

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: P251566

Luminaire Tested: **LD4B40D010 EU4B30509050 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251566  
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: LD4B40D010 EU4B30509050 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3287.0 lumens  
Efficiency: N/A  
Efficacy: 76.4 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

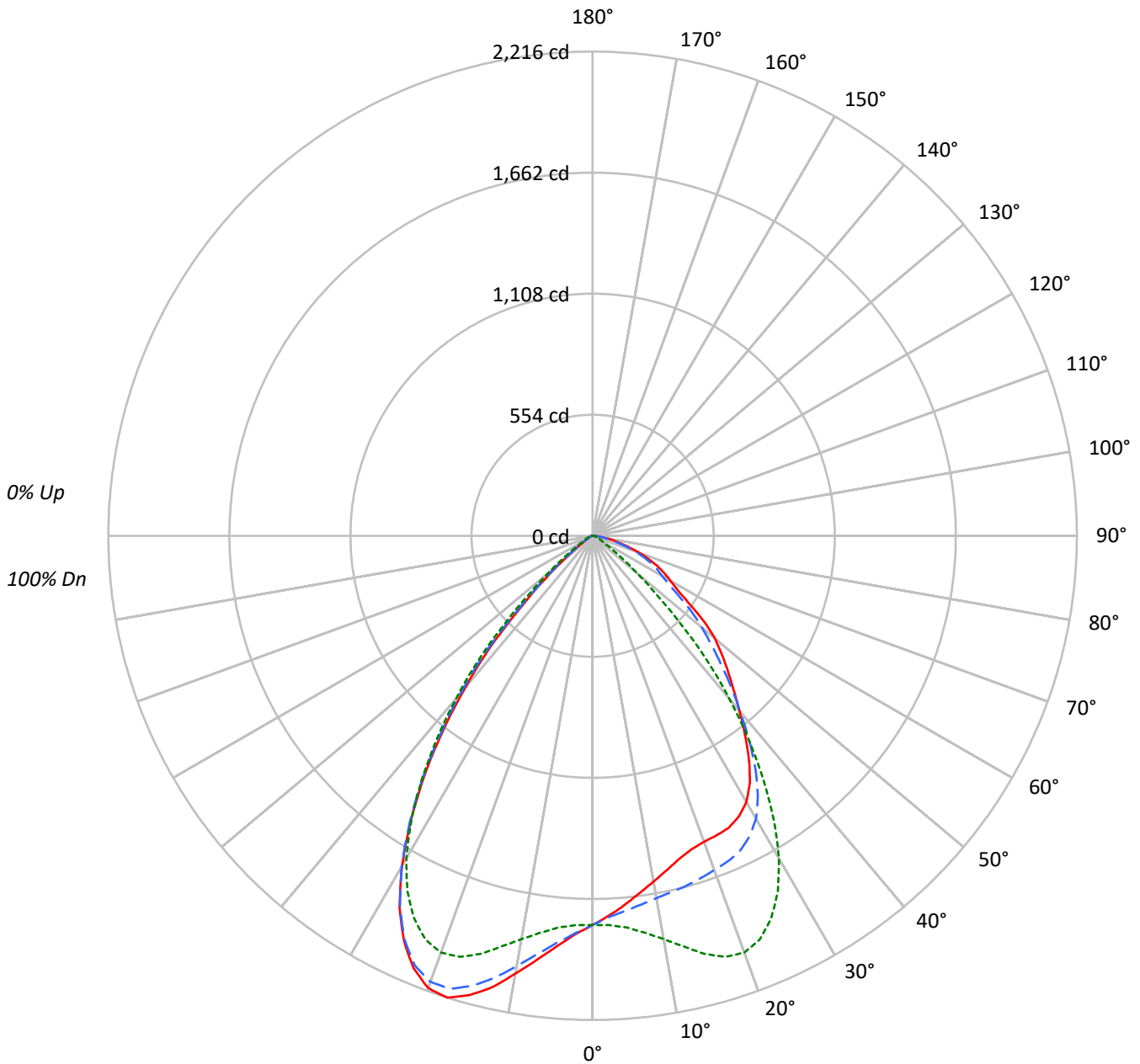
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	173592	173592	173592
5°	165842	176075	184498
10°	159011	185474	201357
15°	154381	199895	219600
20°	154584	210537	228386
25°	158536	207797	219798
30°	158314	191816	196261
35°	148290	162126	159913
40°	132833	123660	115378
45°	120502	78520	64420
50°	110711	39845	27503
55°	90869	17773	9090
60°	79779	9980	4990
65°	75062	7518	3759
70°	64284	5955	3305
75°	49027	4368	2636
80°	35246	2638	1291
85°	26054	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	173.0	5.3
10°-20°	539.2	16.4
20°-30°	834.3	25.4
30°-40°	822.0	25.0
40°-50°	504.7	15.4
50°-60°	224.4	6.8
60°-70°	125.4	3.8
70°-80°	54.3	1.7
80°-90°	9.7	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°	1546.5	47.0
0°-40°	2368.5	72.1
0°-60°	3097.7	94.2
0°-90°	3287.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3287.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1781	1781	1781	1781	1781	
5°	1695	1723	1800	1870	1886	159
15°	1530	1658	1981	2132	2176	434
25°	1474	1593	1932	2037	2044	676
35°	1246	1298	1363	1358	1344	774
45°	874	830	570	498	467	677
55°	535	484	105	60	54	492
65°	326	293	33	19	16	319
75°	130	112	12	7	7	143
85°	23	19	0	0	0	29
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°	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2
2.5°	1739.4	1739.4	1739.4	1739.4	1744.0	1737.0	1744.0	1744.0	1751.0	1753.3	1746.3
5°	1695.2	1692.9	1695.2	1695.2	1699.8	1697.5	1704.5	1709.1	1718.4	1723.1	1723.1
7.5°	1648.7	1648.7	1648.7	1653.3	1660.3	1658.0	1665.0	1671.9	1685.9	1695.2	1702.2
10°	1606.8	1604.5	1611.5	1613.8	1620.8	1620.8	1632.4	1639.4	1655.6	1674.3	1683.6
12.5°	1567.3	1565.0	1569.6	1576.6	1588.2	1588.2	1597.5	1609.1	1632.4	1653.3	1669.6
15°	1530.1	1532.4	1539.4	1544.0	1558.0	1558.0	1569.6	1583.6	1609.1	1634.7	1658.0
17.5°	1504.5	1506.8	1511.5	1518.5	1532.4	1532.4	1544.0	1560.3	1588.2	1616.1	1644.0
20°	1490.5	1492.9	1497.5	1504.5	1516.1	1518.5	1527.8	1546.4	1571.9	1602.2	1627.7
22.5°	1483.6	1488.2	1492.9	1497.5	1509.2	1509.2	1520.8	1534.7	1560.3	1590.5	1613.8
25°	1474.3	1478.9	1481.2	1488.2	1497.5	1497.5	1504.5	1520.8	1544.0	1569.6	1592.9
27.5°	1448.7	1453.3	1455.7	1462.6	1471.9	1469.6	1478.9	1490.5	1511.5	1534.7	1553.3
30°	1406.8	1409.2	1413.8	1416.1	1423.1	1423.1	1430.1	1441.7	1455.7	1476.6	1495.2
32.5°	1339.4	1344.1	1346.4	1348.7	1355.7	1353.4	1355.7	1362.7	1376.6	1395.2	1406.8
35°	1246.4	1255.7	1255.7	1260.3	1262.7	1260.3	1260.3	1269.6	1276.6	1290.6	1297.5
37.5°	1144.1	1151.0	1148.7	1153.4	1155.7	1148.7	1153.4	1155.7	1165.0	1172.0	1174.3
40°	1044.1	1046.4	1046.4	1046.4	1046.4	1044.1	1046.4	1048.7	1055.7	1055.7	1048.7
42.5°	953.4	955.7	955.7	951.1	955.7	953.4	953.4	953.4	953.4	944.1	937.1
45°	874.3	876.7	876.7	874.3	874.3	869.7	867.4	865.0	858.1	846.4	830.1
47.5°	799.9	804.6	806.9	802.2	799.9	795.3	795.3	781.3	772.0	758.1	734.8
50°	730.2	734.8	734.8	730.2	730.2	723.2	716.2	711.6	697.6	681.3	653.4
52.5°	641.8	648.8	648.8	646.4	646.4	637.1	634.8	625.5	613.9	595.3	572.0
55°	534.8	544.1	541.8	539.5	534.8	534.8	534.8	527.9	520.9	506.9	483.7
57.5°	458.1	460.4	460.4	458.1	458.1	453.4	453.4	446.5	444.1	430.2	411.6
60°	409.3	409.3	411.6	409.3	406.9	404.6	402.3	397.6	390.7	381.4	367.4
62.5°	369.7	372.1	372.1	369.7	367.4	365.1	362.8	358.1	353.5	346.5	332.5
65°	325.5	330.2	327.9	325.5	323.2	320.9	320.9	316.2	311.6	306.9	293.0
67.5°	276.7	279.0	281.4	276.7	276.7	274.4	274.4	269.7	267.4	258.1	248.8
70°	225.6	227.9	227.9	225.6	225.6	223.2	223.2	220.9	218.6	211.6	202.3
72.5°	176.7	179.1	176.7	174.4	174.4	174.4	172.1	169.8	167.4	162.8	155.8
75°	130.2	130.2	132.5	130.2	127.9	127.9	125.6	125.6	120.9	118.6	111.6
77.5°	93.0	95.3	93.0	93.0	90.7	88.4	88.4	86.0	86.0	83.7	79.1
80°	62.8	62.8	65.1	62.8	60.5	62.8	60.5	58.1	58.1	55.8	51.2
82.5°	39.5	41.9	39.5	39.5	39.5	39.5	39.5	37.2	37.2	34.9	32.6
85°	23.3	23.3	23.3	23.3	23.3	23.3	23.3	20.9	20.9	20.9	18.6
87.5°	11.6	11.6	9.3	9.3	11.6	11.6	11.6	9.3	9.3	9.3	9.3
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°	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2
2.5°	1755.6	1758.0	1762.6	1769.6	1769.6	1764.9	1776.6	1776.6	1781.2	1783.5	1792.8
5°	1737.0	1741.7	1751.0	1762.6	1764.9	1762.6	1778.9	1785.9	1792.8	1799.8	1813.8
7.5°	1720.8	1730.1	1746.3	1762.6	1769.6	1769.6	1795.2	1804.5	1818.4	1832.4	1848.7
10°	1711.5	1725.4	1748.7	1774.2	1781.2	1788.2	1818.4	1837.0	1855.6	1874.2	1897.5
12.5°	1699.8	1725.4	1755.6	1788.2	1802.1	1811.4	1853.3	1876.6	1902.1	1925.4	1955.6
15°	1697.5	1727.7	1767.3	1809.1	1827.7	1841.7	1888.2	1920.7	1951.0	1981.2	2011.4
17.5°	1688.2	1725.4	1774.2	1820.7	1844.0	1862.6	1916.1	1955.6	1990.5	2020.7	2055.6
20°	1676.6	1718.4	1771.9	1823.1	1848.7	1867.3	1925.4	1962.6	2002.1	2030.0	2062.6
22.5°	1660.3	1702.2	1755.6	1806.8	1830.0	1846.3	1904.5	1937.0	1971.9	1999.8	2030.0
25°	1632.4	1671.9	1718.4	1760.3	1783.5	1797.5	1848.7	1878.9	1904.5	1932.4	1960.3
27.5°	1592.9	1623.1	1662.6	1692.9	1706.8	1720.8	1762.6	1788.2	1811.4	1834.7	1853.3
30°	1523.1	1546.4	1574.3	1599.8	1613.8	1616.1	1655.6	1669.6	1688.2	1704.5	1718.4
32.5°	1430.1	1448.7	1465.0	1478.9	1488.2	1490.5	1520.8	1525.4	1544.0	1544.0	1565.0
35°	1311.5	1320.8	1332.4	1332.4	1339.4	1332.4	1353.4	1358.0	1360.3	1362.7	1378.9
37.5°	1176.6	1181.3	1188.3	1174.3	1174.3	1167.3	1174.3	1179.0	1169.7	1169.7	1181.3
40°	1048.7	1039.4	1030.1	1016.2	1009.2	995.2	995.2	983.6	976.6	972.0	974.3
42.5°	925.5	904.6	883.6	853.4	839.5	825.5	811.5	795.3	790.6	779.0	772.0
45°	806.9	776.7	748.8	699.9	672.0	658.1	627.8	595.3	574.4	569.7	551.1
47.5°	706.9	662.7	616.2	558.1	530.2	504.6	460.4	432.5	404.6	390.7	379.0
50°	618.5	579.0	518.6	455.8	420.9	395.3	346.5	313.9	283.7	262.8	248.8
52.5°	541.8	497.6	441.8	369.7	334.9	306.9	253.5	216.3	190.7	169.8	153.5
55°	455.8	420.9	365.1	297.6	262.8	230.2	183.7	144.2	118.6	104.6	93.0
57.5°	393.0	362.8	309.3	244.2	211.6	181.4	134.9	102.3	81.4	67.4	60.5
60°	351.1	323.2	276.7	213.9	183.7	155.8	111.6	81.4	62.8	51.2	46.5
62.5°	316.2	288.3	246.5	188.4	162.8	134.9	95.3	67.4	51.2	41.9	34.9
65°	276.7	251.1	213.9	162.8	139.5	116.3	81.4	55.8	41.9	32.6	27.9
67.5°	234.9	211.6	179.1	134.9	116.3	97.7	65.1	46.5	34.9	27.9	23.3
70°	190.7	172.1	141.8	109.3	93.0	76.7	53.5	37.2	25.6	20.9	18.6
72.5°	146.5	130.2	109.3	83.7	69.8	58.1	39.5	27.9	20.9	16.3	14.0
75°	104.6	93.0	76.7	60.5	51.2	41.9	30.2	20.9	14.0	11.6	9.3
77.5°	72.1	65.1	53.5	41.9	34.9	30.2	20.9	14.0	11.6	9.3	7.0
80°	46.5	41.9	34.9	25.6	20.9	18.6	11.6	9.3	7.0	4.7	4.7
82.5°	27.9	25.6	20.9	14.0	11.6	9.3	7.0	4.7	4.7	2.3	2.3
85°	16.3	14.0	9.3	7.0	7.0	4.7	4.7	2.3	2.3	0.0	0.0
87.5°	7.0	4.7	4.7	2.3	2.3	2.3	2.3	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°	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2
2.5°	1788.2	1799.8	1797.5	1804.5	1802.1	1802.1	1813.8	1809.1	1820.7	1820.7	1823.1
5°	1813.8	1830.0	1830.0	1841.7	1839.4	1844.0	1855.6	1855.6	1869.6	1874.2	1874.2
7.5°	1851.0	1871.9	1876.6	1888.2	1890.5	1899.8	1909.1	1911.4	1930.0	1934.7	1937.0
10°	1902.1	1927.7	1934.7	1946.3	1951.0	1960.3	1971.9	1976.5	1999.8	2002.1	2011.4
12.5°	1964.9	1992.8	1999.8	2013.8	2016.1	2027.7	2044.0	2048.6	2071.9	2078.9	2085.8
15°	2025.4	2051.0	2062.6	2076.5	2078.9	2092.8	2106.8	2111.4	2132.3	2141.6	2148.6
17.5°	2067.2	2097.5	2104.4	2123.0	2123.0	2134.7	2148.6	2153.3	2174.2	2181.2	2185.8
20°	2076.5	2104.4	2113.7	2127.7	2130.0	2137.0	2148.6	2153.3	2171.9	2174.2	2181.2
22.5°	2041.7	2069.6	2074.2	2088.2	2090.5	2097.5	2106.8	2104.4	2127.7	2125.4	2127.7
25°	1967.2	1992.8	1992.8	2009.1	2006.8	2013.8	2018.4	2016.1	2037.0	2037.0	2037.0
27.5°	1860.3	1883.5	1885.9	1897.5	1890.5	1892.8	1897.5	1895.2	1909.1	1909.1	1909.1
30°	1727.7	1746.3	1739.4	1748.7	1744.0	1748.7	1744.0	1741.7	1746.3	1751.0	1748.7
32.5°	1562.6	1576.6	1576.6	1578.9	1578.9	1565.0	1560.3	1560.3	1558.0	1555.7	1555.7
35°	1372.0	1383.6	1378.9	1378.9	1376.6	1362.7	1355.7	1351.0	1358.0	1344.1	1353.4
37.5°	1176.6	1179.0	1172.0	1169.7	1158.0	1158.0	1146.4	1137.1	1141.7	1139.4	1130.1
40°	962.7	972.0	958.0	953.4	960.4	951.1	939.4	927.8	937.1	925.5	930.1
42.5°	753.4	751.1	746.4	746.4	746.4	732.5	730.2	727.8	730.2	720.9	713.9
45°	544.1	537.2	530.2	530.2	520.9	516.2	516.2	509.3	497.6	497.6	483.7
47.5°	367.4	351.1	346.5	344.2	339.5	339.5	334.9	330.2	327.9	316.2	316.2
50°	239.5	223.2	218.6	216.3	218.6	213.9	209.3	204.6	200.0	197.7	193.0
52.5°	144.2	137.2	132.5	130.2	125.6	123.2	120.9	116.3	113.9	113.9	111.6
55°	86.0	79.1	69.8	69.8	69.8	67.4	65.1	62.8	60.5	60.5	58.1
57.5°	53.5	48.8	44.2	41.9	41.9	41.9	39.5	39.5	39.5	39.5	37.2
60°	39.5	34.9	32.6	32.6	32.6	30.2	30.2	30.2	30.2	27.9	27.9
62.5°	30.2	27.9	25.6	25.6	23.3	23.3	23.3	23.3	23.3	23.3	20.9
65°	25.6	20.9	20.9	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
67.5°	18.6	16.3	16.3	16.3	16.3	14.0	14.0	14.0	14.0	14.0	14.0
70°	14.0	14.0	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
72.5°	11.6	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
75°	9.3	9.3	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
77.5°	7.0	7.0	7.0	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
80°	4.7	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	2.3	2.3	2.3	2.3	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: P251566

CATALOG NUMBER: LD4B40D010 EU4B30509050 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2	1781.2
2.5°	1823.1	1834.7	1823.1	1823.1	1830.0	1827.7	1832.4	1825.4
5°	1876.6	1892.8	1881.2	1878.9	1890.5	1888.2	1890.5	1885.9
7.5°	1941.7	1957.9	1946.3	1946.3	1957.9	1955.6	1962.6	1957.9
10°	2016.1	2034.7	2018.4	2020.7	2037.0	2034.7	2034.7	2034.7
12.5°	2092.8	2111.4	2102.1	2102.1	2113.7	2116.1	2118.4	2116.1
15°	2155.6	2174.2	2162.6	2162.6	2178.9	2176.5	2178.9	2176.5
17.5°	2192.8	2211.4	2197.5	2197.5	2211.4	2211.4	2213.7	2216.1
20°	2183.5	2204.4	2192.8	2188.2	2204.4	2204.4	2202.1	2202.1
22.5°	2130.0	2148.6	2139.3	2134.7	2146.3	2141.6	2139.3	2141.6
25°	2037.0	2055.6	2037.0	2037.0	2046.3	2044.0	2046.3	2044.0
27.5°	1911.4	1925.4	1906.8	1904.5	1913.8	1909.1	1906.8	1913.8
30°	1744.0	1758.0	1748.7	1741.7	1753.3	1746.3	1741.7	1744.0
32.5°	1553.3	1562.6	1558.0	1546.4	1553.3	1548.7	1546.4	1548.7
35°	1344.1	1355.7	1337.1	1334.8	1346.4	1337.1	1332.4	1344.1
37.5°	1127.8	1141.7	1125.5	1127.8	1120.8	1123.1	1118.5	1125.5
40°	923.2	920.8	916.2	913.9	916.2	909.2	913.9	906.9
42.5°	702.3	706.9	704.6	702.3	704.6	695.3	690.6	699.9
45°	488.3	486.0	481.3	476.7	476.7	474.4	474.4	467.4
47.5°	313.9	311.6	302.3	304.6	309.3	304.6	297.6	306.9
50°	190.7	188.4	188.4	186.0	190.7	186.0	181.4	181.4
52.5°	107.0	107.0	104.6	104.6	104.6	104.6	102.3	100.0
55°	58.1	55.8	55.8	55.8	53.5	53.5	53.5	53.5
57.5°	37.2	37.2	37.2	37.2	37.2	37.2	34.9	34.9
60°	27.9	27.9	27.9	27.9	25.6	27.9	25.6	25.6
62.5°	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
65°	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3
67.5°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
70°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
72.5°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
75°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
77.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)