

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: P251952

Luminaire Tested: **LD4B40D010 EU4B30509027 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251952  
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 EU4B30509027 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2898.0 lumens  
Efficiency: N/A  
Efficacy: 67.4 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

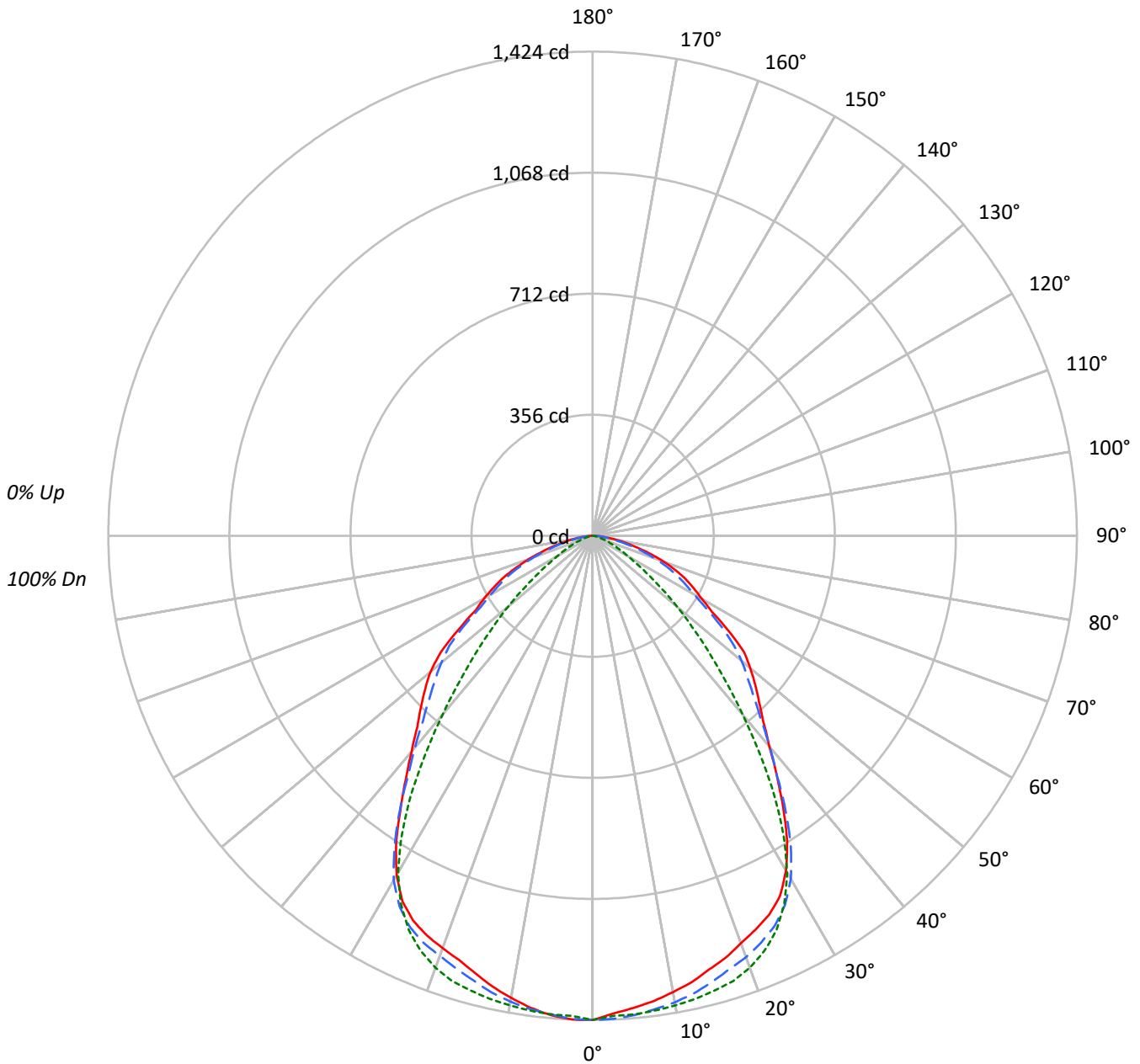
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	138780	138780	138780
5°	136307	138234	138450
10°	134845	138754	136577
15°	133284	139691	134394
20°	132234	140188	133821
25°	132158	137578	134277
30°	127952	128695	129674
35°	116250	110777	117285
40°	102847	87236	105353
45°	95417	66432	98436
50°	91668	49155	94337
55°	83002	33881	81898
60°	72158	23059	71729
65°	69712	16673	66184
70°	63059	11227	56192
75°	51964	7418	44546
80°	41812	4939	33169
85°	34329	2460	22029



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.4	4.6
10°-20°	384.3	13.3
20°-30°	580.6	20.0
30°-40°	607.7	21.0
40°-50°	492.1	17.0
50°-60°	358.0	12.4
60°-70°	220.8	7.6
70°-80°	99.7	3.4
80°-90°	20.3	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°	1099.4	37.9
0°-40°	1707.1	58.9
0°-60°	2557.2	88.2
0°-90°	2898.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2898.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1424	1424	1424	1424	1424	
5°	1393	1415	1413	1413	1415	132
15°	1321	1358	1384	1354	1332	373
25°	1229	1266	1279	1271	1249	563
35°	977	990	931	990	986	609
45°	692	670	482	679	714	538
55°	488	458	199	462	482	436
65°	302	272	72	267	287	296
75°	138	118	20	103	118	150
85°	31	24	2	18	20	35
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°	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0
2.5°	1406.4	1406.4	1419.6	1434.9	1421.8	1408.6	1417.4	1413.0	1428.3	1428.3	1421.8
5°	1393.3	1397.7	1408.6	1421.8	1410.8	1397.7	1408.6	1404.2	1419.6	1419.6	1415.2
7.5°	1380.1	1382.3	1395.5	1410.8	1399.9	1386.7	1395.5	1393.3	1406.4	1408.6	1404.2
10°	1362.6	1364.8	1378.0	1393.3	1382.3	1371.4	1380.1	1378.0	1395.5	1395.5	1393.3
12.5°	1345.1	1347.3	1360.4	1373.6	1362.6	1351.7	1360.4	1360.4	1378.0	1380.1	1378.0
15°	1321.0	1325.4	1336.3	1349.5	1342.9	1329.8	1338.5	1338.5	1353.9	1358.2	1358.2
17.5°	1301.3	1303.5	1314.4	1327.6	1318.8	1307.9	1316.6	1316.6	1332.0	1336.3	1336.3
20°	1275.0	1279.4	1290.3	1303.5	1296.9	1288.1	1294.7	1294.7	1312.2	1316.6	1318.8
22.5°	1253.1	1257.5	1266.2	1283.8	1272.8	1266.2	1275.0	1272.8	1292.5	1294.7	1294.7
25°	1229.0	1233.4	1244.3	1255.3	1248.7	1242.1	1248.7	1248.7	1264.0	1266.2	1266.2
27.5°	1193.9	1196.1	1207.1	1218.0	1211.5	1202.7	1211.5	1209.3	1224.6	1226.8	1224.6
30°	1137.0	1141.4	1145.7	1161.1	1154.5	1147.9	1156.7	1152.3	1167.7	1167.7	1165.5
32.5°	1064.7	1064.7	1073.4	1084.4	1075.6	1071.3	1077.8	1080.0	1091.0	1091.0	1084.4
35°	977.1	981.4	988.0	994.6	988.0	983.6	990.2	988.0	1001.2	996.8	990.2
37.5°	889.4	891.6	898.2	907.0	898.2	891.6	893.8	891.6	902.6	902.6	891.6
40°	808.4	812.8	817.1	825.9	817.1	812.8	814.9	808.4	821.5	817.1	810.6
42.5°	742.7	744.8	751.4	755.8	747.0	744.8	747.0	742.7	749.2	744.8	731.7
45°	692.3	692.3	694.5	701.0	692.3	690.1	690.1	685.7	692.3	683.5	670.4
47.5°	648.5	650.6	652.8	657.2	650.6	644.1	646.3	637.5	641.9	635.3	617.8
50°	604.6	609.0	611.2	615.6	609.0	604.6	606.8	598.1	598.1	587.1	571.8
52.5°	560.8	563.0	560.8	565.2	560.8	554.3	556.4	547.7	547.7	534.5	519.2
55°	488.5	490.7	492.9	497.3	492.9	486.3	490.7	484.1	484.1	475.4	457.9
57.5°	416.2	418.4	420.6	422.8	422.8	418.4	420.6	416.2	414.0	407.5	394.3
60°	370.2	370.2	370.2	372.4	370.2	368.0	368.0	363.7	363.7	354.9	341.8
62.5°	335.2	337.4	337.4	339.6	337.4	335.2	333.0	328.6	326.4	317.7	306.7
65°	302.3	302.3	300.1	304.5	302.3	300.1	300.1	295.7	291.4	282.6	271.6
67.5°	262.9	265.1	262.9	265.1	265.1	262.9	260.7	256.3	254.1	247.6	234.4
70°	221.3	221.3	221.3	223.5	221.3	221.3	223.5	216.9	214.7	205.9	195.0
72.5°	179.6	181.8	181.8	179.6	181.8	177.4	177.4	177.4	175.3	166.5	155.5
75°	138.0	140.2	140.2	142.4	140.2	138.0	138.0	135.8	133.6	127.1	118.3
77.5°	103.0	103.0	105.2	105.2	105.2	103.0	103.0	98.6	98.6	94.2	85.4
80°	74.5	74.5	72.3	74.5	74.5	72.3	72.3	70.1	70.1	65.7	59.1
82.5°	48.2	50.4	50.4	50.4	50.4	48.2	48.2	48.2	46.0	43.8	39.4
85°	30.7	30.7	30.7	30.7	32.9	30.7	32.9	30.7	30.7	26.3	24.1
87.5°	13.1	13.1	13.1	15.3	15.3	13.1	13.1	13.1	13.1	13.1	11.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0
2.5°	1421.8	1424.0	1417.4	1426.2	1419.6	1421.8	1424.0	1421.8	1413.0	1413.0	1437.1
5°	1413.0	1417.4	1410.8	1421.8	1417.4	1417.4	1421.8	1419.6	1410.8	1413.0	1434.9
7.5°	1404.2	1410.8	1406.4	1417.4	1410.8	1410.8	1415.2	1415.2	1406.4	1408.6	1428.3
10°	1391.1	1399.9	1397.7	1408.6	1402.1	1402.1	1408.6	1408.6	1399.9	1402.1	1421.8
12.5°	1380.1	1388.9	1386.7	1397.7	1393.3	1395.5	1397.7	1402.1	1391.1	1395.5	1413.0
15°	1362.6	1371.4	1371.4	1382.3	1378.0	1382.3	1386.7	1393.3	1384.5	1384.5	1402.1
17.5°	1342.9	1353.9	1353.9	1362.6	1362.6	1364.8	1373.6	1380.1	1371.4	1373.6	1388.9
20°	1321.0	1334.1	1334.1	1345.1	1342.9	1347.3	1353.9	1360.4	1351.7	1351.7	1369.2
22.5°	1299.1	1310.0	1312.2	1318.8	1318.8	1321.0	1327.6	1332.0	1321.0	1321.0	1338.5
25°	1268.4	1279.4	1281.6	1285.9	1281.6	1281.6	1285.9	1290.3	1279.4	1279.4	1294.7
27.5°	1226.8	1237.8	1237.8	1235.6	1231.2	1233.4	1231.2	1233.4	1222.4	1220.2	1235.6
30°	1165.5	1172.0	1172.0	1169.8	1163.3	1163.3	1156.7	1158.9	1143.6	1143.6	1156.7
32.5°	1082.2	1088.8	1084.4	1080.0	1071.3	1066.9	1062.5	1060.3	1045.0	1045.0	1060.3
35°	983.6	988.0	981.4	972.7	961.7	955.2	948.6	939.8	928.9	931.1	939.8
37.5°	882.9	882.9	874.1	856.6	847.8	836.9	825.9	825.9	808.4	806.2	812.8
40°	797.4	788.7	773.3	749.2	733.9	722.9	707.6	698.8	685.7	685.7	696.6
42.5°	720.7	703.2	683.5	650.6	635.3	622.2	602.4	593.7	578.3	576.2	582.7
45°	652.8	635.3	606.8	571.8	552.1	536.7	508.2	497.3	484.1	482.0	486.3
47.5°	598.1	578.3	543.3	497.3	477.6	457.9	429.4	414.0	403.1	396.5	403.1
50°	549.9	523.6	486.3	438.1	411.9	394.3	359.3	343.9	328.6	324.2	326.4
52.5°	497.3	471.0	431.6	381.2	357.1	330.8	297.9	276.0	262.9	256.3	262.9
55°	440.3	414.0	374.6	324.2	297.9	273.8	238.8	221.3	205.9	199.4	205.9
57.5°	379.0	354.9	319.8	269.5	245.4	223.5	190.6	173.1	157.7	153.3	157.7
60°	326.4	306.7	271.6	223.5	203.7	179.6	151.2	133.6	120.5	118.3	120.5
62.5°	291.4	269.5	236.6	190.6	170.9	151.2	124.9	107.3	96.4	94.2	96.4
65°	256.3	232.2	201.5	162.1	142.4	127.1	100.8	85.4	74.5	72.3	74.5
67.5°	216.9	195.0	168.7	133.6	118.3	103.0	81.1	65.7	57.0	54.8	57.0
70°	179.6	159.9	133.6	107.3	92.0	81.1	61.3	50.4	41.6	39.4	41.6
72.5°	142.4	124.9	103.0	81.1	72.3	61.3	48.2	37.2	30.7	28.5	30.7
75°	109.5	96.4	78.9	59.1	52.6	46.0	32.9	26.3	21.9	19.7	21.9
77.5°	76.7	67.9	54.8	43.8	37.2	32.9	24.1	17.5	15.3	13.1	15.3
80°	52.6	46.0	37.2	28.5	24.1	19.7	15.3	11.0	8.8	8.8	8.8
82.5°	35.1	28.5	21.9	17.5	15.3	13.1	8.8	6.6	6.6	4.4	4.4
85°	19.7	17.5	13.1	11.0	8.8	6.6	4.4	4.4	2.2	2.2	2.2
87.5°	8.8	6.6	4.4	4.4	2.2	2.2	2.2	2.2	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°	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0
2.5°	1430.5	1424.0	1432.7	1424.0	1419.6	1424.0	1419.6	1432.7	1421.8	1413.0	1421.8
5°	1428.3	1419.6	1428.3	1421.8	1415.2	1417.4	1413.0	1426.2	1413.0	1406.4	1410.8
7.5°	1424.0	1417.4	1421.8	1415.2	1408.6	1410.8	1406.4	1417.4	1404.2	1397.7	1402.1
10°	1417.4	1410.8	1413.0	1408.6	1402.1	1402.1	1397.7	1406.4	1391.1	1382.3	1386.7
12.5°	1408.6	1399.9	1404.2	1397.7	1388.9	1388.9	1384.5	1391.1	1375.8	1367.0	1369.2
15°	1397.7	1388.9	1388.9	1382.3	1373.6	1373.6	1364.8	1371.4	1353.9	1345.1	1345.1
17.5°	1384.5	1373.6	1373.6	1367.0	1356.1	1353.9	1347.3	1353.9	1334.1	1325.4	1325.4
20°	1364.8	1356.1	1353.9	1349.5	1338.5	1336.3	1327.6	1329.8	1314.4	1307.9	1305.7
22.5°	1338.5	1329.8	1332.0	1325.4	1316.6	1314.4	1305.7	1312.2	1296.9	1290.3	1292.5
25°	1292.5	1288.1	1292.5	1290.3	1283.8	1283.8	1279.4	1283.8	1270.6	1266.2	1268.4
27.5°	1239.9	1237.8	1239.9	1239.9	1235.6	1235.6	1235.6	1242.1	1229.0	1226.8	1226.8
30°	1163.3	1163.3	1165.5	1167.7	1167.7	1172.0	1169.8	1178.6	1169.8	1165.5	1169.8
32.5°	1062.5	1071.3	1077.8	1077.8	1077.8	1082.2	1086.6	1093.2	1084.4	1086.6	1086.6
35°	948.6	955.2	959.5	970.5	963.9	979.2	983.6	992.4	990.2	994.6	992.4
37.5°	821.5	830.3	839.0	854.4	852.2	869.7	878.5	896.0	891.6	900.4	904.8
40°	703.2	716.4	729.5	740.5	749.2	766.7	784.3	806.2	812.8	819.3	821.5
42.5°	589.3	602.4	624.4	639.7	652.8	681.3	705.4	731.7	738.3	751.4	755.8
45°	497.3	508.2	534.5	554.3	565.2	606.8	635.3	668.2	679.1	694.5	701.0
47.5°	411.9	431.6	457.9	482.0	497.3	541.1	578.3	613.4	628.7	646.3	655.0
50°	337.4	359.3	394.3	416.2	438.1	486.3	528.0	565.2	580.5	600.3	609.0
52.5°	276.0	300.1	333.0	357.1	381.2	431.6	475.4	510.4	530.2	543.3	556.4
55°	216.9	243.2	276.0	302.3	322.0	376.8	414.0	449.1	462.2	473.2	479.8
57.5°	168.7	188.4	221.3	243.2	267.3	315.5	352.7	379.0	389.9	403.1	407.5
60°	131.4	151.2	181.8	203.7	225.6	271.6	308.9	335.2	346.1	357.1	363.7
62.5°	105.2	124.9	153.3	173.1	192.8	234.4	267.3	293.6	306.7	317.7	324.2
65°	83.2	100.8	124.9	144.6	159.9	197.2	230.0	254.1	267.3	278.2	284.8
67.5°	65.7	81.1	103.0	116.1	131.4	162.1	190.6	212.5	223.5	236.6	243.2
70°	50.4	61.3	81.1	92.0	103.0	129.3	151.2	173.1	184.0	192.8	197.2
72.5°	37.2	46.0	61.3	70.1	76.7	98.6	116.1	131.4	140.2	149.0	153.3
75°	26.3	32.9	43.8	50.4	54.8	70.1	85.4	96.4	103.0	109.5	116.1
77.5°	17.5	21.9	28.5	32.9	37.2	48.2	57.0	65.7	72.3	78.9	81.1
80°	11.0	15.3	19.7	21.9	24.1	30.7	39.4	43.8	48.2	52.6	54.8
82.5°	6.6	8.8	11.0	13.1	15.3	19.7	24.1	28.5	30.7	35.1	37.2
85°	2.2	4.4	4.4	6.6	6.6	11.0	13.1	15.3	17.5	19.7	21.9
87.5°	0.0	0.0	2.2	2.2	2.2	2.2	4.4	4.4	4.4	4.4	4.4
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: P251952

CATALOG NUMBER: LD4B40D010 EU4B30509027 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0	1424.0
2.5°	1430.5	1424.0	1419.6	1417.4	1432.7	1413.0	1421.8	1424.0
5°	1421.8	1415.2	1410.8	1408.6	1421.8	1404.2	1410.8	1415.2
7.5°	1408.6	1404.2	1397.7	1395.5	1408.6	1388.9	1397.7	1399.9
10°	1393.3	1386.7	1382.3	1380.1	1391.1	1371.4	1380.1	1380.1
12.5°	1373.6	1369.2	1360.4	1360.4	1369.2	1351.7	1358.2	1358.2
15°	1347.3	1342.9	1334.1	1334.1	1342.9	1325.4	1332.0	1332.0
17.5°	1325.4	1321.0	1314.4	1312.2	1321.0	1303.5	1310.0	1307.9
20°	1307.9	1303.5	1294.7	1294.7	1301.3	1283.8	1290.3	1290.3
22.5°	1292.5	1290.3	1281.6	1281.6	1290.3	1272.8	1277.2	1272.8
25°	1268.4	1266.2	1257.5	1259.7	1264.0	1246.5	1253.1	1248.7
27.5°	1229.0	1229.0	1220.2	1218.0	1224.6	1209.3	1213.7	1211.5
30°	1167.7	1169.8	1158.9	1158.9	1161.1	1147.9	1154.5	1152.3
32.5°	1084.4	1086.6	1077.8	1075.6	1082.2	1071.3	1075.6	1075.6
35°	992.4	994.6	988.0	988.0	994.6	988.0	988.0	985.8
37.5°	900.4	904.8	900.4	902.6	907.0	900.4	904.8	902.6
40°	825.9	830.3	823.7	828.1	832.5	825.9	832.5	828.1
42.5°	758.0	764.6	760.2	764.6	768.9	764.6	768.9	762.4
45°	707.6	712.0	709.8	712.0	716.4	714.2	716.4	714.2
47.5°	659.4	668.2	663.8	668.2	674.7	670.4	674.7	668.2
50°	615.6	622.2	620.0	624.4	626.5	624.4	628.7	622.2
52.5°	558.6	565.2	563.0	563.0	567.4	563.0	567.4	563.0
55°	484.1	486.3	486.3	488.5	486.3	484.1	486.3	482.0
57.5°	411.9	416.2	409.7	416.2	414.0	411.9	411.9	407.5
60°	365.8	372.4	368.0	372.4	370.2	370.2	370.2	368.0
62.5°	328.6	333.0	328.6	330.8	330.8	330.8	328.6	326.4
65°	287.0	293.6	289.2	291.4	289.2	287.0	289.2	287.0
67.5°	245.4	247.6	247.6	245.4	245.4	245.4	245.4	241.0
70°	199.4	201.5	199.4	203.7	201.5	199.4	201.5	197.2
72.5°	155.5	157.7	155.5	157.7	155.5	155.5	155.5	155.5
75°	116.1	118.3	118.3	118.3	118.3	118.3	113.9	118.3
77.5°	83.2	83.2	83.2	85.4	83.2	83.2	83.2	83.2
80°	57.0	57.0	57.0	59.1	57.0	59.1	57.0	59.1
82.5°	37.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2
85°	19.7	21.9	21.9	19.7	19.7	19.7	19.7	19.7
87.5°	4.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)