

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: P251654

Luminaire Tested: **LD4B50D010TE EU4B30509030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251654
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: LD4B50D010TE EU4B30509030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3940.0 lumens
Efficiency: N/A
Efficacy: 67.0 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

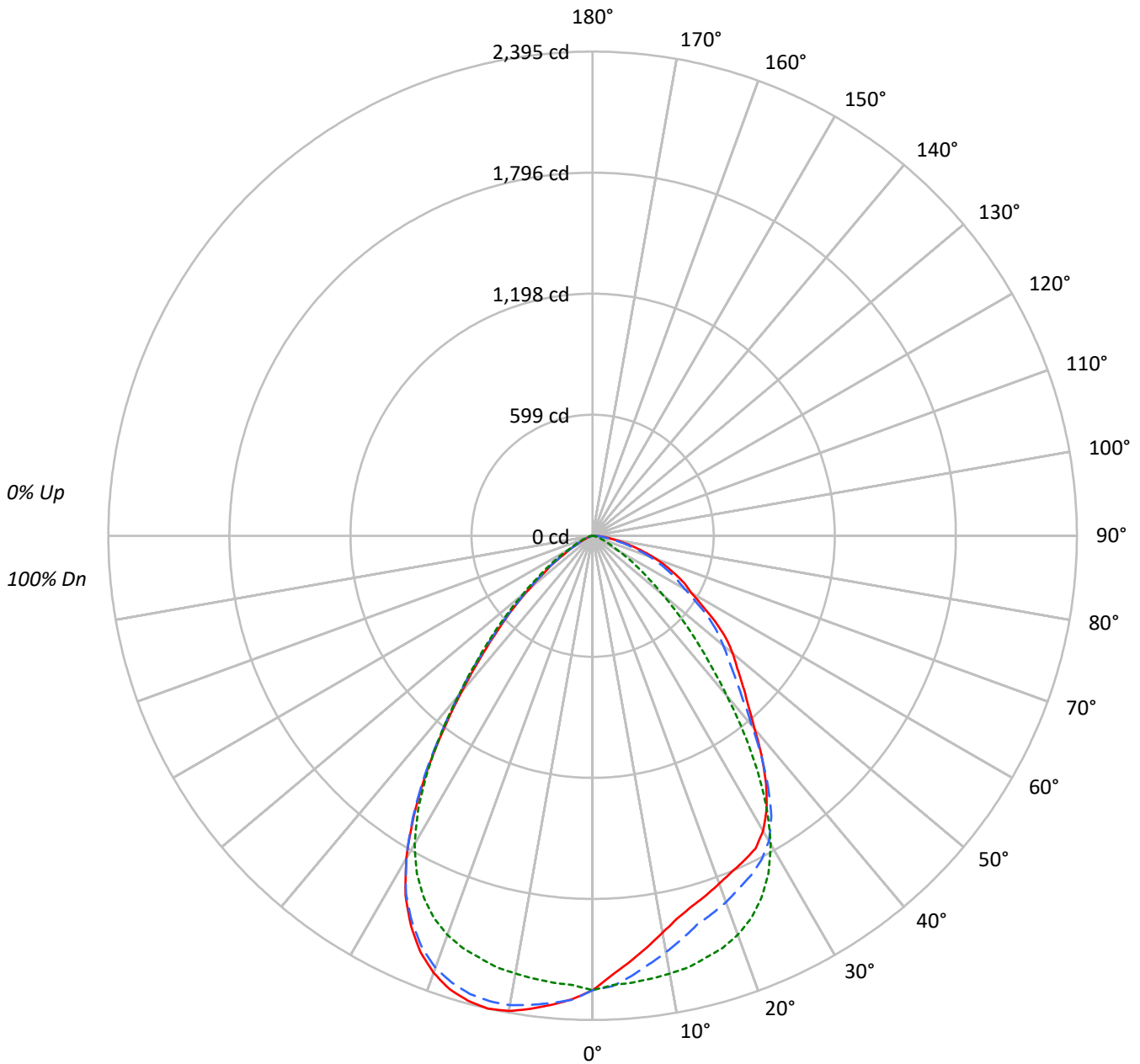
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251654

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1H

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°	219057	219057	219057
5°	206862	217066	227827
10°	197211	217567	236201
15°	191420	218016	240233
20°	189857	217797	238529
25°	190624	212421	228626
30°	189711	198185	207312
35°	177819	169205	170930
40°	158456	131192	128240
45°	144911	97815	91820
50°	137017	68516	61921
55°	125990	46267	38876
60°	110089	27093	21460
65°	104211	17365	12015
70°	94916	12367	7437
75°	78548	8736	5460
80°	61792	4883	3255
85°	55016	3243	0



TEST NUMBER: P251654

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	212.4	5.4
10°-20°	609.3	15.5
20°-30°	903.2	22.9
30°-40°	904.4	23.0
40°-50°	632.1	16.0
50°-60°	376.1	9.5
60°-70°	196.3	5.0
70°-80°	87.3	2.2
80°-90°	19.0	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°	1724.8	43.8
0°-40°	2629.2	66.7
0°-60°	3637.4	92.3
0°-90°	3940.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3940.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2248	2248	2248	2248	2248	
5°	2114	2187	2219	2320	2329	198
15°	1897	1993	2161	2346	2381	537
25°	1773	1854	1975	2112	2126	817
35°	1495	1512	1422	1448	1437	927
45°	1051	999	710	686	666	816
55°	742	695	272	238	229	658
65°	452	414	75	55	52	447
75°	209	182	23	14	14	226
85°	49	38	3	3	0	55
90°	0	0	0	0	0	



TEST NUMBER: P251654

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7
2.5°	2175.3	2201.4	2175.3	2184.0	2218.8	2186.9	2204.3	2204.3	2195.6	2215.9	2230.3
5°	2114.5	2140.5	2114.5	2126.1	2163.7	2131.9	2152.1	2146.3	2149.2	2166.6	2186.9
7.5°	2053.7	2073.9	2050.8	2065.2	2100.0	2073.9	2091.3	2091.3	2094.2	2120.3	2137.7
10°	1992.8	2010.2	1992.8	2004.4	2042.1	2018.9	2030.5	2033.4	2042.1	2065.2	2091.3
12.5°	1937.8	1952.3	1934.9	1952.3	1984.1	1961.0	1975.4	1978.3	1987.0	2013.1	2042.1
15°	1897.2	1911.7	1894.3	1908.8	1937.8	1920.4	1932.0	1937.8	1943.6	1966.8	1992.8
17.5°	1865.4	1877.0	1862.5	1879.9	1903.0	1882.8	1900.1	1900.1	1908.8	1932.0	1961.0
20°	1830.6	1842.2	1830.6	1845.1	1871.2	1853.8	1868.3	1868.3	1877.0	1903.0	1929.1
22.5°	1798.8	1804.5	1798.8	1810.3	1836.4	1821.9	1830.6	1833.5	1842.2	1865.4	1888.5
25°	1772.7	1784.3	1778.5	1790.1	1807.4	1793.0	1801.7	1804.5	1813.2	1833.5	1853.8
27.5°	1743.7	1749.5	1743.7	1758.2	1772.7	1761.1	1769.8	1766.9	1772.7	1790.1	1807.4
30°	1685.8	1691.6	1691.6	1700.3	1711.9	1706.1	1714.8	1706.1	1711.9	1726.3	1743.7
32.5°	1601.8	1604.7	1607.6	1616.3	1625.0	1616.3	1622.1	1622.1	1622.1	1633.7	1645.2
35°	1494.6	1500.4	1497.5	1503.3	1512.0	1509.1	1509.1	1506.2	1500.4	1506.2	1512.0
37.5°	1373.0	1364.3	1364.3	1373.0	1378.8	1367.2	1373.0	1367.2	1367.2	1370.1	1370.1
40°	1245.5	1236.8	1245.5	1248.4	1251.3	1245.5	1242.6	1236.8	1228.1	1231.0	1225.2
42.5°	1138.3	1132.5	1135.4	1135.4	1138.3	1132.5	1135.4	1123.9	1115.2	1109.4	1100.7
45°	1051.4	1042.8	1051.4	1045.7	1045.7	1042.8	1039.9	1034.1	1022.5	1013.8	999.3
47.5°	970.3	970.3	973.2	973.2	973.2	967.4	967.4	955.9	944.3	932.7	912.4
50°	903.7	897.9	909.5	909.5	900.8	897.9	900.8	886.3	877.7	863.2	842.9
52.5°	831.3	831.3	834.2	834.2	831.3	825.5	828.4	816.8	808.1	793.7	773.4
55°	741.5	735.7	744.4	744.4	741.5	738.6	741.5	732.8	724.1	712.6	695.2
57.5°	640.1	637.2	643.0	645.9	640.1	640.1	643.0	634.3	631.4	619.9	602.5
60°	564.8	561.9	567.7	570.6	564.8	564.8	564.8	553.2	547.4	535.9	524.3
62.5°	512.7	509.8	515.6	512.7	509.8	506.9	509.8	498.2	492.4	480.8	469.2
65°	451.9	454.8	457.7	457.7	454.8	451.9	451.9	446.1	440.3	428.7	414.2
67.5°	393.9	393.9	396.8	399.7	396.8	396.8	396.8	388.1	382.3	373.7	356.3
70°	333.1	330.2	338.9	338.9	333.1	336.0	333.1	330.2	324.4	312.8	298.3
72.5°	269.4	269.4	272.3	272.3	269.4	269.4	269.4	266.5	257.8	252.0	237.5
75°	208.6	208.6	211.4	214.3	208.6	208.6	211.4	205.7	199.9	191.2	182.5
77.5°	156.4	153.5	156.4	156.4	153.5	153.5	153.5	150.6	147.7	139.0	130.3
80°	110.1	107.2	110.1	110.1	110.1	107.2	107.2	104.3	104.3	98.5	89.8
82.5°	75.3	72.4	75.3	75.3	75.3	72.4	72.4	72.4	69.5	66.6	60.8
85°	49.2	46.3	46.3	49.2	46.3	46.3	46.3	46.3	43.4	40.6	37.7
87.5°	23.2	23.2	23.2	23.2	23.2	23.2	23.2	20.3	20.3	20.3	17.4
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: P251654

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7
2.5°	2218.8	2213.0	2230.3	2224.5	2227.4	2213.0	2236.1	2224.5	2239.0	2224.5	2253.5
5°	2181.1	2175.3	2201.4	2198.5	2201.4	2189.8	2215.9	2213.0	2230.3	2218.8	2250.6
7.5°	2140.5	2134.8	2163.7	2166.6	2172.4	2160.8	2195.6	2195.6	2213.0	2210.1	2244.8
10°	2094.2	2097.1	2126.1	2131.9	2143.4	2137.7	2169.5	2178.2	2201.4	2198.5	2241.9
12.5°	2050.8	2050.8	2088.4	2100.0	2108.7	2105.8	2143.4	2155.0	2181.1	2186.9	2227.4
15°	2007.3	2010.2	2045.0	2062.3	2073.9	2071.0	2111.6	2126.1	2157.9	2160.8	2210.1
17.5°	1972.5	1969.7	2007.3	2021.8	2039.2	2036.3	2079.7	2097.1	2129.0	2137.7	2184.0
20°	1943.6	1940.7	1975.4	1992.8	2004.4	2001.5	2045.0	2065.2	2094.2	2100.0	2146.3
22.5°	1908.8	1903.0	1937.8	1952.3	1963.9	1961.0	1998.6	2013.1	2042.1	2047.9	2091.3
25°	1868.3	1862.5	1894.3	1903.0	1911.7	1905.9	1937.8	1946.5	1969.7	1975.4	2018.9
27.5°	1821.9	1807.4	1833.5	1833.5	1839.3	1830.6	1853.8	1862.5	1882.8	1882.8	1923.3
30°	1749.5	1729.2	1743.7	1740.8	1743.7	1732.1	1746.6	1749.5	1764.0	1761.1	1790.1
32.5°	1648.1	1619.2	1627.9	1619.2	1610.5	1593.1	1610.5	1604.7	1616.3	1604.7	1630.8
35°	1509.1	1480.1	1477.2	1465.7	1457.0	1442.5	1442.5	1428.0	1430.9	1422.2	1439.6
37.5°	1358.5	1320.8	1315.0	1291.9	1277.4	1260.0	1260.0	1248.4	1233.9	1228.1	1242.6
40°	1210.8	1170.2	1155.7	1118.1	1103.6	1086.2	1074.6	1060.1	1054.3	1031.2	1042.8
42.5°	1083.3	1039.9	1008.0	967.4	953.0	926.9	909.5	892.1	883.4	857.4	869.0
45°	976.1	924.0	889.2	837.1	816.8	787.9	761.8	741.5	721.2	709.7	703.9
47.5°	886.3	831.3	785.0	727.0	695.2	669.1	634.3	614.1	588.0	573.5	564.8
50°	811.0	750.2	698.1	631.4	599.6	570.6	530.1	498.2	475.0	451.9	446.1
52.5°	744.4	680.7	622.8	547.4	509.8	475.0	431.6	396.8	376.6	350.5	347.6
55°	666.2	611.2	547.4	469.2	431.6	396.8	350.5	315.7	289.7	272.3	266.5
57.5°	582.2	530.1	469.2	391.0	353.4	315.7	272.3	240.4	217.2	202.8	199.9
60°	504.0	454.8	396.8	318.6	281.0	249.1	202.8	170.9	150.6	139.0	133.2
62.5°	446.1	399.7	344.7	272.3	237.5	205.7	162.2	133.2	115.9	104.3	98.5
65°	391.0	344.7	295.4	228.8	199.9	170.9	130.3	104.3	86.9	75.3	69.5
67.5°	333.1	292.6	246.2	191.2	162.2	139.0	104.3	81.1	66.6	57.9	52.1
70°	275.2	237.5	199.9	153.5	133.2	110.1	81.1	63.7	49.2	43.4	37.7
72.5°	217.2	188.3	156.4	118.8	101.4	86.9	63.7	46.3	37.7	31.9	26.1
75°	162.2	141.9	115.9	89.8	75.3	63.7	46.3	34.8	29.0	23.2	20.3
77.5°	115.9	98.5	81.1	60.8	55.0	46.3	31.9	26.1	20.3	14.5	11.6
80°	78.2	69.5	55.0	43.4	34.8	31.9	23.2	17.4	11.6	8.7	8.7
82.5°	52.1	43.4	34.8	26.1	23.2	20.3	14.5	11.6	8.7	5.8	5.8
85°	31.9	26.1	20.3	14.5	14.5	11.6	8.7	5.8	2.9	2.9	2.9
87.5°	14.5	11.6	8.7	5.8	5.8	2.9	2.9	2.9	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: P251654

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7
2.5°	2276.7	2259.3	2247.7	2262.2	2268.0	2259.3	2268.0	2282.5	2297.0	2299.9	2259.3
5°	2279.6	2262.2	2256.4	2273.8	2276.7	2273.8	2282.5	2302.8	2320.1	2325.9	2285.4
7.5°	2279.6	2268.0	2265.1	2285.4	2288.3	2285.4	2299.9	2323.0	2340.4	2352.0	2311.4
10°	2273.8	2268.0	2270.9	2288.3	2294.1	2294.1	2314.3	2340.4	2357.8	2369.4	2328.8
12.5°	2265.1	2265.1	2265.1	2285.4	2291.2	2294.1	2311.4	2346.2	2357.8	2375.2	2334.6
15°	2250.6	2250.6	2250.6	2270.9	2279.6	2279.6	2299.9	2331.7	2346.2	2363.6	2323.0
17.5°	2224.5	2224.5	2227.4	2244.8	2253.5	2253.5	2273.8	2308.5	2317.2	2337.5	2297.0
20°	2186.9	2186.9	2189.8	2207.2	2215.9	2210.1	2236.1	2265.1	2273.8	2291.2	2250.6
22.5°	2131.9	2131.9	2131.9	2149.2	2155.0	2152.1	2178.2	2204.3	2204.3	2227.4	2184.0
25°	2050.8	2056.5	2050.8	2068.1	2073.9	2071.0	2094.2	2117.4	2111.6	2137.7	2094.2
27.5°	1952.3	1949.4	1949.4	1963.9	1963.9	1961.0	1978.3	2004.4	1998.6	2016.0	1975.4
30°	1816.1	1824.8	1810.3	1830.6	1821.9	1816.1	1827.7	1850.9	1842.2	1856.7	1824.8
32.5°	1659.7	1648.1	1648.1	1648.1	1653.9	1639.4	1651.0	1662.6	1653.9	1668.4	1633.7
35°	1454.1	1457.0	1448.3	1451.2	1454.1	1436.7	1448.3	1459.9	1448.3	1457.0	1425.1
37.5°	1248.4	1251.3	1231.0	1242.6	1231.0	1225.2	1236.8	1242.6	1231.0	1239.7	1205.0
40°	1042.8	1037.0	1034.1	1034.1	1037.0	1022.5	1031.2	1039.9	1031.2	1037.0	1005.1
42.5°	863.2	860.3	854.5	857.4	848.7	845.8	848.7	857.4	848.7	854.5	831.3
45°	706.8	701.0	692.3	695.2	695.2	680.7	689.4	695.2	686.5	689.4	669.1
47.5°	561.9	553.2	553.2	550.3	550.3	544.6	553.2	550.3	541.7	547.4	527.2
50°	437.4	431.6	431.6	431.6	431.6	422.9	425.8	431.6	422.9	422.9	411.3
52.5°	341.8	333.1	327.3	327.3	327.3	324.4	324.4	327.3	318.6	318.6	315.7
55°	257.8	254.9	246.2	246.2	246.2	237.5	240.4	240.4	237.5	237.5	228.8
57.5°	191.2	182.5	176.7	176.7	170.9	170.9	168.0	170.9	165.1	165.1	159.3
60°	127.4	121.7	118.8	115.9	115.9	113.0	115.9	113.0	113.0	110.1	107.2
62.5°	92.7	86.9	81.1	81.1	81.1	78.2	78.2	78.2	78.2	78.2	75.3
65°	66.6	60.8	60.8	57.9	57.9	55.0	55.0	55.0	55.0	55.0	52.1
67.5°	46.3	43.4	40.6	40.6	40.6	40.6	40.6	40.6	37.7	37.7	37.7
70°	34.8	31.9	29.0	29.0	29.0	29.0	29.0	26.1	29.0	29.0	26.1
72.5°	23.2	23.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
75°	17.4	17.4	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
77.5°	11.6	11.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
80°	8.7	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
82.5°	5.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
85°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	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: P251654

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7
2.5°	2302.8	2299.9	2294.1	2302.8	2279.6	2270.9	2268.0	2294.1
5°	2334.6	2328.8	2328.8	2337.5	2311.4	2305.7	2299.9	2328.8
7.5°	2363.6	2357.8	2357.8	2366.5	2343.3	2337.5	2331.7	2360.7
10°	2381.0	2381.0	2381.0	2386.8	2366.5	2360.7	2357.8	2386.8
12.5°	2389.7	2389.7	2386.8	2398.3	2372.3	2372.3	2366.5	2395.4
15°	2378.1	2378.1	2378.1	2386.8	2363.6	2357.8	2357.8	2381.0
17.5°	2349.1	2349.1	2346.2	2354.9	2328.8	2328.8	2325.9	2352.0
20°	2305.7	2305.7	2299.9	2311.4	2285.4	2276.7	2273.8	2299.9
22.5°	2236.1	2233.2	2230.3	2236.1	2213.0	2207.2	2204.3	2227.4
25°	2146.3	2143.4	2137.7	2143.4	2117.4	2108.7	2108.7	2126.1
27.5°	2018.9	2018.9	2010.2	2018.9	1989.9	1987.0	1984.1	2004.4
30°	1862.5	1850.9	1845.1	1856.7	1827.7	1827.7	1821.9	1842.2
32.5°	1668.4	1656.8	1653.9	1659.7	1633.7	1625.0	1636.5	1648.1
35°	1445.4	1448.3	1436.7	1436.7	1413.5	1416.4	1419.3	1436.7
37.5°	1231.0	1225.2	1222.3	1225.2	1207.9	1202.1	1196.3	1213.7
40°	1031.2	1016.7	1013.8	1013.8	999.3	996.4	999.3	1008.0
42.5°	842.9	840.0	828.4	834.2	819.7	825.5	822.6	822.6
45°	680.7	683.6	672.0	680.7	669.1	660.4	660.4	666.2
47.5°	538.8	538.8	535.9	535.9	527.2	530.1	524.3	533.0
50°	417.1	417.1	411.3	414.2	408.4	408.4	405.5	408.4
52.5°	318.6	315.7	315.7	312.8	307.0	309.9	312.8	307.0
55°	231.7	234.6	228.8	231.7	225.9	228.8	225.9	228.8
57.5°	159.3	162.2	156.4	162.2	156.4	159.3	156.4	156.4
60°	110.1	110.1	107.2	110.1	107.2	107.2	104.3	110.1
62.5°	75.3	75.3	75.3	75.3	75.3	72.4	75.3	75.3
65°	55.0	52.1	52.1	52.1	52.1	52.1	52.1	52.1
67.5°	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7
70°	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
72.5°	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
75°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
77.5°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
80°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
82.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
85°	2.9	2.9	2.9	0.0	2.9	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)