

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: P251640

Luminaire Tested: **LD4B40D010 EU4B30509027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251640
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 EU4B30509027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2979.0 lumens
Efficiency: N/A
Efficacy: 69.2 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

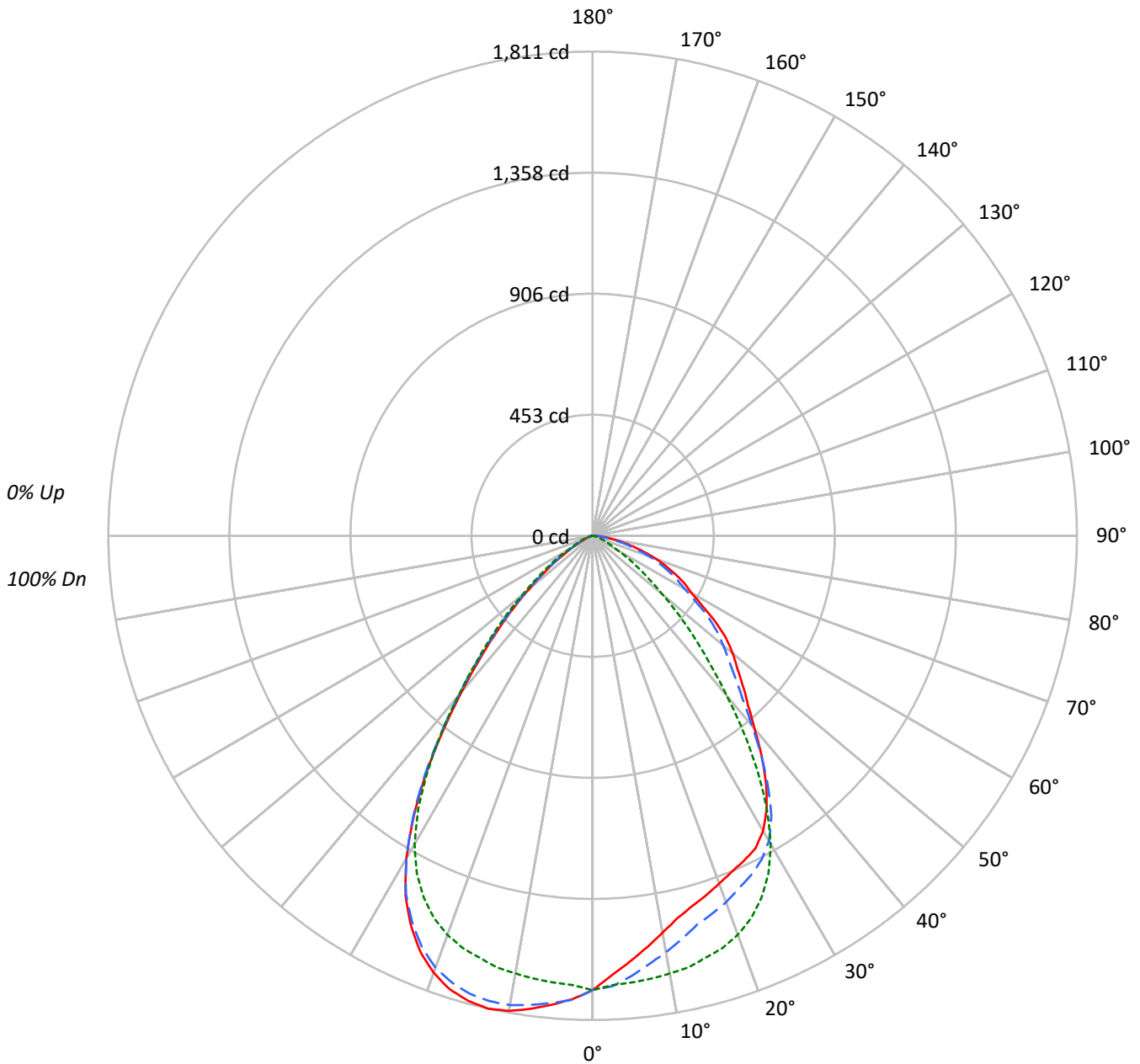
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	165630	165630	165630
5°	156401	164120	172260
10°	149115	164504	178586
15°	144735	164844	181633
20°	143549	164675	180346
25°	144127	160611	172859
30°	143437	149851	156750
35°	134453	127933	129242
40°	119805	99195	96956
45°	109572	73958	69423
50°	103600	51793	46820
55°	95270	34985	29395
60°	83249	20486	16217
65°	78775	13121	9086
70°	71778	9375	5613
75°	59382	6590	4142
80°	46695	3704	2469
85°	41597	2460	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	160.6	5.4
10°-20°	460.7	15.5
20°-30°	682.9	22.9
30°-40°	683.8	23.0
40°-50°	477.9	16.0
50°-60°	284.4	9.5
60°-70°	148.4	5.0
70°-80°	66.0	2.2
80°-90°	14.4	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°	1304.1	43.8
0°-40°	1987.9	66.7
0°-60°	2750.2	92.3
0°-90°	2979.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2979.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1700	1700	1700	1700	1700	
5°	1599	1654	1678	1754	1761	150
15°	1434	1507	1634	1774	1800	406
25°	1340	1402	1494	1596	1608	618
35°	1130	1143	1075	1095	1086	701
45°	795	756	537	519	504	617
55°	561	526	206	180	173	498
65°	342	313	57	42	39	338
75°	158	138	18	11	11	171
85°	37	28	2	2	0	42
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°	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5
2.5°	1644.7	1664.4	1644.7	1651.3	1677.6	1653.5	1666.6	1666.6	1660.1	1675.4	1686.3
5°	1598.7	1618.4	1598.7	1607.5	1636.0	1611.9	1627.2	1622.8	1625.0	1638.2	1653.5
7.5°	1552.7	1568.1	1550.6	1561.5	1587.8	1568.1	1581.2	1581.2	1583.4	1603.1	1616.3
10°	1506.8	1519.9	1506.8	1515.5	1544.0	1526.5	1535.2	1537.4	1544.0	1561.5	1581.2
12.5°	1465.1	1476.1	1463.0	1476.1	1500.2	1482.7	1493.6	1495.8	1502.4	1522.1	1544.0
15°	1434.5	1445.4	1432.3	1443.2	1465.1	1452.0	1460.8	1465.1	1469.5	1487.0	1506.8
17.5°	1410.4	1419.2	1408.2	1421.3	1438.9	1423.5	1436.7	1436.7	1443.2	1460.8	1482.7
20°	1384.1	1392.9	1384.1	1395.1	1414.8	1401.6	1412.6	1412.6	1419.2	1438.9	1458.6
22.5°	1360.0	1364.4	1360.0	1368.8	1388.5	1377.5	1384.1	1386.3	1392.9	1410.4	1427.9
25°	1340.3	1349.1	1344.7	1353.5	1366.6	1355.6	1362.2	1364.4	1371.0	1386.3	1401.6
27.5°	1318.4	1322.8	1318.4	1329.4	1340.3	1331.6	1338.1	1335.9	1340.3	1353.5	1366.6
30°	1274.6	1279.0	1279.0	1285.6	1294.3	1289.9	1296.5	1289.9	1294.3	1305.3	1318.4
32.5°	1211.1	1213.3	1215.5	1222.0	1228.6	1222.0	1226.4	1226.4	1226.4	1235.2	1244.0
35°	1130.1	1134.4	1132.3	1136.6	1143.2	1141.0	1141.0	1138.8	1134.4	1138.8	1143.2
37.5°	1038.1	1031.5	1031.5	1038.1	1042.5	1033.7	1038.1	1033.7	1033.7	1035.9	1035.9
40°	941.7	935.2	941.7	943.9	946.1	941.7	939.5	935.2	928.6	930.8	926.4
42.5°	860.7	856.3	858.5	858.5	860.7	856.3	858.5	849.7	843.2	838.8	832.2
45°	795.0	788.4	795.0	790.6	790.6	788.4	786.2	781.8	773.1	766.5	755.6
47.5°	733.7	733.7	735.9	735.9	735.9	731.5	731.5	722.7	714.0	705.2	689.9
50°	683.3	678.9	687.7	687.7	681.1	678.9	681.1	670.2	663.6	652.6	637.3
52.5°	628.5	628.5	630.7	630.7	628.5	624.2	626.4	617.6	611.0	600.1	584.7
55°	560.7	556.3	562.8	562.8	560.7	558.5	560.7	554.1	547.5	538.8	525.6
57.5°	484.0	481.8	486.2	488.4	484.0	484.0	486.2	479.6	477.4	468.7	455.5
60°	427.1	424.9	429.3	431.4	427.1	427.1	427.1	418.3	413.9	405.2	396.4
62.5°	387.6	385.4	389.8	387.6	385.4	383.3	385.4	376.7	372.3	363.5	354.8
65°	341.6	343.8	346.0	346.0	343.8	341.6	341.6	337.3	332.9	324.1	313.2
67.5°	297.8	297.8	300.0	302.2	300.0	300.0	300.0	293.5	289.1	282.5	269.4
70°	251.9	249.7	256.2	256.2	251.9	254.0	251.9	249.7	245.3	236.5	225.6
72.5°	203.7	203.7	205.9	205.9	203.7	203.7	203.7	201.5	194.9	190.5	179.6
75°	157.7	157.7	159.9	162.1	157.7	157.7	159.9	155.5	151.1	144.5	138.0
77.5°	118.3	116.1	118.3	118.3	116.1	116.1	116.1	113.9	111.7	105.1	98.6
80°	83.2	81.0	83.2	83.2	83.2	81.0	81.0	78.8	78.8	74.5	67.9
82.5°	56.9	54.8	56.9	56.9	56.9	54.8	54.8	54.8	52.6	50.4	46.0
85°	37.2	35.0	35.0	37.2	35.0	35.0	35.0	35.0	32.9	30.7	28.5
87.5°	17.5	17.5	17.5	17.5	17.5	17.5	17.5	15.3	15.3	15.3	13.1
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°	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5
2.5°	1677.6	1673.2	1686.3	1682.0	1684.2	1673.2	1690.7	1682.0	1692.9	1682.0	1703.9
5°	1649.1	1644.7	1664.4	1662.3	1664.4	1655.7	1675.4	1673.2	1686.3	1677.6	1701.7
7.5°	1618.4	1614.1	1636.0	1638.2	1642.5	1633.8	1660.1	1660.1	1673.2	1671.0	1697.3
10°	1583.4	1585.6	1607.5	1611.9	1620.6	1616.3	1640.3	1646.9	1664.4	1662.3	1695.1
12.5°	1550.6	1550.6	1579.0	1587.8	1594.4	1592.2	1620.6	1629.4	1649.1	1653.5	1684.2
15°	1517.7	1519.9	1546.2	1559.3	1568.1	1565.9	1596.5	1607.5	1631.6	1633.8	1671.0
17.5°	1491.4	1489.2	1517.7	1528.7	1541.8	1539.6	1572.5	1585.6	1609.7	1616.3	1651.3
20°	1469.5	1467.3	1493.6	1506.8	1515.5	1513.3	1546.2	1561.5	1583.4	1587.8	1622.8
22.5°	1443.2	1438.9	1465.1	1476.1	1484.9	1482.7	1511.1	1522.1	1544.0	1548.4	1581.2
25°	1412.6	1408.2	1432.3	1438.9	1445.4	1441.1	1465.1	1471.7	1489.2	1493.6	1526.5
27.5°	1377.5	1366.6	1386.3	1386.3	1390.7	1384.1	1401.6	1408.2	1423.5	1423.5	1454.2
30°	1322.8	1307.5	1318.4	1316.2	1318.4	1309.7	1320.6	1322.8	1333.7	1331.6	1353.5
32.5°	1246.1	1224.2	1230.8	1224.2	1217.7	1204.5	1217.7	1213.3	1222.0	1213.3	1233.0
35°	1141.0	1119.1	1116.9	1108.2	1101.6	1090.6	1090.6	1079.7	1081.9	1075.3	1088.5
37.5°	1027.1	998.7	994.3	976.8	965.8	952.7	952.7	943.9	933.0	928.6	939.5
40°	915.4	884.8	873.8	845.4	834.4	821.3	812.5	801.6	797.2	779.7	788.4
42.5°	819.1	786.2	762.1	731.5	720.5	700.8	687.7	674.5	668.0	648.3	657.0
45°	738.0	698.6	672.3	632.9	617.6	595.7	576.0	560.7	545.3	536.6	532.2
47.5°	670.2	628.5	593.5	549.7	525.6	505.9	479.6	464.3	444.6	433.6	427.1
50°	613.2	567.2	527.8	477.4	453.3	431.4	400.8	376.7	359.2	341.6	337.3
52.5°	562.8	514.7	470.9	413.9	385.4	359.2	326.3	300.0	284.7	265.0	262.8
55°	503.7	462.1	413.9	354.8	326.3	300.0	265.0	238.7	219.0	205.9	201.5
57.5°	440.2	400.8	354.8	295.7	267.2	238.7	205.9	181.8	164.3	153.3	151.1
60°	381.1	343.8	300.0	240.9	212.4	188.3	153.3	129.2	113.9	105.1	100.7
62.5°	337.3	302.2	260.6	205.9	179.6	155.5	122.6	100.7	87.6	78.8	74.5
65°	295.7	260.6	223.4	173.0	151.1	129.2	98.6	78.8	65.7	56.9	52.6
67.5°	251.9	221.2	186.2	144.5	122.6	105.1	78.8	61.3	50.4	43.8	39.4
70°	208.1	179.6	151.1	116.1	100.7	83.2	61.3	48.2	37.2	32.9	28.5
72.5°	164.3	142.4	118.3	89.8	76.7	65.7	48.2	35.0	28.5	24.1	19.7
75°	122.6	107.3	87.6	67.9	56.9	48.2	35.0	26.3	21.9	17.5	15.3
77.5°	87.6	74.5	61.3	46.0	41.6	35.0	24.1	19.7	15.3	11.0	8.8
80°	59.1	52.6	41.6	32.9	26.3	24.1	17.5	13.1	8.8	6.6	6.6
82.5°	39.4	32.9	26.3	19.7	17.5	15.3	11.0	8.8	6.6	4.4	4.4
85°	24.1	19.7	15.3	11.0	11.0	8.8	6.6	4.4	2.2	2.2	2.2
87.5°	11.0	8.8	6.6	4.4	4.4	2.2	2.2	2.2	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°	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5
2.5°	1721.4	1708.2	1699.5	1710.4	1714.8	1708.2	1714.8	1725.8	1736.7	1738.9	1708.2
5°	1723.6	1710.4	1706.1	1719.2	1721.4	1719.2	1725.8	1741.1	1754.2	1758.6	1728.0
7.5°	1723.6	1714.8	1712.6	1728.0	1730.1	1728.0	1738.9	1756.4	1769.6	1778.3	1747.7
10°	1719.2	1714.8	1717.0	1730.1	1734.5	1734.5	1749.9	1769.6	1782.7	1791.5	1760.8
12.5°	1712.6	1712.6	1712.6	1728.0	1732.3	1734.5	1747.7	1773.9	1782.7	1795.8	1765.2
15°	1701.7	1701.7	1701.7	1717.0	1723.6	1723.6	1738.9	1763.0	1773.9	1787.1	1756.4
17.5°	1682.0	1682.0	1684.2	1697.3	1703.9	1703.9	1719.2	1745.5	1752.0	1767.4	1736.7
20°	1653.5	1653.5	1655.7	1668.8	1675.4	1671.0	1690.7	1712.6	1719.2	1732.3	1701.7
22.5°	1611.9	1611.9	1611.9	1625.0	1629.4	1627.2	1646.9	1666.6	1666.6	1684.2	1651.3
25°	1550.6	1554.9	1550.6	1563.7	1568.1	1565.9	1583.4	1600.9	1596.5	1616.3	1583.4
27.5°	1476.1	1473.9	1473.9	1484.9	1484.9	1482.7	1495.8	1515.5	1511.1	1524.3	1493.6
30°	1373.2	1379.7	1368.8	1384.1	1377.5	1373.2	1381.9	1399.4	1392.9	1403.8	1379.7
32.5°	1254.9	1246.1	1246.1	1246.1	1250.5	1239.6	1248.3	1257.1	1250.5	1261.5	1235.2
35°	1099.4	1101.6	1095.0	1097.2	1099.4	1086.3	1095.0	1103.8	1095.0	1101.6	1077.5
37.5°	943.9	946.1	930.8	939.5	930.8	926.4	935.2	939.5	930.8	937.3	911.1
40°	788.4	784.0	781.8	781.8	784.0	773.1	779.7	786.2	779.7	784.0	759.9
42.5°	652.6	650.4	646.1	648.3	641.7	639.5	641.7	648.3	641.7	646.1	628.5
45°	534.4	530.0	523.4	525.6	525.6	514.7	521.2	525.6	519.0	521.2	505.9
47.5°	424.9	418.3	418.3	416.1	416.1	411.7	418.3	416.1	409.5	413.9	398.6
50°	330.7	326.3	326.3	326.3	326.3	319.7	321.9	326.3	319.7	319.7	311.0
52.5°	258.4	251.9	247.5	247.5	247.5	245.3	245.3	247.5	240.9	240.9	238.7
55°	194.9	192.7	186.2	186.2	186.2	179.6	181.8	181.8	179.6	179.6	173.0
57.5°	144.5	138.0	133.6	133.6	129.2	129.2	127.0	129.2	124.8	124.8	120.5
60°	96.4	92.0	89.8	87.6	87.6	85.4	87.6	85.4	85.4	83.2	81.0
62.5°	70.1	65.7	61.3	61.3	61.3	59.1	59.1	59.1	59.1	59.1	56.9
65°	50.4	46.0	46.0	43.8	43.8	41.6	41.6	41.6	41.6	41.6	39.4
67.5°	35.0	32.9	30.7	30.7	30.7	30.7	30.7	30.7	28.5	28.5	28.5
70°	26.3	24.1	21.9	21.9	21.9	21.9	21.9	19.7	21.9	21.9	19.7
72.5°	17.5	17.5	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
75°	13.1	13.1	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
77.5°	8.8	8.8	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
80°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
82.5°	4.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	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: P251640

CATALOG NUMBER: LD4B40D010 EU4B30509027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5	1699.5
2.5°	1741.1	1738.9	1734.5	1741.1	1723.6	1717.0	1714.8	1734.5
5°	1765.2	1760.8	1760.8	1767.4	1747.7	1743.3	1738.9	1760.8
7.5°	1787.1	1782.7	1782.7	1789.3	1771.8	1767.4	1763.0	1784.9
10°	1800.2	1800.2	1800.2	1804.6	1789.3	1784.9	1782.7	1804.6
12.5°	1806.8	1806.8	1804.6	1813.4	1793.7	1793.7	1789.3	1811.2
15°	1798.0	1798.0	1798.0	1804.6	1787.1	1782.7	1782.7	1800.2
17.5°	1776.1	1776.1	1773.9	1780.5	1760.8	1760.8	1758.6	1778.3
20°	1743.3	1743.3	1738.9	1747.7	1728.0	1721.4	1719.2	1738.9
22.5°	1690.7	1688.5	1686.3	1690.7	1673.2	1668.8	1666.6	1684.2
25°	1622.8	1620.6	1616.3	1620.6	1600.9	1594.4	1594.4	1607.5
27.5°	1526.5	1526.5	1519.9	1526.5	1504.6	1502.4	1500.2	1515.5
30°	1408.2	1399.4	1395.1	1403.8	1381.9	1381.9	1377.5	1392.9
32.5°	1261.5	1252.7	1250.5	1254.9	1235.2	1228.6	1237.4	1246.1
35°	1092.8	1095.0	1086.3	1086.3	1068.7	1070.9	1073.1	1086.3
37.5°	930.8	926.4	924.2	926.4	913.3	908.9	904.5	917.6
40°	779.7	768.7	766.5	766.5	755.6	753.4	755.6	762.1
42.5°	637.3	635.1	626.4	630.7	619.8	624.2	622.0	622.0
45°	514.7	516.9	508.1	514.7	505.9	499.3	499.3	503.7
47.5°	407.3	407.3	405.2	405.2	398.6	400.8	396.4	403.0
50°	315.4	315.4	311.0	313.2	308.8	308.8	306.6	308.8
52.5°	240.9	238.7	238.7	236.5	232.1	234.3	236.5	232.1
55°	175.2	177.4	173.0	175.2	170.8	173.0	170.8	173.0
57.5°	120.5	122.6	118.3	122.6	118.3	120.5	118.3	118.3
60°	83.2	83.2	81.0	83.2	81.0	81.0	78.8	83.2
62.5°	56.9	56.9	56.9	56.9	56.9	54.8	56.9	56.9
65°	41.6	39.4	39.4	39.4	39.4	39.4	39.4	39.4
67.5°	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
70°	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7
72.5°	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
75°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
77.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
80°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
82.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	0.0	2.2	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)