

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: P251576

Luminaire Tested: **LD4B50D010TE EU4B30509030 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251576  
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 EU4B30509030 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

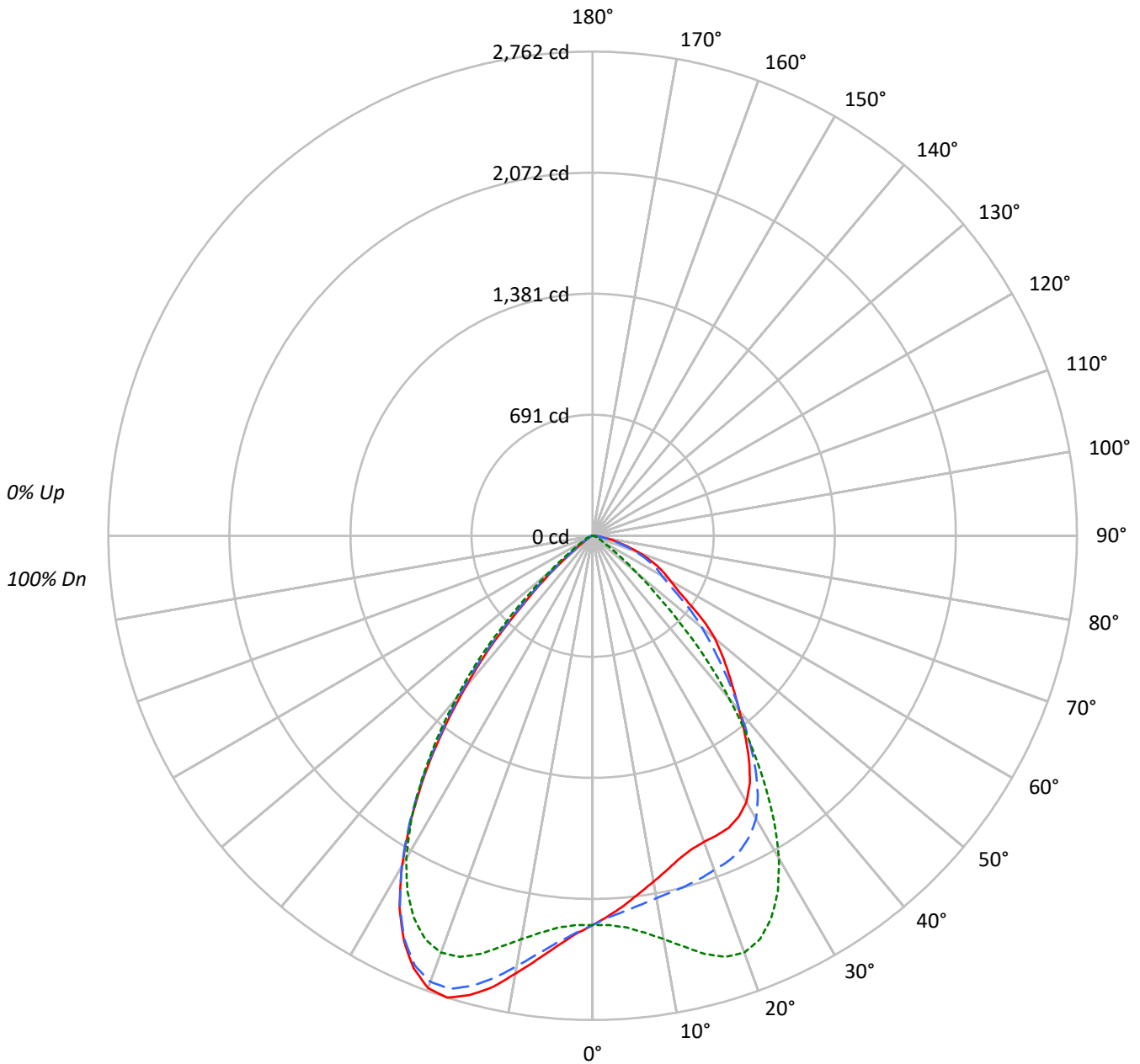
Lumens per Lamp: N/A  
Luminaire Lumens: 4097.0 lumens  
Efficiency: N/A  
Efficacy: 69.7 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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°	216376	216376	216376
5°	206706	219463	229960
10°	198200	231184	250976
15°	192419	249153	273721
20°	192688	262424	284671
25°	197603	258993	273962
30°	197330	239080	244628
35°	184827	202066	199318
40°	165567	154130	143812
45°	150203	97871	80298
50°	137987	49655	34281
55°	113264	22157	11333
60°	99427	12436	6218
65°	93580	9363	4681
70°	80099	7437	4132
75°	61114	5460	3276
80°	43945	3255	1628
85°	32428	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.7	5.3
10°-20°	672.1	16.4
20°-30°	1039.9	25.4
30°-40°	1024.6	25.0
40°-50°	629.1	15.4
50°-60°	279.7	6.8
60°-70°	156.3	3.8
70°-80°	67.6	1.7
80°-90°	12.1	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°	1927.6	47.0
0°-40°	2952.2	72.1
0°-60°	3861.1	94.2
0°-90°	4097.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4097.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2220	2220	2220	2220	2220	
5°	2113	2148	2243	2330	2351	198
15°	1907	2066	2469	2658	2713	541
25°	1838	1985	2408	2539	2548	843
35°	1554	1617	1698	1693	1675	964
45°	1090	1035	710	620	583	844
55°	667	603	130	75	67	613
65°	406	365	41	23	20	397
75°	162	139	14	9	9	179
85°	29	23	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°	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2
2.5°	2168.0	2168.0	2168.0	2168.0	2173.8	2165.1	2173.8	2173.8	2182.5	2185.4	2176.7
5°	2112.9	2110.0	2112.9	2112.9	2118.7	2115.8	2124.5	2130.3	2141.9	2147.7	2147.7
7.5°	2054.9	2054.9	2054.9	2060.7	2069.4	2066.5	2075.2	2083.9	2101.3	2112.9	2121.6
10°	2002.8	1999.9	2008.6	2011.5	2020.2	2020.2	2034.7	2043.4	2063.6	2086.8	2098.4
12.5°	1953.5	1950.6	1956.4	1965.1	1979.6	1979.6	1991.2	2005.7	2034.7	2060.7	2081.0
15°	1907.1	1910.0	1918.7	1924.5	1941.9	1941.9	1956.4	1973.8	2005.7	2037.6	2066.5
17.5°	1875.2	1878.1	1883.9	1892.6	1910.0	1910.0	1924.5	1944.8	1979.6	2014.4	2049.2
20°	1857.9	1860.8	1866.6	1875.2	1889.7	1892.6	1904.2	1927.4	1959.3	1997.0	2028.9
22.5°	1849.2	1855.0	1860.8	1866.6	1881.0	1881.0	1895.5	1912.9	1944.8	1982.5	2011.5
25°	1837.6	1843.4	1846.3	1855.0	1866.6	1866.6	1875.2	1895.5	1924.5	1956.4	1985.4
27.5°	1805.7	1811.5	1814.4	1823.1	1834.7	1831.8	1843.4	1857.9	1883.9	1912.9	1936.1
30°	1753.5	1756.4	1762.2	1765.1	1773.8	1773.8	1782.5	1797.0	1814.4	1840.5	1863.7
32.5°	1669.5	1675.3	1678.2	1681.1	1689.8	1686.9	1689.8	1698.4	1715.8	1739.0	1753.5
35°	1553.5	1565.1	1565.1	1570.9	1573.8	1570.9	1570.9	1582.5	1591.2	1608.6	1617.3
37.5°	1426.0	1434.7	1431.8	1437.6	1440.5	1431.8	1437.6	1440.5	1452.1	1460.8	1463.7
40°	1301.4	1304.3	1304.3	1304.3	1304.3	1301.4	1304.3	1307.2	1315.9	1315.9	1307.2
42.5°	1188.3	1191.2	1191.2	1185.4	1191.2	1188.3	1188.3	1188.3	1188.3	1176.7	1168.0
45°	1089.8	1092.7	1092.7	1089.8	1089.8	1084.0	1081.1	1078.2	1069.5	1055.0	1034.7
47.5°	997.0	1002.8	1005.7	999.9	997.0	991.2	991.2	973.9	962.3	944.9	915.9
50°	910.1	915.9	915.9	910.1	910.1	901.4	892.7	886.9	869.5	849.2	814.4
52.5°	800.0	808.6	808.6	805.7	805.7	794.2	791.3	779.7	765.2	742.0	713.0
55°	666.6	678.2	675.3	672.4	666.6	666.6	666.6	657.9	649.2	631.8	602.9
57.5°	571.0	573.9	573.9	571.0	571.0	565.2	565.2	556.5	553.6	536.2	513.0
60°	510.1	510.1	513.0	510.1	507.2	504.3	501.4	495.6	486.9	475.3	457.9
62.5°	460.8	463.7	463.7	460.8	457.9	455.0	452.1	446.3	440.6	431.9	414.5
65°	405.8	411.6	408.7	405.8	402.9	400.0	400.0	394.2	388.4	382.6	365.2
67.5°	344.9	347.8	350.7	344.9	344.9	342.0	342.0	336.2	333.3	321.7	310.1
70°	281.1	284.0	284.0	281.1	281.1	278.2	278.2	275.3	272.4	263.8	252.2
72.5°	220.3	223.2	220.3	217.4	217.4	217.4	214.5	211.6	208.7	202.9	194.2
75°	162.3	162.3	165.2	162.3	159.4	159.4	156.5	156.5	150.7	147.8	139.1
77.5°	115.9	118.8	115.9	115.9	113.0	110.1	110.1	107.2	107.2	104.3	98.5
80°	78.3	78.3	81.2	78.3	75.4	78.3	75.4	72.5	72.5	69.6	63.8
82.5°	49.3	52.2	49.3	49.3	49.3	49.3	49.3	46.4	46.4	43.5	40.6
85°	29.0	29.0	29.0	29.0	29.0	29.0	29.0	26.1	26.1	26.1	23.2
87.5°	14.5	14.5	11.6	11.6	14.5	14.5	14.5	11.6	11.6	11.6	11.6
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°	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2
2.5°	2188.3	2191.2	2197.0	2205.7	2205.7	2199.9	2214.4	2214.4	2220.2	2223.1	2234.6
5°	2165.1	2170.9	2182.5	2197.0	2199.9	2197.0	2217.3	2226.0	2234.6	2243.3	2260.7
7.5°	2144.8	2156.4	2176.7	2197.0	2205.7	2205.7	2237.5	2249.1	2266.5	2283.9	2304.2
10°	2133.2	2150.6	2179.6	2211.5	2220.2	2228.8	2266.5	2289.7	2312.9	2336.1	2365.1
12.5°	2118.7	2150.6	2188.3	2228.8	2246.2	2257.8	2310.0	2339.0	2370.9	2399.9	2437.5
15°	2115.8	2153.5	2202.8	2254.9	2278.1	2295.5	2353.5	2394.1	2431.7	2469.4	2507.1
17.5°	2104.2	2150.6	2211.5	2269.4	2298.4	2321.6	2388.3	2437.5	2481.0	2518.7	2562.2
20°	2089.7	2141.9	2208.6	2272.3	2304.2	2327.4	2399.9	2446.2	2495.5	2530.3	2570.9
22.5°	2069.4	2121.6	2188.3	2252.0	2281.0	2301.3	2373.8	2414.3	2457.8	2492.6	2530.3
25°	2034.7	2083.9	2141.9	2194.1	2223.1	2240.4	2304.2	2341.9	2373.8	2408.5	2443.3
27.5°	1985.4	2023.1	2072.3	2110.0	2127.4	2144.8	2197.0	2228.8	2257.8	2286.8	2310.0
30°	1898.4	1927.4	1962.2	1994.1	2011.5	2014.4	2063.6	2081.0	2104.2	2124.5	2141.9
32.5°	1782.5	1805.7	1826.0	1843.4	1855.0	1857.9	1895.5	1901.3	1924.5	1924.5	1950.6
35°	1634.7	1646.3	1660.8	1660.8	1669.5	1660.8	1686.9	1692.7	1695.5	1698.4	1718.7
37.5°	1466.6	1472.4	1481.1	1463.7	1463.7	1455.0	1463.7	1469.5	1457.9	1457.9	1472.4
40°	1307.2	1295.6	1284.0	1266.6	1257.9	1240.5	1240.5	1226.0	1217.3	1211.5	1214.4
42.5°	1153.6	1127.5	1101.4	1063.7	1046.3	1028.9	1011.5	991.2	985.4	971.0	962.3
45°	1005.7	968.1	933.3	872.4	837.6	820.2	782.6	742.0	715.9	710.1	686.9
47.5°	881.1	826.0	768.1	695.6	660.8	628.9	573.9	539.1	504.3	486.9	472.4
50°	771.0	721.7	646.3	568.1	524.6	492.7	431.9	391.3	353.6	327.5	310.1
52.5°	675.3	620.3	550.7	460.8	417.4	382.6	315.9	269.5	237.7	211.6	191.3
55°	568.1	524.6	455.0	371.0	327.5	286.9	229.0	179.7	147.8	130.4	115.9
57.5°	489.8	452.1	385.5	304.3	263.8	226.1	168.1	127.5	101.4	84.1	75.4
60°	437.7	402.9	344.9	266.7	229.0	194.2	139.1	101.4	78.3	63.8	58.0
62.5°	394.2	359.4	307.2	234.8	202.9	168.1	118.8	84.1	63.8	52.2	43.5
65°	344.9	313.0	266.7	202.9	173.9	144.9	101.4	69.6	52.2	40.6	34.8
67.5°	292.7	263.8	223.2	168.1	144.9	121.7	81.2	58.0	43.5	34.8	29.0
70°	237.7	214.5	176.8	136.2	115.9	95.6	66.7	46.4	31.9	26.1	23.2
72.5°	182.6	162.3	136.2	104.3	87.0	72.5	49.3	34.8	26.1	20.3	17.4
75°	130.4	115.9	95.6	75.4	63.8	52.2	37.7	26.1	17.4	14.5	11.6
77.5°	89.8	81.2	66.7	52.2	43.5	37.7	26.1	17.4	14.5	11.6	8.7
80°	58.0	52.2	43.5	31.9	26.1	23.2	14.5	11.6	8.7	5.8	5.8
82.5°	34.8	31.9	26.1	17.4	14.5	11.6	8.7	5.8	5.8	2.9	2.9
85°	20.3	17.4	11.6	8.7	8.7	5.8	5.8	2.9	2.9	0.0	0.0
87.5°	8.7	5.8	5.8	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°	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2
2.5°	2228.8	2243.3	2240.4	2249.1	2246.2	2246.2	2260.7	2254.9	2269.4	2269.4	2272.3
5°	2260.7	2281.0	2281.0	2295.5	2292.6	2298.4	2312.9	2312.9	2330.3	2336.1	2336.1
7.5°	2307.1	2333.2	2339.0	2353.5	2356.4	2368.0	2379.6	2382.5	2405.7	2411.4	2414.3
10°	2370.9	2402.8	2411.4	2425.9	2431.7	2443.3	2457.8	2463.6	2492.6	2495.5	2507.1
12.5°	2449.1	2483.9	2492.6	2510.0	2512.9	2527.4	2547.7	2553.5	2582.5	2591.1	2599.8
15°	2524.5	2556.4	2570.9	2588.2	2591.1	2608.5	2625.9	2631.7	2657.8	2669.4	2678.1
17.5°	2576.7	2614.3	2623.0	2646.2	2646.2	2660.7	2678.1	2683.9	2710.0	2718.7	2724.5
20°	2588.2	2623.0	2634.6	2652.0	2654.9	2663.6	2678.1	2683.9	2707.1	2710.0	2718.7
22.5°	2544.8	2579.6	2585.3	2602.7	2605.6	2614.3	2625.9	2623.0	2652.0	2649.1	2652.0
25°	2452.0	2483.9	2483.9	2504.2	2501.3	2510.0	2515.8	2512.9	2539.0	2539.0	2539.0
27.5°	2318.7	2347.7	2350.6	2365.1	2356.4	2359.3	2365.1	2362.2	2379.6	2379.6	2379.6
30°	2153.5	2176.7	2168.0	2179.6	2173.8	2179.6	2173.8	2170.9	2176.7	2182.5	2179.6
32.5°	1947.7	1965.1	1965.1	1968.0	1968.0	1950.6	1944.8	1944.8	1941.9	1939.0	1939.0
35°	1710.0	1724.5	1718.7	1718.7	1715.8	1698.4	1689.8	1684.0	1692.7	1675.3	1686.9
37.5°	1466.6	1469.5	1460.8	1457.9	1443.4	1443.4	1428.9	1417.3	1423.1	1420.2	1408.6
40°	1199.9	1211.5	1194.1	1188.3	1197.0	1185.4	1170.9	1156.5	1168.0	1153.6	1159.3
42.5°	939.1	936.2	930.4	930.4	930.4	913.0	910.1	907.2	910.1	898.5	889.8
45°	678.2	669.5	660.8	660.8	649.2	643.4	643.4	634.7	620.3	620.3	602.9
47.5°	457.9	437.7	431.9	429.0	423.2	423.2	417.4	411.6	408.7	394.2	394.2
50°	298.5	278.2	272.4	269.5	272.4	266.7	260.9	255.1	249.3	246.4	240.6
52.5°	179.7	171.0	165.2	162.3	156.5	153.6	150.7	144.9	142.0	142.0	139.1
55°	107.2	98.5	87.0	87.0	87.0	84.1	81.2	78.3	75.4	75.4	72.5
57.5°	66.7	60.9	55.1	52.2	52.2	52.2	49.3	49.3	49.3	49.3	46.4
60°	49.3	43.5	40.6	40.6	40.6	37.7	37.7	37.7	37.7	34.8	34.8
62.5°	37.7	34.8	31.9	31.9	29.0	29.0	29.0	29.0	29.0	29.0	26.1
65°	31.9	26.1	26.1	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
67.5°	23.2	20.3	20.3	20.3	20.3	17.4	17.4	17.4	17.4	17.4	17.4
70°	17.4	17.4	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
72.5°	14.5	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
75°	11.6	11.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
77.5°	8.7	8.7	8.7	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
80°	5.8	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: P251576

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2	2220.2
2.5°	2272.3	2286.8	2272.3	2272.3	2281.0	2278.1	2283.9	2275.2
5°	2339.0	2359.3	2344.8	2341.9	2356.4	2353.5	2356.4	2350.6
7.5°	2420.1	2440.4	2425.9	2425.9	2440.4	2437.5	2446.2	2440.4
10°	2512.9	2536.1	2515.8	2518.7	2539.0	2536.1	2536.1	2536.1
12.5°	2608.5	2631.7	2620.1	2620.1	2634.6	2637.5	2640.4	2637.5
15°	2686.8	2710.0	2695.5	2695.5	2715.8	2712.9	2715.8	2712.9
17.5°	2733.2	2756.4	2739.0	2739.0	2756.4	2756.4	2759.3	2762.2
20°	2721.6	2747.7	2733.2	2727.4	2747.7	2747.7	2744.8	2744.8
22.5°	2654.9	2678.1	2666.5	2660.7	2675.2	2669.4	2666.5	2669.4
25°	2539.0	2562.2	2539.0	2539.0	2550.6	2547.7	2550.6	2547.7
27.5°	2382.5	2399.9	2376.7	2373.8	2385.4	2379.6	2376.7	2385.4
30°	2173.8	2191.2	2179.6	2170.9	2185.4	2176.7	2170.9	2173.8
32.5°	1936.1	1947.7	1941.9	1927.4	1936.1	1930.3	1927.4	1930.3
35°	1675.3	1689.8	1666.6	1663.7	1678.2	1666.6	1660.8	1675.3
37.5°	1405.7	1423.1	1402.8	1405.7	1397.0	1399.9	1394.1	1402.8
40°	1150.7	1147.8	1142.0	1139.1	1142.0	1133.3	1139.1	1130.4
42.5°	875.3	881.1	878.2	875.3	878.2	866.6	860.8	872.4
45°	608.7	605.8	600.0	594.2	594.2	591.3	591.3	582.6
47.5°	391.3	388.4	376.8	379.7	385.5	379.7	371.0	382.6
50°	237.7	234.8	234.8	231.9	237.7	231.9	226.1	226.1
52.5°	133.3	133.3	130.4	130.4	130.4	130.4	127.5	124.6
55°	72.5	69.6	69.6	69.6	66.7	66.7	66.7	66.7
57.5°	46.4	46.4	46.4	46.4	46.4	46.4	43.5	43.5
60°	34.8	34.8	34.8	34.8	31.9	34.8	31.9	31.9
62.5°	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
65°	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
67.5°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
70°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
72.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
75°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
77.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
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)