

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: P251578

Luminaire Tested: **LD4B50D010TE EU4B30509040 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251578
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: LD4B50D010TE 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: 4162.0 lumens
Efficiency: N/A
Efficacy: 70.8 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

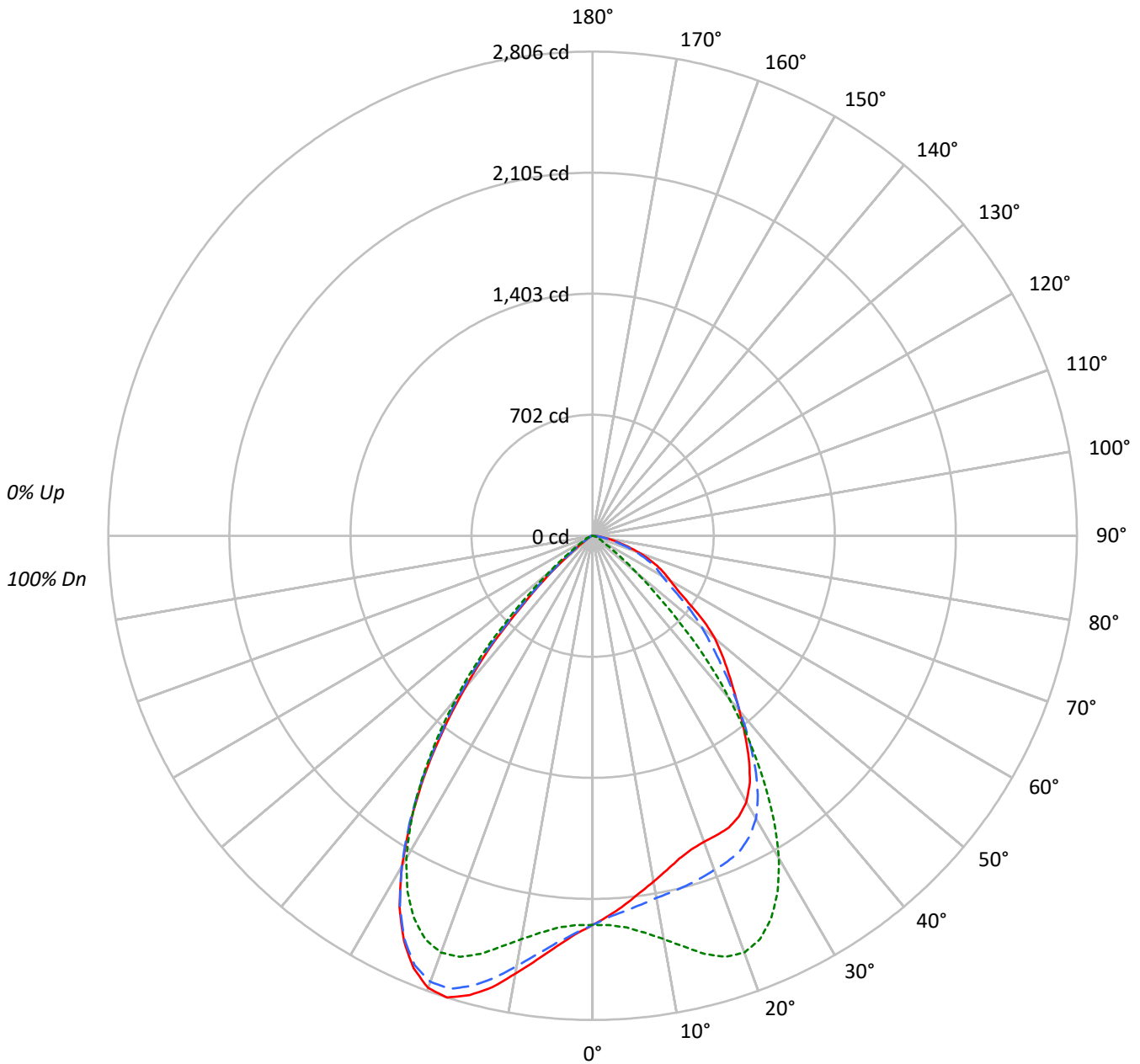
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	219807	219807	219807
5°	209983	222946	233609
10°	201347	234855	254955
15°	195476	253108	278059
20°	195737	266583	289182
25°	200732	263112	278306
30°	200458	242873	248511
35°	187765	205278	202471
40°	168188	156573	146090
45°	152588	99428	81566
50°	140171	50443	34827
55°	115065	22513	11503
60°	101006	12631	6315
65°	95056	9501	4750
70°	81381	7551	4189
75°	62093	5535	3314
80°	44618	3311	1628
85°	32875	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	5.3
10°-20°	682.8	16.4
20°-30°	1056.4	25.4
30°-40°	1040.8	25.0
40°-50°	639.1	15.4
50°-60°	284.2	6.8
60°-70°	158.7	3.8
70°-80°	68.7	1.7
80°-90°	12.3	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°	1958.2	47.0
0°-40°	2999.0	72.1
0°-60°	3922.3	94.2
0°-90°	4162.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4162.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2255	2255	2255	2255	2255	
5°	2146	2182	2279	2367	2388	201
15°	1937	2099	2509	2700	2756	550
25°	1867	2017	2447	2579	2588	857
35°	1578	1643	1725	1720	1702	980
45°	1107	1051	721	630	592	857
55°	677	612	132	77	68	622
65°	412	371	41	24	21	404
75°	165	141	15	9	9	181
85°	29	24	0	0	0	36
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°	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4
2.5°	2202.4	2202.4	2202.4	2202.4	2208.3	2199.4	2208.3	2208.3	2217.1	2220.0	2211.2
5°	2146.4	2143.5	2146.4	2146.4	2152.3	2149.4	2158.2	2164.1	2175.9	2181.8	2181.8
7.5°	2087.5	2087.5	2087.5	2093.4	2102.3	2099.3	2108.2	2117.0	2134.7	2146.4	2155.3
10°	2034.6	2031.6	2040.4	2043.4	2052.2	2052.2	2066.9	2075.8	2096.4	2119.9	2131.7
12.5°	1984.5	1981.6	1987.4	1996.3	2011.0	2011.0	2022.8	2037.5	2066.9	2093.4	2114.0
15°	1937.4	1940.3	1949.2	1955.1	1972.7	1972.7	1987.4	2005.1	2037.5	2069.9	2099.3
17.5°	1905.0	1907.9	1913.8	1922.7	1940.3	1940.3	1955.1	1975.7	2011.0	2046.3	2081.7
20°	1887.3	1890.3	1896.2	1905.0	1919.7	1922.7	1934.4	1958.0	1990.4	2028.7	2061.1
22.5°	1878.5	1884.4	1890.3	1896.2	1910.9	1910.9	1925.6	1943.3	1975.7	2013.9	2043.4
25°	1866.7	1872.6	1875.6	1884.4	1896.2	1896.2	1905.0	1925.6	1955.1	1987.4	2016.9
27.5°	1834.3	1840.2	1843.2	1852.0	1863.8	1860.8	1872.6	1887.3	1913.8	1943.3	1966.8
30°	1781.3	1784.3	1790.2	1793.1	1801.9	1801.9	1810.8	1825.5	1843.2	1869.7	1893.2
32.5°	1696.0	1701.8	1704.8	1707.7	1716.6	1713.6	1716.6	1725.4	1743.1	1766.6	1781.3
35°	1578.2	1590.0	1590.0	1595.8	1598.8	1595.8	1595.8	1607.6	1616.5	1634.1	1643.0
37.5°	1448.6	1457.5	1454.5	1460.4	1463.3	1454.5	1460.4	1463.3	1475.1	1484.0	1486.9
40°	1322.0	1325.0	1325.0	1325.0	1325.0	1322.0	1325.0	1327.9	1336.7	1336.7	1327.9
42.5°	1207.2	1210.1	1210.1	1204.2	1210.1	1207.2	1207.2	1207.2	1207.2	1195.4	1186.6
45°	1107.1	1110.0	1110.0	1107.1	1107.1	1101.2	1098.2	1095.3	1086.5	1071.7	1051.1
47.5°	1012.9	1018.7	1021.7	1015.8	1012.9	1007.0	1007.0	989.3	977.5	959.9	930.4
50°	924.5	930.4	930.4	924.5	924.5	915.7	906.9	901.0	883.3	862.7	827.4
52.5°	812.6	821.5	821.5	818.5	818.5	806.8	803.8	792.0	777.3	753.8	724.3
55°	677.2	689.0	686.0	683.1	677.2	677.2	677.2	668.4	659.5	641.9	612.4
57.5°	580.0	583.0	583.0	580.0	580.0	574.1	574.1	565.3	562.4	544.7	521.2
60°	518.2	518.2	521.2	518.2	515.3	512.3	509.4	503.5	494.7	482.9	465.2
62.5°	468.2	471.1	471.1	468.2	465.2	462.3	459.3	453.4	447.5	438.7	421.0
65°	412.2	418.1	415.2	412.2	409.3	406.3	406.3	400.4	394.5	388.7	371.0
67.5°	350.4	353.3	356.3	350.4	350.4	347.4	347.4	341.5	338.6	326.8	315.0
70°	285.6	288.5	288.5	285.6	285.6	282.7	282.7	279.7	276.8	267.9	256.2
72.5°	223.8	226.7	223.8	220.8	220.8	220.8	217.9	214.9	212.0	206.1	197.3
75°	164.9	164.9	167.8	164.9	161.9	161.9	159.0	159.0	153.1	150.2	141.3
77.5°	117.8	120.7	117.8	117.8	114.8	111.9	111.9	108.9	108.9	106.0	100.1
80°	79.5	79.5	82.4	79.5	76.6	79.5	76.6	73.6	73.6	70.7	64.8
82.5°	50.1	53.0	50.1	50.1	50.1	50.1	50.1	47.1	47.1	44.2	41.2
85°	29.4	29.4	29.4	29.4	29.4	29.4	29.4	26.5	26.5	26.5	23.6
87.5°	14.7	14.7	11.8	11.8	14.7	14.7	14.7	11.8	11.8	11.8	11.8
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°	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4
2.5°	2223.0	2225.9	2231.8	2240.7	2240.7	2234.8	2249.5	2249.5	2255.4	2258.3	2270.1
5°	2199.4	2205.3	2217.1	2231.8	2234.8	2231.8	2252.4	2261.3	2270.1	2278.9	2296.6
7.5°	2178.8	2190.6	2211.2	2231.8	2240.7	2240.7	2273.0	2284.8	2302.5	2320.2	2340.8
10°	2167.0	2184.7	2214.2	2246.5	2255.4	2264.2	2302.5	2326.0	2349.6	2373.2	2402.6
12.5°	2152.3	2184.7	2223.0	2264.2	2281.9	2293.7	2346.7	2376.1	2408.5	2437.9	2476.2
15°	2149.4	2187.7	2237.7	2290.7	2314.3	2331.9	2390.8	2432.0	2470.3	2508.6	2546.9
17.5°	2137.6	2184.7	2246.5	2305.4	2334.9	2358.4	2426.2	2476.2	2520.4	2558.6	2602.8
20°	2122.9	2175.9	2243.6	2308.4	2340.8	2364.3	2437.9	2485.0	2535.1	2570.4	2611.6
22.5°	2102.3	2155.3	2223.0	2287.8	2317.2	2337.8	2411.4	2452.7	2496.8	2532.1	2570.4
25°	2066.9	2117.0	2175.9	2228.9	2258.3	2276.0	2340.8	2379.0	2411.4	2446.8	2482.1
27.5°	2016.9	2055.2	2105.2	2143.5	2161.2	2178.8	2231.8	2264.2	2293.7	2323.1	2346.7
30°	1928.6	1958.0	1993.3	2025.7	2043.4	2046.3	2096.4	2114.0	2137.6	2158.2	2175.9
32.5°	1810.8	1834.3	1854.9	1872.6	1884.4	1887.3	1925.6	1931.5	1955.1	1955.1	1981.6
35°	1660.6	1672.4	1687.1	1687.1	1696.0	1687.1	1713.6	1719.5	1722.4	1725.4	1746.0
37.5°	1489.8	1495.7	1504.6	1486.9	1486.9	1478.1	1486.9	1492.8	1481.0	1481.0	1495.7
40°	1327.9	1316.1	1304.4	1286.7	1277.9	1260.2	1260.2	1245.5	1236.6	1230.7	1233.7
42.5°	1171.9	1145.4	1118.9	1080.6	1062.9	1045.2	1027.6	1007.0	1001.1	986.4	977.5
45°	1021.7	983.4	948.1	886.3	850.9	833.3	795.0	753.8	727.3	721.4	697.8
47.5°	895.1	839.1	780.3	706.6	671.3	638.9	583.0	547.7	512.3	494.7	479.9
50°	783.2	733.1	656.6	577.1	532.9	500.5	438.7	397.5	359.2	332.7	315.0
52.5°	686.0	630.1	559.4	468.2	424.0	388.7	320.9	273.8	241.4	214.9	194.3
55°	577.1	532.9	462.3	376.9	332.7	291.5	232.6	182.6	150.2	132.5	117.8
57.5°	497.6	459.3	391.6	309.2	267.9	229.7	170.8	129.6	103.1	85.4	76.6
60°	444.6	409.3	350.4	270.9	232.6	197.3	141.3	103.1	79.5	64.8	58.9
62.5°	400.4	365.1	312.1	238.5	206.1	170.8	120.7	85.4	64.8	53.0	44.2
65°	350.4	318.0	270.9	206.1	176.7	147.2	103.1	70.7	53.0	41.2	35.3
67.5°	297.4	267.9	226.7	170.8	147.2	123.7	82.4	58.9	44.2	35.3	29.4
70°	241.4	217.9	179.6	138.4	117.8	97.2	67.7	47.1	32.4	26.5	23.6
72.5°	185.5	164.9	138.4	106.0	88.3	73.6	50.1	35.3	26.5	20.6	17.7
75°	132.5	117.8	97.2	76.6	64.8	53.0	38.3	26.5	17.7	14.7	11.8
77.5°	91.3	82.4	67.7	53.0	44.2	38.3	26.5	17.7	14.7	11.8	8.8
80°	58.9	53.0	44.2	32.4	26.5	23.6	14.7	11.8	8.8	5.9	5.9
82.5°	35.3	32.4	26.5	17.7	14.7	11.8	8.8	5.9	5.9	2.9	2.9
85°	20.6	17.7	11.8	8.8	8.8	5.9	5.9	2.9	2.9	0.0	0.0
87.5°	8.8	5.9	5.9	2.9	2.9	2.9	2.9	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°	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4
2.5°	2264.2	2278.9	2276.0	2284.8	2281.9	2281.9	2296.6	2290.7	2305.4	2305.4	2308.4
5°	2296.6	2317.2	2317.2	2331.9	2329.0	2334.9	2349.6	2349.6	2367.3	2373.2	2373.2
7.5°	2343.7	2370.2	2376.1	2390.8	2393.8	2405.5	2417.3	2420.3	2443.8	2449.7	2452.7
10°	2408.5	2440.9	2449.7	2464.4	2470.3	2482.1	2496.8	2502.7	2532.1	2535.1	2546.9
12.5°	2488.0	2523.3	2532.1	2549.8	2552.8	2567.5	2588.1	2594.0	2623.4	2632.3	2641.1
15°	2564.5	2596.9	2611.6	2629.3	2632.3	2649.9	2667.6	2673.5	2700.0	2711.8	2720.6
17.5°	2617.5	2655.8	2664.6	2688.2	2688.2	2702.9	2720.6	2726.5	2753.0	2761.8	2767.7
20°	2629.3	2664.6	2676.4	2694.1	2697.0	2705.9	2720.6	2726.5	2750.0	2753.0	2761.8
22.5°	2585.1	2620.5	2626.4	2644.0	2647.0	2655.8	2667.6	2664.6	2694.1	2691.1	2694.1
25°	2490.9	2523.3	2523.3	2543.9	2541.0	2549.8	2555.7	2552.8	2579.3	2579.3	2579.3
27.5°	2355.5	2384.9	2387.9	2402.6	2393.8	2396.7	2402.6	2399.7	2417.3	2417.3	2417.3
30°	2187.7	2211.2	2202.4	2214.2	2208.3	2214.2	2208.3	2205.3	2211.2	2217.1	2214.2
32.5°	1978.6	1996.3	1996.3	1999.2	1999.2	1981.6	1975.7	1975.7	1972.7	1969.8	1969.8
35°	1737.2	1751.9	1746.0	1746.0	1743.1	1725.4	1716.6	1710.7	1719.5	1701.8	1713.6
37.5°	1489.8	1492.8	1484.0	1481.0	1466.3	1466.3	1451.6	1439.8	1445.7	1442.7	1431.0
40°	1219.0	1230.7	1213.1	1207.2	1216.0	1204.2	1189.5	1174.8	1186.6	1171.9	1177.7
42.5°	954.0	951.0	945.1	945.1	945.1	927.5	924.5	921.6	924.5	912.8	903.9
45°	689.0	680.1	671.3	671.3	659.5	653.6	653.6	644.8	630.1	630.1	612.4
47.5°	465.2	444.6	438.7	435.8	429.9	429.9	424.0	418.1	415.2	400.4	400.4
50°	303.3	282.7	276.8	273.8	276.8	270.9	265.0	259.1	253.2	250.3	244.4
52.5°	182.6	173.7	167.8	164.9	159.0	156.1	153.1	147.2	144.3	144.3	141.3
55°	108.9	100.1	88.3	88.3	88.3	85.4	82.4	79.5	76.6	76.6	73.6
57.5°	67.7	61.8	55.9	53.0	53.0	53.0	50.1	50.1	50.1	50.1	47.1
60°	50.1	44.2	41.2	41.2	41.2	38.3	38.3	38.3	38.3	35.3	35.3
62.5°	38.3	35.3	32.4	32.4	29.4	29.4	29.4	29.4	29.4	29.4	26.5
65°	32.4	26.5	26.5	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
67.5°	23.6	20.6	20.6	20.6	20.6	17.7	17.7	17.7	17.7	17.7	17.7
70°	17.7	17.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
72.5°	14.7	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
75°	11.8	11.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
77.5°	8.8	8.8	8.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	5.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
82.5°	2.9	2.9	2.9	2.9	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: P251578

CATALOG NUMBER: LD4B50D010TE EU4B30509040 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4	2255.4
2.5°	2308.4	2323.1	2308.4	2308.4	2317.2	2314.3	2320.2	2311.3
5°	2376.1	2396.7	2382.0	2379.0	2393.8	2390.8	2393.8	2387.9
7.5°	2458.5	2479.1	2464.4	2464.4	2479.1	2476.2	2485.0	2479.1
10°	2552.8	2576.3	2555.7	2558.6	2579.3	2576.3	2576.3	2576.3
12.5°	2649.9	2673.5	2661.7	2661.7	2676.4	2679.4	2682.3	2679.4
15°	2729.4	2753.0	2738.3	2738.3	2758.9	2755.9	2758.9	2755.9
17.5°	2776.5	2800.1	2782.4	2782.4	2800.1	2800.1	2803.0	2806.0
20°	2764.8	2791.3	2776.5	2770.6	2791.3	2791.3	2788.3	2788.3
22.5°	2697.0	2720.6	2708.8	2702.9	2717.6	2711.8	2708.8	2711.8
25°	2579.3	2602.8	2579.3	2579.3	2591.0	2588.1	2591.0	2588.1
27.5°	2420.3	2437.9	2414.4	2411.4	2423.2	2417.3	2414.4	2423.2
30°	2208.3	2225.9	2214.2	2205.3	2220.0	2211.2	2205.3	2208.3
32.5°	1966.8	1978.6	1972.7	1958.0	1966.8	1960.9	1958.0	1960.9
35°	1701.8	1716.6	1693.0	1690.1	1704.8	1693.0	1687.1	1701.8
37.5°	1428.0	1445.7	1425.1	1428.0	1419.2	1422.1	1416.2	1425.1
40°	1168.9	1166.0	1160.1	1157.1	1160.1	1151.2	1157.1	1148.3
42.5°	889.2	895.1	892.1	889.2	892.1	880.4	874.5	886.3
45°	618.3	615.4	609.5	603.6	603.6	600.6	600.6	591.8
47.5°	397.5	394.5	382.8	385.7	391.6	385.7	376.9	388.7
50°	241.4	238.5	238.5	235.5	241.4	235.5	229.7	229.7
52.5°	135.4	135.4	132.5	132.5	132.5	132.5	129.6	126.6
55°	73.6	70.7	70.7	70.7	67.7	67.7	67.7	67.7
57.5°	47.1	47.1	47.1	47.1	47.1	47.1	44.2	44.2
60°	35.3	35.3	35.3	35.3	32.4	35.3	32.4	32.4
62.5°	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
65°	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6
67.5°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
70°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
72.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
75°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
77.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
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)