

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: P209108

Luminaire Tested: **LDSQ4B10D010 EU4B10209035 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209108  
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: LDSQ4B10D010 EU4B10209035 4LBSQ1LI  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW  
IRIDESCENT TRIM.  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
WATTAGE D010TR-10.05 W DE010-10.58 W D5LT-10.2 W DMX-10.6 W DL2-11.8 W  
DL3-11.1 W DLE-11.39 W  
Light Source: HIGH LUMEN LED 3500 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 882.1 lumens  
Efficiency: N/A  
Efficacy: 87.8 lumens/watt  
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
CIE Type: Direct

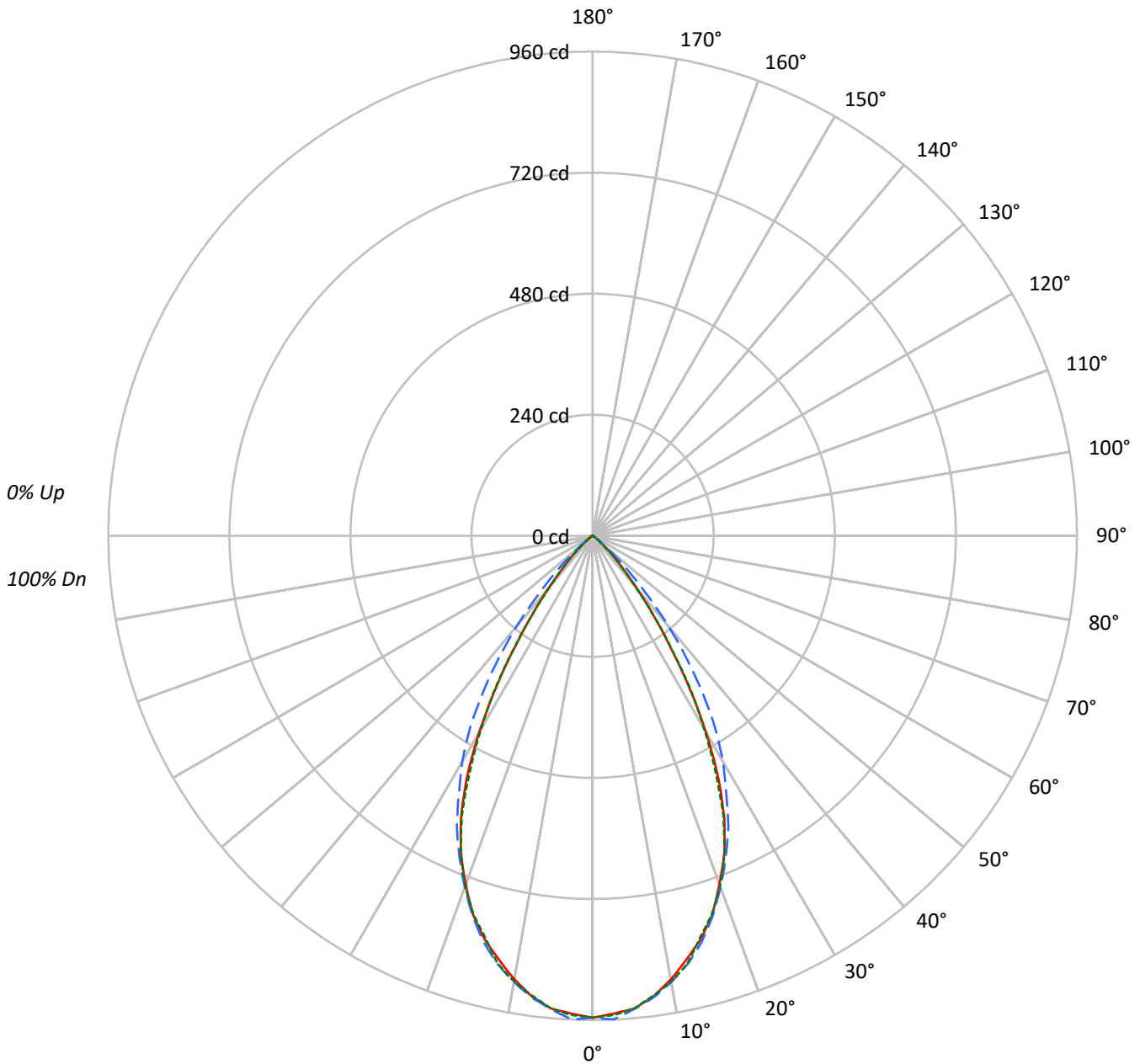
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P209108

CATALOG NUMBER: LDSQ4B10D010 EU4B10209035 4LBSQ1LI

### Luminous Intensity Polar Plot





TEST NUMBER: P209108

CATALOG NUMBER: LDSQ4B10D010 EU4B10209035 4LBSQ1LI

**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°	10347	10347	10347
5°	10229	10242	10229
10°	9819	9880	9866
15°	9284	9351	9235
20°	8472	8534	8514
25°	7377	7609	7327
30°	5609	6452	5527
35°	3531	5015	3563
40°	1906	3312	1870
45°	902	1636	893
50°	337	613	337
55°	160	194	149
60°	106	91	106
65°	61	61	61
70°	38	57	38
75°	25	25	25
80°	37	37	37
85°	0	0	0



TEST NUMBER: P209108

CATALOG NUMBER: LDSQ4B10D010 EU4B10209035 4LBSQ1LI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.6	10.0
10°-20°	232.2	26.3
20°-30°	283.6	32.2
30°-40°	198.4	22.5
40°-50°	65.0	7.4
50°-60°	10.3	1.2
60°-70°	2.8	0.3
70°-80°	0.9	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°	604.4	68.5
0°-40°	802.8	91.0
0°-60°	878.2	99.5
0°-90°	882.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	882.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	956	956	956	956	956	
5°	941	941	942	936	941	88
15°	828	831	834	829	824	231
25°	617	627	637	625	613	277
35°	267	315	379	310	270	170
45°	59	73	107	72	58	49
55°	8	9	10	9	8	8
65°	2	3	2	3	2	3
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P209108

CATALOG NUMBER: LDSQ4B10D010 EU4B10209035 4LBSQ1LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	955.5	955.5	955.5	955.5	955.5	955.5	955.5	955.5	955.5	955.5	955.5
2.5°	948.3	954.9	953.1	957.4	957.4	952.5	953.7	955.5	958.0	959.8	945.2
5°	941.0	947.0	941.6	947.7	944.0	938.5	947.7	942.8	945.8	942.2	944.6
7.5°	921.5	931.3	920.3	927.6	925.2	922.2	925.8	924.6	926.4	923.4	916.7
10°	893.0	900.9	893.6	903.9	899.1	896.1	899.1	902.1	901.5	898.5	902.1
12.5°	860.2	869.3	865.7	871.8	866.3	866.3	873.6	871.8	872.4	869.9	874.2
15°	828.1	834.7	829.3	837.2	834.7	828.1	831.1	831.1	835.9	834.1	829.3
17.5°	788.0	793.5	787.4	789.2	786.8	785.6	798.3	789.8	794.7	791.0	791.6
20°	735.2	737.6	735.8	740.6	737.6	741.2	740.0	738.8	738.8	740.6	736.4
22.5°	681.8	681.8	683.6	684.8	687.2	683.6	690.9	684.8	685.4	689.6	688.4
25°	617.4	615.6	619.8	625.9	628.3	625.3	635.0	630.1	633.8	636.8	630.1
27.5°	539.1	539.1	543.3	553.7	555.5	559.1	572.5	572.5	577.3	573.1	577.9
30°	448.6	455.3	460.8	474.1	478.4	486.3	500.2	506.9	517.8	516.0	513.6
32.5°	355.7	364.9	365.5	379.4	391.0	404.3	423.1	438.9	446.8	452.3	446.2
35°	267.1	272.6	277.4	287.1	306.6	324.2	341.2	361.8	375.8	379.4	374.0
37.5°	195.5	196.7	201.6	210.7	225.2	242.2	262.9	285.3	299.9	305.4	299.3
40°	134.8	136.0	138.4	146.3	158.4	170.6	187.0	210.0	223.4	234.3	226.4
42.5°	90.5	91.7	94.1	100.2	106.8	118.4	131.1	145.7	158.4	163.3	159.1
45°	58.9	58.9	60.1	64.4	68.0	77.1	86.2	95.3	103.8	106.8	103.8
47.5°	34.6	35.2	36.4	39.5	43.7	47.4	54.0	60.1	62.5	65.0	63.7
50°	20.0	20.0	21.9	23.7	26.7	29.1	31.6	34.0	35.2	36.4	35.2
52.5°	10.9	11.5	12.1	12.7	14.0	16.4	18.2	18.2	18.8	19.4	18.8
55°	8.5	8.5	8.5	8.5	9.1	9.1	9.1	9.7	9.7	10.3	9.7
57.5°	6.1	6.1	6.1	6.7	6.7	6.7	6.1	6.1	6.1	6.1	6.1
60°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.2	4.2	4.2	4.2
62.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
65°	2.4	2.4	3.0	3.0	3.0	3.0	3.0	2.4	2.4	2.4	2.4
67.5°	1.8	1.8	1.8	1.8	2.4	2.4	1.8	1.8	1.8	1.8	1.8
70°	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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: P209108

CATALOG NUMBER: LDSQ4B10D010 EU4B10209035 4LBSQ1LI

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	955.5	955.5	955.5	955.5	955.5	955.5	955.5	955.5
2.5°	955.5	945.2	946.4	951.9	948.9	951.9	951.3	951.3
5°	945.2	942.2	937.3	935.5	939.2	947.0	945.8	941.0
7.5°	925.8	917.9	923.4	925.8	922.8	927.6	930.0	919.7
10°	902.7	899.7	898.5	899.7	898.5	903.3	897.3	897.3
12.5°	869.9	865.1	865.1	872.4	868.1	864.5	869.3	868.7
15°	837.2	827.5	827.5	829.9	831.7	829.3	829.9	823.8
17.5°	788.6	785.6	781.3	788.0	789.8	787.4	789.2	786.2
20°	743.1	743.1	735.2	738.2	740.6	742.5	743.7	738.8
22.5°	684.8	686.0	680.5	686.6	688.4	682.4	683.6	682.4
25°	631.4	630.8	626.5	624.1	625.3	622.9	622.3	613.2
27.5°	572.5	566.4	557.3	559.7	549.4	540.9	540.9	526.9
30°	508.7	498.4	486.3	474.1	465.0	455.3	449.8	442.0
32.5°	434.1	420.1	404.9	388.5	378.2	363.6	355.7	360.0
35°	360.0	339.4	318.7	302.3	286.5	278.0	268.3	269.5
37.5°	288.4	259.2	241.0	223.4	210.0	199.1	194.9	193.7
40°	210.7	187.6	169.4	156.6	147.5	139.0	134.2	132.3
42.5°	145.7	129.3	114.7	104.4	98.3	92.9	90.5	89.8
45°	94.7	85.0	75.3	68.0	63.1	59.5	58.9	58.3
47.5°	59.5	54.6	48.6	43.1	38.9	36.4	34.6	34.6
50°	34.0	32.2	29.1	26.1	23.7	22.5	20.6	20.0
52.5°	18.2	18.2	17.0	14.6	12.7	11.5	11.5	10.9
55°	9.7	9.7	9.1	9.1	8.5	8.5	8.5	7.9
57.5°	6.1	6.1	6.7	6.7	6.1	6.1	6.1	6.1
60°	4.2	4.9	4.9	4.9	4.9	4.9	4.9	4.9
62.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
65°	2.4	3.0	3.0	3.0	3.0	2.4	2.4	2.4
67.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093







— 0°-180°    - - 45°-225°    - - - - 90°-270°









(END OF REPORT)