

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: P251634

Luminaire Tested: **LD4B40D010 EU4B30508027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251634
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30508027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 3470.0 lumens
Efficiency: N/A
Efficacy: 80.7 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

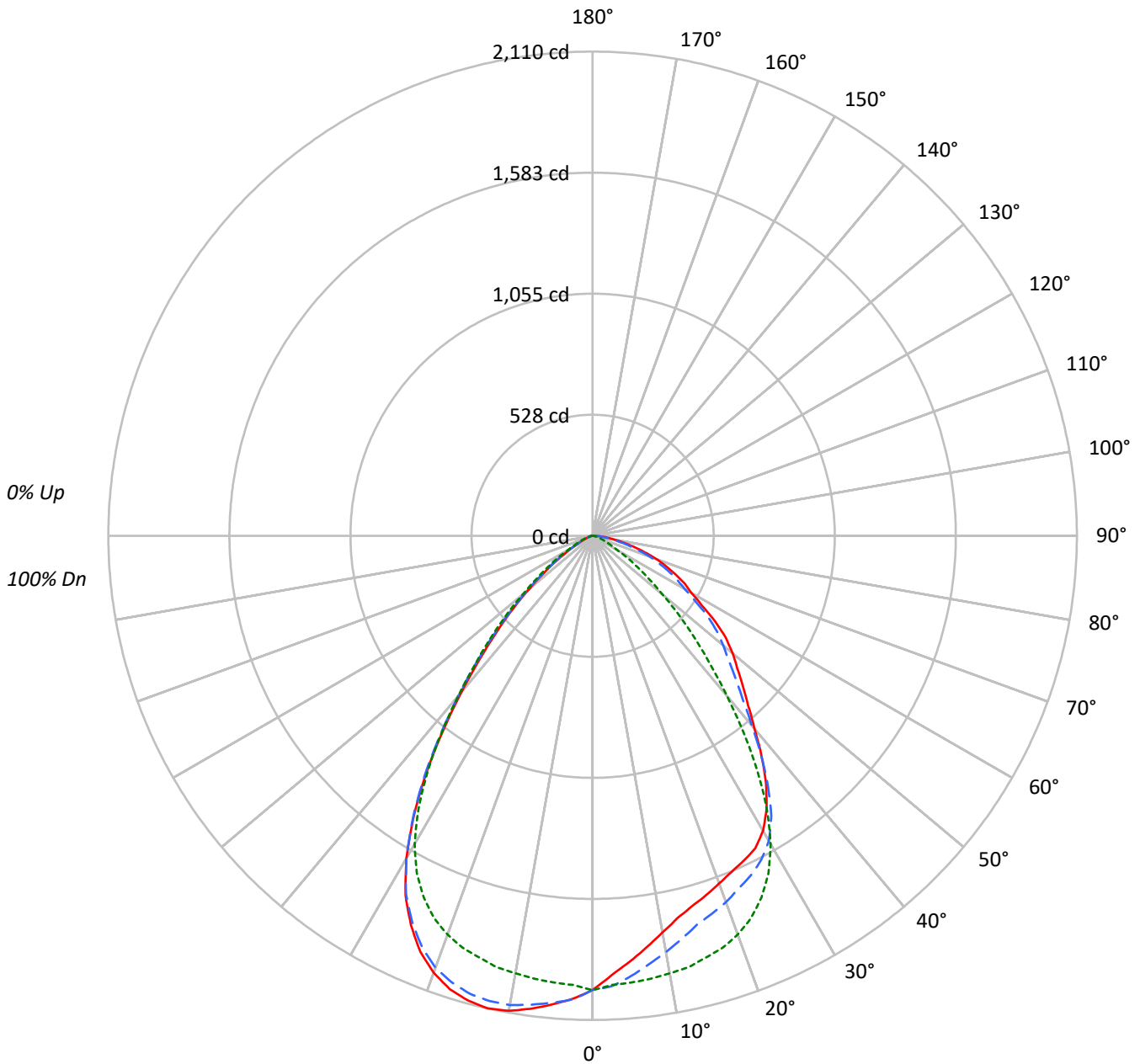
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	192928	192928	192928
5°	182180	191170	200650
10°	173687	191609	208017
15°	168587	192015	211569
20°	167206	191817	210070
25°	167881	187086	201345
30°	167081	174542	182577
35°	156606	149027	150538
40°	139550	115543	112948
45°	127627	86142	80863
50°	120673	60344	54537
55°	110970	40745	34237
60°	96951	23858	18887
65°	91781	15289	10585
70°	83604	10914	6554
75°	69172	7682	4820
80°	54384	4322	2862
85°	48530	2907	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.0	5.4
10°-20°	536.6	15.5
20°-30°	795.4	22.9
30°-40°	796.5	23.0
40°-50°	556.7	16.0
50°-60°	331.2	9.5
60°-70°	172.9	5.0
70°-80°	76.9	2.2
80°-90°	16.8	0.5
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°	1519.1	43.8
0°-40°	2315.6	66.7
0°-60°	3203.5	92.3
0°-90°	3470.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3470.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1980	1980	1980	1980	1980	
5°	1862	1926	1954	2043	2051	175
15°	1671	1755	1903	2066	2097	473
25°	1561	1633	1740	1860	1872	719
35°	1316	1332	1253	1276	1265	816
45°	926	880	625	605	587	719
55°	653	612	240	209	202	579
65°	398	365	66	48	46	394
75°	184	161	20	13	13	199
85°	43	33	3	3	0	49
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°	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6
2.5°	1915.8	1938.8	1915.8	1923.5	1954.1	1926.0	1941.3	1941.3	1933.7	1951.5	1964.3
5°	1862.2	1885.2	1862.2	1872.4	1905.6	1877.5	1895.4	1890.3	1892.9	1908.2	1926.0
7.5°	1808.7	1826.5	1806.1	1818.9	1849.5	1826.5	1841.8	1841.8	1844.4	1867.3	1882.7
10°	1755.1	1770.4	1755.1	1765.3	1798.5	1778.1	1788.3	1790.8	1798.5	1818.9	1841.8
12.5°	1706.6	1719.4	1704.1	1719.4	1747.4	1727.0	1739.8	1742.3	1750.0	1773.0	1798.5
15°	1670.9	1683.7	1668.4	1681.1	1706.6	1691.3	1701.5	1706.6	1711.7	1732.1	1755.1
17.5°	1642.9	1653.1	1640.3	1655.6	1676.0	1658.2	1673.5	1673.5	1681.1	1701.5	1727.0
20°	1612.2	1622.4	1612.2	1625.0	1648.0	1632.7	1645.4	1645.4	1653.1	1676.0	1699.0
22.5°	1584.2	1589.3	1584.2	1594.4	1617.3	1604.6	1612.2	1614.8	1622.4	1642.9	1663.3
25°	1561.2	1571.4	1566.3	1576.5	1591.8	1579.1	1586.7	1589.3	1596.9	1614.8	1632.7
27.5°	1535.7	1540.8	1535.7	1548.5	1561.2	1551.0	1558.7	1556.1	1561.2	1576.5	1591.8
30°	1484.7	1489.8	1489.8	1497.4	1507.7	1502.6	1510.2	1502.6	1507.7	1520.4	1535.7
32.5°	1410.7	1413.3	1415.8	1423.5	1431.1	1423.5	1428.6	1428.6	1428.6	1438.8	1449.0
35°	1316.3	1321.4	1318.9	1324.0	1331.6	1329.1	1329.1	1326.5	1321.4	1326.5	1331.6
37.5°	1209.2	1201.5	1201.5	1209.2	1214.3	1204.1	1209.2	1204.1	1204.1	1206.6	1206.6
40°	1096.9	1089.3	1096.9	1099.5	1102.0	1096.9	1094.4	1089.3	1081.6	1084.2	1079.1
42.5°	1002.6	997.4	1000.0	1000.0	1002.6	997.4	1000.0	989.8	982.1	977.0	969.4
45°	926.0	918.4	926.0	920.9	920.9	918.4	915.8	910.7	900.5	892.9	880.1
47.5°	854.6	854.6	857.1	857.1	857.1	852.0	852.0	841.8	831.6	821.4	803.6
50°	795.9	790.8	801.0	801.0	793.4	790.8	793.4	780.6	773.0	760.2	742.3
52.5°	732.1	732.1	734.7	734.7	732.1	727.0	729.6	719.4	711.7	699.0	681.1
55°	653.1	648.0	655.6	655.6	653.1	650.5	653.1	645.4	637.8	627.6	612.2
57.5°	563.8	561.2	566.3	568.9	563.8	563.8	566.3	558.7	556.1	545.9	530.6
60°	497.4	494.9	500.0	502.6	497.4	497.4	497.4	487.2	482.1	471.9	461.7
62.5°	451.5	449.0	454.1	451.5	449.0	446.4	449.0	438.8	433.7	423.5	413.3
65°	398.0	400.5	403.1	403.1	400.5	398.0	398.0	392.9	387.8	377.6	364.8
67.5°	346.9	346.9	349.5	352.0	349.5	349.5	349.5	341.8	336.7	329.1	313.8
70°	293.4	290.8	298.5	298.5	293.4	295.9	293.4	290.8	285.7	275.5	262.8
72.5°	237.2	237.2	239.8	239.8	237.2	237.2	237.2	234.7	227.0	221.9	209.2
75°	183.7	183.7	186.2	188.8	183.7	183.7	186.2	181.1	176.0	168.4	160.7
77.5°	137.8	135.2	137.8	137.8	135.2	135.2	135.2	132.7	130.1	122.4	114.8
80°	96.9	94.4	96.9	96.9	96.9	94.4	94.4	91.8	91.8	86.7	79.1
82.5°	66.3	63.8	66.3	66.3	66.3	63.8	63.8	63.8	61.2	58.7	53.6
85°	43.4	40.8	40.8	43.4	40.8	40.8	40.8	40.8	38.3	35.7	33.2
87.5°	20.4	20.4	20.4	20.4	20.4	20.4	20.4	17.9	17.9	17.9	15.3
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°	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6
2.5°	1954.1	1949.0	1964.3	1959.2	1961.7	1949.0	1969.4	1959.2	1971.9	1959.2	1984.7
5°	1920.9	1915.8	1938.8	1936.2	1938.8	1928.6	1951.5	1949.0	1964.3	1954.1	1982.1
7.5°	1885.2	1880.1	1905.6	1908.2	1913.3	1903.1	1933.7	1933.7	1949.0	1946.4	1977.0
10°	1844.4	1846.9	1872.4	1877.5	1887.8	1882.7	1910.7	1918.4	1938.8	1936.2	1974.5
12.5°	1806.1	1806.1	1839.3	1849.5	1857.1	1854.6	1887.8	1898.0	1920.9	1926.0	1961.7
15°	1767.9	1770.4	1801.0	1816.3	1826.5	1824.0	1859.7	1872.4	1900.5	1903.1	1946.4
17.5°	1737.2	1734.7	1767.9	1780.6	1795.9	1793.4	1831.6	1846.9	1875.0	1882.7	1923.5
20°	1711.7	1709.2	1739.8	1755.1	1765.3	1762.8	1801.0	1818.9	1844.4	1849.5	1890.3
22.5°	1681.1	1676.0	1706.6	1719.4	1729.6	1727.0	1760.2	1773.0	1798.5	1803.6	1841.8
25°	1645.4	1640.3	1668.4	1676.0	1683.7	1678.6	1706.6	1714.3	1734.7	1739.8	1778.1
27.5°	1604.6	1591.8	1614.8	1614.8	1619.9	1612.2	1632.7	1640.3	1658.2	1658.2	1693.9
30°	1540.8	1523.0	1535.7	1533.2	1535.7	1525.5	1538.3	1540.8	1553.6	1551.0	1576.5
32.5°	1451.5	1426.0	1433.7	1426.0	1418.4	1403.1	1418.4	1413.3	1423.5	1413.3	1436.2
35°	1329.1	1303.6	1301.0	1290.8	1283.2	1270.4	1270.4	1257.7	1260.2	1252.6	1267.9
37.5°	1196.4	1163.3	1158.2	1137.8	1125.0	1109.7	1109.7	1099.5	1086.7	1081.6	1094.4
40°	1066.3	1030.6	1017.9	984.7	971.9	956.6	946.4	933.7	928.6	908.2	918.4
42.5°	954.1	915.8	887.8	852.0	839.3	816.3	801.0	785.7	778.1	755.1	765.3
45°	859.7	813.8	783.2	737.2	719.4	693.9	670.9	653.1	635.2	625.0	619.9
47.5°	780.6	732.1	691.3	640.3	612.2	589.3	558.7	540.8	517.9	505.1	497.4
50°	714.3	660.7	614.8	556.1	528.1	502.6	466.8	438.8	418.4	398.0	392.9
52.5°	655.6	599.5	548.5	482.1	449.0	418.4	380.1	349.5	331.6	308.7	306.1
55°	586.7	538.3	482.1	413.3	380.1	349.5	308.7	278.1	255.1	239.8	234.7
57.5°	512.8	466.8	413.3	344.4	311.2	278.1	239.8	211.7	191.3	178.6	176.0
60°	443.9	400.5	349.5	280.6	247.4	219.4	178.6	150.5	132.7	122.4	117.3
62.5°	392.9	352.0	303.6	239.8	209.2	181.1	142.9	117.3	102.0	91.8	86.7
65°	344.4	303.6	260.2	201.5	176.0	150.5	114.8	91.8	76.5	66.3	61.2
67.5°	293.4	257.7	216.8	168.4	142.9	122.4	91.8	71.4	58.7	51.0	45.9
70°	242.3	209.2	176.0	135.2	117.3	96.9	71.4	56.1	43.4	38.3	33.2
72.5°	191.3	165.8	137.8	104.6	89.3	76.5	56.1	40.8	33.2	28.1	23.0
75°	142.9	125.0	102.0	79.1	66.3	56.1	40.8	30.6	25.5	20.4	17.9
77.5°	102.0	86.7	71.4	53.6	48.5	40.8	28.1	23.0	17.9	12.8	10.2
80°	68.9	61.2	48.5	38.3	30.6	28.1	20.4	15.3	10.2	7.7	7.7
82.5°	45.9	38.3	30.6	23.0	20.4	17.9	12.8	10.2	7.7	5.1	5.1
85°	28.1	23.0	17.9	12.8	12.8	10.2	7.7	5.1	2.6	2.6	2.6
87.5°	12.8	10.2	7.7	5.1	5.1	2.6	2.6	2.6	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°	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6
2.5°	2005.1	1989.8	1979.6	1992.3	1997.4	1989.8	1997.4	2010.2	2023.0	2025.5	1989.8
5°	2007.7	1992.3	1987.2	2002.5	2005.1	2002.5	2010.2	2028.1	2043.4	2048.5	2012.8
7.5°	2007.7	1997.4	1994.9	2012.8	2015.3	2012.8	2025.5	2045.9	2061.2	2071.4	2035.7
10°	2002.5	1997.4	2000.0	2015.3	2020.4	2020.4	2038.3	2061.2	2076.5	2086.7	2051.0
12.5°	1994.9	1994.9	1994.9	2012.8	2017.9	2020.4	2035.7	2066.3	2076.5	2091.8	2056.1
15°	1982.1	1982.1	1982.1	2000.0	2007.7	2007.7	2025.5	2053.6	2066.3	2081.6	2045.9
17.5°	1959.2	1959.2	1961.7	1977.0	1984.7	1984.7	2002.5	2033.2	2040.8	2058.7	2023.0
20°	1926.0	1926.0	1928.6	1943.9	1951.5	1946.4	1969.4	1994.9	2002.5	2017.9	1982.1
22.5°	1877.5	1877.5	1877.5	1892.9	1898.0	1895.4	1918.4	1941.3	1941.3	1961.7	1923.5
25°	1806.1	1811.2	1806.1	1821.4	1826.5	1824.0	1844.4	1864.8	1859.7	1882.7	1844.4
27.5°	1719.4	1716.8	1716.8	1729.6	1729.6	1727.0	1742.3	1765.3	1760.2	1775.5	1739.8
30°	1599.5	1607.1	1594.4	1612.2	1604.6	1599.5	1609.7	1630.1	1622.4	1635.2	1607.1
32.5°	1461.7	1451.5	1451.5	1451.5	1456.6	1443.9	1454.1	1464.3	1456.6	1469.4	1438.8
35°	1280.6	1283.2	1275.5	1278.1	1280.6	1265.3	1275.5	1285.7	1275.5	1283.2	1255.1
37.5°	1099.5	1102.0	1084.2	1094.4	1084.2	1079.1	1089.3	1094.4	1084.2	1091.8	1061.2
40°	918.4	913.3	910.7	910.7	913.3	900.5	908.2	915.8	908.2	913.3	885.2
42.5°	760.2	757.7	752.6	755.1	747.4	744.9	747.4	755.1	747.4	752.6	732.1
45°	622.4	617.3	609.7	612.2	612.2	599.5	607.1	612.2	604.6	607.1	589.3
47.5°	494.9	487.2	487.2	484.7	484.7	479.6	487.2	484.7	477.0	482.1	464.3
50°	385.2	380.1	380.1	380.1	380.1	372.4	375.0	380.1	372.4	372.4	362.2
52.5°	301.0	293.4	288.3	288.3	288.3	285.7	285.7	288.3	280.6	280.6	278.1
55°	227.0	224.5	216.8	216.8	216.8	209.2	211.7	211.7	209.2	209.2	201.5
57.5°	168.4	160.7	155.6	155.6	150.5	150.5	148.0	150.5	145.4	145.4	140.3
60°	112.2	107.1	104.6	102.0	102.0	99.5	102.0	99.5	99.5	96.9	94.4
62.5°	81.6	76.5	71.4	71.4	71.4	68.9	68.9	68.9	68.9	68.9	66.3
65°	58.7	53.6	53.6	51.0	51.0	48.5	48.5	48.5	48.5	48.5	45.9
67.5°	40.8	38.3	35.7	35.7	35.7	35.7	35.7	35.7	33.2	33.2	33.2
70°	30.6	28.1	25.5	25.5	25.5	25.5	25.5	23.0	25.5	25.5	23.0
72.5°	20.4	20.4	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
75°	15.3	15.3	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
77.5°	10.2	10.2	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
80°	7.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
82.5°	5.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
85°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	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: P251634

CATALOG NUMBER: LD4B40D010 EU4B30508027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6	1979.6
2.5°	2028.1	2025.5	2020.4	2028.1	2007.7	2000.0	1997.4	2020.4
5°	2056.1	2051.0	2051.0	2058.7	2035.7	2030.6	2025.5	2051.0
7.5°	2081.6	2076.5	2076.5	2084.2	2063.8	2058.7	2053.6	2079.1
10°	2096.9	2096.9	2096.9	2102.0	2084.2	2079.1	2076.5	2102.0
12.5°	2104.6	2104.6	2102.0	2112.2	2089.3	2089.3	2084.2	2109.7
15°	2094.4	2094.4	2094.4	2102.0	2081.6	2076.5	2076.5	2096.9
17.5°	2068.9	2068.9	2066.3	2074.0	2051.0	2051.0	2048.5	2071.4
20°	2030.6	2030.6	2025.5	2035.7	2012.8	2005.1	2002.5	2025.5
22.5°	1969.4	1966.8	1964.3	1969.4	1949.0	1943.9	1941.3	1961.7
25°	1890.3	1887.8	1882.7	1887.8	1864.8	1857.1	1857.1	1872.4
27.5°	1778.1	1778.1	1770.4	1778.1	1752.5	1750.0	1747.4	1765.3
30°	1640.3	1630.1	1625.0	1635.2	1609.7	1609.7	1604.6	1622.4
32.5°	1469.4	1459.2	1456.6	1461.7	1438.8	1431.1	1441.3	1451.5
35°	1273.0	1275.5	1265.3	1265.3	1244.9	1247.4	1250.0	1265.3
37.5°	1084.2	1079.1	1076.5	1079.1	1063.8	1058.7	1053.6	1068.9
40°	908.2	895.4	892.9	892.9	880.1	877.6	880.1	887.8
42.5°	742.3	739.8	729.6	734.7	721.9	727.0	724.5	724.5
45°	599.5	602.0	591.8	599.5	589.3	581.6	581.6	586.7
47.5°	474.5	474.5	471.9	471.9	464.3	466.8	461.7	469.4
50°	367.3	367.3	362.2	364.8	359.7	359.7	357.1	359.7
52.5°	280.6	278.1	278.1	275.5	270.4	273.0	275.5	270.4
55°	204.1	206.6	201.5	204.1	199.0	201.5	199.0	201.5
57.5°	140.3	142.9	137.8	142.9	137.8	140.3	137.8	137.8
60°	96.9	96.9	94.4	96.9	94.4	94.4	91.8	96.9
62.5°	66.3	66.3	66.3	66.3	66.3	63.8	66.3	66.3
65°	48.5	45.9	45.9	45.9	45.9	45.9	45.9	45.9
67.5°	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
70°	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
72.5°	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
75°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
77.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
80°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
85°	2.6	2.6	2.6	0.0	2.6	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)