

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: P251556

Luminaire Tested: **LD4B40D010 EU4B30508027 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251556
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: LD4B40D010 EU4B30508027 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3608.0 lumens
Efficiency: N/A
Efficacy: 83.9 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

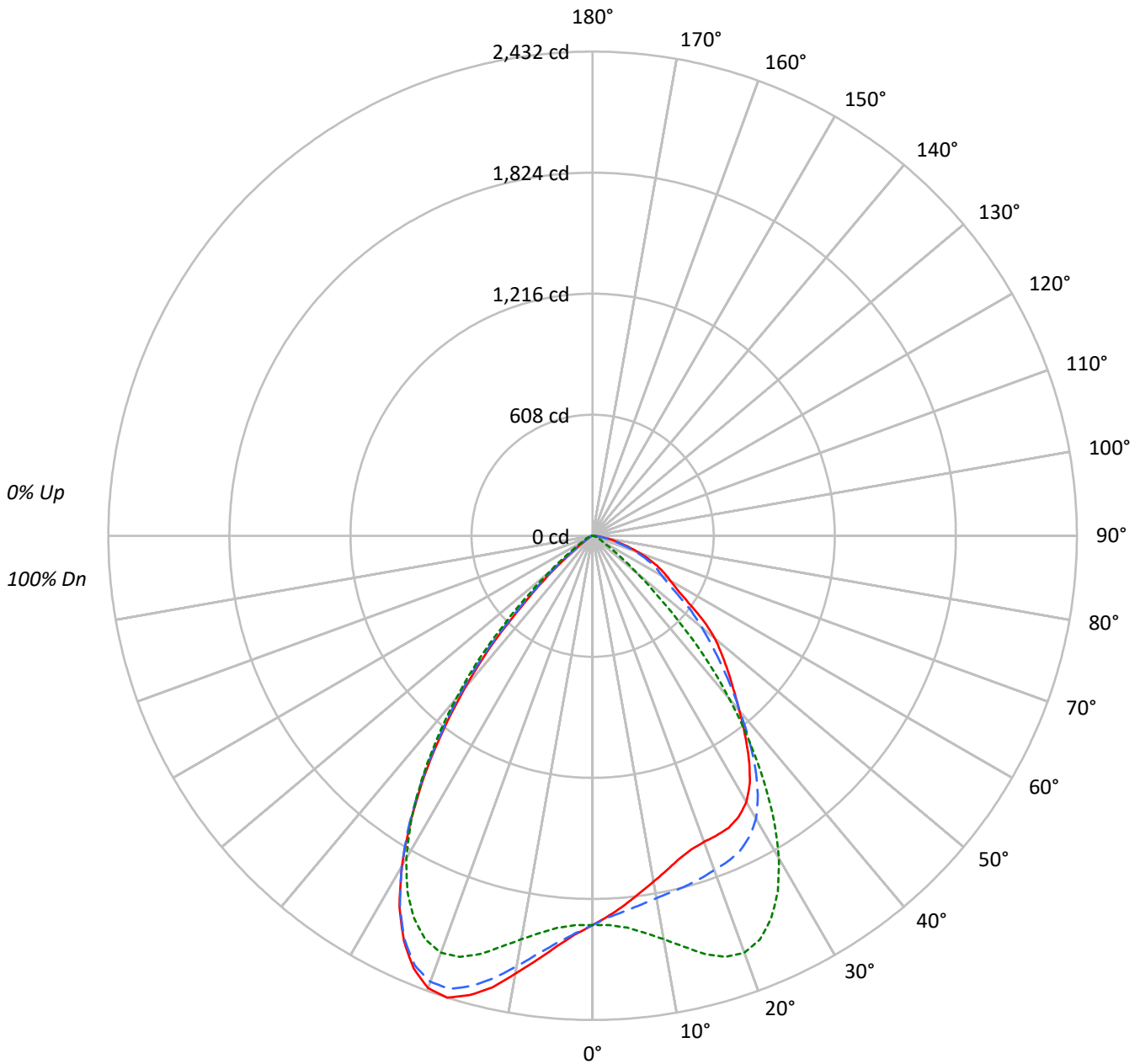
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	190550	190550	190550
5°	182033	193274	202509
10°	174538	203594	221021
15°	169455	219419	241051
20°	169684	231103	250694
25°	174010	228088	241261
30°	173776	210542	215426
35°	162769	177950	175523
40°	145797	135734	126650
45°	132272	86183	70705
50°	121522	43727	30187
55°	99756	19523	9974
60°	87556	10954	5477
65°	82395	8233	4128
70°	70553	6554	3647
75°	53809	4820	2899
80°	38669	2862	1459
85°	28514	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.9	5.3
10°-20°	591.9	16.4
20°-30°	915.7	25.4
30°-40°	902.3	25.0
40°-50°	554.0	15.4
50°-60°	246.4	6.8
60°-70°	137.6	3.8
70°-80°	59.6	1.7
80°-90°	10.7	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°	1697.6	47.0
0°-40°	2599.8	72.1
0°-60°	3400.2	94.2
0°-90°	3608.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3608.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1955	1955	1955	1955	1955	
5°	1861	1891	1976	2052	2070	175
15°	1680	1820	2175	2341	2389	477
25°	1618	1748	2121	2236	2244	743
35°	1368	1424	1496	1491	1475	849
45°	960	911	625	546	513	743
55°	587	531	115	66	59	540
65°	357	322	36	20	18	350
75°	143	122	13	8	8	157
85°	26	20	0	0	0	32
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°	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2
2.5°	1909.2	1909.2	1909.2	1909.2	1914.3	1906.7	1914.3	1914.3	1922.0	1924.5	1916.9
5°	1860.7	1858.2	1860.7	1860.7	1865.8	1863.3	1870.9	1876.0	1886.3	1891.4	1891.4
7.5°	1809.7	1809.7	1809.7	1814.8	1822.4	1819.9	1827.5	1835.2	1850.5	1860.7	1868.4
10°	1763.7	1761.2	1768.8	1771.4	1779.0	1779.0	1791.8	1799.5	1817.3	1837.8	1848.0
12.5°	1720.3	1717.8	1722.9	1730.6	1743.3	1743.3	1753.5	1766.3	1791.8	1814.8	1832.6
15°	1679.5	1682.1	1689.7	1694.8	1710.1	1710.1	1722.9	1738.2	1766.3	1794.4	1819.9
17.5°	1651.4	1654.0	1659.1	1666.7	1682.1	1682.1	1694.8	1712.7	1743.3	1773.9	1804.6
20°	1636.1	1638.7	1643.8	1651.4	1664.2	1666.7	1677.0	1697.4	1725.4	1758.6	1786.7
22.5°	1628.5	1633.6	1638.7	1643.8	1656.5	1656.5	1669.3	1684.6	1712.7	1745.9	1771.4
25°	1618.2	1623.3	1625.9	1633.6	1643.8	1643.8	1651.4	1669.3	1694.8	1722.9	1748.4
27.5°	1590.2	1595.3	1597.8	1605.5	1615.7	1613.1	1623.3	1636.1	1659.1	1684.6	1705.0
30°	1544.2	1546.8	1551.9	1554.4	1562.1	1562.1	1569.7	1582.5	1597.8	1620.8	1641.2
32.5°	1470.2	1475.3	1477.9	1480.4	1488.1	1485.5	1488.1	1495.7	1511.0	1531.5	1544.2
35°	1368.1	1378.3	1378.3	1383.4	1386.0	1383.4	1383.4	1393.6	1401.3	1416.6	1424.3
37.5°	1255.8	1263.5	1260.9	1266.0	1268.6	1260.9	1266.0	1268.6	1278.8	1286.4	1289.0
40°	1146.0	1148.6	1148.6	1148.6	1148.6	1146.0	1148.6	1151.1	1158.8	1158.8	1151.1
42.5°	1046.5	1049.1	1049.1	1043.9	1049.1	1046.5	1046.5	1046.5	1046.5	1036.3	1028.6
45°	959.7	962.3	962.3	959.7	959.7	954.6	952.1	949.5	941.8	929.1	911.2
47.5°	878.0	883.1	885.7	880.6	878.0	872.9	872.9	857.6	847.4	832.1	806.6
50°	801.5	806.6	806.6	801.5	801.5	793.8	786.2	781.0	765.7	747.9	717.2
52.5°	704.5	712.1	712.1	709.6	709.6	699.4	696.8	686.6	673.8	653.4	627.9
55°	587.1	597.3	594.7	592.2	587.1	587.1	587.1	579.4	571.7	556.4	530.9
57.5°	502.8	505.4	505.4	502.8	502.8	497.7	497.7	490.1	487.5	472.2	451.8
60°	449.2	449.2	451.8	449.2	446.7	444.1	441.6	436.5	428.8	418.6	403.3
62.5°	405.8	408.4	408.4	405.8	403.3	400.7	398.2	393.1	388.0	380.3	365.0
65°	357.3	362.4	359.9	357.3	354.8	352.2	352.2	347.1	342.0	336.9	321.6
67.5°	303.7	306.3	308.8	303.7	303.7	301.2	301.2	296.1	293.5	283.3	273.1
70°	247.6	250.1	250.1	247.6	247.6	245.0	245.0	242.5	239.9	232.3	222.1
72.5°	194.0	196.5	194.0	191.4	191.4	191.4	188.9	186.3	183.8	178.7	171.0
75°	142.9	142.9	145.5	142.9	140.4	140.4	137.8	137.8	132.7	130.2	122.5
77.5°	102.1	104.6	102.1	102.1	99.5	97.0	97.0	94.4	94.4	91.9	86.8
80°	68.9	68.9	71.5	68.9	66.4	68.9	66.4	63.8	63.8	61.3	56.2
82.5°	43.4	45.9	43.4	43.4	43.4	43.4	43.4	40.8	40.8	38.3	35.7
85°	25.5	25.5	25.5	25.5	25.5	25.5	25.5	23.0	23.0	23.0	20.4
87.5°	12.8	12.8	10.2	10.2	12.8	12.8	12.8	10.2	10.2	10.2	10.2
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°	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2
2.5°	1927.1	1929.6	1934.7	1942.4	1942.4	1937.3	1950.1	1950.1	1955.2	1957.7	1967.9
5°	1906.7	1911.8	1922.0	1934.7	1937.3	1934.7	1952.6	1960.3	1967.9	1975.6	1990.9
7.5°	1888.8	1899.0	1916.9	1934.7	1942.4	1942.4	1970.5	1980.7	1996.0	2011.3	2029.2
10°	1878.6	1893.9	1919.4	1947.5	1955.2	1962.8	1996.0	2016.4	2036.8	2057.3	2082.8
12.5°	1865.8	1893.9	1927.1	1962.8	1978.1	1988.3	2034.3	2059.8	2087.9	2113.4	2146.6
15°	1863.3	1896.5	1939.9	1985.8	2006.2	2021.5	2072.6	2108.3	2141.5	2174.7	2207.9
17.5°	1853.1	1893.9	1947.5	1998.6	2024.1	2044.5	2103.2	2146.6	2184.9	2218.1	2256.4
20°	1840.3	1886.3	1945.0	2001.1	2029.2	2049.6	2113.4	2154.3	2197.6	2228.3	2264.0
22.5°	1822.4	1868.4	1927.1	1983.2	2008.8	2026.6	2090.4	2126.2	2164.5	2195.1	2228.3
25°	1791.8	1835.2	1886.3	1932.2	1957.7	1973.0	2029.2	2062.4	2090.4	2121.1	2151.7
27.5°	1748.4	1781.6	1825.0	1858.2	1873.5	1888.8	1934.7	1962.8	1988.3	2013.9	2034.3
30°	1671.8	1697.4	1728.0	1756.1	1771.4	1773.9	1817.3	1832.6	1853.1	1870.9	1886.3
32.5°	1569.7	1590.2	1608.0	1623.3	1633.6	1636.1	1669.3	1674.4	1694.8	1694.8	1717.8
35°	1439.6	1449.8	1462.5	1462.5	1470.2	1462.5	1485.5	1490.6	1493.2	1495.7	1513.6
37.5°	1291.5	1296.6	1304.3	1289.0	1289.0	1281.3	1289.0	1294.1	1283.9	1283.9	1296.6
40°	1151.1	1140.9	1130.7	1115.4	1107.8	1092.4	1092.4	1079.7	1072.0	1066.9	1069.5
42.5°	1015.9	992.9	969.9	936.7	921.4	906.1	890.8	872.9	867.8	855.1	847.4
45°	885.7	852.5	821.9	768.3	737.7	722.3	689.2	653.4	630.5	625.3	604.9
47.5°	775.9	727.4	676.4	612.6	582.0	553.9	505.4	474.8	444.1	428.8	416.0
50°	678.9	635.6	569.2	500.3	462.0	433.9	380.3	344.6	311.4	288.4	273.1
52.5°	594.7	546.2	485.0	405.8	367.6	336.9	278.2	237.4	209.3	186.3	168.5
55°	500.3	462.0	400.7	326.7	288.4	252.7	201.6	158.3	130.2	114.9	102.1
57.5°	431.4	398.2	339.5	268.0	232.3	199.1	148.0	112.3	89.3	74.0	66.4
60°	385.4	354.8	303.7	234.8	201.6	171.0	122.5	89.3	68.9	56.2	51.0
62.5°	347.1	316.5	270.6	206.7	178.7	148.0	104.6	74.0	56.2	45.9	38.3
65°	303.7	275.7	234.8	178.7	153.1	127.6	89.3	61.3	45.9	35.7	30.6
67.5°	257.8	232.3	196.5	148.0	127.6	107.2	71.5	51.0	38.3	30.6	25.5
70°	209.3	188.9	155.7	120.0	102.1	84.2	58.7	40.8	28.1	23.0	20.4
72.5°	160.8	142.9	120.0	91.9	76.6	63.8	43.4	30.6	23.0	17.9	15.3
75°	114.9	102.1	84.2	66.4	56.2	45.9	33.2	23.0	15.3	12.8	10.2
77.5°	79.1	71.5	58.7	45.9	38.3	33.2	23.0	15.3	12.8	10.2	7.7
80°	51.0	45.9	38.3	28.1	23.0	20.4	12.8	10.2	7.7	5.1	5.1
82.5°	30.6	28.1	23.0	15.3	12.8	10.2	7.7	5.1	5.1	2.6	2.6
85°	17.9	15.3	10.2	7.7	7.7	5.1	5.1	2.6	2.6	0.0	0.0
87.5°	7.7	5.1	5.1	2.6	2.6	2.6	2.6	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°	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2
2.5°	1962.8	1975.6	1973.0	1980.7	1978.1	1978.1	1990.9	1985.8	1998.6	1998.6	2001.1
5°	1990.9	2008.8	2008.8	2021.5	2019.0	2024.1	2036.8	2036.8	2052.2	2057.3	2057.3
7.5°	2031.7	2054.7	2059.8	2072.6	2075.1	2085.3	2095.6	2098.1	2118.5	2123.6	2126.2
10°	2087.9	2116.0	2123.6	2136.4	2141.5	2151.7	2164.5	2169.6	2195.1	2197.6	2207.9
12.5°	2156.8	2187.4	2195.1	2210.4	2213.0	2225.7	2243.6	2248.7	2274.2	2281.9	2289.5
15°	2223.2	2251.2	2264.0	2279.3	2281.9	2297.2	2312.5	2317.6	2340.6	2350.8	2358.5
17.5°	2269.1	2302.3	2310.0	2330.4	2330.4	2343.1	2358.5	2363.6	2386.5	2394.2	2399.3
20°	2279.3	2310.0	2320.2	2335.5	2338.0	2345.7	2358.5	2363.6	2384.0	2386.5	2394.2
22.5°	2241.0	2271.7	2276.8	2292.1	2294.6	2302.3	2312.5	2310.0	2335.5	2332.9	2335.5
25°	2159.4	2187.4	2187.4	2205.3	2202.8	2210.4	2215.5	2213.0	2235.9	2235.9	2235.9
27.5°	2041.9	2067.5	2070.0	2082.8	2075.1	2077.7	2082.8	2080.2	2095.6	2095.6	2095.6
30°	1896.5	1916.9	1909.2	1919.4	1914.3	1919.4	1914.3	1911.8	1916.9	1922.0	1919.4
32.5°	1715.2	1730.6	1730.6	1733.1	1733.1	1717.8	1712.7	1712.7	1710.1	1707.6	1707.6
35°	1505.9	1518.7	1513.6	1513.6	1511.0	1495.7	1488.1	1483.0	1490.6	1475.3	1485.5
37.5°	1291.5	1294.1	1286.4	1283.9	1271.1	1271.1	1258.4	1248.1	1253.2	1250.7	1240.5
40°	1056.7	1066.9	1051.6	1046.5	1054.2	1043.9	1031.2	1018.4	1028.6	1015.9	1021.0
42.5°	827.0	824.4	819.3	819.3	819.3	804.0	801.5	798.9	801.5	791.3	783.6
45°	597.3	589.6	582.0	582.0	571.7	566.6	566.6	559.0	546.2	546.2	530.9
47.5°	403.3	385.4	380.3	377.8	372.7	372.7	367.6	362.4	359.9	347.1	347.1
50°	262.9	245.0	239.9	237.4	239.9	234.8	229.7	224.6	219.5	217.0	211.9
52.5°	158.3	150.6	145.5	142.9	137.8	135.3	132.7	127.6	125.1	125.1	122.5
55°	94.4	86.8	76.6	76.6	76.6	74.0	71.5	68.9	66.4	66.4	63.8
57.5°	58.7	53.6	48.5	45.9	45.9	45.9	43.4	43.4	43.4	43.4	40.8
60°	43.4	38.3	35.7	35.7	35.7	33.2	33.2	33.2	33.2	30.6	30.6
62.5°	33.2	30.6	28.1	28.1	25.5	25.5	25.5	25.5	25.5	25.5	23.0
65°	28.1	23.0	23.0	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
67.5°	20.4	17.9	17.9	17.9	17.9	15.3	15.3	15.3	15.3	15.3	15.3
70°	15.3	15.3	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
72.5°	12.8	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
75°	10.2	10.2	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
77.5°	7.7	7.7	7.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
80°	5.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	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: P251556

CATALOG NUMBER: LD4B40D010 EU4B30508027 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2	1955.2
2.5°	2001.1	2013.9	2001.1	2001.1	2008.8	2006.2	2011.3	2003.7
5°	2059.8	2077.7	2064.9	2062.4	2075.1	2072.6	2075.1	2070.0
7.5°	2131.3	2149.2	2136.4	2136.4	2149.2	2146.6	2154.3	2149.2
10°	2213.0	2233.4	2215.5	2218.1	2235.9	2233.4	2233.4	2233.4
12.5°	2297.2	2317.6	2307.4	2307.4	2320.2	2322.7	2325.3	2322.7
15°	2366.1	2386.5	2373.8	2373.8	2391.6	2389.1	2391.6	2389.1
17.5°	2406.9	2427.4	2412.1	2412.1	2427.4	2427.4	2429.9	2432.5
20°	2396.7	2419.7	2406.9	2401.8	2419.7	2419.7	2417.2	2417.2
22.5°	2338.0	2358.5	2348.2	2343.1	2355.9	2350.8	2348.2	2350.8
25°	2235.9	2256.4	2235.9	2235.9	2246.1	2243.6	2246.1	2243.6
27.5°	2098.1	2113.4	2093.0	2090.4	2100.7	2095.6	2093.0	2100.7
30°	1914.3	1929.6	1919.4	1911.8	1924.5	1916.9	1911.8	1914.3
32.5°	1705.0	1715.2	1710.1	1697.4	1705.0	1699.9	1697.4	1699.9
35°	1475.3	1488.1	1467.7	1465.1	1477.9	1467.7	1462.5	1475.3
37.5°	1237.9	1253.2	1235.4	1237.9	1230.3	1232.8	1227.7	1235.4
40°	1013.3	1010.8	1005.7	1003.1	1005.7	998.0	1003.1	995.5
42.5°	770.8	775.9	773.4	770.8	773.4	763.2	758.1	768.3
45°	536.0	533.5	528.4	523.2	523.2	520.7	520.7	513.0
47.5°	344.6	342.0	331.8	334.4	339.5	334.4	326.7	336.9
50°	209.3	206.7	206.7	204.2	209.3	204.2	199.1	199.1
52.5°	117.4	117.4	114.9	114.9	114.9	114.9	112.3	109.8
55°	63.8	61.3	61.3	61.3	58.7	58.7	58.7	58.7
57.5°	40.8	40.8	40.8	40.8	40.8	40.8	38.3	38.3
60°	30.6	30.6	30.6	30.6	28.1	30.6	28.1	28.1
62.5°	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
65°	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
67.5°	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
70°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
72.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
75°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
77.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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)