

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: P251643

Luminaire Tested: **LD4B40D010 EU4B30509040 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251643
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 EU4B30509040 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3147.0 lumens
Efficiency: N/A
Efficacy: 73.2 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

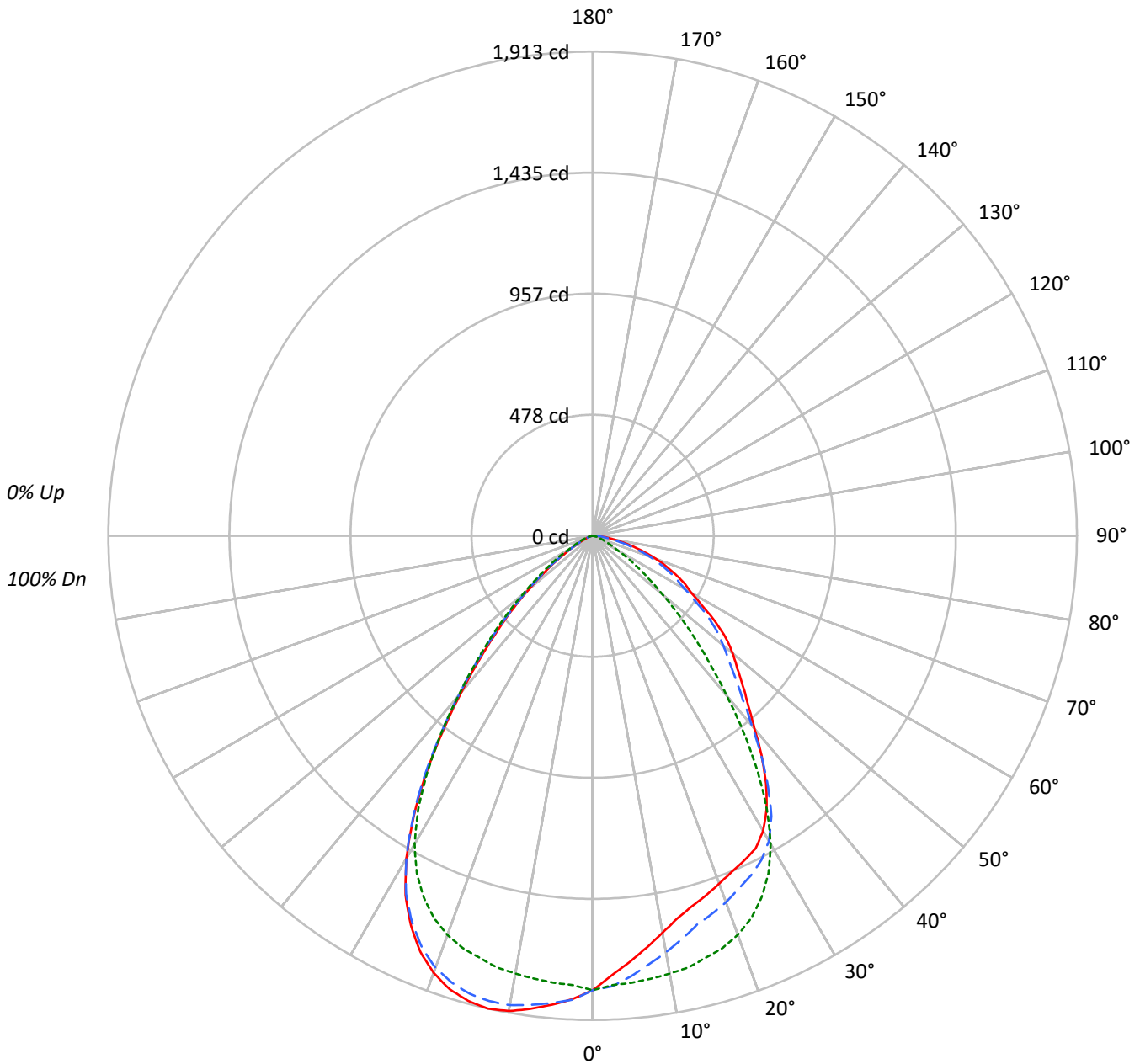
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

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°	174966	174966	174966
5°	165226	173375	181974
10°	157517	173776	188660
15°	152898	174136	191874
20°	151649	173957	190520
25°	152256	169666	182613
30°	151528	158292	165584
35°	142032	135155	136523
40°	126561	104780	102427
45°	115747	78120	73338
50°	109438	54719	49458
55°	100639	36956	31060
60°	87927	21655	17133
65°	83226	13882	9593
70°	75825	9888	5927
75°	62733	6966	4368
80°	49333	3873	2582
85°	43945	2572	0



TEST NUMBER: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	5.4
10°-20°	486.6	15.5
20°-30°	721.4	22.9
30°-40°	722.4	23.0
40°-50°	504.9	16.0
50°-60°	300.4	9.5
60°-70°	156.8	5.0
70°-80°	69.7	2.2
80°-90°	15.2	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°	1377.7	43.8
0°-40°	2100.0	66.7
0°-60°	2905.3	92.3
0°-90°	3147.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3147.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1795	1795	1795	1795	1795	
5°	1689	1747	1772	1853	1860	158
15°	1515	1592	1726	1874	1902	429
25°	1416	1481	1578	1687	1698	652
35°	1194	1208	1136	1157	1148	740
45°	840	798	567	548	532	652
55°	592	555	218	190	183	526
65°	361	331	60	44	42	357
75°	167	146	18	12	12	180
85°	39	30	2	2	0	44
90°	0	0	0	0	0	



TEST NUMBER: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3
2.5°	1737.5	1758.3	1737.5	1744.4	1772.2	1746.7	1760.6	1760.6	1753.7	1769.9	1781.4
5°	1688.9	1709.7	1688.9	1698.2	1728.2	1702.8	1719.0	1714.3	1716.7	1730.5	1746.7
7.5°	1640.3	1656.5	1638.0	1649.6	1677.3	1656.5	1670.4	1670.4	1672.7	1693.5	1707.4
10°	1591.7	1605.6	1591.7	1601.0	1631.1	1612.6	1621.8	1624.1	1631.1	1649.6	1670.4
12.5°	1547.8	1559.3	1545.5	1559.3	1584.8	1566.3	1577.8	1580.2	1587.1	1607.9	1631.1
15°	1515.4	1527.0	1513.1	1524.6	1547.8	1533.9	1543.1	1547.8	1552.4	1570.9	1591.7
17.5°	1489.9	1499.2	1487.6	1501.5	1520.0	1503.8	1517.7	1517.7	1524.6	1543.1	1566.3
20°	1462.2	1471.4	1462.2	1473.7	1494.6	1480.7	1492.2	1492.2	1499.2	1520.0	1540.8
22.5°	1436.7	1441.3	1436.7	1446.0	1466.8	1455.2	1462.2	1464.5	1471.4	1489.9	1508.4
25°	1415.9	1425.2	1420.5	1429.8	1443.7	1432.1	1439.0	1441.3	1448.3	1464.5	1480.7
27.5°	1392.8	1397.4	1392.8	1404.3	1415.9	1406.6	1413.6	1411.3	1415.9	1429.8	1443.7
30°	1346.5	1351.1	1351.1	1358.1	1367.3	1362.7	1369.6	1362.7	1367.3	1378.9	1392.8
32.5°	1279.4	1281.7	1284.0	1291.0	1297.9	1291.0	1295.6	1295.6	1295.6	1304.8	1314.1
35°	1193.8	1198.4	1196.1	1200.7	1207.7	1205.4	1205.4	1203.1	1198.4	1203.1	1207.7
37.5°	1096.6	1089.7	1089.7	1096.6	1101.3	1092.0	1096.6	1092.0	1092.0	1094.3	1094.3
40°	994.8	987.9	994.8	997.1	999.5	994.8	992.5	987.9	980.9	983.3	978.6
42.5°	909.2	904.6	906.9	906.9	909.2	904.6	906.9	897.7	890.7	886.1	879.2
45°	839.8	832.9	839.8	835.2	835.2	832.9	830.6	825.9	816.7	809.7	798.2
47.5°	775.0	775.0	777.4	777.4	777.4	772.7	772.7	763.5	754.2	745.0	728.8
50°	721.8	717.2	726.5	726.5	719.5	717.2	719.5	707.9	701.0	689.4	673.2
52.5°	664.0	664.0	666.3	666.3	664.0	659.4	661.7	652.4	645.5	633.9	617.7
55°	592.3	587.6	594.6	594.6	592.3	590.0	592.3	585.3	578.4	569.1	555.3
57.5°	511.3	509.0	513.6	515.9	511.3	511.3	513.6	506.7	504.4	495.1	481.2
60°	451.1	448.8	453.5	455.8	451.1	451.1	451.1	441.9	437.3	428.0	418.8
62.5°	409.5	407.2	411.8	409.5	407.2	404.9	407.2	397.9	393.3	384.1	374.8
65°	360.9	363.2	365.5	365.5	363.2	360.9	360.9	356.3	351.7	342.4	330.8
67.5°	314.6	314.6	317.0	319.3	317.0	317.0	317.0	310.0	305.4	298.4	284.6
70°	266.1	263.7	270.7	270.7	266.1	268.4	266.1	263.7	259.1	249.9	238.3
72.5°	215.2	215.2	217.5	217.5	215.2	215.2	215.2	212.8	205.9	201.3	189.7
75°	166.6	166.6	168.9	171.2	166.6	166.6	168.9	164.3	159.6	152.7	145.8
77.5°	124.9	122.6	124.9	124.9	122.6	122.6	122.6	120.3	118.0	111.1	104.1
80°	87.9	85.6	87.9	87.9	87.9	85.6	85.6	83.3	83.3	78.7	71.7
82.5°	60.2	57.8	60.2	60.2	60.2	57.8	57.8	57.8	55.5	53.2	48.6
85°	39.3	37.0	37.0	39.3	37.0	37.0	37.0	37.0	34.7	32.4	30.1
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	16.2	16.2	16.2	13.9
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: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3
2.5°	1772.2	1767.6	1781.4	1776.8	1779.1	1767.6	1786.1	1776.8	1788.4	1776.8	1800.0
5°	1742.1	1737.5	1758.3	1756.0	1758.3	1749.1	1769.9	1767.6	1781.4	1772.2	1797.6
7.5°	1709.7	1705.1	1728.2	1730.5	1735.2	1725.9	1753.7	1753.7	1767.6	1765.2	1793.0
10°	1672.7	1675.0	1698.2	1702.8	1712.0	1707.4	1732.9	1739.8	1758.3	1756.0	1790.7
12.5°	1638.0	1638.0	1668.1	1677.3	1684.3	1682.0	1712.0	1721.3	1742.1	1746.7	1779.1
15°	1603.3	1605.6	1633.4	1647.3	1656.5	1654.2	1686.6	1698.2	1723.6	1725.9	1765.2
17.5°	1575.5	1573.2	1603.3	1614.9	1628.7	1626.4	1661.1	1675.0	1700.5	1707.4	1744.4
20°	1552.4	1550.1	1577.8	1591.7	1601.0	1598.7	1633.4	1649.6	1672.7	1677.3	1714.3
22.5°	1524.6	1520.0	1547.8	1559.3	1568.6	1566.3	1596.4	1607.9	1631.1	1635.7	1670.4
25°	1492.2	1487.6	1513.1	1520.0	1527.0	1522.3	1547.8	1554.7	1573.2	1577.8	1612.6
27.5°	1455.2	1443.7	1464.5	1464.5	1469.1	1462.2	1480.7	1487.6	1503.8	1503.8	1536.2
30°	1397.4	1381.2	1392.8	1390.5	1392.8	1383.5	1395.1	1397.4	1409.0	1406.6	1429.8
32.5°	1316.4	1293.3	1300.2	1293.3	1286.3	1272.5	1286.3	1281.7	1291.0	1281.7	1302.5
35°	1205.4	1182.2	1179.9	1170.7	1163.7	1152.2	1152.2	1140.6	1142.9	1136.0	1149.8
37.5°	1085.1	1055.0	1050.4	1031.8	1020.3	1006.4	1006.4	997.1	985.6	980.9	992.5
40°	967.1	934.7	923.1	893.0	881.5	867.6	858.3	846.8	842.1	823.6	832.9
42.5°	865.3	830.6	805.1	772.7	761.2	740.3	726.5	712.6	705.6	684.8	694.1
45°	779.7	738.0	710.3	668.6	652.4	629.3	608.5	592.3	576.1	566.8	562.2
47.5°	707.9	664.0	627.0	580.7	555.3	534.4	506.7	490.5	469.7	458.1	451.1
50°	647.8	599.2	557.6	504.4	478.9	455.8	423.4	397.9	379.4	360.9	356.3
52.5°	594.6	543.7	497.4	437.3	407.2	379.4	344.7	317.0	300.8	279.9	277.6
55°	532.1	488.2	437.3	374.8	344.7	317.0	279.9	252.2	231.4	217.5	212.8
57.5°	465.0	423.4	374.8	312.3	282.3	252.2	217.5	192.0	173.5	161.9	159.6
60°	402.6	363.2	317.0	254.5	224.4	199.0	161.9	136.5	120.3	111.1	106.4
62.5°	356.3	319.3	275.3	217.5	189.7	164.3	129.6	106.4	92.5	83.3	78.7
65°	312.3	275.3	236.0	182.8	159.6	136.5	104.1	83.3	69.4	60.2	55.5
67.5°	266.1	233.7	196.7	152.7	129.6	111.1	83.3	64.8	53.2	46.3	41.6
70°	219.8	189.7	159.6	122.6	106.4	87.9	64.8	50.9	39.3	34.7	30.1
72.5°	173.5	150.4	124.9	94.9	81.0	69.4	50.9	37.0	30.1	25.4	20.8
75°	129.6	113.4	92.5	71.7	60.2	50.9	37.0	27.8	23.1	18.5	16.2
77.5°	92.5	78.7	64.8	48.6	44.0	37.0	25.4	20.8	16.2	11.6	9.3
80°	62.5	55.5	44.0	34.7	27.8	25.4	18.5	13.9	9.3	6.9	6.9
82.5°	41.6	34.7	27.8	20.8	18.5	16.2	11.6	9.3	6.9	4.6	4.6
85°	25.4	20.8	16.2	11.6	11.6	9.3	6.9	4.6	2.3	2.3	2.3
87.5°	11.6	9.3	6.9	4.6	4.6	2.3	2.3	2.3	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: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3
2.5°	1818.5	1804.6	1795.3	1806.9	1811.5	1804.6	1811.5	1823.1	1834.7	1837.0	1804.6
5°	1820.8	1806.9	1802.3	1816.1	1818.5	1816.1	1823.1	1839.3	1853.2	1857.8	1825.4
7.5°	1820.8	1811.5	1809.2	1825.4	1827.7	1825.4	1837.0	1855.5	1869.4	1878.6	1846.2
10°	1816.1	1811.5	1813.8	1827.7	1832.3	1832.3	1848.5	1869.4	1883.2	1892.5	1860.1
12.5°	1809.2	1809.2	1809.2	1825.4	1830.0	1832.3	1846.2	1874.0	1883.2	1897.1	1864.7
15°	1797.6	1797.6	1797.6	1813.8	1820.8	1820.8	1837.0	1862.4	1874.0	1887.9	1855.5
17.5°	1776.8	1776.8	1779.1	1793.0	1800.0	1800.0	1816.1	1843.9	1850.8	1867.0	1834.7
20°	1746.7	1746.7	1749.1	1762.9	1769.9	1765.2	1786.1	1809.2	1816.1	1830.0	1797.6
22.5°	1702.8	1702.8	1702.8	1716.7	1721.3	1719.0	1739.8	1760.6	1760.6	1779.1	1744.4
25°	1638.0	1642.6	1638.0	1651.9	1656.5	1654.2	1672.7	1691.2	1686.6	1707.4	1672.7
27.5°	1559.3	1557.0	1557.0	1568.6	1568.6	1566.3	1580.2	1601.0	1596.4	1610.2	1577.8
30°	1450.6	1457.5	1446.0	1462.2	1455.2	1450.6	1459.9	1478.4	1471.4	1483.0	1457.5
32.5°	1325.7	1316.4	1316.4	1316.4	1321.0	1309.5	1318.7	1328.0	1321.0	1332.6	1304.8
35°	1161.4	1163.7	1156.8	1159.1	1161.4	1147.5	1156.8	1166.0	1156.8	1163.7	1138.3
37.5°	997.1	999.5	983.3	992.5	983.3	978.6	987.9	992.5	983.3	990.2	962.4
40°	832.9	828.3	825.9	825.9	828.3	816.7	823.6	830.6	823.6	828.3	802.8
42.5°	689.4	687.1	682.5	684.8	677.9	675.6	677.9	684.8	677.9	682.5	664.0
45°	564.5	559.9	552.9	555.3	555.3	543.7	550.6	555.3	548.3	550.6	534.4
47.5°	448.8	441.9	441.9	439.6	439.6	434.9	441.9	439.6	432.6	437.3	421.1
50°	349.3	344.7	344.7	344.7	344.7	337.8	340.1	344.7	337.8	337.8	328.5
52.5°	273.0	266.1	261.4	261.4	261.4	259.1	259.1	261.4	254.5	254.5	252.2
55°	205.9	203.6	196.7	196.7	196.7	189.7	192.0	192.0	189.7	189.7	182.8
57.5°	152.7	145.8	141.1	141.1	136.5	136.5	134.2	136.5	131.9	131.9	127.2
60°	101.8	97.2	94.9	92.5	92.5	90.2	92.5	90.2	90.2	87.9	85.6
62.5°	74.0	69.4	64.8	64.8	64.8	62.5	62.5	62.5	62.5	62.5	60.2
65°	53.2	48.6	48.6	46.3	46.3	44.0	44.0	44.0	44.0	44.0	41.6
67.5°	37.0	34.7	32.4	32.4	32.4	32.4	32.4	32.4	30.1	30.1	30.1
70°	27.8	25.4	23.1	23.1	23.1	23.1	23.1	20.8	23.1	23.1	20.8
72.5°	18.5	18.5	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
75°	13.9	13.9	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
77.5°	9.3	9.3	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
80°	6.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
82.5°	4.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	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: P251643

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3	1795.3
2.5°	1839.3	1837.0	1832.3	1839.3	1820.8	1813.8	1811.5	1832.3
5°	1864.7	1860.1	1860.1	1867.0	1846.2	1841.6	1837.0	1860.1
7.5°	1887.9	1883.2	1883.2	1890.2	1871.7	1867.0	1862.4	1885.6
10°	1901.7	1901.7	1901.7	1906.4	1890.2	1885.6	1883.2	1906.4
12.5°	1908.7	1908.7	1906.4	1915.6	1894.8	1894.8	1890.2	1913.3
15°	1899.4	1899.4	1899.4	1906.4	1887.9	1883.2	1883.2	1901.7
17.5°	1876.3	1876.3	1874.0	1880.9	1860.1	1860.1	1857.8	1878.6
20°	1841.6	1841.6	1837.0	1846.2	1825.4	1818.5	1816.1	1837.0
22.5°	1786.1	1783.8	1781.4	1786.1	1767.6	1762.9	1760.6	1779.1
25°	1714.3	1712.0	1707.4	1712.0	1691.2	1684.3	1684.3	1698.2
27.5°	1612.6	1612.6	1605.6	1612.6	1589.4	1587.1	1584.8	1601.0
30°	1487.6	1478.4	1473.7	1483.0	1459.9	1459.9	1455.2	1471.4
32.5°	1332.6	1323.4	1321.0	1325.7	1304.8	1297.9	1307.2	1316.4
35°	1154.5	1156.8	1147.5	1147.5	1129.0	1131.3	1133.6	1147.5
37.5°	983.3	978.6	976.3	978.6	964.8	960.1	955.5	969.4
40°	823.6	812.1	809.7	809.7	798.2	795.9	798.2	805.1
42.5°	673.2	670.9	661.7	666.3	654.7	659.4	657.1	657.1
45°	543.7	546.0	536.7	543.7	534.4	527.5	527.5	532.1
47.5°	430.3	430.3	428.0	428.0	421.1	423.4	418.8	425.7
50°	333.2	333.2	328.5	330.8	326.2	326.2	323.9	326.2
52.5°	254.5	252.2	252.2	249.9	245.2	247.6	249.9	245.2
55°	185.1	187.4	182.8	185.1	180.5	182.8	180.5	182.8
57.5°	127.2	129.6	124.9	129.6	124.9	127.2	124.9	124.9
60°	87.9	87.9	85.6	87.9	85.6	85.6	83.3	87.9
62.5°	60.2	60.2	60.2	60.2	60.2	57.8	60.2	60.2
65°	44.0	41.6	41.6	41.6	41.6	41.6	41.6	41.6
67.5°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1
70°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
72.5°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
75°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
77.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
80°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
82.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	2.3	2.3	0.0	2.3	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



Report Generated By E9808895 / USPTCWHP6082093





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













(END OF REPORT)