

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: P251646

Luminaire Tested: **LD4B40D010 EU4B30509730 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251646
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 EU4B30509730 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2708.0 lumens
Efficiency: N/A
Efficacy: 62.9 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

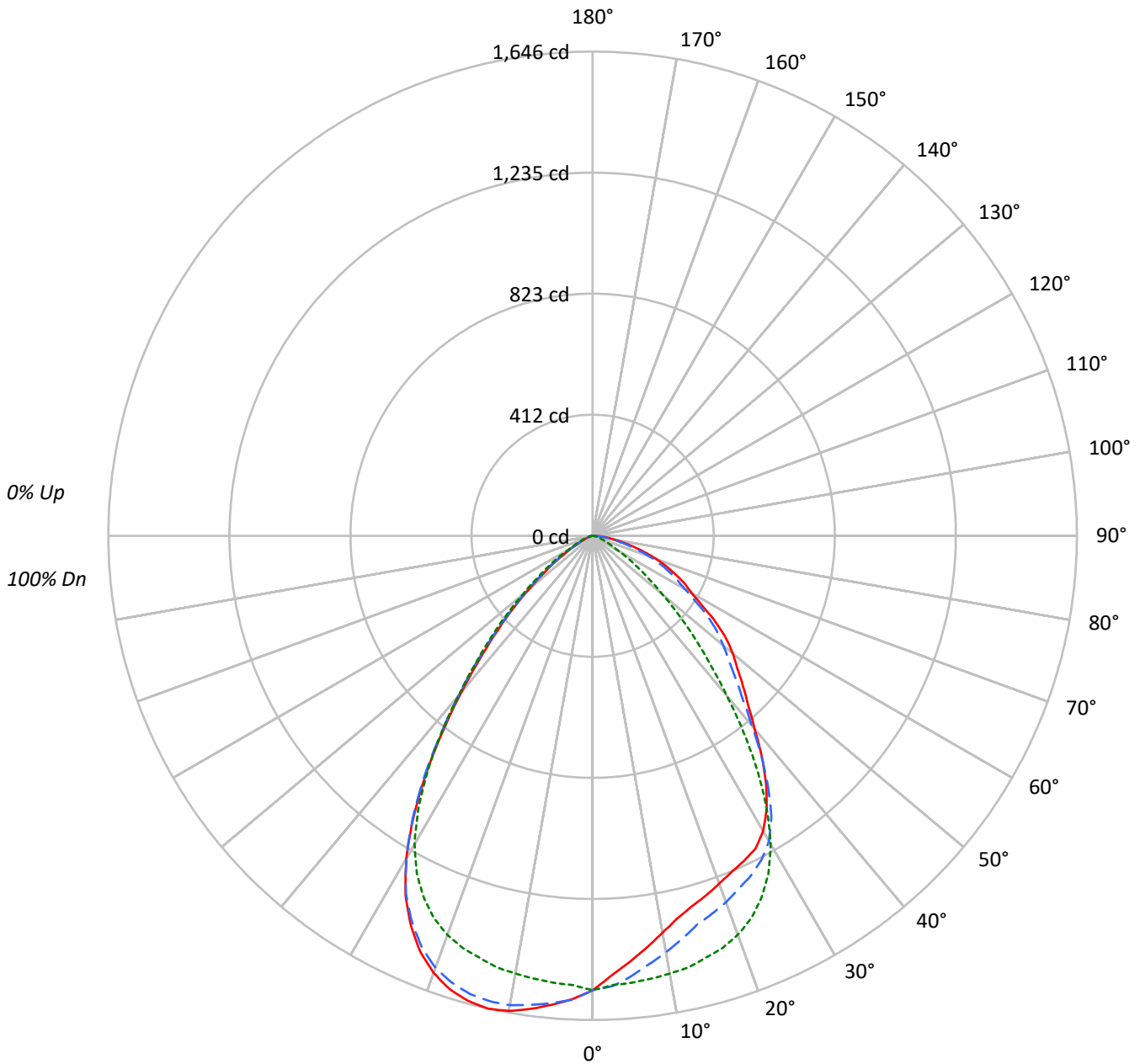
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	150563	150563	150563
5°	142177	149191	156587
10°	135548	149531	162336
15°	131568	149851	165116
20°	130491	149689	163939
25°	131018	145998	157138
30°	130394	136212	142492
35°	122222	116297	117475
40°	108915	90163	88140
45°	99607	67232	63111
50°	94170	47093	42559
55°	86605	31791	26727
60°	75666	18634	14755
65°	71626	11945	8256
70°	65225	8520	5101
75°	53959	5987	3765
80°	42486	3367	2245
85°	37795	2236	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	5.4
10°-20°	418.8	15.5
20°-30°	620.8	22.9
30°-40°	621.6	23.0
40°-50°	434.4	16.0
50°-60°	258.5	9.5
60°-70°	134.9	5.0
70°-80°	60.0	2.2
80°-90°	13.1	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°	1185.5	43.8
0°-40°	1807.1	66.7
0°-60°	2500.0	92.3
0°-90°	2708.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2708.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1545	1545	1545	1545	1545	
5°	1453	1503	1525	1595	1601	136
15°	1304	1370	1485	1613	1636	369
25°	1218	1274	1358	1451	1461	561
35°	1027	1039	978	995	987	637
45°	723	687	488	472	458	561
55°	510	478	187	163	157	452
65°	311	285	52	38	36	307
75°	143	125	16	10	10	155
85°	34	26	2	2	0	38
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°	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9
2.5°	1495.1	1513.0	1495.1	1501.1	1525.0	1503.1	1515.0	1515.0	1509.0	1523.0	1532.9
5°	1453.3	1471.2	1453.3	1461.3	1487.1	1465.2	1479.2	1475.2	1477.2	1489.1	1503.1
7.5°	1411.5	1425.4	1409.5	1419.5	1443.3	1425.4	1437.4	1437.4	1439.4	1457.3	1469.2
10°	1369.7	1381.6	1369.7	1377.7	1403.5	1387.6	1395.6	1397.6	1403.5	1419.5	1437.4
12.5°	1331.9	1341.8	1329.9	1341.8	1363.7	1347.8	1357.7	1359.7	1365.7	1383.6	1403.5
15°	1304.0	1313.9	1302.0	1312.0	1331.9	1319.9	1327.9	1331.9	1335.8	1351.8	1369.7
17.5°	1282.1	1290.1	1280.1	1292.0	1308.0	1294.0	1306.0	1306.0	1312.0	1327.9	1347.8
20°	1258.2	1266.2	1258.2	1268.2	1286.1	1274.1	1284.1	1284.1	1290.1	1308.0	1325.9
22.5°	1236.3	1240.3	1236.3	1244.3	1262.2	1252.2	1258.2	1260.2	1266.2	1282.1	1298.0
25°	1218.4	1226.3	1222.4	1230.3	1242.3	1232.3	1238.3	1240.3	1246.3	1260.2	1274.1
27.5°	1198.5	1202.5	1198.5	1208.4	1218.4	1210.4	1216.4	1214.4	1218.4	1230.3	1242.3
30°	1158.7	1162.6	1162.6	1168.6	1176.6	1172.6	1178.6	1172.6	1176.6	1186.5	1198.5
32.5°	1100.9	1102.9	1104.9	1110.9	1116.9	1110.9	1114.9	1114.9	1114.9	1122.8	1130.8
35°	1027.3	1031.2	1029.3	1033.2	1039.2	1037.2	1037.2	1035.2	1031.2	1035.2	1039.2
37.5°	943.7	937.7	937.7	943.7	947.6	939.7	943.7	939.7	939.7	941.7	941.7
40°	856.1	850.1	856.1	858.0	860.0	856.1	854.1	850.1	844.1	846.1	842.1
42.5°	782.4	778.4	780.4	780.4	782.4	778.4	780.4	772.4	766.5	762.5	756.5
45°	722.7	716.7	722.7	718.7	718.7	716.7	714.7	710.7	702.8	696.8	686.8
47.5°	666.9	666.9	668.9	668.9	668.9	664.9	664.9	657.0	649.0	641.0	627.1
50°	621.1	617.2	625.1	625.1	619.1	617.2	619.1	609.2	603.2	593.3	579.3
52.5°	571.4	571.4	573.4	573.4	571.4	567.4	569.4	561.4	555.4	545.5	531.5
55°	509.7	505.7	511.6	511.6	509.7	507.7	509.7	503.7	497.7	489.7	477.8
57.5°	440.0	438.0	442.0	444.0	440.0	440.0	442.0	436.0	434.0	426.0	414.1
60°	388.2	386.2	390.2	392.2	388.2	388.2	388.2	380.2	376.3	368.3	360.3
62.5°	352.4	350.4	354.4	352.4	350.4	348.4	350.4	342.4	338.4	330.5	322.5
65°	310.6	312.6	314.6	314.6	312.6	310.6	310.6	306.6	302.6	294.6	284.7
67.5°	270.8	270.8	272.7	274.7	272.7	272.7	272.7	266.8	262.8	256.8	244.9
70°	228.9	227.0	232.9	232.9	228.9	230.9	228.9	227.0	223.0	215.0	205.1
72.5°	185.1	185.1	187.1	187.1	185.1	185.1	185.1	183.2	177.2	173.2	163.2
75°	143.3	143.3	145.3	147.3	143.3	143.3	145.3	141.3	137.4	131.4	125.4
77.5°	107.5	105.5	107.5	107.5	105.5	105.5	105.5	103.5	101.5	95.6	89.6
80°	75.7	73.7	75.7	75.7	75.7	73.7	73.7	71.7	71.7	67.7	61.7
82.5°	51.8	49.8	51.8	51.8	51.8	49.8	49.8	49.8	47.8	45.8	41.8
85°	33.8	31.9	31.9	33.8	31.9	31.9	31.9	31.9	29.9	27.9	25.9
87.5°	15.9	15.9	15.9	15.9	15.9	15.9	15.9	13.9	13.9	13.9	11.9
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°	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9
2.5°	1525.0	1521.0	1532.9	1529.0	1530.9	1521.0	1536.9	1529.0	1538.9	1529.0	1548.9
5°	1499.1	1495.1	1513.0	1511.0	1513.0	1505.1	1523.0	1521.0	1532.9	1525.0	1546.9
7.5°	1471.2	1467.2	1487.1	1489.1	1493.1	1485.2	1509.0	1509.0	1521.0	1519.0	1542.9
10°	1439.4	1441.4	1461.3	1465.2	1473.2	1469.2	1491.1	1497.1	1513.0	1511.0	1540.9
12.5°	1409.5	1409.5	1435.4	1443.3	1449.3	1447.3	1473.2	1481.2	1499.1	1503.1	1530.9
15°	1379.6	1381.6	1405.5	1417.5	1425.4	1423.4	1451.3	1461.3	1483.2	1485.2	1519.0
17.5°	1355.8	1353.8	1379.6	1389.6	1401.5	1399.5	1429.4	1441.4	1463.3	1469.2	1501.1
20°	1335.8	1333.9	1357.7	1369.7	1377.7	1375.7	1405.5	1419.5	1439.4	1443.3	1475.2
22.5°	1312.0	1308.0	1331.9	1341.8	1349.8	1347.8	1373.7	1383.6	1403.5	1407.5	1437.4
25°	1284.1	1280.1	1302.0	1308.0	1313.9	1310.0	1331.9	1337.8	1353.8	1357.7	1387.6
27.5°	1252.2	1242.3	1260.2	1260.2	1264.2	1258.2	1274.1	1280.1	1294.0	1294.0	1321.9
30°	1202.5	1188.5	1198.5	1196.5	1198.5	1190.5	1200.5	1202.5	1212.4	1210.4	1230.3
32.5°	1132.8	1112.9	1118.8	1112.9	1106.9	1095.0	1106.9	1102.9	1110.9	1102.9	1120.8
35°	1037.2	1017.3	1015.3	1007.4	1001.4	991.4	991.4	981.5	983.5	977.5	989.4
37.5°	933.7	907.8	903.8	887.9	878.0	866.0	866.0	858.0	848.1	844.1	854.1
40°	832.2	804.3	794.3	768.5	758.5	746.6	738.6	728.6	724.7	708.7	716.7
42.5°	744.6	714.7	692.8	664.9	655.0	637.1	625.1	613.2	607.2	589.3	597.2
45°	670.9	635.1	611.2	575.3	561.4	541.5	523.6	509.7	495.7	487.8	483.8
47.5°	609.2	571.4	539.5	499.7	477.8	459.9	436.0	422.1	404.1	394.2	388.2
50°	557.4	515.6	479.8	434.0	412.1	392.2	364.3	342.4	326.5	310.6	306.6
52.5°	511.6	467.8	428.0	376.3	350.4	326.5	296.6	272.7	258.8	240.9	238.9
55°	457.9	420.1	376.3	322.5	296.6	272.7	240.9	217.0	199.1	187.1	183.2
57.5°	400.2	364.3	322.5	268.8	242.9	217.0	187.1	165.2	149.3	139.4	137.4
60°	346.4	312.6	272.7	219.0	193.1	171.2	139.4	117.5	103.5	95.6	91.6
62.5°	306.6	274.7	236.9	187.1	163.2	141.3	111.5	91.6	79.6	71.7	67.7
65°	268.8	236.9	203.1	157.3	137.4	117.5	89.6	71.7	59.7	51.8	47.8
67.5°	228.9	201.1	169.2	131.4	111.5	95.6	71.7	55.7	45.8	39.8	35.8
70°	189.1	163.2	137.4	105.5	91.6	75.7	55.7	43.8	33.8	29.9	25.9
72.5°	149.3	129.4	107.5	81.6	69.7	59.7	43.8	31.9	25.9	21.9	17.9
75°	111.5	97.6	79.6	61.7	51.8	43.8	31.9	23.9	19.9	15.9	13.9
77.5°	79.6	67.7	55.7	41.8	37.8	31.9	21.9	17.9	13.9	10.0	8.0
80°	53.8	47.8	37.8	29.9	23.9	21.9	15.9	11.9	8.0	6.0	6.0
82.5°	35.8	29.9	23.9	17.9	15.9	13.9	10.0	8.0	6.0	4.0	4.0
85°	21.9	17.9	13.9	10.0	10.0	8.0	6.0	4.0	2.0	2.0	2.0
87.5°	10.0	8.0	6.0	4.0	4.0	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9
2.5°	1564.8	1552.8	1544.9	1554.8	1558.8	1552.8	1558.8	1568.8	1578.7	1580.7	1552.8
5°	1566.8	1554.8	1550.9	1562.8	1564.8	1562.8	1568.8	1582.7	1594.6	1598.6	1570.8
7.5°	1566.8	1558.8	1556.8	1570.8	1572.8	1570.8	1580.7	1596.6	1608.6	1616.5	1588.7
10°	1562.8	1558.8	1560.8	1572.8	1576.7	1576.7	1590.7	1608.6	1620.5	1628.5	1600.6
12.5°	1556.8	1556.8	1556.8	1570.8	1574.7	1576.7	1588.7	1612.6	1620.5	1632.5	1604.6
15°	1546.9	1546.9	1546.9	1560.8	1566.8	1566.8	1580.7	1602.6	1612.6	1624.5	1596.6
17.5°	1529.0	1529.0	1530.9	1542.9	1548.9	1548.9	1562.8	1586.7	1592.7	1606.6	1578.7
20°	1503.1	1503.1	1505.1	1517.0	1523.0	1519.0	1536.9	1556.8	1562.8	1574.7	1546.9
22.5°	1465.2	1465.2	1465.2	1477.2	1481.2	1479.2	1497.1	1515.0	1515.0	1530.9	1501.1
25°	1409.5	1413.5	1409.5	1421.4	1425.4	1423.4	1439.4	1455.3	1451.3	1469.2	1439.4
27.5°	1341.8	1339.8	1339.8	1349.8	1349.8	1347.8	1359.7	1377.7	1373.7	1385.6	1357.7
30°	1248.2	1254.2	1244.3	1258.2	1252.2	1248.2	1256.2	1272.1	1266.2	1276.1	1254.2
32.5°	1140.7	1132.8	1132.8	1132.8	1136.8	1126.8	1134.8	1142.7	1136.8	1146.7	1122.8
35°	999.4	1001.4	995.4	997.4	999.4	987.4	995.4	1003.4	995.4	1001.4	979.5
37.5°	858.0	860.0	846.1	854.1	846.1	842.1	850.1	854.1	846.1	852.1	828.2
40°	716.7	712.7	710.7	710.7	712.7	702.8	708.7	714.7	708.7	712.7	690.8
42.5°	593.3	591.3	587.3	589.3	583.3	581.3	583.3	589.3	583.3	587.3	571.4
45°	485.8	481.8	475.8	477.8	477.8	467.8	473.8	477.8	471.8	473.8	459.9
47.5°	386.2	380.2	380.2	378.3	378.3	374.3	380.2	378.3	372.3	376.3	362.3
50°	300.6	296.6	296.6	296.6	296.6	290.7	292.7	296.6	290.7	290.7	282.7
52.5°	234.9	228.9	225.0	225.0	225.0	223.0	223.0	225.0	219.0	219.0	217.0
55°	177.2	175.2	169.2	169.2	169.2	163.2	165.2	165.2	163.2	163.2	157.3
57.5°	131.4	125.4	121.4	121.4	117.5	117.5	115.5	117.5	113.5	113.5	109.5
60°	87.6	83.6	81.6	79.6	79.6	77.6	79.6	77.6	77.6	75.7	73.7
62.5°	63.7	59.7	55.7	55.7	55.7	53.8	53.8	53.8	53.8	53.8	51.8
65°	45.8	41.8	41.8	39.8	39.8	37.8	37.8	37.8	37.8	37.8	35.8
67.5°	31.9	29.9	27.9	27.9	27.9	27.9	27.9	27.9	25.9	25.9	25.9
70°	23.9	21.9	19.9	19.9	19.9	19.9	19.9	17.9	19.9	19.9	17.9
72.5°	15.9	15.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
75°	11.9	11.9	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
77.5°	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
80°	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
82.5°	4.0	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: P251646

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9	1544.9
2.5°	1582.7	1580.7	1576.7	1582.7	1566.8	1560.8	1558.8	1576.7
5°	1604.6	1600.6	1600.6	1606.6	1588.7	1584.7	1580.7	1600.6
7.5°	1624.5	1620.5	1620.5	1626.5	1610.6	1606.6	1602.6	1622.5
10°	1636.5	1636.5	1636.5	1640.4	1626.5	1622.5	1620.5	1640.4
12.5°	1642.4	1642.4	1640.4	1648.4	1630.5	1630.5	1626.5	1646.4
15°	1634.5	1634.5	1634.5	1640.4	1624.5	1620.5	1620.5	1636.5
17.5°	1614.6	1614.6	1612.6	1618.5	1600.6	1600.6	1598.6	1616.5
20°	1584.7	1584.7	1580.7	1588.7	1570.8	1564.8	1562.8	1580.7
22.5°	1536.9	1534.9	1532.9	1536.9	1521.0	1517.0	1515.0	1530.9
25°	1475.2	1473.2	1469.2	1473.2	1455.3	1449.3	1449.3	1461.3
27.5°	1387.6	1387.6	1381.6	1387.6	1367.7	1365.7	1363.7	1377.7
30°	1280.1	1272.1	1268.2	1276.1	1256.2	1256.2	1252.2	1266.2
32.5°	1146.7	1138.8	1136.8	1140.7	1122.8	1116.9	1124.8	1132.8
35°	993.4	995.4	987.4	987.4	971.5	973.5	975.5	987.4
37.5°	846.1	842.1	840.1	842.1	830.2	826.2	822.2	834.2
40°	708.7	698.8	696.8	696.8	686.8	684.8	686.8	692.8
42.5°	579.3	577.3	569.4	573.4	563.4	567.4	565.4	565.4
45°	467.8	469.8	461.9	467.8	459.9	453.9	453.9	457.9
47.5°	370.3	370.3	368.3	368.3	362.3	364.3	360.3	366.3
50°	286.7	286.7	282.7	284.7	280.7	280.7	278.7	280.7
52.5°	219.0	217.0	217.0	215.0	211.0	213.0	215.0	211.0
55°	159.3	161.3	157.3	159.3	155.3	157.3	155.3	157.3
57.5°	109.5	111.5	107.5	111.5	107.5	109.5	107.5	107.5
60°	75.7	75.7	73.7	75.7	73.7	73.7	71.7	75.7
62.5°	51.8	51.8	51.8	51.8	51.8	49.8	51.8	51.8
65°	37.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8
67.5°	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
70°	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
72.5°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
75°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
77.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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



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













(END OF REPORT)