

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: P251731

Luminaire Tested: **LD4B50D010TE EU4B30509027 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251731
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30509027 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3455.0 lumens
Efficiency: N/A
Efficacy: 58.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

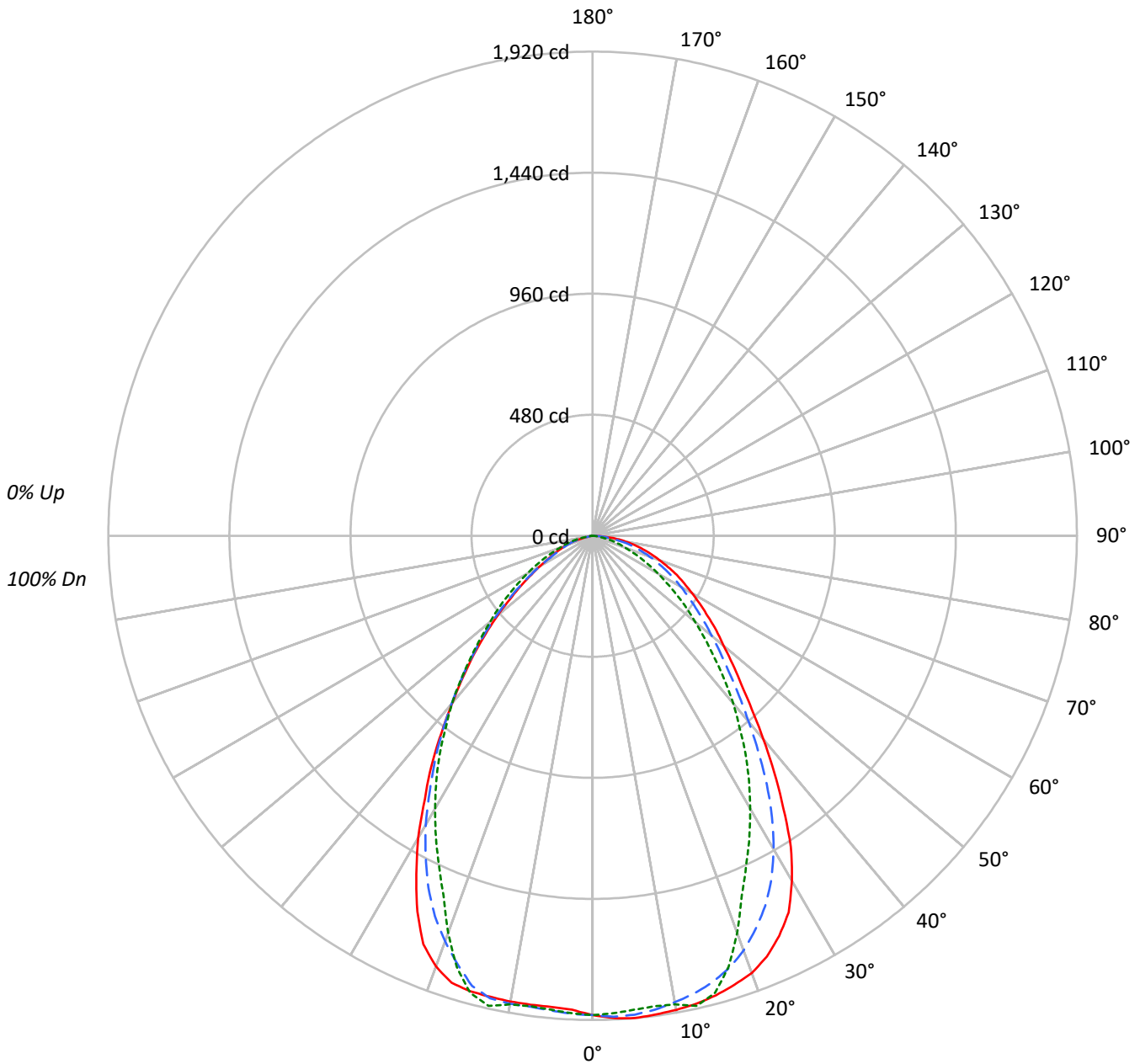
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	105	102	99	101	98	96	97	95	93	93	91	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60																			
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53																			
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48																			
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43																			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39																			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36																			
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	185239	185239	185239
5°	187854	184586	183491
10°	188927	186721	185612
15°	190371	189241	188686
20°	191350	173719	188456
25°	188204	154944	176817
30°	177828	140511	155568
35°	156832	125673	132633
40°	134029	110276	109920
45°	114851	94108	91806
50°	102676	80282	74793
55°	94709	68662	59198
60°	88550	58124	46721
65°	84840	48197	38557
70°	80213	38924	32570
75°	77644	31480	23082
80°	75094	17230	6230
85°	65415	9393	3131



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	180.6	5.2
10°-20°	519.5	15.0
20°-30°	720.6	20.9
30°-40°	711.2	20.6
40°-50°	557.9	16.1
50°-60°	386.4	11.2
60°-70°	236.8	6.9
70°-80°	118.3	3.4
80°-90°	23.7	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°	1420.7	41.1
0°-40°	2131.9	61.7
0°-60°	3076.2	89.0
0°-90°	3455.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3455.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1901	1901	1901	1901	1901	
5°	1920	1906	1887	1890	1876	183
15°	1887	1834	1876	1848	1870	533
25°	1750	1619	1441	1541	1644	801
35°	1318	1204	1056	1090	1115	823
45°	833	764	683	674	666	651
55°	557	499	404	360	348	502
65°	368	318	209	156	167	363
75°	206	173	84	64	61	219
85°	58	33	8	3	3	67
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°	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7
2.5°	1914.7	1909.1	1906.3	1914.7	1911.9	1917.5	1914.7	1911.9	1906.3	1909.1	1909.1
5°	1920.2	1911.9	1909.1	1914.7	1914.7	1920.2	1917.5	1911.9	1906.3	1909.1	1906.3
7.5°	1914.7	1909.1	1909.1	1911.9	1909.1	1914.7	1909.1	1903.5	1897.9	1900.7	1895.2
10°	1909.1	1900.7	1900.7	1900.7	1900.7	1906.3	1900.7	1892.4	1884.0	1884.0	1878.4
12.5°	1900.7	1892.4	1892.4	1895.2	1889.6	1895.2	1889.6	1875.6	1867.3	1864.5	1858.9
15°	1886.8	1878.4	1878.4	1878.4	1872.9	1875.6	1867.3	1853.4	1842.2	1842.2	1833.8
17.5°	1867.3	1858.9	1856.1	1856.1	1847.8	1850.6	1842.2	1828.3	1811.5	1806.0	1797.6
20°	1845.0	1833.8	1828.3	1828.3	1819.9	1822.7	1811.5	1794.8	1772.5	1764.2	1750.2
22.5°	1806.0	1800.4	1792.0	1789.3	1780.9	1778.1	1767.0	1744.7	1725.2	1711.2	1688.9
25°	1750.2	1747.4	1739.1	1736.3	1725.2	1719.6	1708.4	1683.3	1663.8	1641.5	1619.2
27.5°	1683.3	1672.2	1666.6	1658.3	1647.1	1644.3	1630.4	1608.1	1577.4	1563.5	1535.6
30°	1580.2	1574.7	1569.1	1560.7	1549.6	1544.0	1535.6	1510.6	1485.5	1460.4	1435.3
32.5°	1463.2	1452.0	1443.7	1446.5	1432.5	1426.9	1413.0	1390.7	1368.4	1351.7	1323.8
35°	1318.2	1315.5	1312.7	1307.1	1296.0	1293.2	1282.0	1265.3	1240.2	1220.7	1204.0
37.5°	1181.7	1173.3	1167.8	1167.8	1156.6	1156.6	1148.2	1128.7	1114.8	1100.9	1078.6
40°	1053.5	1039.5	1039.5	1039.5	1028.4	1031.2	1025.6	1006.1	992.2	975.4	961.5
42.5°	933.6	928.1	925.3	919.7	914.1	914.1	908.6	897.4	883.5	872.3	858.4
45°	833.3	830.5	827.7	825.0	819.4	816.6	813.8	797.1	788.7	777.6	763.6
47.5°	752.5	746.9	744.1	741.3	735.8	733.0	727.4	716.3	707.9	696.7	685.6
50°	677.2	674.5	671.7	671.7	666.1	663.3	657.7	649.4	635.4	629.9	615.9
52.5°	618.7	613.1	607.6	607.6	602.0	602.0	593.6	585.3	571.3	565.8	554.6
55°	557.4	554.6	551.8	551.8	546.3	543.5	540.7	529.5	518.4	510.0	498.9
57.5°	504.4	501.7	498.9	498.9	493.3	490.5	487.7	479.4	468.2	462.6	448.7
60°	454.3	454.3	451.5	448.7	445.9	443.1	440.3	432.0	423.6	415.3	404.1
62.5°	409.7	406.9	404.1	401.3	401.3	398.5	395.8	384.6	379.0	370.7	359.5
65°	367.9	362.3	362.3	359.5	359.5	356.7	353.9	342.8	337.2	328.9	317.7
67.5°	323.3	320.5	317.7	317.7	314.9	314.9	312.1	303.8	295.4	289.8	278.7
70°	281.5	281.5	278.7	278.7	275.9	273.1	273.1	267.6	259.2	250.8	239.7
72.5°	245.3	242.5	239.7	239.7	236.9	236.9	234.1	228.5	223.0	217.4	203.5
75°	206.2	203.5	203.5	203.5	200.7	200.7	197.9	192.3	186.7	181.2	172.8
77.5°	170.0	170.0	167.2	167.2	164.4	164.4	164.4	158.9	153.3	147.7	136.6
80°	133.8	133.8	133.8	131.0	128.2	128.2	128.2	122.6	117.1	111.5	103.1
82.5°	97.5	94.8	94.8	92.0	89.2	89.2	89.2	83.6	80.8	72.5	66.9
85°	58.5	55.7	55.7	53.0	50.2	50.2	50.2	47.4	41.8	39.0	33.4
87.5°	22.3	22.3	22.3	22.3	22.3	19.5	19.5	16.7	16.7	13.9	13.9
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°	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7
2.5°	1909.1	1906.3	1906.3	1903.5	1906.3	1900.7	1900.7	1900.7	1900.7	1895.2	1895.2
5°	1903.5	1903.5	1900.7	1897.9	1900.7	1895.2	1897.9	1895.2	1895.2	1886.8	1886.8
7.5°	1892.4	1889.6	1884.0	1881.2	1884.0	1881.2	1881.2	1881.2	1886.8	1881.2	1881.2
10°	1872.9	1870.1	1864.5	1861.7	1861.7	1858.9	1864.5	1870.1	1881.2	1886.8	1897.9
12.5°	1853.4	1847.8	1845.0	1845.0	1847.8	1847.8	1858.9	1872.9	1900.7	1909.1	1920.2
15°	1828.3	1825.5	1825.5	1833.8	1845.0	1853.4	1875.6	1884.0	1886.8	1875.6	1870.1
17.5°	1794.8	1794.8	1797.6	1806.0	1814.3	1814.3	1817.1	1811.5	1806.0	1792.0	1775.3
20°	1739.1	1736.3	1730.7	1730.7	1730.7	1719.6	1725.2	1705.6	1691.7	1675.0	1649.9
22.5°	1669.4	1655.5	1636.0	1622.0	1613.7	1608.1	1594.2	1571.9	1555.1	1544.0	1532.8
25°	1594.2	1571.9	1544.0	1521.7	1507.8	1505.0	1485.5	1466.0	1454.8	1440.9	1435.3
27.5°	1507.8	1482.7	1449.2	1426.9	1415.8	1407.4	1390.7	1371.2	1357.3	1346.1	1337.8
30°	1407.4	1382.4	1354.5	1326.6	1315.5	1301.5	1284.8	1270.9	1256.9	1248.6	1243.0
32.5°	1296.0	1270.9	1243.0	1223.5	1209.6	1198.4	1184.5	1170.5	1159.4	1153.8	1148.2
35°	1181.7	1156.6	1134.3	1114.8	1103.7	1095.3	1084.1	1067.4	1059.1	1056.3	1050.7
37.5°	1059.1	1042.3	1022.8	1006.1	997.7	986.6	981.0	967.1	967.1	955.9	955.9
40°	944.8	933.6	914.1	900.2	894.6	886.3	877.9	872.3	869.5	866.8	864.0
42.5°	844.5	827.7	816.6	805.4	797.1	791.5	791.5	783.1	780.4	772.0	769.2
45°	752.5	744.1	724.6	716.3	713.5	705.1	702.3	696.7	688.4	682.8	680.0
47.5°	671.7	663.3	652.2	641.0	635.4	629.9	624.3	615.9	610.4	602.0	599.2
50°	604.8	590.8	579.7	571.3	563.0	560.2	554.6	543.5	537.9	529.5	529.5
52.5°	543.5	532.3	518.4	510.0	501.7	496.1	487.7	479.4	471.0	468.2	459.9
55°	490.5	476.6	462.6	451.5	443.1	434.8	432.0	420.8	409.7	404.1	398.5
57.5°	440.3	426.4	409.7	395.8	390.2	384.6	376.2	365.1	356.7	348.4	342.8
60°	390.2	379.0	362.3	348.4	342.8	334.4	326.1	314.9	306.6	298.2	292.6
62.5°	348.4	331.7	317.7	303.8	295.4	289.8	278.7	270.3	259.2	250.8	242.5
65°	306.6	289.8	275.9	262.0	256.4	248.0	239.7	228.5	217.4	209.0	197.9
67.5°	264.8	250.8	236.9	223.0	217.4	211.8	200.7	189.5	178.4	170.0	158.9
70°	228.5	214.6	200.7	189.5	183.9	178.4	167.2	156.1	147.7	136.6	128.2
72.5°	195.1	183.9	170.0	158.9	153.3	147.7	136.6	128.2	117.1	111.5	103.1
75°	161.6	150.5	139.3	128.2	122.6	117.1	108.7	100.3	92.0	83.6	78.0
77.5°	128.2	117.1	105.9	97.5	92.0	89.2	80.8	72.5	64.1	58.5	50.2
80°	94.8	83.6	75.2	66.9	61.3	58.5	50.2	44.6	39.0	30.7	27.9
82.5°	58.5	50.2	44.6	39.0	36.2	33.4	27.9	22.3	19.5	16.7	13.9
85°	30.7	27.9	22.3	19.5	16.7	16.7	13.9	11.1	8.4	8.4	5.6
87.5°	11.1	8.4	8.4	5.6	5.6	5.6	5.6	2.8	2.8	2.8	2.8
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7
2.5°	1889.6	1892.4	1895.2	1897.9	1895.2	1895.2	1900.7	1889.6	1897.9	1897.9	1886.8
5°	1884.0	1889.6	1886.8	1892.4	1886.8	1886.8	1889.6	1884.0	1889.6	1889.6	1881.2
7.5°	1878.4	1884.0	1884.0	1886.8	1884.0	1884.0	1886.8	1878.4	1884.0	1884.0	1875.6
10°	1903.5	1909.1	1906.3	1903.5	1895.2	1889.6	1892.4	1878.4	1884.0	1884.0	1875.6
12.5°	1911.9	1909.1	1897.9	1892.4	1886.8	1881.2	1884.0	1872.9	1878.4	1878.4	1872.9
15°	1856.1	1850.6	1842.2	1845.0	1839.4	1836.6	1842.2	1836.6	1847.8	1853.4	1847.8
17.5°	1761.4	1758.6	1753.0	1753.0	1753.0	1755.8	1764.2	1764.2	1780.9	1792.0	1797.6
20°	1638.8	1636.0	1638.8	1644.3	1647.1	1658.3	1677.8	1688.9	1711.2	1730.7	1744.7
22.5°	1527.3	1532.8	1541.2	1552.4	1555.1	1569.1	1594.2	1605.3	1633.2	1655.5	1669.4
25°	1432.5	1440.9	1446.5	1454.8	1457.6	1474.3	1496.6	1510.6	1541.2	1557.9	1574.7
27.5°	1337.8	1348.9	1351.7	1362.8	1362.8	1379.6	1399.1	1413.0	1432.5	1449.2	1463.2
30°	1245.8	1248.6	1256.9	1259.7	1265.3	1282.0	1293.2	1301.5	1323.8	1332.2	1340.5
32.5°	1145.5	1156.6	1162.2	1165.0	1162.2	1176.1	1187.3	1192.8	1201.2	1212.3	1217.9
35°	1050.7	1056.3	1059.1	1064.6	1067.4	1070.2	1075.8	1078.6	1089.7	1092.5	1095.3
37.5°	955.9	964.3	961.5	964.3	964.3	967.1	972.7	969.9	978.2	981.0	978.2
40°	861.2	861.2	866.8	864.0	866.8	864.0	869.5	869.5	869.5	872.3	869.5
42.5°	766.4	769.2	766.4	772.0	766.4	769.2	769.2	766.4	769.2	766.4	766.4
45°	680.0	680.0	680.0	680.0	674.5	674.5	680.0	677.2	674.5	671.7	668.9
47.5°	596.4	599.2	593.6	596.4	593.6	590.8	588.1	588.1	585.3	579.7	576.9
50°	526.7	521.2	518.4	521.2	518.4	515.6	512.8	507.2	504.4	498.9	496.1
52.5°	457.1	451.5	445.9	445.9	443.1	437.6	434.8	429.2	426.4	420.8	420.8
55°	395.8	390.2	384.6	381.8	376.2	370.7	367.9	362.3	359.5	353.9	348.4
57.5°	337.2	328.9	323.3	320.5	317.7	309.4	306.6	301.0	295.4	289.8	287.1
60°	284.3	275.9	267.6	264.8	262.0	253.6	250.8	242.5	239.7	234.1	231.3
62.5°	234.1	228.5	217.4	214.6	209.0	203.5	195.1	192.3	189.5	192.3	192.3
65°	189.5	181.2	172.8	170.0	164.4	158.9	156.1	153.3	156.1	156.1	158.9
67.5°	150.5	142.1	133.8	133.8	131.0	125.4	125.4	125.4	128.2	128.2	131.0
70°	119.8	114.3	108.7	105.9	105.9	103.1	105.9	105.9	108.7	108.7	108.7
72.5°	94.8	92.0	89.2	86.4	86.4	86.4	86.4	86.4	86.4	86.4	89.2
75°	72.5	69.7	66.9	66.9	64.1	64.1	64.1	64.1	64.1	64.1	61.3
77.5°	47.4	44.6	41.8	41.8	39.0	36.2	36.2	33.4	33.4	33.4	33.4
80°	25.1	22.3	19.5	16.7	16.7	13.9	13.9	13.9	13.9	11.1	11.1
82.5°	11.1	8.4	8.4	8.4	8.4	5.6	5.6	5.6	5.6	5.6	5.6
85°	5.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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: P251731

CATALOG NUMBER: LD4B50D010TE EU4B30509027 4LBLWW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7	1900.7
2.5°	1892.4	1886.8	1892.4	1895.2	1889.6	1886.8	1892.4	1881.2
5°	1889.6	1881.2	1884.0	1886.8	1881.2	1878.4	1884.0	1875.6
7.5°	1884.0	1881.2	1884.0	1886.8	1878.4	1878.4	1884.0	1875.6
10°	1884.0	1878.4	1881.2	1886.8	1881.2	1881.2	1886.8	1875.6
12.5°	1881.2	1872.9	1881.2	1884.0	1878.4	1878.4	1884.0	1872.9
15°	1861.7	1861.7	1864.5	1870.1	1867.3	1870.1	1878.4	1870.1
17.5°	1819.9	1825.5	1836.6	1845.0	1850.6	1856.1	1864.5	1858.9
20°	1769.7	1778.1	1792.0	1800.4	1811.5	1814.3	1828.3	1817.1
22.5°	1691.7	1708.4	1719.6	1727.9	1736.3	1744.7	1755.8	1753.0
25°	1596.9	1608.1	1616.5	1624.8	1636.0	1641.5	1647.1	1644.3
27.5°	1482.7	1488.3	1499.4	1505.0	1510.6	1516.1	1527.3	1513.3
30°	1357.3	1360.1	1365.6	1374.0	1374.0	1379.6	1385.1	1382.4
32.5°	1229.1	1229.1	1234.6	1240.2	1237.4	1240.2	1251.4	1237.4
35°	1103.7	1100.9	1109.2	1112.0	1112.0	1109.2	1117.6	1114.8
37.5°	981.0	983.8	986.6	989.4	983.8	989.4	989.4	983.8
40°	869.5	866.8	872.3	875.1	872.3	875.1	875.1	864.0
42.5°	769.2	763.6	766.4	769.2	766.4	769.2	766.4	760.8
45°	671.7	668.9	668.9	671.7	666.1	666.1	666.1	666.1
47.5°	579.7	576.9	579.7	579.7	574.1	574.1	576.9	574.1
50°	496.1	493.3	493.3	493.3	490.5	490.5	493.3	493.3
52.5°	420.8	415.3	415.3	415.3	415.3	415.3	418.0	412.5
55°	345.6	345.6	345.6	345.6	348.4	348.4	348.4	348.4
57.5°	284.3	287.1	287.1	289.8	287.1	289.8	289.8	287.1
60°	236.9	234.1	236.9	236.9	239.7	239.7	239.7	239.7
62.5°	195.1	195.1	195.1	197.9	197.9	197.9	200.7	197.9
65°	161.6	161.6	164.4	164.4	164.4	167.2	167.2	167.2
67.5°	133.8	133.8	133.8	133.8	136.6	136.6	139.3	136.6
70°	111.5	111.5	111.5	111.5	111.5	114.3	114.3	114.3
72.5°	89.2	89.2	89.2	89.2	92.0	92.0	92.0	92.0
75°	61.3	61.3	61.3	64.1	61.3	61.3	61.3	61.3
77.5°	30.7	30.7	30.7	30.7	30.7	27.9	27.9	27.9
80°	11.1	11.1	11.1	11.1	11.1	11.1	8.4	11.1
82.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	2.8
85°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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)