

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: P251799

Luminaire Tested: **LD4B40D010 EU4B30509040 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251799  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B40D010 EU4B30509040 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2712.0 lumens  
Efficiency: N/A  
Efficacy: 63.0 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

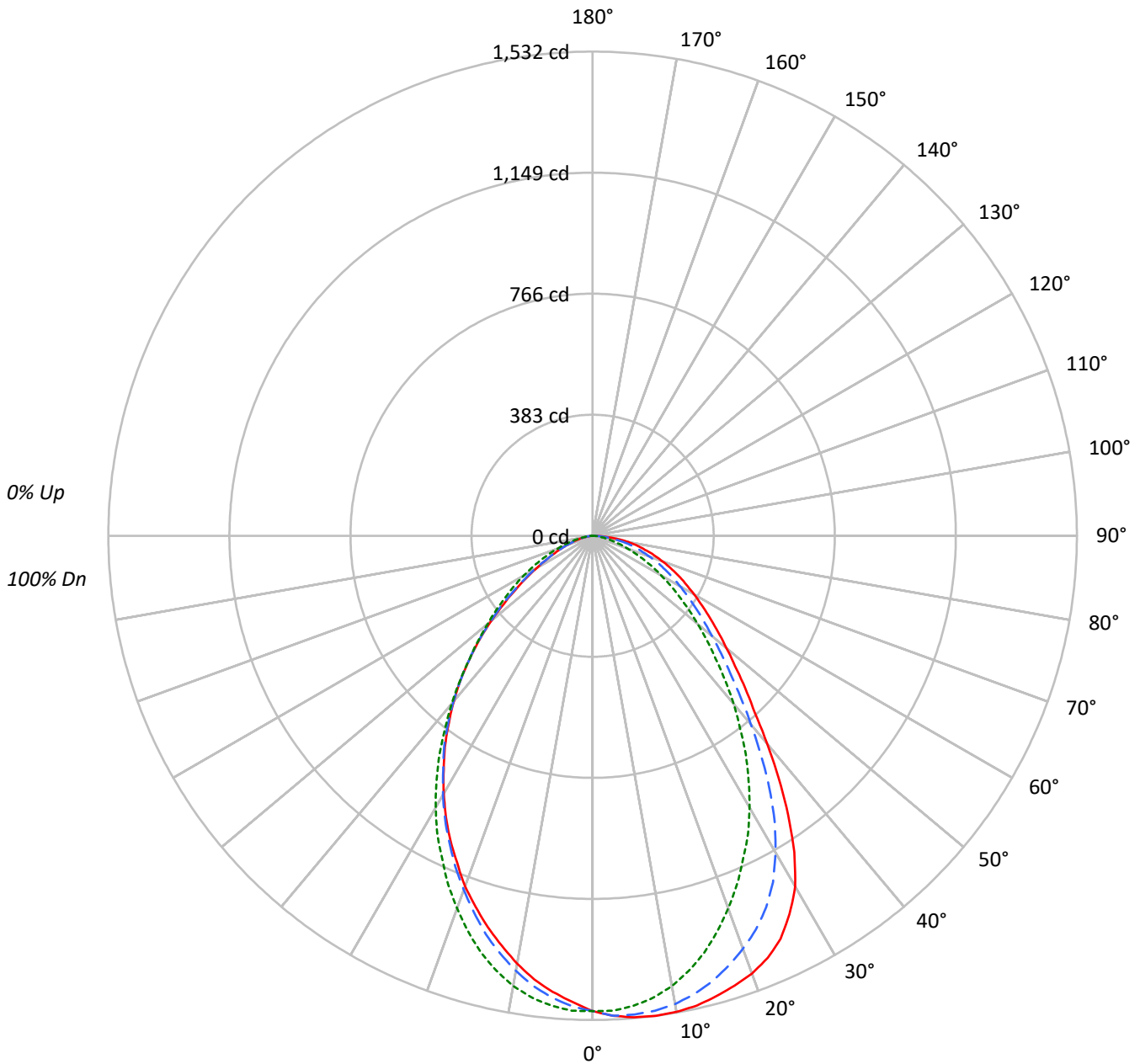
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76	76	76	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67	67	67	67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59	59	59	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38	38	38	38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35	35	35	35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32	32	32	32

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

	0°	90°	180°
0°	146587	146587	146587
5°	149632	146012	141707
10°	151362	143118	136023
15°	152222	137743	129339
20°	152873	130076	122391
25°	151288	121179	114458
30°	144258	111713	105985
35°	128290	100486	96905
40°	109221	88318	86842
45°	94080	75901	75584
50°	83845	65605	63498
55°	77056	56615	50719
60°	72158	48710	39685
65°	69366	41094	30947
70°	66592	32969	25047
75°	64465	26133	19166
80°	64935	18184	11674
85°	54345	12971	5144



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	140.8	5.2
10°-20°	387.1	14.3
20°-30°	541.3	20.0
30°-40°	556.4	20.5
40°-50°	451.6	16.7
50°-60°	318.0	11.7
60°-70°	195.8	7.2
70°-80°	97.8	3.6
80°-90°	23.2	0.9
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°	1069.2	39.4
0°-40°	1625.6	59.9
0°-60°	2395.2	88.3
0°-90°	2712.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2712.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1504	1504	1504	1504	1504	
5°	1530	1520	1492	1467	1448	146
15°	1509	1460	1365	1305	1282	426
25°	1407	1298	1127	1071	1064	643
35°	1078	974	845	819	814	670
45°	683	616	551	551	548	531
55°	454	398	333	305	298	408
65°	301	252	178	136	134	297
75°	171	134	69	51	51	183
85°	49	32	12	7	5	57
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°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1520.3	1522.6	1515.6	1522.6	1513.3	1517.9	1520.3	1515.6	1511.0	1520.3	1520.3
5°	1529.5	1529.5	1522.6	1531.8	1520.3	1522.6	1527.2	1520.3	1513.3	1522.6	1520.3
7.5°	1531.8	1531.8	1522.6	1531.8	1520.3	1522.6	1524.9	1517.9	1511.0	1517.9	1515.6
10°	1529.5	1527.2	1520.3	1529.5	1517.9	1517.9	1520.3	1513.3	1501.7	1508.7	1504.1
12.5°	1522.6	1522.6	1513.3	1522.6	1506.4	1506.4	1508.7	1499.4	1490.2	1490.2	1485.5
15°	1508.7	1508.7	1499.4	1506.4	1492.5	1492.5	1490.2	1480.9	1469.3	1469.3	1460.1
17.5°	1492.5	1492.5	1483.2	1490.2	1474.0	1474.0	1471.7	1457.8	1441.6	1439.3	1427.7
20°	1474.0	1474.0	1462.4	1467.0	1448.5	1448.5	1446.2	1430.0	1411.5	1406.9	1390.7
22.5°	1446.2	1446.2	1434.6	1437.0	1418.4	1416.1	1413.8	1395.3	1376.8	1369.8	1349.0
25°	1406.9	1404.6	1395.3	1395.3	1376.8	1372.2	1367.5	1349.0	1330.5	1316.6	1298.1
27.5°	1349.0	1351.3	1339.8	1342.1	1318.9	1314.3	1312.0	1288.9	1268.0	1254.2	1235.6
30°	1281.9	1275.0	1263.4	1263.4	1244.9	1242.6	1238.0	1217.1	1194.0	1177.8	1157.0
32.5°	1187.0	1184.7	1173.2	1173.2	1152.3	1152.3	1143.1	1122.3	1101.4	1092.2	1071.4
35°	1078.3	1076.0	1066.7	1066.7	1048.2	1050.5	1041.3	1025.1	1004.2	990.4	974.2
37.5°	967.2	964.9	955.7	958.0	941.8	941.8	934.8	918.6	902.4	895.5	874.7
40°	858.5	856.2	844.6	851.5	837.6	833.0	830.7	819.1	800.6	791.4	779.8
42.5°	759.0	761.3	749.7	754.3	742.8	738.1	735.8	726.6	712.7	703.4	691.9
45°	682.6	678.0	673.4	673.4	661.8	659.5	657.2	645.6	636.3	627.1	615.5
47.5°	610.9	606.3	601.6	603.9	594.7	592.4	587.7	578.5	566.9	562.3	550.7
50°	553.0	550.7	543.8	543.8	534.5	532.2	527.6	520.6	509.1	502.1	492.9
52.5°	499.8	499.8	492.9	490.6	483.6	481.3	479.0	469.7	460.5	451.2	442.0
55°	453.5	451.2	446.6	446.6	437.3	435.0	432.7	423.4	414.2	407.3	398.0
57.5°	409.6	409.6	404.9	404.9	398.0	393.4	393.4	384.1	372.5	367.9	356.3
60°	370.2	370.2	365.6	365.6	358.7	358.7	354.0	344.8	337.8	328.6	319.3
62.5°	333.2	335.5	330.9	328.6	321.6	319.3	319.3	312.4	300.8	293.9	284.6
65°	300.8	298.5	296.2	293.9	286.9	284.6	284.6	275.4	268.4	259.2	252.2
67.5°	266.1	266.1	261.5	261.5	256.8	254.5	249.9	243.0	236.0	229.1	222.1
70°	233.7	233.7	231.4	231.4	224.5	222.1	219.8	212.9	205.9	199.0	189.7
72.5°	203.6	201.3	199.0	199.0	194.4	192.1	189.7	182.8	175.9	168.9	162.0
75°	171.2	171.2	168.9	168.9	164.3	162.0	162.0	157.3	148.1	143.5	134.2
77.5°	143.5	143.5	141.1	141.1	136.5	136.5	134.2	127.3	122.6	115.7	111.1
80°	115.7	113.4	113.4	111.1	106.4	106.4	104.1	101.8	94.9	90.2	83.3
82.5°	81.0	81.0	81.0	78.7	76.4	76.4	74.0	69.4	64.8	62.5	55.5
85°	48.6	48.6	46.3	44.0	46.3	44.0	41.7	39.3	37.0	34.7	32.4
87.5°	20.8	20.8	18.5	18.5	18.5	18.5	18.5	16.2	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°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1506.4	1513.3	1511.0	1508.7	1504.1	1504.1	1504.1	1501.7	1504.1	1504.1	1499.4
5°	1506.4	1511.0	1508.7	1504.1	1499.4	1499.4	1497.1	1492.5	1492.5	1492.5	1483.2
7.5°	1499.4	1504.1	1497.1	1492.5	1487.9	1483.2	1483.2	1476.3	1476.3	1474.0	1464.7
10°	1485.5	1487.9	1478.6	1474.0	1467.0	1464.7	1460.1	1450.8	1448.5	1446.2	1437.0
12.5°	1464.7	1467.0	1455.5	1446.2	1437.0	1434.6	1430.0	1418.4	1413.8	1409.2	1397.6
15°	1434.6	1434.6	1420.8	1409.2	1399.9	1397.6	1386.0	1374.5	1369.8	1365.2	1349.0
17.5°	1399.9	1397.6	1379.1	1367.5	1356.0	1351.3	1339.8	1325.9	1316.6	1312.0	1298.1
20°	1362.9	1356.0	1335.1	1323.6	1309.7	1302.7	1291.2	1272.7	1263.4	1254.2	1240.3
22.5°	1318.9	1309.7	1286.5	1270.3	1256.5	1249.5	1233.3	1217.1	1203.2	1194.0	1177.8
25°	1265.7	1254.2	1228.7	1207.9	1196.3	1189.4	1173.2	1154.7	1140.8	1126.9	1113.0
27.5°	1203.2	1189.4	1163.9	1143.1	1131.5	1119.9	1108.4	1087.5	1076.0	1064.4	1048.2
30°	1126.9	1110.7	1087.5	1069.0	1055.2	1045.9	1032.0	1013.5	999.6	992.7	976.5
32.5°	1043.6	1025.1	1004.2	985.7	978.8	967.2	955.7	937.1	925.6	918.6	907.1
35°	951.0	937.1	914.0	900.1	888.6	883.9	874.7	856.2	851.5	844.6	830.7
37.5°	853.8	842.3	826.1	814.5	805.2	800.6	791.4	779.8	772.9	765.9	759.0
40°	763.6	754.3	740.5	731.2	719.6	712.7	712.7	698.8	694.2	694.2	687.2
42.5°	675.7	671.0	659.5	645.6	643.3	636.3	634.0	627.1	622.4	620.1	617.8
45°	601.6	594.7	583.1	576.2	569.2	569.2	562.3	555.3	553.0	550.7	548.4
47.5°	536.8	527.6	518.3	511.4	506.8	504.4	497.5	492.9	490.6	490.6	488.2
50°	479.0	472.0	462.8	455.8	451.2	446.6	442.0	437.3	435.0	432.7	432.7
52.5°	430.4	421.1	411.9	404.9	398.0	395.7	391.1	386.4	384.1	381.8	379.5
55°	386.4	379.5	367.9	361.0	354.0	354.0	347.1	340.1	335.5	333.2	330.9
57.5°	344.8	337.8	326.3	319.3	314.7	310.1	305.4	300.8	296.2	291.6	286.9
60°	307.8	300.8	289.2	280.0	277.7	273.0	268.4	259.2	254.5	249.9	245.3
62.5°	273.0	263.8	254.5	245.3	243.0	238.3	231.4	224.5	217.5	212.9	205.9
65°	240.6	233.7	222.1	215.2	208.3	205.9	199.0	189.7	182.8	178.2	171.2
67.5°	210.6	201.3	189.7	182.8	178.2	173.5	166.6	159.7	152.7	145.8	138.8
70°	180.5	173.5	162.0	155.0	150.4	145.8	138.8	129.6	122.6	115.7	111.1
72.5°	152.7	143.5	134.2	127.3	122.6	118.0	111.1	104.1	97.2	92.6	85.6
75°	127.3	118.0	111.1	101.8	99.5	94.9	87.9	81.0	74.0	69.4	64.8
77.5°	101.8	94.9	85.6	81.0	76.4	71.7	67.1	60.2	55.5	48.6	44.0
80°	76.4	69.4	62.5	57.8	53.2	50.9	46.3	41.7	37.0	32.4	30.1
82.5°	50.9	46.3	39.3	37.0	34.7	32.4	27.8	25.5	23.1	20.8	18.5
85°	27.8	25.5	23.1	18.5	18.5	16.2	13.9	13.9	11.6	11.6	9.3
87.5°	11.6	9.3	9.3	6.9	6.9	6.9	4.6	4.6	4.6	2.3	2.3
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°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1501.7	1492.5	1492.5	1492.5	1485.5	1487.9	1490.2	1492.5	1490.2	1483.2	1490.2
5°	1485.5	1476.3	1476.3	1471.7	1467.0	1467.0	1467.0	1469.3	1467.0	1460.1	1462.4
7.5°	1464.7	1453.2	1450.8	1446.2	1441.6	1439.3	1439.3	1439.3	1437.0	1427.7	1432.3
10°	1432.3	1420.8	1416.1	1413.8	1406.9	1404.6	1402.2	1399.9	1397.6	1388.4	1393.0
12.5°	1393.0	1383.7	1374.5	1372.2	1365.2	1360.6	1358.3	1358.3	1353.7	1344.4	1349.0
15°	1346.7	1332.8	1325.9	1321.3	1314.3	1309.7	1305.1	1307.4	1305.1	1295.8	1298.1
17.5°	1291.2	1277.3	1270.3	1268.0	1258.8	1254.2	1251.8	1251.8	1249.5	1240.3	1242.6
20°	1231.0	1217.1	1212.5	1207.9	1203.2	1198.6	1196.3	1194.0	1191.7	1182.4	1189.4
22.5°	1170.9	1154.7	1147.7	1147.7	1138.5	1136.1	1133.8	1136.1	1133.8	1124.6	1129.2
25°	1108.4	1092.2	1087.5	1080.6	1076.0	1073.7	1073.7	1073.7	1071.4	1066.7	1071.4
27.5°	1039.0	1027.4	1020.4	1018.1	1013.5	1011.2	1008.9	1011.2	1011.2	1004.2	1008.9
30°	969.5	960.3	955.7	953.3	946.4	944.1	946.4	946.4	946.4	939.5	946.4
32.5°	900.1	893.2	890.9	883.9	879.3	879.3	879.3	881.6	879.3	874.7	881.6
35°	830.7	821.4	819.1	816.8	816.8	812.2	816.8	814.5	819.1	812.2	816.8
37.5°	756.7	752.0	749.7	749.7	745.1	747.4	747.4	747.4	752.0	745.1	749.7
40°	687.2	682.6	682.6	682.6	680.3	680.3	680.3	682.6	684.9	680.3	684.9
42.5°	617.8	615.5	615.5	613.2	610.9	613.2	615.5	615.5	617.8	613.2	615.5
45°	550.7	548.4	550.7	548.4	548.4	546.1	548.4	550.7	550.7	548.4	548.4
47.5°	488.2	488.2	485.9	485.9	485.9	485.9	485.9	485.9	485.9	481.3	485.9
50°	432.7	428.1	430.4	428.1	428.1	425.8	425.8	423.4	421.1	418.8	418.8
52.5°	379.5	374.9	374.9	372.5	370.2	370.2	367.9	365.6	363.3	358.7	358.7
55°	328.6	324.0	321.6	319.3	317.0	314.7	312.4	310.1	305.4	303.1	303.1
57.5°	282.3	277.7	273.0	273.0	268.4	266.1	261.5	256.8	254.5	249.9	249.9
60°	240.6	236.0	229.1	226.8	224.5	219.8	212.9	210.6	208.3	203.6	205.9
62.5°	201.3	194.4	187.4	185.1	182.8	178.2	173.5	168.9	166.6	168.9	168.9
65°	164.3	157.3	152.7	148.1	145.8	141.1	138.8	136.5	136.5	136.5	138.8
67.5°	131.9	125.0	120.3	118.0	113.4	111.1	111.1	111.1	111.1	111.1	111.1
70°	104.1	99.5	94.9	90.2	90.2	87.9	87.9	87.9	87.9	87.9	87.9
72.5°	78.7	74.0	71.7	71.7	69.4	69.4	69.4	69.4	67.1	67.1	69.4
75°	57.8	55.5	53.2	53.2	53.2	50.9	50.9	50.9	50.9	50.9	50.9
77.5°	41.7	39.3	39.3	37.0	37.0	37.0	37.0	37.0	37.0	34.7	34.7
80°	27.8	25.5	25.5	25.5	25.5	23.1	23.1	23.1	23.1	23.1	23.1
82.5°	16.2	16.2	16.2	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
85°	9.3	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	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: P251799

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1476.3	1485.5	1487.9	1480.9	1483.2	1478.6	1480.9	1476.3
5°	1450.8	1457.8	1460.1	1455.5	1455.5	1450.8	1453.2	1448.5
7.5°	1418.4	1425.4	1427.7	1423.1	1423.1	1418.4	1418.4	1416.1
10°	1381.4	1383.7	1388.4	1381.4	1383.7	1379.1	1379.1	1374.5
12.5°	1335.1	1339.8	1344.4	1337.5	1337.5	1335.1	1335.1	1328.2
15°	1286.5	1291.2	1293.5	1288.9	1288.9	1286.5	1284.2	1281.9
17.5°	1235.6	1238.0	1242.6	1235.6	1240.3	1235.6	1235.6	1231.0
20°	1177.8	1184.7	1187.0	1180.1	1182.4	1180.1	1180.1	1180.1
22.5°	1122.3	1126.9	1129.2	1124.6	1126.9	1122.3	1124.6	1119.9
25°	1064.4	1066.7	1069.0	1064.4	1069.0	1066.7	1064.4	1064.4
27.5°	1004.2	1006.6	1008.9	1004.2	1008.9	1006.6	1008.9	1004.2
30°	939.5	944.1	948.7	944.1	946.4	944.1	944.1	941.8
32.5°	874.7	879.3	883.9	879.3	883.9	879.3	881.6	877.0
35°	814.5	816.8	819.1	814.5	816.8	816.8	816.8	814.5
37.5°	747.4	752.0	752.0	749.7	754.3	752.0	752.0	747.4
40°	682.6	684.9	687.2	682.6	684.9	682.6	684.9	682.6
42.5°	615.5	620.1	622.4	617.8	617.8	617.8	615.5	617.8
45°	546.1	550.7	555.3	548.4	550.7	550.7	550.7	548.4
47.5°	483.6	483.6	485.9	483.6	485.9	481.3	485.9	483.6
50°	418.8	418.8	423.4	418.8	418.8	418.8	418.8	418.8
52.5°	356.3	358.7	358.7	354.0	356.3	354.0	356.3	354.0
55°	298.5	298.5	300.8	298.5	298.5	298.5	298.5	298.5
57.5°	247.6	249.9	249.9	247.6	249.9	247.6	247.6	247.6
60°	205.9	205.9	205.9	203.6	205.9	203.6	205.9	203.6
62.5°	166.6	168.9	168.9	166.6	168.9	166.6	166.6	166.6
65°	136.5	136.5	136.5	136.5	136.5	136.5	136.5	134.2
67.5°	108.8	108.8	111.1	108.8	111.1	111.1	111.1	111.1
70°	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9
72.5°	67.1	67.1	69.4	67.1	67.1	67.1	67.1	67.1
75°	50.9	50.9	50.9	50.9	50.9	48.6	48.6	50.9
77.5°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	37.0
80°	23.1	23.1	23.1	23.1	20.8	20.8	23.1	20.8
82.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
85°	6.9	6.9	4.6	4.6	4.6	4.6	4.6	4.6
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)