

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: P251636

Luminaire Tested: **LD4B40D010 EU4B30508035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251636
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 EU4B30508035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3717.0 lumens
Efficiency: N/A
Efficacy: 86.4 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

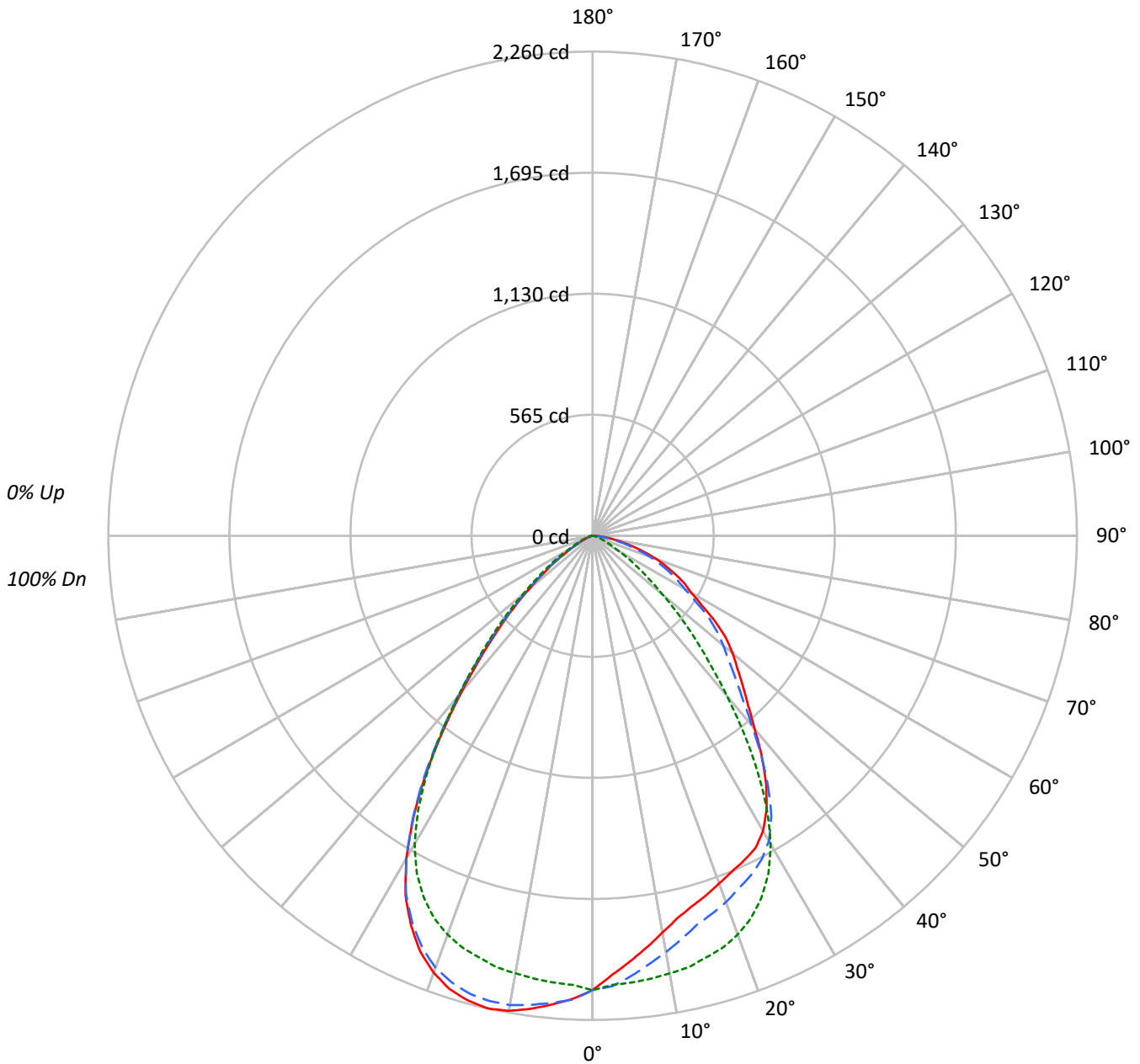
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
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°	206660	206660	206660
5°	195152	204778	214933
10°	186048	205246	222832
15°	180594	205677	226633
20°	179112	205465	225025
25°	179838	200399	215679
30°	178975	186965	195574
35°	167754	159628	161258
40°	149486	123762	120976
45°	136710	92275	86624
50°	129269	64635	58418
55°	118854	43651	36684
60°	103871	25573	20232
65°	98307	16373	11346
70°	89531	11683	7010
75°	74067	8246	5159
80°	58257	4602	3087
85°	51997	3019	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.3	5.4
10°-20°	574.8	15.5
20°-30°	852.1	22.9
30°-40°	853.2	23.0
40°-50°	596.3	16.0
50°-60°	354.8	9.5
60°-70°	185.2	5.0
70°-80°	82.3	2.2
80°-90°	17.9	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°	1627.2	43.8
0°-40°	2480.4	66.7
0°-60°	3431.5	92.3
0°-90°	3717.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3717.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2120	2120	2120	2120	2120	
5°	1995	2063	2093	2189	2197	187
15°	1790	1880	2038	2213	2246	507
25°	1672	1749	1864	1992	2006	771
35°	1410	1426	1342	1366	1355	874
45°	992	943	670	648	628	770
55°	700	656	257	224	216	621
65°	426	391	71	52	49	422
75°	197	172	22	14	14	213
85°	46	36	3	3	0	52
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°	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5
2.5°	2052.2	2076.8	2052.2	2060.4	2093.2	2063.1	2079.5	2079.5	2071.3	2090.4	2104.1
5°	1994.8	2019.4	1994.8	2005.7	2041.3	2011.2	2030.3	2024.9	2027.6	2044.0	2063.1
7.5°	1937.4	1956.5	1934.7	1948.3	1981.1	1956.5	1972.9	1972.9	1975.7	2000.3	2016.7
10°	1880.0	1896.4	1880.0	1891.0	1926.5	1904.6	1915.6	1918.3	1926.5	1948.3	1972.9
12.5°	1828.1	1841.8	1825.4	1841.8	1871.8	1850.0	1863.6	1866.4	1874.6	1899.2	1926.5
15°	1789.9	1803.5	1787.1	1800.8	1828.1	1811.7	1822.6	1828.1	1833.6	1855.4	1880.0
17.5°	1759.8	1770.7	1757.1	1773.5	1795.3	1776.2	1792.6	1792.6	1800.8	1822.6	1850.0
20°	1727.0	1737.9	1727.0	1740.7	1765.3	1748.9	1762.5	1762.5	1770.7	1795.3	1819.9
22.5°	1696.9	1702.4	1696.9	1707.9	1732.5	1718.8	1727.0	1729.7	1737.9	1759.8	1781.7
25°	1672.4	1683.3	1677.8	1688.7	1705.1	1691.5	1699.7	1702.4	1710.6	1729.7	1748.9
27.5°	1645.0	1650.5	1645.0	1658.7	1672.4	1661.4	1669.6	1666.9	1672.4	1688.7	1705.1
30°	1590.4	1595.8	1595.8	1604.0	1615.0	1609.5	1617.7	1609.5	1615.0	1628.6	1645.0
32.5°	1511.1	1513.9	1516.6	1524.8	1533.0	1524.8	1530.3	1530.3	1530.3	1541.2	1552.1
35°	1410.0	1415.5	1412.8	1418.2	1426.4	1423.7	1423.7	1421.0	1415.5	1421.0	1426.4
37.5°	1295.3	1287.1	1287.1	1295.3	1300.7	1289.8	1295.3	1289.8	1289.8	1292.5	1292.5
40°	1175.0	1166.8	1175.0	1177.8	1180.5	1175.0	1172.3	1166.8	1158.6	1161.4	1155.9
42.5°	1073.9	1068.4	1071.2	1071.2	1073.9	1068.4	1071.2	1060.3	1052.1	1046.6	1038.4
45°	991.9	983.7	991.9	986.5	986.5	983.7	981.0	975.5	964.6	956.4	942.7
47.5°	915.4	915.4	918.2	918.2	918.2	912.7	912.7	901.8	890.8	879.9	860.8
50°	852.6	847.1	858.0	858.0	849.8	847.1	849.8	836.2	828.0	814.3	795.2
52.5°	784.3	784.3	787.0	787.0	784.3	778.8	781.5	770.6	762.4	748.7	729.6
55°	699.5	694.1	702.3	702.3	699.5	696.8	699.5	691.3	683.2	672.2	655.8
57.5°	603.9	601.2	606.6	609.4	603.9	603.9	606.6	598.4	595.7	584.8	568.4
60°	532.9	530.1	535.6	538.3	532.9	532.9	532.9	521.9	516.5	505.5	494.6
62.5°	483.7	480.9	486.4	483.7	480.9	478.2	480.9	470.0	464.5	453.6	442.7
65°	426.3	429.0	431.8	431.8	429.0	426.3	426.3	420.8	415.4	404.4	390.8
67.5°	371.6	371.6	374.4	377.1	374.4	374.4	374.4	366.2	360.7	352.5	336.1
70°	314.2	311.5	319.7	319.7	314.2	317.0	314.2	311.5	306.1	295.1	281.5
72.5°	254.1	254.1	256.9	256.9	254.1	254.1	254.1	251.4	243.2	237.7	224.1
75°	196.7	196.7	199.5	202.2	196.7	196.7	199.5	194.0	188.5	180.4	172.2
77.5°	147.6	144.8	147.6	147.6	144.8	144.8	144.8	142.1	139.4	131.2	123.0
80°	103.8	101.1	103.8	103.8	103.8	101.1	101.1	98.4	98.4	92.9	84.7
82.5°	71.0	68.3	71.0	71.0	71.0	68.3	68.3	68.3	65.6	62.8	57.4
85°	46.5	43.7	43.7	46.5	43.7	43.7	43.7	43.7	41.0	38.3	35.5
87.5°	21.9	21.9	21.9	21.9	21.9	21.9	21.9	19.1	19.1	19.1	16.4
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°	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5
2.5°	2093.2	2087.7	2104.1	2098.6	2101.4	2087.7	2109.6	2098.6	2112.3	2098.6	2126.0
5°	2057.7	2052.2	2076.8	2074.0	2076.8	2065.8	2090.4	2087.7	2104.1	2093.2	2123.2
7.5°	2019.4	2013.9	2041.3	2044.0	2049.5	2038.5	2071.3	2071.3	2087.7	2085.0	2117.8
10°	1975.7	1978.4	2005.7	2011.2	2022.1	2016.7	2046.7	2054.9	2076.8	2074.0	2115.0
12.5°	1934.7	1934.7	1970.2	1981.1	1989.3	1986.6	2022.1	2033.1	2057.7	2063.1	2101.4
15°	1893.7	1896.4	1929.2	1945.6	1956.5	1953.8	1992.1	2005.7	2035.8	2038.5	2085.0
17.5°	1860.9	1858.2	1893.7	1907.4	1923.8	1921.0	1962.0	1978.4	2008.5	2016.7	2060.4
20°	1833.6	1830.8	1863.6	1880.0	1891.0	1888.2	1929.2	1948.3	1975.7	1981.1	2024.9
22.5°	1800.8	1795.3	1828.1	1841.8	1852.7	1850.0	1885.5	1899.2	1926.5	1932.0	1972.9
25°	1762.5	1757.1	1787.1	1795.3	1803.5	1798.1	1828.1	1836.3	1858.2	1863.6	1904.6
27.5°	1718.8	1705.1	1729.7	1729.7	1735.2	1727.0	1748.9	1757.1	1776.2	1776.2	1814.4
30°	1650.5	1631.4	1645.0	1642.3	1645.0	1634.1	1647.8	1650.5	1664.2	1661.4	1688.7
32.5°	1554.9	1527.5	1535.7	1527.5	1519.3	1502.9	1519.3	1513.9	1524.8	1513.9	1538.5
35°	1423.7	1396.4	1393.6	1382.7	1374.5	1360.8	1360.8	1347.2	1349.9	1341.7	1358.1
37.5°	1281.6	1246.1	1240.6	1218.7	1205.1	1188.7	1188.7	1177.8	1164.1	1158.6	1172.3
40°	1142.2	1104.0	1090.3	1054.8	1041.1	1024.7	1013.8	1000.1	994.7	972.8	983.7
42.5°	1022.0	981.0	950.9	912.7	899.0	874.4	858.0	841.6	833.4	808.9	819.8
45°	920.9	871.7	838.9	789.7	770.6	743.3	718.7	699.5	680.4	669.5	664.0
47.5°	836.2	784.3	740.5	685.9	655.8	631.2	598.4	579.3	554.7	541.1	532.9
50°	765.1	707.7	658.6	595.7	565.6	538.3	500.1	470.0	448.1	426.3	420.8
52.5°	702.3	642.2	587.5	516.5	480.9	448.1	407.2	374.4	355.2	330.6	327.9
55°	628.5	576.6	516.5	442.7	407.2	374.4	330.6	297.9	273.3	256.9	251.4
57.5°	549.3	500.1	442.7	368.9	333.4	297.9	256.9	226.8	204.9	191.3	188.5
60°	475.5	429.0	374.4	300.6	265.1	235.0	191.3	161.2	142.1	131.2	125.7
62.5°	420.8	377.1	325.2	256.9	224.1	194.0	153.0	125.7	109.3	98.4	92.9
65°	368.9	325.2	278.7	215.9	188.5	161.2	123.0	98.4	82.0	71.0	65.6
67.5°	314.2	276.0	232.3	180.4	153.0	131.2	98.4	76.5	62.8	54.7	49.2
70°	259.6	224.1	188.5	144.8	125.7	103.8	76.5	60.1	46.5	41.0	35.5
72.5°	204.9	177.6	147.6	112.0	95.6	82.0	60.1	43.7	35.5	30.1	24.6
75°	153.0	133.9	109.3	84.7	71.0	60.1	43.7	32.8	27.3	21.9	19.1
77.5°	109.3	92.9	76.5	57.4	51.9	43.7	30.1	24.6	19.1	13.7	10.9
80°	73.8	65.6	51.9	41.0	32.8	30.1	21.9	16.4	10.9	8.2	8.2
82.5°	49.2	41.0	32.8	24.6	21.9	19.1	13.7	10.9	8.2	5.5	5.5
85°	30.1	24.6	19.1	13.7	13.7	10.9	8.2	5.5	2.7	2.7	2.7
87.5°	13.7	10.9	8.2	5.5	5.5	2.7	2.7	2.7	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°	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5
2.5°	2147.8	2131.4	2120.5	2134.2	2139.6	2131.4	2139.6	2153.3	2167.0	2169.7	2131.4
5°	2150.6	2134.2	2128.7	2145.1	2147.8	2145.1	2153.3	2172.4	2188.8	2194.3	2156.0
7.5°	2150.6	2139.6	2136.9	2156.0	2158.8	2156.0	2169.7	2191.5	2207.9	2218.9	2180.6
10°	2145.1	2139.6	2142.4	2158.8	2164.2	2164.2	2183.4	2207.9	2224.3	2235.3	2197.0
12.5°	2136.9	2136.9	2136.9	2156.0	2161.5	2164.2	2180.6	2213.4	2224.3	2240.7	2202.5
15°	2123.2	2123.2	2123.2	2142.4	2150.6	2150.6	2169.7	2199.7	2213.4	2229.8	2191.5
17.5°	2098.6	2098.6	2101.4	2117.8	2126.0	2126.0	2145.1	2177.9	2186.1	2205.2	2167.0
20°	2063.1	2063.1	2065.8	2082.2	2090.4	2085.0	2109.6	2136.9	2145.1	2161.5	2123.2
22.5°	2011.2	2011.2	2011.2	2027.6	2033.1	2030.3	2054.9	2079.5	2079.5	2101.4	2060.4
25°	1934.7	1940.1	1934.7	1951.1	1956.5	1953.8	1975.7	1997.5	1992.1	2016.7	1975.7
27.5°	1841.8	1839.0	1839.0	1852.7	1852.7	1850.0	1866.4	1891.0	1885.5	1901.9	1863.6
30°	1713.3	1721.5	1707.9	1727.0	1718.8	1713.3	1724.3	1746.1	1737.9	1751.6	1721.5
32.5°	1565.8	1554.9	1554.9	1554.9	1560.3	1546.7	1557.6	1568.5	1560.3	1574.0	1541.2
35°	1371.8	1374.5	1366.3	1369.0	1371.8	1355.4	1366.3	1377.2	1366.3	1374.5	1344.4
37.5°	1177.8	1180.5	1161.4	1172.3	1161.4	1155.9	1166.8	1172.3	1161.4	1169.6	1136.8
40°	983.7	978.3	975.5	975.5	978.3	964.6	972.8	981.0	972.8	978.3	948.2
42.5°	814.3	811.6	806.1	808.9	800.7	797.9	800.7	808.9	800.7	806.1	784.3
45°	666.8	661.3	653.1	655.8	655.8	642.2	650.4	655.8	647.6	650.4	631.2
47.5°	530.1	521.9	521.9	519.2	519.2	513.7	521.9	519.2	511.0	516.5	497.3
50°	412.6	407.2	407.2	407.2	407.2	399.0	401.7	407.2	399.0	399.0	388.0
52.5°	322.4	314.2	308.8	308.8	308.8	306.1	306.1	308.8	300.6	300.6	297.9
55°	243.2	240.5	232.3	232.3	232.3	224.1	226.8	226.8	224.1	224.1	215.9
57.5°	180.4	172.2	166.7	166.7	161.2	161.2	158.5	161.2	155.8	155.8	150.3
60°	120.2	114.8	112.0	109.3	109.3	106.6	109.3	106.6	106.6	103.8	101.1
62.5°	87.4	82.0	76.5	76.5	76.5	73.8	73.8	73.8	73.8	73.8	71.0
65°	62.8	57.4	57.4	54.7	54.7	51.9	51.9	51.9	51.9	51.9	49.2
67.5°	43.7	41.0	38.3	38.3	38.3	38.3	38.3	38.3	35.5	35.5	35.5
70°	32.8	30.1	27.3	27.3	27.3	27.3	27.3	24.6	27.3	27.3	24.6
72.5°	21.9	21.9	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
75°	16.4	16.4	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
77.5°	10.9	10.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
80°	8.2	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
82.5°	5.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
85°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	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: P251636

CATALOG NUMBER: LD4B40D010 EU4B30508035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5	2120.5
2.5°	2172.4	2169.7	2164.2	2172.4	2150.6	2142.4	2139.6	2164.2
5°	2202.5	2197.0	2197.0	2205.2	2180.6	2175.2	2169.7	2197.0
7.5°	2229.8	2224.3	2224.3	2232.5	2210.7	2205.2	2199.7	2227.1
10°	2246.2	2246.2	2246.2	2251.7	2232.5	2227.1	2224.3	2251.7
12.5°	2254.4	2254.4	2251.7	2262.6	2238.0	2238.0	2232.5	2259.9
15°	2243.5	2243.5	2243.5	2251.7	2229.8	2224.3	2224.3	2246.2
17.5°	2216.1	2216.1	2213.4	2221.6	2197.0	2197.0	2194.3	2218.9
20°	2175.2	2175.2	2169.7	2180.6	2156.0	2147.8	2145.1	2169.7
22.5°	2109.6	2106.8	2104.1	2109.6	2087.7	2082.2	2079.5	2101.4
25°	2024.9	2022.1	2016.7	2022.1	1997.5	1989.3	1989.3	2005.7
27.5°	1904.6	1904.6	1896.4	1904.6	1877.3	1874.6	1871.8	1891.0
30°	1757.1	1746.1	1740.7	1751.6	1724.3	1724.3	1718.8	1737.9
32.5°	1574.0	1563.0	1560.3	1565.8	1541.2	1533.0	1543.9	1554.9
35°	1363.6	1366.3	1355.4	1355.4	1333.5	1336.2	1339.0	1355.4
37.5°	1161.4	1155.9	1153.2	1155.9	1139.5	1134.0	1128.6	1145.0
40°	972.8	959.1	956.4	956.4	942.7	940.0	942.7	950.9
42.5°	795.2	792.5	781.5	787.0	773.3	778.8	776.1	776.1
45°	642.2	644.9	634.0	642.2	631.2	623.0	623.0	628.5
47.5°	508.3	508.3	505.5	505.5	497.3	500.1	494.6	502.8
50°	393.5	393.5	388.0	390.8	385.3	385.3	382.6	385.3
52.5°	300.6	297.9	297.9	295.1	289.7	292.4	295.1	289.7
55°	218.6	221.3	215.9	218.6	213.1	215.9	213.1	215.9
57.5°	150.3	153.0	147.6	153.0	147.6	150.3	147.6	147.6
60°	103.8	103.8	101.1	103.8	101.1	101.1	98.4	103.8
62.5°	71.0	71.0	71.0	71.0	71.0	68.3	71.0	71.0
65°	51.9	49.2	49.2	49.2	49.2	49.2	49.2	49.2
67.5°	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5
70°	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
72.5°	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
75°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
77.5°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
80°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
82.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
85°	2.7	2.7	2.7	0.0	2.7	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)