

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: P251968

Luminaire Tested: **LD4B50D010TE EU4B30509040 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251968  
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 EU4B30509040 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3895.0 lumens  
Efficiency: N/A  
Efficacy: 66.3 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

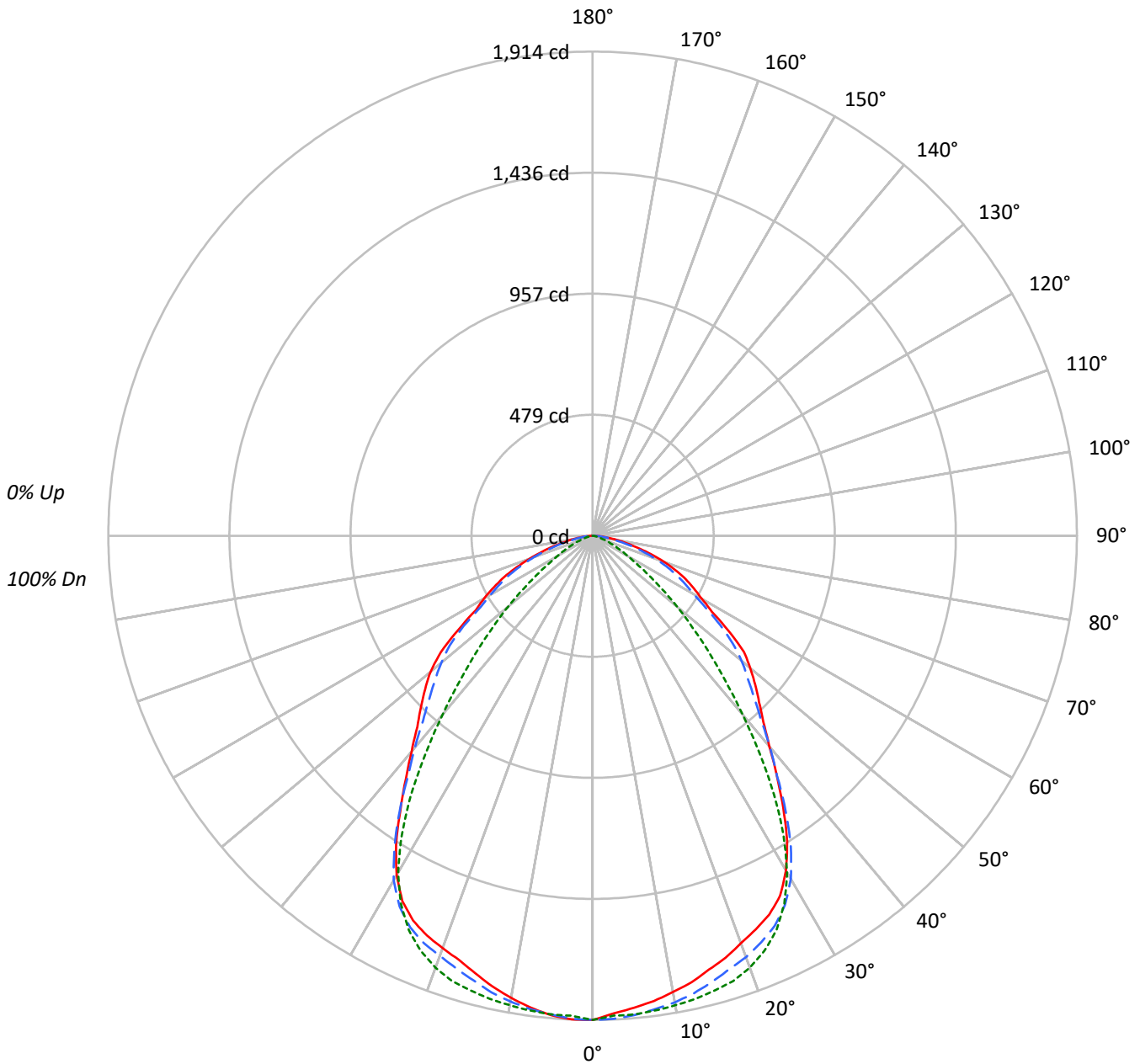
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### 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				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	186525	186525	186525
5°	183197	185790	186083
10°	181238	186483	183574
15°	179141	187757	180624
20°	177722	188415	179859
25°	177623	184903	180473
30°	171965	172966	174283
35°	156237	148884	157641
40°	138227	117248	141599
45°	128234	89284	132300
50°	123220	66075	126783
55°	111565	45520	110070
60°	96990	30992	96425
65°	93695	22415	88945
70°	84744	15102	75511
75°	69850	9979	59871
80°	56180	6623	44618
85°	46070	3243	29632



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.7	4.6
10°-20°	516.6	13.3
20°-30°	780.4	20.0
30°-40°	816.7	21.0
40°-50°	661.5	17.0
50°-60°	481.1	12.4
60°-70°	296.7	7.6
70°-80°	134.1	3.4
80°-90°	27.2	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°	1477.6	37.9
0°-40°	2294.4	58.9
0°-60°	3437.0	88.2
0°-90°	3895.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3895.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1914	1914	1914	1914	1914	
5°	1873	1902	1899	1899	1902	178
15°	1776	1826	1861	1820	1790	502
25°	1652	1702	1720	1708	1678	757
35°	1313	1331	1251	1331	1325	818
45°	930	901	648	913	960	723
55°	657	615	268	621	648	586
65°	406	365	97	359	386	398
75°	186	159	26	138	159	201
85°	41	32	3	24	26	47
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°	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9
2.5°	1890.3	1890.3	1908.0	1928.6	1910.9	1893.2	1905.0	1899.1	1919.7	1919.7	1910.9
5°	1872.6	1878.5	1893.2	1910.9	1896.2	1878.5	1893.2	1887.4	1908.0	1908.0	1902.1
7.5°	1855.0	1857.9	1875.6	1896.2	1881.5	1863.8	1875.6	1872.6	1890.3	1893.2	1887.4
10°	1831.4	1834.4	1852.0	1872.6	1857.9	1843.2	1855.0	1852.0	1875.6	1875.6	1872.6
12.5°	1807.9	1810.8	1828.5	1846.1	1831.4	1816.7	1828.5	1828.5	1852.0	1855.0	1852.0
15°	1775.5	1781.4	1796.1	1813.7	1804.9	1787.2	1799.0	1799.0	1819.6	1825.5	1825.5
17.5°	1749.0	1751.9	1766.6	1784.3	1772.5	1757.8	1769.6	1769.6	1790.2	1796.1	1796.1
20°	1713.6	1719.5	1734.2	1751.9	1743.1	1731.3	1740.1	1740.1	1763.7	1769.6	1772.5
22.5°	1684.2	1690.1	1701.9	1725.4	1710.7	1701.9	1713.6	1710.7	1737.2	1740.1	1740.1
25°	1651.8	1657.7	1672.4	1687.1	1678.3	1669.5	1678.3	1678.3	1698.9	1701.9	1701.9
27.5°	1604.7	1607.6	1622.4	1637.1	1628.2	1616.5	1628.2	1625.3	1645.9	1648.9	1645.9
30°	1528.1	1534.0	1539.9	1560.5	1551.7	1542.9	1554.6	1548.7	1569.4	1569.4	1566.4
32.5°	1431.0	1431.0	1442.7	1457.5	1445.7	1439.8	1448.6	1451.6	1466.3	1466.3	1457.5
35°	1313.2	1319.1	1327.9	1336.8	1327.9	1322.0	1330.9	1327.9	1345.6	1339.7	1330.9
37.5°	1195.4	1198.4	1207.2	1219.0	1207.2	1198.4	1201.3	1198.4	1213.1	1213.1	1198.4
40°	1086.5	1092.4	1098.3	1110.0	1098.3	1092.4	1095.3	1086.5	1104.1	1098.3	1089.4
42.5°	998.1	1001.1	1009.9	1015.8	1004.0	1001.1	1004.0	998.1	1007.0	1001.1	983.4
45°	930.4	930.4	933.4	942.2	930.4	927.5	927.5	921.6	930.4	918.6	901.0
47.5°	871.5	874.5	877.4	883.3	874.5	865.6	868.6	856.8	862.7	853.9	830.3
50°	812.7	818.5	821.5	827.4	818.5	812.7	815.6	803.8	803.8	789.1	768.5
52.5°	753.8	756.7	753.8	759.7	753.8	744.9	747.9	736.1	736.1	718.4	697.8
55°	656.6	659.5	662.5	668.4	662.5	653.7	659.5	650.7	650.7	638.9	615.4
57.5°	559.4	562.4	565.3	568.3	568.3	562.4	565.3	559.4	556.5	547.7	530.0
60°	497.6	497.6	497.6	500.5	497.6	494.7	494.7	488.8	488.8	477.0	459.3
62.5°	450.5	453.4	453.4	456.4	453.4	450.5	447.5	441.7	438.7	426.9	412.2
65°	406.3	406.3	403.4	409.3	406.3	403.4	403.4	397.5	391.6	379.8	365.1
67.5°	353.3	356.3	353.3	356.3	356.3	353.3	350.4	344.5	341.5	332.7	315.0
70°	297.4	297.4	297.4	300.3	297.4	297.4	300.3	291.5	288.5	276.8	262.1
72.5°	241.4	244.4	244.4	241.4	244.4	238.5	238.5	238.5	235.6	223.8	209.1
75°	185.5	188.4	188.4	191.4	188.4	185.5	185.5	182.6	179.6	170.8	159.0
77.5°	138.4	138.4	141.3	141.3	141.3	138.4	138.4	132.5	132.5	126.6	114.8
80°	100.1	100.1	97.2	100.1	100.1	97.2	97.2	94.2	94.2	88.3	79.5
82.5°	64.8	67.7	67.7	67.7	67.7	64.8	64.8	64.8	61.8	58.9	53.0
85°	41.2	41.2	41.2	41.2	44.2	41.2	44.2	41.2	41.2	35.3	32.4
87.5°	17.7	17.7	17.7	20.6	20.6	17.7	17.7	17.7	17.7	17.7	14.7
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°	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9
2.5°	1910.9	1913.9	1905.0	1916.8	1908.0	1910.9	1913.9	1910.9	1899.1	1899.1	1931.5
5°	1899.1	1905.0	1896.2	1910.9	1905.0	1905.0	1910.9	1908.0	1896.2	1899.1	1928.6
7.5°	1887.4	1896.2	1890.3	1905.0	1896.2	1896.2	1902.1	1902.1	1890.3	1893.2	1919.7
10°	1869.7	1881.5	1878.5	1893.2	1884.4	1884.4	1893.2	1893.2	1881.5	1884.4	1910.9
12.5°	1855.0	1866.7	1863.8	1878.5	1872.6	1875.6	1878.5	1884.4	1869.7	1875.6	1899.1
15°	1831.4	1843.2	1843.2	1857.9	1852.0	1857.9	1863.8	1872.6	1860.9	1860.9	1884.4
17.5°	1804.9	1819.6	1819.6	1831.4	1831.4	1834.4	1846.1	1855.0	1843.2	1846.1	1866.7
20°	1775.5	1793.1	1793.1	1807.9	1804.9	1810.8	1819.6	1828.5	1816.7	1816.7	1840.2
22.5°	1746.0	1760.7	1763.7	1772.5	1772.5	1775.5	1784.3	1790.2	1775.5	1775.5	1799.0
25°	1704.8	1719.5	1722.5	1728.4	1722.5	1722.5	1728.4	1734.2	1719.5	1719.5	1740.1
27.5°	1648.9	1663.6	1663.6	1660.6	1654.7	1657.7	1654.7	1657.7	1643.0	1640.0	1660.6
30°	1566.4	1575.2	1575.2	1572.3	1563.5	1563.5	1554.6	1557.6	1537.0	1537.0	1554.6
32.5°	1454.5	1463.4	1457.5	1451.6	1439.8	1433.9	1428.0	1425.1	1404.5	1404.5	1425.1
35°	1322.0	1327.9	1319.1	1307.3	1292.6	1283.8	1274.9	1263.1	1248.4	1251.4	1263.1
37.5°	1186.6	1186.6	1174.8	1151.3	1139.5	1124.8	1110.0	1110.0	1086.5	1083.5	1092.4
40°	1071.8	1060.0	1039.4	1007.0	986.4	971.6	951.0	939.3	921.6	921.6	936.3
42.5°	968.7	945.1	918.6	874.5	853.9	836.2	809.7	797.9	777.3	774.4	783.2
45°	877.4	853.9	815.6	768.5	742.0	721.4	683.1	668.4	650.7	647.8	653.7
47.5°	803.8	777.3	730.2	668.4	641.9	615.4	577.1	556.5	541.8	532.9	541.8
50°	739.0	703.7	653.7	588.9	553.5	530.0	482.9	462.3	441.7	435.8	438.7
52.5°	668.4	633.0	580.0	512.3	479.9	444.6	400.4	371.0	353.3	344.5	353.3
55°	591.8	556.5	503.5	435.8	400.4	368.0	320.9	297.4	276.8	267.9	276.8
57.5°	509.4	477.0	429.9	362.2	329.8	300.3	256.2	232.6	212.0	206.1	212.0
60°	438.7	412.2	365.1	300.3	273.8	241.4	203.2	179.6	161.9	159.0	161.9
62.5°	391.6	362.2	318.0	256.2	229.7	203.2	167.8	144.3	129.6	126.6	129.6
65°	344.5	312.1	270.9	217.9	191.4	170.8	135.4	114.8	100.1	97.2	100.1
67.5°	291.5	262.1	226.7	179.6	159.0	138.4	108.9	88.3	76.6	73.6	76.6
70°	241.4	214.9	179.6	144.3	123.7	108.9	82.4	67.7	55.9	53.0	55.9
72.5°	191.4	167.8	138.4	108.9	97.2	82.4	64.8	50.1	41.2	38.3	41.2
75°	147.2	129.6	106.0	79.5	70.7	61.8	44.2	35.3	29.4	26.5	29.4
77.5°	103.1	91.3	73.6	58.9	50.1	44.2	32.4	23.6	20.6	17.7	20.6
80°	70.7	61.8	50.1	38.3	32.4	26.5	20.6	14.7	11.8	11.8	11.8
82.5°	47.1	38.3	29.4	23.6	20.6	17.7	11.8	8.8	8.8	5.9	5.9
85°	26.5	23.6	17.7	14.7	11.8	8.8	5.9	5.9	2.9	2.9	2.9
87.5°	11.8	8.8	5.9	5.9	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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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9
2.5°	1922.7	1913.9	1925.6	1913.9	1908.0	1913.9	1908.0	1925.6	1910.9	1899.1	1910.9
5°	1919.7	1908.0	1919.7	1910.9	1902.1	1905.0	1899.1	1916.8	1899.1	1890.3	1896.2
7.5°	1913.9	1905.0	1910.9	1902.1	1893.2	1896.2	1890.3	1905.0	1887.4	1878.5	1884.4
10°	1905.0	1896.2	1899.1	1893.2	1884.4	1884.4	1878.5	1890.3	1869.7	1857.9	1863.8
12.5°	1893.2	1881.5	1887.4	1878.5	1866.7	1866.7	1860.9	1869.7	1849.1	1837.3	1840.2
15°	1878.5	1866.7	1866.7	1857.9	1846.1	1846.1	1834.4	1843.2	1819.6	1807.9	1807.9
17.5°	1860.9	1846.1	1846.1	1837.3	1822.6	1819.6	1810.8	1819.6	1793.1	1781.4	1781.4
20°	1834.4	1822.6	1819.6	1813.7	1799.0	1796.1	1784.3	1787.2	1766.6	1757.8	1754.9
22.5°	1799.0	1787.2	1790.2	1781.4	1769.6	1766.6	1754.9	1763.7	1743.1	1734.2	1737.2
25°	1737.2	1731.3	1737.2	1734.2	1725.4	1725.4	1719.5	1725.4	1707.7	1701.9	1704.8
27.5°	1666.5	1663.6	1666.5	1666.5	1660.6	1660.6	1660.6	1669.5	1651.8	1648.9	1648.9
30°	1563.5	1563.5	1566.4	1569.4	1569.4	1575.2	1572.3	1584.1	1572.3	1566.4	1572.3
32.5°	1428.0	1439.8	1448.6	1448.6	1448.6	1454.5	1460.4	1469.2	1457.5	1460.4	1460.4
35°	1274.9	1283.8	1289.6	1304.4	1295.5	1316.1	1322.0	1333.8	1330.9	1336.8	1333.8
37.5°	1104.1	1115.9	1127.7	1148.3	1145.4	1168.9	1180.7	1204.3	1198.4	1210.1	1216.0
40°	945.1	962.8	980.5	995.2	1007.0	1030.5	1054.1	1083.5	1092.4	1101.2	1104.1
42.5°	792.0	809.7	839.2	859.8	877.4	915.7	948.1	983.4	992.3	1009.9	1015.8
45°	668.4	683.1	718.4	744.9	759.7	815.6	853.9	898.0	912.8	933.4	942.2
47.5°	553.5	580.0	615.4	647.8	668.4	727.3	777.3	824.4	845.0	868.6	880.4
50°	453.4	482.9	530.0	559.4	588.9	653.7	709.6	759.7	780.3	806.8	818.5
52.5°	371.0	403.4	447.5	479.9	512.3	580.0	638.9	686.0	712.5	730.2	747.9
55°	291.5	326.8	371.0	406.3	432.8	506.4	556.5	603.6	621.3	636.0	644.8
57.5°	226.7	253.2	297.4	326.8	359.2	424.0	474.0	509.4	524.1	541.8	547.7
60°	176.7	203.2	244.4	273.8	303.3	365.1	415.2	450.5	465.2	479.9	488.8
62.5°	141.3	167.8	206.1	232.6	259.1	315.0	359.2	394.5	412.2	426.9	435.8
65°	111.9	135.4	167.8	194.3	214.9	265.0	309.2	341.5	359.2	373.9	382.8
67.5°	88.3	108.9	138.4	156.1	176.7	217.9	256.2	285.6	300.3	318.0	326.8
70°	67.7	82.4	108.9	123.7	138.4	173.7	203.2	232.6	247.3	259.1	265.0
72.5°	50.1	61.8	82.4	94.2	103.1	132.5	156.1	176.7	188.4	200.2	206.1
75°	35.3	44.2	58.9	67.7	73.6	94.2	114.8	129.6	138.4	147.2	156.1
77.5°	23.6	29.4	38.3	44.2	50.1	64.8	76.6	88.3	97.2	106.0	108.9
80°	14.7	20.6	26.5	29.4	32.4	41.2	53.0	58.9	64.8	70.7	73.6
82.5°	8.8	11.8	14.7	17.7	20.6	26.5	32.4	38.3	41.2	47.1	50.1
85°	2.9	5.9	5.9	8.8	8.8	14.7	17.7	20.6	23.6	26.5	29.4
87.5°	0.0	0.0	2.9	2.9	2.9	2.9	5.9	5.9	5.9	5.9	5.9
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: P251968

CATALOG NUMBER: LD4B50D010TE EU4B30509040 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9	1913.9
2.5°	1922.7	1913.9	1908.0	1905.0	1925.6	1899.1	1910.9	1913.9
5°	1910.9	1902.1	1896.2	1893.2	1910.9	1887.4	1896.2	1902.1
7.5°	1893.2	1887.4	1878.5	1875.6	1893.2	1866.7	1878.5	1881.5
10°	1872.6	1863.8	1857.9	1855.0	1869.7	1843.2	1855.0	1855.0
12.5°	1846.1	1840.2	1828.5	1828.5	1840.2	1816.7	1825.5	1825.5
15°	1810.8	1804.9	1793.1	1793.1	1804.9	1781.4	1790.2	1790.2
17.5°	1781.4	1775.5	1766.6	1763.7	1775.5	1751.9	1760.7	1757.8
20°	1757.8	1751.9	1740.1	1740.1	1749.0	1725.4	1734.2	1734.2
22.5°	1737.2	1734.2	1722.5	1722.5	1734.2	1710.7	1716.6	1710.7
25°	1704.8	1701.9	1690.1	1693.0	1698.9	1675.4	1684.2	1678.3
27.5°	1651.8	1651.8	1640.0	1637.1	1645.9	1625.3	1631.2	1628.2
30°	1569.4	1572.3	1557.6	1557.6	1560.5	1542.9	1551.7	1548.7
32.5°	1457.5	1460.4	1448.6	1445.7	1454.5	1439.8	1445.7	1445.7
35°	1333.8	1336.8	1327.9	1327.9	1336.8	1327.9	1327.9	1325.0
37.5°	1210.1	1216.0	1210.1	1213.1	1219.0	1210.1	1216.0	1213.1
40°	1110.0	1115.9	1107.1	1113.0	1118.9	1110.0	1118.9	1113.0
42.5°	1018.8	1027.6	1021.7	1027.6	1033.5	1027.6	1033.5	1024.6
45°	951.0	956.9	954.0	956.9	962.8	959.9	962.8	959.9
47.5°	886.3	898.0	892.1	898.0	906.9	901.0	906.9	898.0
50°	827.4	836.2	833.3	839.2	842.1	839.2	845.0	836.2
52.5°	750.8	759.7	756.7	756.7	762.6	756.7	762.6	756.7
55°	650.7	653.7	653.7	656.6	653.7	650.7	653.7	647.8
57.5°	553.5	559.4	550.6	559.4	556.5	553.5	553.5	547.7
60°	491.7	500.5	494.7	500.5	497.6	497.6	497.6	494.7
62.5°	441.7	447.5	441.7	444.6	444.6	444.6	441.7	438.7
65°	385.7	394.5	388.7	391.6	388.7	385.7	388.7	385.7
67.5°	329.8	332.7	332.7	329.8	329.8	329.8	329.8	323.9
70°	267.9	270.9	267.9	273.8	270.9	267.9	270.9	265.0
72.5°	209.1	212.0	209.1	212.0	209.1	209.1	209.1	209.1
75°	156.1	159.0	159.0	159.0	159.0	159.0	153.1	159.0
77.5°	111.9	111.9	111.9	114.8	111.9	111.9	111.9	111.9
80°	76.6	76.6	76.6	79.5	76.6	79.5	76.6	79.5
82.5°	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1
85°	26.5	29.4	29.4	26.5	26.5	26.5	26.5	26.5
87.5°	5.9	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)