

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: P251574

Luminaire Tested: **LD4B50D010TE EU4B30509024 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251574
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: LD4B50D010TE EU4B30509024 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3466.0 lumens
Efficiency: N/A
Efficacy: 59.0 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

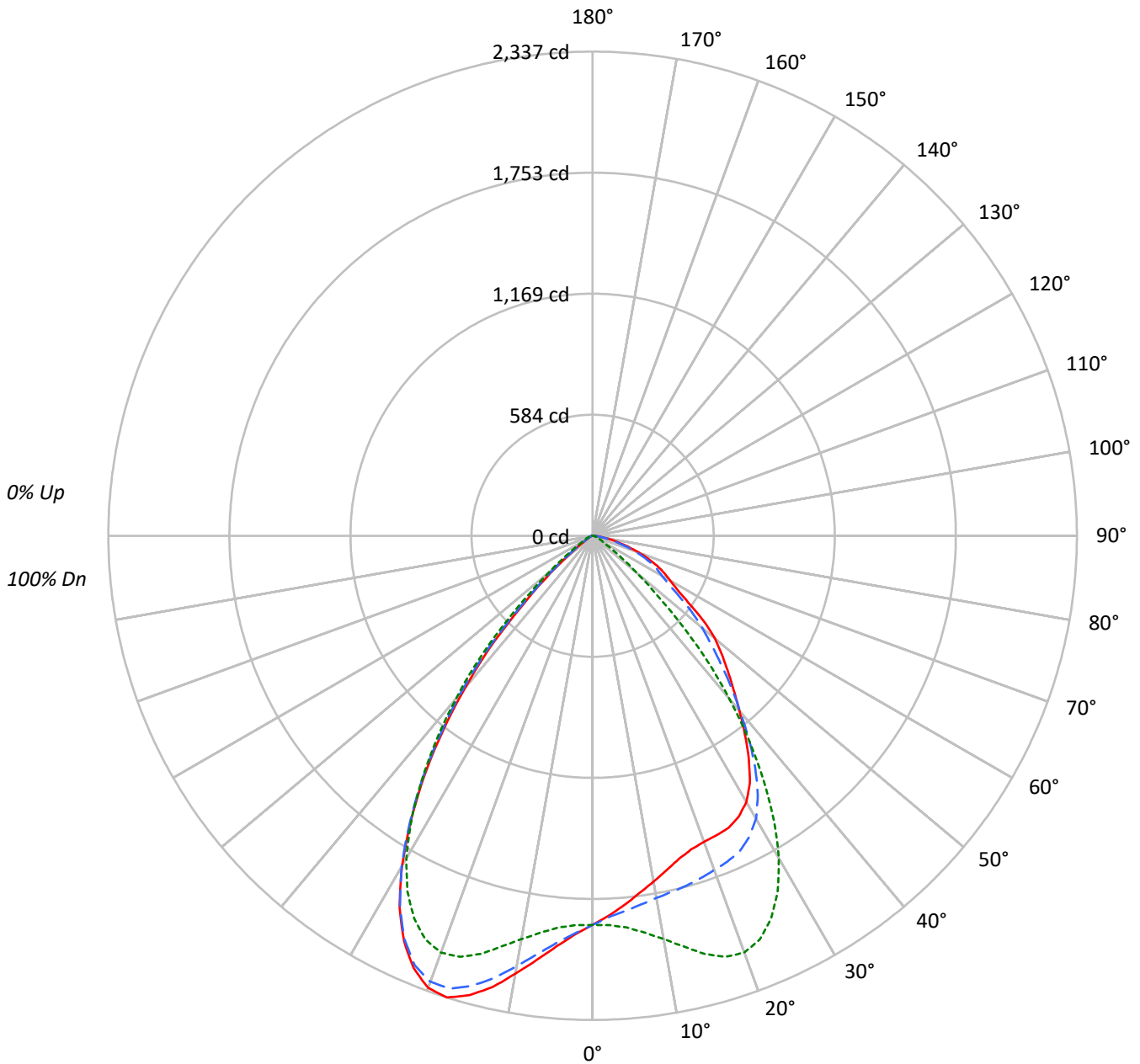
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53				53
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48				48
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44				44
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40				40
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37				37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	183046	183046	183046
5°	174872	185662	194545
10°	167671	195578	212322
15°	162786	210782	231566
20°	163005	222007	240821
25°	167171	219109	231766
30°	166934	202259	206952
35°	156368	170954	168610
40°	140059	130390	121663
45°	127062	82792	67921
50°	116731	42013	29004
55°	95831	18741	9583
60°	84106	10506	5263
65°	79167	7910	3966
70°	67761	6297	3505
75°	51700	4632	2786
80°	37154	2750	1403
85°	27396	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.4	5.3
10°-20°	568.6	16.4
20°-30°	879.7	25.4
30°-40°	866.8	25.0
40°-50°	532.2	15.4
50°-60°	236.7	6.8
60°-70°	132.2	3.8
70°-80°	57.2	1.7
80°-90°	10.2	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°	1630.7	47.0
0°-40°	2497.5	72.1
0°-60°	3266.4	94.2
0°-90°	3466.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3466.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1878	1878	1878	1878	1878	
5°	1788	1817	1898	1971	1989	168
15°	1613	1748	2089	2248	2295	458
25°	1555	1680	2038	2148	2155	713
35°	1314	1368	1437	1432	1417	816
45°	922	875	601	525	493	714
55°	564	510	110	64	56	518
65°	343	309	34	20	17	336
75°	137	118	12	7	7	151
85°	24	20	0	0	0	30
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°	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1834.1	1834.1	1834.1	1834.1	1839.0	1831.6	1839.0	1839.0	1846.3	1848.8	1841.4
5°	1787.5	1785.0	1787.5	1787.5	1792.4	1789.9	1797.3	1802.2	1812.0	1816.9	1816.9
7.5°	1738.5	1738.5	1738.5	1743.4	1750.7	1748.3	1755.6	1763.0	1777.7	1787.5	1794.8
10°	1694.3	1691.9	1699.2	1701.7	1709.0	1709.0	1721.3	1728.6	1745.8	1765.4	1775.2
12.5°	1652.6	1650.2	1655.1	1662.4	1674.7	1674.7	1684.5	1696.8	1721.3	1743.4	1760.5
15°	1613.4	1615.9	1623.2	1628.1	1642.8	1642.8	1655.1	1669.8	1696.8	1723.7	1748.3
17.5°	1586.4	1588.9	1593.8	1601.1	1615.9	1615.9	1628.1	1645.3	1674.7	1704.1	1733.6
20°	1571.7	1574.2	1579.1	1586.4	1598.7	1601.1	1611.0	1630.6	1657.5	1689.4	1716.4
22.5°	1564.4	1569.3	1574.2	1579.1	1591.3	1591.3	1603.6	1618.3	1645.3	1677.2	1701.7
25°	1554.6	1559.5	1561.9	1569.3	1579.1	1579.1	1586.4	1603.6	1628.1	1655.1	1679.6
27.5°	1527.6	1532.5	1534.9	1542.3	1552.1	1549.7	1559.5	1571.7	1593.8	1618.3	1637.9
30°	1483.4	1485.9	1490.8	1493.3	1500.6	1500.6	1508.0	1520.2	1534.9	1557.0	1576.6
32.5°	1412.3	1417.2	1419.7	1422.1	1429.5	1427.1	1429.5	1436.9	1451.6	1471.2	1483.4
35°	1314.3	1324.1	1324.1	1329.0	1331.4	1329.0	1329.0	1338.8	1346.1	1360.8	1368.2
37.5°	1206.4	1213.7	1211.3	1216.2	1218.6	1211.3	1216.2	1218.6	1228.4	1235.8	1238.3
40°	1100.9	1103.4	1103.4	1103.4	1103.4	1100.9	1103.4	1105.8	1113.2	1113.2	1105.8
42.5°	1005.3	1007.8	1007.8	1002.9	1007.8	1005.3	1005.3	1005.3	1005.3	995.5	988.1
45°	921.9	924.4	924.4	921.9	921.9	917.0	914.6	912.1	904.8	892.5	875.4
47.5°	843.5	848.4	850.8	845.9	843.5	838.6	838.6	823.9	814.1	799.3	774.8
50°	769.9	774.8	774.8	769.9	769.9	762.6	755.2	750.3	735.6	718.4	689.0
52.5°	676.7	684.1	684.1	681.7	681.7	671.8	669.4	659.6	647.3	627.7	603.2
55°	564.0	573.8	571.3	568.9	564.0	564.0	564.0	556.6	549.2	534.5	510.0
57.5°	483.0	485.5	485.5	483.0	483.0	478.1	478.1	470.8	468.3	453.6	434.0
60°	431.5	431.5	434.0	431.5	429.1	426.6	424.2	419.3	411.9	402.1	387.4
62.5°	389.9	392.3	392.3	389.9	387.4	385.0	382.5	377.6	372.7	365.3	350.6
65°	343.3	348.2	345.7	343.3	340.8	338.4	338.4	333.5	328.6	323.7	308.9
67.5°	291.8	294.2	296.7	291.8	291.8	289.3	289.3	284.4	282.0	272.2	262.4
70°	237.8	240.3	240.3	237.8	237.8	235.4	235.4	232.9	230.5	223.1	213.3
72.5°	186.4	188.8	186.4	183.9	183.9	183.9	181.4	179.0	176.5	171.6	164.3
75°	137.3	137.3	139.8	137.3	134.9	134.9	132.4	132.4	127.5	125.1	117.7
77.5°	98.1	100.5	98.1	98.1	95.6	93.2	93.2	90.7	90.7	88.3	83.4
80°	66.2	66.2	68.7	66.2	63.8	66.2	63.8	61.3	61.3	58.8	53.9
82.5°	41.7	44.1	41.7	41.7	41.7	41.7	41.7	39.2	39.2	36.8	34.3
85°	24.5	24.5	24.5	24.5	24.5	24.5	24.5	22.1	22.1	22.1	19.6
87.5°	12.3	12.3	9.8	9.8	12.3	12.3	12.3	9.8	9.8	9.8	9.8
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°	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1851.2	1853.7	1858.6	1866.0	1866.0	1861.1	1873.3	1873.3	1878.2	1880.7	1890.5
5°	1831.6	1836.5	1846.3	1858.6	1861.1	1858.6	1875.8	1883.1	1890.5	1897.8	1912.5
7.5°	1814.5	1824.3	1841.4	1858.6	1866.0	1866.0	1892.9	1902.7	1917.4	1932.2	1949.3
10°	1804.7	1819.4	1843.9	1870.9	1878.2	1885.6	1917.4	1937.1	1956.7	1976.3	2000.8
12.5°	1792.4	1819.4	1851.2	1885.6	1900.3	1910.1	1954.2	1978.7	2005.7	2030.2	2062.1
15°	1789.9	1821.8	1863.5	1907.6	1927.3	1942.0	1991.0	2025.3	2057.2	2089.1	2121.0
17.5°	1780.1	1819.4	1870.9	1919.9	1944.4	1964.0	2020.4	2062.1	2098.9	2130.8	2167.6
20°	1767.9	1812.0	1868.4	1922.4	1949.3	1968.9	2030.2	2069.5	2111.2	2140.6	2174.9
22.5°	1750.7	1794.8	1851.2	1905.2	1929.7	1946.9	2008.2	2042.5	2079.3	2108.7	2140.6
25°	1721.3	1763.0	1812.0	1856.1	1880.7	1895.4	1949.3	1981.2	2008.2	2037.6	2067.0
27.5°	1679.6	1711.5	1753.2	1785.0	1799.8	1814.5	1858.6	1885.6	1910.1	1934.6	1954.2
30°	1606.0	1630.6	1660.0	1687.0	1701.7	1704.1	1745.8	1760.5	1780.1	1797.3	1812.0
32.5°	1508.0	1527.6	1544.7	1559.5	1569.3	1571.7	1603.6	1608.5	1628.1	1628.1	1650.2
35°	1382.9	1392.7	1405.0	1405.0	1412.3	1405.0	1427.1	1432.0	1434.4	1436.9	1454.0
37.5°	1240.7	1245.6	1253.0	1238.3	1238.3	1230.9	1238.3	1243.2	1233.3	1233.3	1245.6
40°	1105.8	1096.0	1086.2	1071.5	1064.2	1049.4	1049.4	1037.2	1029.8	1024.9	1027.4
42.5°	975.9	953.8	931.8	899.9	885.2	870.5	855.7	838.6	833.7	821.4	814.1
45°	850.8	819.0	789.5	738.0	708.6	693.9	662.0	627.7	605.6	600.7	581.1
47.5°	745.4	698.8	649.8	588.5	559.1	532.1	485.5	456.1	426.6	411.9	399.7
50°	652.2	610.5	546.8	480.6	443.8	416.8	365.3	331.0	299.1	277.1	262.4
52.5°	571.3	524.7	465.9	389.9	353.1	323.7	267.3	228.0	201.1	179.0	161.8
55°	480.6	443.8	385.0	313.9	277.1	242.7	193.7	152.0	125.1	110.3	98.1
57.5°	414.4	382.5	326.1	257.5	223.1	191.3	142.2	107.9	85.8	71.1	63.8
60°	370.2	340.8	291.8	225.6	193.7	164.3	117.7	85.8	66.2	53.9	49.0
62.5°	333.5	304.0	259.9	198.6	171.6	142.2	100.5	71.1	53.9	44.1	36.8
65°	291.8	264.8	225.6	171.6	147.1	122.6	85.8	58.8	44.1	34.3	29.4
67.5°	247.7	223.1	188.8	142.2	122.6	103.0	68.7	49.0	36.8	29.4	24.5
70°	201.1	181.4	149.6	115.2	98.1	80.9	56.4	39.2	27.0	22.1	19.6
72.5°	154.5	137.3	115.2	88.3	73.6	61.3	41.7	29.4	22.1	17.2	14.7
75°	110.3	98.1	80.9	63.8	53.9	44.1	31.9	22.1	14.7	12.3	9.8
77.5°	76.0	68.7	56.4	44.1	36.8	31.9	22.1	14.7	12.3	9.8	7.4
80°	49.0	44.1	36.8	27.0	22.1	19.6	12.3	9.8	7.4	4.9	4.9
82.5°	29.4	27.0	22.1	14.7	12.3	9.8	7.4	4.9	4.9	2.5	2.5
85°	17.2	14.7	9.8	7.4	7.4	4.9	4.9	2.5	2.5	0.0	0.0
87.5°	7.4	4.9	4.9	2.5	2.5	2.5	2.5	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°	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1885.6	1897.8	1895.4	1902.7	1900.3	1900.3	1912.5	1907.6	1919.9	1919.9	1922.4
5°	1912.5	1929.7	1929.7	1942.0	1939.5	1944.4	1956.7	1956.7	1971.4	1976.3	1976.3
7.5°	1951.8	1973.8	1978.7	1991.0	1993.5	2003.3	2013.1	2015.5	2035.1	2040.0	2042.5
10°	2005.7	2032.7	2040.0	2052.3	2057.2	2067.0	2079.3	2084.2	2108.7	2111.2	2121.0
12.5°	2071.9	2101.3	2108.7	2123.4	2125.9	2138.1	2155.3	2160.2	2184.7	2192.1	2199.4
15°	2135.7	2162.6	2174.9	2189.6	2192.1	2206.8	2221.5	2226.4	2248.5	2258.3	2265.6
17.5°	2179.8	2211.7	2219.0	2238.7	2238.7	2250.9	2265.6	2270.5	2292.6	2300.0	2304.9
20°	2189.6	2219.0	2228.9	2243.6	2246.0	2253.4	2265.6	2270.5	2290.2	2292.6	2300.0
22.5°	2152.8	2182.3	2187.2	2201.9	2204.3	2211.7	2221.5	2219.0	2243.6	2241.1	2243.6
25°	2074.4	2101.3	2101.3	2118.5	2116.1	2123.4	2128.3	2125.9	2147.9	2147.9	2147.9
27.5°	1961.6	1986.1	1988.6	2000.8	1993.5	1995.9	2000.8	1998.4	2013.1	2013.1	2013.1
30°	1821.8	1841.4	1834.1	1843.9	1839.0	1843.9	1839.0	1836.5	1841.4	1846.3	1843.9
32.5°	1647.7	1662.4	1662.4	1664.9	1664.9	1650.2	1645.3	1645.3	1642.8	1640.4	1640.4
35°	1446.7	1458.9	1454.0	1454.0	1451.6	1436.9	1429.5	1424.6	1432.0	1417.2	1427.1
37.5°	1240.7	1243.2	1235.8	1233.3	1221.1	1221.1	1208.8	1199.0	1203.9	1201.5	1191.7
40°	1015.1	1024.9	1010.2	1005.3	1012.7	1002.9	990.6	978.3	988.1	975.9	980.8
42.5°	794.4	792.0	787.1	787.1	787.1	772.4	769.9	767.5	769.9	760.1	752.8
45°	573.8	566.4	559.1	559.1	549.2	544.3	544.3	537.0	524.7	524.7	510.0
47.5°	387.4	370.2	365.3	362.9	358.0	358.0	353.1	348.2	345.7	333.5	333.5
50°	252.6	235.4	230.5	228.0	230.5	225.6	220.7	215.8	210.9	208.4	203.5
52.5°	152.0	144.7	139.8	137.3	132.4	130.0	127.5	122.6	120.1	120.1	117.7
55°	90.7	83.4	73.6	73.6	73.6	71.1	68.7	66.2	63.8	63.8	61.3
57.5°	56.4	51.5	46.6	44.1	44.1	44.1	41.7	41.7	41.7	41.7	39.2
60°	41.7	36.8	34.3	34.3	34.3	31.9	31.9	31.9	31.9	29.4	29.4
62.5°	31.9	29.4	27.0	27.0	24.5	24.5	24.5	24.5	24.5	24.5	22.1
65°	27.0	22.1	22.1	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
67.5°	19.6	17.2	17.2	17.2	17.2	14.7	14.7	14.7	14.7	14.7	14.7
70°	14.7	14.7	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
72.5°	12.3	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
75°	9.8	9.8	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
77.5°	7.4	7.4	7.4	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
80°	4.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	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: P251574

CATALOG NUMBER: LD4B50D010TE EU4B30509024 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1922.4	1934.6	1922.4	1922.4	1929.7	1927.3	1932.2	1924.8
5°	1978.7	1995.9	1983.7	1981.2	1993.5	1991.0	1993.5	1988.6
7.5°	2047.4	2064.6	2052.3	2052.3	2064.6	2062.1	2069.5	2064.6
10°	2125.9	2145.5	2128.3	2130.8	2147.9	2145.5	2145.5	2145.5
12.5°	2206.8	2226.4	2216.6	2216.6	2228.9	2231.3	2233.8	2231.3
15°	2273.0	2292.6	2280.3	2280.3	2297.5	2295.1	2297.5	2295.1
17.5°	2312.2	2331.8	2317.1	2317.1	2331.8	2331.8	2334.3	2336.7
20°	2302.4	2324.5	2312.2	2307.3	2324.5	2324.5	2322.0	2322.0
22.5°	2246.0	2265.6	2255.8	2250.9	2263.2	2258.3	2255.8	2258.3
25°	2147.9	2167.6	2147.9	2147.9	2157.7	2155.3	2157.7	2155.3
27.5°	2015.5	2030.2	2010.6	2008.2	2018.0	2013.1	2010.6	2018.0
30°	1839.0	1853.7	1843.9	1836.5	1848.8	1841.4	1836.5	1839.0
32.5°	1637.9	1647.7	1642.8	1630.6	1637.9	1633.0	1630.6	1633.0
35°	1417.2	1429.5	1409.9	1407.4	1419.7	1409.9	1405.0	1417.2
37.5°	1189.2	1203.9	1186.8	1189.2	1181.9	1184.3	1179.4	1186.8
40°	973.4	971.0	966.1	963.6	966.1	958.7	963.6	956.3
42.5°	740.5	745.4	743.0	740.5	743.0	733.1	728.2	738.0
45°	514.9	512.5	507.6	502.7	502.7	500.2	500.2	492.8
47.5°	331.0	328.6	318.8	321.2	326.1	321.2	313.9	323.7
50°	201.1	198.6	198.6	196.2	201.1	196.2	191.3	191.3
52.5°	112.8	112.8	110.3	110.3	110.3	110.3	107.9	105.4
55°	61.3	58.8	58.8	58.8	56.4	56.4	56.4	56.4
57.5°	39.2	39.2	39.2	39.2	39.2	39.2	36.8	36.8
60°	29.4	29.4	29.4	29.4	27.0	29.4	27.0	27.0
62.5°	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1
65°	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
67.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
70°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
72.5°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
75°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
77.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)