

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: P251545

Luminaire Tested: **LD4B30D010 EU4B30508035 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251545  
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: LD4B30D010 EU4B30508035 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2759.0 lumens  
Efficiency: N/A  
Efficacy: 98.5 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

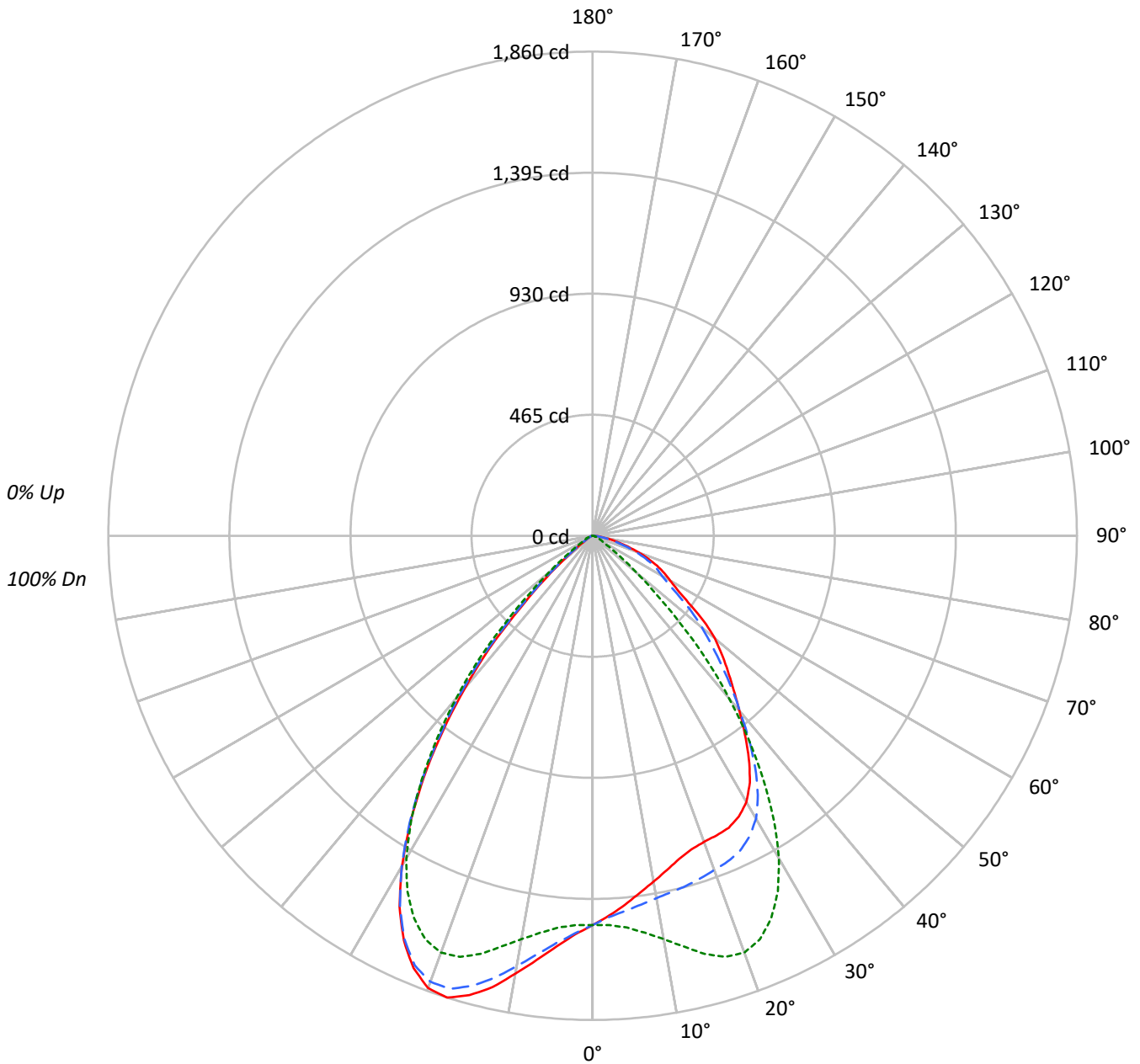
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	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°	145710	145710	145710
5°	139203	147792	154856
10°	133469	155686	169006
15°	129581	167790	184327
20°	129755	176716	191703
25°	133072	174419	184495
30°	132892	161004	164740
35°	124471	136083	134227
40°	111498	103801	96842
45°	101151	65909	54069
50°	92927	33447	23076
55°	76274	14918	7629
60°	66954	8362	4191
65°	63024	6296	3159
70°	53941	5015	2792
75°	41157	3690	2222
80°	29577	2189	1122
85°	21805	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.2	5.3
10°-20°	452.6	16.4
20°-30°	700.3	25.4
30°-40°	690.0	25.0
40°-50°	423.7	15.4
50°-60°	188.4	6.8
60°-70°	105.2	3.8
70°-80°	45.5	1.7
80°-90°	8.1	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°	1298.1	47.0
0°-40°	1988.1	72.1
0°-60°	2600.1	94.2
0°-90°	2759.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2759.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1495	1495	1495	1495	1495	
5°	1423	1446	1511	1569	1583	134
15°	1284	1392	1663	1790	1827	364
25°	1238	1337	1622	1710	1716	568
35°	1046	1089	1144	1140	1128	649
45°	734	697	478	418	392	568
55°	449	406	88	51	45	413
65°	273	246	27	16	14	268
75°	109	94	10	6	6	120
85°	20	16	0	0	0	24
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°	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1
2.5°	1460.0	1460.0	1460.0	1460.0	1463.9	1458.0	1463.9	1463.9	1469.7	1471.7	1465.8
5°	1422.9	1420.9	1422.9	1422.9	1426.8	1424.8	1430.7	1434.6	1442.4	1446.3	1446.3
7.5°	1383.8	1383.8	1383.8	1387.7	1393.6	1391.6	1397.5	1403.4	1415.1	1422.9	1428.7
10°	1348.7	1346.8	1352.6	1354.6	1360.4	1360.4	1370.2	1376.0	1389.7	1405.3	1413.1
12.5°	1315.5	1313.6	1317.5	1323.3	1333.1	1333.1	1340.9	1350.7	1370.2	1387.7	1401.4
15°	1284.3	1286.3	1292.1	1296.0	1307.7	1307.7	1317.5	1329.2	1350.7	1372.1	1391.6
17.5°	1262.8	1264.8	1268.7	1274.5	1286.3	1286.3	1296.0	1309.7	1333.1	1356.5	1379.9
20°	1251.1	1253.1	1257.0	1262.8	1272.6	1274.5	1282.3	1298.0	1319.4	1344.8	1366.3
22.5°	1245.3	1249.2	1253.1	1257.0	1266.7	1266.7	1276.5	1288.2	1309.7	1335.0	1354.6
25°	1237.5	1241.4	1243.3	1249.2	1257.0	1257.0	1262.8	1276.5	1296.0	1317.5	1337.0
27.5°	1216.0	1219.9	1221.8	1227.7	1235.5	1233.6	1241.4	1251.1	1268.7	1288.2	1303.8
30°	1180.9	1182.8	1186.7	1188.7	1194.5	1194.5	1200.4	1210.1	1221.8	1239.4	1255.0
32.5°	1124.2	1128.2	1130.1	1132.1	1137.9	1136.0	1137.9	1143.8	1155.5	1171.1	1180.9
35°	1046.2	1054.0	1054.0	1057.9	1059.8	1057.9	1057.9	1065.7	1071.6	1083.3	1089.1
37.5°	960.3	966.2	964.2	968.1	970.1	964.2	968.1	970.1	977.9	983.7	985.7
40°	876.4	878.3	878.3	878.3	878.3	876.4	878.3	880.3	886.1	886.1	880.3
42.5°	800.2	802.2	802.2	798.3	802.2	800.2	800.2	800.2	800.2	792.4	786.6
45°	733.9	735.8	735.8	733.9	733.9	730.0	728.0	726.1	720.2	710.5	696.8
47.5°	671.4	675.3	677.3	673.4	671.4	667.5	667.5	655.8	648.0	636.3	616.8
50°	612.9	616.8	616.8	612.9	612.9	607.0	601.2	597.3	585.5	571.9	548.5
52.5°	538.7	544.6	544.6	542.6	542.6	534.8	532.8	525.0	515.3	499.7	480.1
55°	448.9	456.7	454.8	452.8	448.9	448.9	448.9	443.1	437.2	425.5	406.0
57.5°	384.5	386.5	386.5	384.5	384.5	380.6	380.6	374.7	372.8	361.1	345.5
60°	343.5	343.5	345.5	343.5	341.6	339.6	337.7	333.8	327.9	320.1	308.4
62.5°	310.3	312.3	312.3	310.3	308.4	306.4	304.5	300.6	296.7	290.8	279.1
65°	273.3	277.2	275.2	273.3	271.3	269.4	269.4	265.4	261.5	257.6	245.9
67.5°	232.3	234.2	236.2	232.3	232.3	230.3	230.3	226.4	224.5	216.7	208.8
70°	189.3	191.3	191.3	189.3	189.3	187.4	187.4	185.4	183.5	177.6	169.8
72.5°	148.3	150.3	148.3	146.4	146.4	146.4	144.4	142.5	140.5	136.6	130.8
75°	109.3	109.3	111.3	109.3	107.4	107.4	105.4	105.4	101.5	99.5	93.7
77.5°	78.1	80.0	78.1	78.1	76.1	74.2	74.2	72.2	72.2	70.3	66.4
80°	52.7	52.7	54.7	52.7	50.7	52.7	50.7	48.8	48.8	46.8	42.9
82.5°	33.2	35.1	33.2	33.2	33.2	33.2	33.2	31.2	31.2	29.3	27.3
85°	19.5	19.5	19.5	19.5	19.5	19.5	19.5	17.6	17.6	17.6	15.6
87.5°	9.8	9.8	7.8	7.8	9.8	9.8	9.8	7.8	7.8	7.8	7.8
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°	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1
2.5°	1473.6	1475.6	1479.5	1485.3	1485.3	1481.4	1491.2	1491.2	1495.1	1497.0	1504.9
5°	1458.0	1461.9	1469.7	1479.5	1481.4	1479.5	1493.1	1499.0	1504.9	1510.7	1522.4
7.5°	1444.3	1452.2	1465.8	1479.5	1485.3	1485.3	1506.8	1514.6	1526.3	1538.0	1551.7
10°	1436.5	1448.3	1467.8	1489.2	1495.1	1501.0	1526.3	1541.9	1557.6	1573.2	1592.7
12.5°	1426.8	1448.3	1473.6	1501.0	1512.7	1520.5	1555.6	1575.1	1596.6	1616.1	1641.5
15°	1424.8	1450.2	1483.4	1518.5	1534.1	1545.8	1584.9	1612.2	1637.6	1663.0	1688.3
17.5°	1417.0	1448.3	1489.2	1528.3	1547.8	1563.4	1608.3	1641.5	1670.8	1696.1	1725.4
20°	1407.3	1442.4	1487.3	1530.2	1551.7	1567.3	1616.1	1647.3	1680.5	1703.9	1731.3
22.5°	1393.6	1428.7	1473.6	1516.6	1536.1	1549.7	1598.5	1625.9	1655.1	1678.6	1703.9
25°	1370.2	1403.4	1442.4	1477.5	1497.0	1508.8	1551.7	1577.1	1598.5	1622.0	1645.4
27.5°	1337.0	1362.4	1395.6	1420.9	1432.6	1444.3	1479.5	1501.0	1520.5	1540.0	1555.6
30°	1278.4	1298.0	1321.4	1342.9	1354.6	1356.5	1389.7	1401.4	1417.0	1430.7	1442.4
32.5°	1200.4	1216.0	1229.6	1241.4	1249.2	1251.1	1276.5	1280.4	1296.0	1296.0	1313.6
35°	1100.8	1108.6	1118.4	1118.4	1124.2	1118.4	1136.0	1139.9	1141.8	1143.8	1157.4
37.5°	987.6	991.5	997.4	985.7	985.7	979.8	985.7	989.6	981.8	981.8	991.5
40°	880.3	872.5	864.7	852.9	847.1	835.4	835.4	825.6	819.8	815.9	817.8
42.5°	776.8	759.3	741.7	716.3	704.6	692.9	681.2	667.5	663.6	653.9	648.0
45°	677.3	651.9	628.5	587.5	564.1	552.4	527.0	499.7	482.1	478.2	462.6
47.5°	593.4	556.3	517.2	468.4	445.0	423.5	386.5	363.0	339.6	327.9	318.1
50°	519.2	486.0	435.3	382.6	353.3	331.8	290.8	263.5	238.1	220.6	208.8
52.5°	454.8	417.7	370.8	310.3	281.1	257.6	212.7	181.5	160.0	142.5	128.8
55°	382.6	353.3	306.4	249.8	220.6	193.2	154.2	121.0	99.5	87.8	78.1
57.5°	329.9	304.5	259.6	204.9	177.6	152.2	113.2	85.9	68.3	56.6	50.7
60°	294.7	271.3	232.3	179.6	154.2	130.8	93.7	68.3	52.7	42.9	39.0
62.5°	265.4	242.0	206.9	158.1	136.6	113.2	80.0	56.6	42.9	35.1	29.3
65°	232.3	210.8	179.6	136.6	117.1	97.6	68.3	46.8	35.1	27.3	23.4
67.5°	197.1	177.6	150.3	113.2	97.6	82.0	54.7	39.0	29.3	23.4	19.5
70°	160.0	144.4	119.1	91.7	78.1	64.4	44.9	31.2	21.5	17.6	15.6
72.5°	123.0	109.3	91.7	70.3	58.6	48.8	33.2	23.4	17.6	13.7	11.7
75°	87.8	78.1	64.4	50.7	42.9	35.1	25.4	17.6	11.7	9.8	7.8
77.5°	60.5	54.7	44.9	35.1	29.3	25.4	17.6	11.7	9.8	7.8	5.9
80°	39.0	35.1	29.3	21.5	17.6	15.6	9.8	7.8	5.9	3.9	3.9
82.5°	23.4	21.5	17.6	11.7	9.8	7.8	5.9	3.9	3.9	2.0	2.0
85°	13.7	11.7	7.8	5.9	5.9	3.9	3.9	2.0	2.0	0.0	0.0
87.5°	5.9	3.9	3.9	2.0	2.0	2.0	2.0	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1
2.5°	1501.0	1510.7	1508.8	1514.6	1512.7	1512.7	1522.4	1518.5	1528.3	1528.3	1530.2
5°	1522.4	1536.1	1536.1	1545.8	1543.9	1547.8	1557.6	1557.6	1569.3	1573.2	1573.2
7.5°	1553.7	1571.2	1575.1	1584.9	1586.8	1594.6	1602.4	1604.4	1620.0	1623.9	1625.9
10°	1596.6	1618.1	1623.9	1633.7	1637.6	1645.4	1655.1	1659.0	1678.6	1680.5	1688.3
12.5°	1649.3	1672.7	1678.6	1690.3	1692.2	1702.0	1715.7	1719.6	1739.1	1744.9	1750.8
15°	1700.0	1721.5	1731.3	1743.0	1744.9	1756.6	1768.4	1772.3	1789.8	1797.6	1803.5
17.5°	1735.2	1760.5	1766.4	1782.0	1782.0	1791.8	1803.5	1807.4	1825.0	1830.8	1834.7
20°	1743.0	1766.4	1774.2	1785.9	1787.9	1793.7	1803.5	1807.4	1823.0	1825.0	1830.8
22.5°	1713.7	1737.1	1741.0	1752.7	1754.7	1760.5	1768.4	1766.4	1785.9	1784.0	1785.9
25°	1651.2	1672.7	1672.7	1686.4	1684.4	1690.3	1694.2	1692.2	1709.8	1709.8	1709.8
27.5°	1561.5	1581.0	1582.9	1592.7	1586.8	1588.8	1592.7	1590.7	1602.4	1602.4	1602.4
30°	1450.2	1465.8	1460.0	1467.8	1463.9	1467.8	1463.9	1461.9	1465.8	1469.7	1467.8
32.5°	1311.6	1323.3	1323.3	1325.3	1325.3	1313.6	1309.7	1309.7	1307.7	1305.8	1305.8
35°	1151.6	1161.3	1157.4	1157.4	1155.5	1143.8	1137.9	1134.0	1139.9	1128.2	1136.0
37.5°	987.6	989.6	983.7	981.8	972.0	972.0	962.2	954.4	958.3	956.4	948.6
40°	808.1	815.9	804.2	800.2	806.1	798.3	788.5	778.8	786.6	776.8	780.7
42.5°	632.4	630.4	626.5	626.5	626.5	614.8	612.9	610.9	612.9	605.1	599.2
45°	456.7	450.9	445.0	445.0	437.2	433.3	433.3	427.4	417.7	417.7	406.0
47.5°	308.4	294.7	290.8	288.9	285.0	285.0	281.1	277.2	275.2	265.4	265.4
50°	201.0	187.4	183.5	181.5	183.5	179.6	175.7	171.8	167.9	165.9	162.0
52.5°	121.0	115.2	111.3	109.3	105.4	103.4	101.5	97.6	95.6	95.6	93.7
55°	72.2	66.4	58.6	58.6	58.6	56.6	54.7	52.7	50.7	50.7	48.8
57.5°	44.9	41.0	37.1	35.1	35.1	35.1	33.2	33.2	33.2	33.2	31.2
60°	33.2	29.3	27.3	27.3	27.3	25.4	25.4	25.4	25.4	23.4	23.4
62.5°	25.4	23.4	21.5	21.5	19.5	19.5	19.5	19.5	19.5	19.5	17.6
65°	21.5	17.6	17.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
67.5°	15.6	13.7	13.7	13.7	13.7	11.7	11.7	11.7	11.7	11.7	11.7
70°	11.7	11.7	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
72.5°	9.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
75°	7.8	7.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
77.5°	5.9	5.9	5.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	3.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	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	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: P251545

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1	1495.1
2.5°	1530.2	1540.0	1530.2	1530.2	1536.1	1534.1	1538.0	1532.2
5°	1575.1	1588.8	1579.0	1577.1	1586.8	1584.9	1586.8	1582.9
7.5°	1629.8	1643.4	1633.7	1633.7	1643.4	1641.5	1647.3	1643.4
10°	1692.2	1707.8	1694.2	1696.1	1709.8	1707.8	1707.8	1707.8
12.5°	1756.6	1772.3	1764.4	1764.4	1774.2	1776.2	1778.1	1776.2
15°	1809.3	1825.0	1815.2	1815.2	1828.9	1826.9	1828.9	1826.9
17.5°	1840.6	1856.2	1844.5	1844.5	1856.2	1856.2	1858.1	1860.1
20°	1832.8	1850.3	1840.6	1836.7	1850.3	1850.3	1848.4	1848.4
22.5°	1787.9	1803.5	1795.7	1791.8	1801.5	1797.6	1795.7	1797.6
25°	1709.8	1725.4	1709.8	1709.8	1717.6	1715.7	1717.6	1715.7
27.5°	1604.4	1616.1	1600.5	1598.5	1606.3	1602.4	1600.5	1606.3
30°	1463.9	1475.6	1467.8	1461.9	1471.7	1465.8	1461.9	1463.9
32.5°	1303.8	1311.6	1307.7	1298.0	1303.8	1299.9	1298.0	1299.9
35°	1128.2	1137.9	1122.3	1120.3	1130.1	1122.3	1118.4	1128.2
37.5°	946.6	958.3	944.7	946.6	940.8	942.7	938.8	944.7
40°	774.9	772.9	769.0	767.1	769.0	763.2	767.1	761.2
42.5°	589.5	593.4	591.4	589.5	591.4	583.6	579.7	587.5
45°	409.9	407.9	404.0	400.1	400.1	398.2	398.2	392.3
47.5°	263.5	261.5	253.7	255.7	259.6	255.7	249.8	257.6
50°	160.0	158.1	158.1	156.1	160.0	156.1	152.2	152.2
52.5°	89.8	89.8	87.8	87.8	87.8	87.8	85.9	83.9
55°	48.8	46.8	46.8	46.8	44.9	44.9	44.9	44.9
57.5°	31.2	31.2	31.2	31.2	31.2	31.2	29.3	29.3
60°	23.4	23.4	23.4	23.4	21.5	23.4	21.5	21.5
62.5°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
65°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
67.5°	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
70°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
72.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
75°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)