

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: P251564

Luminaire Tested: **LD4B40D010 EU4B30509035 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251564
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30509035 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3267.0 lumens
Efficiency: N/A
Efficacy: 75.9 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

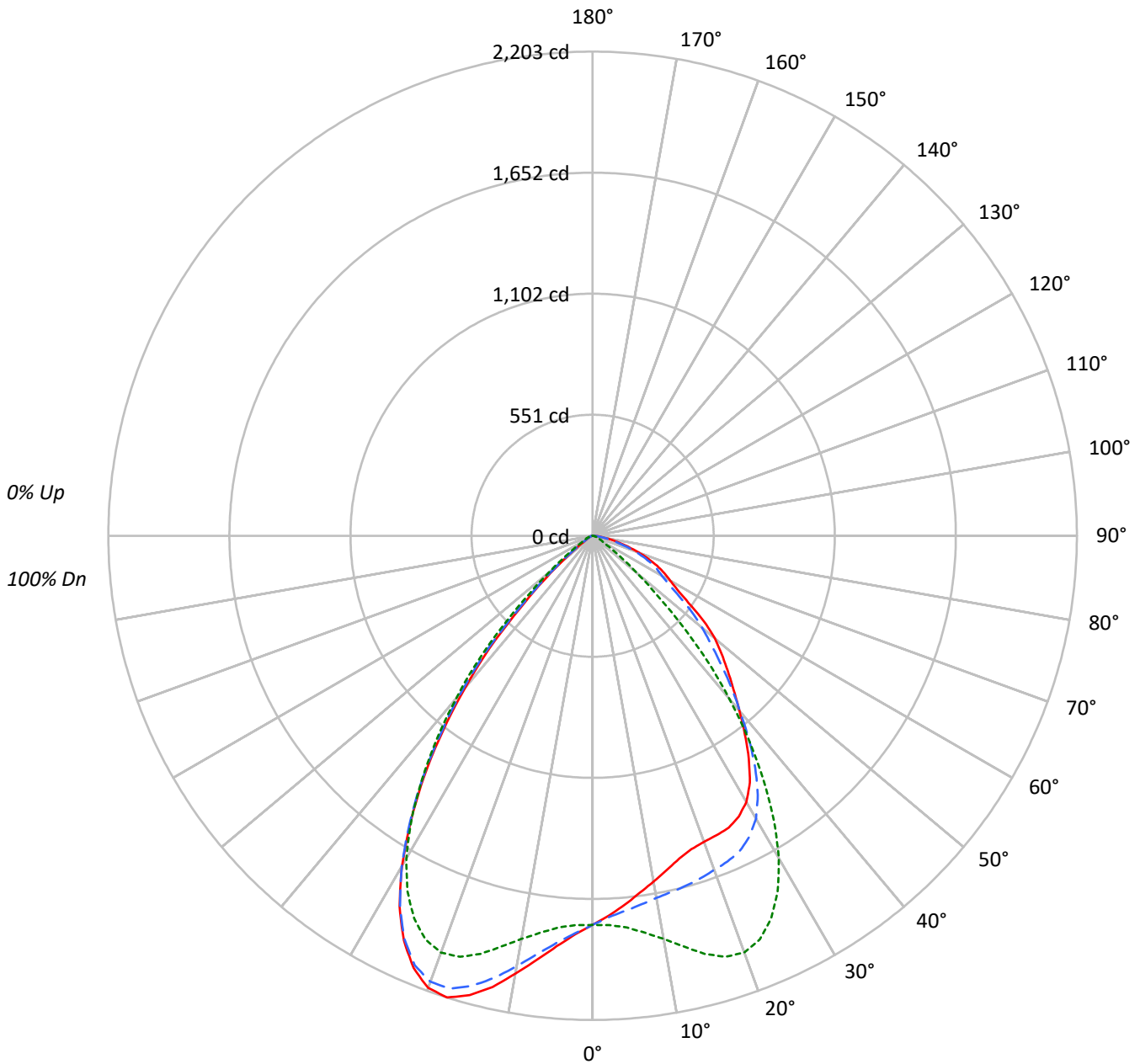
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	172540	172540	172540
5°	164834	175009	183373
10°	158042	184346	200130
15°	153443	198674	218268
20°	153650	209261	226996
25°	157568	206528	218453
30°	157358	190645	195068
35°	147385	161139	158938
40°	132019	122910	114678
45°	119771	78037	64034
50°	110029	39603	27337
55°	90326	17671	9039
60°	79292	9902	4951
65°	74624	7472	3736
70°	63885	5927	3305
75°	48725	4368	2598
80°	35021	2582	1291
85°	25831	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.0	5.3
10°-20°	535.9	16.4
20°-30°	829.2	25.4
30°-40°	817.0	25.0
40°-50°	501.7	15.4
50°-60°	223.1	6.8
60°-70°	124.6	3.8
70°-80°	53.9	1.7
80°-90°	9.6	0.3
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°	1537.1	47.0
0°-40°	2354.1	72.1
0°-60°	3078.8	94.2
0°-90°	3267.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3267.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1770	1770	1770	1770	1770	
5°	1685	1713	1789	1858	1874	158
15°	1521	1648	1969	2119	2163	431
25°	1465	1583	1921	2025	2032	672
35°	1239	1290	1354	1350	1336	769
45°	869	825	566	495	465	673
55°	532	481	104	60	53	489
65°	324	291	32	18	16	317
75°	129	111	12	7	7	142
85°	23	18	0	0	0	29
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°	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4
2.5°	1728.8	1728.8	1728.8	1728.8	1733.4	1726.5	1733.4	1733.4	1740.3	1742.6	1735.7
5°	1684.9	1682.6	1684.9	1684.9	1689.5	1687.2	1694.1	1698.7	1708.0	1712.6	1712.6
7.5°	1638.6	1638.6	1638.6	1643.3	1650.2	1647.9	1654.8	1661.8	1675.6	1684.9	1691.8
10°	1597.0	1594.7	1601.7	1604.0	1610.9	1610.9	1622.5	1629.4	1645.6	1664.1	1673.3
12.5°	1557.7	1555.4	1560.1	1567.0	1578.6	1578.6	1587.8	1599.4	1622.5	1643.3	1659.4
15°	1520.8	1523.1	1530.0	1534.6	1548.5	1548.5	1560.1	1573.9	1599.4	1624.8	1647.9
17.5°	1495.3	1497.7	1502.3	1509.2	1523.1	1523.1	1534.6	1550.8	1578.6	1606.3	1634.0
20°	1481.5	1483.8	1488.4	1495.3	1506.9	1509.2	1518.5	1536.9	1562.4	1592.4	1617.8
22.5°	1474.5	1479.2	1483.8	1488.4	1500.0	1500.0	1511.5	1525.4	1550.8	1580.9	1604.0
25°	1465.3	1469.9	1472.2	1479.2	1488.4	1488.4	1495.3	1511.5	1534.6	1560.1	1583.2
27.5°	1439.9	1444.5	1446.8	1453.7	1463.0	1460.7	1469.9	1481.5	1502.3	1525.4	1543.9
30°	1398.3	1400.6	1405.2	1407.5	1414.5	1414.5	1421.4	1432.9	1446.8	1467.6	1486.1
32.5°	1331.3	1335.9	1338.2	1340.5	1347.4	1345.1	1347.4	1354.4	1368.2	1386.7	1398.3
35°	1238.8	1248.0	1248.0	1252.7	1255.0	1252.7	1252.7	1261.9	1268.8	1282.7	1289.6
37.5°	1137.1	1144.0	1141.7	1146.4	1148.7	1141.7	1146.4	1148.7	1157.9	1164.8	1167.2
40°	1037.7	1040.0	1040.0	1040.0	1040.0	1037.7	1040.0	1042.4	1049.3	1049.3	1042.4
42.5°	947.6	949.9	949.9	945.3	949.9	947.6	947.6	947.6	947.6	938.3	931.4
45°	869.0	871.3	871.3	869.0	869.0	864.4	862.1	859.8	852.8	841.3	825.1
47.5°	795.1	799.7	802.0	797.4	795.1	790.4	790.4	776.6	767.3	753.5	730.3
50°	725.7	730.3	730.3	725.7	725.7	718.8	711.8	707.2	693.4	677.2	649.4
52.5°	637.9	644.8	644.8	642.5	642.5	633.3	631.0	621.7	610.2	591.7	568.6
55°	531.6	540.8	538.5	536.2	531.6	531.6	531.6	524.6	517.7	503.8	480.7
57.5°	455.3	457.6	457.6	455.3	455.3	450.7	450.7	443.8	441.4	427.6	409.1
60°	406.8	406.8	409.1	406.8	404.5	402.1	399.8	395.2	388.3	379.0	365.2
62.5°	367.5	369.8	369.8	367.5	365.2	362.9	360.5	355.9	351.3	344.4	330.5
65°	323.6	328.2	325.9	323.6	321.3	318.9	318.9	314.3	309.7	305.1	291.2
67.5°	275.0	277.3	279.7	275.0	275.0	272.7	272.7	268.1	265.8	256.5	247.3
70°	224.2	226.5	226.5	224.2	224.2	221.9	221.9	219.6	217.3	210.3	201.1
72.5°	175.7	178.0	175.7	173.3	173.3	173.3	171.0	168.7	166.4	161.8	154.9
75°	129.4	129.4	131.7	129.4	127.1	127.1	124.8	124.8	120.2	117.9	110.9
77.5°	92.4	94.8	92.4	92.4	90.1	87.8	87.8	85.5	85.5	83.2	78.6
80°	62.4	62.4	64.7	62.4	60.1	62.4	60.1	57.8	57.8	55.5	50.8
82.5°	39.3	41.6	39.3	39.3	39.3	39.3	39.3	37.0	37.0	34.7	32.4
85°	23.1	23.1	23.1	23.1	23.1	23.1	23.1	20.8	20.8	20.8	18.5
87.5°	11.6	11.6	9.2	9.2	11.6	11.6	11.6	9.2	9.2	9.2	9.2
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°	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4
2.5°	1745.0	1747.3	1751.9	1758.8	1758.8	1754.2	1765.8	1765.8	1770.4	1772.7	1781.9
5°	1726.5	1731.1	1740.3	1751.9	1754.2	1751.9	1768.1	1775.0	1781.9	1788.9	1802.7
7.5°	1710.3	1719.5	1735.7	1751.9	1758.8	1758.8	1784.2	1793.5	1807.4	1821.2	1837.4
10°	1701.0	1714.9	1738.0	1763.4	1770.4	1777.3	1807.4	1825.8	1844.3	1862.8	1885.9
12.5°	1689.5	1714.9	1745.0	1777.3	1791.2	1800.4	1842.0	1865.1	1890.6	1913.7	1943.7
15°	1687.2	1717.2	1756.5	1798.1	1816.6	1830.5	1876.7	1909.1	1939.1	1969.1	1999.2
17.5°	1677.9	1714.9	1763.4	1809.7	1832.8	1851.3	1904.4	1943.7	1978.4	2008.4	2043.1
20°	1666.4	1708.0	1761.1	1812.0	1837.4	1855.9	1913.7	1950.7	1989.9	2017.7	2050.0
22.5°	1650.2	1691.8	1745.0	1795.8	1818.9	1835.1	1892.9	1925.2	1959.9	1987.6	2017.7
25°	1622.5	1661.8	1708.0	1749.6	1772.7	1786.6	1837.4	1867.5	1892.9	1920.6	1948.3
27.5°	1583.2	1613.2	1652.5	1682.6	1696.4	1710.3	1751.9	1777.3	1800.4	1823.5	1842.0
30°	1513.8	1536.9	1564.7	1590.1	1604.0	1606.3	1645.6	1659.4	1677.9	1694.1	1708.0
32.5°	1421.4	1439.9	1456.1	1469.9	1479.2	1481.5	1511.5	1516.1	1534.6	1534.6	1555.4
35°	1303.5	1312.8	1324.3	1324.3	1331.3	1324.3	1345.1	1349.7	1352.1	1354.4	1370.5
37.5°	1169.5	1174.1	1181.0	1167.2	1167.2	1160.2	1167.2	1171.8	1162.5	1162.5	1174.1
40°	1042.4	1033.1	1023.9	1010.0	1003.1	989.2	989.2	977.6	970.7	966.1	968.4
42.5°	919.9	899.1	878.3	848.2	834.3	820.5	806.6	790.4	785.8	774.3	767.3
45°	802.0	771.9	744.2	695.7	667.9	654.1	624.0	591.7	570.9	566.2	547.8
47.5°	702.6	658.7	612.5	554.7	527.0	501.5	457.6	429.9	402.1	388.3	376.7
50°	614.8	575.5	515.4	453.0	418.3	392.9	344.4	312.0	282.0	261.2	247.3
52.5°	538.5	494.6	439.1	367.5	332.8	305.1	251.9	214.9	189.5	168.7	152.5
55°	453.0	418.3	362.9	295.8	261.2	228.8	182.6	143.3	117.9	104.0	92.4
57.5°	390.6	360.5	307.4	242.7	210.3	180.3	134.0	101.7	80.9	67.0	60.1
60°	349.0	321.3	275.0	212.6	182.6	154.9	110.9	80.9	62.4	50.8	46.2
62.5°	314.3	286.6	245.0	187.2	161.8	134.0	94.8	67.0	50.8	41.6	34.7
65°	275.0	249.6	212.6	161.8	138.7	115.6	80.9	55.5	41.6	32.4	27.7
67.5°	233.4	210.3	178.0	134.0	115.6	97.1	64.7	46.2	34.7	27.7	23.1
70°	189.5	171.0	141.0	108.6	92.4	76.3	53.2	37.0	25.4	20.8	18.5
72.5°	145.6	129.4	108.6	83.2	69.3	57.8	39.3	27.7	20.8	16.2	13.9
75°	104.0	92.4	76.3	60.1	50.8	41.6	30.0	20.8	13.9	11.6	9.2
77.5°	71.6	64.7	53.2	41.6	34.7	30.0	20.8	13.9	11.6	9.2	6.9
80°	46.2	41.6	34.7	25.4	20.8	18.5	11.6	9.2	6.9	4.6	4.6
82.5°	27.7	25.4	20.8	13.9	11.6	9.2	6.9	4.6	4.6	2.3	2.3
85°	16.2	13.9	9.2	6.9	6.9	4.6	4.6	2.3	2.3	0.0	0.0
87.5°	6.9	4.6	4.6	2.3	2.3	2.3	2.3	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4
2.5°	1777.3	1788.9	1786.6	1793.5	1791.2	1791.2	1802.7	1798.1	1809.7	1809.7	1812.0
5°	1802.7	1818.9	1818.9	1830.5	1828.2	1832.8	1844.3	1844.3	1858.2	1862.8	1862.8
7.5°	1839.7	1860.5	1865.1	1876.7	1879.0	1888.3	1897.5	1899.8	1918.3	1922.9	1925.2
10°	1890.6	1916.0	1922.9	1934.5	1939.1	1948.3	1959.9	1964.5	1987.6	1989.9	1999.2
12.5°	1953.0	1980.7	1987.6	2001.5	2003.8	2015.4	2031.5	2036.2	2059.3	2066.2	2073.1
15°	2013.1	2038.5	2050.0	2063.9	2066.2	2080.1	2093.9	2098.6	2119.4	2128.6	2135.5
17.5°	2054.7	2084.7	2091.6	2110.1	2110.1	2121.7	2135.5	2140.2	2161.0	2167.9	2172.5
20°	2063.9	2091.6	2100.9	2114.7	2117.1	2124.0	2135.5	2140.2	2158.7	2161.0	2167.9
22.5°	2029.2	2057.0	2061.6	2075.5	2077.8	2084.7	2093.9	2091.6	2114.7	2112.4	2114.7
25°	1955.3	1980.7	1980.7	1996.9	1994.6	2001.5	2006.1	2003.8	2024.6	2024.6	2024.6
27.5°	1849.0	1872.1	1874.4	1885.9	1879.0	1881.3	1885.9	1883.6	1897.5	1897.5	1897.5
30°	1717.2	1735.7	1728.8	1738.0	1733.4	1738.0	1733.4	1731.1	1735.7	1740.3	1738.0
32.5°	1553.1	1567.0	1567.0	1569.3	1569.3	1555.4	1550.8	1550.8	1548.5	1546.2	1546.2
35°	1363.6	1375.2	1370.5	1370.5	1368.2	1354.4	1347.4	1342.8	1349.7	1335.9	1345.1
37.5°	1169.5	1171.8	1164.8	1162.5	1151.0	1151.0	1139.4	1130.2	1134.8	1132.5	1123.2
40°	956.8	966.1	952.2	947.6	954.5	945.3	933.7	922.2	931.4	919.9	924.5
42.5°	748.8	746.5	741.9	741.9	741.9	728.0	725.7	723.4	725.7	716.5	709.5
45°	540.8	533.9	527.0	527.0	517.7	513.1	513.1	506.2	494.6	494.6	480.7
47.5°	365.2	349.0	344.4	342.1	337.4	337.4	332.8	328.2	325.9	314.3	314.3
50°	238.1	221.9	217.3	214.9	217.3	212.6	208.0	203.4	198.8	196.5	191.8
52.5°	143.3	136.4	131.7	129.4	124.8	122.5	120.2	115.6	113.2	113.2	110.9
55°	85.5	78.6	69.3	69.3	69.3	67.0	64.7	62.4	60.1	60.1	57.8
57.5°	53.2	48.5	43.9	41.6	41.6	41.6	39.3	39.3	39.3	39.3	37.0
60°	39.3	34.7	32.4	32.4	32.4	30.0	30.0	30.0	30.0	27.7	27.7
62.5°	30.0	27.7	25.4	25.4	23.1	23.1	23.1	23.1	23.1	23.1	20.8
65°	25.4	20.8	20.8	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
67.5°	18.5	16.2	16.2	16.2	16.2	13.9	13.9	13.9	13.9	13.9	13.9
70°	13.9	13.9	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
72.5°	11.6	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
75°	9.2	9.2	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
77.5°	6.9	6.9	6.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
80°	4.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	2.3	2.3	2.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P251564

CATALOG NUMBER: LD4B40D010 EU4B30509035 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4	1770.4
2.5°	1812.0	1823.5	1812.0	1812.0	1818.9	1816.6	1821.2	1814.3
5°	1865.1	1881.3	1869.8	1867.5	1879.0	1876.7	1879.0	1874.4
7.5°	1929.9	1946.0	1934.5	1934.5	1946.0	1943.7	1950.7	1946.0
10°	2003.8	2022.3	2006.1	2008.4	2024.6	2022.3	2022.3	2022.3
12.5°	2080.1	2098.6	2089.3	2089.3	2100.9	2103.2	2105.5	2103.2
15°	2142.5	2161.0	2149.4	2149.4	2165.6	2163.3	2165.6	2163.3
17.5°	2179.5	2198.0	2184.1	2184.1	2198.0	2198.0	2200.3	2202.6
20°	2170.2	2191.0	2179.5	2174.8	2191.0	2191.0	2188.7	2188.7
22.5°	2117.1	2135.5	2126.3	2121.7	2133.2	2128.6	2126.3	2128.6
25°	2024.6	2043.1	2024.6	2024.6	2033.9	2031.5	2033.9	2031.5
27.5°	1899.8	1913.7	1895.2	1892.9	1902.1	1897.5	1895.2	1902.1
30°	1733.4	1747.3	1738.0	1731.1	1742.6	1735.7	1731.1	1733.4
32.5°	1543.9	1553.1	1548.5	1536.9	1543.9	1539.3	1536.9	1539.3
35°	1335.9	1347.4	1328.9	1326.6	1338.2	1328.9	1324.3	1335.9
37.5°	1120.9	1134.8	1118.6	1120.9	1114.0	1116.3	1111.7	1118.6
40°	917.5	915.2	910.6	908.3	910.6	903.7	908.3	901.4
42.5°	698.0	702.6	700.3	698.0	700.3	691.0	686.4	695.7
45°	485.4	483.0	478.4	473.8	473.8	471.5	471.5	464.6
47.5°	312.0	309.7	300.5	302.8	307.4	302.8	295.8	305.1
50°	189.5	187.2	187.2	184.9	189.5	184.9	180.3	180.3
52.5°	106.3	106.3	104.0	104.0	104.0	104.0	101.7	99.4
55°	57.8	55.5	55.5	55.5	53.2	53.2	53.2	53.2
57.5°	37.0	37.0	37.0	37.0	37.0	37.0	34.7	34.7
60°	27.7	27.7	27.7	27.7	25.4	27.7	25.4	25.4
62.5°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
65°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
67.5°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
70°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
72.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
75°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
77.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)