

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: P251811

Luminaire Tested: **LD4B50D010TE EU4B30509035 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251811  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B50D010TE EU4B30509035 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

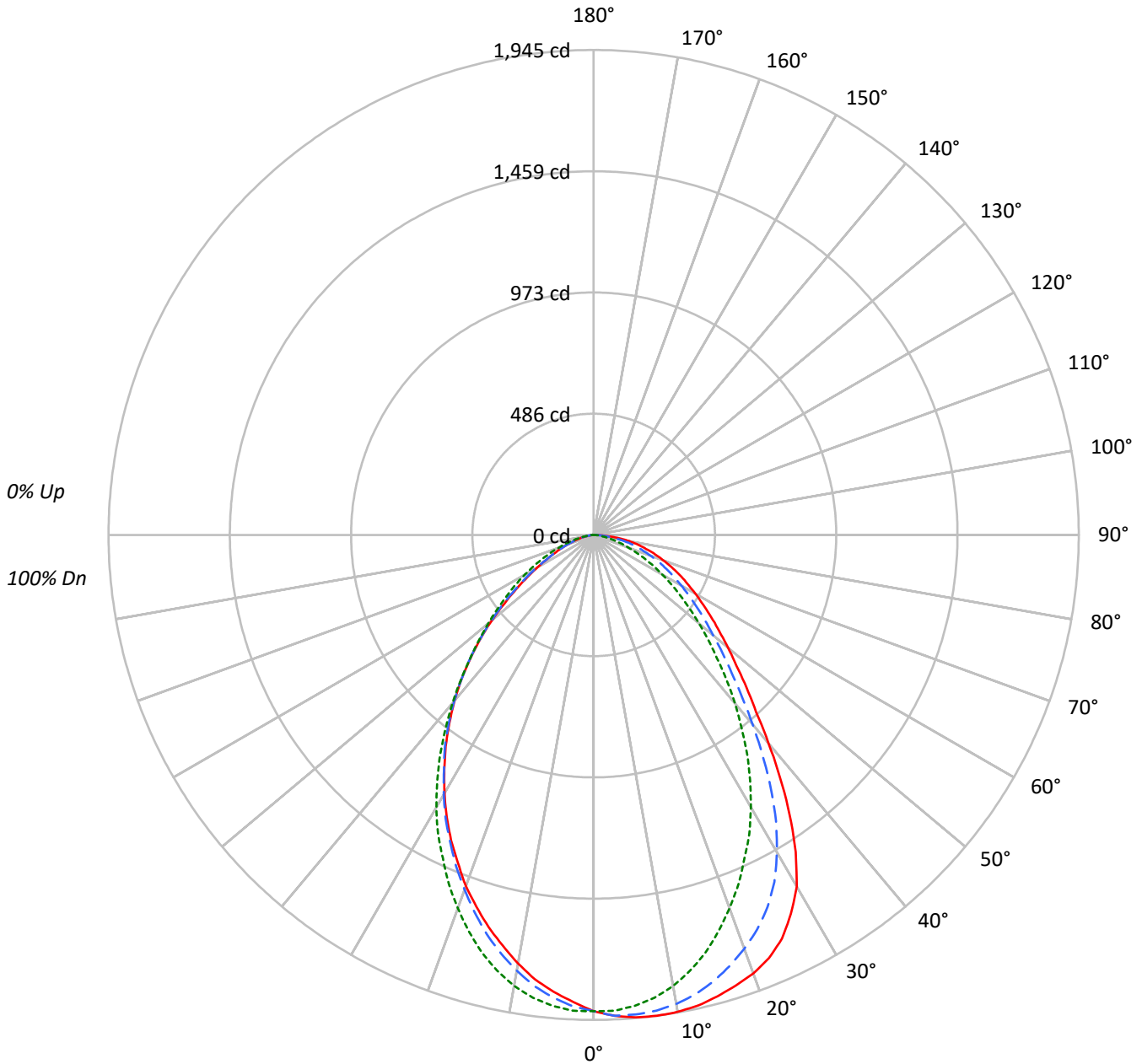
Lumens per Lamp: N/A  
Luminaire Lumens: 3444.0 lumens  
Efficiency: N/A  
Efficacy: 58.6 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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	90	88																			
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67																			
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	186145	186145	186145
5°	190016	185418	179959
10°	192213	181753	172737
15°	193307	174923	164249
20°	194129	165183	155424
25°	192119	153880	145352
30°	183196	141861	134592
35°	162912	127600	123055
40°	138698	112147	110289
45°	119482	96396	95982
50°	106481	83314	80646
55°	97853	71890	64414
60°	91650	61866	50405
65°	88091	52186	39295
70°	84573	41859	31829
75°	81862	33212	24325
80°	82446	23067	14817
85°	68993	16438	6597



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.8	5.2
10°-20°	491.6	14.3
20°-30°	687.4	20.0
30°-40°	706.6	20.5
40°-50°	573.5	16.7
50°-60°	403.8	11.7
60°-70°	248.6	7.2
70°-80°	124.2	3.6
80°-90°	29.5	0.9
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°	1357.8	39.4
0°-40°	2064.4	59.9
0°-60°	3041.7	88.3
0°-90°	3444.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3444.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1910	1910	1910	1910	1910	
5°	1942	1931	1895	1863	1840	185
15°	1916	1854	1734	1657	1628	541
25°	1787	1648	1431	1360	1352	817
35°	1369	1237	1072	1040	1034	851
45°	867	782	699	699	696	674
55°	576	505	423	388	379	518
65°	382	320	226	173	170	378
75°	217	170	88	65	65	232
85°	62	41	15	9	6	72
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°	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0
2.5°	1930.6	1933.5	1924.7	1933.5	1921.8	1927.6	1930.6	1924.7	1918.8	1930.6	1930.6
5°	1942.3	1942.3	1933.5	1945.3	1930.6	1933.5	1939.4	1930.6	1921.8	1933.5	1930.6
7.5°	1945.3	1945.3	1933.5	1945.3	1930.6	1933.5	1936.5	1927.6	1918.8	1927.6	1924.7
10°	1942.3	1939.4	1930.6	1942.3	1927.6	1927.6	1930.6	1921.8	1907.1	1915.9	1910.0
12.5°	1933.5	1933.5	1921.8	1933.5	1913.0	1913.0	1915.9	1904.1	1892.4	1892.4	1886.5
15°	1915.9	1915.9	1904.1	1913.0	1895.3	1895.3	1892.4	1880.6	1865.9	1865.9	1854.2
17.5°	1895.3	1895.3	1883.6	1892.4	1871.8	1871.8	1868.9	1851.2	1830.7	1827.7	1813.0
20°	1871.8	1871.8	1857.1	1863.0	1839.5	1839.5	1836.6	1816.0	1792.5	1786.6	1766.0
22.5°	1836.6	1836.6	1821.9	1824.8	1801.3	1798.4	1795.4	1771.9	1748.4	1739.6	1713.1
25°	1786.6	1783.7	1771.9	1771.9	1748.4	1742.5	1736.6	1713.1	1689.6	1672.0	1648.5
27.5°	1713.1	1716.1	1701.4	1704.3	1674.9	1669.1	1666.1	1636.7	1610.3	1592.7	1569.2
30°	1627.9	1619.1	1604.4	1604.4	1580.9	1578.0	1572.1	1545.6	1516.3	1495.7	1469.2
32.5°	1507.4	1504.5	1489.8	1489.8	1463.4	1463.4	1451.6	1425.2	1398.7	1387.0	1360.5
35°	1369.3	1366.4	1354.6	1354.6	1331.1	1334.1	1322.3	1301.8	1275.3	1257.7	1237.1
37.5°	1228.3	1225.4	1213.6	1216.5	1196.0	1196.0	1187.2	1166.6	1146.0	1137.2	1110.7
40°	1090.2	1087.2	1072.5	1081.4	1063.7	1057.9	1054.9	1040.2	1016.7	1005.0	990.3
42.5°	963.8	966.8	952.1	957.9	943.3	937.4	934.4	922.7	905.1	893.3	878.6
45°	866.9	861.0	855.1	855.1	840.4	837.5	834.5	819.8	808.1	796.3	781.6
47.5°	775.8	769.9	764.0	766.9	755.2	752.3	746.4	734.6	719.9	714.1	699.4
50°	702.3	699.4	690.5	690.5	678.8	675.9	670.0	661.2	646.5	637.7	625.9
52.5°	634.7	634.7	625.9	623.0	614.1	611.2	608.3	596.5	584.8	573.0	561.3
55°	575.9	573.0	567.1	567.1	555.4	552.4	549.5	537.7	526.0	517.2	505.4
57.5°	520.1	520.1	514.2	514.2	505.4	499.5	499.5	487.8	473.1	467.2	452.5
60°	470.2	470.2	464.3	464.3	455.5	455.5	449.6	437.8	429.0	417.3	405.5
62.5°	423.1	426.1	420.2	417.3	408.5	405.5	405.5	396.7	382.0	373.2	361.4
65°	382.0	379.1	376.1	373.2	364.4	361.4	361.4	349.7	340.9	329.1	320.3
67.5°	337.9	337.9	332.0	332.0	326.2	323.2	317.4	308.5	299.7	290.9	282.1
70°	296.8	296.8	293.8	293.8	285.0	282.1	279.2	270.3	261.5	252.7	241.0
72.5°	258.6	255.6	252.7	252.7	246.8	243.9	241.0	232.1	223.3	214.5	205.7
75°	217.4	217.4	214.5	214.5	208.6	205.7	205.7	199.8	188.1	182.2	170.4
77.5°	182.2	182.2	179.2	179.2	173.4	173.4	170.4	161.6	155.7	146.9	141.0
80°	146.9	144.0	144.0	141.0	135.2	135.2	132.2	129.3	120.5	114.6	105.8
82.5°	102.8	102.8	102.8	99.9	97.0	97.0	94.0	88.2	82.3	79.3	70.5
85°	61.7	61.7	58.8	55.8	58.8	55.8	52.9	50.0	47.0	44.1	41.1
87.5°	26.4	26.4	23.5	23.5	23.5	23.5	23.5	20.6	17.6	17.6	14.7
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°	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0
2.5°	1913.0	1921.8	1918.8	1915.9	1910.0	1910.0	1910.0	1907.1	1910.0	1910.0	1904.1
5°	1913.0	1918.8	1915.9	1910.0	1904.1	1904.1	1901.2	1895.3	1895.3	1895.3	1883.6
7.5°	1904.1	1910.0	1901.2	1895.3	1889.4	1883.6	1883.6	1874.8	1874.8	1871.8	1860.1
10°	1886.5	1889.4	1877.7	1871.8	1863.0	1860.1	1854.2	1842.4	1839.5	1836.6	1824.8
12.5°	1860.1	1863.0	1848.3	1836.6	1824.8	1821.9	1816.0	1801.3	1795.4	1789.5	1774.8
15°	1821.9	1821.9	1804.2	1789.5	1777.8	1774.8	1760.2	1745.5	1739.6	1733.7	1713.1
17.5°	1777.8	1774.8	1751.3	1736.6	1722.0	1716.1	1701.4	1683.8	1672.0	1666.1	1648.5
20°	1730.8	1722.0	1695.5	1680.8	1663.2	1654.4	1639.7	1616.2	1604.4	1592.7	1575.0
22.5°	1674.9	1663.2	1633.8	1613.2	1595.6	1586.8	1566.2	1545.6	1528.0	1516.3	1495.7
25°	1607.4	1592.7	1560.3	1533.9	1519.2	1510.4	1489.8	1466.3	1448.7	1431.0	1413.4
27.5°	1528.0	1510.4	1478.1	1451.6	1436.9	1422.2	1407.5	1381.1	1366.4	1351.7	1331.1
30°	1431.0	1410.5	1381.1	1357.6	1340.0	1328.2	1310.6	1287.1	1269.4	1260.6	1240.0
32.5°	1325.3	1301.8	1275.3	1251.8	1243.0	1228.3	1213.6	1190.1	1175.4	1166.6	1151.9
35°	1207.7	1190.1	1160.7	1143.1	1128.4	1122.5	1110.7	1087.2	1081.4	1072.5	1054.9
37.5°	1084.3	1069.6	1049.0	1034.3	1022.6	1016.7	1005.0	990.3	981.5	972.6	963.8
40°	969.7	957.9	940.3	928.6	913.9	905.1	905.1	887.4	881.5	881.5	872.7
42.5°	858.0	852.2	837.5	819.8	816.9	808.1	805.1	796.3	790.5	787.5	784.6
45°	764.0	755.2	740.5	731.7	722.9	722.9	714.1	705.2	702.3	699.4	696.4
47.5°	681.7	670.0	658.2	649.4	643.5	640.6	631.8	625.9	623.0	623.0	620.0
50°	608.3	599.5	587.7	578.9	573.0	567.1	561.3	555.4	552.4	549.5	549.5
52.5°	546.6	534.8	523.1	514.2	505.4	502.5	496.6	490.7	487.8	484.9	481.9
55°	490.7	481.9	467.2	458.4	449.6	449.6	440.8	432.0	426.1	423.1	420.2
57.5°	437.8	429.0	414.3	405.5	399.6	393.8	387.9	382.0	376.1	370.2	364.4
60°	390.8	382.0	367.3	355.6	352.6	346.7	340.9	329.1	323.2	317.4	311.5
62.5°	346.7	335.0	323.2	311.5	308.5	302.7	293.8	285.0	276.2	270.3	261.5
65°	305.6	296.8	282.1	273.3	264.5	261.5	252.7	241.0	232.1	226.3	217.4
67.5°	267.4	255.6	241.0	232.1	226.3	220.4	211.6	202.8	193.9	185.1	176.3
70°	229.2	220.4	205.7	196.9	191.0	185.1	176.3	164.6	155.7	146.9	141.0
72.5°	193.9	182.2	170.4	161.6	155.7	149.9	141.0	132.2	123.4	117.5	108.7
75°	161.6	149.9	141.0	129.3	126.4	120.5	111.7	102.8	94.0	88.2	82.3
77.5°	129.3	120.5	108.7	102.8	97.0	91.1	85.2	76.4	70.5	61.7	55.8
80°	97.0	88.2	79.3	73.5	67.6	64.6	58.8	52.9	47.0	41.1	38.2
82.5°	64.6	58.8	50.0	47.0	44.1	41.1	35.3	32.3	29.4	26.4	23.5
85°	35.3	32.3	29.4	23.5	23.5	20.6	17.6	17.6	14.7	14.7	11.8
87.5°	14.7	11.8	11.8	8.8	8.8	8.8	5.9	5.9	5.9	2.9	2.9
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°	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0
2.5°	1907.1	1895.3	1895.3	1895.3	1886.5	1889.4	1892.4	1895.3	1892.4	1883.6	1892.4
5°	1886.5	1874.8	1874.8	1868.9	1863.0	1863.0	1863.0	1865.9	1863.0	1854.2	1857.1
7.5°	1860.1	1845.4	1842.4	1836.6	1830.7	1827.7	1827.7	1827.7	1824.8	1813.0	1818.9
10°	1818.9	1804.2	1798.4	1795.4	1786.6	1783.7	1780.7	1777.8	1774.8	1763.1	1769.0
12.5°	1769.0	1757.2	1745.5	1742.5	1733.7	1727.8	1724.9	1724.9	1719.0	1707.3	1713.1
15°	1710.2	1692.6	1683.8	1677.9	1669.1	1663.2	1657.3	1660.2	1657.3	1645.6	1648.5
17.5°	1639.7	1622.0	1613.2	1610.3	1598.5	1592.7	1589.7	1589.7	1586.8	1575.0	1578.0
20°	1563.3	1545.6	1539.8	1533.9	1528.0	1522.1	1519.2	1516.3	1513.3	1501.6	1510.4
22.5°	1486.9	1466.3	1457.5	1457.5	1445.7	1442.8	1439.9	1442.8	1439.9	1428.1	1434.0
25°	1407.5	1387.0	1381.1	1372.3	1366.4	1363.5	1363.5	1363.5	1360.5	1354.6	1360.5
27.5°	1319.4	1304.7	1295.9	1292.9	1287.1	1284.1	1281.2	1284.1	1284.1	1275.3	1281.2
30°	1231.2	1219.5	1213.6	1210.7	1201.8	1198.9	1201.8	1201.8	1201.8	1193.0	1201.8
32.5°	1143.1	1134.3	1131.3	1122.5	1116.6	1116.6	1116.6	1119.6	1116.6	1110.7	1119.6
35°	1054.9	1043.2	1040.2	1037.3	1037.3	1031.4	1037.3	1034.3	1040.2	1031.4	1037.3
37.5°	960.9	955.0	952.1	952.1	946.2	949.1	949.1	949.1	955.0	946.2	952.1
40°	872.7	866.9	866.9	866.9	863.9	863.9	863.9	866.9	869.8	863.9	869.8
42.5°	784.6	781.6	781.6	778.7	775.8	778.7	781.6	781.6	784.6	778.7	781.6
45°	699.4	696.4	699.4	696.4	696.4	693.5	696.4	699.4	699.4	696.4	696.4
47.5°	620.0	620.0	617.1	617.1	617.1	617.1	617.1	617.1	617.1	611.2	617.1
50°	549.5	543.6	546.6	543.6	543.6	540.7	540.7	537.7	534.8	531.9	531.9
52.5°	481.9	476.0	476.0	473.1	470.2	470.2	467.2	464.3	461.3	455.5	455.5
55°	417.3	411.4	408.5	405.5	402.6	399.6	396.7	393.8	387.9	384.9	384.9
57.5°	358.5	352.6	346.7	346.7	340.9	337.9	332.0	326.2	323.2	317.4	317.4
60°	305.6	299.7	290.9	288.0	285.0	279.2	270.3	267.4	264.5	258.6	261.5
62.5°	255.6	246.8	238.0	235.1	232.1	226.3	220.4	214.5	211.6	214.5	214.5
65°	208.6	199.8	193.9	188.1	185.1	179.2	176.3	173.4	173.4	173.4	176.3
67.5°	167.5	158.7	152.8	149.9	144.0	141.0	141.0	141.0	141.0	141.0	141.0
70°	132.2	126.4	120.5	114.6	114.6	111.7	111.7	111.7	111.7	111.7	111.7
72.5°	99.9	94.0	91.1	91.1	88.2	88.2	88.2	88.2	85.2	85.2	88.2
75°	73.5	70.5	67.6	67.6	67.6	64.6	64.6	64.6	64.6	64.6	64.6
77.5°	52.9	50.0	50.0	47.0	47.0	47.0	47.0	47.0	47.0	44.1	44.1
80°	35.3	32.3	32.3	32.3	32.3	29.4	29.4	29.4	29.4	29.4	29.4
82.5°	20.6	20.6	20.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
85°	11.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
87.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	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: P251811

CATALOG NUMBER: LD4B50D010TE EU4B30509035 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0	1910.0
2.5°	1874.8	1886.5	1889.4	1880.6	1883.6	1877.7	1880.6	1874.8
5°	1842.4	1851.2	1854.2	1848.3	1848.3	1842.4	1845.4	1839.5
7.5°	1801.3	1810.1	1813.0	1807.2	1807.2	1801.3	1801.3	1798.4
10°	1754.3	1757.2	1763.1	1754.3	1757.2	1751.3	1751.3	1745.5
12.5°	1695.5	1701.4	1707.3	1698.4	1698.4	1695.5	1695.5	1686.7
15°	1633.8	1639.7	1642.6	1636.7	1636.7	1633.8	1630.9	1627.9
17.5°	1569.2	1572.1	1578.0	1569.2	1575.0	1569.2	1569.2	1563.3
20°	1495.7	1504.5	1507.4	1498.6	1501.6	1498.6	1498.6	1498.6
22.5°	1425.2	1431.0	1434.0	1428.1	1431.0	1425.2	1428.1	1422.2
25°	1351.7	1354.6	1357.6	1351.7	1357.6	1354.6	1351.7	1351.7
27.5°	1275.3	1278.2	1281.2	1275.3	1281.2	1278.2	1281.2	1275.3
30°	1193.0	1198.9	1204.8	1198.9	1201.8	1198.9	1198.9	1196.0
32.5°	1110.7	1116.6	1122.5	1116.6	1122.5	1116.6	1119.6	1113.7
35°	1034.3	1037.3	1040.2	1034.3	1037.3	1037.3	1037.3	1034.3
37.5°	949.1	955.0	955.0	952.1	957.9	955.0	955.0	949.1
40°	866.9	869.8	872.7	866.9	869.8	866.9	869.8	866.9
42.5°	781.6	787.5	790.5	784.6	784.6	784.6	781.6	784.6
45°	693.5	699.4	705.2	696.4	699.4	699.4	699.4	696.4
47.5°	614.1	614.1	617.1	614.1	617.1	611.2	617.1	614.1
50°	531.9	531.9	537.7	531.9	531.9	531.9	531.9	531.9
52.5°	452.5	455.5	455.5	449.6	452.5	449.6	452.5	449.6
55°	379.1	379.1	382.0	379.1	379.1	379.1	379.1	379.1
57.5°	314.4	317.4	317.4	314.4	317.4	314.4	314.4	314.4
60°	261.5	261.5	261.5	258.6	261.5	258.6	261.5	258.6
62.5°	211.6	214.5	214.5	211.6	214.5	211.6	211.6	211.6
65°	173.4	173.4	173.4	173.4	173.4	173.4	173.4	170.4
67.5°	138.1	138.1	141.0	138.1	141.0	141.0	141.0	141.0
70°	111.7	111.7	111.7	111.7	111.7	111.7	111.7	111.7
72.5°	85.2	85.2	88.2	85.2	85.2	85.2	85.2	85.2
75°	64.6	64.6	64.6	64.6	64.6	61.7	61.7	64.6
77.5°	44.1	44.1	44.1	44.1	44.1	44.1	44.1	47.0
80°	29.4	29.4	29.4	29.4	26.4	26.4	29.4	26.4
82.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
85°	8.8	8.8	5.9	5.9	5.9	5.9	5.9	5.9
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)