

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: P251970

Luminaire Tested: **LD4B50D010TE EU4B30509727 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251970  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B50D010TE EU4B30509727 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE 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: 3206.0 lumens  
Efficiency: N/A  
Efficacy: 54.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

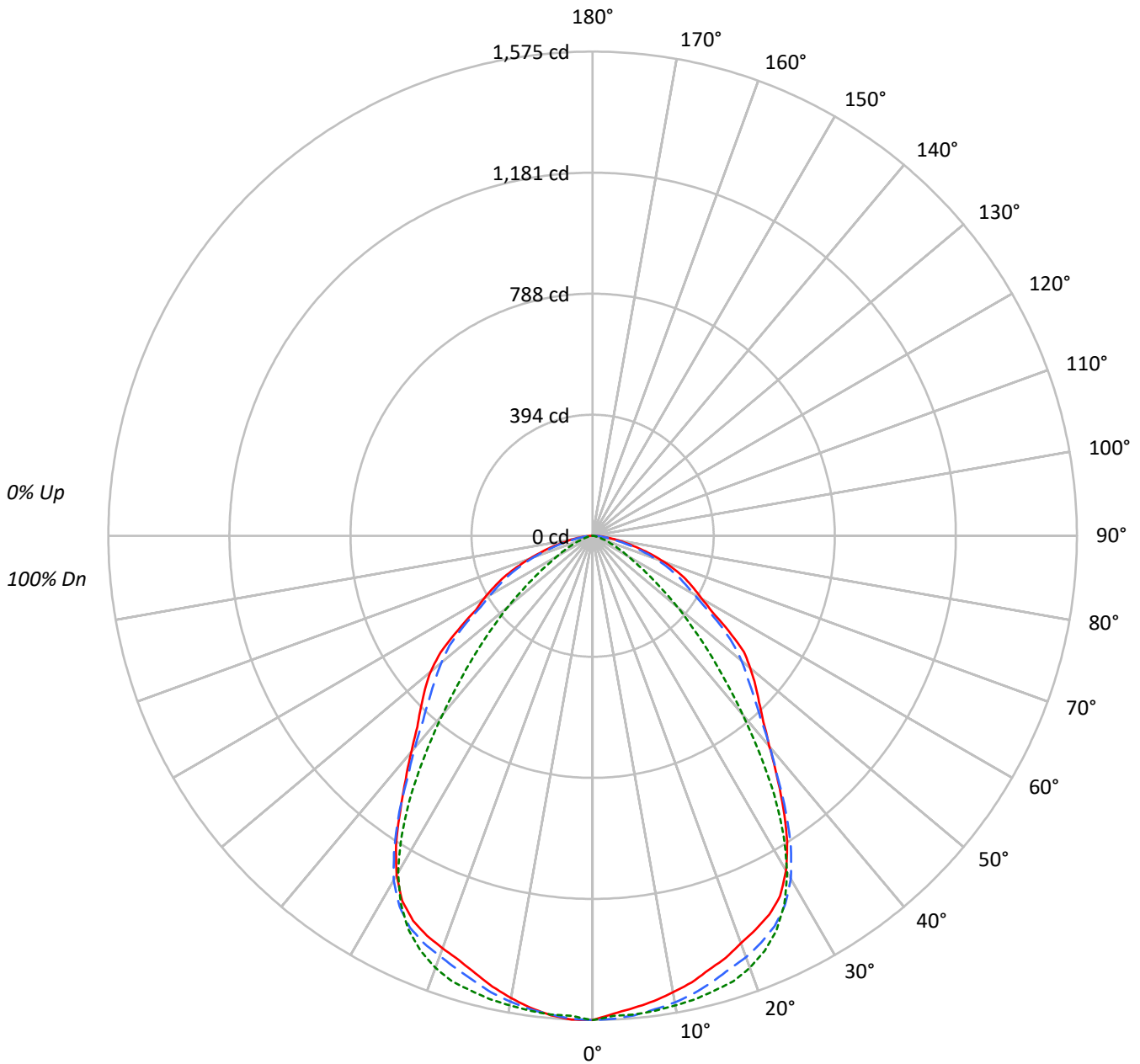
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	153526	153526	153526
5°	150796	152928	153163
10°	149175	153499	151094
15°	147449	154542	148670
20°	146287	155082	148050
25°	146202	152192	148546
30°	141546	142368	143459
35°	128599	122544	129753
40°	113775	96511	116549
45°	105548	73489	108897
50°	101417	54385	104359
55°	91838	37466	90598
60°	79838	25515	79370
65°	77114	18448	73217
70°	69755	12424	62147
75°	57499	8209	49290
80°	46246	5444	36705
85°	37907	2684	24377



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.7	4.6
10°-20°	425.2	13.3
20°-30°	642.4	20.0
30°-40°	672.2	21.0
40°-50°	544.5	17.0
50°-60°	396.0	12.4
60°-70°	244.2	7.6
70°-80°	110.4	3.4
80°-90°	22.4	0.7
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°	1216.2	37.9
0°-40°	1888.5	58.9
0°-60°	2829.0	88.2
0°-90°	3206.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3206.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1575	1575	1575	1575	1575	
5°	1541	1566	1563	1563	1566	146
15°	1461	1503	1532	1498	1474	413
25°	1360	1401	1415	1406	1381	623
35°	1081	1095	1030	1095	1091	674
45°	766	742	533	751	790	595
55°	540	506	220	511	533	482
65°	334	300	80	296	318	327
75°	153	131	22	114	131	166
85°	34	27	2	19	22	39
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°	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3
2.5°	1555.9	1555.9	1570.5	1587.4	1572.9	1558.3	1568.0	1563.2	1580.2	1580.2	1572.9
5°	1541.4	1546.2	1558.3	1572.9	1560.8	1546.2	1558.3	1553.5	1570.5	1570.5	1565.6
7.5°	1526.8	1529.3	1543.8	1560.8	1548.6	1534.1	1543.8	1541.4	1555.9	1558.3	1553.5
10°	1507.4	1509.9	1524.4	1541.4	1529.3	1517.1	1526.8	1524.4	1543.8	1543.8	1541.4
12.5°	1488.1	1490.5	1505.0	1519.6	1507.4	1495.3	1505.0	1505.0	1524.4	1526.8	1524.4
15°	1461.4	1466.2	1478.4	1492.9	1485.6	1471.1	1480.8	1480.8	1497.7	1502.6	1502.6
17.5°	1439.6	1442.0	1454.1	1468.7	1459.0	1446.9	1456.5	1456.5	1473.5	1478.4	1478.4
20°	1410.5	1415.3	1427.5	1442.0	1434.7	1425.0	1432.3	1432.3	1451.7	1456.5	1459.0
22.5°	1386.3	1391.1	1400.8	1420.2	1408.1	1400.8	1410.5	1408.1	1429.9	1432.3	1432.3
25°	1359.6	1364.5	1376.6	1388.7	1381.4	1374.1	1381.4	1381.4	1398.4	1400.8	1400.8
27.5°	1320.8	1323.3	1335.4	1347.5	1340.2	1330.5	1340.2	1337.8	1354.8	1357.2	1354.8
30°	1257.8	1262.7	1267.5	1284.5	1277.2	1269.9	1279.6	1274.8	1291.7	1291.7	1289.3
32.5°	1177.8	1177.8	1187.5	1199.7	1190.0	1185.1	1192.4	1194.8	1206.9	1206.9	1199.7
35°	1080.9	1085.7	1093.0	1100.3	1093.0	1088.2	1095.4	1093.0	1107.6	1102.7	1095.4
37.5°	984.0	986.4	993.7	1003.3	993.7	986.4	988.8	986.4	998.5	998.5	986.4
40°	894.3	899.1	904.0	913.7	904.0	899.1	901.6	894.3	908.8	904.0	896.7
42.5°	821.6	824.0	831.3	836.1	826.4	824.0	826.4	821.6	828.9	824.0	809.5
45°	765.8	765.8	768.3	775.5	765.8	763.4	763.4	758.6	765.8	756.1	741.6
47.5°	717.4	719.8	722.2	727.1	719.8	712.5	714.9	705.3	710.1	702.8	683.4
50°	668.9	673.7	676.2	681.0	673.7	668.9	671.3	661.6	661.6	649.5	632.5
52.5°	620.4	622.9	620.4	625.3	620.4	613.2	615.6	605.9	605.9	591.3	574.4
55°	540.5	542.9	545.3	550.1	545.3	538.0	542.9	535.6	535.6	525.9	506.5
57.5°	460.5	462.9	465.3	467.7	467.7	462.9	465.3	460.5	458.0	450.8	436.2
60°	409.6	409.6	409.6	412.0	409.6	407.2	407.2	402.3	402.3	392.6	378.1
62.5°	370.8	373.2	373.2	375.6	373.2	370.8	368.4	363.5	361.1	351.4	339.3
65°	334.4	334.4	332.0	336.9	334.4	332.0	332.0	327.2	322.3	312.6	300.5
67.5°	290.8	293.2	290.8	293.2	293.2	290.8	288.4	283.6	281.1	273.9	259.3
70°	244.8	244.8	244.8	247.2	244.8	244.8	247.2	239.9	237.5	227.8	215.7
72.5°	198.7	201.2	201.2	198.7	201.2	196.3	196.3	196.3	193.9	184.2	172.1
75°	152.7	155.1	155.1	157.5	155.1	152.7	152.7	150.3	147.8	140.6	130.9
77.5°	113.9	113.9	116.3	116.3	116.3	113.9	113.9	109.1	109.1	104.2	94.5
80°	82.4	82.4	80.0	82.4	82.4	80.0	80.0	77.6	77.6	72.7	65.4
82.5°	53.3	55.7	55.7	55.7	55.7	53.3	53.3	53.3	50.9	48.5	43.6
85°	33.9	33.9	33.9	33.9	36.4	33.9	36.4	33.9	33.9	29.1	26.7
87.5°	14.5	14.5	14.5	17.0	17.0	14.5	14.5	14.5	14.5	14.5	12.1
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°	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3
2.5°	1572.9	1575.3	1568.0	1577.7	1570.5	1572.9	1575.3	1572.9	1563.2	1563.2	1589.8
5°	1563.2	1568.0	1560.8	1572.9	1568.0	1568.0	1572.9	1570.5	1560.8	1563.2	1587.4
7.5°	1553.5	1560.8	1555.9	1568.0	1560.8	1560.8	1565.6	1565.6	1555.9	1558.3	1580.2
10°	1539.0	1548.6	1546.2	1558.3	1551.1	1551.1	1558.3	1558.3	1548.6	1551.1	1572.9
12.5°	1526.8	1536.5	1534.1	1546.2	1541.4	1543.8	1546.2	1551.1	1539.0	1543.8	1563.2
15°	1507.4	1517.1	1517.1	1529.3	1524.4	1529.3	1534.1	1541.4	1531.7	1531.7	1551.1
17.5°	1485.6	1497.7	1497.7	1507.4	1507.4	1509.9	1519.6	1526.8	1517.1	1519.6	1536.5
20°	1461.4	1475.9	1475.9	1488.1	1485.6	1490.5	1497.7	1505.0	1495.3	1495.3	1514.7
22.5°	1437.2	1449.3	1451.7	1459.0	1459.0	1461.4	1468.7	1473.5	1461.4	1461.4	1480.8
25°	1403.2	1415.3	1417.8	1422.6	1417.8	1417.8	1422.6	1427.5	1415.3	1415.3	1432.3
27.5°	1357.2	1369.3	1369.3	1366.9	1362.0	1364.5	1362.0	1364.5	1352.3	1349.9	1366.9
30°	1289.3	1296.6	1296.6	1294.2	1286.9	1286.9	1279.6	1282.1	1265.1	1265.1	1279.6
32.5°	1197.2	1204.5	1199.7	1194.8	1185.1	1180.3	1175.4	1173.0	1156.0	1156.0	1173.0
35°	1088.2	1093.0	1085.7	1076.1	1063.9	1056.7	1049.4	1039.7	1027.6	1030.0	1039.7
37.5°	976.7	976.7	967.0	947.6	937.9	925.8	913.7	913.7	894.3	891.9	899.1
40°	882.2	872.5	855.5	828.9	811.9	799.8	782.8	773.1	758.6	758.6	770.7
42.5°	797.3	778.0	756.1	719.8	702.8	688.3	666.5	656.8	639.8	637.4	644.7
45°	722.2	702.8	671.3	632.5	610.7	593.8	562.3	550.1	535.6	533.2	538.0
47.5°	661.6	639.8	601.0	550.1	528.3	506.5	475.0	458.0	445.9	438.7	445.9
50°	608.3	579.2	538.0	484.7	455.6	436.2	397.5	380.5	363.5	358.7	361.1
52.5°	550.1	521.1	477.4	421.7	395.0	366.0	329.6	305.4	290.8	283.6	290.8
55°	487.1	458.0	414.4	358.7	329.6	302.9	264.2	244.8	227.8	220.5	227.8
57.5°	419.3	392.6	353.8	298.1	271.4	247.2	210.8	191.5	174.5	169.6	174.5
60°	361.1	339.3	300.5	247.2	225.4	198.7	167.2	147.8	133.3	130.9	133.3
62.5°	322.3	298.1	261.7	210.8	189.0	167.2	138.1	118.8	106.6	104.2	106.6
65°	283.6	256.9	223.0	179.3	157.5	140.6	111.5	94.5	82.4	80.0	82.4
67.5°	239.9	215.7	186.6	147.8	130.9	113.9	89.7	72.7	63.0	60.6	63.0
70°	198.7	176.9	147.8	118.8	101.8	89.7	67.9	55.7	46.0	43.6	46.0
72.5°	157.5	138.1	113.9	89.7	80.0	67.9	53.3	41.2	33.9	31.5	33.9
75°	121.2	106.6	87.2	65.4	58.2	50.9	36.4	29.1	24.2	21.8	24.2
77.5°	84.8	75.1	60.6	48.5	41.2	36.4	26.7	19.4	17.0	14.5	17.0
80°	58.2	50.9	41.2	31.5	26.7	21.8	17.0	12.1	9.7	9.7	9.7
82.5°	38.8	31.5	24.2	19.4	17.0	14.5	9.7	7.3	7.3	4.8	4.8
85°	21.8	19.4	14.5	12.1	9.7	7.3	4.8	4.8	2.4	2.4	2.4
87.5°	9.7	7.3	4.8	4.8	2.4	2.4	2.4	2.4	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°	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3
2.5°	1582.6	1575.3	1585.0	1575.3	1570.5	1575.3	1570.5	1585.0	1572.9	1563.2	1572.9
5°	1580.2	1570.5	1580.2	1572.9	1565.6	1568.0	1563.2	1577.7	1563.2	1555.9	1560.8
7.5°	1575.3	1568.0	1572.9	1565.6	1558.3	1560.8	1555.9	1568.0	1553.5	1546.2	1551.1
10°	1568.0	1560.8	1563.2	1558.3	1551.1	1551.1	1546.2	1555.9	1539.0	1529.3	1534.1
12.5°	1558.3	1548.6	1553.5	1546.2	1536.5	1536.5	1531.7	1539.0	1522.0	1512.3	1514.7
15°	1546.2	1536.5	1536.5	1529.3	1519.6	1519.6	1509.9	1517.1	1497.7	1488.1	1488.1
17.5°	1531.7	1519.6	1519.6	1512.3	1500.2	1497.7	1490.5	1497.7	1475.9	1466.2	1466.2
20°	1509.9	1500.2	1497.7	1492.9	1480.8	1478.4	1468.7	1471.1	1454.1	1446.9	1444.4
22.5°	1480.8	1471.1	1473.5	1466.2	1456.5	1454.1	1444.4	1451.7	1434.7	1427.5	1429.9
25°	1429.9	1425.0	1429.9	1427.5	1420.2	1420.2	1415.3	1420.2	1405.7	1400.8	1403.2
27.5°	1371.7	1369.3	1371.7	1371.7	1366.9	1366.9	1366.9	1374.1	1359.6	1357.2	1357.2
30°	1286.9	1286.9	1289.3	1291.7	1291.7	1296.6	1294.2	1303.9	1294.2	1289.3	1294.2
32.5°	1175.4	1185.1	1192.4	1192.4	1192.4	1197.2	1202.1	1209.3	1199.7	1202.1	1202.1
35°	1049.4	1056.7	1061.5	1073.6	1066.4	1083.3	1088.2	1097.9	1095.4	1100.3	1097.9
37.5°	908.8	918.5	928.2	945.2	942.8	962.1	971.8	991.2	986.4	996.1	1000.9
40°	778.0	792.5	807.0	819.2	828.9	848.2	867.6	891.9	899.1	906.4	908.8
42.5°	651.9	666.5	690.7	707.7	722.2	753.7	780.4	809.5	816.7	831.3	836.1
45°	550.1	562.3	591.3	613.2	625.3	671.3	702.8	739.2	751.3	768.3	775.5
47.5°	455.6	477.4	506.5	533.2	550.1	598.6	639.8	678.6	695.6	714.9	724.6
50°	373.2	397.5	436.2	460.5	484.7	538.0	584.1	625.3	642.2	664.1	673.7
52.5°	305.4	332.0	368.4	395.0	421.7	477.4	525.9	564.7	586.5	601.0	615.6
55°	239.9	269.0	305.4	334.4	356.3	416.8	458.0	496.8	511.4	523.5	530.8
57.5°	186.6	208.4	244.8	269.0	295.7	349.0	390.2	419.3	431.4	445.9	450.8
60°	145.4	167.2	201.2	225.4	249.6	300.5	341.7	370.8	382.9	395.0	402.3
62.5°	116.3	138.1	169.6	191.5	213.3	259.3	295.7	324.8	339.3	351.4	358.7
65°	92.1	111.5	138.1	160.0	176.9	218.1	254.5	281.1	295.7	307.8	315.1
67.5°	72.7	89.7	113.9	128.4	145.4	179.3	210.8	235.1	247.2	261.7	269.0
70°	55.7	67.9	89.7	101.8	113.9	143.0	167.2	191.5	203.6	213.3	218.1
72.5°	41.2	50.9	67.9	77.6	84.8	109.1	128.4	145.4	155.1	164.8	169.6
75°	29.1	36.4	48.5	55.7	60.6	77.6	94.5	106.6	113.9	121.2	128.4
77.5°	19.4	24.2	31.5	36.4	41.2	53.3	63.0	72.7	80.0	87.2	89.7
80°	12.1	17.0	21.8	24.2	26.7	33.9	43.6	48.5	53.3	58.2	60.6
82.5°	7.3	9.7	12.1	14.5	17.0	21.8	26.7	31.5	33.9	38.8	41.2
85°	2.4	4.8	4.8	7.3	7.3	12.1	14.5	17.0	19.4	21.8	24.2
87.5°	0.0	0.0	2.4	2.4	2.4	2.4	4.8	4.8	4.8	4.8	4.8
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: P251970

CATALOG NUMBER: LD4B50D010TE EU4B30509727 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3	1575.3
2.5°	1582.6	1575.3	1570.5	1568.0	1585.0	1563.2	1572.9	1575.3
5°	1572.9	1565.6	1560.8	1558.3	1572.9	1553.5	1560.8	1565.6
7.5°	1558.3	1553.5	1546.2	1543.8	1558.3	1536.5	1546.2	1548.6
10°	1541.4	1534.1	1529.3	1526.8	1539.0	1517.1	1526.8	1526.8
12.5°	1519.6	1514.7	1505.0	1505.0	1514.7	1495.3	1502.6	1502.6
15°	1490.5	1485.6	1475.9	1475.9	1485.6	1466.2	1473.5	1473.5
17.5°	1466.2	1461.4	1454.1	1451.7	1461.4	1442.0	1449.3	1446.9
20°	1446.9	1442.0	1432.3	1432.3	1439.6	1420.2	1427.5	1427.5
22.5°	1429.9	1427.5	1417.8	1417.8	1427.5	1408.1	1412.9	1408.1
25°	1403.2	1400.8	1391.1	1393.5	1398.4	1379.0	1386.3	1381.4
27.5°	1359.6	1359.6	1349.9	1347.5	1354.8	1337.8	1342.6	1340.2
30°	1291.7	1294.2	1282.1	1282.1	1284.5	1269.9	1277.2	1274.8
32.5°	1199.7	1202.1	1192.4	1190.0	1197.2	1185.1	1190.0	1190.0
35°	1097.9	1100.3	1093.0	1093.0	1100.3	1093.0	1093.0	1090.6
37.5°	996.1	1000.9	996.1	998.5	1003.3	996.1	1000.9	998.5
40°	913.7	918.5	911.3	916.1	920.9	913.7	920.9	916.1
42.5°	838.5	845.8	841.0	845.8	850.7	845.8	850.7	843.4
45°	782.8	787.7	785.2	787.7	792.5	790.1	792.5	790.1
47.5°	729.5	739.2	734.3	739.2	746.5	741.6	746.5	739.2
50°	681.0	688.3	685.9	690.7	693.1	690.7	695.6	688.3
52.5°	618.0	625.3	622.9	622.9	627.7	622.9	627.7	622.9
55°	535.6	538.0	538.0	540.5	538.0	535.6	538.0	533.2
57.5°	455.6	460.5	453.2	460.5	458.0	455.6	455.6	450.8
60°	404.7	412.0	407.2	412.0	409.6	409.6	409.6	407.2
62.5°	363.5	368.4	363.5	366.0	366.0	366.0	363.5	361.1
65°	317.5	324.8	319.9	322.3	319.9	317.5	319.9	317.5
67.5°	271.4	273.9	273.9	271.4	271.4	271.4	271.4	266.6
70°	220.5	223.0	220.5	225.4	223.0	220.5	223.0	218.1
72.5°	172.1	174.5	172.1	174.5	172.1	172.1	172.1	172.1
75°	128.4	130.9	130.9	130.9	130.9	130.9	126.0	130.9
77.5°	92.1	92.1	92.1	94.5	92.1	92.1	92.1	92.1
80°	63.0	63.0	63.0	65.4	63.0	65.4	63.0	65.4
82.5°	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2
85°	21.8	24.2	24.2	21.8	21.8	21.8	21.8	21.8
87.5°	4.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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)