

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: P251635

Luminaire Tested: **LD4B40D010 EU4B30508030 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251635  
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: LD4B40D010 EU4B30508030 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE 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: 3627.0 lumens  
Efficiency: N/A  
Efficacy: 84.3 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

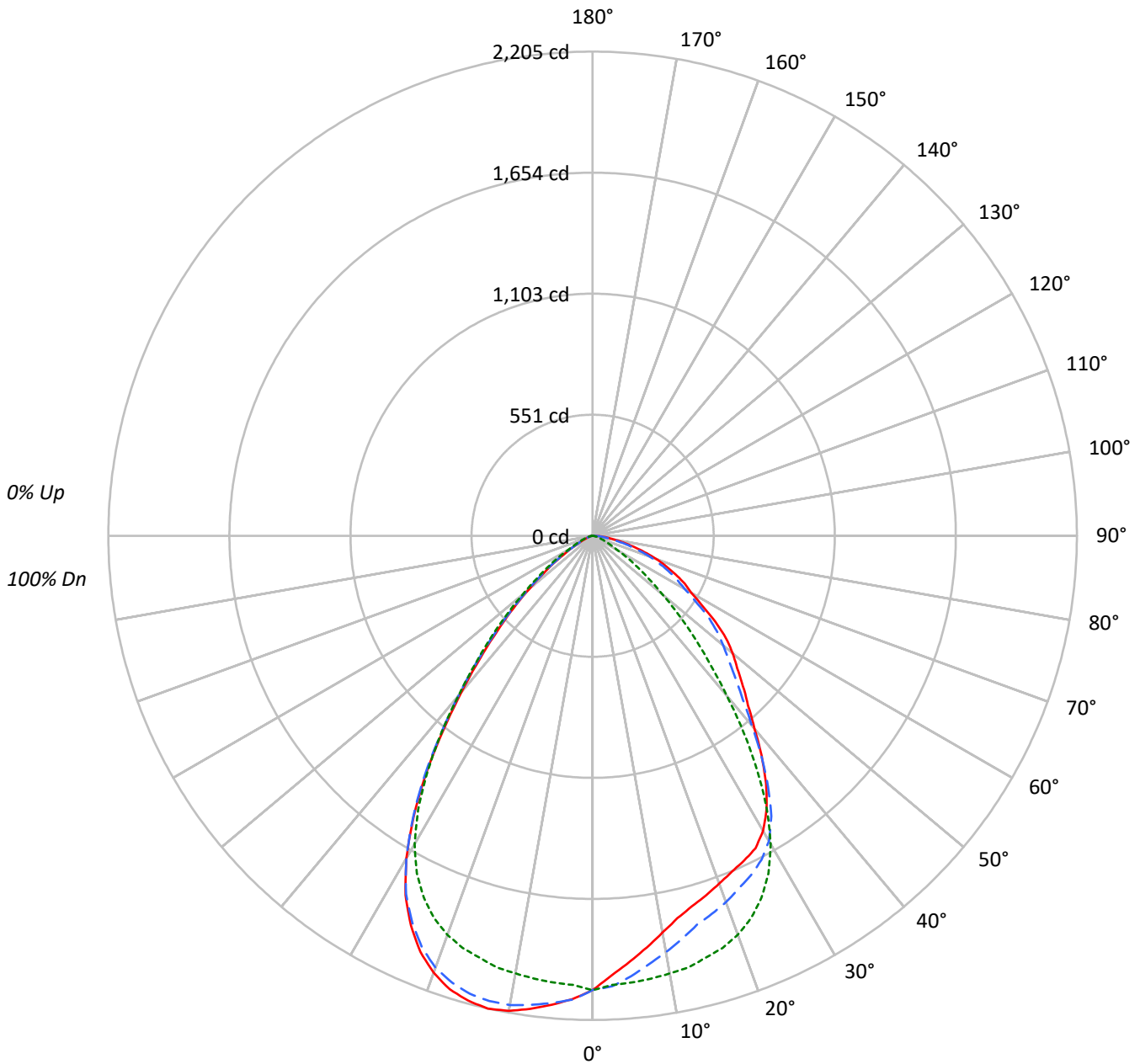
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

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

	0°	90°	180°
0°	201660	201660	201660
5°	190427	199818	209729
10°	181545	200278	217428
15°	176215	200702	221144
20°	174777	200497	219581
25°	175483	195549	210464
30°	174643	182442	190848
35°	163697	155761	157355
40°	145873	120772	118050
45°	133402	90042	84529
50°	126131	63073	57008
55°	115983	42580	35784
60°	101356	24949	19745
65°	95932	15981	11069
70°	87365	11398	6839
75°	72297	8020	5008
80°	56853	4490	2975
85°	50655	3019	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.5	5.4
10°-20°	560.9	15.5
20°-30°	831.4	22.9
30°-40°	832.6	23.0
40°-50°	581.9	16.0
50°-60°	346.2	9.5
60°-70°	180.7	5.0
70°-80°	80.3	2.2
80°-90°	17.5	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°	1587.8	43.8
0°-40°	2420.3	66.7
0°-60°	3348.5	92.3
0°-90°	3627.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3627.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2069	2069	2069	2069	2069	
5°	1946	2013	2042	2136	2144	183
15°	1746	1834	1989	2160	2192	495
25°	1632	1706	1818	1944	1957	752
35°	1376	1392	1309	1333	1323	853
45°	968	920	653	632	613	751
55°	683	640	251	219	211	606
65°	416	381	69	51	48	412
75°	192	168	21	13	13	208
85°	45	35	3	3	0	51
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°	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2
2.5°	2002.5	2026.5	2002.5	2010.5	2042.5	2013.2	2029.2	2029.2	2021.2	2039.8	2053.2
5°	1946.5	1970.5	1946.5	1957.2	1991.8	1962.5	1981.2	1975.8	1978.5	1994.5	2013.2
7.5°	1890.5	1909.2	1887.8	1901.2	1933.2	1909.2	1925.2	1925.2	1927.8	1951.8	1967.8
10°	1834.5	1850.5	1834.5	1845.2	1879.8	1858.5	1869.2	1871.8	1879.8	1901.2	1925.2
12.5°	1783.8	1797.2	1781.2	1797.2	1826.5	1805.2	1818.5	1821.2	1829.2	1853.2	1879.8
15°	1746.5	1759.9	1743.9	1757.2	1783.8	1767.8	1778.5	1783.8	1789.2	1810.5	1834.5
17.5°	1717.2	1727.9	1714.5	1730.5	1751.9	1733.2	1749.2	1749.2	1757.2	1778.5	1805.2
20°	1685.2	1695.9	1685.2	1698.5	1722.5	1706.5	1719.9	1719.9	1727.9	1751.9	1775.8
22.5°	1655.9	1661.2	1655.9	1666.5	1690.5	1677.2	1685.2	1687.9	1695.9	1717.2	1738.5
25°	1631.9	1642.5	1637.2	1647.9	1663.9	1650.5	1658.5	1661.2	1669.2	1687.9	1706.5
27.5°	1605.2	1610.5	1605.2	1618.5	1631.9	1621.2	1629.2	1626.5	1631.9	1647.9	1663.9
30°	1551.9	1557.2	1557.2	1565.2	1575.9	1570.5	1578.5	1570.5	1575.9	1589.2	1605.2
32.5°	1474.5	1477.2	1479.9	1487.9	1495.9	1487.9	1493.2	1493.2	1493.2	1503.9	1514.5
35°	1375.9	1381.2	1378.5	1383.9	1391.9	1389.2	1389.2	1386.5	1381.2	1386.5	1391.9
37.5°	1263.9	1255.9	1255.9	1263.9	1269.2	1258.6	1263.9	1258.6	1258.6	1261.2	1261.2
40°	1146.6	1138.6	1146.6	1149.2	1151.9	1146.6	1143.9	1138.6	1130.6	1133.2	1127.9
42.5°	1047.9	1042.6	1045.2	1045.2	1047.9	1042.6	1045.2	1034.6	1026.6	1021.2	1013.2
45°	967.9	959.9	967.9	962.6	962.6	959.9	957.3	951.9	941.3	933.3	919.9
47.5°	893.3	893.3	895.9	895.9	895.9	890.6	890.6	879.9	869.3	858.6	839.9
50°	831.9	826.6	837.3	837.3	829.3	826.6	829.3	815.9	807.9	794.6	775.9
52.5°	765.3	765.3	767.9	767.9	765.3	759.9	762.6	751.9	743.9	730.6	711.9
55°	682.6	677.3	685.3	685.3	682.6	679.9	682.6	674.6	666.6	655.9	639.9
57.5°	589.3	586.6	591.9	594.6	589.3	589.3	591.9	584.0	581.3	570.6	554.6
60°	520.0	517.3	522.6	525.3	520.0	520.0	520.0	509.3	504.0	493.3	482.6
62.5°	472.0	469.3	474.6	472.0	469.3	466.6	469.3	458.6	453.3	442.6	432.0
65°	416.0	418.6	421.3	421.3	418.6	416.0	416.0	410.6	405.3	394.6	381.3
67.5°	362.6	362.6	365.3	368.0	365.3	365.3	365.3	357.3	352.0	344.0	328.0
70°	306.6	304.0	312.0	312.0	306.6	309.3	306.6	304.0	298.6	288.0	274.6
72.5°	248.0	248.0	250.6	250.6	248.0	248.0	248.0	245.3	237.3	232.0	218.6
75°	192.0	192.0	194.7	197.3	192.0	192.0	194.7	189.3	184.0	176.0	168.0
77.5°	144.0	141.3	144.0	144.0	141.3	141.3	141.3	138.7	136.0	128.0	120.0
80°	101.3	98.7	101.3	101.3	101.3	98.7	98.7	96.0	96.0	90.7	82.7
82.5°	69.3	66.7	69.3	69.3	69.3	66.7	66.7	66.7	64.0	61.3	56.0
85°	45.3	42.7	42.7	45.3	42.7	42.7	42.7	42.7	40.0	37.3	34.7
87.5°	21.3	21.3	21.3	21.3	21.3	21.3	21.3	18.7	18.7	18.7	16.0
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°	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2
2.5°	2042.5	2037.2	2053.2	2047.8	2050.5	2037.2	2058.5	2047.8	2061.2	2047.8	2074.5
5°	2007.8	2002.5	2026.5	2023.8	2026.5	2015.8	2039.8	2037.2	2053.2	2042.5	2071.8
7.5°	1970.5	1965.2	1991.8	1994.5	1999.8	1989.2	2021.2	2021.2	2037.2	2034.5	2066.5
10°	1927.8	1930.5	1957.2	1962.5	1973.2	1967.8	1997.2	2005.2	2026.5	2023.8	2063.8
12.5°	1887.8	1887.8	1922.5	1933.2	1941.2	1938.5	1973.2	1983.8	2007.8	2013.2	2050.5
15°	1847.8	1850.5	1882.5	1898.5	1909.2	1906.5	1943.8	1957.2	1986.5	1989.2	2034.5
17.5°	1815.8	1813.2	1847.8	1861.2	1877.2	1874.5	1914.5	1930.5	1959.8	1967.8	2010.5
20°	1789.2	1786.5	1818.5	1834.5	1845.2	1842.5	1882.5	1901.2	1927.8	1933.2	1975.8
22.5°	1757.2	1751.9	1783.8	1797.2	1807.8	1805.2	1839.8	1853.2	1879.8	1885.2	1925.2
25°	1719.9	1714.5	1743.9	1751.9	1759.9	1754.5	1783.8	1791.8	1813.2	1818.5	1858.5
27.5°	1677.2	1663.9	1687.9	1687.9	1693.2	1685.2	1706.5	1714.5	1733.2	1733.2	1770.5
30°	1610.5	1591.9	1605.2	1602.5	1605.2	1594.5	1607.9	1610.5	1623.9	1621.2	1647.9
32.5°	1517.2	1490.5	1498.5	1490.5	1482.5	1466.5	1482.5	1477.2	1487.9	1477.2	1501.2
35°	1389.2	1362.6	1359.9	1349.2	1341.2	1327.9	1327.9	1314.6	1317.2	1309.2	1325.2
37.5°	1250.6	1215.9	1210.6	1189.2	1175.9	1159.9	1159.9	1149.2	1135.9	1130.6	1143.9
40°	1114.6	1077.2	1063.9	1029.2	1015.9	999.9	989.2	975.9	970.6	949.3	959.9
42.5°	997.2	957.3	927.9	890.6	877.3	853.3	837.3	821.3	813.3	789.3	799.9
45°	898.6	850.6	818.6	770.6	751.9	725.3	701.3	682.6	663.9	653.3	647.9
47.5°	815.9	765.3	722.6	669.3	639.9	615.9	584.0	565.3	541.3	528.0	520.0
50°	746.6	690.6	642.6	581.3	552.0	525.3	488.0	458.6	437.3	416.0	410.6
52.5°	685.3	626.6	573.3	504.0	469.3	437.3	397.3	365.3	346.6	322.6	320.0
55°	613.3	562.6	504.0	432.0	397.3	365.3	322.6	290.6	266.6	250.6	245.3
57.5°	536.0	488.0	432.0	360.0	325.3	290.6	250.6	221.3	200.0	186.7	184.0
60°	464.0	418.6	365.3	293.3	258.6	229.3	186.7	157.3	138.7	128.0	122.7
62.5°	410.6	368.0	317.3	250.6	218.6	189.3	149.3	122.7	106.7	96.0	90.7
65°	360.0	317.3	272.0	210.6	184.0	157.3	120.0	96.0	80.0	69.3	64.0
67.5°	306.6	269.3	226.6	176.0	149.3	128.0	96.0	74.7	61.3	53.3	48.0
70°	253.3	218.6	184.0	141.3	122.7	101.3	74.7	58.7	45.3	40.0	34.7
72.5°	200.0	173.3	144.0	109.3	93.3	80.0	58.7	42.7	34.7	29.3	24.0
75°	149.3	130.7	106.7	82.7	69.3	58.7	42.7	32.0	26.7	21.3	18.7
77.5°	106.7	90.7	74.7	56.0	50.7	42.7	29.3	24.0	18.7	13.3	10.7
80°	72.0	64.0	50.7	40.0	32.0	29.3	21.3	16.0	10.7	8.0	8.0
82.5°	48.0	40.0	32.0	24.0	21.3	18.7	13.3	10.7	8.0	5.3	5.3
85°	29.3	24.0	18.7	13.3	13.3	10.7	8.0	5.3	2.7	2.7	2.7
87.5°	13.3	10.7	8.0	5.3	5.3	2.7	2.7	2.7	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°	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2
2.5°	2095.8	2079.8	2069.2	2082.5	2087.8	2079.8	2087.8	2101.2	2114.5	2117.2	2079.8
5°	2098.5	2082.5	2077.2	2093.2	2095.8	2093.2	2101.2	2119.8	2135.8	2141.2	2103.8
7.5°	2098.5	2087.8	2085.2	2103.8	2106.5	2103.8	2117.2	2138.5	2154.5	2165.1	2127.8
10°	2093.2	2087.8	2090.5	2106.5	2111.8	2111.8	2130.5	2154.5	2170.5	2181.1	2143.8
12.5°	2085.2	2085.2	2085.2	2103.8	2109.2	2111.8	2127.8	2159.8	2170.5	2186.5	2149.2
15°	2071.8	2071.8	2071.8	2090.5	2098.5	2098.5	2117.2	2146.5	2159.8	2175.8	2138.5
17.5°	2047.8	2047.8	2050.5	2066.5	2074.5	2074.5	2093.2	2125.2	2133.2	2151.8	2114.5
20°	2013.2	2013.2	2015.8	2031.8	2039.8	2034.5	2058.5	2085.2	2093.2	2109.2	2071.8
22.5°	1962.5	1962.5	1962.5	1978.5	1983.8	1981.2	2005.2	2029.2	2029.2	2050.5	2010.5
25°	1887.8	1893.2	1887.8	1903.8	1909.2	1906.5	1927.8	1949.2	1943.8	1967.8	1927.8
27.5°	1797.2	1794.5	1794.5	1807.8	1807.8	1805.2	1821.2	1845.2	1839.8	1855.8	1818.5
30°	1671.9	1679.9	1666.5	1685.2	1677.2	1671.9	1682.5	1703.9	1695.9	1709.2	1679.9
32.5°	1527.9	1517.2	1517.2	1517.2	1522.5	1509.2	1519.9	1530.5	1522.5	1535.9	1503.9
35°	1338.6	1341.2	1333.2	1335.9	1338.6	1322.6	1333.2	1343.9	1333.2	1341.2	1311.9
37.5°	1149.2	1151.9	1133.2	1143.9	1133.2	1127.9	1138.6	1143.9	1133.2	1141.2	1109.2
40°	959.9	954.6	951.9	951.9	954.6	941.3	949.3	957.3	949.3	954.6	925.3
42.5°	794.6	791.9	786.6	789.3	781.3	778.6	781.3	789.3	781.3	786.6	765.3
45°	650.6	645.3	637.3	639.9	639.9	626.6	634.6	639.9	631.9	634.6	615.9
47.5°	517.3	509.3	509.3	506.6	506.6	501.3	509.3	506.6	498.6	504.0	485.3
50°	402.6	397.3	397.3	397.3	397.3	389.3	392.0	397.3	389.3	389.3	378.6
52.5°	314.6	306.6	301.3	301.3	301.3	298.6	298.6	301.3	293.3	293.3	290.6
55°	237.3	234.6	226.6	226.6	226.6	218.6	221.3	221.3	218.6	218.6	210.6
57.5°	176.0	168.0	162.7	162.7	157.3	157.3	154.7	157.3	152.0	152.0	146.7
60°	117.3	112.0	109.3	106.7	106.7	104.0	106.7	104.0	104.0	101.3	98.7
62.5°	85.3	80.0	74.7	74.7	74.7	72.0	72.0	72.0	72.0	72.0	69.3
65°	61.3	56.0	56.0	53.3	53.3	50.7	50.7	50.7	50.7	50.7	48.0
67.5°	42.7	40.0	37.3	37.3	37.3	37.3	37.3	37.3	34.7	34.7	34.7
70°	32.0	29.3	26.7	26.7	26.7	26.7	26.7	24.0	26.7	26.7	24.0
72.5°	21.3	21.3	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
75°	16.0	16.0	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
77.5°	10.7	10.7	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
80°	8.0	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
82.5°	5.3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
85°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	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: P251635

CATALOG NUMBER: LD4B40D010 EU4B30508030 4LBSW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2	2069.2
2.5°	2119.8	2117.2	2111.8	2119.8	2098.5	2090.5	2087.8	2111.8
5°	2149.2	2143.8	2143.8	2151.8	2127.8	2122.5	2117.2	2143.8
7.5°	2175.8	2170.5	2170.5	2178.5	2157.1	2151.8	2146.5	2173.1
10°	2191.8	2191.8	2191.8	2197.1	2178.5	2173.1	2170.5	2197.1
12.5°	2199.8	2199.8	2197.1	2207.8	2183.8	2183.8	2178.5	2205.1
15°	2189.1	2189.1	2189.1	2197.1	2175.8	2170.5	2170.5	2191.8
17.5°	2162.5	2162.5	2159.8	2167.8	2143.8	2143.8	2141.2	2165.1
20°	2122.5	2122.5	2117.2	2127.8	2103.8	2095.8	2093.2	2117.2
22.5°	2058.5	2055.8	2053.2	2058.5	2037.2	2031.8	2029.2	2050.5
25°	1975.8	1973.2	1967.8	1973.2	1949.2	1941.2	1941.2	1957.2
27.5°	1858.5	1858.5	1850.5	1858.5	1831.8	1829.2	1826.5	1845.2
30°	1714.5	1703.9	1698.5	1709.2	1682.5	1682.5	1677.2	1695.9
32.5°	1535.9	1525.2	1522.5	1527.9	1503.9	1495.9	1506.5	1517.2
35°	1330.6	1333.2	1322.6	1322.6	1301.2	1303.9	1306.6	1322.6
37.5°	1133.2	1127.9	1125.2	1127.9	1111.9	1106.6	1101.2	1117.2
40°	949.3	935.9	933.3	933.3	919.9	917.3	919.9	927.9
42.5°	775.9	773.3	762.6	767.9	754.6	759.9	757.3	757.3
45°	626.6	629.3	618.6	626.6	615.9	607.9	607.9	613.3
47.5°	496.0	496.0	493.3	493.3	485.3	488.0	482.6	490.6
50°	384.0	384.0	378.6	381.3	376.0	376.0	373.3	376.0
52.5°	293.3	290.6	290.6	288.0	282.6	285.3	288.0	282.6
55°	213.3	216.0	210.6	213.3	208.0	210.6	208.0	210.6
57.5°	146.7	149.3	144.0	149.3	144.0	146.7	144.0	144.0
60°	101.3	101.3	98.7	101.3	98.7	98.7	96.0	101.3
62.5°	69.3	69.3	69.3	69.3	69.3	66.7	69.3	69.3
65°	50.7	48.0	48.0	48.0	48.0	48.0	48.0	48.0
67.5°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7
70°	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
72.5°	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
75°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
77.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
80°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
82.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
85°	2.7	2.7	2.7	0.0	2.7	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)