

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: P251645

Luminaire Tested: **LD4B40D010 EU4B30509727 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251645  
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 EU4B30509727 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2590.0 lumens  
Efficiency: N/A  
Efficacy: 60.2 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

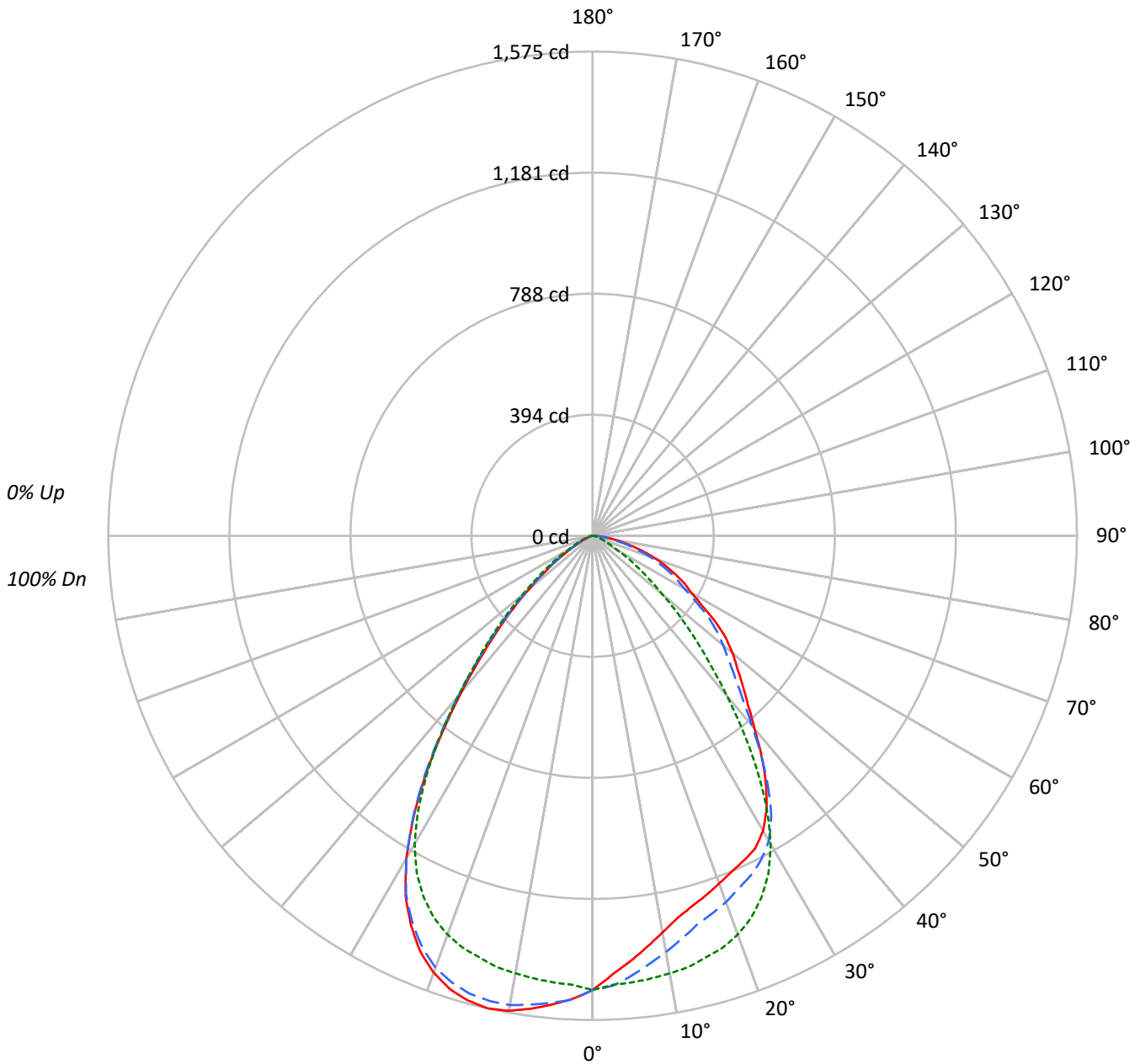
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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°	144004	144004	144004
5°	135984	142686	149768
10°	129640	143019	155271
15°	125838	143313	157912
20°	124808	143175	156793
25°	125308	139642	150288
30°	124711	130282	136280
35°	116892	111229	112359
40°	104170	86244	84298
45°	95266	64296	60354
50°	90076	45031	40709
55°	82816	30414	25555
60°	72372	17815	14112
65°	68490	11415	7910
70°	62404	8150	4873
75°	51625	5724	3577
80°	40634	3199	2133
85°	36230	2125	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.6	5.4
10°-20°	400.5	15.5
20°-30°	593.7	22.9
30°-40°	594.5	23.0
40°-50°	415.5	16.0
50°-60°	247.2	9.5
60°-70°	129.0	5.0
70°-80°	57.4	2.2
80°-90°	12.5	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°	1133.8	43.8
0°-40°	1728.3	66.7
0°-60°	2391.1	92.3
0°-90°	2590.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2590.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1478	1478	1478	1478	1478	
5°	1390	1438	1458	1525	1531	130
15°	1247	1310	1420	1542	1565	353
25°	1165	1219	1299	1388	1398	537
35°	982	994	935	952	944	609
45°	691	657	466	451	438	537
55°	487	457	179	156	150	433
65°	297	272	50	36	34	294
75°	137	120	15	10	10	148
85°	32	25	2	2	0	36
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°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1430.0	1447.1	1430.0	1435.7	1458.5	1437.6	1449.0	1449.0	1443.3	1456.6	1466.1
5°	1390.0	1407.1	1390.0	1397.6	1422.3	1401.4	1414.7	1410.9	1412.8	1424.2	1437.6
7.5°	1350.0	1363.3	1348.1	1357.6	1380.5	1363.3	1374.7	1374.7	1376.6	1393.8	1405.2
10°	1310.0	1321.4	1310.0	1317.6	1342.4	1327.1	1334.8	1336.7	1342.4	1357.6	1374.7
12.5°	1273.8	1283.3	1271.9	1283.3	1304.3	1289.1	1298.6	1300.5	1306.2	1323.3	1342.4
15°	1247.2	1256.7	1245.3	1254.8	1273.8	1262.4	1270.0	1273.8	1277.6	1292.9	1310.0
17.5°	1226.2	1233.8	1224.3	1235.7	1251.0	1237.6	1249.1	1249.1	1254.8	1270.0	1289.1
20°	1203.4	1211.0	1203.4	1212.9	1230.0	1218.6	1228.1	1228.1	1233.8	1251.0	1268.1
22.5°	1182.4	1186.2	1182.4	1190.0	1207.2	1197.7	1203.4	1205.3	1211.0	1226.2	1241.5
25°	1165.3	1172.9	1169.1	1176.7	1188.1	1178.6	1184.3	1186.2	1192.0	1205.3	1218.6
27.5°	1146.3	1150.1	1146.3	1155.8	1165.3	1157.7	1163.4	1161.5	1165.3	1176.7	1188.1
30°	1108.2	1112.0	1112.0	1117.7	1125.3	1121.5	1127.2	1121.5	1125.3	1134.8	1146.3
32.5°	1053.0	1054.9	1056.8	1062.5	1068.2	1062.5	1066.3	1066.3	1066.3	1073.9	1081.5
35°	982.5	986.3	984.4	988.2	993.9	992.0	992.0	990.1	986.3	990.1	993.9
37.5°	902.5	896.8	896.8	902.5	906.3	898.7	902.5	898.7	898.7	900.6	900.6
40°	818.8	813.0	818.8	820.7	822.6	818.8	816.8	813.0	807.3	809.2	805.4
42.5°	748.3	744.5	746.4	746.4	748.3	744.5	746.4	738.8	733.1	729.3	723.5
45°	691.2	685.5	691.2	687.4	687.4	685.5	683.6	679.8	672.1	666.4	656.9
47.5°	637.9	637.9	639.8	639.8	639.8	636.0	636.0	628.3	620.7	613.1	599.8
50°	594.1	590.3	597.9	597.9	592.2	590.3	592.2	582.6	576.9	567.4	554.1
52.5°	546.5	546.5	548.4	548.4	546.5	542.7	544.6	536.9	531.2	521.7	508.4
55°	487.4	483.6	489.3	489.3	487.4	485.5	487.4	481.7	476.0	468.4	457.0
57.5°	420.8	418.9	422.7	424.6	420.8	420.8	422.7	417.0	415.1	407.5	396.0
60°	371.3	369.4	373.2	375.1	371.3	371.3	371.3	363.7	359.9	352.3	344.6
62.5°	337.0	335.1	338.9	337.0	335.1	333.2	335.1	327.5	323.7	316.1	308.5
65°	297.0	298.9	300.8	300.8	298.9	297.0	297.0	293.2	289.4	281.8	272.3
67.5°	259.0	259.0	260.9	262.8	260.9	260.9	260.9	255.1	251.3	245.6	234.2
70°	219.0	217.1	222.8	222.8	219.0	220.9	219.0	217.1	213.3	205.6	196.1
72.5°	177.1	177.1	179.0	179.0	177.1	177.1	177.1	175.2	169.5	165.7	156.1
75°	137.1	137.1	139.0	140.9	137.1	137.1	139.0	135.2	131.4	125.7	120.0
77.5°	102.8	100.9	102.8	102.8	100.9	100.9	100.9	99.0	97.1	91.4	85.7
80°	72.4	70.5	72.4	72.4	72.4	70.5	70.5	68.5	68.5	64.7	59.0
82.5°	49.5	47.6	49.5	49.5	49.5	47.6	47.6	47.6	45.7	43.8	40.0
85°	32.4	30.5	30.5	32.4	30.5	30.5	30.5	30.5	28.6	26.7	24.8
87.5°	15.2	15.2	15.2	15.2	15.2	15.2	15.2	13.3	13.3	13.3	11.4
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°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1458.5	1454.7	1466.1	1462.3	1464.2	1454.7	1469.9	1462.3	1471.8	1462.3	1481.4
5°	1433.8	1430.0	1447.1	1445.2	1447.1	1439.5	1456.6	1454.7	1466.1	1458.5	1479.5
7.5°	1407.1	1403.3	1422.3	1424.2	1428.1	1420.4	1443.3	1443.3	1454.7	1452.8	1475.7
10°	1376.6	1378.6	1397.6	1401.4	1409.0	1405.2	1426.2	1431.9	1447.1	1445.2	1473.8
12.5°	1348.1	1348.1	1372.8	1380.5	1386.2	1384.3	1409.0	1416.6	1433.8	1437.6	1464.2
15°	1319.5	1321.4	1344.3	1355.7	1363.3	1361.4	1388.1	1397.6	1418.5	1420.4	1452.8
17.5°	1296.7	1294.8	1319.5	1329.0	1340.5	1338.6	1367.1	1378.6	1399.5	1405.2	1435.7
20°	1277.6	1275.7	1298.6	1310.0	1317.6	1315.7	1344.3	1357.6	1376.6	1380.5	1410.9
22.5°	1254.8	1251.0	1273.8	1283.3	1291.0	1289.1	1313.8	1323.3	1342.4	1346.2	1374.7
25°	1228.1	1224.3	1245.3	1251.0	1256.7	1252.9	1273.8	1279.5	1294.8	1298.6	1327.1
27.5°	1197.7	1188.1	1205.3	1205.3	1209.1	1203.4	1218.6	1224.3	1237.6	1237.6	1264.3
30°	1150.1	1136.7	1146.3	1144.3	1146.3	1138.6	1148.2	1150.1	1159.6	1157.7	1176.7
32.5°	1083.4	1064.4	1070.1	1064.4	1058.7	1047.2	1058.7	1054.9	1062.5	1054.9	1072.0
35°	992.0	973.0	971.1	963.5	957.7	948.2	948.2	938.7	940.6	934.9	946.3
37.5°	893.0	868.3	864.4	849.2	839.7	828.3	828.3	820.7	811.1	807.3	816.8
40°	795.9	769.2	759.7	735.0	725.5	714.0	706.4	696.9	693.1	677.9	685.5
42.5°	712.1	683.6	662.6	636.0	626.4	609.3	597.9	586.5	580.7	563.6	571.2
45°	641.7	607.4	584.6	550.3	536.9	517.9	500.8	487.4	474.1	466.5	462.7
47.5°	582.6	546.5	516.0	477.9	457.0	439.8	417.0	403.7	386.5	377.0	371.3
50°	533.1	493.2	458.9	415.1	394.1	375.1	348.4	327.5	312.3	297.0	293.2
52.5°	489.3	447.5	409.4	359.9	335.1	312.3	283.7	260.9	247.5	230.4	228.5
55°	437.9	401.8	359.9	308.5	283.7	260.9	230.4	207.5	190.4	179.0	175.2
57.5°	382.7	348.4	308.5	257.1	232.3	207.5	179.0	158.0	142.8	133.3	131.4
60°	331.3	298.9	260.9	209.4	184.7	163.8	133.3	112.3	99.0	91.4	87.6
62.5°	293.2	262.8	226.6	179.0	156.1	135.2	106.6	87.6	76.2	68.5	64.7
65°	257.1	226.6	194.2	150.4	131.4	112.3	85.7	68.5	57.1	49.5	45.7
67.5°	219.0	192.3	161.8	125.7	106.6	91.4	68.5	53.3	43.8	38.1	34.3
70°	180.9	156.1	131.4	100.9	87.6	72.4	53.3	41.9	32.4	28.6	24.8
72.5°	142.8	123.8	102.8	78.1	66.6	57.1	41.9	30.5	24.8	20.9	17.1
75°	106.6	93.3	76.2	59.0	49.5	41.9	30.5	22.8	19.0	15.2	13.3
77.5°	76.2	64.7	53.3	40.0	36.2	30.5	20.9	17.1	13.3	9.5	7.6
80°	51.4	45.7	36.2	28.6	22.8	20.9	15.2	11.4	7.6	5.7	5.7
82.5°	34.3	28.6	22.8	17.1	15.2	13.3	9.5	7.6	5.7	3.8	3.8
85°	20.9	17.1	13.3	9.5	9.5	7.6	5.7	3.8	1.9	1.9	1.9
87.5°	9.5	7.6	5.7	3.8	3.8	1.9	1.9	1.9	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°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1496.6	1485.2	1477.6	1487.1	1490.9	1485.2	1490.9	1500.4	1509.9	1511.8	1485.2
5°	1498.5	1487.1	1483.3	1494.7	1496.6	1494.7	1500.4	1513.7	1525.2	1529.0	1502.3
7.5°	1498.5	1490.9	1489.0	1502.3	1504.2	1502.3	1511.8	1527.1	1538.5	1546.1	1519.5
10°	1494.7	1490.9	1492.8	1504.2	1508.0	1508.0	1521.4	1538.5	1549.9	1557.5	1530.9
12.5°	1489.0	1489.0	1489.0	1502.3	1506.1	1508.0	1519.5	1542.3	1549.9	1561.3	1534.7
15°	1479.5	1479.5	1479.5	1492.8	1498.5	1498.5	1511.8	1532.8	1542.3	1553.7	1527.1
17.5°	1462.3	1462.3	1464.2	1475.7	1481.4	1481.4	1494.7	1517.5	1523.3	1536.6	1509.9
20°	1437.6	1437.6	1439.5	1450.9	1456.6	1452.8	1469.9	1489.0	1494.7	1506.1	1479.5
22.5°	1401.4	1401.4	1401.4	1412.8	1416.6	1414.7	1431.9	1449.0	1449.0	1464.2	1435.7
25°	1348.1	1351.9	1348.1	1359.5	1363.3	1361.4	1376.6	1391.9	1388.1	1405.2	1376.6
27.5°	1283.3	1281.4	1281.4	1291.0	1291.0	1289.1	1300.5	1317.6	1313.8	1325.2	1298.6
30°	1193.9	1199.6	1190.0	1203.4	1197.7	1193.9	1201.5	1216.7	1211.0	1220.5	1199.6
32.5°	1091.0	1083.4	1083.4	1083.4	1087.2	1077.7	1085.3	1092.9	1087.2	1096.7	1073.9
35°	955.8	957.7	952.0	953.9	955.8	944.4	952.0	959.7	952.0	957.7	936.8
37.5°	820.7	822.6	809.2	816.8	809.2	805.4	813.0	816.8	809.2	814.9	792.1
40°	685.5	681.7	679.8	679.8	681.7	672.1	677.9	683.6	677.9	681.7	660.7
42.5°	567.4	565.5	561.7	563.6	557.9	556.0	557.9	563.6	557.9	561.7	546.5
45°	464.6	460.8	455.1	457.0	457.0	447.5	453.2	457.0	451.3	453.2	439.8
47.5°	369.4	363.7	363.7	361.8	361.8	358.0	363.7	361.8	356.1	359.9	346.5
50°	287.5	283.7	283.7	283.7	283.7	278.0	279.9	283.7	278.0	278.0	270.4
52.5°	224.7	219.0	215.2	215.2	215.2	213.3	213.3	215.2	209.4	209.4	207.5
55°	169.5	167.6	161.8	161.8	161.8	156.1	158.0	158.0	156.1	156.1	150.4
57.5°	125.7	120.0	116.1	116.1	112.3	112.3	110.4	112.3	108.5	108.5	104.7
60°	83.8	80.0	78.1	76.2	76.2	74.3	76.2	74.3	74.3	72.4	70.5
62.5°	60.9	57.1	53.3	53.3	53.3	51.4	51.4	51.4	51.4	51.4	49.5
65°	43.8	40.0	40.0	38.1	38.1	36.2	36.2	36.2	36.2	36.2	34.3
67.5°	30.5	28.6	26.7	26.7	26.7	26.7	26.7	26.7	24.8	24.8	24.8
70°	22.8	20.9	19.0	19.0	19.0	19.0	19.0	17.1	19.0	19.0	17.1
72.5°	15.2	15.2	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
75°	11.4	11.4	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
77.5°	7.6	7.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
80°	5.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
82.5°	3.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
85°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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: P251645

CATALOG NUMBER: LD4B40D010 EU4B30509727 4LBSW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6	1477.6
2.5°	1513.7	1511.8	1508.0	1513.7	1498.5	1492.8	1490.9	1508.0
5°	1534.7	1530.9	1530.9	1536.6	1519.5	1515.6	1511.8	1530.9
7.5°	1553.7	1549.9	1549.9	1555.6	1540.4	1536.6	1532.8	1551.8
10°	1565.1	1565.1	1565.1	1569.0	1555.6	1551.8	1549.9	1569.0
12.5°	1570.9	1570.9	1569.0	1576.6	1559.4	1559.4	1555.6	1574.7
15°	1563.2	1563.2	1563.2	1569.0	1553.7	1549.9	1549.9	1565.1
17.5°	1544.2	1544.2	1542.3	1548.0	1530.9	1530.9	1529.0	1546.1
20°	1515.6	1515.6	1511.8	1519.5	1502.3	1496.6	1494.7	1511.8
22.5°	1469.9	1468.0	1466.1	1469.9	1454.7	1450.9	1449.0	1464.2
25°	1410.9	1409.0	1405.2	1409.0	1391.9	1386.2	1386.2	1397.6
27.5°	1327.1	1327.1	1321.4	1327.1	1308.1	1306.2	1304.3	1317.6
30°	1224.3	1216.7	1212.9	1220.5	1201.5	1201.5	1197.7	1211.0
32.5°	1096.7	1089.1	1087.2	1091.0	1073.9	1068.2	1075.8	1083.4
35°	950.1	952.0	944.4	944.4	929.2	931.1	933.0	944.4
37.5°	809.2	805.4	803.5	805.4	794.0	790.2	786.4	797.8
40°	677.9	668.3	666.4	666.4	656.9	655.0	656.9	662.6
42.5°	554.1	552.2	544.6	548.4	538.9	542.7	540.8	540.8
45°	447.5	449.4	441.7	447.5	439.8	434.1	434.1	437.9
47.5°	354.2	354.2	352.3	352.3	346.5	348.4	344.6	350.3
50°	274.2	274.2	270.4	272.3	268.5	268.5	266.6	268.5
52.5°	209.4	207.5	207.5	205.6	201.8	203.7	205.6	201.8
55°	152.3	154.2	150.4	152.3	148.5	150.4	148.5	150.4
57.5°	104.7	106.6	102.8	106.6	102.8	104.7	102.8	102.8
60°	72.4	72.4	70.5	72.4	70.5	70.5	68.5	72.4
62.5°	49.5	49.5	49.5	49.5	49.5	47.6	49.5	49.5
65°	36.2	34.3	34.3	34.3	34.3	34.3	34.3	34.3
67.5°	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
70°	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
72.5°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
75°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
77.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
80°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
85°	1.9	1.9	1.9	0.0	1.9	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)