

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: P251561

Luminaire Tested: **LD4B40D010 EU4B30509024 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251561
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 EU4B30509024 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2725.0 lumens
Efficiency: N/A
Efficacy: 63.3 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

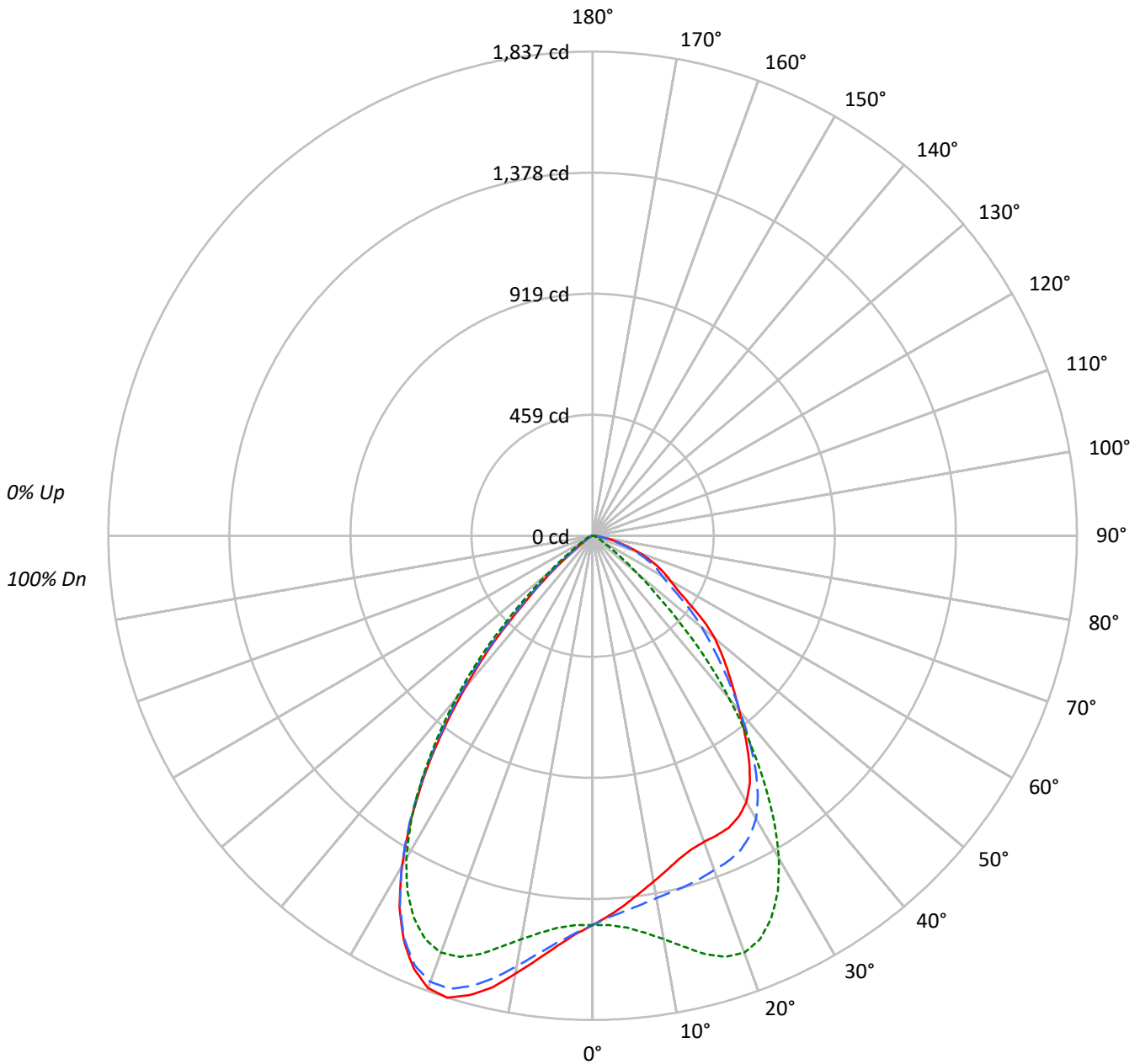
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

Luminous Intensity Polar Plot





TEST NUMBER: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	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			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90					90			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80					80			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72					72			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64					64			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58					58			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53					53			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48					48			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44					44			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40					40			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37					37			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	143916	143916	143916
5°	137481	145973	152948
10°	131827	153766	166928
15°	127987	165722	182057
20°	128158	174538	189338
25°	131427	172268	182215
30°	131249	159023	162703
35°	122936	134405	132573
40°	110124	102516	95646
45°	99897	65095	53408
50°	91774	33022	22803
55°	75339	14731	7527
60°	66135	8264	4132
65°	62240	6226	3113
70°	53285	4930	2736
75°	40667	3615	2184
80°	29184	2189	1066
85°	21581	0	0



TEST NUMBER: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.4	5.3
10°-20°	447.0	16.4
20°-30°	691.6	25.4
30°-40°	681.5	25.0
40°-50°	418.4	15.4
50°-60°	186.1	6.8
60°-70°	103.9	3.8
70°-80°	45.0	1.7
80°-90°	8.0	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°	1282.1	47.0
0°-40°	1963.6	72.1
0°-60°	2568.1	94.2
0°-90°	2725.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2725.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1477	1477	1477	1477	1477	
5°	1405	1428	1492	1550	1563	132
15°	1268	1374	1642	1768	1804	360
25°	1222	1320	1602	1689	1694	561
35°	1033	1076	1130	1126	1114	641
45°	725	688	472	412	388	561
55°	443	401	87	50	44	407
65°	270	243	27	15	14	264
75°	108	92	10	6	6	119
85°	19	15	0	0	0	24
90°	0	0	0	0	0	



TEST NUMBER: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7
2.5°	1442.0	1442.0	1442.0	1442.0	1445.8	1440.0	1445.8	1445.8	1451.6	1453.5	1447.8
5°	1405.3	1403.4	1405.3	1405.3	1409.2	1407.3	1413.1	1416.9	1424.6	1428.5	1428.5
7.5°	1366.8	1366.8	1366.8	1370.6	1376.4	1374.5	1380.3	1386.1	1397.6	1405.3	1411.1
10°	1332.1	1330.2	1335.9	1337.9	1343.7	1343.7	1353.3	1359.1	1372.6	1388.0	1395.7
12.5°	1299.3	1297.4	1301.2	1307.0	1316.7	1316.7	1324.4	1334.0	1353.3	1370.6	1384.1
15°	1268.5	1270.4	1276.2	1280.0	1291.6	1291.6	1301.2	1312.8	1334.0	1355.2	1374.5
17.5°	1247.3	1249.2	1253.0	1258.8	1270.4	1270.4	1280.0	1293.5	1316.7	1339.8	1362.9
20°	1235.7	1237.6	1241.5	1247.3	1256.9	1258.8	1266.5	1282.0	1303.2	1328.2	1349.4
22.5°	1229.9	1233.8	1237.6	1241.5	1251.1	1251.1	1260.8	1272.3	1293.5	1318.6	1337.9
25°	1222.2	1226.1	1228.0	1233.8	1241.5	1241.5	1247.3	1260.8	1280.0	1301.2	1320.5
27.5°	1201.0	1204.9	1206.8	1212.6	1220.3	1218.4	1226.1	1235.7	1253.0	1272.3	1287.7
30°	1166.3	1168.2	1172.1	1174.0	1179.8	1179.8	1185.6	1195.2	1206.8	1224.1	1239.6
32.5°	1110.4	1114.3	1116.2	1118.1	1123.9	1122.0	1123.9	1129.7	1141.2	1156.7	1166.3
35°	1033.3	1041.0	1041.0	1044.9	1046.8	1044.9	1044.9	1052.6	1058.3	1069.9	1075.7
37.5°	948.5	954.2	952.3	956.2	958.1	952.3	956.2	958.1	965.8	971.6	973.5
40°	865.6	867.5	867.5	867.5	867.5	865.6	867.5	869.4	875.2	875.2	869.4
42.5°	790.4	792.3	792.3	788.5	792.3	790.4	790.4	790.4	790.4	782.7	776.9
45°	724.8	726.8	726.8	724.8	724.8	721.0	719.1	717.1	711.3	701.7	688.2
47.5°	663.2	667.0	668.9	665.1	663.2	659.3	659.3	647.7	640.0	628.5	609.2
50°	605.3	609.2	609.2	605.3	605.3	599.5	593.8	589.9	578.3	564.8	541.7
52.5°	532.1	537.8	537.8	535.9	535.9	528.2	526.3	518.6	508.9	493.5	474.2
55°	443.4	451.1	449.2	447.2	443.4	443.4	443.4	437.6	431.8	420.3	401.0
57.5°	379.8	381.7	381.7	379.8	379.8	375.9	375.9	370.1	368.2	356.6	341.2
60°	339.3	339.3	341.2	339.3	337.4	335.4	333.5	329.6	323.9	316.2	304.6
62.5°	306.5	308.4	308.4	306.5	304.6	302.7	300.7	296.9	293.0	287.2	275.7
65°	269.9	273.7	271.8	269.9	268.0	266.0	266.0	262.2	258.3	254.5	242.9
67.5°	229.4	231.3	233.3	229.4	229.4	227.5	227.5	223.6	221.7	214.0	206.3
70°	187.0	188.9	188.9	187.0	187.0	185.1	185.1	183.1	181.2	175.4	167.7
72.5°	146.5	148.4	146.5	144.6	144.6	144.6	142.7	140.7	138.8	134.9	129.2
75°	108.0	108.0	109.9	108.0	106.0	106.0	104.1	104.1	100.2	98.3	92.5
77.5°	77.1	79.0	77.1	77.1	75.2	73.3	73.3	71.3	71.3	69.4	65.5
80°	52.0	52.0	54.0	52.0	50.1	52.0	50.1	48.2	48.2	46.3	42.4
82.5°	32.8	34.7	32.8	32.8	32.8	32.8	32.8	30.8	30.8	28.9	27.0
85°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	17.3	17.3	17.3	15.4
87.5°	9.6	9.6	7.7	7.7	9.6	9.6	9.6	7.7	7.7	7.7	7.7
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: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7
2.5°	1455.5	1457.4	1461.2	1467.0	1467.0	1463.2	1472.8	1472.8	1476.7	1478.6	1486.3
5°	1440.0	1443.9	1451.6	1461.2	1463.2	1461.2	1474.7	1480.5	1486.3	1492.1	1503.7
7.5°	1426.5	1434.3	1447.8	1461.2	1467.0	1467.0	1488.2	1495.9	1507.5	1519.1	1532.6
10°	1418.8	1430.4	1449.7	1470.9	1476.7	1482.5	1507.5	1522.9	1538.4	1553.8	1573.1
12.5°	1409.2	1430.4	1455.5	1482.5	1494.0	1501.7	1536.4	1555.7	1576.9	1596.2	1621.3
15°	1407.3	1432.3	1465.1	1499.8	1515.2	1526.8	1565.3	1592.3	1617.4	1642.5	1667.5
17.5°	1399.6	1430.4	1470.9	1509.4	1528.7	1544.1	1588.5	1621.3	1650.2	1675.2	1704.1
20°	1389.9	1424.6	1469.0	1511.4	1532.6	1548.0	1596.2	1627.0	1659.8	1682.9	1709.9
22.5°	1376.4	1411.1	1455.5	1497.9	1517.2	1530.6	1578.8	1605.8	1634.7	1657.9	1682.9
25°	1353.3	1386.1	1424.6	1459.3	1478.6	1490.2	1532.6	1557.6	1578.8	1602.0	1625.1
27.5°	1320.5	1345.6	1378.4	1403.4	1415.0	1426.5	1461.2	1482.5	1501.7	1521.0	1536.4
30°	1262.7	1282.0	1305.1	1326.3	1337.9	1339.8	1372.6	1384.1	1399.6	1413.1	1424.6
32.5°	1185.6	1201.0	1214.5	1226.1	1233.8	1235.7	1260.8	1264.6	1280.0	1280.0	1297.4
35°	1087.3	1095.0	1104.6	1104.6	1110.4	1104.6	1122.0	1125.8	1127.7	1129.7	1143.2
37.5°	975.5	979.3	985.1	973.5	973.5	967.7	973.5	977.4	969.7	969.7	979.3
40°	869.4	861.7	854.0	842.4	836.7	825.1	825.1	815.4	809.7	805.8	807.7
42.5°	767.3	749.9	732.6	707.5	695.9	684.4	672.8	659.3	655.4	645.8	640.0
45°	668.9	643.9	620.7	580.3	557.1	545.6	520.5	493.5	476.2	472.3	456.9
47.5°	586.0	549.4	510.9	462.7	439.5	418.3	381.7	358.6	335.4	323.9	314.2
50°	512.8	480.0	429.9	377.8	348.9	327.7	287.2	260.2	235.2	217.8	206.3
52.5°	449.2	412.5	366.3	306.5	277.6	254.5	210.1	179.3	158.1	140.7	127.2
55°	377.8	348.9	302.7	246.8	217.8	190.8	152.3	119.5	98.3	86.7	77.1
57.5°	325.8	300.7	256.4	202.4	175.4	150.4	111.8	84.8	67.5	55.9	50.1
60°	291.1	268.0	229.4	177.4	152.3	129.2	92.5	67.5	52.0	42.4	38.6
62.5°	262.2	239.0	204.3	156.1	134.9	111.8	79.0	55.9	42.4	34.7	28.9
65°	229.4	208.2	177.4	134.9	115.7	96.4	67.5	46.3	34.7	27.0	23.1
67.5°	194.7	175.4	148.4	111.8	96.4	81.0	54.0	38.6	28.9	23.1	19.3
70°	158.1	142.7	117.6	90.6	77.1	63.6	44.3	30.8	21.2	17.3	15.4
72.5°	121.4	108.0	90.6	69.4	57.8	48.2	32.8	23.1	17.3	13.5	11.6
75°	86.7	77.1	63.6	50.1	42.4	34.7	25.1	17.3	11.6	9.6	7.7
77.5°	59.8	54.0	44.3	34.7	28.9	25.1	17.3	11.6	9.6	7.7	5.8
80°	38.6	34.7	28.9	21.2	17.3	15.4	9.6	7.7	5.8	3.9	3.9
82.5°	23.1	21.2	17.3	11.6	9.6	7.7	5.8	3.9	3.9	1.9	1.9
85°	13.5	11.6	7.7	5.8	5.8	3.9	3.9	1.9	1.9	0.0	0.0
87.5°	5.8	3.9	3.9	1.9	1.9	1.9	1.9	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: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7
2.5°	1482.5	1492.1	1490.2	1495.9	1494.0	1494.0	1503.7	1499.8	1509.4	1509.4	1511.4
5°	1503.7	1517.2	1517.2	1526.8	1524.9	1528.7	1538.4	1538.4	1549.9	1553.8	1553.8
7.5°	1534.5	1551.9	1555.7	1565.3	1567.3	1575.0	1582.7	1584.6	1600.0	1603.9	1605.8
10°	1576.9	1598.1	1603.9	1613.5	1617.4	1625.1	1634.7	1638.6	1657.9	1659.8	1667.5
12.5°	1629.0	1652.1	1657.9	1669.4	1671.4	1681.0	1694.5	1698.4	1717.6	1723.4	1729.2
15°	1679.1	1700.3	1709.9	1721.5	1723.4	1735.0	1746.6	1750.4	1767.8	1775.5	1781.3
17.5°	1713.8	1738.8	1744.6	1760.1	1760.1	1769.7	1781.3	1785.1	1802.5	1808.2	1812.1
20°	1721.5	1744.6	1752.3	1763.9	1765.8	1771.6	1781.3	1785.1	1800.5	1802.5	1808.2
22.5°	1692.6	1715.7	1719.6	1731.1	1733.1	1738.8	1746.6	1744.6	1763.9	1762.0	1763.9
25°	1630.9	1652.1	1652.1	1665.6	1663.7	1669.4	1673.3	1671.4	1688.7	1688.7	1688.7
27.5°	1542.2	1561.5	1563.4	1573.1	1567.3	1569.2	1573.1	1571.1	1582.7	1582.7	1582.7
30°	1432.3	1447.8	1442.0	1449.7	1445.8	1449.7	1445.8	1443.9	1447.8	1451.6	1449.7
32.5°	1295.5	1307.0	1307.0	1309.0	1309.0	1297.4	1293.5	1293.5	1291.6	1289.7	1289.7
35°	1137.4	1147.0	1143.2	1143.2	1141.2	1129.7	1123.9	1120.0	1125.8	1114.3	1122.0
37.5°	975.5	977.4	971.6	969.7	960.0	960.0	950.4	942.7	946.5	944.6	936.9
40°	798.1	805.8	794.2	790.4	796.2	788.5	778.8	769.2	776.9	767.3	771.1
42.5°	624.6	622.7	618.8	618.8	618.8	607.2	605.3	603.4	605.3	597.6	591.8
45°	451.1	445.3	439.5	439.5	431.8	428.0	428.0	422.2	412.5	412.5	401.0
47.5°	304.6	291.1	287.2	285.3	281.5	281.5	277.6	273.7	271.8	262.2	262.2
50°	198.6	185.1	181.2	179.3	181.2	177.4	173.5	169.6	165.8	163.9	160.0
52.5°	119.5	113.7	109.9	108.0	104.1	102.2	100.2	96.4	94.5	94.5	92.5
55°	71.3	65.5	57.8	57.8	57.8	55.9	54.0	52.0	50.1	50.1	48.2
57.5°	44.3	40.5	36.6	34.7	34.7	34.7	32.8	32.8	32.8	32.8	30.8
60°	32.8	28.9	27.0	27.0	27.0	25.1	25.1	25.1	25.1	23.1	23.1
62.5°	25.1	23.1	21.2	21.2	19.3	19.3	19.3	19.3	19.3	19.3	17.3
65°	21.2	17.3	17.3	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
67.5°	15.4	13.5	13.5	13.5	13.5	11.6	11.6	11.6	11.6	11.6	11.6
70°	11.6	11.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
72.5°	9.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
75°	7.7	7.7	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
77.5°	5.8	5.8	5.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	3.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.9	1.9	1.9	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: P251561

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7	1476.7
2.5°	1511.4	1521.0	1511.4	1511.4	1517.2	1515.2	1519.1	1513.3
5°	1555.7	1569.2	1559.6	1557.6	1567.3	1565.3	1567.3	1563.4
7.5°	1609.7	1623.2	1613.5	1613.5	1623.2	1621.3	1627.0	1623.2
10°	1671.4	1686.8	1673.3	1675.2	1688.7	1686.8	1686.8	1686.8
12.5°	1735.0	1750.4	1742.7	1742.7	1752.3	1754.3	1756.2	1754.3
15°	1787.0	1802.5	1792.8	1792.8	1806.3	1804.4	1806.3	1804.4
17.5°	1817.9	1833.3	1821.7	1821.7	1833.3	1833.3	1835.2	1837.2
20°	1810.2	1827.5	1817.9	1814.0	1827.5	1827.5	1825.6	1825.6
22.5°	1765.8	1781.3	1773.5	1769.7	1779.3	1775.5	1773.5	1775.5
25°	1688.7	1704.1	1688.7	1688.7	1696.4	1694.5	1696.4	1694.5
27.5°	1584.6	1596.2	1580.8	1578.8	1586.6	1582.7	1580.8	1586.6
30°	1445.8	1457.4	1449.7	1443.9	1453.5	1447.8	1443.9	1445.8
32.5°	1287.7	1295.5	1291.6	1282.0	1287.7	1283.9	1282.0	1283.9
35°	1114.3	1123.9	1108.5	1106.5	1116.2	1108.5	1104.6	1114.3
37.5°	935.0	946.5	933.0	935.0	929.2	931.1	927.3	933.0
40°	765.3	763.4	759.5	757.6	759.5	753.8	757.6	751.8
42.5°	582.2	586.0	584.1	582.2	584.1	576.4	572.5	580.3
45°	404.8	402.9	399.0	395.2	395.2	393.3	393.3	387.5
47.5°	260.2	258.3	250.6	252.5	256.4	252.5	246.8	254.5
50°	158.1	156.1	156.1	154.2	158.1	154.2	150.4	150.4
52.5°	88.7	88.7	86.7	86.7	86.7	86.7	84.8	82.9
55°	48.2	46.3	46.3	46.3	44.3	44.3	44.3	44.3
57.5°	30.8	30.8	30.8	30.8	30.8	30.8	28.9	28.9
60°	23.1	23.1	23.1	23.1	21.2	23.1	21.2	21.2
62.5°	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
65°	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
67.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
70°	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
72.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
75°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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



Report Generated By E9808895 / USPTCWHP6082093





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













(END OF REPORT)