

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: P251638

Luminaire Tested: **LD4B40D010 EU4B30508050 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251638
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30508050 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3755.0 lumens
Efficiency: N/A
Efficacy: 87.3 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

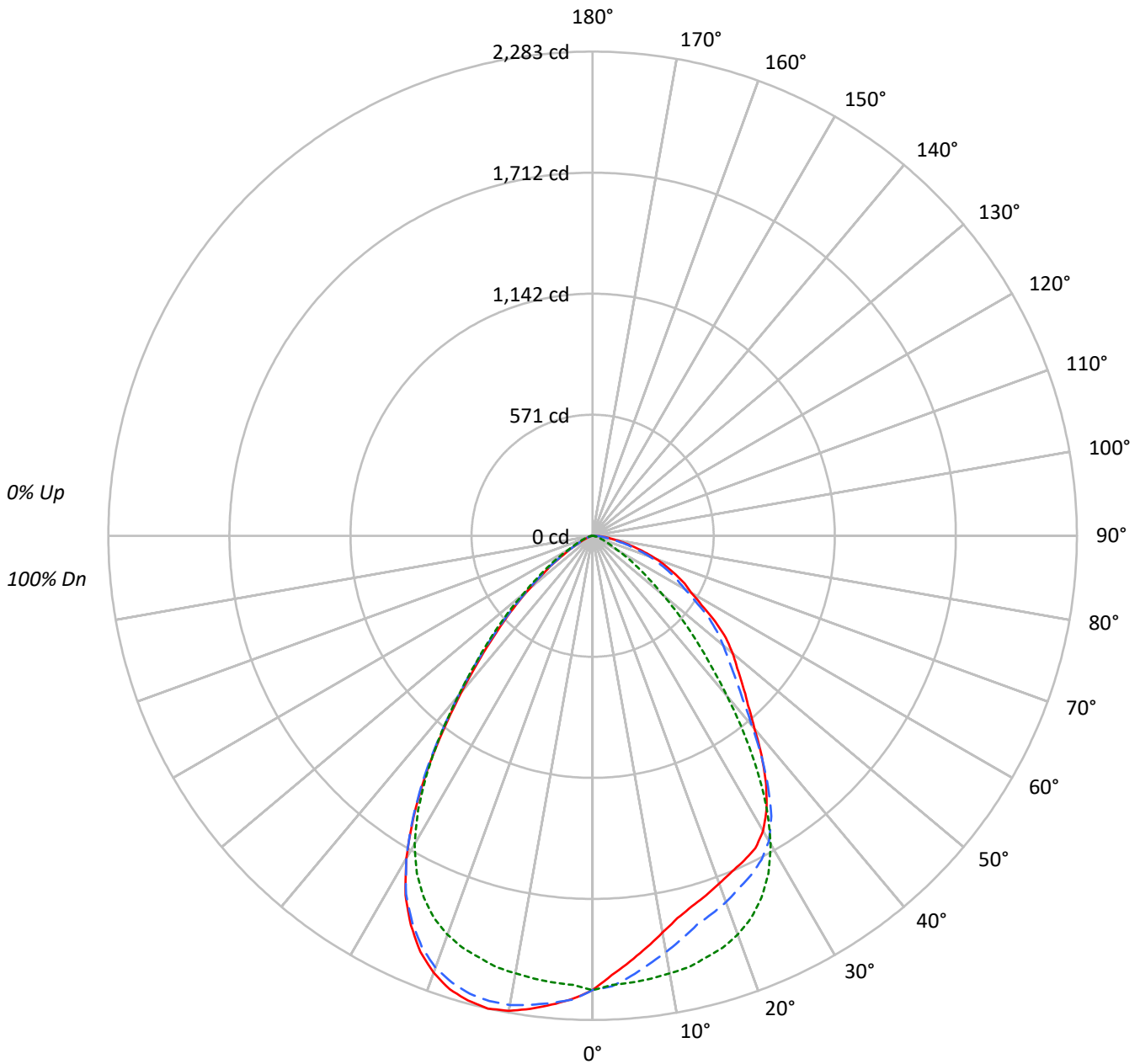
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	208775	208775	208775
5°	197148	206872	217134
10°	187958	207354	225108
15°	182440	207785	228953
20°	180948	207571	227328
25°	181677	202453	217884
30°	180799	188879	197578
35°	169467	161258	162900
40°	151013	125034	122223
45°	138116	93212	87506
50°	130588	65287	59010
55°	120077	44092	37058
60°	104923	25826	20447
65°	99299	16557	11461
70°	90471	11797	7067
75°	74858	8322	5196
80°	58874	4658	3087
85°	52444	3131	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	202.4	5.4
10°-20°	580.7	15.5
20°-30°	860.8	22.9
30°-40°	861.9	23.0
40°-50°	602.4	16.0
50°-60°	358.5	9.5
60°-70°	187.1	5.0
70°-80°	83.2	2.2
80°-90°	18.1	0.5
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°	1643.8	43.8
0°-40°	2505.8	66.7
0°-60°	3466.6	92.3
0°-90°	3755.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3755.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2142	2142	2142	2142	2142	
5°	2015	2084	2115	2211	2220	189
15°	1808	1899	2059	2236	2269	512
25°	1690	1767	1883	2012	2026	778
35°	1424	1441	1355	1380	1369	883
45°	1002	952	676	654	635	778
55°	707	662	260	226	218	627
65°	431	395	72	52	50	426
75°	199	174	22	14	14	215
85°	47	36	3	3	0	53
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°	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2
2.5°	2073.2	2098.0	2073.2	2081.4	2114.6	2084.2	2100.8	2100.8	2092.5	2111.8	2125.6
5°	2015.2	2040.0	2015.2	2026.2	2062.1	2031.8	2051.1	2045.6	2048.3	2064.9	2084.2
7.5°	1957.2	1976.5	1954.5	1968.3	2001.4	1976.5	1993.1	1993.1	1995.9	2020.7	2037.3
10°	1899.3	1915.8	1899.3	1910.3	1946.2	1924.1	1935.1	1937.9	1946.2	1968.3	1993.1
12.5°	1846.8	1860.6	1844.0	1860.6	1891.0	1868.9	1882.7	1885.4	1893.7	1918.6	1946.2
15°	1808.2	1822.0	1805.4	1819.2	1846.8	1830.2	1841.3	1846.8	1852.3	1874.4	1899.3
17.5°	1777.8	1788.8	1775.0	1791.6	1813.7	1794.4	1810.9	1810.9	1819.2	1841.3	1868.9
20°	1744.7	1755.7	1744.7	1758.5	1783.3	1766.7	1780.5	1780.5	1788.8	1813.7	1838.5
22.5°	1714.3	1719.8	1714.3	1725.3	1750.2	1736.4	1744.7	1747.4	1755.7	1777.8	1799.9
25°	1689.5	1700.5	1695.0	1706.0	1722.6	1708.8	1717.1	1719.8	1728.1	1747.4	1766.7
27.5°	1661.8	1667.4	1661.8	1675.6	1689.5	1678.4	1686.7	1683.9	1689.5	1706.0	1722.6
30°	1606.6	1612.2	1612.2	1620.4	1631.5	1626.0	1634.2	1626.0	1631.5	1645.3	1661.8
32.5°	1526.6	1529.3	1532.1	1540.4	1548.7	1540.4	1545.9	1545.9	1545.9	1556.9	1568.0
35°	1424.4	1430.0	1427.2	1432.7	1441.0	1438.2	1438.2	1435.5	1430.0	1435.5	1441.0
37.5°	1308.5	1300.2	1300.2	1308.5	1314.0	1303.0	1308.5	1303.0	1303.0	1305.7	1305.7
40°	1187.0	1178.8	1187.0	1189.8	1192.6	1187.0	1184.3	1178.8	1170.5	1173.2	1167.7
42.5°	1084.9	1079.4	1082.1	1082.1	1084.9	1079.4	1082.1	1071.1	1062.8	1057.3	1049.0
45°	1002.1	993.8	1002.1	996.6	996.6	993.8	991.0	985.5	974.5	966.2	952.4
47.5°	924.8	924.8	927.5	927.5	927.5	922.0	922.0	911.0	899.9	888.9	869.6
50°	861.3	855.8	866.8	866.8	858.5	855.8	858.5	844.7	836.4	822.6	803.3
52.5°	792.3	792.3	795.0	795.0	792.3	786.8	789.5	778.5	770.2	756.4	737.1
55°	706.7	701.2	709.5	709.5	706.7	703.9	706.7	698.4	690.1	679.1	662.5
57.5°	610.1	607.3	612.8	615.6	610.1	610.1	612.8	604.6	601.8	590.8	574.2
60°	538.3	535.5	541.1	543.8	538.3	538.3	538.3	527.3	521.7	510.7	499.7
62.5°	488.6	485.9	491.4	488.6	485.9	483.1	485.9	474.8	469.3	458.2	447.2
65°	430.6	433.4	436.2	436.2	433.4	430.6	430.6	425.1	419.6	408.6	394.8
67.5°	375.4	375.4	378.2	381.0	378.2	378.2	378.2	369.9	364.4	356.1	339.5
70°	317.5	314.7	323.0	323.0	317.5	320.2	317.5	314.7	309.2	298.1	284.3
72.5°	256.7	256.7	259.5	259.5	256.7	256.7	256.7	254.0	245.7	240.2	226.4
75°	198.8	198.8	201.5	204.3	198.8	198.8	201.5	196.0	190.5	182.2	173.9
77.5°	149.1	146.3	149.1	149.1	146.3	146.3	146.3	143.5	140.8	132.5	124.2
80°	104.9	102.1	104.9	104.9	104.9	102.1	102.1	99.4	99.4	93.9	85.6
82.5°	71.8	69.0	71.8	71.8	71.8	69.0	69.0	69.0	66.3	63.5	58.0
85°	46.9	44.2	44.2	46.9	44.2	44.2	44.2	44.2	41.4	38.6	35.9
87.5°	22.1	22.1	22.1	22.1	22.1	22.1	22.1	19.3	19.3	19.3	16.6
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°	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2
2.5°	2114.6	2109.1	2125.6	2120.1	2122.9	2109.1	2131.1	2120.1	2133.9	2120.1	2147.7
5°	2078.7	2073.2	2098.0	2095.3	2098.0	2087.0	2111.8	2109.1	2125.6	2114.6	2144.9
7.5°	2040.0	2034.5	2062.1	2064.9	2070.4	2059.4	2092.5	2092.5	2109.1	2106.3	2139.4
10°	1995.9	1998.6	2026.2	2031.8	2042.8	2037.3	2067.6	2075.9	2098.0	2095.3	2136.7
12.5°	1954.5	1954.5	1990.3	2001.4	2009.7	2006.9	2042.8	2053.8	2078.7	2084.2	2122.9
15°	1913.1	1915.8	1948.9	1965.5	1976.5	1973.8	2012.4	2026.2	2056.6	2059.4	2106.3
17.5°	1879.9	1877.2	1913.1	1926.9	1943.4	1940.7	1982.1	1998.6	2029.0	2037.3	2081.4
20°	1852.3	1849.6	1882.7	1899.3	1910.3	1907.5	1948.9	1968.3	1995.9	2001.4	2045.6
22.5°	1819.2	1813.7	1846.8	1860.6	1871.6	1868.9	1904.8	1918.6	1946.2	1951.7	1993.1
25°	1780.5	1775.0	1805.4	1813.7	1822.0	1816.4	1846.8	1855.1	1877.2	1882.7	1924.1
27.5°	1736.4	1722.6	1747.4	1747.4	1752.9	1744.7	1766.7	1775.0	1794.4	1794.4	1833.0
30°	1667.4	1648.0	1661.8	1659.1	1661.8	1650.8	1664.6	1667.4	1681.2	1678.4	1706.0
32.5°	1570.7	1543.1	1551.4	1543.1	1534.9	1518.3	1534.9	1529.3	1540.4	1529.3	1554.2
35°	1438.2	1410.6	1407.9	1396.8	1388.6	1374.7	1374.7	1360.9	1363.7	1355.4	1372.0
37.5°	1294.7	1258.8	1253.3	1231.2	1217.4	1200.8	1200.8	1189.8	1176.0	1170.5	1184.3
40°	1153.9	1115.3	1101.5	1065.6	1051.8	1035.2	1024.2	1010.4	1004.8	982.8	993.8
42.5°	1032.4	991.0	960.7	922.0	908.2	883.4	866.8	850.2	842.0	817.1	828.2
45°	930.3	880.6	847.5	797.8	778.5	750.9	726.0	706.7	687.4	676.3	670.8
47.5°	844.7	792.3	748.1	692.9	662.5	637.7	604.6	585.2	560.4	546.6	538.3
50°	773.0	715.0	665.3	601.8	571.4	543.8	505.2	474.8	452.7	430.6	425.1
52.5°	709.5	648.7	593.5	521.7	485.9	452.7	411.3	378.2	358.9	334.0	331.3
55°	634.9	582.5	521.7	447.2	411.3	378.2	334.0	300.9	276.1	259.5	254.0
57.5°	554.9	505.2	447.2	372.7	336.8	300.9	259.5	229.1	207.0	193.2	190.5
60°	480.3	433.4	378.2	303.7	267.8	237.4	193.2	162.9	143.5	132.5	127.0
62.5°	425.1	381.0	328.5	259.5	226.4	196.0	154.6	127.0	110.4	99.4	93.9
65°	372.7	328.5	281.6	218.1	190.5	162.9	124.2	99.4	82.8	71.8	66.3
67.5°	317.5	278.8	234.6	182.2	154.6	132.5	99.4	77.3	63.5	55.2	49.7
70°	262.3	226.4	190.5	146.3	127.0	104.9	77.3	60.7	46.9	41.4	35.9
72.5°	207.0	179.4	149.1	113.2	96.6	82.8	60.7	44.2	35.9	30.4	24.8
75°	154.6	135.3	110.4	85.6	71.8	60.7	44.2	33.1	27.6	22.1	19.3
77.5°	110.4	93.9	77.3	58.0	52.5	44.2	30.4	24.8	19.3	13.8	11.0
80°	74.5	66.3	52.5	41.4	33.1	30.4	22.1	16.6	11.0	8.3	8.3
82.5°	49.7	41.4	33.1	24.8	22.1	19.3	13.8	11.0	8.3	5.5	5.5
85°	30.4	24.8	19.3	13.8	13.8	11.0	8.3	5.5	2.8	2.8	2.8
87.5°	13.8	11.0	8.3	5.5	5.5	2.8	2.8	2.8	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°	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2
2.5°	2169.8	2153.2	2142.2	2156.0	2161.5	2153.2	2161.5	2175.3	2189.1	2191.9	2153.2
5°	2172.5	2156.0	2150.5	2167.0	2169.8	2167.0	2175.3	2194.6	2211.2	2216.7	2178.1
7.5°	2172.5	2161.5	2158.7	2178.1	2180.8	2178.1	2191.9	2214.0	2230.5	2241.6	2202.9
10°	2167.0	2161.5	2164.3	2180.8	2186.3	2186.3	2205.7	2230.5	2247.1	2258.1	2219.5
12.5°	2158.7	2158.7	2158.7	2178.1	2183.6	2186.3	2202.9	2236.0	2247.1	2263.6	2225.0
15°	2144.9	2144.9	2144.9	2164.3	2172.5	2172.5	2191.9	2222.2	2236.0	2252.6	2214.0
17.5°	2120.1	2120.1	2122.9	2139.4	2147.7	2147.7	2167.0	2200.2	2208.4	2227.8	2189.1
20°	2084.2	2084.2	2087.0	2103.5	2111.8	2106.3	2131.1	2158.7	2167.0	2183.6	2144.9
22.5°	2031.8	2031.8	2031.8	2048.3	2053.8	2051.1	2075.9	2100.8	2100.8	2122.9	2081.4
25°	1954.5	1960.0	1954.5	1971.0	1976.5	1973.8	1995.9	2018.0	2012.4	2037.3	1995.9
27.5°	1860.6	1857.8	1857.8	1871.6	1871.6	1868.9	1885.4	1910.3	1904.8	1921.3	1882.7
30°	1730.9	1739.1	1725.3	1744.7	1736.4	1730.9	1741.9	1764.0	1755.7	1769.5	1739.1
32.5°	1581.8	1570.7	1570.7	1570.7	1576.3	1562.5	1573.5	1584.6	1576.3	1590.1	1556.9
35°	1385.8	1388.6	1380.3	1383.0	1385.8	1369.2	1380.3	1391.3	1380.3	1388.6	1358.2
37.5°	1189.8	1192.6	1173.2	1184.3	1173.2	1167.7	1178.8	1184.3	1173.2	1181.5	1148.4
40°	993.8	988.3	985.5	985.5	988.3	974.5	982.8	991.0	982.8	988.3	957.9
42.5°	822.6	819.9	814.4	817.1	808.8	806.1	808.8	817.1	808.8	814.4	792.3
45°	673.6	668.1	659.8	662.5	662.5	648.7	657.0	662.5	654.2	657.0	637.7
47.5°	535.5	527.3	527.3	524.5	524.5	519.0	527.3	524.5	516.2	521.7	502.4
50°	416.8	411.3	411.3	411.3	411.3	403.0	405.8	411.3	403.0	403.0	392.0
52.5°	325.7	317.5	311.9	311.9	311.9	309.2	309.2	311.9	303.7	303.7	300.9
55°	245.7	242.9	234.6	234.6	234.6	226.4	229.1	229.1	226.4	226.4	218.1
57.5°	182.2	173.9	168.4	168.4	162.9	162.9	160.1	162.9	157.4	157.4	151.8
60°	121.5	115.9	113.2	110.4	110.4	107.7	110.4	107.7	107.7	104.9	102.1
62.5°	88.3	82.8	77.3	77.3	77.3	74.5	74.5	74.5	74.5	74.5	71.8
65°	63.5	58.0	58.0	55.2	55.2	52.5	52.5	52.5	52.5	52.5	49.7
67.5°	44.2	41.4	38.6	38.6	38.6	38.6	38.6	38.6	35.9	35.9	35.9
70°	33.1	30.4	27.6	27.6	27.6	27.6	27.6	24.8	27.6	27.6	24.8
72.5°	22.1	22.1	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
75°	16.6	16.6	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
77.5°	11.0	11.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
80°	8.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
82.5°	5.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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: P251638

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2	2142.2
2.5°	2194.6	2191.9	2186.3	2194.6	2172.5	2164.3	2161.5	2186.3
5°	2225.0	2219.5	2219.5	2227.8	2202.9	2197.4	2191.9	2219.5
7.5°	2252.6	2247.1	2247.1	2255.4	2233.3	2227.8	2222.2	2249.8
10°	2269.2	2269.2	2269.2	2274.7	2255.4	2249.8	2247.1	2274.7
12.5°	2277.4	2277.4	2274.7	2285.7	2260.9	2260.9	2255.4	2283.0
15°	2266.4	2266.4	2266.4	2274.7	2252.6	2247.1	2247.1	2269.2
17.5°	2238.8	2238.8	2236.0	2244.3	2219.5	2219.5	2216.7	2241.6
20°	2197.4	2197.4	2191.9	2202.9	2178.1	2169.8	2167.0	2191.9
22.5°	2131.1	2128.4	2125.6	2131.1	2109.1	2103.5	2100.8	2122.9
25°	2045.6	2042.8	2037.3	2042.8	2018.0	2009.7	2009.7	2026.2
27.5°	1924.1	1924.1	1915.8	1924.1	1896.5	1893.7	1891.0	1910.3
30°	1775.0	1764.0	1758.5	1769.5	1741.9	1741.9	1736.4	1755.7
32.5°	1590.1	1579.0	1576.3	1581.8	1556.9	1548.7	1559.7	1570.7
35°	1377.5	1380.3	1369.2	1369.2	1347.1	1349.9	1352.7	1369.2
37.5°	1173.2	1167.7	1164.9	1167.7	1151.1	1145.6	1140.1	1156.7
40°	982.8	968.9	966.2	966.2	952.4	949.6	952.4	960.7
42.5°	803.3	800.6	789.5	795.0	781.2	786.8	784.0	784.0
45°	648.7	651.5	640.4	648.7	637.7	629.4	629.4	634.9
47.5°	513.5	513.5	510.7	510.7	502.4	505.2	499.7	507.9
50°	397.5	397.5	392.0	394.8	389.2	389.2	386.5	389.2
52.5°	303.7	300.9	300.9	298.1	292.6	295.4	298.1	292.6
55°	220.8	223.6	218.1	220.8	215.3	218.1	215.3	218.1
57.5°	151.8	154.6	149.1	154.6	149.1	151.8	149.1	149.1
60°	104.9	104.9	102.1	104.9	102.1	102.1	99.4	104.9
62.5°	71.8	71.8	71.8	71.8	71.8	69.0	71.8	71.8
65°	52.5	49.7	49.7	49.7	49.7	49.7	49.7	49.7
67.5°	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9
70°	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
72.5°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
75°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
77.5°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
80°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	2.8	2.8	2.8	0.0	2.8	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)