	1306.8	1324.2	1318.4	1309.7
37.5°	1176.4	1179.3	1188.0	1199.6	1188.0	1179.3	1182.2	1179.3	1193.8	1193.8	1179.3
40°	1069.2	1075.0	1080.8	1092.4	1080.8	1075.0	1077.9	1069.2	1086.6	1080.8	1072.1
42.5°	982.3	985.2	993.8	999.6	988.1	985.2	988.1	982.3	991.0	985.2	967.8
45°	915.6	915.6	918.5	927.2	915.6	912.7	912.7	906.9	915.6	904.0	886.6
47.5°	857.7	860.6	863.5	869.3	860.6	851.9	854.8	843.2	849.0	840.3	817.1
50°	799.7	805.5	808.4	814.2	805.5	799.7	802.6	791.0	791.0	776.5	756.3
52.5°	741.8	744.7	741.8	747.6	741.8	733.1	736.0	724.4	724.4	707.0	686.7
55°	646.1	649.0	651.9	657.7	651.9	643.2	649.0	640.4	640.4	628.8	605.6
57.5°	550.5	553.4	556.3	559.2	559.2	553.4	556.3	550.5	547.6	538.9	521.6
60°	489.7	489.7	489.7	492.6	489.7	486.8	486.8	481.0	481.0	469.4	452.0
62.5°	443.3	446.2	446.2	449.1	446.2	443.3	440.4	434.6	431.7	420.1	405.7
65°	399.9	399.9	397.0	402.8	399.9	397.0	397.0	391.2	385.4	373.8	359.3
67.5°	347.7	350.6	347.7	350.6	350.6	347.7	344.8	339.0	336.1	327.4	310.0
70°	292.6	292.6	292.6	295.5	292.6	292.6	295.5	286.9	284.0	272.4	257.9
72.5°	237.6	240.5	240.5	237.6	240.5	234.7	234.7	234.7	231.8	220.2	205.7
75°	182.5	185.4	185.4	188.3	185.4	182.5	182.5	179.6	176.7	168.1	156.5
77.5°	136.2	136.2	139.1	139.1	139.1	136.2	136.2	130.4	130.4	124.6	113.0
80°	98.5	98.5	95.6	98.5	98.5	95.6	95.6	92.7	92.7	86.9	78.2
82.5°	63.7	66.6	66.6	66.6	66.6	63.7	63.7	63.7	60.8	58.0	52.2
85°	40.6	40.6	40.6	40.6	43.5	40.6	43.5	40.6	40.6	34.8	31.9
87.5°	17.4	17.4	17.4	20.3	20.3	17.4	17.4	17.4	17.4	17.4	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



TEST NUMBER: P251966

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1880.5	1883.4	1874.7	1886.3	1877.6	1880.5	1883.4	1880.5	1868.9	1868.9	1900.8
5°	1868.9	1874.7	1866.0	1880.5	1874.7	1874.7	1880.5	1877.6	1866.0	1868.9	1897.9
7.5°	1857.3	1866.0	1860.2	1874.7	1866.0	1866.0	1871.8	1871.8	1860.2	1863.1	1889.2
10°	1839.9	1851.5	1848.6	1863.1	1854.4	1854.4	1863.1	1863.1	1851.5	1854.4	1880.5
12.5°	1825.4	1837.0	1834.1	1848.6	1842.8	1845.7	1848.6	1854.4	1839.9	1845.7	1868.9
15°	1802.3	1813.8	1813.8	1828.3	1822.5	1828.3	1834.1	1842.8	1831.2	1831.2	1854.4
17.5°	1776.2	1790.7	1790.7	1802.3	1802.3	1805.2	1816.7	1825.4	1813.8	1816.7	1837.0
20°	1747.2	1764.6	1764.6	1779.1	1776.2	1782.0	1790.7	1799.4	1787.8	1787.8	1810.9
22.5°	1718.2	1732.7	1735.6	1744.3	1744.3	1747.2	1755.9	1761.7	1747.2	1747.2	1770.4
25°	1677.7	1692.2	1695.0	1700.8	1695.0	1695.0	1700.8	1706.6	1692.2	1692.2	1712.4
27.5°	1622.6	1637.1	1637.1	1634.2	1628.4	1631.3	1628.4	1631.3	1616.8	1613.9	1634.2
30°	1541.5	1550.2	1550.2	1547.3	1538.6	1538.6	1529.9	1532.8	1512.5	1512.5	1529.9
32.5°	1431.4	1440.1	1434.3	1428.5	1416.9	1411.1	1405.3	1402.4	1382.1	1382.1	1402.4
35°	1301.0	1306.8	1298.1	1286.5	1272.0	1263.3	1254.6	1243.0	1228.5	1231.4	1243.0
37.5°	1167.7	1167.7	1156.1	1132.9	1121.3	1106.9	1092.4	1092.4	1069.2	1066.3	1075.0
40°	1054.7	1043.1	1022.8	991.0	970.7	956.2	935.9	924.3	906.9	906.9	921.4
42.5°	953.3	930.1	904.0	860.6	840.3	822.9	796.8	785.2	764.9	762.0	770.7
45°	863.5	840.3	802.6	756.3	730.2	709.9	672.2	657.7	640.4	637.5	643.2
47.5°	791.0	764.9	718.6	657.7	631.7	605.6	567.9	547.6	533.1	524.5	533.1
50°	727.3	692.5	643.2	579.5	544.7	521.6	475.2	454.9	434.6	428.8	431.7
52.5°	657.7	623.0	570.8	504.2	472.3	437.5	394.1	365.1	347.7	339.0	347.7
55°	582.4	547.6	495.5	428.8	394.1	362.2	315.8	292.6	272.4	263.7	272.4
57.5°	501.3	469.4	423.0	356.4	324.5	295.5	252.1	228.9	208.6	202.8	208.6
60°	431.7	405.7	359.3	295.5	269.5	237.6	199.9	176.7	159.4	156.5	159.4
62.5°	385.4	356.4	312.9	252.1	226.0	199.9	165.2	142.0	127.5	124.6	127.5
65°	339.0	307.1	266.6	214.4	188.3	168.1	133.3	113.0	98.5	95.6	98.5
67.5°	286.9	257.9	223.1	176.7	156.5	136.2	107.2	86.9	75.3	72.4	75.3
70°	237.6	211.5	176.7	142.0	121.7	107.2	81.1	66.6	55.1	52.2	55.1
72.5°	188.3	165.2	136.2	107.2	95.6	81.1	63.7	49.3	40.6	37.7	40.6
75°	144.9	127.5	104.3	78.2	69.5	60.8	43.5	34.8	29.0	26.1	29.0
77.5°	101.4	89.8	72.4	58.0	49.3	43.5	31.9	23.2	20.3	17.4	20.3
80°	69.5	60.8	49.3	37.7	31.9	26.1	20.3	14.5	11.6	11.6	11.6
82.5°	46.4	37.7	29.0	23.2	20.3	17.4	11.6	8.7	8.7	5.8	5.8
85°	26.1	23.2	17.4	14.5	11.6	8.7	5.8	5.8	2.9	2.9	2.9
87.5°	11.6	8.7	5.8	5.8	2.9	2.9	2.9	2.9	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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CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1892.1	1883.4	1895.0	1883.4	1877.6	1883.4	1877.6	1895.0	1880.5	1868.9	1880.5
5°	1889.2	1877.6	1889.2	1880.5	1871.8	1874.7	1868.9	1886.3	1868.9	1860.2	1866.0
7.5°	1883.4	1874.7	1880.5	1871.8	1863.1	1866.0	1860.2	1874.7	1857.3	1848.6	1854.4
10°	1874.7	1866.0	1868.9	1863.1	1854.4	1854.4	1848.6	1860.2	1839.9	1828.3	1834.1
12.5°	1863.1	1851.5	1857.3	1848.6	1837.0	1837.0	1831.2	1839.9	1819.6	1808.1	1810.9
15°	1848.6	1837.0	1837.0	1828.3	1816.7	1816.7	1805.2	1813.8	1790.7	1779.1	1779.1
17.5°	1831.2	1816.7	1816.7	1808.1	1793.6	1790.7	1782.0	1790.7	1764.6	1753.0	1753.0
20°	1805.2	1793.6	1790.7	1784.9	1770.4	1767.5	1755.9	1758.8	1738.5	1729.8	1726.9
22.5°	1770.4	1758.8	1761.7	1753.0	1741.4	1738.5	1726.9	1735.6	1715.3	1706.6	1709.5
25°	1709.5	1703.7	1709.5	1706.6	1697.9	1697.9	1692.2	1697.9	1680.6	1674.8	1677.7
27.5°	1640.0	1637.1	1640.0	1640.0	1634.2	1634.2	1634.2	1642.9	1625.5	1622.6	1622.6
30°	1538.6	1538.6	1541.5	1544.4	1544.4	1550.2	1547.3	1558.9	1547.3	1541.5	1547.3
32.5°	1405.3	1416.9	1425.6	1425.6	1425.6	1431.4	1437.2	1445.9	1434.3	1437.2	1437.2
35°	1254.6	1263.3	1269.1	1283.6	1274.9	1295.2	1301.0	1312.6	1309.7	1315.5	1312.6
37.5°	1086.6	1098.2	1109.7	1130.0	1127.1	1150.3	1161.9	1185.1	1179.3	1190.9	1196.7
40°	930.1	947.5	964.9	979.4	991.0	1014.1	1037.3	1066.3	1075.0	1083.7	1086.6
42.5°	779.4	796.8	825.8	846.1	863.5	901.1	933.0	967.8	976.5	993.8	999.6
45°	657.7	672.2	707.0	733.1	747.6	802.6	840.3	883.7	898.2	918.5	927.2
47.5°	544.7	570.8	605.6	637.5	657.7	715.7	764.9	811.3	831.6	854.8	866.4
50°	446.2	475.2	521.6	550.5	579.5	643.2	698.3	747.6	767.8	793.9	805.5
52.5°	365.1	397.0	440.4	472.3	504.2	570.8	628.8	675.1	701.2	718.6	736.0
55°	286.9	321.6	365.1	399.9	425.9	498.4	547.6	594.0	611.4	625.9	634.6
57.5°	223.1	249.2	292.6	321.6	353.5	417.2	466.5	501.3	515.8	533.1	538.9
60°	173.9	199.9	240.5	269.5	298.4	359.3	408.5	443.3	457.8	472.3	481.0
62.5°	139.1	165.2	202.8	228.9	255.0	310.0	353.5	388.3	405.7	420.1	428.8
65°	110.1	133.3	165.2	191.2	211.5	260.8	304.2	336.1	353.5	368.0	376.7
67.5°	86.9	107.2	136.2	153.6	173.9	214.4	252.1	281.1	295.5	312.9	321.6
70°	66.6	81.1	107.2	121.7	136.2	171.0	199.9	228.9	243.4	255.0	260.8
72.5°	49.3	60.8	81.1	92.7	101.4	130.4	153.6	173.9	185.4	197.0	202.8
75°	34.8	43.5	58.0	66.6	72.4	92.7	113.0	127.5	136.2	144.9	153.6
77.5°	23.2	29.0	37.7	43.5	49.3	63.7	75.3	86.9	95.6	104.3	107.2
80°	14.5	20.3	26.1	29.0	31.9	40.6	52.2	58.0	63.7	69.5	72.4
82.5°	8.7	11.6	14.5	17.4	20.3	26.1	31.9	37.7	40.6	46.4	49.3
85°	2.9	5.8	5.8	8.7	8.7	14.5	17.4	20.3	23.2	26.1	29.0
87.5°	0.0	0.0	2.9	2.9	2.9	2.9	5.8	5.8	5.8	5.8	5.8
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: P251966

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1892.1	1883.4	1877.6	1874.7	1895.0	1868.9	1880.5	1883.4
5°	1880.5	1871.8	1866.0	1863.1	1880.5	1857.3	1866.0	1871.8
7.5°	1863.1	1857.3	1848.6	1845.7	1863.1	1837.0	1848.6	1851.5
10°	1842.8	1834.1	1828.3	1825.4	1839.9	1813.8	1825.4	1825.4
12.5°	1816.7	1810.9	1799.4	1799.4	1810.9	1787.8	1796.5	1796.5
15°	1782.0	1776.2	1764.6	1764.6	1776.2	1753.0	1761.7	1761.7
17.5°	1753.0	1747.2	1738.5	1735.6	1747.2	1724.0	1732.7	1729.8
20°	1729.8	1724.0	1712.4	1712.4	1721.1	1697.9	1706.6	1706.6
22.5°	1709.5	1706.6	1695.0	1695.0	1706.6	1683.5	1689.3	1683.5
25°	1677.7	1674.8	1663.2	1666.1	1671.9	1648.7	1657.4	1651.6
27.5°	1625.5	1625.5	1613.9	1611.0	1619.7	1599.4	1605.2	1602.3
30°	1544.4	1547.3	1532.8	1532.8	1535.7	1518.3	1527.0	1524.1
32.5°	1434.3	1437.2	1425.6	1422.7	1431.4	1416.9	1422.7	1422.7
35°	1312.6	1315.5	1306.8	1306.8	1315.5	1306.8	1306.8	1303.9
37.5°	1190.9	1196.7	1190.9	1193.8	1199.6	1190.9	1196.7	1193.8
40°	1092.4	1098.2	1089.5	1095.3	1101.1	1092.4	1101.1	1095.3
42.5°	1002.5	1011.2	1005.4	1011.2	1017.0	1011.2	1017.0	1008.3
45°	935.9	941.7	938.8	941.7	947.5	944.6	947.5	944.6
47.5°	872.2	883.7	877.9	883.7	892.4	886.6	892.4	883.7
50°	814.2	822.9	820.0	825.8	828.7	825.8	831.6	822.9
52.5°	738.9	747.6	744.7	744.7	750.5	744.7	750.5	744.7
55°	640.4	643.2	643.2	646.1	643.2	640.4	643.2	637.5
57.5°	544.7	550.5	541.8	550.5	547.6	544.7	544.7	538.9
60°	483.9	492.6	486.8	492.6	489.7	489.7	489.7	486.8
62.5°	434.6	440.4	434.6	437.5	437.5	437.5	434.6	431.7
65°	379.6	388.3	382.5	385.4	382.5	379.6	382.5	379.6
67.5°	324.5	327.4	327.4	324.5	324.5	324.5	324.5	318.7
70°	263.7	266.6	263.7	269.5	266.6	263.7	266.6	260.8
72.5°	205.7	208.6	205.7	208.6	205.7	205.7	205.7	205.7
75°	153.6	156.5	156.5	156.5	156.5	156.5	150.7	156.5
77.5°	110.1	110.1	110.1	113.0	110.1	110.1	110.1	110.1
80°	75.3	75.3	75.3	78.2	75.3	78.2	75.3	78.2
82.5°	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3
85°	26.1	29.0	29.0	26.1	26.1	26.1	26.1	26.1
87.5°	5.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9
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)