

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: P209120

Luminaire Tested: **LDSQ4B15D010 EU4B10209035 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209120  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35088)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ4B15D010 EU4B10209035 4LBSQ1LI  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW  
IRIDESCENT TRIM.  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
WATTAGE D010TR-14.39 W DE010-14.29 W D5LT-14.34 W DMX-14.46 W DL2-15.8 W  
DL3-15.28 W DLE-15.432 W  
Light Source: HIGH LUMEN LED 3500 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1227.9 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Direct

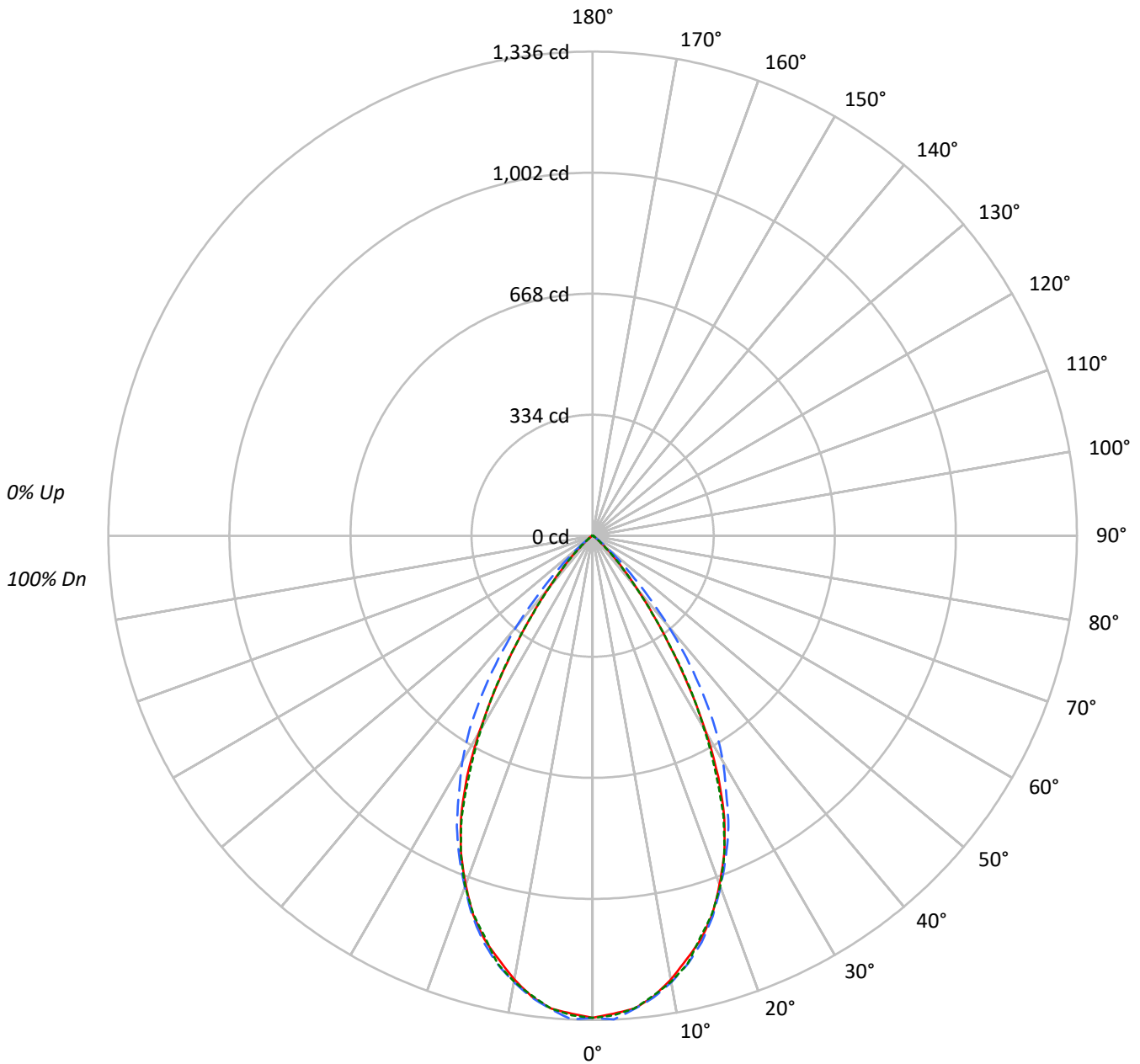
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93																			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87																			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80																			
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75																			
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69																			
6	87	78	72	68	86	77	72	67	76	71	67	74	70	66	73	69	66	65																			
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60																			
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56																			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53																			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50																			

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

	0°	45°	90°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	123.3	10.0
10°-20°	323.2	26.3
20°-30°	394.8	32.2
30°-40°	276.2	22.5
40°-50°	90.5	7.4
50°-60°	14.4	1.2
60°-70°	3.9	0.3
70°-80°	1.3	0.1
80°-90°	0.3	0.0
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°	841.4	68.5
0°-40°	1117.5	91.0
0°-60°	1222.4	99.5
0°-90°	1227.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1227.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1330	1330	1330	1330	1330	
5°	1310	1310	1312	1304	1310	123
15°	1153	1157	1161	1154	1147	322
25°	859	872	886	870	854	386
35°	372	439	528	432	375	237
45°	82	101	149	100	81	69
55°	12	13	14	13	11	12
65°	3	4	3	4	3	4
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1
2.5°	1320.0	1329.3	1326.7	1332.7	1332.7	1325.9	1327.6	1330.1	1333.5	1336.0	1315.8
5°	1309.8	1318.3	1310.7	1319.1	1314.1	1306.5	1319.1	1312.4	1316.6	1311.5	1314.9
7.5°	1282.8	1296.3	1281.1	1291.2	1287.9	1283.6	1288.7	1287.0	1289.6	1285.3	1276.0
10°	1243.1	1254.1	1243.9	1258.3	1251.5	1247.3	1251.5	1255.8	1254.9	1250.7	1255.8
12.5°	1197.4	1210.1	1205.1	1213.5	1205.9	1205.9	1216.0	1213.5	1214.3	1211.0	1216.9
15°	1152.7	1162.0	1154.3	1165.3	1162.0	1152.7	1156.9	1156.9	1163.6	1161.1	1154.3
17.5°	1096.9	1104.5	1096.0	1098.6	1095.2	1093.5	1111.3	1099.4	1106.2	1101.1	1102.0
20°	1023.4	1026.7	1024.2	1031.0	1026.7	1031.8	1030.1	1028.4	1028.4	1031.0	1025.1
22.5°	949.0	949.0	951.5	953.2	956.6	951.5	961.7	953.2	954.1	960.0	958.3
25°	859.4	856.9	862.8	871.3	874.6	870.4	883.9	877.2	882.2	886.5	877.2
27.5°	750.4	750.4	756.3	770.7	773.2	778.3	796.9	796.9	803.7	797.7	804.5
30°	624.5	633.8	641.4	660.0	665.9	676.9	696.3	705.6	720.8	718.3	714.9
32.5°	495.2	507.9	508.7	528.2	544.2	562.8	589.0	611.0	622.0	629.6	621.1
35°	371.8	379.4	386.2	399.7	426.8	451.3	474.9	503.7	523.1	528.2	520.6
37.5°	272.1	273.8	280.6	293.2	313.5	337.2	365.9	397.2	417.5	425.1	416.6
40°	187.6	189.3	192.7	203.7	220.6	237.5	260.3	292.4	311.0	326.2	315.2
42.5°	125.9	127.6	131.0	139.4	148.7	164.8	182.5	202.8	220.6	227.3	221.4
45°	82.0	82.0	83.7	89.6	94.6	107.3	120.0	132.7	144.5	148.7	144.5
47.5°	48.2	49.0	50.7	54.9	60.8	65.9	75.2	83.7	87.0	90.4	88.7
50°	27.9	27.9	30.4	33.0	37.2	40.6	43.9	47.3	49.0	50.7	49.0
52.5°	15.2	16.1	16.9	17.7	19.4	22.8	25.4	25.4	26.2	27.0	26.2
55°	11.8	11.8	11.8	11.8	12.7	12.7	12.7	13.5	13.5	14.4	13.5
57.5°	8.5	8.5	8.5	9.3	9.3	9.3	8.5	8.5	8.5	8.5	8.5
60°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9
62.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
65°	3.4	3.4	4.2	4.2	4.2	4.2	4.2	3.4	3.4	3.4	3.4
67.5°	2.5	2.5	2.5	2.5	3.4	3.4	2.5	2.5	2.5	2.5	2.5
70°	1.7	1.7	1.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
72.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1	1330.1
2.5°	1330.1	1315.8	1317.4	1325.1	1320.8	1325.1	1324.2	1324.2
5°	1315.8	1311.5	1304.8	1302.2	1307.3	1318.3	1316.6	1309.8
7.5°	1288.7	1277.7	1285.3	1288.7	1284.5	1291.2	1294.6	1280.3
10°	1256.6	1252.4	1250.7	1252.4	1250.7	1257.4	1249.0	1249.0
12.5°	1211.0	1204.2	1204.2	1214.3	1208.4	1203.4	1210.1	1209.3
15°	1165.3	1151.8	1151.8	1155.2	1157.7	1154.3	1155.2	1146.7
17.5°	1097.7	1093.5	1087.6	1096.9	1099.4	1096.0	1098.6	1094.3
20°	1034.4	1034.4	1023.4	1027.6	1031.0	1033.5	1035.2	1028.4
22.5°	953.2	954.9	947.3	955.8	958.3	949.8	951.5	949.8
25°	878.9	878.0	872.1	868.7	870.4	867.0	866.2	853.5
27.5°	796.9	788.4	775.8	779.1	764.8	752.9	752.9	733.5
30°	708.2	693.8	676.9	660.0	647.3	633.8	626.2	615.2
32.5°	604.2	584.8	563.7	540.8	526.5	506.2	495.2	501.1
35°	501.1	472.4	443.7	420.8	398.9	387.0	373.5	375.2
37.5°	401.4	360.8	335.5	311.0	292.4	277.2	271.3	269.6
40°	293.2	261.1	235.8	218.0	205.3	193.5	186.8	184.2
42.5°	202.8	180.0	159.7	145.3	136.9	129.3	125.9	125.1
45°	131.8	118.3	104.8	94.6	87.9	82.8	82.0	81.1
47.5°	82.8	76.1	67.6	60.0	54.1	50.7	48.2	48.2
50°	47.3	44.8	40.6	36.3	33.0	31.3	28.7	27.9
52.5°	25.4	25.4	23.7	20.3	17.7	16.1	16.1	15.2
55°	13.5	13.5	12.7	12.7	11.8	11.8	11.8	11.0
57.5°	8.5	8.5	9.3	9.3	8.5	8.5	8.5	8.5
60°	5.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8
62.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
65°	3.4	4.2	4.2	4.2	4.2	3.4	3.4	3.4
67.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
70°	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7
72.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)