

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: P251969

Luminaire Tested: **LD4B50D010TE EU4B30509050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251969
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 EU4B30509050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3912.0 lumens
Efficiency: N/A
Efficacy: 66.6 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

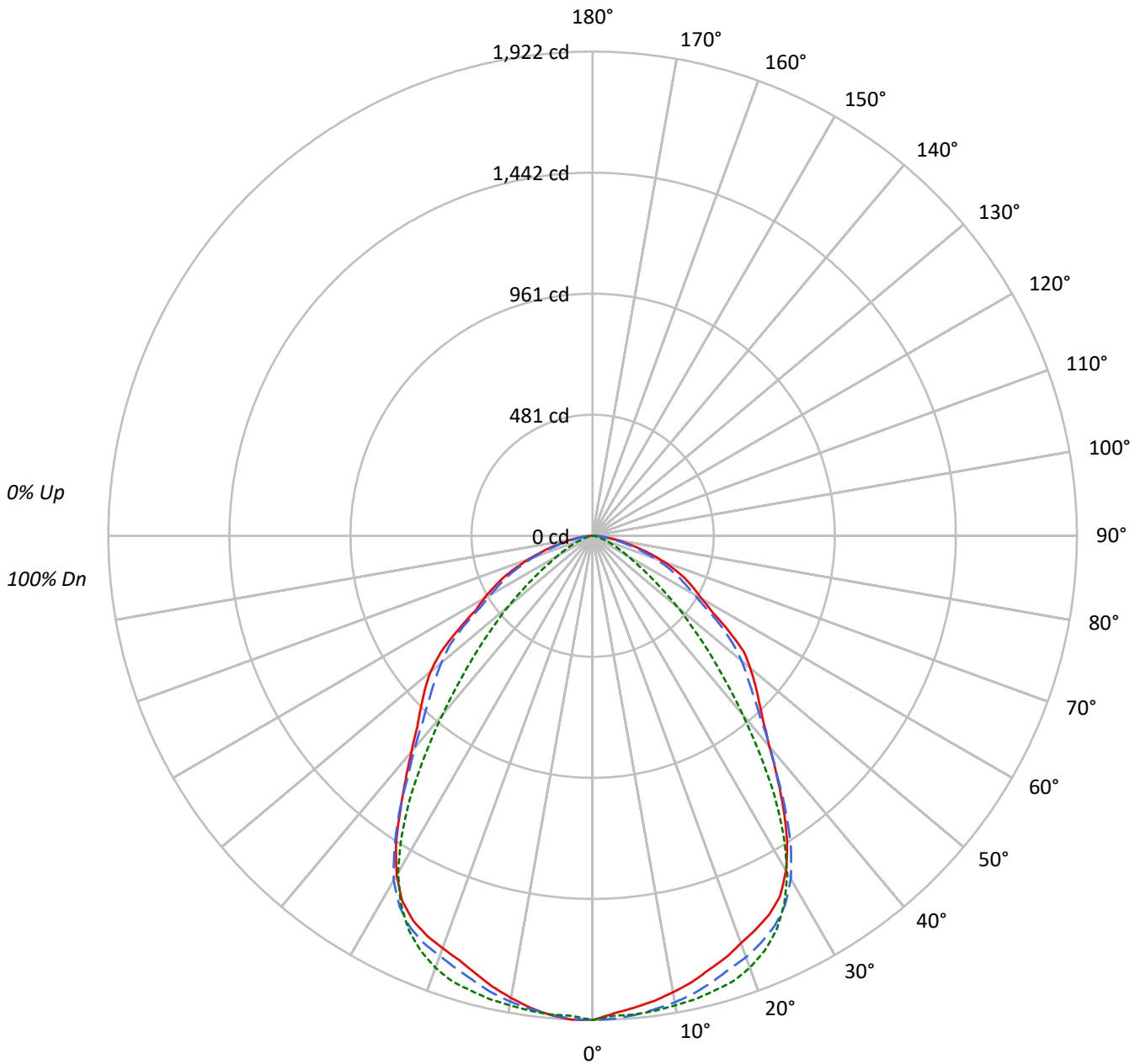
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
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°	187334	187334	187334
5°	183999	186602	186895
10°	182030	187295	184375
15°	179918	188575	181411
20°	178500	189234	180647
25°	178397	185710	181258
30°	172719	173720	175048
35°	156915	149527	158331
40°	138825	117757	142209
45°	128799	89670	132879
50°	123750	66363	127344
55°	112058	45724	110545
60°	97419	31128	96834
65°	94110	22507	89337
70°	85114	15159	75853
75°	70151	10016	60135
80°	56404	6623	44787
85°	46294	3355	29744



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	181.5	4.6
10°-20°	518.8	13.3
20°-30°	783.8	20.0
30°-40°	820.3	21.0
40°-50°	664.4	17.0
50°-60°	483.2	12.4
60°-70°	298.0	7.6
70°-80°	134.7	3.4
80°-90°	27.4	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°	1484.1	37.9
0°-40°	2304.4	58.9
0°-60°	3452.0	88.2
0°-90°	3912.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3912.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1922	1922	1922	1922	1922	
5°	1881	1910	1907	1907	1910	178
15°	1783	1834	1869	1828	1798	504
25°	1659	1709	1727	1715	1686	760
35°	1319	1337	1257	1337	1331	822
45°	934	905	651	917	964	726
55°	660	618	269	624	651	588
65°	408	367	98	361	387	399
75°	186	160	27	139	160	202
85°	41	32	3	24	27	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°	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2
2.5°	1898.5	1898.5	1916.3	1937.0	1919.2	1901.5	1913.3	1907.4	1928.1	1928.1	1919.2
5°	1880.8	1886.7	1901.5	1919.2	1904.5	1886.7	1901.5	1895.6	1916.3	1916.3	1910.4
7.5°	1863.1	1866.0	1883.8	1904.5	1889.7	1871.9	1883.8	1880.8	1898.5	1901.5	1895.6
10°	1839.4	1842.4	1860.1	1880.8	1866.0	1851.2	1863.1	1860.1	1883.8	1883.8	1880.8
12.5°	1815.7	1818.7	1836.4	1854.2	1839.4	1824.6	1836.4	1836.4	1860.1	1863.1	1860.1
15°	1783.2	1789.1	1803.9	1821.7	1812.8	1795.0	1806.9	1806.9	1827.6	1833.5	1833.5
17.5°	1756.6	1759.6	1774.3	1792.1	1780.3	1765.5	1777.3	1777.3	1798.0	1803.9	1803.9
20°	1721.1	1727.0	1741.8	1759.6	1750.7	1738.9	1747.7	1747.7	1771.4	1777.3	1780.3
22.5°	1691.5	1697.5	1709.3	1732.9	1718.2	1709.3	1721.1	1718.2	1744.8	1747.7	1747.7
25°	1659.0	1664.9	1679.7	1694.5	1685.6	1676.8	1685.6	1685.6	1706.3	1709.3	1709.3
27.5°	1611.7	1614.7	1629.4	1644.2	1635.4	1623.5	1635.4	1632.4	1653.1	1656.1	1653.1
30°	1534.8	1540.7	1546.6	1567.3	1558.5	1549.6	1561.4	1555.5	1576.2	1576.2	1573.3
32.5°	1437.2	1437.2	1449.0	1463.8	1452.0	1446.1	1455.0	1457.9	1472.7	1472.7	1463.8
35°	1318.9	1324.8	1333.7	1342.6	1333.7	1327.8	1336.7	1333.7	1351.5	1345.5	1336.7
37.5°	1200.6	1203.6	1212.5	1224.3	1212.5	1203.6	1206.6	1203.6	1218.4	1218.4	1203.6
40°	1091.2	1097.1	1103.0	1114.9	1103.0	1097.1	1100.1	1091.2	1109.0	1103.0	1094.2
42.5°	1002.5	1005.5	1014.3	1020.2	1008.4	1005.5	1008.4	1002.5	1011.4	1005.5	987.7
45°	934.5	934.5	937.4	946.3	934.5	931.5	931.5	925.6	934.5	922.7	904.9
47.5°	875.3	878.3	881.3	887.2	878.3	869.4	872.4	860.6	866.5	857.6	833.9
50°	816.2	822.1	825.1	831.0	822.1	816.2	819.2	807.3	807.3	792.5	771.8
52.5°	757.1	760.0	757.1	763.0	757.1	748.2	751.1	739.3	739.3	721.6	700.9
55°	659.5	662.4	665.4	671.3	665.4	656.5	662.4	653.5	653.5	641.7	618.1
57.5°	561.9	564.8	567.8	570.7	570.7	564.8	567.8	561.9	558.9	550.0	532.3
60°	499.8	499.8	499.8	502.7	499.8	496.8	496.8	490.9	490.9	479.1	461.3
62.5°	452.5	455.4	455.4	458.4	455.4	452.5	449.5	443.6	440.6	428.8	414.0
65°	408.1	408.1	405.1	411.1	408.1	405.1	405.1	399.2	393.3	381.5	366.7
67.5°	354.9	357.8	354.9	357.8	357.8	354.9	351.9	346.0	343.0	334.2	316.4
70°	298.7	298.7	298.7	301.6	298.7	298.7	301.6	292.8	289.8	278.0	263.2
72.5°	242.5	245.5	245.5	242.5	245.5	239.5	239.5	239.5	236.6	224.8	210.0
75°	186.3	189.3	189.3	192.2	189.3	186.3	186.3	183.3	180.4	171.5	159.7
77.5°	139.0	139.0	141.9	141.9	141.9	139.0	139.0	133.1	133.1	127.2	115.3
80°	100.5	100.5	97.6	100.5	100.5	97.6	97.6	94.6	94.6	88.7	79.8
82.5°	65.1	68.0	68.0	68.0	68.0	65.1	65.1	65.1	62.1	59.1	53.2
85°	41.4	41.4	41.4	41.4	44.4	41.4	44.4	41.4	41.4	35.5	32.5
87.5°	17.7	17.7	17.7	20.7	20.7	17.7	17.7	17.7	17.7	17.7	14.8
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2
2.5°	1919.2	1922.2	1913.3	1925.2	1916.3	1919.2	1922.2	1919.2	1907.4	1907.4	1939.9
5°	1907.4	1913.3	1904.5	1919.2	1913.3	1913.3	1919.2	1916.3	1904.5	1907.4	1937.0
7.5°	1895.6	1904.5	1898.5	1913.3	1904.5	1904.5	1910.4	1910.4	1898.5	1901.5	1928.1
10°	1877.8	1889.7	1886.7	1901.5	1892.6	1892.6	1901.5	1901.5	1889.7	1892.6	1919.2
12.5°	1863.1	1874.9	1871.9	1886.7	1880.8	1883.8	1886.7	1892.6	1877.8	1883.8	1907.4
15°	1839.4	1851.2	1851.2	1866.0	1860.1	1866.0	1871.9	1880.8	1869.0	1869.0	1892.6
17.5°	1812.8	1827.6	1827.6	1839.4	1839.4	1842.4	1854.2	1863.1	1851.2	1854.2	1874.9
20°	1783.2	1801.0	1801.0	1815.7	1812.8	1818.7	1827.6	1836.4	1824.6	1824.6	1848.3
22.5°	1753.6	1768.4	1771.4	1780.3	1780.3	1783.2	1792.1	1798.0	1783.2	1783.2	1806.9
25°	1712.2	1727.0	1730.0	1735.9	1730.0	1730.0	1735.9	1741.8	1727.0	1727.0	1747.7
27.5°	1656.1	1670.8	1670.8	1667.9	1662.0	1664.9	1662.0	1664.9	1650.1	1647.2	1667.9
30°	1573.3	1582.1	1582.1	1579.2	1570.3	1570.3	1561.4	1564.4	1543.7	1543.7	1561.4
32.5°	1460.9	1469.7	1463.8	1457.9	1446.1	1440.2	1434.3	1431.3	1410.6	1410.6	1431.3
35°	1327.8	1333.7	1324.8	1313.0	1298.2	1289.4	1280.5	1268.7	1253.9	1256.8	1268.7
37.5°	1191.8	1191.8	1179.9	1156.3	1144.5	1129.7	1114.9	1114.9	1091.2	1088.3	1097.1
40°	1076.4	1064.6	1043.9	1011.4	990.7	975.9	955.2	943.4	925.6	925.6	940.4
42.5°	972.9	949.3	922.7	878.3	857.6	839.9	813.2	801.4	780.7	777.8	786.6
45°	881.3	857.6	819.2	771.8	745.2	724.5	686.1	671.3	653.5	650.6	656.5
47.5°	807.3	780.7	733.4	671.3	644.7	618.1	579.6	558.9	544.1	535.3	544.1
50°	742.3	706.8	656.5	591.4	556.0	532.3	485.0	464.3	443.6	437.7	440.6
52.5°	671.3	635.8	582.6	514.6	482.0	446.5	402.2	372.6	354.9	346.0	354.9
55°	594.4	558.9	505.7	437.7	402.2	369.7	322.3	298.7	278.0	269.1	278.0
57.5°	511.6	479.1	431.8	363.7	331.2	301.6	257.3	233.6	212.9	207.0	212.9
60°	440.6	414.0	366.7	301.6	275.0	242.5	204.0	180.4	162.6	159.7	162.6
62.5°	393.3	363.7	319.4	257.3	230.7	204.0	168.6	144.9	130.1	127.2	130.1
65°	346.0	313.5	272.1	218.8	192.2	171.5	136.0	115.3	100.5	97.6	100.5
67.5°	292.8	263.2	227.7	180.4	159.7	139.0	109.4	88.7	76.9	73.9	76.9
70°	242.5	215.9	180.4	144.9	124.2	109.4	82.8	68.0	56.2	53.2	56.2
72.5°	192.2	168.6	139.0	109.4	97.6	82.8	65.1	50.3	41.4	38.4	41.4
75°	147.9	130.1	106.5	79.8	71.0	62.1	44.4	35.5	29.6	26.6	29.6
77.5°	103.5	91.7	73.9	59.1	50.3	44.4	32.5	23.7	20.7	17.7	20.7
80°	71.0	62.1	50.3	38.4	32.5	26.6	20.7	14.8	11.8	11.8	11.8
82.5°	47.3	38.4	29.6	23.7	20.7	17.7	11.8	8.9	8.9	5.9	5.9
85°	26.6	23.7	17.7	14.8	11.8	8.9	5.9	5.9	3.0	3.0	3.0
87.5°	11.8	8.9	5.9	5.9	3.0	3.0	3.0	3.0	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2
2.5°	1931.1	1922.2	1934.0	1922.2	1916.3	1922.2	1916.3	1934.0	1919.2	1907.4	1919.2
5°	1928.1	1916.3	1928.1	1919.2	1910.4	1913.3	1907.4	1925.2	1907.4	1898.5	1904.5
7.5°	1922.2	1913.3	1919.2	1910.4	1901.5	1904.5	1898.5	1913.3	1895.6	1886.7	1892.6
10°	1913.3	1904.5	1907.4	1901.5	1892.6	1892.6	1886.7	1898.5	1877.8	1866.0	1871.9
12.5°	1901.5	1889.7	1895.6	1886.7	1874.9	1874.9	1869.0	1877.8	1857.1	1845.3	1848.3
15°	1886.7	1874.9	1874.9	1866.0	1854.2	1854.2	1842.4	1851.2	1827.6	1815.7	1815.7
17.5°	1869.0	1854.2	1854.2	1845.3	1830.5	1827.6	1818.7	1827.6	1801.0	1789.1	1789.1
20°	1842.4	1830.5	1827.6	1821.7	1806.9	1803.9	1792.1	1795.0	1774.3	1765.5	1762.5
22.5°	1806.9	1795.0	1798.0	1789.1	1777.3	1774.3	1762.5	1771.4	1750.7	1741.8	1744.8
25°	1744.8	1738.9	1744.8	1741.8	1732.9	1732.9	1727.0	1732.9	1715.2	1709.3	1712.2
27.5°	1673.8	1670.8	1673.8	1673.8	1667.9	1667.9	1667.9	1676.8	1659.0	1656.1	1656.1
30°	1570.3	1570.3	1573.3	1576.2	1576.2	1582.1	1579.2	1591.0	1579.2	1573.3	1579.2
32.5°	1434.3	1446.1	1455.0	1455.0	1455.0	1460.9	1466.8	1475.7	1463.8	1466.8	1466.8
35°	1280.5	1289.4	1295.3	1310.1	1301.2	1321.9	1327.8	1339.6	1336.7	1342.6	1339.6
37.5°	1109.0	1120.8	1132.6	1153.3	1150.4	1174.0	1185.9	1209.5	1203.6	1215.4	1221.3
40°	949.3	967.0	984.8	999.5	1011.4	1035.0	1058.7	1088.3	1097.1	1106.0	1109.0
42.5°	795.5	813.2	842.8	863.5	881.3	919.7	952.2	987.7	996.6	1014.3	1020.2
45°	671.3	686.1	721.6	748.2	763.0	819.2	857.6	902.0	916.7	937.4	946.3
47.5°	556.0	582.6	618.1	650.6	671.3	730.4	780.7	828.0	848.7	872.4	884.2
50°	455.4	485.0	532.3	561.9	591.4	656.5	712.7	763.0	783.7	810.3	822.1
52.5°	372.6	405.1	449.5	482.0	514.6	582.6	641.7	689.0	715.7	733.4	751.1
55°	292.8	328.3	372.6	408.1	434.7	508.6	558.9	606.2	624.0	638.8	647.6
57.5°	227.7	254.3	298.7	328.3	360.8	425.8	476.1	511.6	526.4	544.1	550.0
60°	177.4	204.0	245.5	275.0	304.6	366.7	417.0	452.5	467.2	482.0	490.9
62.5°	141.9	168.6	207.0	233.6	260.2	316.4	360.8	396.3	414.0	428.8	437.7
65°	112.4	136.0	168.6	195.2	215.9	266.2	310.5	343.0	360.8	375.6	384.4
67.5°	88.7	109.4	139.0	156.7	177.4	218.8	257.3	286.9	301.6	319.4	328.3
70°	68.0	82.8	109.4	124.2	139.0	174.5	204.0	233.6	248.4	260.2	266.2
72.5°	50.3	62.1	82.8	94.6	103.5	133.1	156.7	177.4	189.3	201.1	207.0
75°	35.5	44.4	59.1	68.0	73.9	94.6	115.3	130.1	139.0	147.9	156.7
77.5°	23.7	29.6	38.4	44.4	50.3	65.1	76.9	88.7	97.6	106.5	109.4
80°	14.8	20.7	26.6	29.6	32.5	41.4	53.2	59.1	65.1	71.0	73.9
82.5°	8.9	11.8	14.8	17.7	20.7	26.6	32.5	38.4	41.4	47.3	50.3
85°	3.0	5.9	5.9	8.9	8.9	14.8	17.7	20.7	23.7	26.6	29.6
87.5°	0.0	0.0	3.0	3.0	3.0	3.0	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: P251969

CATALOG NUMBER: LD4B50D010TE EU4B30509050 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2	1922.2
2.5°	1931.1	1922.2	1916.3	1913.3	1934.0	1907.4	1919.2	1922.2
5°	1919.2	1910.4	1904.5	1901.5	1919.2	1895.6	1904.5	1910.4
7.5°	1901.5	1895.6	1886.7	1883.8	1901.5	1874.9	1886.7	1889.7
10°	1880.8	1871.9	1866.0	1863.1	1877.8	1851.2	1863.1	1863.1
12.5°	1854.2	1848.3	1836.4	1836.4	1848.3	1824.6	1833.5	1833.5
15°	1818.7	1812.8	1801.0	1801.0	1812.8	1789.1	1798.0	1798.0
17.5°	1789.1	1783.2	1774.3	1771.4	1783.2	1759.6	1768.4	1765.5
20°	1765.5	1759.6	1747.7	1747.7	1756.6	1732.9	1741.8	1741.8
22.5°	1744.8	1741.8	1730.0	1730.0	1741.8	1718.2	1724.1	1718.2
25°	1712.2	1709.3	1697.5	1700.4	1706.3	1682.7	1691.5	1685.6
27.5°	1659.0	1659.0	1647.2	1644.2	1653.1	1632.4	1638.3	1635.4
30°	1576.2	1579.2	1564.4	1564.4	1567.3	1549.6	1558.5	1555.5
32.5°	1463.8	1466.8	1455.0	1452.0	1460.9	1446.1	1452.0	1452.0
35°	1339.6	1342.6	1333.7	1333.7	1342.6	1333.7	1333.7	1330.8
37.5°	1215.4	1221.3	1215.4	1218.4	1224.3	1215.4	1221.3	1218.4
40°	1114.9	1120.8	1111.9	1117.8	1123.8	1114.9	1123.8	1117.8
42.5°	1023.2	1032.1	1026.2	1032.1	1038.0	1032.1	1038.0	1029.1
45°	955.2	961.1	958.1	961.1	967.0	964.1	967.0	964.1
47.5°	890.1	902.0	896.0	902.0	910.8	904.9	910.8	902.0
50°	831.0	839.9	836.9	842.8	845.8	842.8	848.7	839.9
52.5°	754.1	763.0	760.0	760.0	765.9	760.0	765.9	760.0
55°	653.5	656.5	656.5	659.5	656.5	653.5	656.5	650.6
57.5°	556.0	561.9	553.0	561.9	558.9	556.0	556.0	550.0
60°	493.9	502.7	496.8	502.7	499.8	499.8	499.8	496.8
62.5°	443.6	449.5	443.6	446.5	446.5	446.5	443.6	440.6
65°	387.4	396.3	390.4	393.3	390.4	387.4	390.4	387.4
67.5°	331.2	334.2	334.2	331.2	331.2	331.2	331.2	325.3
70°	269.1	272.1	269.1	275.0	272.1	269.1	272.1	266.2
72.5°	210.0	212.9	210.0	212.9	210.0	210.0	210.0	210.0
75°	156.7	159.7	159.7	159.7	159.7	159.7	153.8	159.7
77.5°	112.4	112.4	112.4	115.3	112.4	112.4	112.4	112.4
80°	76.9	76.9	76.9	79.8	76.9	79.8	76.9	79.8
82.5°	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3
85°	26.6	29.6	29.6	26.6	26.6	26.6	26.6	26.6
87.5°	5.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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)