

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: P251967

Luminaire Tested: **LD4B50D010TE EU4B30509035 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251967  
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 EU4B30509035 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

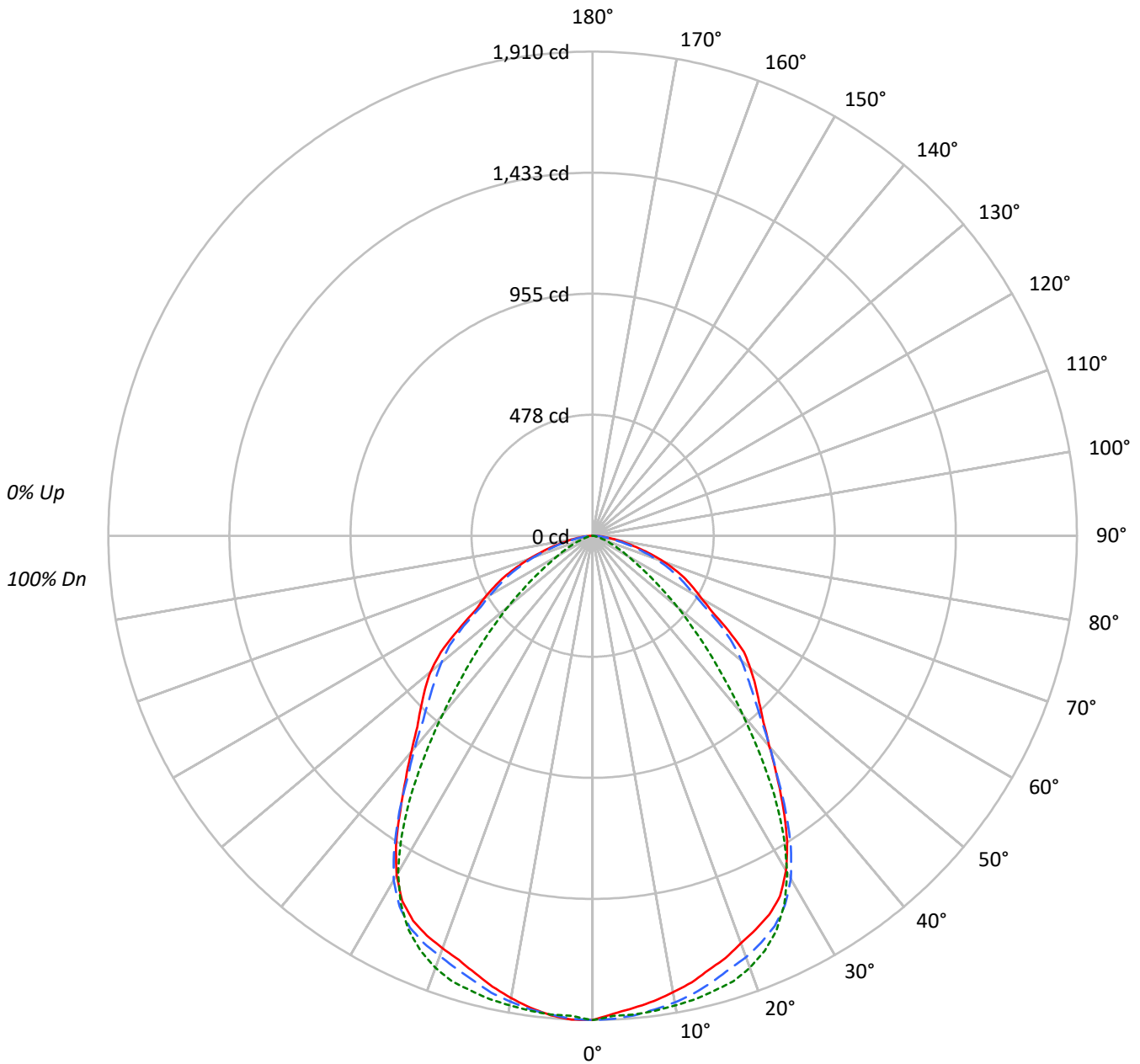
Lumens per Lamp: N/A  
Luminaire Lumens: 3888.0 lumens  
Efficiency: N/A  
Efficacy: 66.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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



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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								
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°	186184	186184	186184
5°	182874	185457	185750
10°	180912	186147	183237
15°	178818	187414	180301
20°	177411	188073	179537
25°	177301	184570	180150
30°	171661	172651	173979
35°	155952	148611	157355
40°	137973	117032	141344
45°	128013	89119	132052
50°	122992	65954	126555
55°	111361	45452	109866
60°	96815	30933	96250
65°	93534	22369	88783
70°	84573	15074	75369
75°	69737	9979	59758
80°	56068	6623	44562
85°	45958	3243	29632



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.3	4.6
10°-20°	515.6	13.3
20°-30°	779.0	20.0
30°-40°	815.3	21.0
40°-50°	660.3	17.0
50°-60°	480.3	12.4
60°-70°	296.2	7.6
70°-80°	133.8	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°	1475.0	37.9
0°-40°	2290.2	58.9
0°-60°	3430.8	88.2
0°-90°	3888.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3888.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1910	1910	1910	1910	1910	
5°	1869	1899	1896	1896	1899	177
15°	1772	1822	1858	1816	1787	501
25°	1649	1699	1716	1705	1675	756
35°	1311	1328	1249	1328	1323	817
45°	929	899	647	911	958	722
55°	655	614	268	620	647	585
65°	406	364	97	359	385	397
75°	185	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°	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4
2.5°	1886.9	1886.9	1904.5	1925.1	1907.5	1889.8	1901.6	1895.7	1916.3	1916.3	1907.5
5°	1869.3	1875.1	1889.8	1907.5	1892.8	1875.1	1889.8	1884.0	1904.5	1904.5	1898.7
7.5°	1851.6	1854.6	1872.2	1892.8	1878.1	1860.4	1872.2	1869.3	1886.9	1889.8	1884.0
10°	1828.1	1831.1	1848.7	1869.3	1854.6	1839.9	1851.6	1848.7	1872.2	1872.2	1869.3
12.5°	1804.6	1807.5	1825.2	1842.8	1828.1	1813.4	1825.2	1825.2	1848.7	1851.6	1848.7
15°	1772.3	1778.2	1792.8	1810.5	1801.7	1784.0	1795.8	1795.8	1816.4	1822.2	1822.2
17.5°	1745.8	1748.8	1763.5	1781.1	1769.3	1754.6	1766.4	1766.4	1787.0	1792.8	1792.8
20°	1710.6	1716.4	1731.1	1748.8	1739.9	1728.2	1737.0	1737.0	1760.5	1766.4	1769.3
22.5°	1681.2	1687.0	1698.8	1722.3	1707.6	1698.8	1710.6	1707.6	1734.1	1737.0	1737.0
25°	1648.8	1654.7	1669.4	1684.1	1675.3	1666.5	1675.3	1675.3	1695.9	1698.8	1698.8
27.5°	1601.8	1604.7	1619.4	1634.1	1625.3	1613.6	1625.3	1622.4	1643.0	1645.9	1643.0
30°	1525.4	1531.3	1537.1	1557.7	1548.9	1540.1	1551.8	1546.0	1566.5	1566.5	1563.6
32.5°	1428.4	1428.4	1440.2	1454.9	1443.1	1437.2	1446.0	1449.0	1463.7	1463.7	1454.9
35°	1310.8	1316.7	1325.5	1334.3	1325.5	1319.7	1328.5	1325.5	1343.2	1337.3	1328.5
37.5°	1193.3	1196.2	1205.0	1216.8	1205.0	1196.2	1199.2	1196.2	1210.9	1210.9	1196.2
40°	1084.5	1090.4	1096.3	1108.0	1096.3	1090.4	1093.3	1084.5	1102.2	1096.3	1087.5
42.5°	996.4	999.3	1008.1	1014.0	1002.2	999.3	1002.2	996.4	1005.2	999.3	981.7
45°	928.8	928.8	931.7	940.5	928.8	925.8	925.8	919.9	928.8	917.0	899.4
47.5°	870.0	872.9	875.9	881.7	872.9	864.1	867.0	855.3	861.2	852.3	828.8
50°	811.2	817.1	820.0	825.9	817.1	811.2	814.1	802.4	802.4	787.7	767.1
52.5°	752.4	755.3	752.4	758.3	752.4	743.6	746.5	734.8	734.8	717.1	696.6
55°	655.4	658.4	661.3	667.2	661.3	652.5	658.4	649.5	649.5	637.8	614.3
57.5°	558.4	561.4	564.3	567.2	567.2	561.4	564.3	558.4	555.5	546.7	529.0
60°	496.7	496.7	496.7	499.6	496.7	493.8	493.8	487.9	487.9	476.1	458.5
62.5°	449.7	452.6	452.6	455.6	452.6	449.7	446.7	440.9	437.9	426.2	411.5
65°	405.6	405.6	402.7	408.5	405.6	402.7	402.7	396.8	390.9	379.1	364.4
67.5°	352.7	355.6	352.7	355.6	355.6	352.7	349.8	343.9	340.9	332.1	314.5
70°	296.8	296.8	296.8	299.8	296.8	296.8	299.8	291.0	288.0	276.3	261.6
72.5°	241.0	243.9	243.9	241.0	243.9	238.1	238.1	238.1	235.1	223.4	208.7
75°	185.2	188.1	188.1	191.0	188.1	185.2	185.2	182.2	179.3	170.5	158.7
77.5°	138.1	138.1	141.1	141.1	141.1	138.1	138.1	132.3	132.3	126.4	114.6
80°	99.9	99.9	97.0	99.9	99.9	97.0	97.0	94.1	94.1	88.2	79.4
82.5°	64.7	67.6	67.6	67.6	67.6	64.7	64.7	64.7	61.7	58.8	52.9
85°	41.1	41.1	41.1	41.1	44.1	41.1	44.1	41.1	41.1	35.3	32.3
87.5°	17.6	17.6	17.6	20.6	20.6	17.6	17.6	17.6	17.6	17.6	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°	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4
2.5°	1907.5	1910.4	1901.6	1913.4	1904.5	1907.5	1910.4	1907.5	1895.7	1895.7	1928.0
5°	1895.7	1901.6	1892.8	1907.5	1901.6	1901.6	1907.5	1904.5	1892.8	1895.7	1925.1
7.5°	1884.0	1892.8	1886.9	1901.6	1892.8	1892.8	1898.7	1898.7	1886.9	1889.8	1916.3
10°	1866.3	1878.1	1875.1	1889.8	1881.0	1881.0	1889.8	1889.8	1878.1	1881.0	1907.5
12.5°	1851.6	1863.4	1860.4	1875.1	1869.3	1872.2	1875.1	1881.0	1866.3	1872.2	1895.7
15°	1828.1	1839.9	1839.9	1854.6	1848.7	1854.6	1860.4	1869.3	1857.5	1857.5	1881.0
17.5°	1801.7	1816.4	1816.4	1828.1	1828.1	1831.1	1842.8	1851.6	1839.9	1842.8	1863.4
20°	1772.3	1789.9	1789.9	1804.6	1801.7	1807.5	1816.4	1825.2	1813.4	1813.4	1836.9
22.5°	1742.9	1757.6	1760.5	1769.3	1769.3	1772.3	1781.1	1787.0	1772.3	1772.3	1795.8
25°	1701.7	1716.4	1719.4	1725.2	1719.4	1719.4	1725.2	1731.1	1716.4	1716.4	1737.0
27.5°	1645.9	1660.6	1660.6	1657.6	1651.8	1654.7	1651.8	1654.7	1640.0	1637.1	1657.6
30°	1563.6	1572.4	1572.4	1569.5	1560.7	1560.7	1551.8	1554.8	1534.2	1534.2	1551.8
32.5°	1451.9	1460.7	1454.9	1449.0	1437.2	1431.3	1425.5	1422.5	1401.9	1401.9	1422.5
35°	1319.7	1325.5	1316.7	1305.0	1290.3	1281.4	1272.6	1260.9	1246.2	1249.1	1260.9
37.5°	1184.5	1184.5	1172.7	1149.2	1137.4	1122.7	1108.0	1108.0	1084.5	1081.6	1090.4
40°	1069.8	1058.1	1037.5	1005.2	984.6	969.9	949.3	937.6	919.9	919.9	934.6
42.5°	967.0	943.4	917.0	872.9	852.3	834.7	808.3	796.5	775.9	773.0	781.8
45°	875.9	852.3	814.1	767.1	740.7	720.1	681.9	667.2	649.5	646.6	652.5
47.5°	802.4	775.9	728.9	667.2	640.7	614.3	576.1	555.5	540.8	532.0	540.8
50°	737.7	702.4	652.5	587.8	552.5	529.0	482.0	461.4	440.9	435.0	437.9
52.5°	667.2	631.9	579.0	511.4	479.1	443.8	399.7	370.3	352.7	343.9	352.7
55°	590.8	555.5	502.6	435.0	399.7	367.4	320.4	296.8	276.3	267.5	276.3
57.5°	508.5	476.1	429.1	361.5	329.2	299.8	255.7	232.2	211.6	205.7	211.6
60°	437.9	411.5	364.4	299.8	273.3	241.0	202.8	179.3	161.7	158.7	161.7
62.5°	390.9	361.5	317.4	255.7	229.2	202.8	167.5	144.0	129.3	126.4	129.3
65°	343.9	311.5	270.4	217.5	191.0	170.5	135.2	114.6	99.9	97.0	99.9
67.5°	291.0	261.6	226.3	179.3	158.7	138.1	108.7	88.2	76.4	73.5	76.4
70°	241.0	214.6	179.3	144.0	123.4	108.7	82.3	67.6	55.8	52.9	55.8
72.5°	191.0	167.5	138.1	108.7	97.0	82.3	64.7	50.0	41.1	38.2	41.1
75°	147.0	129.3	105.8	79.4	70.5	61.7	44.1	35.3	29.4	26.5	29.4
77.5°	102.9	91.1	73.5	58.8	50.0	44.1	32.3	23.5	20.6	17.6	20.6
80°	70.5	61.7	50.0	38.2	32.3	26.5	20.6	14.7	11.8	11.8	11.8
82.5°	47.0	38.2	29.4	23.5	20.6	17.6	11.8	8.8	8.8	5.9	5.9
85°	26.5	23.5	17.6	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°	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4
2.5°	1919.2	1910.4	1922.2	1910.4	1904.5	1910.4	1904.5	1922.2	1907.5	1895.7	1907.5
5°	1916.3	1904.5	1916.3	1907.5	1898.7	1901.6	1895.7	1913.4	1895.7	1886.9	1892.8
7.5°	1910.4	1901.6	1907.5	1898.7	1889.8	1892.8	1886.9	1901.6	1884.0	1875.1	1881.0
10°	1901.6	1892.8	1895.7	1889.8	1881.0	1881.0	1875.1	1886.9	1866.3	1854.6	1860.4
12.5°	1889.8	1878.1	1884.0	1875.1	1863.4	1863.4	1857.5	1866.3	1845.8	1834.0	1836.9
15°	1875.1	1863.4	1863.4	1854.6	1842.8	1842.8	1831.1	1839.9	1816.4	1804.6	1804.6
17.5°	1857.5	1842.8	1842.8	1834.0	1819.3	1816.4	1807.5	1816.4	1789.9	1778.2	1778.2
20°	1831.1	1819.3	1816.4	1810.5	1795.8	1792.8	1781.1	1784.0	1763.5	1754.6	1751.7
22.5°	1795.8	1784.0	1787.0	1778.2	1766.4	1763.5	1751.7	1760.5	1739.9	1731.1	1734.1
25°	1734.1	1728.2	1734.1	1731.1	1722.3	1722.3	1716.4	1722.3	1704.7	1698.8	1701.7
27.5°	1663.5	1660.6	1663.5	1663.5	1657.6	1657.6	1657.6	1666.5	1648.8	1645.9	1645.9
30°	1560.7	1560.7	1563.6	1566.5	1566.5	1572.4	1569.5	1581.2	1569.5	1563.6	1569.5
32.5°	1425.5	1437.2	1446.0	1446.0	1446.0	1451.9	1457.8	1466.6	1454.9	1457.8	1457.8
35°	1272.6	1281.4	1287.3	1302.0	1293.2	1313.8	1319.7	1331.4	1328.5	1334.3	1331.4
37.5°	1102.2	1113.9	1125.7	1146.2	1143.3	1166.8	1178.6	1202.1	1196.2	1208.0	1213.8
40°	943.4	961.1	978.7	993.4	1005.2	1028.7	1052.2	1081.6	1090.4	1099.2	1102.2
42.5°	790.6	808.3	837.6	858.2	875.9	914.1	946.4	981.7	990.5	1008.1	1014.0
45°	667.2	681.9	717.1	743.6	758.3	814.1	852.3	896.4	911.1	931.7	940.5
47.5°	552.5	579.0	614.3	646.6	667.2	726.0	775.9	822.9	843.5	867.0	878.8
50°	452.6	482.0	529.0	558.4	587.8	652.5	708.3	758.3	778.9	805.3	817.1
52.5°	370.3	402.7	446.7	479.1	511.4	579.0	637.8	684.8	711.3	728.9	746.5
55°	291.0	326.2	370.3	405.6	432.0	505.5	555.5	602.5	620.1	634.8	643.7
57.5°	226.3	252.8	296.8	326.2	358.6	423.2	473.2	508.5	523.2	540.8	546.7
60°	176.3	202.8	243.9	273.3	302.7	364.4	414.4	449.7	464.4	479.1	487.9
62.5°	141.1	167.5	205.7	232.2	258.6	314.5	358.6	393.8	411.5	426.2	435.0
65°	111.7	135.2	167.5	194.0	214.6	264.5	308.6	340.9	358.6	373.3	382.1
67.5°	88.2	108.7	138.1	155.8	176.3	217.5	255.7	285.1	299.8	317.4	326.2
70°	67.6	82.3	108.7	123.4	138.1	173.4	202.8	232.2	246.9	258.6	264.5
72.5°	50.0	61.7	82.3	94.1	102.9	132.3	155.8	176.3	188.1	199.9	205.7
75°	35.3	44.1	58.8	67.6	73.5	94.1	114.6	129.3	138.1	147.0	155.8
77.5°	23.5	29.4	38.2	44.1	50.0	64.7	76.4	88.2	97.0	105.8	108.7
80°	14.7	20.6	26.5	29.4	32.3	41.1	52.9	58.8	64.7	70.5	73.5
82.5°	8.8	11.8	14.7	17.6	20.6	26.5	32.3	38.2	41.1	47.0	50.0
85°	2.9	5.9	5.9	8.8	8.8	14.7	17.6	20.6	23.5	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: P251967

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4	1910.4
2.5°	1919.2	1910.4	1904.5	1901.6	1922.2	1895.7	1907.5	1910.4
5°	1907.5	1898.7	1892.8	1889.8	1907.5	1884.0	1892.8	1898.7
7.5°	1889.8	1884.0	1875.1	1872.2	1889.8	1863.4	1875.1	1878.1
10°	1869.3	1860.4	1854.6	1851.6	1866.3	1839.9	1851.6	1851.6
12.5°	1842.8	1836.9	1825.2	1825.2	1836.9	1813.4	1822.2	1822.2
15°	1807.5	1801.7	1789.9	1789.9	1801.7	1778.2	1787.0	1787.0
17.5°	1778.2	1772.3	1763.5	1760.5	1772.3	1748.8	1757.6	1754.6
20°	1754.6	1748.8	1737.0	1737.0	1745.8	1722.3	1731.1	1731.1
22.5°	1734.1	1731.1	1719.4	1719.4	1731.1	1707.6	1713.5	1707.6
25°	1701.7	1698.8	1687.0	1690.0	1695.9	1672.3	1681.2	1675.3
27.5°	1648.8	1648.8	1637.1	1634.1	1643.0	1622.4	1628.3	1625.3
30°	1566.5	1569.5	1554.8	1554.8	1557.7	1540.1	1548.9	1546.0
32.5°	1454.9	1457.8	1446.0	1443.1	1451.9	1437.2	1443.1	1443.1
35°	1331.4	1334.3	1325.5	1325.5	1334.3	1325.5	1325.5	1322.6
37.5°	1208.0	1213.8	1208.0	1210.9	1216.8	1208.0	1213.8	1210.9
40°	1108.0	1113.9	1105.1	1111.0	1116.9	1108.0	1116.9	1111.0
42.5°	1016.9	1025.7	1019.9	1025.7	1031.6	1025.7	1031.6	1022.8
45°	949.3	955.2	952.3	955.2	961.1	958.1	961.1	958.1
47.5°	884.7	896.4	890.5	896.4	905.2	899.4	905.2	896.4
50°	825.9	834.7	831.8	837.6	840.6	837.6	843.5	834.7
52.5°	749.5	758.3	755.3	755.3	761.2	755.3	761.2	755.3
55°	649.5	652.5	652.5	655.4	652.5	649.5	652.5	646.6
57.5°	552.5	558.4	549.6	558.4	555.5	552.5	552.5	546.7
60°	490.8	499.6	493.8	499.6	496.7	496.7	496.7	493.8
62.5°	440.9	446.7	440.9	443.8	443.8	443.8	440.9	437.9
65°	385.0	393.8	388.0	390.9	388.0	385.0	388.0	385.0
67.5°	329.2	332.1	332.1	329.2	329.2	329.2	329.2	323.3
70°	267.5	270.4	267.5	273.3	270.4	267.5	270.4	264.5
72.5°	208.7	211.6	208.7	211.6	208.7	208.7	208.7	208.7
75°	155.8	158.7	158.7	158.7	158.7	158.7	152.8	158.7
77.5°	111.7	111.7	111.7	114.6	111.7	111.7	111.7	111.7
80°	76.4	76.4	76.4	79.4	76.4	79.4	76.4	79.4
82.5°	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
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)