

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: P251956

Luminaire Tested: **LD4B40D010 EU4B30509050 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251956  
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: LD4B40D010 EU4B30509050 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3075.0 lumens  
Efficiency: N/A  
Efficacy: 71.5 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

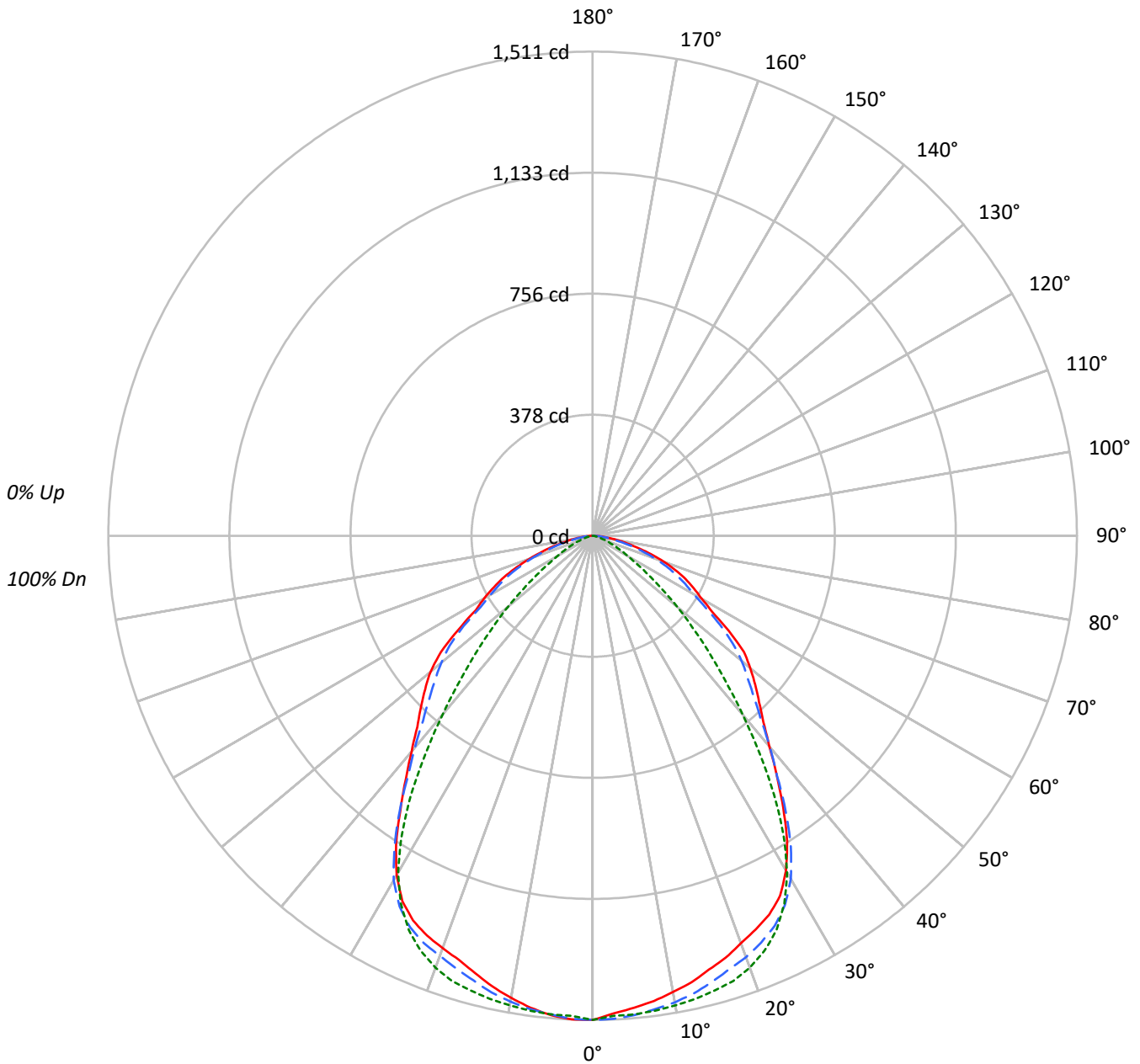
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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				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°	147249	147249	147249
5°	144632	146677	146902
10°	143079	147225	144919
15°	141426	148226	142596
20°	140313	148745	141993
25°	140234	145976	142481
30°	135762	136550	137596
35°	123341	117535	124447
40°	109119	92567	111790
45°	101234	70484	104445
50°	97278	52157	100098
55°	88083	35937	86893
60°	76563	24462	76115
65°	73978	17687	70219
70°	66906	11911	59611
75°	55127	7870	47257
80°	44338	5220	35246
85°	36342	2572	23371



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.6	4.6
10°-20°	407.8	13.3
20°-30°	616.1	20.0
30°-40°	644.8	21.0
40°-50°	522.2	17.0
50°-60°	379.8	12.4
60°-70°	234.3	7.6
70°-80°	105.8	3.4
80°-90°	21.5	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°	1166.6	37.9
0°-40°	1811.3	58.9
0°-60°	2713.4	88.2
0°-90°	3075.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3075.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1511	1511	1511	1511	1511	
5°	1478	1502	1499	1499	1502	140
15°	1402	1441	1469	1437	1413	396
25°	1304	1344	1358	1348	1325	598
35°	1037	1051	988	1051	1046	646
45°	734	711	511	721	758	571
55°	518	486	212	490	511	462
65°	321	288	77	284	304	314
75°	146	126	21	109	126	159
85°	32	26	2	19	21	37
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°	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9
2.5°	1492.3	1492.3	1506.3	1522.6	1508.6	1494.7	1504.0	1499.3	1515.6	1515.6	1508.6
5°	1478.4	1483.0	1494.7	1508.6	1497.0	1483.0	1494.7	1490.0	1506.3	1506.3	1501.6
7.5°	1464.4	1466.8	1480.7	1497.0	1485.4	1471.4	1480.7	1478.4	1492.3	1494.7	1490.0
10°	1445.8	1448.2	1462.1	1478.4	1466.8	1455.1	1464.4	1462.1	1480.7	1480.7	1478.4
12.5°	1427.3	1429.6	1443.5	1457.5	1445.8	1434.2	1443.5	1443.5	1462.1	1464.4	1462.1
15°	1401.7	1406.3	1418.0	1431.9	1424.9	1411.0	1420.3	1420.3	1436.6	1441.2	1441.2
17.5°	1380.8	1383.1	1394.7	1408.7	1399.4	1387.7	1397.0	1397.0	1413.3	1418.0	1418.0
20°	1352.9	1357.5	1369.1	1383.1	1376.1	1366.8	1373.8	1373.8	1392.4	1397.0	1399.4
22.5°	1329.6	1334.3	1343.6	1362.2	1350.5	1343.6	1352.9	1350.5	1371.5	1373.8	1373.8
25°	1304.1	1308.7	1320.3	1331.9	1325.0	1318.0	1325.0	1325.0	1341.2	1343.6	1343.6
27.5°	1266.9	1269.2	1280.8	1292.4	1285.5	1276.2	1285.5	1283.1	1299.4	1301.7	1299.4
30°	1206.4	1211.1	1215.7	1232.0	1225.0	1218.0	1227.3	1222.7	1239.0	1239.0	1236.6
32.5°	1129.7	1129.7	1139.0	1150.6	1141.3	1136.7	1143.7	1146.0	1157.6	1157.6	1150.6
35°	1036.7	1041.4	1048.4	1055.3	1048.4	1043.7	1050.7	1048.4	1062.3	1057.7	1050.7
37.5°	943.8	946.1	953.1	962.3	953.1	946.1	948.4	946.1	957.7	957.7	946.1
40°	857.7	862.4	867.0	876.3	867.0	862.4	864.7	857.7	871.7	867.0	860.1
42.5°	788.0	790.3	797.3	802.0	792.7	790.3	792.7	788.0	795.0	790.3	776.4
45°	734.5	734.5	736.9	743.8	734.5	732.2	732.2	727.6	734.5	725.2	711.3
47.5°	688.1	690.4	692.7	697.4	690.4	683.4	685.7	676.4	681.1	674.1	655.5
50°	641.6	646.2	648.5	653.2	646.2	641.6	643.9	634.6	634.6	623.0	606.7
52.5°	595.1	597.4	595.1	599.7	595.1	588.1	590.4	581.1	581.1	567.2	550.9
55°	518.4	520.7	523.0	527.7	523.0	516.0	520.7	513.7	513.7	504.4	485.8
57.5°	441.7	444.0	446.3	448.6	448.6	444.0	446.3	441.7	439.3	432.4	418.4
60°	392.8	392.8	392.8	395.2	392.8	390.5	390.5	385.9	385.9	376.6	362.6
62.5°	355.7	358.0	358.0	360.3	358.0	355.7	353.3	348.7	346.4	337.1	325.4
65°	320.8	320.8	318.5	323.1	320.8	318.5	318.5	313.8	309.2	299.9	288.2
67.5°	278.9	281.3	278.9	281.3	281.3	278.9	276.6	272.0	269.6	262.7	248.7
70°	234.8	234.8	234.8	237.1	234.8	234.8	237.1	230.1	227.8	218.5	206.9
72.5°	190.6	192.9	192.9	190.6	192.9	188.3	188.3	188.3	186.0	176.7	165.0
75°	146.4	148.8	148.8	151.1	148.8	146.4	146.4	144.1	141.8	134.8	125.5
77.5°	109.3	109.3	111.6	111.6	111.6	109.3	109.3	104.6	104.6	100.0	90.7
80°	79.0	79.0	76.7	79.0	79.0	76.7	76.7	74.4	74.4	69.7	62.8
82.5°	51.1	53.5	53.5	53.5	53.5	51.1	51.1	51.1	48.8	46.5	41.8
85°	32.5	32.5	32.5	32.5	34.9	32.5	34.9	32.5	32.5	27.9	25.6
87.5°	13.9	13.9	13.9	16.3	16.3	13.9	13.9	13.9	13.9	13.9	11.6
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°	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9
2.5°	1508.6	1510.9	1504.0	1513.3	1506.3	1508.6	1510.9	1508.6	1499.3	1499.3	1524.9
5°	1499.3	1504.0	1497.0	1508.6	1504.0	1504.0	1508.6	1506.3	1497.0	1499.3	1522.6
7.5°	1490.0	1497.0	1492.3	1504.0	1497.0	1497.0	1501.6	1501.6	1492.3	1494.7	1515.6
10°	1476.1	1485.4	1483.0	1494.7	1487.7	1487.7	1494.7	1494.7	1485.4	1487.7	1508.6
12.5°	1464.4	1473.7	1471.4	1483.0	1478.4	1480.7	1483.0	1487.7	1476.1	1480.7	1499.3
15°	1445.8	1455.1	1455.1	1466.8	1462.1	1466.8	1471.4	1478.4	1469.1	1469.1	1487.7
17.5°	1424.9	1436.6	1436.6	1445.8	1445.8	1448.2	1457.5	1464.4	1455.1	1457.5	1473.7
20°	1401.7	1415.6	1415.6	1427.3	1424.9	1429.6	1436.6	1443.5	1434.2	1434.2	1452.8
22.5°	1378.4	1390.1	1392.4	1399.4	1399.4	1401.7	1408.7	1413.3	1401.7	1401.7	1420.3
25°	1345.9	1357.5	1359.8	1364.5	1359.8	1359.8	1364.5	1369.1	1357.5	1357.5	1373.8
27.5°	1301.7	1313.4	1313.4	1311.0	1306.4	1308.7	1306.4	1308.7	1297.1	1294.8	1311.0
30°	1236.6	1243.6	1243.6	1241.3	1234.3	1234.3	1227.3	1229.7	1213.4	1213.4	1227.3
32.5°	1148.3	1155.3	1150.6	1146.0	1136.7	1132.0	1127.4	1125.1	1108.8	1108.8	1125.1
35°	1043.7	1048.4	1041.4	1032.1	1020.5	1013.5	1006.5	997.2	985.6	987.9	997.2
37.5°	936.8	936.8	927.5	908.9	899.6	888.0	876.3	876.3	857.7	855.4	862.4
40°	846.1	836.8	820.6	795.0	778.7	767.1	750.8	741.5	727.6	727.6	739.2
42.5°	764.8	746.2	725.2	690.4	674.1	660.2	639.2	629.9	613.7	611.3	618.3
45°	692.7	674.1	643.9	606.7	585.8	569.5	539.3	527.7	513.7	511.4	516.0
47.5°	634.6	613.7	576.5	527.7	506.7	485.8	455.6	439.3	427.7	420.7	427.7
50°	583.5	555.6	516.0	464.9	437.0	418.4	381.2	364.9	348.7	344.0	346.4
52.5°	527.7	499.8	457.9	404.5	378.9	351.0	316.1	292.9	278.9	272.0	278.9
55°	467.2	439.3	397.5	344.0	316.1	290.6	253.4	234.8	218.5	211.5	218.5
57.5°	402.1	376.6	339.4	285.9	260.3	237.1	202.2	183.6	167.4	162.7	167.4
60°	346.4	325.4	288.2	237.1	216.2	190.6	160.4	141.8	127.8	125.5	127.8
62.5°	309.2	285.9	251.0	202.2	181.3	160.4	132.5	113.9	102.3	100.0	102.3
65°	272.0	246.4	213.9	172.0	151.1	134.8	106.9	90.7	79.0	76.7	79.0
67.5°	230.1	206.9	179.0	141.8	125.5	109.3	86.0	69.7	60.4	58.1	60.4
70°	190.6	169.7	141.8	113.9	97.6	86.0	65.1	53.5	44.2	41.8	44.2
72.5°	151.1	132.5	109.3	86.0	76.7	65.1	51.1	39.5	32.5	30.2	32.5
75°	116.2	102.3	83.7	62.8	55.8	48.8	34.9	27.9	23.2	20.9	23.2
77.5°	81.4	72.1	58.1	46.5	39.5	34.9	25.6	18.6	16.3	13.9	16.3
80°	55.8	48.8	39.5	30.2	25.6	20.9	16.3	11.6	9.3	9.3	9.3
82.5°	37.2	30.2	23.2	18.6	16.3	13.9	9.3	7.0	7.0	4.6	4.6
85°	20.9	18.6	13.9	11.6	9.3	7.0	4.6	4.6	2.3	2.3	2.3
87.5°	9.3	7.0	4.6	4.6	2.3	2.3	2.3	2.3	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°	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9
2.5°	1517.9	1510.9	1520.2	1510.9	1506.3	1510.9	1506.3	1520.2	1508.6	1499.3	1508.6
5°	1515.6	1506.3	1515.6	1508.6	1501.6	1504.0	1499.3	1513.3	1499.3	1492.3	1497.0
7.5°	1510.9	1504.0	1508.6	1501.6	1494.7	1497.0	1492.3	1504.0	1490.0	1483.0	1487.7
10°	1504.0	1497.0	1499.3	1494.7	1487.7	1487.7	1483.0	1492.3	1476.1	1466.8	1471.4
12.5°	1494.7	1485.4	1490.0	1483.0	1473.7	1473.7	1469.1	1476.1	1459.8	1450.5	1452.8
15°	1483.0	1473.7	1473.7	1466.8	1457.5	1457.5	1448.2	1455.1	1436.6	1427.3	1427.3
17.5°	1469.1	1457.5	1457.5	1450.5	1438.9	1436.6	1429.6	1436.6	1415.6	1406.3	1406.3
20°	1448.2	1438.9	1436.6	1431.9	1420.3	1418.0	1408.7	1411.0	1394.7	1387.7	1385.4
22.5°	1420.3	1411.0	1413.3	1406.3	1397.0	1394.7	1385.4	1392.4	1376.1	1369.1	1371.5
25°	1371.5	1366.8	1371.5	1369.1	1362.2	1362.2	1357.5	1362.2	1348.2	1343.6	1345.9
27.5°	1315.7	1313.4	1315.7	1315.7	1311.0	1311.0	1311.0	1318.0	1304.1	1301.7	1301.7
30°	1234.3	1234.3	1236.6	1239.0	1239.0	1243.6	1241.3	1250.6	1241.3	1236.6	1241.3
32.5°	1127.4	1136.7	1143.7	1143.7	1143.7	1148.3	1153.0	1159.9	1150.6	1153.0	1153.0
35°	1006.5	1013.5	1018.1	1029.8	1022.8	1039.1	1043.7	1053.0	1050.7	1055.3	1053.0
37.5°	871.7	881.0	890.3	906.6	904.2	922.8	932.1	950.7	946.1	955.4	960.0
40°	746.2	760.1	774.1	785.7	795.0	813.6	832.2	855.4	862.4	869.4	871.7
42.5°	625.3	639.2	662.5	678.8	692.7	722.9	748.5	776.4	783.4	797.3	802.0
45°	527.7	539.3	567.2	588.1	599.7	643.9	674.1	709.0	720.6	736.9	743.8
47.5°	437.0	457.9	485.8	511.4	527.7	574.2	613.7	650.9	667.1	685.7	695.0
50°	358.0	381.2	418.4	441.7	464.9	516.0	560.2	599.7	616.0	636.9	646.2
52.5°	292.9	318.5	353.3	378.9	404.5	457.9	504.4	541.6	562.5	576.5	590.4
55°	230.1	258.0	292.9	320.8	341.7	399.8	439.3	476.5	490.5	502.1	509.1
57.5°	179.0	199.9	234.8	258.0	283.6	334.7	374.2	402.1	413.8	427.7	432.4
60°	139.5	160.4	192.9	216.2	239.4	288.2	327.8	355.7	367.3	378.9	385.9
62.5°	111.6	132.5	162.7	183.6	204.6	248.7	283.6	311.5	325.4	337.1	344.0
65°	88.3	106.9	132.5	153.4	169.7	209.2	244.1	269.6	283.6	295.2	302.2
67.5°	69.7	86.0	109.3	123.2	139.5	172.0	202.2	225.5	237.1	251.0	258.0
70°	53.5	65.1	86.0	97.6	109.3	137.1	160.4	183.6	195.3	204.6	209.2
72.5°	39.5	48.8	65.1	74.4	81.4	104.6	123.2	139.5	148.8	158.1	162.7
75°	27.9	34.9	46.5	53.5	58.1	74.4	90.7	102.3	109.3	116.2	123.2
77.5°	18.6	23.2	30.2	34.9	39.5	51.1	60.4	69.7	76.7	83.7	86.0
80°	11.6	16.3	20.9	23.2	25.6	32.5	41.8	46.5	51.1	55.8	58.1
82.5°	7.0	9.3	11.6	13.9	16.3	20.9	25.6	30.2	32.5	37.2	39.5
85°	2.3	4.6	4.6	7.0	7.0	11.6	13.9	16.3	18.6	20.9	23.2
87.5°	0.0	0.0	2.3	2.3	2.3	2.3	4.6	4.6	4.6	4.6	4.6
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: P251956

CATALOG NUMBER: LD4B40D010 EU4B30509050 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9	1510.9
2.5°	1517.9	1510.9	1506.3	1504.0	1520.2	1499.3	1508.6	1510.9
5°	1508.6	1501.6	1497.0	1494.7	1508.6	1490.0	1497.0	1501.6
7.5°	1494.7	1490.0	1483.0	1480.7	1494.7	1473.7	1483.0	1485.4
10°	1478.4	1471.4	1466.8	1464.4	1476.1	1455.1	1464.4	1464.4
12.5°	1457.5	1452.8	1443.5	1443.5	1452.8	1434.2	1441.2	1441.2
15°	1429.6	1424.9	1415.6	1415.6	1424.9	1406.3	1413.3	1413.3
17.5°	1406.3	1401.7	1394.7	1392.4	1401.7	1383.1	1390.1	1387.7
20°	1387.7	1383.1	1373.8	1373.8	1380.8	1362.2	1369.1	1369.1
22.5°	1371.5	1369.1	1359.8	1359.8	1369.1	1350.5	1355.2	1350.5
25°	1345.9	1343.6	1334.3	1336.6	1341.2	1322.6	1329.6	1325.0
27.5°	1304.1	1304.1	1294.8	1292.4	1299.4	1283.1	1287.8	1285.5
30°	1239.0	1241.3	1229.7	1229.7	1232.0	1218.0	1225.0	1222.7
32.5°	1150.6	1153.0	1143.7	1141.3	1148.3	1136.7	1141.3	1141.3
35°	1053.0	1055.3	1048.4	1048.4	1055.3	1048.4	1048.4	1046.0
37.5°	955.4	960.0	955.4	957.7	962.3	955.4	960.0	957.7
40°	876.3	881.0	874.0	878.7	883.3	876.3	883.3	878.7
42.5°	804.3	811.3	806.6	811.3	815.9	811.3	815.9	808.9
45°	750.8	755.5	753.1	755.5	760.1	757.8	760.1	757.8
47.5°	699.7	709.0	704.3	709.0	716.0	711.3	716.0	709.0
50°	653.2	660.2	657.8	662.5	664.8	662.5	667.1	660.2
52.5°	592.8	599.7	597.4	597.4	602.0	597.4	602.0	597.4
55°	513.7	516.0	516.0	518.4	516.0	513.7	516.0	511.4
57.5°	437.0	441.7	434.7	441.7	439.3	437.0	437.0	432.4
60°	388.2	395.2	390.5	395.2	392.8	392.8	392.8	390.5
62.5°	348.7	353.3	348.7	351.0	351.0	351.0	348.7	346.4
65°	304.5	311.5	306.8	309.2	306.8	304.5	306.8	304.5
67.5°	260.3	262.7	262.7	260.3	260.3	260.3	260.3	255.7
70°	211.5	213.9	211.5	216.2	213.9	211.5	213.9	209.2
72.5°	165.0	167.4	165.0	167.4	165.0	165.0	165.0	165.0
75°	123.2	125.5	125.5	125.5	125.5	125.5	120.9	125.5
77.5°	88.3	88.3	88.3	90.7	88.3	88.3	88.3	88.3
80°	60.4	60.4	60.4	62.8	60.4	62.8	60.4	62.8
82.5°	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5
85°	20.9	23.2	23.2	20.9	20.9	20.9	20.9	20.9
87.5°	4.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)