

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: P251581

Luminaire Tested: **LD4B50D010TE EU4B30509730 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251581
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 EU4B30509730 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3581.0 lumens
Efficiency: N/A
Efficacy: 60.9 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

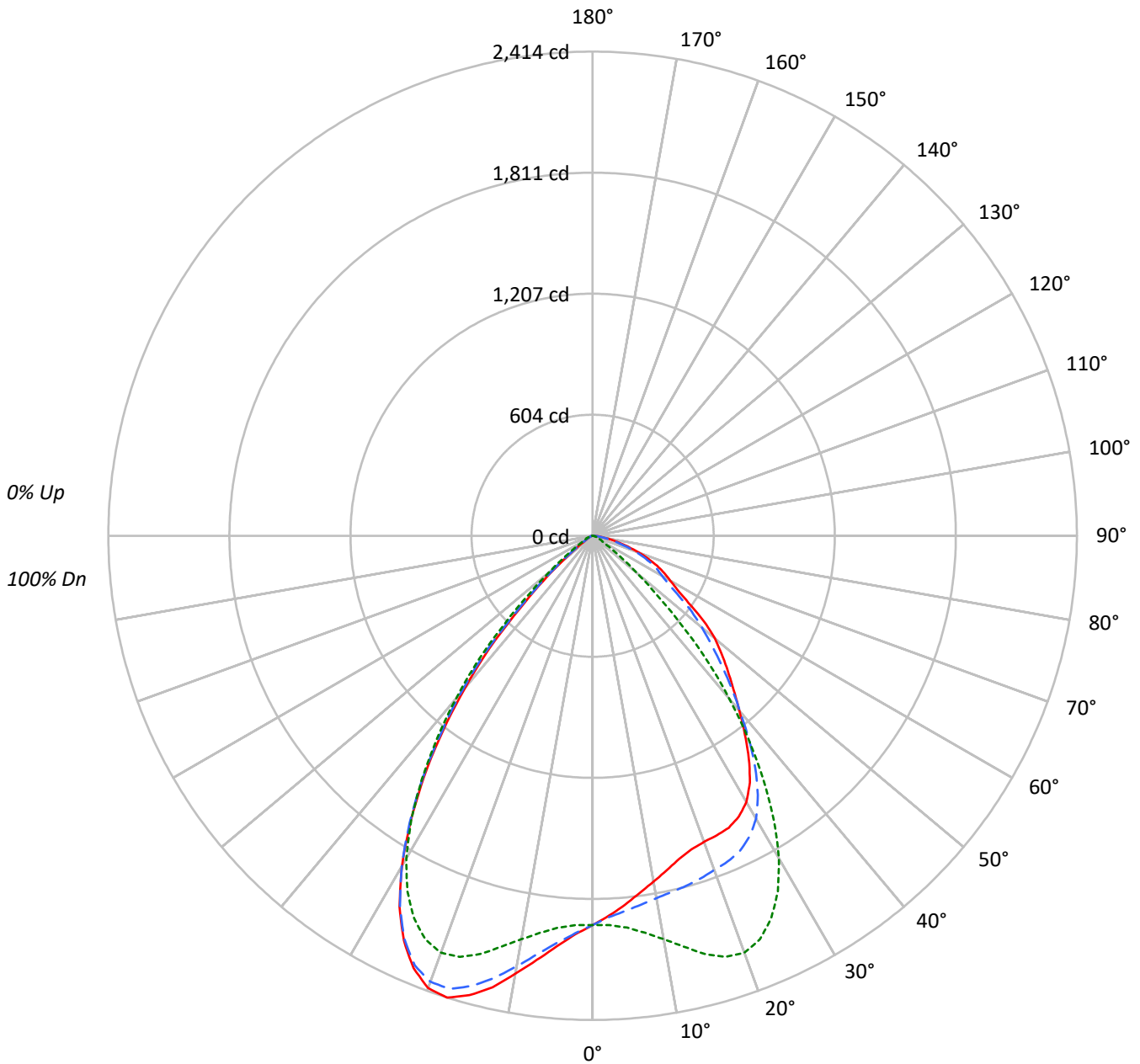
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	189117	189117	189117
5°	180673	191826	200992
10°	173232	202070	219368
15°	168184	217774	239245
20°	168419	229371	248817
25°	172709	226379	239455
30°	172482	208966	213816
35°	161555	176617	174214
40°	144716	134716	125696
45°	131280	85549	70181
50°	120612	43408	29960
55°	99008	19370	9906
60°	86913	10857	5438
65°	81796	8186	4082
70°	70012	6497	3619
75°	53432	4782	2862
80°	38389	2862	1403
85°	28291	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.5	5.3
10°-20°	587.5	16.4
20°-30°	908.9	25.4
30°-40°	895.5	25.0
40°-50°	549.9	15.4
50°-60°	244.5	6.8
60°-70°	136.6	3.8
70°-80°	59.1	1.7
80°-90°	10.6	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°	1684.9	47.0
0°-40°	2580.4	72.1
0°-60°	3374.8	94.2
0°-90°	3581.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3581.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1940	1940	1940	1940	1940	
5°	1847	1877	1961	2037	2054	173
15°	1667	1806	2158	2323	2371	473
25°	1606	1735	2105	2219	2227	737
35°	1358	1414	1484	1480	1464	843
45°	952	904	621	542	509	738
55°	583	527	114	66	58	536
65°	355	319	36	20	18	347
75°	142	122	13	8	8	156
85°	25	20	0	0	0	31
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°	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5
2.5°	1894.9	1894.9	1894.9	1894.9	1900.0	1892.4	1900.0	1900.0	1907.6	1910.1	1902.5
5°	1846.8	1844.3	1846.8	1846.8	1851.9	1849.3	1856.9	1862.0	1872.1	1877.2	1877.2
7.5°	1796.1	1796.1	1796.1	1801.2	1808.8	1806.3	1813.9	1821.5	1836.7	1846.8	1854.4
10°	1750.5	1748.0	1755.6	1758.1	1765.7	1765.7	1778.4	1786.0	1803.7	1824.0	1834.1
12.5°	1707.5	1704.9	1710.0	1717.6	1730.3	1730.3	1740.4	1753.1	1778.4	1801.2	1818.9
15°	1666.9	1669.5	1677.1	1682.1	1697.3	1697.3	1710.0	1725.2	1753.1	1780.9	1806.3
17.5°	1639.1	1641.6	1646.7	1654.3	1669.5	1669.5	1682.1	1699.9	1730.3	1760.7	1791.1
20°	1623.9	1626.4	1631.5	1639.1	1651.7	1654.3	1664.4	1684.7	1712.5	1745.5	1773.3
22.5°	1616.3	1621.3	1626.4	1631.5	1644.1	1644.1	1656.8	1672.0	1699.9	1732.8	1758.1
25°	1606.1	1611.2	1613.7	1621.3	1631.5	1631.5	1639.1	1656.8	1682.1	1710.0	1735.3
27.5°	1578.3	1583.3	1585.9	1593.5	1603.6	1601.1	1611.2	1623.9	1646.7	1672.0	1692.3
30°	1532.7	1535.2	1540.3	1542.8	1550.4	1550.4	1558.0	1570.7	1585.9	1608.7	1628.9
32.5°	1459.2	1464.3	1466.8	1469.3	1476.9	1474.4	1476.9	1484.5	1499.7	1520.0	1532.7
35°	1357.9	1368.0	1368.0	1373.1	1375.6	1373.1	1373.1	1383.2	1390.8	1406.0	1413.6
37.5°	1246.4	1254.0	1251.5	1256.5	1259.1	1251.5	1256.5	1259.1	1269.2	1276.8	1279.3
40°	1137.5	1140.0	1140.0	1140.0	1140.0	1137.5	1140.0	1142.5	1150.1	1150.1	1142.5
42.5°	1038.7	1041.2	1041.2	1036.1	1041.2	1038.7	1038.7	1038.7	1038.7	1028.5	1020.9
45°	952.5	955.1	955.1	952.5	952.5	947.5	944.9	942.4	934.8	922.1	904.4
47.5°	871.5	876.5	879.1	874.0	871.5	866.4	866.4	851.2	841.1	825.9	800.5
50°	795.5	800.5	800.5	795.5	795.5	787.9	780.3	775.2	760.0	742.3	711.9
52.5°	699.2	706.8	706.8	704.3	704.3	694.1	691.6	681.5	668.8	648.5	623.2
55°	582.7	592.8	590.3	587.7	582.7	582.7	582.7	575.1	567.5	552.3	526.9
57.5°	499.1	501.6	501.6	499.1	499.1	494.0	494.0	486.4	483.9	468.7	448.4
60°	445.9	445.9	448.4	445.9	443.3	440.8	438.3	433.2	425.6	415.5	400.3
62.5°	402.8	405.3	405.3	402.8	400.3	397.7	395.2	390.1	385.1	377.5	362.3
65°	354.7	359.7	357.2	354.7	352.1	349.6	349.6	344.5	339.5	334.4	319.2
67.5°	301.5	304.0	306.5	301.5	301.5	298.9	298.9	293.9	291.3	281.2	271.1
70°	245.7	248.3	248.3	245.7	245.7	243.2	243.2	240.7	238.1	230.5	220.4
72.5°	192.5	195.1	192.5	190.0	190.0	190.0	187.5	184.9	182.4	177.3	169.7
75°	141.9	141.9	144.4	141.9	139.3	139.3	136.8	136.8	131.7	129.2	121.6
77.5°	101.3	103.9	101.3	101.3	98.8	96.3	96.3	93.7	93.7	91.2	86.1
80°	68.4	68.4	70.9	68.4	65.9	68.4	65.9	63.3	63.3	60.8	55.7
82.5°	43.1	45.6	43.1	43.1	43.1	43.1	43.1	40.5	40.5	38.0	35.5
85°	25.3	25.3	25.3	25.3	25.3	25.3	25.3	22.8	22.8	22.8	20.3
87.5°	12.7	12.7	10.1	10.1	12.7	12.7	12.7	10.1	10.1	10.1	10.1
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°	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5
2.5°	1912.7	1915.2	1920.3	1927.9	1927.9	1922.8	1935.5	1935.5	1940.5	1943.1	1953.2
5°	1892.4	1897.5	1907.6	1920.3	1922.8	1920.3	1938.0	1945.6	1953.2	1960.8	1976.0
7.5°	1874.7	1884.8	1902.5	1920.3	1927.9	1927.9	1955.7	1965.9	1981.1	1996.3	2014.0
10°	1864.5	1879.7	1905.1	1932.9	1940.5	1948.1	1981.1	2001.3	2021.6	2041.9	2067.2
12.5°	1851.9	1879.7	1912.7	1948.1	1963.3	1973.5	2019.1	2044.4	2072.3	2097.6	2130.5
15°	1849.3	1882.3	1925.3	1970.9	1991.2	2006.4	2057.1	2092.5	2125.5	2158.4	2191.3
17.5°	1839.2	1879.7	1932.9	1983.6	2008.9	2029.2	2087.5	2130.5	2168.5	2201.5	2239.5
20°	1826.5	1872.1	1930.4	1986.1	2014.0	2034.3	2097.6	2138.1	2181.2	2211.6	2247.1
22.5°	1808.8	1854.4	1912.7	1968.4	1993.7	2011.5	2074.8	2110.3	2148.3	2178.7	2211.6
25°	1778.4	1821.5	1872.1	1917.7	1943.1	1958.3	2014.0	2046.9	2074.8	2105.2	2135.6
27.5°	1735.3	1768.3	1811.3	1844.3	1859.5	1874.7	1920.3	1948.1	1973.5	1998.8	2019.1
30°	1659.3	1684.7	1715.1	1742.9	1758.1	1760.7	1803.7	1818.9	1839.2	1856.9	1872.1
32.5°	1558.0	1578.3	1596.0	1611.2	1621.3	1623.9	1656.8	1661.9	1682.1	1682.1	1704.9
35°	1428.8	1438.9	1451.6	1451.6	1459.2	1451.6	1474.4	1479.5	1482.0	1484.5	1502.3
37.5°	1281.9	1286.9	1294.5	1279.3	1279.3	1271.7	1279.3	1284.4	1274.3	1274.3	1286.9
40°	1142.5	1132.4	1122.3	1107.1	1099.5	1084.3	1084.3	1071.6	1064.0	1058.9	1061.5
42.5°	1008.3	985.5	962.7	929.7	914.5	899.3	884.1	866.4	861.3	848.7	841.1
45°	879.1	846.1	815.7	762.5	732.1	716.9	684.0	648.5	625.7	620.7	600.4
47.5°	770.1	722.0	671.3	608.0	577.6	549.7	501.6	471.2	440.8	425.6	412.9
50°	673.9	630.8	564.9	496.5	458.5	430.7	377.5	342.0	309.1	286.3	271.1
52.5°	590.3	542.1	481.3	402.8	364.8	334.4	276.1	235.6	207.7	184.9	167.2
55°	496.5	458.5	397.7	324.3	286.3	250.8	200.1	157.1	129.2	114.0	101.3
57.5°	428.1	395.2	336.9	266.0	230.5	197.6	146.9	111.5	88.7	73.5	65.9
60°	382.5	352.1	301.5	233.1	200.1	169.7	121.6	88.7	68.4	55.7	50.7
62.5°	344.5	314.1	268.5	205.2	177.3	146.9	103.9	73.5	55.7	45.6	38.0
65°	301.5	273.6	233.1	177.3	152.0	126.7	88.7	60.8	45.6	35.5	30.4
67.5°	255.9	230.5	195.1	146.9	126.7	106.4	70.9	50.7	38.0	30.4	25.3
70°	207.7	187.5	154.5	119.1	101.3	83.6	58.3	40.5	27.9	22.8	20.3
72.5°	159.6	141.9	119.1	91.2	76.0	63.3	43.1	30.4	22.8	17.7	15.2
75°	114.0	101.3	83.6	65.9	55.7	45.6	32.9	22.8	15.2	12.7	10.1
77.5°	78.5	70.9	58.3	45.6	38.0	32.9	22.8	15.2	12.7	10.1	7.6
80°	50.7	45.6	38.0	27.9	22.8	20.3	12.7	10.1	7.6	5.1	5.1
82.5°	30.4	27.9	22.8	15.2	12.7	10.1	7.6	5.1	5.1	2.5	2.5
85°	17.7	15.2	10.1	7.6	7.6	5.1	5.1	2.5	2.5	0.0	0.0
87.5°	7.6	5.1	5.1	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°	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5
2.5°	1948.1	1960.8	1958.3	1965.9	1963.3	1963.3	1976.0	1970.9	1983.6	1983.6	1986.1
5°	1976.0	1993.7	1993.7	2006.4	2003.9	2008.9	2021.6	2021.6	2036.8	2041.9	2041.9
7.5°	2016.5	2039.3	2044.4	2057.1	2059.6	2069.7	2079.9	2082.4	2102.7	2107.7	2110.3
10°	2072.3	2100.1	2107.7	2120.4	2125.5	2135.6	2148.3	2153.3	2178.7	2181.2	2191.3
12.5°	2140.7	2171.1	2178.7	2193.9	2196.4	2209.1	2226.8	2231.9	2257.2	2264.8	2272.4
15°	2206.5	2234.4	2247.1	2262.3	2264.8	2280.0	2295.2	2300.3	2323.1	2333.2	2340.8
17.5°	2252.1	2285.1	2292.7	2312.9	2312.9	2325.6	2340.8	2345.9	2368.7	2376.3	2381.3
20°	2262.3	2292.7	2302.8	2318.0	2320.5	2328.1	2340.8	2345.9	2366.1	2368.7	2376.3
22.5°	2224.3	2254.7	2259.7	2274.9	2277.5	2285.1	2295.2	2292.7	2318.0	2315.5	2318.0
25°	2143.2	2171.1	2171.1	2188.8	2186.3	2193.9	2198.9	2196.4	2219.2	2219.2	2219.2
27.5°	2026.7	2052.0	2054.5	2067.2	2059.6	2062.1	2067.2	2064.7	2079.9	2079.9	2079.9
30°	1882.3	1902.5	1894.9	1905.1	1900.0	1905.1	1900.0	1897.5	1902.5	1907.6	1905.1
32.5°	1702.4	1717.6	1717.6	1720.1	1720.1	1704.9	1699.9	1699.9	1697.3	1694.8	1694.8
35°	1494.7	1507.3	1502.3	1502.3	1499.7	1484.5	1476.9	1471.9	1479.5	1464.3	1474.4
37.5°	1281.9	1284.4	1276.8	1274.3	1261.6	1261.6	1248.9	1238.8	1243.9	1241.3	1231.2
40°	1048.8	1058.9	1043.7	1038.7	1046.3	1036.1	1023.5	1010.8	1020.9	1008.3	1013.3
42.5°	820.8	818.3	813.2	813.2	813.2	798.0	795.5	792.9	795.5	785.3	777.7
45°	592.8	585.2	577.6	577.6	567.5	562.4	562.4	554.8	542.1	542.1	526.9
47.5°	400.3	382.5	377.5	374.9	369.9	369.9	364.8	359.7	357.2	344.5	344.5
50°	260.9	243.2	238.1	235.6	238.1	233.1	228.0	222.9	217.9	215.3	210.3
52.5°	157.1	149.5	144.4	141.9	136.8	134.3	131.7	126.7	124.1	124.1	121.6
55°	93.7	86.1	76.0	76.0	76.0	73.5	70.9	68.4	65.9	65.9	63.3
57.5°	58.3	53.2	48.1	45.6	45.6	45.6	43.1	43.1	43.1	43.1	40.5
60°	43.1	38.0	35.5	35.5	35.5	32.9	32.9	32.9	32.9	30.4	30.4
62.5°	32.9	30.4	27.9	27.9	25.3	25.3	25.3	25.3	25.3	25.3	22.8
65°	27.9	22.8	22.8	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
67.5°	20.3	17.7	17.7	17.7	17.7	15.2	15.2	15.2	15.2	15.2	15.2
70°	15.2	15.2	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
72.5°	12.7	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
75°	10.1	10.1	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
77.5°	7.6	7.6	7.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
80°	5.1	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: P251581

CATALOG NUMBER: LD4B50D010TE EU4B30509730 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5	1940.5
2.5°	1986.1	1998.8	1986.1	1986.1	1993.7	1991.2	1996.3	1988.7
5°	2044.4	2062.1	2049.5	2046.9	2059.6	2057.1	2059.6	2054.5
7.5°	2115.3	2133.1	2120.4	2120.4	2133.1	2130.5	2138.1	2133.1
10°	2196.4	2216.7	2198.9	2201.5	2219.2	2216.7	2216.7	2216.7
12.5°	2280.0	2300.3	2290.1	2290.1	2302.8	2305.3	2307.9	2305.3
15°	2348.4	2368.7	2356.0	2356.0	2373.7	2371.2	2373.7	2371.2
17.5°	2388.9	2409.2	2394.0	2394.0	2409.2	2409.2	2411.7	2414.3
20°	2378.8	2401.6	2388.9	2383.9	2401.6	2401.6	2399.1	2399.1
22.5°	2320.5	2340.8	2330.7	2325.6	2338.3	2333.2	2330.7	2333.2
25°	2219.2	2239.5	2219.2	2219.2	2229.3	2226.8	2229.3	2226.8
27.5°	2082.4	2097.6	2077.3	2074.8	2084.9	2079.9	2077.3	2084.9
30°	1900.0	1915.2	1905.1	1897.5	1910.1	1902.5	1897.5	1900.0
32.5°	1692.3	1702.4	1697.3	1684.7	1692.3	1687.2	1684.7	1687.2
35°	1464.3	1476.9	1456.7	1454.1	1466.8	1456.7	1451.6	1464.3
37.5°	1228.7	1243.9	1226.1	1228.7	1221.1	1223.6	1218.5	1226.1
40°	1005.7	1003.2	998.1	995.6	998.1	990.5	995.6	988.0
42.5°	765.1	770.1	767.6	765.1	767.6	757.5	752.4	762.5
45°	532.0	529.5	524.4	519.3	519.3	516.8	516.8	509.2
47.5°	342.0	339.5	329.3	331.9	336.9	331.9	324.3	334.4
50°	207.7	205.2	205.2	202.7	207.7	202.7	197.6	197.6
52.5°	116.5	116.5	114.0	114.0	114.0	114.0	111.5	108.9
55°	63.3	60.8	60.8	60.8	58.3	58.3	58.3	58.3
57.5°	40.5	40.5	40.5	40.5	40.5	40.5	38.0	38.0
60°	30.4	30.4	30.4	30.4	27.9	30.4	27.9	27.9
62.5°	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8
65°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
67.5°	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
70°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
72.5°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
75°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
77.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
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



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













(END OF REPORT)