

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: P251554

Luminaire Tested: **LD4B30D010 EU4B30509727 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251554
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 EU4B30509727 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2693.0 lumens
Efficiency: N/A
Efficacy: 96.2 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

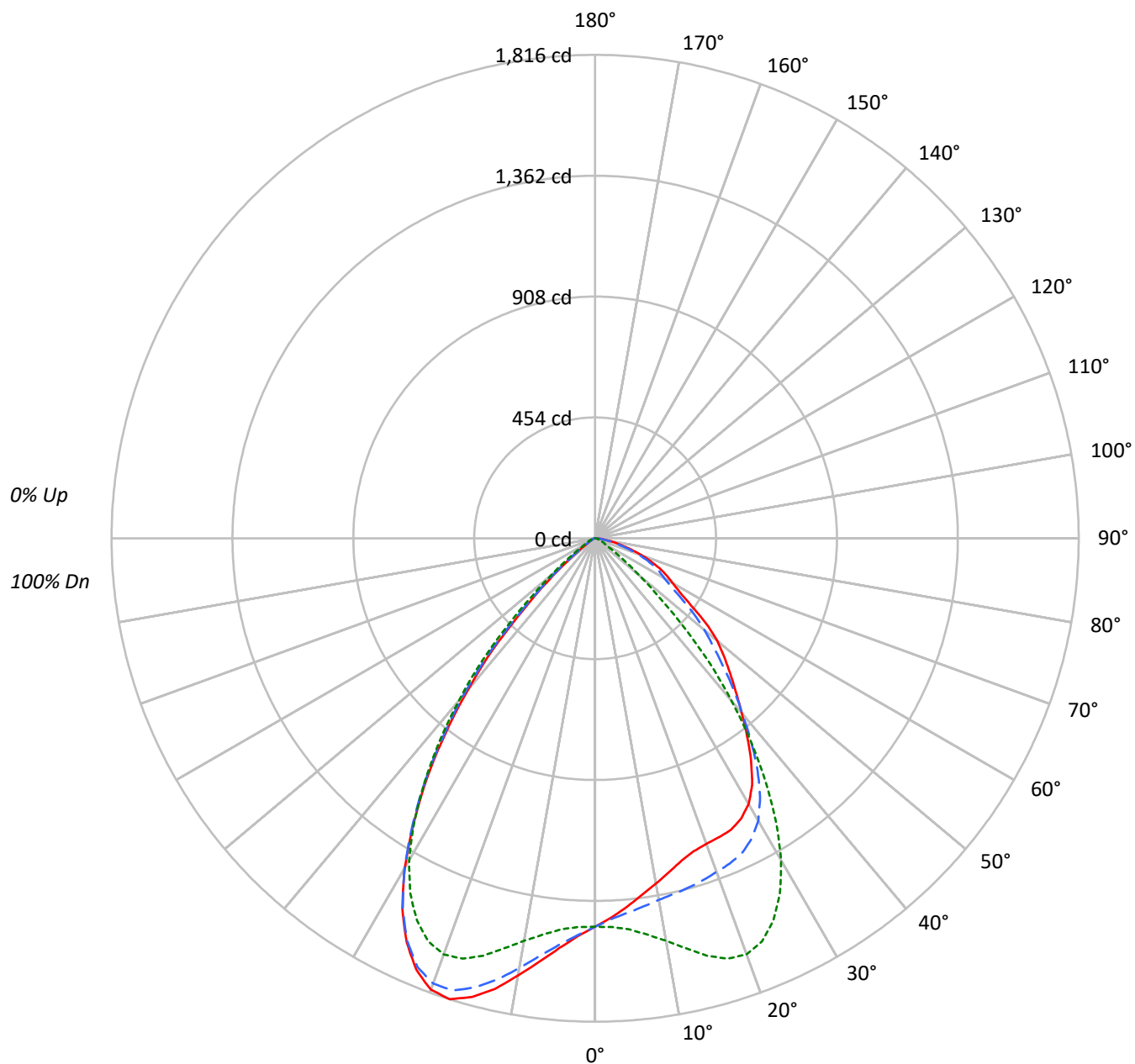
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251554

CATALOG NUMBER: LD4B30D010 EU4B30509727 4LBSW1LI

Luminous Intensity Polar Plot





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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	0			
RCR																								
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100						
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90						
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80						
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72						
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64						
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58						
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53						
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48						
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44						
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40						
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37						

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	142221	142221	142221
5°	135867	144261	151158
10°	130273	151955	164969
15°	126483	163774	179918
20°	126654	172495	187118
25°	129889	170246	180075
30°	129708	157155	160790
35°	121497	132823	131015
40°	108826	101307	94526
45°	98725	64337	52774
50°	90698	32643	22530
55°	74456	14562	7442
60°	65355	8167	4093
65°	61502	6157	3067
70°	52658	4873	2707
75°	40178	3577	2146
80°	28848	2133	1066
85°	21358	0	0



TEST NUMBER: P251554

CATALOG NUMBER: LD4B30D010 EU4B30509727 4LBSW1LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.8	5.3
10°-20°	441.8	16.4
20°-30°	683.5	25.4
30°-40°	673.4	25.0
40°-50°	413.5	15.4
50°-60°	183.9	6.8
60°-70°	102.7	3.8
70°-80°	44.4	1.7
80°-90°	7.9	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°	1267.1	47.1
0°-40°	1940.5	72.1
0°-60°	2537.9	94.2
0°-90°	2693.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2693.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1459	1459	1459	1459	1459	
5°	1389	1412	1475	1532	1545	130
15°	1254	1358	1623	1747	1783	356
25°	1208	1305	1583	1669	1675	554
35°	1021	1063	1116	1113	1101	634
45°	716	680	467	408	383	555
55°	438	396	86	50	44	403
65°	267	240	27	15	13	261
75°	107	91	10	6	6	117
85°	19	15	0	0	0	24
90°	0	0	0	0	0	



TEST NUMBER: P251554

CATALOG NUMBER: LD4B30D010 EU4B30509727 4LBSW1LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3
2.5°	1425.0	1425.0	1425.0	1425.0	1428.8	1423.1	1428.8	1428.8	1434.6	1436.5	1430.8
5°	1388.8	1386.9	1388.8	1388.8	1392.7	1390.7	1396.5	1400.3	1407.9	1411.7	1411.7
7.5°	1350.7	1350.7	1350.7	1354.5	1360.3	1358.4	1364.1	1369.8	1381.2	1388.8	1394.6
10°	1316.4	1314.5	1320.3	1322.2	1327.9	1327.9	1337.4	1343.1	1356.5	1371.7	1379.3
12.5°	1284.1	1282.2	1286.0	1291.7	1301.2	1301.2	1308.8	1318.4	1337.4	1354.5	1367.9
15°	1253.6	1255.5	1261.2	1265.0	1276.4	1276.4	1286.0	1297.4	1318.4	1339.3	1358.4
17.5°	1232.6	1234.5	1238.3	1244.1	1255.5	1255.5	1265.0	1278.3	1301.2	1324.1	1346.9
20°	1221.2	1223.1	1226.9	1232.6	1242.1	1244.1	1251.7	1266.9	1287.9	1312.6	1333.6
22.5°	1215.5	1219.3	1223.1	1226.9	1236.4	1236.4	1246.0	1257.4	1278.3	1303.1	1322.2
25°	1207.9	1211.7	1213.6	1219.3	1226.9	1226.9	1232.6	1246.0	1265.0	1286.0	1305.0
27.5°	1186.9	1190.7	1192.6	1198.3	1205.9	1204.0	1211.7	1221.2	1238.3	1257.4	1272.6
30°	1152.6	1154.5	1158.3	1160.2	1165.9	1165.9	1171.7	1181.2	1192.6	1209.8	1225.0
32.5°	1097.4	1101.2	1103.1	1105.0	1110.7	1108.8	1110.7	1116.4	1127.8	1143.1	1152.6
35°	1021.2	1028.8	1028.8	1032.6	1034.5	1032.6	1032.6	1040.2	1045.9	1057.3	1063.1
37.5°	937.3	943.0	941.1	944.9	946.9	941.1	944.9	946.9	954.5	960.2	962.1
40°	855.4	857.3	857.3	857.3	857.3	855.4	857.3	859.2	864.9	864.9	859.2
42.5°	781.1	783.0	783.0	779.2	783.0	781.1	781.1	781.1	781.1	773.5	767.8
45°	716.3	718.2	718.2	716.3	716.3	712.5	710.6	708.7	703.0	693.5	680.1
47.5°	655.4	659.2	661.1	657.3	655.4	651.6	651.6	640.1	632.5	621.1	602.0
50°	598.2	602.0	602.0	598.2	598.2	592.5	586.8	583.0	571.5	558.2	535.3
52.5°	525.8	531.5	531.5	529.6	529.6	522.0	520.1	512.5	503.0	487.7	468.7
55°	438.2	445.8	443.9	442.0	438.2	438.2	438.2	432.5	426.7	415.3	396.3
57.5°	375.3	377.2	377.2	375.3	375.3	371.5	371.5	365.8	363.9	352.4	337.2
60°	335.3	335.3	337.2	335.3	333.4	331.5	329.6	325.8	320.1	312.4	301.0
62.5°	302.9	304.8	304.8	302.9	301.0	299.1	297.2	293.4	289.6	283.9	272.4
65°	266.7	270.5	268.6	266.7	264.8	262.9	262.9	259.1	255.3	251.5	240.0
67.5°	226.7	228.6	230.5	226.7	226.7	224.8	224.8	221.0	219.1	211.5	203.8
70°	184.8	186.7	186.7	184.8	184.8	182.9	182.9	181.0	179.1	173.4	165.7
72.5°	144.8	146.7	144.8	142.9	142.9	142.9	141.0	139.1	137.2	133.4	127.6
75°	106.7	106.7	108.6	106.7	104.8	104.8	102.9	102.9	99.1	97.2	91.4
77.5°	76.2	78.1	76.2	76.2	74.3	72.4	72.4	70.5	70.5	68.6	64.8
80°	51.4	51.4	53.3	51.4	49.5	51.4	49.5	47.6	47.6	45.7	41.9
82.5°	32.4	34.3	32.4	32.4	32.4	32.4	32.4	30.5	30.5	28.6	26.7
85°	19.1	19.1	19.1	19.1	19.1	19.1	19.1	17.1	17.1	17.1	15.2
87.5°	9.5	9.5	7.6	7.6	9.5	9.5	9.5	7.6	7.6	7.6	7.6
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: P251554

CATALOG NUMBER: LD4B30D010 EU4B30509727 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3
2.5°	1438.4	1440.3	1444.1	1449.8	1449.8	1446.0	1455.5	1455.5	1459.3	1461.2	1468.9
5°	1423.1	1426.9	1434.6	1444.1	1446.0	1444.1	1457.4	1463.1	1468.9	1474.6	1486.0
7.5°	1409.8	1417.4	1430.8	1444.1	1449.8	1449.8	1470.8	1478.4	1489.8	1501.2	1514.6
10°	1402.2	1413.6	1432.7	1453.6	1459.3	1465.0	1489.8	1505.1	1520.3	1535.5	1554.6
12.5°	1392.7	1413.6	1438.4	1465.0	1476.5	1484.1	1518.4	1537.4	1558.4	1577.4	1602.2
15°	1390.7	1415.5	1447.9	1482.2	1497.4	1508.9	1547.0	1573.6	1598.4	1623.2	1647.9
17.5°	1383.1	1413.6	1453.6	1491.7	1510.8	1526.0	1569.8	1602.2	1630.8	1655.6	1684.1
20°	1373.6	1407.9	1451.7	1493.6	1514.6	1529.8	1577.4	1607.9	1640.3	1663.2	1689.9
22.5°	1360.3	1394.6	1438.4	1480.3	1499.3	1512.7	1560.3	1587.0	1615.6	1638.4	1663.2
25°	1337.4	1369.8	1407.9	1442.2	1461.2	1472.7	1514.6	1539.3	1560.3	1583.2	1606.0
27.5°	1305.0	1329.8	1362.2	1386.9	1398.4	1409.8	1444.1	1465.0	1484.1	1503.1	1518.4
30°	1247.9	1266.9	1289.8	1310.7	1322.2	1324.1	1356.5	1367.9	1383.1	1396.5	1407.9
32.5°	1171.7	1186.9	1200.2	1211.7	1219.3	1221.2	1246.0	1249.8	1265.0	1265.0	1282.2
35°	1074.5	1082.1	1091.6	1091.6	1097.4	1091.6	1108.8	1112.6	1114.5	1116.4	1129.7
37.5°	964.0	967.8	973.5	962.1	962.1	956.4	962.1	965.9	958.3	958.3	967.8
40°	859.2	851.6	844.0	832.5	826.8	815.4	815.4	805.9	800.2	796.3	798.2
42.5°	758.2	741.1	723.9	699.2	687.8	676.3	664.9	651.6	647.7	638.2	632.5
45°	661.1	636.3	613.5	573.4	550.6	539.2	514.4	487.7	470.6	466.8	451.5
47.5°	579.2	543.0	504.9	457.2	434.4	413.4	377.2	354.4	331.5	320.1	310.5
50°	506.8	474.4	424.8	373.4	344.8	323.9	283.9	257.2	232.4	215.3	203.8
52.5°	443.9	407.7	362.0	302.9	274.3	251.5	207.7	177.2	156.2	139.1	125.7
55°	373.4	344.8	299.1	243.9	215.3	188.6	150.5	118.1	97.2	85.7	76.2
57.5°	322.0	297.2	253.4	200.0	173.4	148.6	110.5	83.8	66.7	55.2	49.5
60°	287.7	264.8	226.7	175.3	150.5	127.6	91.4	66.7	51.4	41.9	38.1
62.5°	259.1	236.2	201.9	154.3	133.4	110.5	78.1	55.2	41.9	34.3	28.6
65°	226.7	205.8	175.3	133.4	114.3	95.3	66.7	45.7	34.3	26.7	22.9
67.5°	192.4	173.4	146.7	110.5	95.3	80.0	53.3	38.1	28.6	22.9	19.1
70°	156.2	141.0	116.2	89.5	76.2	62.9	43.8	30.5	21.0	17.1	15.2
72.5°	120.0	106.7	89.5	68.6	57.2	47.6	32.4	22.9	17.1	13.3	11.4
75°	85.7	76.2	62.9	49.5	41.9	34.3	24.8	17.1	11.4	9.5	7.6
77.5°	59.1	53.3	43.8	34.3	28.6	24.8	17.1	11.4	9.5	7.6	5.7
80°	38.1	34.3	28.6	21.0	17.1	15.2	9.5	7.6	5.7	3.8	3.8
82.5°	22.9	21.0	17.1	11.4	9.5	7.6	5.7	3.8	3.8	1.9	1.9
85°	13.3	11.4	7.6	5.7	5.7	3.8	3.8	1.9	1.9	0.0	0.0
87.5°	5.7	3.8	3.8	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: P251554

CATALOG NUMBER: LD4B30D010 EU4B30509727 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3
2.5°	1465.0	1474.6	1472.7	1478.4	1476.5	1476.5	1486.0	1482.2	1491.7	1491.7	1493.6
5°	1486.0	1499.3	1499.3	1508.9	1507.0	1510.8	1520.3	1520.3	1531.7	1535.5	1535.5
7.5°	1516.5	1533.6	1537.4	1547.0	1548.9	1556.5	1564.1	1566.0	1581.3	1585.1	1587.0
10°	1558.4	1579.4	1585.1	1594.6	1598.4	1606.0	1615.6	1619.4	1638.4	1640.3	1647.9
12.5°	1609.8	1632.7	1638.4	1649.8	1651.7	1661.3	1674.6	1678.4	1697.5	1703.2	1708.9
15°	1659.4	1680.3	1689.9	1701.3	1703.2	1714.6	1726.0	1729.9	1747.0	1754.6	1760.3
17.5°	1693.7	1718.4	1724.1	1739.4	1739.4	1748.9	1760.3	1764.2	1781.3	1787.0	1790.8
20°	1701.3	1724.1	1731.8	1743.2	1745.1	1750.8	1760.3	1764.2	1779.4	1781.3	1787.0
22.5°	1672.7	1695.6	1699.4	1710.8	1712.7	1718.4	1726.0	1724.1	1743.2	1741.3	1743.2
25°	1611.7	1632.7	1632.7	1646.0	1644.1	1649.8	1653.7	1651.7	1668.9	1668.9	1668.9
27.5°	1524.1	1543.2	1545.1	1554.6	1548.9	1550.8	1554.6	1552.7	1564.1	1564.1	1564.1
30°	1415.5	1430.8	1425.0	1432.7	1428.8	1432.7	1428.8	1426.9	1430.8	1434.6	1432.7
32.5°	1280.2	1291.7	1291.7	1293.6	1293.6	1282.2	1278.3	1278.3	1276.4	1274.5	1274.5
35°	1124.0	1133.6	1129.7	1129.7	1127.8	1116.4	1110.7	1106.9	1112.6	1101.2	1108.8
37.5°	964.0	965.9	960.2	958.3	948.8	948.8	939.2	931.6	935.4	933.5	925.9
40°	788.7	796.3	784.9	781.1	786.8	779.2	769.7	760.1	767.8	758.2	762.1
42.5°	617.3	615.4	611.5	611.5	611.5	600.1	598.2	596.3	598.2	590.6	584.9
45°	445.8	440.1	434.4	434.4	426.7	422.9	422.9	417.2	407.7	407.7	396.3
47.5°	301.0	287.7	283.9	282.0	278.1	278.1	274.3	270.5	268.6	259.1	259.1
50°	196.2	182.9	179.1	177.2	179.1	175.3	171.5	167.7	163.8	161.9	158.1
52.5°	118.1	112.4	108.6	106.7	102.9	101.0	99.1	95.3	93.4	93.4	91.4
55°	70.5	64.8	57.2	57.2	57.2	55.2	53.3	51.4	49.5	49.5	47.6
57.5°	43.8	40.0	36.2	34.3	34.3	34.3	32.4	32.4	32.4	32.4	30.5
60°	32.4	28.6	26.7	26.7	26.7	24.8	24.8	24.8	24.8	22.9	22.9
62.5°	24.8	22.9	21.0	21.0	19.1	19.1	19.1	19.1	19.1	19.1	17.1
65°	21.0	17.1	17.1	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
67.5°	15.2	13.3	13.3	13.3	13.3	11.4	11.4	11.4	11.4	11.4	11.4
70°	11.4	11.4	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
72.5°	9.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
75°	7.6	7.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
77.5°	5.7	5.7	5.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	3.8	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: P251554

CATALOG NUMBER: LD4B30D010 EU4B30509727 4LBSW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3	1459.3
2.5°	1493.6	1503.1	1493.6	1493.6	1499.3	1497.4	1501.2	1495.5
5°	1537.4	1550.8	1541.3	1539.3	1548.9	1547.0	1548.9	1545.1
7.5°	1590.8	1604.1	1594.6	1594.6	1604.1	1602.2	1607.9	1604.1
10°	1651.7	1667.0	1653.7	1655.6	1668.9	1667.0	1667.0	1667.0
12.5°	1714.6	1729.9	1722.2	1722.2	1731.8	1733.7	1735.6	1733.7
15°	1766.1	1781.3	1771.8	1771.8	1785.1	1783.2	1785.1	1783.2
17.5°	1796.5	1811.8	1800.3	1800.3	1811.8	1811.8	1813.7	1815.6
20°	1788.9	1806.1	1796.5	1792.7	1806.1	1806.1	1804.2	1804.2
22.5°	1745.1	1760.3	1752.7	1748.9	1758.4	1754.6	1752.7	1754.6
25°	1668.9	1684.1	1668.9	1668.9	1676.5	1674.6	1676.5	1674.6
27.5°	1566.0	1577.4	1562.2	1560.3	1567.9	1564.1	1562.2	1567.9
30°	1428.8	1440.3	1432.7	1426.9	1436.5	1430.8	1426.9	1428.8
32.5°	1272.6	1280.2	1276.4	1266.9	1272.6	1268.8	1266.9	1268.8
35°	1101.2	1110.7	1095.5	1093.5	1103.1	1095.5	1091.6	1101.2
37.5°	924.0	935.4	922.1	924.0	918.3	920.2	916.4	922.1
40°	756.3	754.4	750.6	748.7	750.6	744.9	748.7	743.0
42.5°	575.3	579.2	577.3	575.3	577.3	569.6	565.8	573.4
45°	400.1	398.2	394.4	390.6	390.6	388.6	388.6	382.9
47.5°	257.2	255.3	247.7	249.6	253.4	249.6	243.9	251.5
50°	156.2	154.3	154.3	152.4	156.2	152.4	148.6	148.6
52.5°	87.6	87.6	85.7	85.7	85.7	85.7	83.8	81.9
55°	47.6	45.7	45.7	45.7	43.8	43.8	43.8	43.8
57.5°	30.5	30.5	30.5	30.5	30.5	30.5	28.6	28.6
60°	22.9	22.9	22.9	22.9	21.0	22.9	21.0	21.0
62.5°	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
65°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
67.5°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
70°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
72.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
75°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
77.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
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



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— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)