

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: P251963

Luminaire Tested: **LD4B50D010TE EU4B30508050 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251963  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B50D010TE EU4B30508050 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

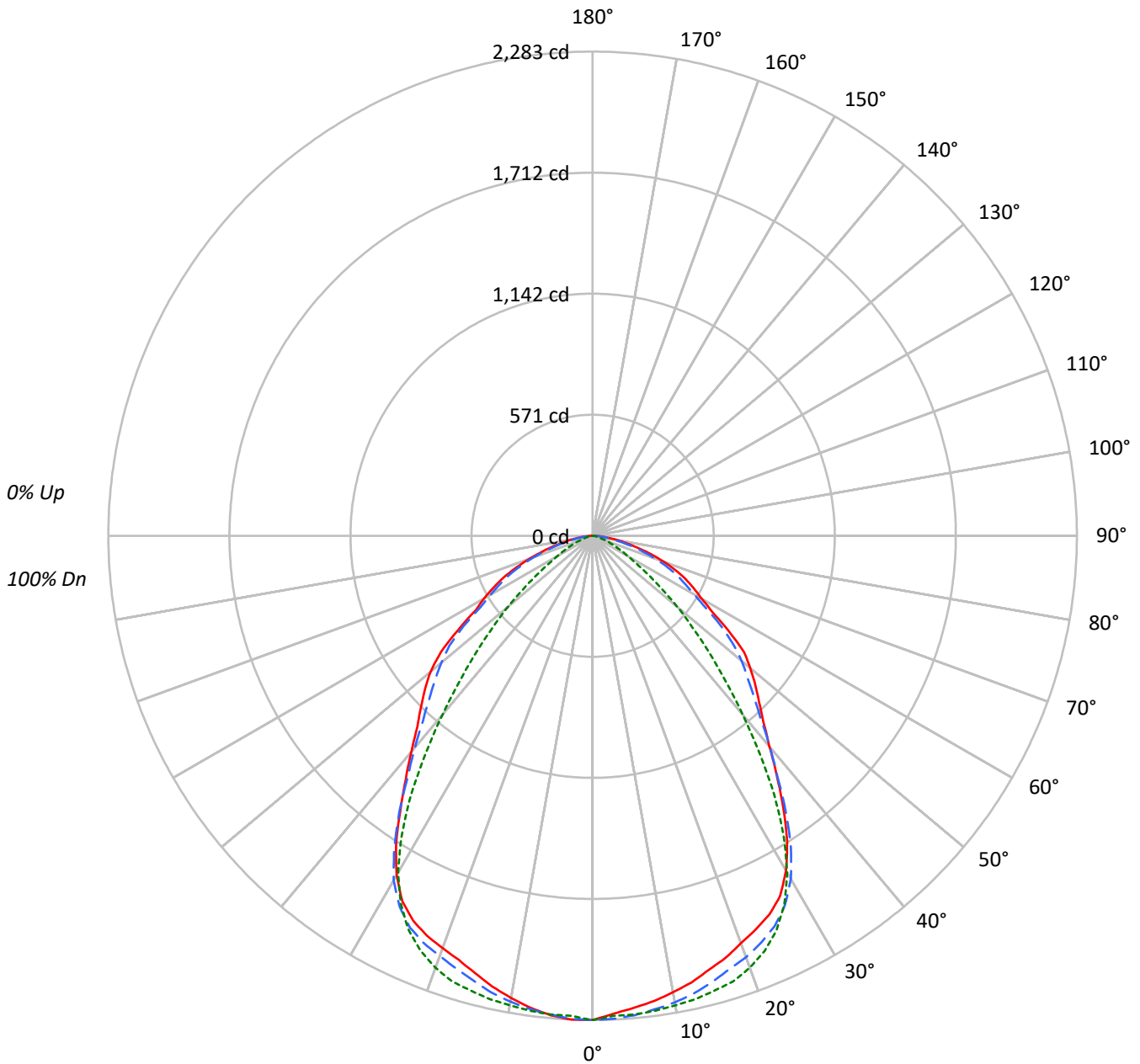
Lumens per Lamp: N/A  
Luminaire Lumens: 4647.0 lumens  
Efficiency: N/A  
Efficacy: 79.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	222536	222536	222536
5°	218573	221664	222006
10°	216231	222485	219012
15°	213728	223999	215494
20°	212041	224787	214592
25°	211915	220604	215314
30°	205174	206355	207942
35°	186397	177629	188075
40°	164906	139881	168939
45°	153001	106512	157839
50°	146994	78826	151269
55°	133110	54321	131309
60°	115722	36976	115040
65°	111798	26727	106125
70°	101100	18009	90101
75°	83330	11899	71431
80°	67012	7913	53205
85°	55016	3914	35335



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.5	4.6
10°-20°	616.3	13.3
20°-30°	931.1	20.0
30°-40°	974.4	21.0
40°-50°	789.2	17.0
50°-60°	574.0	12.4
60°-70°	354.0	7.6
70°-80°	160.0	3.4
80°-90°	32.5	0.7
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°	1762.9	37.9
0°-40°	2737.3	58.9
0°-60°	4100.5	88.2
0°-90°	4647.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4647.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2283	2283	2283	2283	2283	
5°	2234	2269	2266	2266	2269	212
15°	2118	2178	2220	2171	2136	599
25°	1971	2030	2052	2038	2002	903
35°	1567	1588	1493	1588	1581	976
45°	1110	1075	773	1089	1145	863
55°	783	734	320	741	773	699
65°	485	436	116	429	460	474
75°	221	190	32	165	190	240
85°	49	39	4	28	32	56
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°	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4
2.5°	2255.3	2255.3	2276.3	2300.9	2279.8	2258.8	2272.8	2265.8	2290.4	2290.4	2279.8
5°	2234.2	2241.2	2258.8	2279.8	2262.3	2241.2	2258.8	2251.7	2276.3	2276.3	2269.3
7.5°	2213.1	2216.6	2237.7	2262.3	2244.7	2223.6	2237.7	2234.2	2255.3	2258.8	2251.7
10°	2185.0	2188.5	2209.6	2234.2	2216.6	2199.0	2213.1	2209.6	2237.7	2237.7	2234.2
12.5°	2156.9	2160.4	2181.5	2202.6	2185.0	2167.4	2181.5	2181.5	2209.6	2213.1	2209.6
15°	2118.3	2125.3	2142.8	2163.9	2153.4	2132.3	2146.4	2146.4	2170.9	2178.0	2178.0
17.5°	2086.6	2090.1	2107.7	2128.8	2114.7	2097.2	2111.2	2111.2	2135.8	2142.8	2142.8
20°	2044.5	2051.5	2069.1	2090.1	2079.6	2065.6	2076.1	2076.1	2104.2	2111.2	2114.7
22.5°	2009.4	2016.4	2030.4	2058.5	2041.0	2030.4	2044.5	2041.0	2072.6	2076.1	2076.1
25°	1970.7	1977.7	1995.3	2012.9	2002.3	1991.8	2002.3	2002.3	2026.9	2030.4	2030.4
27.5°	1914.5	1918.0	1935.6	1953.1	1942.6	1928.6	1942.6	1939.1	1963.7	1967.2	1963.7
30°	1823.2	1830.2	1837.2	1861.8	1851.3	1840.7	1854.8	1847.8	1872.4	1872.4	1868.8
32.5°	1707.2	1707.2	1721.3	1738.9	1724.8	1717.8	1728.3	1731.8	1749.4	1749.4	1738.9
35°	1566.7	1573.8	1584.3	1594.8	1584.3	1577.3	1587.8	1584.3	1605.4	1598.3	1587.8
37.5°	1426.2	1429.7	1440.3	1454.3	1440.3	1429.7	1433.2	1429.7	1447.3	1447.3	1429.7
40°	1296.2	1303.3	1310.3	1324.3	1310.3	1303.3	1306.8	1296.2	1317.3	1310.3	1299.8
42.5°	1190.9	1194.4	1204.9	1211.9	1197.9	1194.4	1197.9	1190.9	1201.4	1194.4	1173.3
45°	1110.1	1110.1	1113.6	1124.1	1110.1	1106.5	1106.5	1099.5	1110.1	1096.0	1074.9
47.5°	1039.8	1043.3	1046.8	1053.9	1043.3	1032.8	1036.3	1022.2	1029.3	1018.7	990.6
50°	969.5	976.6	980.1	987.1	976.6	969.5	973.1	959.0	959.0	941.4	916.9
52.5°	899.3	902.8	899.3	906.3	899.3	888.8	892.3	878.2	878.2	857.1	832.5
55°	783.4	786.9	790.4	797.4	790.4	779.9	786.9	776.3	776.3	762.3	734.2
57.5°	667.4	671.0	674.5	678.0	678.0	671.0	674.5	667.4	663.9	653.4	632.3
60°	593.7	593.7	593.7	597.2	593.7	590.2	590.2	583.1	583.1	569.1	548.0
62.5°	537.5	541.0	541.0	544.5	541.0	537.5	534.0	526.9	523.4	509.4	491.8
65°	484.8	484.8	481.3	488.3	484.8	481.3	481.3	474.2	467.2	453.2	435.6
67.5°	421.5	425.1	421.5	425.1	425.1	421.5	418.0	411.0	407.5	397.0	375.9
70°	354.8	354.8	354.8	358.3	354.8	354.8	358.3	347.8	344.3	330.2	312.6
72.5°	288.1	291.6	291.6	288.1	291.6	284.5	284.5	284.5	281.0	267.0	249.4
75°	221.3	224.8	224.8	228.3	224.8	221.3	221.3	217.8	214.3	203.7	189.7
77.5°	165.1	165.1	168.6	168.6	168.6	165.1	165.1	158.1	158.1	151.1	137.0
80°	119.4	119.4	115.9	119.4	119.4	115.9	115.9	112.4	112.4	105.4	94.8
82.5°	77.3	80.8	80.8	80.8	80.8	77.3	77.3	77.3	73.8	70.3	63.2
85°	49.2	49.2	49.2	49.2	52.7	49.2	52.7	49.2	49.2	42.2	38.6
87.5°	21.1	21.1	21.1	24.6	24.6	21.1	21.1	21.1	21.1	21.1	17.6
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°	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4
2.5°	2279.8	2283.4	2272.8	2286.9	2276.3	2279.8	2283.4	2279.8	2265.8	2265.8	2304.4
5°	2265.8	2272.8	2262.3	2279.8	2272.8	2272.8	2279.8	2276.3	2262.3	2265.8	2300.9
7.5°	2251.7	2262.3	2255.3	2272.8	2262.3	2262.3	2269.3	2269.3	2255.3	2258.8	2290.4
10°	2230.7	2244.7	2241.2	2258.8	2248.2	2248.2	2258.8	2258.8	2244.7	2248.2	2279.8
12.5°	2213.1	2227.1	2223.6	2241.2	2234.2	2237.7	2241.2	2248.2	2230.7	2237.7	2265.8
15°	2185.0	2199.0	2199.0	2216.6	2209.6	2216.6	2223.6	2234.2	2220.1	2220.1	2248.2
17.5°	2153.4	2170.9	2170.9	2185.0	2185.0	2188.5	2202.6	2213.1	2199.0	2202.6	2227.1
20°	2118.3	2139.3	2139.3	2156.9	2153.4	2160.4	2170.9	2181.5	2167.4	2167.4	2195.5
22.5°	2083.1	2100.7	2104.2	2114.7	2114.7	2118.3	2128.8	2135.8	2118.3	2118.3	2146.4
25°	2033.9	2051.5	2055.0	2062.0	2055.0	2055.0	2062.0	2069.1	2051.5	2051.5	2076.1
27.5°	1967.2	1984.8	1984.8	1981.2	1974.2	1977.7	1974.2	1977.7	1960.2	1956.7	1981.2
30°	1868.8	1879.4	1879.4	1875.9	1865.3	1865.3	1854.8	1858.3	1833.7	1833.7	1854.8
32.5°	1735.3	1745.9	1738.9	1731.8	1717.8	1710.8	1703.7	1700.2	1675.6	1675.6	1700.2
35°	1577.3	1584.3	1573.8	1559.7	1542.1	1531.6	1521.1	1507.0	1489.4	1493.0	1507.0
37.5°	1415.7	1415.7	1401.6	1373.5	1359.5	1341.9	1324.3	1324.3	1296.2	1292.7	1303.3
40°	1278.7	1264.6	1240.0	1201.4	1176.8	1159.2	1134.7	1120.6	1099.5	1099.5	1117.1
42.5°	1155.7	1127.6	1096.0	1043.3	1018.7	997.7	966.0	952.0	927.4	923.9	934.4
45°	1046.8	1018.7	973.1	916.9	885.2	860.6	815.0	797.4	776.3	772.8	779.9
47.5°	959.0	927.4	871.2	797.4	765.8	734.2	688.5	663.9	646.4	635.8	646.4
50°	881.7	839.6	779.9	702.6	660.4	632.3	576.1	551.5	526.9	519.9	523.4
52.5°	797.4	755.3	692.0	611.2	572.6	530.4	477.7	442.6	421.5	411.0	421.5
55°	706.1	663.9	600.7	519.9	477.7	439.1	382.9	354.8	330.2	319.7	330.2
57.5°	607.7	569.1	512.9	432.1	393.4	358.3	305.6	277.5	252.9	245.9	252.9
60°	523.4	491.8	435.6	358.3	326.7	288.1	242.4	214.3	193.2	189.7	193.2
62.5°	467.2	432.1	379.4	305.6	274.0	242.4	200.2	172.1	154.6	151.1	154.6
65°	411.0	372.4	323.2	260.0	228.3	203.7	161.6	137.0	119.4	115.9	119.4
67.5°	347.8	312.6	270.5	214.3	189.7	165.1	130.0	105.4	91.3	87.8	91.3
70°	288.1	256.4	214.3	172.1	147.5	130.0	98.4	80.8	66.7	63.2	66.7
72.5°	228.3	200.2	165.1	130.0	115.9	98.4	77.3	59.7	49.2	45.7	49.2
75°	175.6	154.6	126.5	94.8	84.3	73.8	52.7	42.2	35.1	31.6	35.1
77.5°	122.9	108.9	87.8	70.3	59.7	52.7	38.6	28.1	24.6	21.1	24.6
80°	84.3	73.8	59.7	45.7	38.6	31.6	24.6	17.6	14.1	14.1	14.1
82.5°	56.2	45.7	35.1	28.1	24.6	21.1	14.1	10.5	10.5	7.0	7.0
85°	31.6	28.1	21.1	17.6	14.1	10.5	7.0	7.0	3.5	3.5	3.5
87.5°	14.1	10.5	7.0	7.0	3.5	3.5	3.5	3.5	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°	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4
2.5°	2293.9	2283.4	2297.4	2283.4	2276.3	2283.4	2276.3	2297.4	2279.8	2265.8	2279.8
5°	2290.4	2276.3	2290.4	2279.8	2269.3	2272.8	2265.8	2286.9	2265.8	2255.3	2262.3
7.5°	2283.4	2272.8	2279.8	2269.3	2258.8	2262.3	2255.3	2272.8	2251.7	2241.2	2248.2
10°	2272.8	2262.3	2265.8	2258.8	2248.2	2248.2	2241.2	2255.3	2230.7	2216.6	2223.6
12.5°	2258.8	2244.7	2251.7	2241.2	2227.1	2227.1	2220.1	2230.7	2206.1	2192.0	2195.5
15°	2241.2	2227.1	2227.1	2216.6	2202.6	2202.6	2188.5	2199.0	2170.9	2156.9	2156.9
17.5°	2220.1	2202.6	2202.6	2192.0	2174.5	2170.9	2160.4	2170.9	2139.3	2125.3	2125.3
20°	2188.5	2174.5	2170.9	2163.9	2146.4	2142.8	2128.8	2132.3	2107.7	2097.2	2093.7
22.5°	2146.4	2132.3	2135.8	2125.3	2111.2	2107.7	2093.7	2104.2	2079.6	2069.1	2072.6
25°	2072.6	2065.6	2072.6	2069.1	2058.5	2058.5	2051.5	2058.5	2037.5	2030.4	2033.9
27.5°	1988.3	1984.8	1988.3	1988.3	1981.2	1981.2	1981.2	1991.8	1970.7	1967.2	1967.2
30°	1865.3	1865.3	1868.8	1872.4	1872.4	1879.4	1875.9	1889.9	1875.9	1868.8	1875.9
32.5°	1703.7	1717.8	1728.3	1728.3	1728.3	1735.3	1742.4	1752.9	1738.9	1742.4	1742.4
35°	1521.1	1531.6	1538.6	1556.2	1545.7	1570.2	1577.3	1591.3	1587.8	1594.8	1591.3
37.5°	1317.3	1331.4	1345.4	1370.0	1366.5	1394.6	1408.7	1436.8	1429.7	1443.8	1450.8
40°	1127.6	1148.7	1169.8	1187.3	1201.4	1229.5	1257.6	1292.7	1303.3	1313.8	1317.3
42.5°	945.0	966.0	1001.2	1025.8	1046.8	1092.5	1131.1	1173.3	1183.8	1204.9	1211.9
45°	797.4	815.0	857.1	888.8	906.3	973.1	1018.7	1071.4	1089.0	1113.6	1124.1
47.5°	660.4	692.0	734.2	772.8	797.4	867.7	927.4	983.6	1008.2	1036.3	1050.3
50°	541.0	576.1	632.3	667.4	702.6	779.9	846.6	906.3	930.9	962.5	976.6
52.5°	442.6	481.3	534.0	572.6	611.2	692.0	762.3	818.5	850.1	871.2	892.3
55°	347.8	389.9	442.6	484.8	516.4	604.2	663.9	720.1	741.2	758.8	769.3
57.5°	270.5	302.1	354.8	389.9	428.6	505.9	565.6	607.7	625.3	646.4	653.4
60°	210.8	242.4	291.6	326.7	361.8	435.6	495.3	537.5	555.0	572.6	583.1
62.5°	168.6	200.2	245.9	277.5	309.1	375.9	428.6	470.7	491.8	509.4	519.9
65°	133.5	161.6	200.2	231.8	256.4	316.2	368.8	407.5	428.6	446.1	456.7
67.5°	105.4	130.0	165.1	186.2	210.8	260.0	305.6	340.7	358.3	379.4	389.9
70°	80.8	98.4	130.0	147.5	165.1	207.3	242.4	277.5	295.1	309.1	316.2
72.5°	59.7	73.8	98.4	112.4	122.9	158.1	186.2	210.8	224.8	238.9	245.9
75°	42.2	52.7	70.3	80.8	87.8	112.4	137.0	154.6	165.1	175.6	186.2
77.5°	28.1	35.1	45.7	52.7	59.7	77.3	91.3	105.4	115.9	126.5	130.0
80°	17.6	24.6	31.6	35.1	38.6	49.2	63.2	70.3	77.3	84.3	87.8
82.5°	10.5	14.1	17.6	21.1	24.6	31.6	38.6	45.7	49.2	56.2	59.7
85°	3.5	7.0	7.0	10.5	10.5	17.6	21.1	24.6	28.1	31.6	35.1
87.5°	0.0	0.0	3.5	3.5	3.5	3.5	7.0	7.0	7.0	7.0	7.0
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: P251963

CATALOG NUMBER: LD4B50D010TE EU4B30508050 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4	2283.4
2.5°	2293.9	2283.4	2276.3	2272.8	2297.4	2265.8	2279.8	2283.4
5°	2279.8	2269.3	2262.3	2258.8	2279.8	2251.7	2262.3	2269.3
7.5°	2258.8	2251.7	2241.2	2237.7	2258.8	2227.1	2241.2	2244.7
10°	2234.2	2223.6	2216.6	2213.1	2230.7	2199.0	2213.1	2213.1
12.5°	2202.6	2195.5	2181.5	2181.5	2195.5	2167.4	2178.0	2178.0
15°	2160.4	2153.4	2139.3	2139.3	2153.4	2125.3	2135.8	2135.8
17.5°	2125.3	2118.3	2107.7	2104.2	2118.3	2090.1	2100.7	2097.2
20°	2097.2	2090.1	2076.1	2076.1	2086.6	2058.5	2069.1	2069.1
22.5°	2072.6	2069.1	2055.0	2055.0	2069.1	2041.0	2048.0	2041.0
25°	2033.9	2030.4	2016.4	2019.9	2026.9	1998.8	2009.4	2002.3
27.5°	1970.7	1970.7	1956.7	1953.1	1963.7	1939.1	1946.1	1942.6
30°	1872.4	1875.9	1858.3	1858.3	1861.8	1840.7	1851.3	1847.8
32.5°	1738.9	1742.4	1728.3	1724.8	1735.3	1717.8	1724.8	1724.8
35°	1591.3	1594.8	1584.3	1584.3	1594.8	1584.3	1584.3	1580.8
37.5°	1443.8	1450.8	1443.8	1447.3	1454.3	1443.8	1450.8	1447.3
40°	1324.3	1331.4	1320.8	1327.9	1334.9	1324.3	1334.9	1327.9
42.5°	1215.4	1226.0	1219.0	1226.0	1233.0	1226.0	1233.0	1222.5
45°	1134.7	1141.7	1138.2	1141.7	1148.7	1145.2	1148.7	1145.2
47.5°	1057.4	1071.4	1064.4	1071.4	1082.0	1074.9	1082.0	1071.4
50°	987.1	997.7	994.1	1001.2	1004.7	1001.2	1008.2	997.7
52.5°	895.8	906.3	902.8	902.8	909.8	902.8	909.8	902.8
55°	776.3	779.9	779.9	783.4	779.9	776.3	779.9	772.8
57.5°	660.4	667.4	656.9	667.4	663.9	660.4	660.4	653.4
60°	586.6	597.2	590.2	597.2	593.7	593.7	593.7	590.2
62.5°	526.9	534.0	526.9	530.4	530.4	530.4	526.9	523.4
65°	460.2	470.7	463.7	467.2	463.7	460.2	463.7	460.2
67.5°	393.4	397.0	397.0	393.4	393.4	393.4	393.4	386.4
70°	319.7	323.2	319.7	326.7	323.2	319.7	323.2	316.2
72.5°	249.4	252.9	249.4	252.9	249.4	249.4	249.4	249.4
75°	186.2	189.7	189.7	189.7	189.7	189.7	182.7	189.7
77.5°	133.5	133.5	133.5	137.0	133.5	133.5	133.5	133.5
80°	91.3	91.3	91.3	94.8	91.3	94.8	91.3	94.8
82.5°	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7
85°	31.6	35.1	35.1	31.6	31.6	31.6	31.6	31.6
87.5°	7.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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)