

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: P209110

Luminaire Tested: **LDSQ4B10D010 EU4B10209050 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209110  
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 EU4B10209050 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 5000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 886.7 lumens  
Efficiency: N/A  
Efficacy: 88.2 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

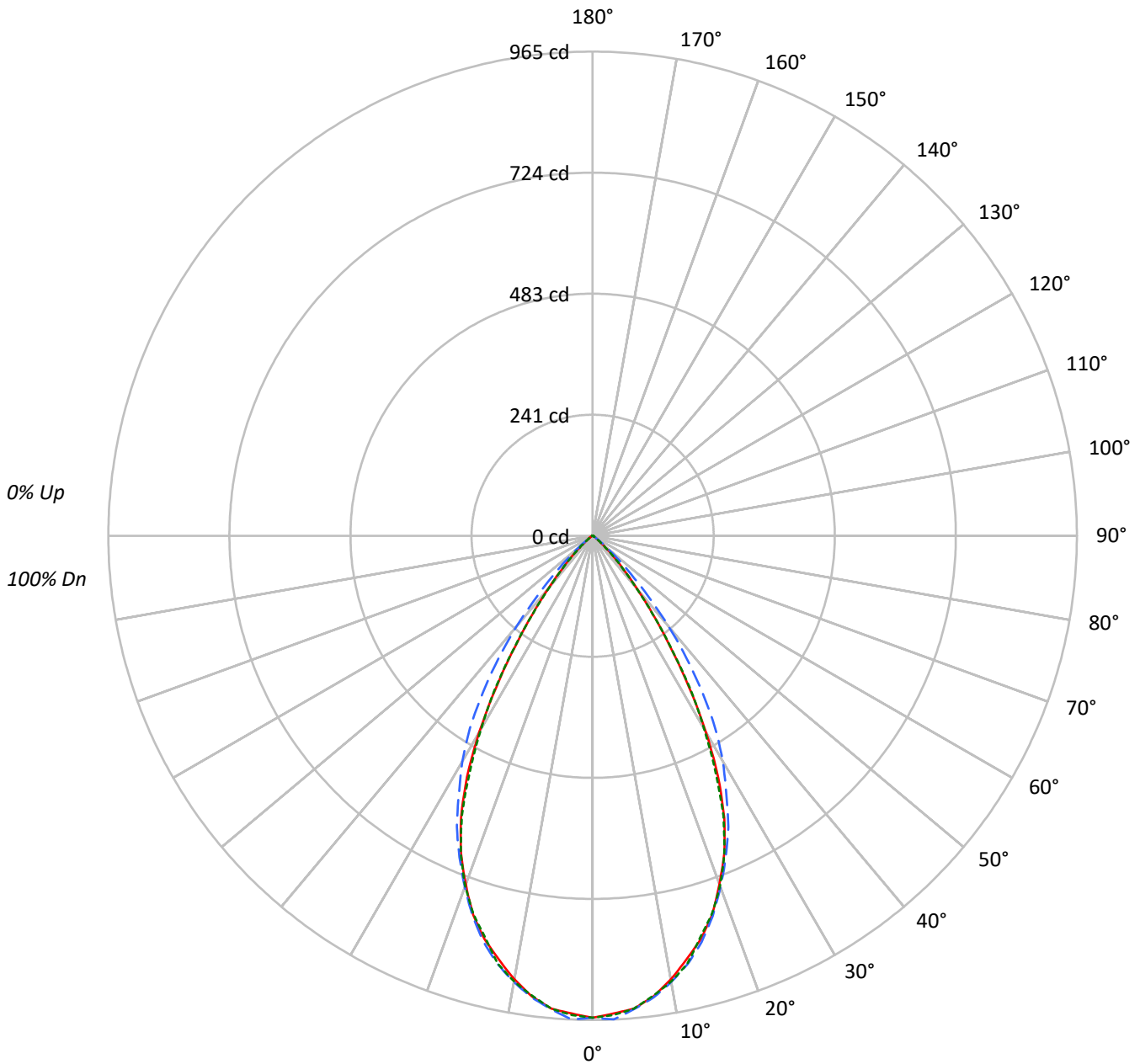
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P209110

CATALOG NUMBER: LDSQ4B10D010 EU4B10209050 4LBSQ1LI

### Luminous Intensity Polar Plot





TEST NUMBER: P209110

CATALOG NUMBER: LDSQ4B10D010 EU4B10209050 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	71	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°	10401	10401	10401
5°	10281	10295	10281
10°	9870	9930	9917
15°	9331	9400	9284
20°	8516	8579	8557
25°	7415	7648	7364
30°	5639	6486	5554
35°	3549	5042	3581
40°	1915	3329	1880
45°	907	1645	897
50°	339	617	339
55°	160	196	149
60°	106	93	106
65°	61	61	61
70°	38	57	38
75°	25	25	25
80°	37	37	37
85°	0	0	0



TEST NUMBER: P209110

CATALOG NUMBER: LDSQ4B10D010 EU4B10209050 4LBSQ1LI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	89.1	10.0
10°-20°	233.4	26.3
20°-30°	285.1	32.2
30°-40°	199.4	22.5
40°-50°	65.4	7.4
50°-60°	10.4	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°	607.6	68.5
0°-40°	807.0	91.0
0°-60°	882.7	99.5
0°-90°	886.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	886.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	960	960	960	960	960	
5°	946	946	947	941	946	89
15°	832	836	838	833	828	232
25°	621	630	640	629	616	279
35°	268	317	381	312	271	171
45°	59	73	107	72	59	50
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: P209110

CATALOG NUMBER: LDSQ4B10D010 EU4B10209050 4LBSQ1LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	960.5	960.5	960.5	960.5	960.5	960.5	960.5	960.5	960.5	960.5	960.5
2.5°	953.2	959.9	958.1	962.3	962.3	957.4	958.7	960.5	962.9	964.8	950.1
5°	945.8	952.0	946.5	952.6	948.9	943.4	952.6	947.7	950.7	947.1	949.5
7.5°	926.3	936.1	925.1	932.4	930.0	926.9	930.6	929.4	931.2	928.2	921.4
10°	897.6	905.6	898.3	908.6	903.7	900.7	903.7	906.8	906.2	903.1	906.8
12.5°	864.7	873.8	870.2	876.3	870.8	870.8	878.1	876.3	876.9	874.5	878.7
15°	832.3	839.1	833.6	841.5	839.1	832.3	835.4	835.4	840.3	838.5	833.6
17.5°	792.1	797.6	791.5	793.3	790.9	789.6	802.4	793.9	798.8	795.1	795.7
20°	739.0	741.4	739.6	744.5	741.4	745.1	743.9	742.6	742.6	744.5	740.2
22.5°	685.3	685.3	687.1	688.3	690.8	687.1	694.4	688.3	688.9	693.2	692.0
25°	620.6	618.8	623.0	629.1	631.6	628.5	638.3	633.4	637.1	640.1	633.4
27.5°	541.9	541.9	546.2	556.5	558.4	562.0	575.4	575.4	580.3	576.1	580.9
30°	451.0	457.7	463.2	476.6	480.9	488.8	502.8	509.5	520.5	518.7	516.3
32.5°	357.6	366.7	367.4	381.4	393.0	406.4	425.3	441.2	449.1	454.6	448.5
35°	268.5	274.0	278.9	288.6	308.2	325.9	342.9	363.7	377.7	381.4	375.9
37.5°	196.5	197.7	202.6	211.7	226.4	243.5	264.2	286.8	301.5	306.9	300.8
40°	135.5	136.7	139.1	147.1	159.3	171.5	187.9	211.1	224.6	235.5	227.6
42.5°	90.9	92.1	94.6	100.7	107.4	119.0	131.8	146.5	159.3	164.2	159.9
45°	59.2	59.2	60.4	64.7	68.3	77.5	86.7	95.8	104.3	107.4	104.3
47.5°	34.8	35.4	36.6	39.7	43.9	47.6	54.3	60.4	62.9	65.3	64.1
50°	20.1	20.1	22.0	23.8	26.8	29.3	31.7	34.2	35.4	36.6	35.4
52.5°	11.0	11.6	12.2	12.8	14.0	16.5	18.3	18.3	18.9	19.5	18.9
55°	8.5	8.5	8.5	8.5	9.2	9.2	9.2	9.8	9.8	10.4	9.8
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	4.3	4.3	4.3	4.3
62.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
65°	2.4	2.4	3.1	3.1	3.1	3.1	3.1	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: P209110

CATALOG NUMBER: LDSQ4B10D010 EU4B10209050 4LBSQ1LI

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	960.5	960.5	960.5	960.5	960.5	960.5	960.5	960.5
2.5°	960.5	950.1	951.3	956.8	953.8	956.8	956.2	956.2
5°	950.1	947.1	942.2	940.4	944.0	952.0	950.7	945.8
7.5°	930.6	922.7	928.2	930.6	927.5	932.4	934.9	924.5
10°	907.4	904.4	903.1	904.4	903.1	908.0	901.9	901.9
12.5°	874.5	869.6	869.6	876.9	872.6	869.0	873.8	873.2
15°	841.5	831.7	831.7	834.2	836.0	833.6	834.2	828.1
17.5°	792.7	789.6	785.4	792.1	793.9	791.5	793.3	790.2
20°	746.9	746.9	739.0	742.0	744.5	746.3	747.5	742.6
22.5°	688.3	689.6	684.1	690.2	692.0	685.9	687.1	685.9
25°	634.6	634.0	629.8	627.3	628.5	626.1	625.5	616.3
27.5°	575.4	569.3	560.2	562.6	552.3	543.7	543.7	529.7
30°	511.4	501.0	488.8	476.6	467.4	457.7	452.2	444.2
32.5°	436.3	422.3	407.0	390.5	380.2	365.5	357.6	361.9
35°	361.9	341.1	320.4	303.9	288.0	279.5	269.7	270.9
37.5°	289.9	260.6	242.3	224.6	211.1	200.2	195.9	194.7
40°	211.7	188.6	170.3	157.4	148.3	139.7	134.9	133.0
42.5°	146.5	130.0	115.3	105.0	98.9	93.4	90.9	90.3
45°	95.2	85.4	75.7	68.3	63.5	59.8	59.2	58.6
47.5°	59.8	54.9	48.8	43.3	39.1	36.6	34.8	34.8
50°	34.2	32.3	29.3	26.2	23.8	22.6	20.7	20.1
52.5°	18.3	18.3	17.1	14.6	12.8	11.6	11.6	11.0
55°	9.8	9.8	9.2	9.2	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°	4.3	4.9	4.9	4.9	4.9	4.9	4.9	4.9
62.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
65°	2.4	3.1	3.1	3.1	3.1	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)