

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: P251960

Luminaire Tested: **LD4B50D010TE EU4B30508030 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251960  
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 EU4B30508030 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4488.0 lumens  
Efficiency: N/A  
Efficacy: 76.4 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

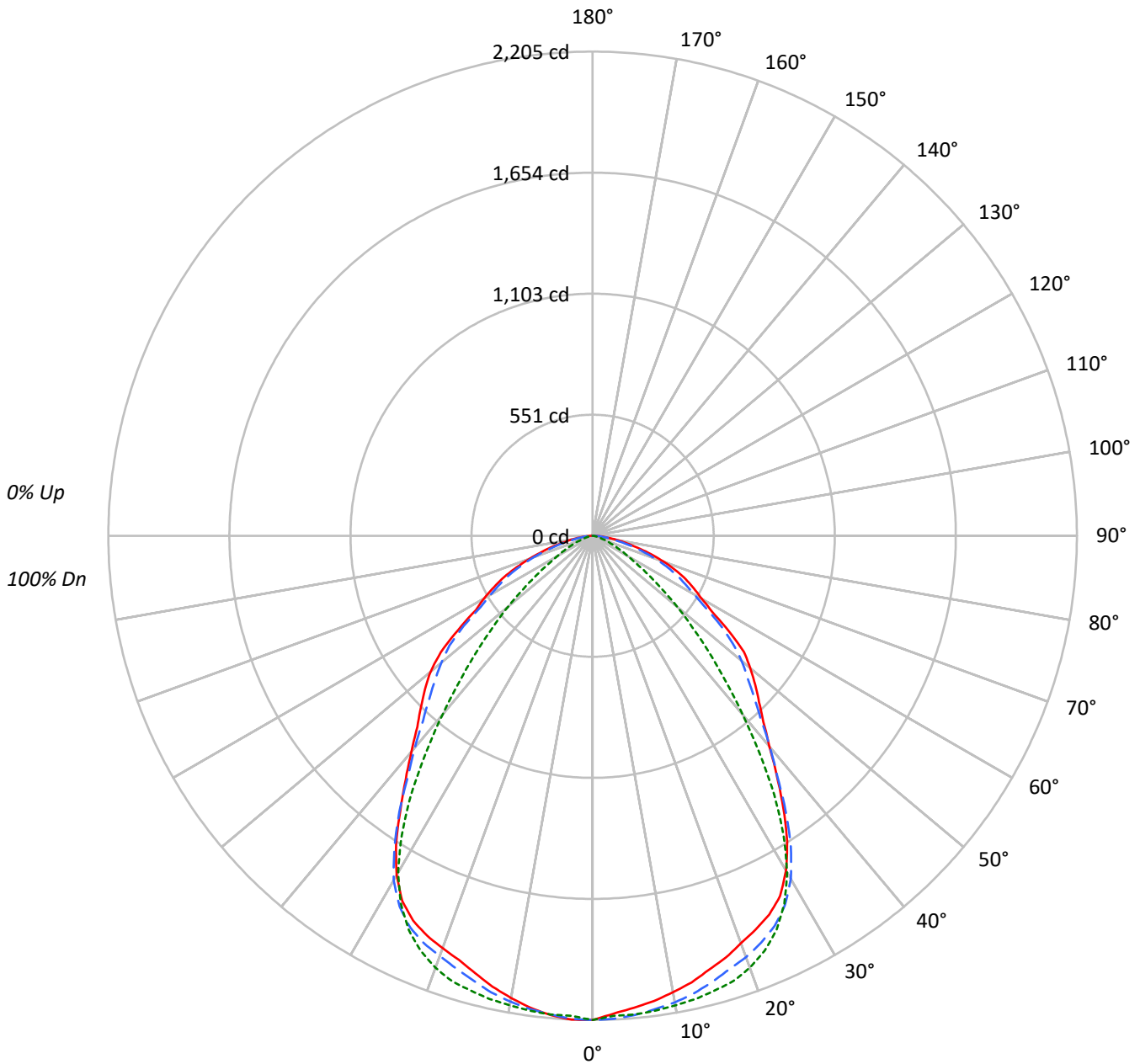
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31

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

	0°	90°	180°
0°	214915	214915	214915
5°	211089	214082	214415
10°	208829	214875	211520
15°	206413	216341	208118
20°	204781	217102	207249
25°	204668	213055	207947
30°	198151	199299	200819
35°	180020	171549	181638
40°	159270	135098	163150
45°	147764	102874	152436
50°	141975	76127	146084
55°	128556	52452	126823
60°	111765	35709	111102
65°	107969	25828	102481
70°	97652	17410	86995
75°	80469	11485	68984
80°	64767	7633	51409
85°	53115	3802	34105



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.2	4.6
10°-20°	595.2	13.3
20°-30°	899.2	20.0
30°-40°	941.1	21.0
40°-50°	762.2	17.0
50°-60°	554.4	12.4
60°-70°	341.9	7.6
70°-80°	154.5	3.4
80°-90°	31.4	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°	1702.6	37.9
0°-40°	2643.7	58.9
0°-60°	3960.2	88.2
0°-90°	4488.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4488.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2205	2205	2205	2205	2205	
5°	2158	2192	2188	2188	2192	205
15°	2046	2103	2144	2097	2063	578
25°	1903	1961	1981	1968	1934	872
35°	1513	1534	1442	1534	1527	943
45°	1072	1038	746	1052	1106	833
55°	757	709	309	716	746	675
65°	468	421	112	414	444	458
75°	214	183	30	160	183	232
85°	48	37	3	27	30	54
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°	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2
2.5°	2178.1	2178.1	2198.4	2222.2	2201.8	2181.5	2195.0	2188.3	2212.0	2212.0	2201.8
5°	2157.7	2164.5	2181.5	2201.8	2184.9	2164.5	2181.5	2174.7	2198.4	2198.4	2191.7
7.5°	2137.4	2140.8	2161.1	2184.9	2167.9	2147.6	2161.1	2157.7	2178.1	2181.5	2174.7
10°	2110.2	2113.6	2134.0	2157.7	2140.8	2123.8	2137.4	2134.0	2161.1	2161.1	2157.7
12.5°	2083.1	2086.5	2106.8	2127.2	2110.2	2093.3	2106.8	2106.8	2134.0	2137.4	2134.0
15°	2045.8	2052.6	2069.5	2089.9	2079.7	2059.3	2072.9	2072.9	2096.7	2103.4	2103.4
17.5°	2015.2	2018.6	2035.6	2056.0	2042.4	2025.4	2039.0	2039.0	2062.7	2069.5	2069.5
20°	1974.5	1981.3	1998.3	2018.6	2008.5	1994.9	2005.1	2005.1	2032.2	2039.0	2042.4
22.5°	1940.6	1947.4	1961.0	1988.1	1971.1	1961.0	1974.5	1971.1	2001.7	2005.1	2005.1
25°	1903.3	1910.1	1927.0	1944.0	1933.8	1923.6	1933.8	1933.8	1957.6	1961.0	1961.0
27.5°	1849.0	1852.4	1869.4	1886.3	1876.1	1862.6	1876.1	1872.7	1896.5	1899.9	1896.5
30°	1760.8	1767.6	1774.4	1798.1	1787.9	1777.8	1791.3	1784.5	1808.3	1808.3	1804.9
32.5°	1648.8	1648.8	1662.4	1679.4	1665.8	1659.0	1669.2	1672.6	1689.5	1689.5	1679.4
35°	1513.1	1519.9	1530.1	1540.3	1530.1	1523.3	1533.5	1530.1	1550.4	1543.7	1533.5
37.5°	1377.4	1380.8	1391.0	1404.6	1391.0	1380.8	1384.2	1380.8	1397.8	1397.8	1380.8
40°	1251.9	1258.7	1265.5	1279.0	1265.5	1258.7	1262.1	1251.9	1272.2	1265.5	1255.3
42.5°	1150.1	1153.5	1163.7	1170.5	1156.9	1153.5	1156.9	1150.1	1160.3	1153.5	1133.1
45°	1072.1	1072.1	1075.5	1085.7	1072.1	1068.7	1068.7	1061.9	1072.1	1058.5	1038.2
47.5°	1004.2	1007.6	1011.0	1017.8	1007.6	997.4	1000.8	987.3	994.0	983.9	956.7
50°	936.4	943.2	946.6	953.3	943.2	936.4	939.8	926.2	926.2	909.2	885.5
52.5°	868.5	871.9	868.5	875.3	868.5	858.3	861.7	848.2	848.2	827.8	804.1
55°	756.6	760.0	763.3	770.1	763.3	753.2	760.0	749.8	749.8	736.2	709.1
57.5°	644.6	648.0	651.4	654.8	654.8	648.0	651.4	644.6	641.2	631.0	610.7
60°	573.4	573.4	573.4	576.8	573.4	570.0	570.0	563.2	563.2	549.6	529.3
62.5°	519.1	522.5	522.5	525.9	522.5	519.1	515.7	508.9	505.5	491.9	475.0
65°	468.2	468.2	464.8	471.6	468.2	464.8	464.8	458.0	451.2	437.7	420.7
67.5°	407.1	410.5	407.1	410.5	410.5	407.1	403.7	396.9	393.5	383.4	363.0
70°	342.7	342.7	342.7	346.1	342.7	342.7	346.1	335.9	332.5	318.9	301.9
72.5°	278.2	281.6	281.6	278.2	281.6	274.8	274.8	274.8	271.4	257.8	240.9
75°	213.7	217.1	217.1	220.5	217.1	213.7	213.7	210.3	207.0	196.8	183.2
77.5°	159.5	159.5	162.8	162.8	162.8	159.5	159.5	152.7	152.7	145.9	132.3
80°	115.4	115.4	112.0	115.4	115.4	112.0	112.0	108.6	108.6	101.8	91.6
82.5°	74.6	78.0	78.0	78.0	78.0	74.6	74.6	74.6	71.2	67.9	61.1
85°	47.5	47.5	47.5	47.5	50.9	47.5	50.9	47.5	47.5	40.7	37.3
87.5°	20.4	20.4	20.4	23.7	23.7	20.4	20.4	20.4	20.4	20.4	17.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2
2.5°	2201.8	2205.2	2195.0	2208.6	2198.4	2201.8	2205.2	2201.8	2188.3	2188.3	2225.6
5°	2188.3	2195.0	2184.9	2201.8	2195.0	2195.0	2201.8	2198.4	2184.9	2188.3	2222.2
7.5°	2174.7	2184.9	2178.1	2195.0	2184.9	2184.9	2191.7	2191.7	2178.1	2181.5	2212.0
10°	2154.3	2167.9	2164.5	2181.5	2171.3	2171.3	2181.5	2181.5	2167.9	2171.3	2201.8
12.5°	2137.4	2150.9	2147.6	2164.5	2157.7	2161.1	2164.5	2171.3	2154.3	2161.1	2188.3
15°	2110.2	2123.8	2123.8	2140.8	2134.0	2140.8	2147.6	2157.7	2144.2	2144.2	2171.3
17.5°	2079.7	2096.7	2096.7	2110.2	2110.2	2113.6	2127.2	2137.4	2123.8	2127.2	2150.9
20°	2045.8	2066.1	2066.1	2083.1	2079.7	2086.5	2096.7	2106.8	2093.3	2093.3	2120.4
22.5°	2011.8	2028.8	2032.2	2042.4	2042.4	2045.8	2056.0	2062.7	2045.8	2045.8	2072.9
25°	1964.3	1981.3	1984.7	1991.5	1984.7	1984.7	1991.5	1998.3	1981.3	1981.3	2005.1
27.5°	1899.9	1916.9	1916.9	1913.5	1906.7	1910.1	1906.7	1910.1	1893.1	1889.7	1913.5
30°	1804.9	1815.1	1815.1	1811.7	1801.5	1801.5	1791.3	1794.7	1771.0	1771.0	1791.3
32.5°	1676.0	1686.2	1679.4	1672.6	1659.0	1652.2	1645.4	1642.0	1618.3	1618.3	1642.0
35°	1523.3	1530.1	1519.9	1506.3	1489.4	1479.2	1469.0	1455.5	1438.5	1441.9	1455.5
37.5°	1367.2	1367.2	1353.7	1326.5	1313.0	1296.0	1279.0	1279.0	1251.9	1248.5	1258.7
40°	1234.9	1221.4	1197.6	1160.3	1136.5	1119.6	1095.8	1082.3	1061.9	1061.9	1078.9
42.5°	1116.2	1089.0	1058.5	1007.6	983.9	963.5	933.0	919.4	895.7	892.3	902.4
45°	1011.0	983.9	939.8	885.5	854.9	831.2	787.1	770.1	749.8	746.4	753.2
47.5°	926.2	895.7	841.4	770.1	739.6	709.1	665.0	641.2	624.2	614.1	624.2
50°	851.6	810.8	753.2	678.5	637.8	610.7	556.4	532.6	508.9	502.1	505.5
52.5°	770.1	729.4	668.4	590.3	553.0	512.3	461.4	427.5	407.1	396.9	407.1
55°	681.9	641.2	580.1	502.1	461.4	424.1	369.8	342.7	318.9	308.7	318.9
57.5°	586.9	549.6	495.3	417.3	380.0	346.1	295.2	268.0	244.3	237.5	244.3
60°	505.5	475.0	420.7	346.1	315.5	278.2	234.1	207.0	186.6	183.2	186.6
62.5°	451.2	417.3	366.4	295.2	264.6	234.1	193.4	166.2	149.3	145.9	149.3
65°	396.9	359.6	312.1	251.1	220.5	196.8	156.1	132.3	115.4	112.0	115.4
67.5°	335.9	301.9	261.2	207.0	183.2	159.5	125.5	101.8	88.2	84.8	88.2
70°	278.2	247.7	207.0	166.2	142.5	125.5	95.0	78.0	64.5	61.1	64.5
72.5°	220.5	193.4	159.5	125.5	112.0	95.0	74.6	57.7	47.5	44.1	47.5
75°	169.6	149.3	122.1	91.6	81.4	71.2	50.9	40.7	33.9	30.5	33.9
77.5°	118.7	105.2	84.8	67.9	57.7	50.9	37.3	27.1	23.7	20.4	23.7
80°	81.4	71.2	57.7	44.1	37.3	30.5	23.7	17.0	13.6	13.6	13.6
82.5°	54.3	44.1	33.9	27.1	23.7	20.4	13.6	10.2	10.2	6.8	6.8
85°	30.5	27.1	20.4	17.0	13.6	10.2	6.8	6.8	3.4	3.4	3.4
87.5°	13.6	10.2	6.8	6.8	3.4	3.4	3.4	3.4	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°	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2
2.5°	2215.4	2205.2	2218.8	2205.2	2198.4	2205.2	2198.4	2218.8	2201.8	2188.3	2201.8
5°	2212.0	2198.4	2212.0	2201.8	2191.7	2195.0	2188.3	2208.6	2188.3	2178.1	2184.9
7.5°	2205.2	2195.0	2201.8	2191.7	2181.5	2184.9	2178.1	2195.0	2174.7	2164.5	2171.3
10°	2195.0	2184.9	2188.3	2181.5	2171.3	2171.3	2164.5	2178.1	2154.3	2140.8	2147.6
12.5°	2181.5	2167.9	2174.7	2164.5	2150.9	2150.9	2144.2	2154.3	2130.6	2117.0	2120.4
15°	2164.5	2150.9	2150.9	2140.8	2127.2	2127.2	2113.6	2123.8	2096.7	2083.1	2083.1
17.5°	2144.2	2127.2	2127.2	2117.0	2100.1	2096.7	2086.5	2096.7	2066.1	2052.6	2052.6
20°	2113.6	2100.1	2096.7	2089.9	2072.9	2069.5	2056.0	2059.3	2035.6	2025.4	2022.0
22.5°	2072.9	2059.3	2062.7	2052.6	2039.0	2035.6	2022.0	2032.2	2008.5	1998.3	2001.7
25°	2001.7	1994.9	2001.7	1998.3	1988.1	1988.1	1981.3	1988.1	1967.7	1961.0	1964.3
27.5°	1920.2	1916.9	1920.2	1920.2	1913.5	1913.5	1913.5	1923.6	1903.3	1899.9	1899.9
30°	1801.5	1801.5	1804.9	1808.3	1808.3	1815.1	1811.7	1825.3	1811.7	1804.9	1811.7
32.5°	1645.4	1659.0	1669.2	1669.2	1669.2	1676.0	1682.8	1692.9	1679.4	1682.8	1682.8
35°	1469.0	1479.2	1486.0	1502.9	1492.8	1516.5	1523.3	1536.9	1533.5	1540.3	1536.9
37.5°	1272.2	1285.8	1299.4	1323.1	1319.7	1346.9	1360.5	1387.6	1380.8	1394.4	1401.2
40°	1089.0	1109.4	1129.8	1146.7	1160.3	1187.4	1214.6	1248.5	1258.7	1268.9	1272.2
42.5°	912.6	933.0	966.9	990.7	1011.0	1055.1	1092.4	1133.1	1143.3	1163.7	1170.5
45°	770.1	787.1	827.8	858.3	875.3	939.8	983.9	1034.8	1051.7	1075.5	1085.7
47.5°	637.8	668.4	709.1	746.4	770.1	838.0	895.7	949.9	973.7	1000.8	1014.4
50°	522.5	556.4	610.7	644.6	678.5	753.2	817.6	875.3	899.1	929.6	943.2
52.5°	427.5	464.8	515.7	553.0	590.3	668.4	736.2	790.5	821.0	841.4	861.7
55°	335.9	376.6	427.5	468.2	498.7	583.5	641.2	695.5	715.9	732.8	743.0
57.5°	261.2	291.8	342.7	376.6	413.9	488.5	546.2	586.9	603.9	624.2	631.0
60°	203.6	234.1	281.6	315.5	349.4	420.7	478.4	519.1	536.0	553.0	563.2
62.5°	162.8	193.4	237.5	268.0	298.6	363.0	413.9	454.6	475.0	491.9	502.1
65°	128.9	156.1	193.4	223.9	247.7	305.3	356.2	393.5	413.9	430.9	441.0
67.5°	101.8	125.5	159.5	179.8	203.6	251.1	295.2	329.1	346.1	366.4	376.6
70°	78.0	95.0	125.5	142.5	159.5	200.2	234.1	268.0	285.0	298.6	305.3
72.5°	57.7	71.2	95.0	108.6	118.7	152.7	179.8	203.6	217.1	230.7	237.5
75°	40.7	50.9	67.9	78.0	84.8	108.6	132.3	149.3	159.5	169.6	179.8
77.5°	27.1	33.9	44.1	50.9	57.7	74.6	88.2	101.8	112.0	122.1	125.5
80°	17.0	23.7	30.5	33.9	37.3	47.5	61.1	67.9	74.6	81.4	84.8
82.5°	10.2	13.6	17.0	20.4	23.7	30.5	37.3	44.1	47.5	54.3	57.7
85°	3.4	6.8	6.8	10.2	10.2	17.0	20.4	23.7	27.1	30.5	33.9
87.5°	0.0	0.0	3.4	3.4	3.4	3.4	6.8	6.8	6.8	6.8	6.8
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: P251960

CATALOG NUMBER: LD4B50D010TE EU4B30508030 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2	2205.2
2.5°	2215.4	2205.2	2198.4	2195.0	2218.8	2188.3	2201.8	2205.2
5°	2201.8	2191.7	2184.9	2181.5	2201.8	2174.7	2184.9	2191.7
7.5°	2181.5	2174.7	2164.5	2161.1	2181.5	2150.9	2164.5	2167.9
10°	2157.7	2147.6	2140.8	2137.4	2154.3	2123.8	2137.4	2137.4
12.5°	2127.2	2120.4	2106.8	2106.8	2120.4	2093.3	2103.4	2103.4
15°	2086.5	2079.7	2066.1	2066.1	2079.7	2052.6	2062.7	2062.7
17.5°	2052.6	2045.8	2035.6	2032.2	2045.8	2018.6	2028.8	2025.4
20°	2025.4	2018.6	2005.1	2005.1	2015.2	1988.1	1998.3	1998.3
22.5°	2001.7	1998.3	1984.7	1984.7	1998.3	1971.1	1977.9	1971.1
25°	1964.3	1961.0	1947.4	1950.8	1957.6	1930.4	1940.6	1933.8
27.5°	1903.3	1903.3	1889.7	1886.3	1896.5	1872.7	1879.5	1876.1
30°	1808.3	1811.7	1794.7	1794.7	1798.1	1777.8	1787.9	1784.5
32.5°	1679.4	1682.8	1669.2	1665.8	1676.0	1659.0	1665.8	1665.8
35°	1536.9	1540.3	1530.1	1530.1	1540.3	1530.1	1530.1	1526.7
37.5°	1394.4	1401.2	1394.4	1397.8	1404.6	1394.4	1401.2	1397.8
40°	1279.0	1285.8	1275.6	1282.4	1289.2	1279.0	1289.2	1282.4
42.5°	1173.9	1184.0	1177.3	1184.0	1190.8	1184.0	1190.8	1180.6
45°	1095.8	1102.6	1099.2	1102.6	1109.4	1106.0	1109.4	1106.0
47.5°	1021.2	1034.8	1028.0	1034.8	1044.9	1038.2	1044.9	1034.8
50°	953.3	963.5	960.1	966.9	970.3	966.9	973.7	963.5
52.5°	865.1	875.3	871.9	871.9	878.7	871.9	878.7	871.9
55°	749.8	753.2	753.2	756.6	753.2	749.8	753.2	746.4
57.5°	637.8	644.6	634.4	644.6	641.2	637.8	637.8	631.0
60°	566.6	576.8	570.0	576.8	573.4	573.4	573.4	570.0
62.5°	508.9	515.7	508.9	512.3	512.3	512.3	508.9	505.5
65°	444.4	454.6	447.8	451.2	447.8	444.4	447.8	444.4
67.5°	380.0	383.4	383.4	380.0	380.0	380.0	380.0	373.2
70°	308.7	312.1	308.7	315.5	312.1	308.7	312.1	305.3
72.5°	240.9	244.3	240.9	244.3	240.9	240.9	240.9	240.9
75°	179.8	183.2	183.2	183.2	183.2	183.2	176.4	183.2
77.5°	128.9	128.9	128.9	132.3	128.9	128.9	128.9	128.9
80°	88.2	88.2	88.2	91.6	88.2	91.6	88.2	91.6
82.5°	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7
85°	30.5	33.9	33.9	30.5	30.5	30.5	30.5	30.5
87.5°	6.8	3.4	3.4	3.4	3.4	3.4	3.4	3.4
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)