

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: P251803

Luminaire Tested: **LD4B50D010TE EU4B30508027 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251803
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 EU4B30508027 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3803.0 lumens
Efficiency: N/A
Efficacy: 64.7 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

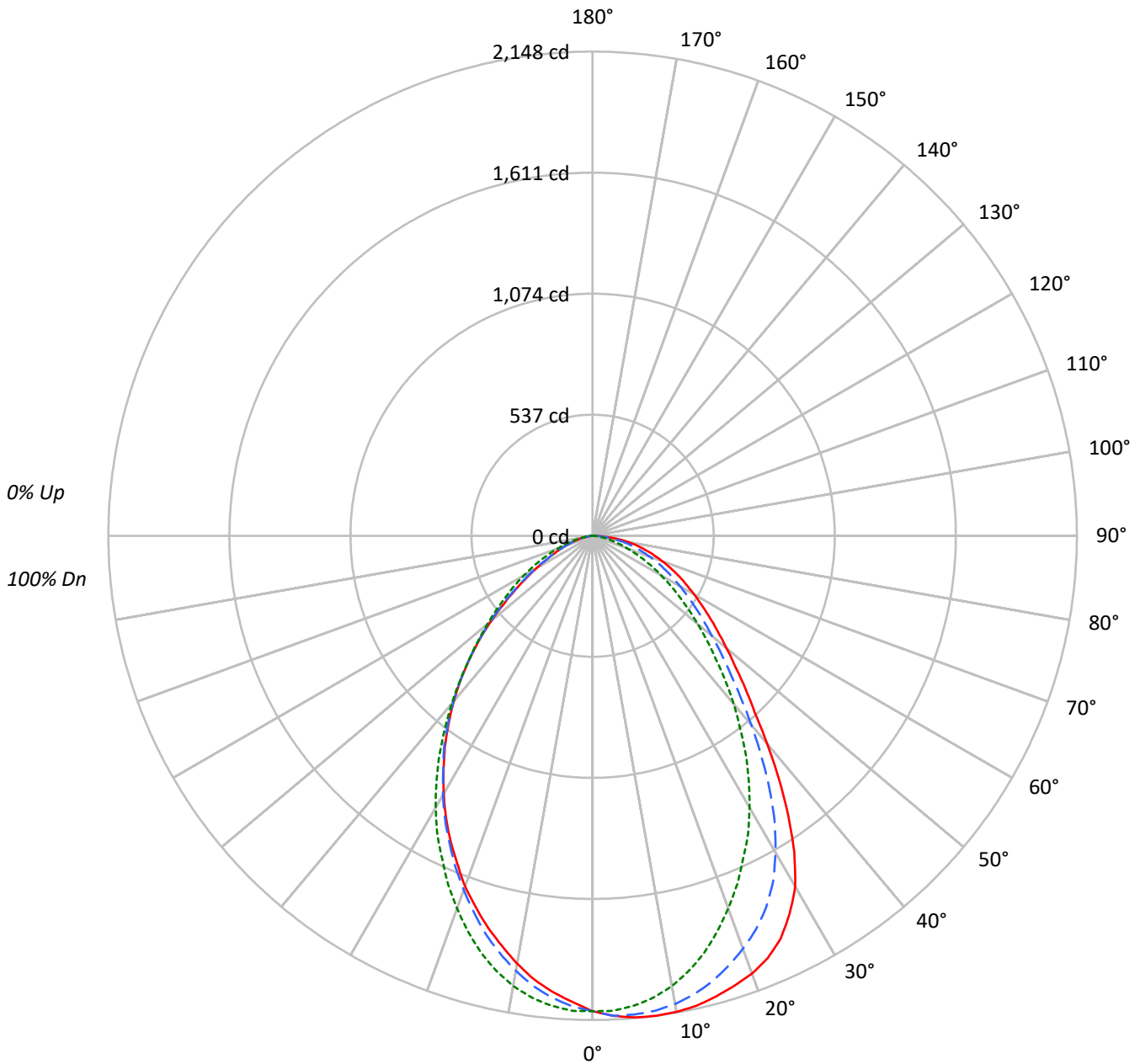
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	100	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76	76	76	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67	67	67	67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59	59	59	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38	38	38	38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35	35	35	35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32	32	32	32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	205549	205549	205549
5°	209827	204749	198713
10°	212253	200694	190738
15°	213456	193155	181371
20°	214364	182400	171624
25°	212141	169924	160504
30°	202293	156649	148614
35°	179901	140913	135892
40°	153150	123838	121777
45°	131928	106443	105989
50°	117580	92002	89045
55°	108065	79400	71126
60°	101200	68299	55649
65°	97269	57605	43400
70°	93378	46219	35134
75°	90409	36638	26886
80°	91033	25480	16388
85°	76150	18115	7268



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.4	5.2
10°-20°	542.8	14.3
20°-30°	759.1	20.0
30°-40°	780.2	20.5
40°-50°	633.3	16.7
50°-60°	445.9	11.7
60°-70°	274.5	7.2
70°-80°	137.1	3.6
80°-90°	32.6	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°	1499.3	39.4
0°-40°	2279.6	59.9
0°-60°	3358.8	88.3
0°-90°	3803.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3803.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2109	2109	2109	2109	2109	
5°	2145	2132	2093	2057	2031	205
15°	2116	2048	1914	1830	1798	598
25°	1973	1820	1580	1502	1493	902
35°	1512	1366	1184	1149	1142	940
45°	957	863	772	772	769	744
55°	636	558	467	428	419	572
65°	422	354	250	191	188	417
75°	240	188	97	71	71	256
85°	68	45	16	10	6	79
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°	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1
2.5°	2131.8	2135.1	2125.3	2135.1	2122.1	2128.6	2131.8	2125.3	2118.9	2131.8	2131.8
5°	2144.8	2144.8	2135.1	2148.1	2131.8	2135.1	2141.6	2131.8	2122.1	2135.1	2131.8
7.5°	2148.1	2148.1	2135.1	2148.1	2131.8	2135.1	2138.3	2128.6	2118.9	2128.6	2125.3
10°	2144.8	2141.6	2131.8	2144.8	2128.6	2128.6	2131.8	2122.1	2105.9	2115.6	2109.1
12.5°	2135.1	2135.1	2122.1	2135.1	2112.4	2112.4	2115.6	2102.6	2089.6	2089.6	2083.2
15°	2115.6	2115.6	2102.6	2112.4	2092.9	2092.9	2089.6	2076.7	2060.4	2060.4	2047.5
17.5°	2092.9	2092.9	2079.9	2089.6	2066.9	2066.9	2063.7	2044.2	2021.5	2018.3	2002.0
20°	2066.9	2066.9	2050.7	2057.2	2031.2	2031.2	2028.0	2005.3	1979.3	1972.8	1950.1
22.5°	2028.0	2028.0	2011.8	2015.0	1989.1	1985.8	1982.6	1956.6	1930.7	1920.9	1891.7
25°	1972.8	1969.6	1956.6	1956.6	1930.7	1924.2	1917.7	1891.7	1865.8	1846.3	1820.3
27.5°	1891.7	1895.0	1878.7	1882.0	1849.5	1843.0	1839.8	1807.4	1778.1	1758.7	1732.7
30°	1797.6	1787.9	1771.7	1771.7	1745.7	1742.5	1736.0	1706.8	1674.3	1651.6	1622.4
32.5°	1664.6	1661.3	1645.1	1645.1	1615.9	1615.9	1602.9	1573.7	1544.5	1531.5	1502.3
35°	1512.1	1508.8	1495.9	1495.9	1469.9	1473.1	1460.2	1437.4	1408.2	1388.8	1366.1
37.5°	1356.3	1353.1	1340.1	1343.3	1320.6	1320.6	1310.9	1288.2	1265.5	1255.7	1226.5
40°	1203.8	1200.6	1184.4	1194.1	1174.6	1168.1	1164.9	1148.7	1122.7	1109.7	1093.5
42.5°	1064.3	1067.5	1051.3	1057.8	1041.6	1035.1	1031.8	1018.9	999.4	986.4	970.2
45°	957.2	950.7	944.2	944.2	928.0	924.8	921.5	905.3	892.3	879.3	863.1
47.5°	856.6	850.1	843.6	846.9	833.9	830.7	824.2	811.2	795.0	788.5	772.3
50°	775.5	772.3	762.5	762.5	749.5	746.3	739.8	730.1	713.9	704.1	691.1
52.5°	700.9	700.9	691.1	687.9	678.2	674.9	671.7	658.7	645.7	632.7	619.8
55°	636.0	632.7	626.2	626.2	613.3	610.0	606.8	593.8	580.8	571.1	558.1
57.5°	574.3	574.3	567.8	567.8	558.1	551.6	551.6	538.6	522.4	515.9	499.7
60°	519.2	519.2	512.7	512.7	502.9	502.9	496.5	483.5	473.7	460.8	447.8
62.5°	467.3	470.5	464.0	460.8	451.0	447.8	447.8	438.0	421.8	412.1	399.1
65°	421.8	418.6	415.3	412.1	402.4	399.1	399.1	386.1	376.4	363.4	353.7
67.5°	373.2	373.2	366.7	366.7	360.2	356.9	350.4	340.7	331.0	321.2	311.5
70°	327.7	327.7	324.5	324.5	314.7	311.5	308.3	298.5	288.8	279.1	266.1
72.5°	285.5	282.3	279.1	279.1	272.6	269.3	266.1	256.3	246.6	236.9	227.1
75°	240.1	240.1	236.9	236.9	230.4	227.1	227.1	220.6	207.7	201.2	188.2
77.5°	201.2	201.2	197.9	197.9	191.4	191.4	188.2	178.5	172.0	162.2	155.8
80°	162.2	159.0	159.0	155.8	149.3	149.3	146.0	142.8	133.0	126.5	116.8
82.5°	113.6	113.6	113.6	110.3	107.1	107.1	103.8	97.3	90.9	87.6	77.9
85°	68.1	68.1	64.9	61.7	64.9	61.7	58.4	55.2	51.9	48.7	45.4
87.5°	29.2	29.2	26.0	26.0	26.0	26.0	26.0	22.7	19.5	19.5	16.2
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°	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1
2.5°	2112.4	2122.1	2118.9	2115.6	2109.1	2109.1	2109.1	2105.9	2109.1	2109.1	2102.6
5°	2112.4	2118.9	2115.6	2109.1	2102.6	2102.6	2099.4	2092.9	2092.9	2092.9	2079.9
7.5°	2102.6	2109.1	2099.4	2092.9	2086.4	2079.9	2079.9	2070.2	2070.2	2066.9	2054.0
10°	2083.2	2086.4	2073.4	2066.9	2057.2	2054.0	2047.5	2034.5	2031.2	2028.0	2015.0
12.5°	2054.0	2057.2	2041.0	2028.0	2015.0	2011.8	2005.3	1989.1	1982.6	1976.1	1959.9
15°	2011.8	2011.8	1992.3	1976.1	1963.1	1959.9	1943.6	1927.4	1920.9	1914.4	1891.7
17.5°	1963.1	1959.9	1933.9	1917.7	1901.5	1895.0	1878.7	1859.3	1846.3	1839.8	1820.3
20°	1911.2	1901.5	1872.2	1856.0	1836.6	1826.8	1810.6	1784.6	1771.7	1758.7	1739.2
22.5°	1849.5	1836.6	1804.1	1781.4	1761.9	1752.2	1729.5	1706.8	1687.3	1674.3	1651.6
25°	1774.9	1758.7	1723.0	1693.8	1677.6	1667.8	1645.1	1619.2	1599.7	1580.2	1560.7
27.5°	1687.3	1667.8	1632.1	1602.9	1586.7	1570.5	1554.3	1525.1	1508.8	1492.6	1469.9
30°	1580.2	1557.5	1525.1	1499.1	1479.6	1466.6	1447.2	1421.2	1401.8	1392.0	1369.3
32.5°	1463.4	1437.4	1408.2	1382.3	1372.5	1356.3	1340.1	1314.1	1297.9	1288.2	1272.0
35°	1333.6	1314.1	1281.7	1262.2	1246.0	1239.5	1226.5	1200.6	1194.1	1184.4	1164.9
37.5°	1197.3	1181.1	1158.4	1142.2	1129.2	1122.7	1109.7	1093.5	1083.8	1074.0	1064.3
40°	1070.8	1057.8	1038.3	1025.4	1009.1	999.4	999.4	979.9	973.4	973.4	963.7
42.5°	947.5	941.0	924.8	905.3	902.1	892.3	889.1	879.3	872.9	869.6	866.4
45°	843.6	833.9	817.7	808.0	798.2	798.2	788.5	778.8	775.5	772.3	769.0
47.5°	752.8	739.8	726.8	717.1	710.6	707.4	697.6	691.1	687.9	687.9	684.7
50°	671.7	661.9	649.0	639.2	632.7	626.2	619.8	613.3	610.0	606.8	606.8
52.5°	603.5	590.6	577.6	567.8	558.1	554.9	548.4	541.9	538.6	535.4	532.1
55°	541.9	532.1	515.9	506.2	496.5	496.5	486.7	477.0	470.5	467.3	464.0
57.5°	483.5	473.7	457.5	447.8	441.3	434.8	428.3	421.8	415.3	408.8	402.4
60°	431.6	421.8	405.6	392.6	389.4	382.9	376.4	363.4	356.9	350.4	343.9
62.5°	382.9	369.9	356.9	343.9	340.7	334.2	324.5	314.7	305.0	298.5	288.8
65°	337.5	327.7	311.5	301.8	292.0	288.8	279.1	266.1	256.3	249.8	240.1
67.5°	295.3	282.3	266.1	256.3	249.8	243.4	233.6	223.9	214.2	204.4	194.7
70°	253.1	243.4	227.1	217.4	210.9	204.4	194.7	181.7	172.0	162.2	155.8
72.5°	214.2	201.2	188.2	178.5	172.0	165.5	155.8	146.0	136.3	129.8	120.1
75°	178.5	165.5	155.8	142.8	139.5	133.0	123.3	113.6	103.8	97.3	90.9
77.5°	142.8	133.0	120.1	113.6	107.1	100.6	94.1	84.4	77.9	68.1	61.7
80°	107.1	97.3	87.6	81.1	74.6	71.4	64.9	58.4	51.9	45.4	42.2
82.5°	71.4	64.9	55.2	51.9	48.7	45.4	38.9	35.7	32.4	29.2	26.0
85°	38.9	35.7	32.4	26.0	26.0	22.7	19.5	19.5	16.2	16.2	13.0
87.5°	16.2	13.0	13.0	9.7	9.7	9.7	6.5	6.5	6.5	3.2	3.2
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°	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1
2.5°	2105.9	2092.9	2092.9	2092.9	2083.2	2086.4	2089.6	2092.9	2089.6	2079.9	2089.6
5°	2083.2	2070.2	2070.2	2063.7	2057.2	2057.2	2057.2	2060.4	2057.2	2047.5	2050.7
7.5°	2054.0	2037.7	2034.5	2028.0	2021.5	2018.3	2018.3	2018.3	2015.0	2002.0	2008.5
10°	2008.5	1992.3	1985.8	1982.6	1972.8	1969.6	1966.3	1963.1	1959.9	1946.9	1953.4
12.5°	1953.4	1940.4	1927.4	1924.2	1914.4	1907.9	1904.7	1904.7	1898.2	1885.2	1891.7
15°	1888.5	1869.0	1859.3	1852.8	1843.0	1836.6	1830.1	1833.3	1830.1	1817.1	1820.3
17.5°	1810.6	1791.1	1781.4	1778.1	1765.2	1758.7	1755.4	1755.4	1752.2	1739.2	1742.5
20°	1726.2	1706.8	1700.3	1693.8	1687.3	1680.8	1677.6	1674.3	1671.1	1658.1	1667.8
22.5°	1641.9	1619.2	1609.4	1609.4	1596.4	1593.2	1590.0	1593.2	1590.0	1577.0	1583.5
25°	1554.3	1531.5	1525.1	1515.3	1508.8	1505.6	1505.6	1505.6	1502.3	1495.9	1502.3
27.5°	1456.9	1440.7	1431.0	1427.7	1421.2	1418.0	1414.7	1418.0	1418.0	1408.2	1414.7
30°	1359.6	1346.6	1340.1	1336.9	1327.1	1323.9	1327.1	1327.1	1327.1	1317.4	1327.1
32.5°	1262.2	1252.5	1249.2	1239.5	1233.0	1233.0	1233.0	1236.3	1233.0	1226.5	1236.3
35°	1164.9	1151.9	1148.7	1145.4	1145.4	1138.9	1145.4	1142.2	1148.7	1138.9	1145.4
37.5°	1061.0	1054.6	1051.3	1051.3	1044.8	1048.1	1048.1	1048.1	1054.6	1044.8	1051.3
40°	963.7	957.2	957.2	957.2	954.0	954.0	954.0	957.2	960.5	954.0	960.5
42.5°	866.4	863.1	863.1	859.9	856.6	859.9	863.1	863.1	866.4	859.9	863.1
45°	772.3	769.0	772.3	769.0	769.0	765.8	769.0	772.3	772.3	769.0	769.0
47.5°	684.7	684.7	681.4	681.4	681.4	681.4	681.4	681.4	681.4	674.9	681.4
50°	606.8	600.3	603.5	600.3	600.3	597.0	597.0	593.8	590.6	587.3	587.3
52.5°	532.1	525.7	525.7	522.4	519.2	519.2	515.9	512.7	509.4	502.9	502.9
55°	460.8	454.3	451.0	447.8	444.5	441.3	438.0	434.8	428.3	425.1	425.1
57.5°	395.9	389.4	382.9	382.9	376.4	373.2	366.7	360.2	356.9	350.4	350.4
60°	337.5	331.0	321.2	318.0	314.7	308.3	298.5	295.3	292.0	285.5	288.8
62.5°	282.3	272.6	262.8	259.6	256.3	249.8	243.4	236.9	233.6	236.9	236.9
65°	230.4	220.6	214.2	207.7	204.4	197.9	194.7	191.4	191.4	191.4	194.7
67.5°	185.0	175.2	168.7	165.5	159.0	155.8	155.8	155.8	155.8	155.8	155.8
70°	146.0	139.5	133.0	126.5	126.5	123.3	123.3	123.3	123.3	123.3	123.3
72.5°	110.3	103.8	100.6	100.6	97.3	97.3	97.3	97.3	94.1	94.1	97.3
75°	81.1	77.9	74.6	74.6	74.6	71.4	71.4	71.4	71.4	71.4	71.4
77.5°	58.4	55.2	55.2	51.9	51.9	51.9	51.9	51.9	51.9	48.7	48.7
80°	38.9	35.7	35.7	35.7	35.7	32.4	32.4	32.4	32.4	32.4	32.4
82.5°	22.7	22.7	22.7	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
85°	13.0	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
87.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	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: P251803

CATALOG NUMBER: LD4B50D010TE EU4B30508027 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1	2109.1
2.5°	2070.2	2083.2	2086.4	2076.7	2079.9	2073.4	2076.7	2070.2
5°	2034.5	2044.2	2047.5	2041.0	2041.0	2034.5	2037.7	2031.2
7.5°	1989.1	1998.8	2002.0	1995.5	1995.5	1989.1	1989.1	1985.8
10°	1937.1	1940.4	1946.9	1937.1	1940.4	1933.9	1933.9	1927.4
12.5°	1872.2	1878.7	1885.2	1875.5	1875.5	1872.2	1872.2	1862.5
15°	1804.1	1810.6	1813.8	1807.4	1807.4	1804.1	1800.9	1797.6
17.5°	1732.7	1736.0	1742.5	1732.7	1739.2	1732.7	1732.7	1726.2
20°	1651.6	1661.3	1664.6	1654.8	1658.1	1654.8	1654.8	1654.8
22.5°	1573.7	1580.2	1583.5	1577.0	1580.2	1573.7	1577.0	1570.5
25°	1492.6	1495.9	1499.1	1492.6	1499.1	1495.9	1492.6	1492.6
27.5°	1408.2	1411.5	1414.7	1408.2	1414.7	1411.5	1414.7	1408.2
30°	1317.4	1323.9	1330.4	1323.9	1327.1	1323.9	1323.9	1320.6
32.5°	1226.5	1233.0	1239.5	1233.0	1239.5	1233.0	1236.3	1229.8
35°	1142.2	1145.4	1148.7	1142.2	1145.4	1145.4	1145.4	1142.2
37.5°	1048.1	1054.6	1054.6	1051.3	1057.8	1054.6	1054.6	1048.1
40°	957.2	960.5	963.7	957.2	960.5	957.2	960.5	957.2
42.5°	863.1	869.6	872.9	866.4	866.4	866.4	863.1	866.4
45°	765.8	772.3	778.8	769.0	772.3	772.3	772.3	769.0
47.5°	678.2	678.2	681.4	678.2	681.4	674.9	681.4	678.2
50°	587.3	587.3	593.8	587.3	587.3	587.3	587.3	587.3
52.5°	499.7	502.9	502.9	496.5	499.7	496.5	499.7	496.5
55°	418.6	418.6	421.8	418.6	418.6	418.6	418.6	418.6
57.5°	347.2	350.4	350.4	347.2	350.4	347.2	347.2	347.2
60°	288.8	288.8	288.8	285.5	288.8	285.5	288.8	285.5
62.5°	233.6	236.9	236.9	233.6	236.9	233.6	233.6	233.6
65°	191.4	191.4	191.4	191.4	191.4	191.4	191.4	188.2
67.5°	152.5	152.5	155.8	152.5	155.8	155.8	155.8	155.8
70°	123.3	123.3	123.3	123.3	123.3	123.3	123.3	123.3
72.5°	94.1	94.1	97.3	94.1	94.1	94.1	94.1	94.1
75°	71.4	71.4	71.4	71.4	71.4	68.1	68.1	71.4
77.5°	48.7	48.7	48.7	48.7	48.7	48.7	48.7	51.9
80°	32.4	32.4	32.4	32.4	29.2	29.2	32.4	29.2
82.5°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
85°	9.7	9.7	6.5	6.5	6.5	6.5	6.5	6.5
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)