

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: P251623

Luminaire Tested: **LD4B30D010 EU4B30508035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251623
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: LD4B30D010 EU4B30508035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2654.0 lumens
Efficiency: N/A
Efficacy: 94.8 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

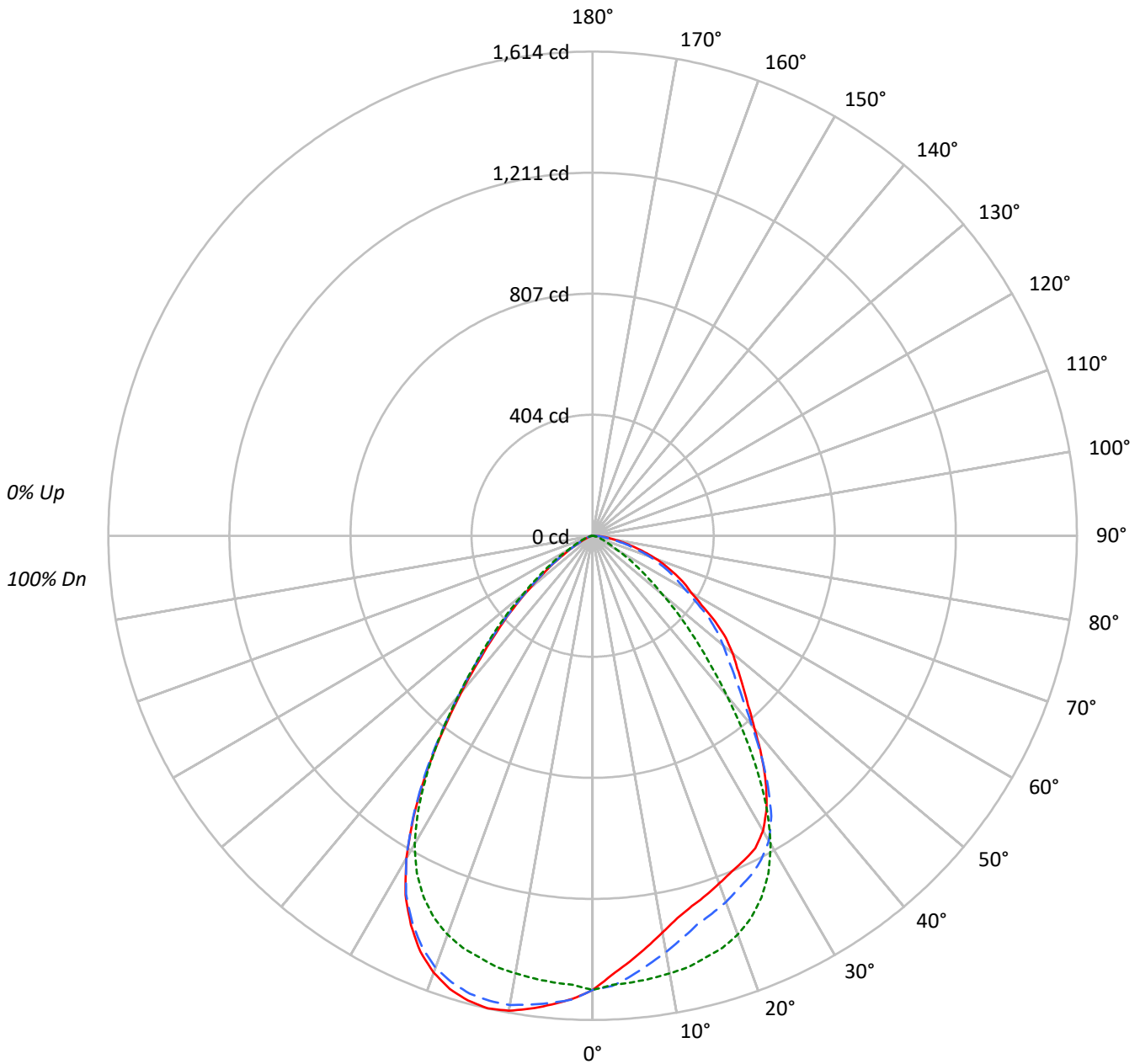
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 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°	147561	147561	147561
5°	139340	146217	153466
10°	132846	146552	159100
15°	128945	146854	161817
20°	127888	146712	160672
25°	128405	143094	153998
30°	127795	133500	139645
35°	119783	113977	115143
40°	106740	88369	86384
45°	97623	65881	61857
50°	92305	46152	41710
55°	84872	31162	26184
60°	74166	18264	14443
65°	70196	11692	8094
70°	63942	8349	5015
75°	52905	5874	3690
80°	41588	3311	2189
85°	37124	2236	0



TEST NUMBER: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.1	5.4
10°-20°	410.4	15.5
20°-30°	608.4	22.9
30°-40°	609.2	23.0
40°-50°	425.8	16.0
50°-60°	253.4	9.5
60°-70°	132.2	5.0
70°-80°	58.8	2.2
80°-90°	12.8	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°	1161.8	43.8
0°-40°	1771.0	66.7
0°-60°	2450.2	92.3
0°-90°	2654.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2654.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1514	1514	1514	1514	1514	
5°	1424	1473	1495	1563	1569	134
15°	1278	1342	1456	1580	1604	362
25°	1194	1249	1331	1422	1432	550
35°	1007	1018	958	976	968	624
45°	708	673	478	462	449	550
55°	500	468	183	160	154	443
65°	304	279	51	37	35	301
75°	140	123	16	10	10	152
85°	33	25	2	2	0	37
90°	0	0	0	0	0	



TEST NUMBER: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1
2.5°	1465.3	1482.9	1465.3	1471.1	1494.6	1473.1	1484.8	1484.8	1479.0	1492.6	1502.4
5°	1424.3	1441.9	1424.3	1432.1	1457.5	1436.0	1449.7	1445.8	1447.7	1459.4	1473.1
7.5°	1383.3	1397.0	1381.4	1391.2	1414.6	1397.0	1408.7	1408.7	1410.7	1428.2	1439.9
10°	1342.4	1354.1	1342.4	1350.2	1375.5	1359.9	1367.7	1369.7	1375.5	1391.2	1408.7
12.5°	1305.3	1315.1	1303.4	1315.1	1336.5	1320.9	1330.7	1332.6	1338.5	1356.0	1375.5
15°	1278.0	1287.7	1276.0	1285.8	1305.3	1293.6	1301.4	1305.3	1309.2	1324.8	1342.4
17.5°	1256.5	1264.3	1254.6	1266.3	1281.9	1268.2	1279.9	1279.9	1285.8	1301.4	1320.9
20°	1233.1	1240.9	1233.1	1242.9	1260.4	1248.7	1258.5	1258.5	1264.3	1281.9	1299.4
22.5°	1211.6	1215.6	1211.6	1219.5	1237.0	1227.3	1233.1	1235.1	1240.9	1256.5	1272.1
25°	1194.1	1201.9	1198.0	1205.8	1217.5	1207.7	1213.6	1215.6	1221.4	1235.1	1248.7
27.5°	1174.6	1178.5	1174.6	1184.3	1194.1	1186.3	1192.1	1190.2	1194.1	1205.8	1217.5
30°	1135.6	1139.5	1139.5	1145.3	1153.1	1149.2	1155.1	1149.2	1153.1	1162.9	1174.6
32.5°	1079.0	1080.9	1082.9	1088.7	1094.6	1088.7	1092.6	1092.6	1092.6	1100.4	1108.2
35°	1006.8	1010.7	1008.7	1012.6	1018.5	1016.5	1016.5	1014.6	1010.7	1014.6	1018.5
37.5°	924.8	919.0	919.0	924.8	928.7	920.9	924.8	920.9	920.9	922.9	922.9
40°	839.0	833.1	839.0	840.9	842.9	839.0	837.0	833.1	827.3	829.2	825.3
42.5°	766.8	762.9	764.8	764.8	766.8	762.9	764.8	757.0	751.2	747.3	741.4
45°	708.3	702.4	708.3	704.4	704.4	702.4	700.5	696.6	688.7	682.9	673.1
47.5°	653.6	653.6	655.6	655.6	655.6	651.7	651.7	643.9	636.1	628.3	614.6
50°	608.8	604.8	612.7	612.7	606.8	604.8	606.8	597.0	591.2	581.4	567.8
52.5°	560.0	560.0	561.9	561.9	560.0	556.1	558.0	550.2	544.4	534.6	521.0
55°	499.5	495.6	501.4	501.4	499.5	497.5	499.5	493.6	487.8	480.0	468.3
57.5°	431.2	429.2	433.1	435.1	431.2	431.2	433.1	427.3	425.3	417.5	405.8
60°	380.5	378.5	382.4	384.4	380.5	380.5	380.5	372.7	368.8	361.0	353.2
62.5°	345.3	343.4	347.3	345.3	343.4	341.4	343.4	335.6	331.7	323.9	316.1
65°	304.4	306.3	308.3	308.3	306.3	304.4	304.4	300.5	296.6	288.8	279.0
67.5°	265.4	265.4	267.3	269.3	267.3	267.3	267.3	261.5	257.5	251.7	240.0
70°	224.4	222.4	228.3	228.3	224.4	226.3	224.4	222.4	218.5	210.7	201.0
72.5°	181.5	181.5	183.4	183.4	181.5	181.5	181.5	179.5	173.7	169.7	160.0
75°	140.5	140.5	142.4	144.4	140.5	140.5	142.4	138.5	134.6	128.8	122.9
77.5°	105.4	103.4	105.4	105.4	103.4	103.4	103.4	101.5	99.5	93.7	87.8
80°	74.1	72.2	74.1	74.1	74.1	72.2	72.2	70.2	70.2	66.3	60.5
82.5°	50.7	48.8	50.7	50.7	50.7	48.8	48.8	48.8	46.8	44.9	41.0
85°	33.2	31.2	31.2	33.2	31.2	31.2	31.2	31.2	29.3	27.3	25.4
87.5°	15.6	15.6	15.6	15.6	15.6	15.6	15.6	13.7	13.7	13.7	11.7
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: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1
2.5°	1494.6	1490.7	1502.4	1498.5	1500.4	1490.7	1506.3	1498.5	1508.2	1498.5	1518.0
5°	1469.2	1465.3	1482.9	1480.9	1482.9	1475.1	1492.6	1490.7	1502.4	1494.6	1516.0
7.5°	1441.9	1438.0	1457.5	1459.4	1463.3	1455.5	1479.0	1479.0	1490.7	1488.7	1512.1
10°	1410.7	1412.6	1432.1	1436.0	1443.8	1439.9	1461.4	1467.2	1482.9	1480.9	1510.2
12.5°	1381.4	1381.4	1406.8	1414.6	1420.4	1418.5	1443.8	1451.6	1469.2	1473.1	1500.4
15°	1352.1	1354.1	1377.5	1389.2	1397.0	1395.1	1422.4	1432.1	1453.6	1455.5	1488.7
17.5°	1328.7	1326.8	1352.1	1361.9	1373.6	1371.6	1400.9	1412.6	1434.1	1439.9	1471.1
20°	1309.2	1307.3	1330.7	1342.4	1350.2	1348.2	1377.5	1391.2	1410.7	1414.6	1445.8
22.5°	1285.8	1281.9	1305.3	1315.1	1322.9	1320.9	1346.3	1356.0	1375.5	1379.4	1408.7
25°	1258.5	1254.6	1276.0	1281.9	1287.7	1283.8	1305.3	1311.2	1326.8	1330.7	1359.9
27.5°	1227.3	1217.5	1235.1	1235.1	1239.0	1233.1	1248.7	1254.6	1268.2	1268.2	1295.5
30°	1178.5	1164.8	1174.6	1172.6	1174.6	1166.8	1176.5	1178.5	1188.2	1186.3	1205.8
32.5°	1110.2	1090.7	1096.5	1090.7	1084.8	1073.1	1084.8	1080.9	1088.7	1080.9	1098.5
35°	1016.5	997.0	995.1	987.3	981.4	971.7	971.7	961.9	963.9	958.0	969.7
37.5°	915.1	889.7	885.8	870.2	860.4	848.7	848.7	840.9	831.2	827.3	837.0
40°	815.6	788.3	778.5	753.1	743.4	731.7	723.9	714.1	710.2	694.6	702.4
42.5°	729.7	700.5	679.0	651.7	641.9	624.4	612.7	600.9	595.1	577.5	585.3
45°	657.5	622.4	599.0	563.9	550.2	530.7	513.1	499.5	485.8	478.0	474.1
47.5°	597.0	560.0	528.8	489.7	468.3	450.7	427.3	413.6	396.1	386.3	380.5
50°	546.3	505.3	470.2	425.3	403.9	384.4	357.1	335.6	320.0	304.4	300.5
52.5°	501.4	458.5	419.5	368.8	343.4	320.0	290.7	267.3	253.6	236.1	234.1
55°	448.8	411.7	368.8	316.1	290.7	267.3	236.1	212.7	195.1	183.4	179.5
57.5°	392.2	357.1	316.1	263.4	238.0	212.7	183.4	161.9	146.3	136.6	134.6
60°	339.5	306.3	267.3	214.6	189.3	167.8	136.6	115.1	101.5	93.7	89.8
62.5°	300.5	269.3	232.2	183.4	160.0	138.5	109.3	89.8	78.0	70.2	66.3
65°	263.4	232.2	199.0	154.1	134.6	115.1	87.8	70.2	58.5	50.7	46.8
67.5°	224.4	197.1	165.8	128.8	109.3	93.7	70.2	54.6	44.9	39.0	35.1
70°	185.4	160.0	134.6	103.4	89.8	74.1	54.6	42.9	33.2	29.3	25.4
72.5°	146.3	126.8	105.4	80.0	68.3	58.5	42.9	31.2	25.4	21.5	17.6
75°	109.3	95.6	78.0	60.5	50.7	42.9	31.2	23.4	19.5	15.6	13.7
77.5°	78.0	66.3	54.6	41.0	37.1	31.2	21.5	17.6	13.7	9.8	7.8
80°	52.7	46.8	37.1	29.3	23.4	21.5	15.6	11.7	7.8	5.9	5.9
82.5°	35.1	29.3	23.4	17.6	15.6	13.7	9.8	7.8	5.9	3.9	3.9
85°	21.5	17.6	13.7	9.8	9.8	7.8	5.9	3.9	2.0	2.0	2.0
87.5°	9.8	7.8	5.9	3.9	3.9	2.0	2.0	2.0	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: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1
2.5°	1533.6	1521.9	1514.1	1523.8	1527.7	1521.9	1527.7	1537.5	1547.2	1549.2	1521.9
5°	1535.5	1523.8	1519.9	1531.6	1533.6	1531.6	1537.5	1551.1	1562.9	1566.8	1539.4
7.5°	1535.5	1527.7	1525.8	1539.4	1541.4	1539.4	1549.2	1564.8	1576.5	1584.3	1557.0
10°	1531.6	1527.7	1529.7	1541.4	1545.3	1545.3	1558.9	1576.5	1588.2	1596.0	1568.7
12.5°	1525.8	1525.8	1525.8	1539.4	1543.3	1545.3	1557.0	1580.4	1588.2	1599.9	1572.6
15°	1516.0	1516.0	1516.0	1529.7	1535.5	1535.5	1549.2	1570.7	1580.4	1592.1	1564.8
17.5°	1498.5	1498.5	1500.4	1512.1	1518.0	1518.0	1531.6	1555.0	1560.9	1574.6	1547.2
20°	1473.1	1473.1	1475.1	1486.8	1492.6	1488.7	1506.3	1525.8	1531.6	1543.3	1516.0
22.5°	1436.0	1436.0	1436.0	1447.7	1451.6	1449.7	1467.2	1484.8	1484.8	1500.4	1471.1
25°	1381.4	1385.3	1381.4	1393.1	1397.0	1395.1	1410.7	1426.3	1422.4	1439.9	1410.7
27.5°	1315.1	1313.1	1313.1	1322.9	1322.9	1320.9	1332.6	1350.2	1346.3	1358.0	1330.7
30°	1223.4	1229.2	1219.5	1233.1	1227.3	1223.4	1231.2	1246.8	1240.9	1250.7	1229.2
32.5°	1118.0	1110.2	1110.2	1110.2	1114.1	1104.3	1112.1	1119.9	1114.1	1123.8	1100.4
35°	979.5	981.4	975.6	977.5	979.5	967.8	975.6	983.4	975.6	981.4	960.0
37.5°	840.9	842.9	829.2	837.0	829.2	825.3	833.1	837.0	829.2	835.1	811.7
40°	702.4	698.5	696.6	696.6	698.5	688.7	694.6	700.5	694.6	698.5	677.0
42.5°	581.4	579.5	575.6	577.5	571.7	569.7	571.7	577.5	571.7	575.6	560.0
45°	476.1	472.2	466.3	468.3	468.3	458.5	464.4	468.3	462.4	464.4	450.7
47.5°	378.5	372.7	372.7	370.7	370.7	366.8	372.7	370.7	364.9	368.8	355.1
50°	294.6	290.7	290.7	290.7	290.7	284.9	286.8	290.7	284.9	284.9	277.1
52.5°	230.2	224.4	220.5	220.5	220.5	218.5	218.5	220.5	214.6	214.6	212.7
55°	173.7	171.7	165.8	165.8	165.8	160.0	161.9	161.9	160.0	160.0	154.1
57.5°	128.8	122.9	119.0	119.0	115.1	115.1	113.2	115.1	111.2	111.2	107.3
60°	85.8	81.9	80.0	78.0	78.0	76.1	78.0	76.1	76.1	74.1	72.2
62.5°	62.4	58.5	54.6	54.6	54.6	52.7	52.7	52.7	52.7	52.7	50.7
65°	44.9	41.0	41.0	39.0	39.0	37.1	37.1	37.1	37.1	37.1	35.1
67.5°	31.2	29.3	27.3	27.3	27.3	27.3	27.3	27.3	25.4	25.4	25.4
70°	23.4	21.5	19.5	19.5	19.5	19.5	19.5	17.6	19.5	19.5	17.6
72.5°	15.6	15.6	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
75°	11.7	11.7	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
77.5°	7.8	7.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	5.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	3.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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: P251623

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1	1514.1
2.5°	1551.1	1549.2	1545.3	1551.1	1535.5	1529.7	1527.7	1545.3
5°	1572.6	1568.7	1568.7	1574.6	1557.0	1553.1	1549.2	1568.7
7.5°	1592.1	1588.2	1588.2	1594.1	1578.5	1574.6	1570.7	1590.2
10°	1603.8	1603.8	1603.8	1607.7	1594.1	1590.2	1588.2	1607.7
12.5°	1609.7	1609.7	1607.7	1615.5	1598.0	1598.0	1594.1	1613.6
15°	1601.9	1601.9	1601.9	1607.7	1592.1	1588.2	1588.2	1603.8
17.5°	1582.4	1582.4	1580.4	1586.3	1568.7	1568.7	1566.8	1584.3
20°	1553.1	1553.1	1549.2	1557.0	1539.4	1533.6	1531.6	1549.2
22.5°	1506.3	1504.3	1502.4	1506.3	1490.7	1486.8	1484.8	1500.4
25°	1445.8	1443.8	1439.9	1443.8	1426.3	1420.4	1420.4	1432.1
27.5°	1359.9	1359.9	1354.1	1359.9	1340.4	1338.5	1336.5	1350.2
30°	1254.6	1246.8	1242.9	1250.7	1231.2	1231.2	1227.3	1240.9
32.5°	1123.8	1116.0	1114.1	1118.0	1100.4	1094.6	1102.4	1110.2
35°	973.6	975.6	967.8	967.8	952.1	954.1	956.1	967.8
37.5°	829.2	825.3	823.4	825.3	813.6	809.7	805.8	817.5
40°	694.6	684.8	682.9	682.9	673.1	671.2	673.1	679.0
42.5°	567.8	565.8	558.0	561.9	552.2	556.1	554.1	554.1
45°	458.5	460.5	452.7	458.5	450.7	444.9	444.9	448.8
47.5°	362.9	362.9	361.0	361.0	355.1	357.1	353.2	359.0
50°	281.0	281.0	277.1	279.0	275.1	275.1	273.2	275.1
52.5°	214.6	212.7	212.7	210.7	206.8	208.8	210.7	206.8
55°	156.1	158.0	154.1	156.1	152.2	154.1	152.2	154.1
57.5°	107.3	109.3	105.4	109.3	105.4	107.3	105.4	105.4
60°	74.1	74.1	72.2	74.1	72.2	72.2	70.2	74.1
62.5°	50.7	50.7	50.7	50.7	50.7	48.8	50.7	50.7
65°	37.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1
67.5°	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4
70°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
72.5°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
75°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
77.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	0.0	2.0	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)