

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: P251565

Luminaire Tested: **LD4B40D010 EU4B30509040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251565
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 EU4B30509040 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3272.0 lumens
Efficiency: N/A
Efficacy: 76.1 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

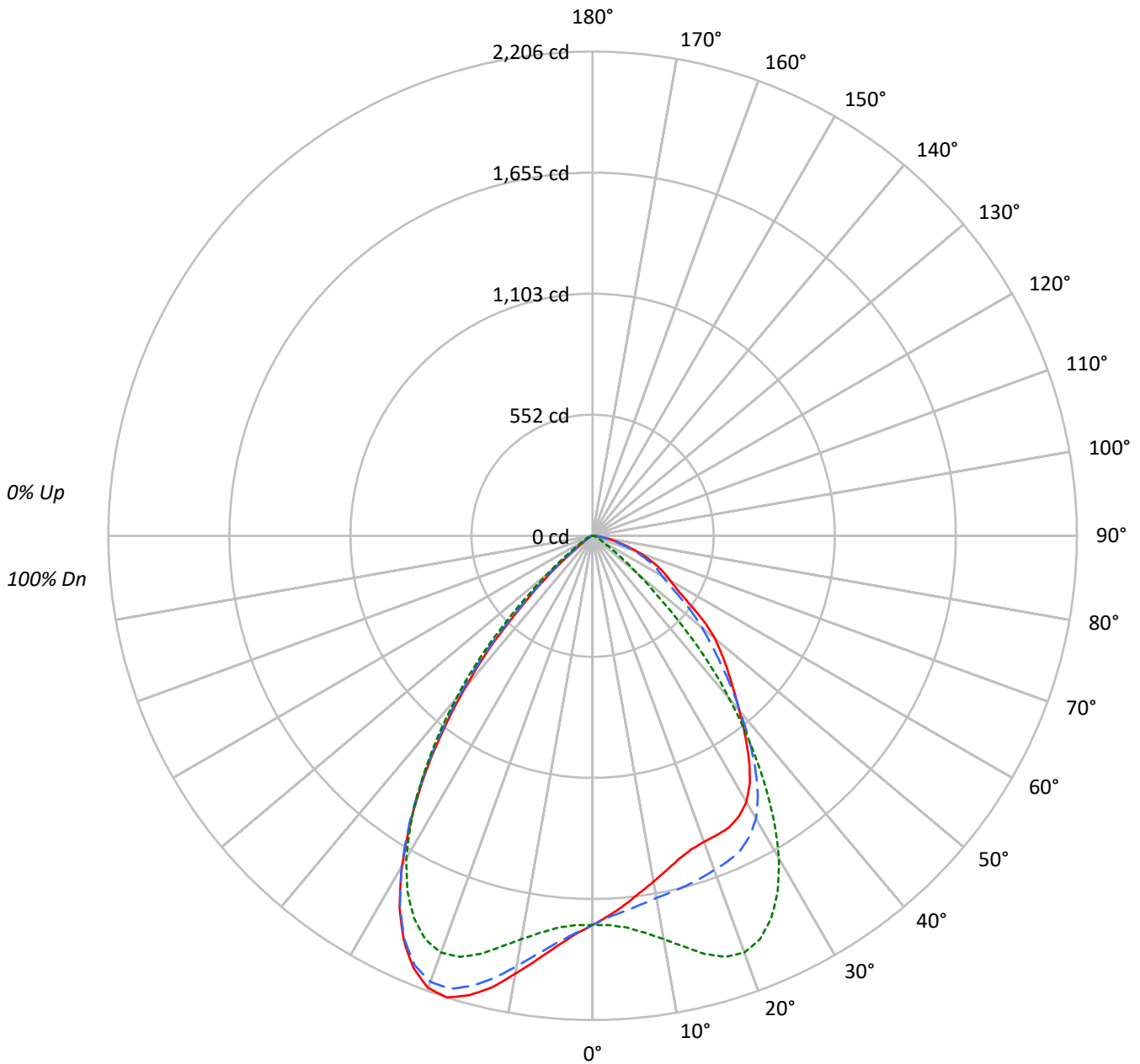
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251565

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1LI

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°	172803	172803	172803
5°	165079	175273	183657
10°	158289	184633	200437
15°	153675	198987	218601
20°	153879	209583	227349
25°	157805	206840	218798
30°	157594	190938	195372
35°	147611	161377	159176
40°	132222	123100	114844
45°	119950	78161	64131
50°	110196	39663	27367
55°	90462	17705	9039
60°	79409	9921	4970
65°	74739	7472	3736
70°	63971	5927	3305
75°	48801	4368	2598
80°	35077	2582	1291
85°	25831	0	0



TEST NUMBER: P251565

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.2	5.3
10°-20°	536.8	16.4
20°-30°	830.5	25.4
30°-40°	818.2	25.0
40°-50°	502.4	15.4
50°-60°	223.4	6.8
60°-70°	124.8	3.8
70°-80°	54.0	1.7
80°-90°	9.7	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°	1539.5	47.0
0°-40°	2357.7	72.1
0°-60°	3083.6	94.2
0°-90°	3272.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3272.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1773	1773	1773	1773	1773	
5°	1687	1715	1792	1861	1877	158
15°	1523	1650	1972	2123	2167	432
25°	1468	1586	1924	2028	2035	673
35°	1241	1292	1356	1352	1338	770
45°	870	826	567	495	465	674
55°	532	482	104	60	53	489
65°	324	292	32	18	16	317
75°	130	111	12	7	7	143
85°	23	18	0	0	0	29
90°	0	0	0	0	0	



TEST NUMBER: P251565

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1
2.5°	1731.4	1731.4	1731.4	1731.4	1736.1	1729.1	1736.1	1736.1	1743.0	1745.3	1738.4
5°	1687.4	1685.1	1687.4	1687.4	1692.1	1689.8	1696.7	1701.3	1710.6	1715.2	1715.2
7.5°	1641.1	1641.1	1641.1	1645.8	1652.7	1650.4	1657.4	1664.3	1678.2	1687.4	1694.4
10°	1599.5	1597.2	1604.1	1606.4	1613.4	1613.4	1624.9	1631.9	1648.1	1666.6	1675.9
12.5°	1560.1	1557.8	1562.4	1569.4	1581.0	1581.0	1590.2	1601.8	1624.9	1645.8	1662.0
15°	1523.1	1525.4	1532.4	1537.0	1550.9	1550.9	1562.4	1576.3	1601.8	1627.3	1650.4
17.5°	1497.6	1500.0	1504.6	1511.5	1525.4	1525.4	1537.0	1553.2	1581.0	1608.7	1636.5
20°	1483.7	1486.1	1490.7	1497.6	1509.2	1511.5	1520.8	1539.3	1564.8	1594.9	1620.3
22.5°	1476.8	1481.4	1486.1	1490.7	1502.3	1502.3	1513.8	1527.7	1553.2	1583.3	1606.4
25°	1467.5	1472.2	1474.5	1481.4	1490.7	1490.7	1497.6	1513.8	1537.0	1562.4	1585.6
27.5°	1442.1	1446.7	1449.0	1456.0	1465.2	1462.9	1472.2	1483.7	1504.6	1527.7	1546.2
30°	1400.4	1402.7	1407.4	1409.7	1416.6	1416.6	1423.6	1435.1	1449.0	1469.9	1488.4
32.5°	1333.3	1337.9	1340.2	1342.5	1349.5	1347.2	1349.5	1356.4	1370.3	1388.8	1400.4
35°	1240.7	1250.0	1250.0	1254.6	1256.9	1254.6	1254.6	1263.8	1270.8	1284.7	1291.6
37.5°	1138.9	1145.8	1143.5	1148.1	1150.4	1143.5	1148.1	1150.4	1159.7	1166.6	1168.9
40°	1039.3	1041.6	1041.6	1041.6	1041.6	1039.3	1041.6	1043.9	1050.9	1050.9	1043.9
42.5°	949.0	951.4	951.4	946.7	951.4	949.0	949.0	949.0	949.0	939.8	932.8
45°	870.3	872.7	872.7	870.3	870.3	865.7	863.4	861.1	854.1	842.6	826.4
47.5°	796.3	800.9	803.2	798.6	796.3	791.6	791.6	777.8	768.5	754.6	731.5
50°	726.8	731.5	731.5	726.8	726.8	719.9	712.9	708.3	694.4	678.2	650.4
52.5°	638.9	645.8	645.8	643.5	643.5	634.2	631.9	622.7	611.1	592.6	569.4
55°	532.4	541.6	539.3	537.0	532.4	532.4	532.4	525.4	518.5	504.6	481.5
57.5°	456.0	458.3	458.3	456.0	456.0	451.4	451.4	444.4	442.1	428.2	409.7
60°	407.4	407.4	409.7	407.4	405.1	402.8	400.4	395.8	388.9	379.6	365.7
62.5°	368.0	370.4	370.4	368.0	365.7	363.4	361.1	356.5	351.8	344.9	331.0
65°	324.1	328.7	326.4	324.1	321.7	319.4	319.4	314.8	310.2	305.5	291.7
67.5°	275.5	277.8	280.1	275.5	275.5	273.1	273.1	268.5	266.2	256.9	247.7
70°	224.5	226.8	226.8	224.5	224.5	222.2	222.2	219.9	217.6	210.6	201.4
72.5°	175.9	178.2	175.9	173.6	173.6	173.6	171.3	169.0	166.7	162.0	155.1
75°	129.6	129.6	131.9	129.6	127.3	127.3	125.0	125.0	120.4	118.1	111.1
77.5°	92.6	94.9	92.6	92.6	90.3	88.0	88.0	85.6	85.6	83.3	78.7
80°	62.5	62.5	64.8	62.5	60.2	62.5	60.2	57.9	57.9	55.6	50.9
82.5°	39.4	41.7	39.4	39.4	39.4	39.4	39.4	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	9.3	9.3	11.6	11.6	11.6	9.3	9.3	9.3	9.3
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: P251565

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1
2.5°	1747.6	1749.9	1754.6	1761.5	1761.5	1756.9	1768.5	1768.5	1773.1	1775.4	1784.7
5°	1729.1	1733.7	1743.0	1754.6	1756.9	1754.6	1770.8	1777.7	1784.7	1791.6	1805.5
7.5°	1712.9	1722.2	1738.4	1754.6	1761.5	1761.5	1787.0	1796.2	1810.1	1824.0	1840.2
10°	1703.6	1717.5	1740.7	1766.1	1773.1	1780.0	1810.1	1828.6	1847.2	1865.7	1888.8
12.5°	1692.1	1717.5	1747.6	1780.0	1793.9	1803.2	1844.8	1868.0	1893.5	1916.6	1946.7
15°	1689.8	1719.9	1759.2	1800.9	1819.4	1833.3	1879.6	1912.0	1942.1	1972.2	2002.2
17.5°	1680.5	1717.5	1766.1	1812.4	1835.6	1854.1	1907.3	1946.7	1981.4	2011.5	2046.2
20°	1668.9	1710.6	1763.8	1814.8	1840.2	1858.7	1916.6	1953.6	1993.0	2020.8	2053.2
22.5°	1652.7	1694.4	1747.6	1798.6	1821.7	1837.9	1895.8	1928.2	1962.9	1990.7	2020.8
25°	1624.9	1664.3	1710.6	1752.3	1775.4	1789.3	1840.2	1870.3	1895.8	1923.5	1951.3
27.5°	1585.6	1615.7	1655.0	1685.1	1699.0	1712.9	1754.6	1780.0	1803.2	1826.3	1844.8
30°	1516.2	1539.3	1567.1	1592.5	1606.4	1608.7	1648.1	1662.0	1680.5	1696.7	1710.6
32.5°	1423.6	1442.1	1458.3	1472.2	1481.4	1483.7	1513.8	1518.5	1537.0	1537.0	1557.8
35°	1305.5	1314.8	1326.3	1326.3	1333.3	1326.3	1347.2	1351.8	1354.1	1356.4	1372.6
37.5°	1171.3	1175.9	1182.8	1168.9	1168.9	1162.0	1168.9	1173.6	1164.3	1164.3	1175.9
40°	1043.9	1034.7	1025.4	1011.5	1004.6	990.7	990.7	979.1	972.2	967.6	969.9
42.5°	921.3	900.4	879.6	849.5	835.6	821.7	807.8	791.6	787.0	775.4	768.5
45°	803.2	773.1	745.3	696.7	669.0	655.1	625.0	592.6	571.7	567.1	548.6
47.5°	703.7	659.7	613.4	555.5	527.8	502.3	458.3	430.5	402.8	388.9	377.3
50°	615.7	576.4	516.2	453.7	419.0	393.5	344.9	312.5	282.4	261.6	247.7
52.5°	539.3	495.4	439.8	368.0	333.3	305.5	252.3	215.3	189.8	169.0	152.8
55°	453.7	419.0	363.4	296.3	261.6	229.2	182.9	143.5	118.1	104.2	92.6
57.5°	391.2	361.1	307.9	243.0	210.6	180.5	134.3	101.8	81.0	67.1	60.2
60°	349.5	321.7	275.5	213.0	182.9	155.1	111.1	81.0	62.5	50.9	46.3
62.5°	314.8	287.0	245.4	187.5	162.0	134.3	94.9	67.1	50.9	41.7	34.7
65°	275.5	250.0	213.0	162.0	138.9	115.7	81.0	55.6	41.7	32.4	27.8
67.5°	233.8	210.6	178.2	134.3	115.7	97.2	64.8	46.3	34.7	27.8	23.1
70°	189.8	171.3	141.2	108.8	92.6	76.4	53.2	37.0	25.5	20.8	18.5
72.5°	145.8	129.6	108.8	83.3	69.4	57.9	39.4	27.8	20.8	16.2	13.9
75°	104.2	92.6	76.4	60.2	50.9	41.7	30.1	20.8	13.9	11.6	9.3
77.5°	71.8	64.8	53.2	41.7	34.7	30.1	20.8	13.9	11.6	9.3	6.9
80°	46.3	41.7	34.7	25.5	20.8	18.5	11.6	9.3	6.9	4.6	4.6
82.5°	27.8	25.5	20.8	13.9	11.6	9.3	6.9	4.6	4.6	2.3	2.3
85°	16.2	13.9	9.3	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



TEST NUMBER: P251565

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1
2.5°	1780.0	1791.6	1789.3	1796.2	1793.9	1793.9	1805.5	1800.9	1812.4	1812.4	1814.8
5°	1805.5	1821.7	1821.7	1833.3	1831.0	1835.6	1847.2	1847.2	1861.0	1865.7	1865.7
7.5°	1842.5	1863.4	1868.0	1879.6	1881.9	1891.1	1900.4	1902.7	1921.2	1925.9	1928.2
10°	1893.5	1918.9	1925.9	1937.4	1942.1	1951.3	1962.9	1967.5	1990.7	1993.0	2002.2
12.5°	1956.0	1983.7	1990.7	2004.6	2006.9	2018.5	2034.7	2039.3	2062.4	2069.4	2076.3
15°	2016.1	2041.6	2053.2	2067.1	2069.4	2083.3	2097.2	2101.8	2122.6	2131.9	2138.8
17.5°	2057.8	2087.9	2094.8	2113.4	2113.4	2124.9	2138.8	2143.4	2164.3	2171.2	2175.9
20°	2067.1	2094.8	2104.1	2118.0	2120.3	2127.2	2138.8	2143.4	2162.0	2164.3	2171.2
22.5°	2032.3	2060.1	2064.7	2078.6	2080.9	2087.9	2097.2	2094.8	2118.0	2115.7	2118.0
25°	1958.3	1983.7	1983.7	1999.9	1997.6	2004.6	2009.2	2006.9	2027.7	2027.7	2027.7
27.5°	1851.8	1874.9	1877.3	1888.8	1881.9	1884.2	1888.8	1886.5	1900.4	1900.4	1900.4
30°	1719.9	1738.4	1731.4	1740.7	1736.1	1740.7	1736.1	1733.7	1738.4	1743.0	1740.7
32.5°	1555.5	1569.4	1569.4	1571.7	1571.7	1557.8	1553.2	1553.2	1550.9	1548.6	1548.6
35°	1365.7	1377.3	1372.6	1372.6	1370.3	1356.4	1349.5	1344.9	1351.8	1337.9	1347.2
37.5°	1171.3	1173.6	1166.6	1164.3	1152.7	1152.7	1141.2	1131.9	1136.5	1134.2	1125.0
40°	958.3	967.6	953.7	949.0	956.0	946.7	935.2	923.6	932.8	921.3	925.9
42.5°	750.0	747.7	743.0	743.0	743.0	729.1	726.8	724.5	726.8	717.6	710.6
45°	541.6	534.7	527.8	527.8	518.5	513.9	513.9	506.9	495.4	495.4	481.5
47.5°	365.7	349.5	344.9	342.6	338.0	338.0	333.3	328.7	326.4	314.8	314.8
50°	238.4	222.2	217.6	215.3	217.6	213.0	208.3	203.7	199.1	196.8	192.1
52.5°	143.5	136.6	131.9	129.6	125.0	122.7	120.4	115.7	113.4	113.4	111.1
55°	85.6	78.7	69.4	69.4	69.4	67.1	64.8	62.5	60.2	60.2	57.9
57.5°	53.2	48.6	44.0	41.7	41.7	41.7	39.4	39.4	39.4	39.4	37.0
60°	39.4	34.7	32.4	32.4	32.4	30.1	30.1	30.1	30.1	27.8	27.8
62.5°	30.1	27.8	25.5	25.5	23.1	23.1	23.1	23.1	23.1	23.1	20.8
65°	25.5	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	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
75°	9.3	9.3	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: P251565

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1	1773.1
2.5°	1814.8	1826.3	1814.8	1814.8	1821.7	1819.4	1824.0	1817.1
5°	1868.0	1884.2	1872.6	1870.3	1881.9	1879.6	1881.9	1877.3
7.5°	1932.8	1949.0	1937.4	1937.4	1949.0	1946.7	1953.6	1949.0
10°	2006.9	2025.4	2009.2	2011.5	2027.7	2025.4	2025.4	2025.4
12.5°	2083.3	2101.8	2092.5	2092.5	2104.1	2106.4	2108.7	2106.4
15°	2145.8	2164.3	2152.7	2152.7	2168.9	2166.6	2168.9	2166.6
17.5°	2182.8	2201.3	2187.4	2187.4	2201.3	2201.3	2203.6	2205.9
20°	2173.5	2194.4	2182.8	2178.2	2194.4	2194.4	2192.1	2192.1
22.5°	2120.3	2138.8	2129.6	2124.9	2136.5	2131.9	2129.6	2131.9
25°	2027.7	2046.2	2027.7	2027.7	2037.0	2034.7	2037.0	2034.7
27.5°	1902.7	1916.6	1898.1	1895.8	1905.0	1900.4	1898.1	1905.0
30°	1736.1	1749.9	1740.7	1733.7	1745.3	1738.4	1733.7	1736.1
32.5°	1546.2	1555.5	1550.9	1539.3	1546.2	1541.6	1539.3	1541.6
35°	1337.9	1349.5	1331.0	1328.7	1340.2	1331.0	1326.3	1337.9
37.5°	1122.6	1136.5	1120.3	1122.6	1115.7	1118.0	1113.4	1120.3
40°	919.0	916.6	912.0	909.7	912.0	905.1	909.7	902.7
42.5°	699.1	703.7	701.4	699.1	701.4	692.1	687.5	696.7
45°	486.1	483.8	479.2	474.5	474.5	472.2	472.2	465.3
47.5°	312.5	310.2	300.9	303.2	307.9	303.2	296.3	305.5
50°	189.8	187.5	187.5	185.2	189.8	185.2	180.5	180.5
52.5°	106.5	106.5	104.2	104.2	104.2	104.2	101.8	99.5
55°	57.9	55.6	55.6	55.6	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°	27.8	27.8	27.8	27.8	25.5	27.8	25.5	25.5
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°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
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)