

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: P209101

Luminaire Tested: **LDSQ4B10D010 EU4B10208030 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209101  
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 EU4B10208030 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 3000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1017.7 lumens  
Efficiency: N/A  
Efficacy: 101.3 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

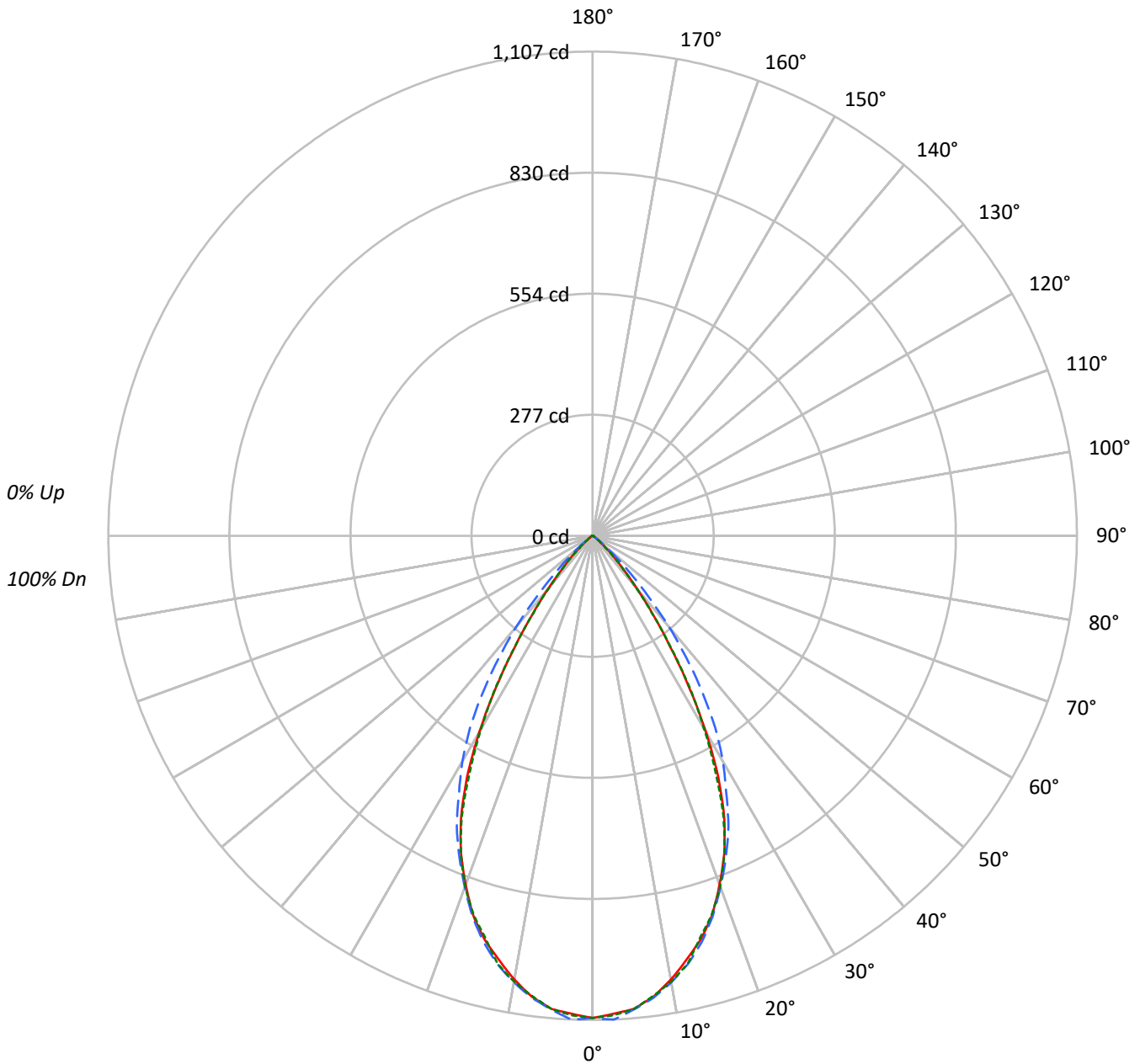
Input Watts (W): 10.05  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	71	67	76	71	67	74	70	66	73	69	66	64																			
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°	11938	11938	11938
5°	11801	11816	11801
10°	11329	11398	11383
15°	10710	10788	10655
20°	9774	9847	9823
25°	8511	8778	8452
30°	6472	7444	6376
35°	4074	5786	4111
40°	2198	3822	2159
45°	1040	1888	1029
50°	389	708	389
55°	185	225	172
60°	121	106	121
65°	72	72	72
70°	44	66	44
75°	29	29	29
80°	44	44	44
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.2	10.0
10°-20°	267.9	26.3
20°-30°	327.2	32.2
30°-40°	228.9	22.5
40°-50°	75.0	7.4
50°-60°	11.9	1.2
60°-70°	3.2	0.3
70°-80°	1.1	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°	697.3	68.5
0°-40°	926.2	91.0
0°-60°	1013.1	99.5
0°-90°	1017.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1017.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1102	1102	1102	1102	1102	
5°	1086	1086	1087	1080	1086	102
15°	955	959	962	956	950	266
25°	712	723	735	721	707	320
35°	308	364	438	358	311	197
45°	68	84	123	83	67	57
55°	10	10	12	10	9	10
65°	3	4	3	4	3	3
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°	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4
2.5°	1094.0	1101.7	1099.6	1104.5	1104.5	1098.9	1100.3	1102.4	1105.2	1107.3	1090.5
5°	1085.6	1092.6	1086.3	1093.3	1089.1	1082.8	1093.3	1087.7	1091.2	1087.0	1089.8
7.5°	1063.2	1074.4	1061.8	1070.2	1067.4	1063.9	1068.1	1066.7	1068.8	1065.3	1057.6
10°	1030.3	1039.4	1031.0	1042.9	1037.3	1033.8	1037.3	1040.8	1040.1	1036.6	1040.8
12.5°	992.5	1003.0	998.8	1005.8	999.5	999.5	1007.9	1005.8	1006.5	1003.7	1008.6
15°	955.3	963.0	956.7	965.8	963.0	955.3	958.8	958.8	964.4	962.3	956.7
17.5°	909.1	915.4	908.4	910.5	907.7	906.3	921.0	911.2	916.8	912.6	913.3
20°	848.2	851.0	848.9	854.5	851.0	855.2	853.8	852.4	852.4	854.5	849.6
22.5°	786.5	786.5	788.6	790.0	792.8	788.6	797.1	790.0	790.7	795.7	794.2
25°	712.3	710.2	715.1	722.1	724.9	721.4	732.6	727.0	731.2	734.7	727.0
27.5°	622.0	622.0	626.9	638.8	640.9	645.1	660.5	660.5	666.1	661.2	666.8
30°	517.6	525.3	531.6	547.0	551.9	561.0	577.1	584.8	597.4	595.3	592.5
32.5°	410.4	420.9	421.6	437.7	451.1	466.5	488.2	506.4	515.5	521.8	514.8
35°	308.2	314.5	320.1	331.3	353.7	374.0	393.6	417.4	433.5	437.7	431.4
37.5°	225.5	226.9	232.5	243.0	259.8	279.5	303.3	329.2	346.0	352.3	345.3
40°	155.5	156.9	159.7	168.8	182.8	196.8	215.7	242.3	257.7	270.4	261.2
42.5°	104.4	105.8	108.6	115.6	123.3	136.6	151.3	168.1	182.8	188.4	183.5
45°	67.9	67.9	69.3	74.2	78.4	89.0	99.5	110.0	119.8	123.3	119.8
47.5°	39.9	40.6	42.0	45.5	50.4	54.6	62.3	69.3	72.1	74.9	73.5
50°	23.1	23.1	25.2	27.3	30.8	33.6	36.4	39.2	40.6	42.0	40.6
52.5°	12.6	13.3	14.0	14.7	16.1	18.9	21.0	21.0	21.7	22.4	21.7
55°	9.8	9.8	9.8	9.8	10.5	10.5	10.5	11.2	11.2	11.9	11.2
57.5°	7.0	7.0	7.0	7.7	7.7	7.7	7.0	7.0	7.0	7.0	7.0
60°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.9	4.9
62.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
65°	2.8	2.8	3.5	3.5	3.5	3.5	3.5	2.8	2.8	2.8	2.8
67.5°	2.1	2.1	2.1	2.1	2.8	2.8	2.1	2.1	2.1	2.1	2.1
70°	1.4	1.4	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
75°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
77.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	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°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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°	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4	1102.4
2.5°	1102.4	1090.5	1091.9	1098.2	1094.7	1098.2	1097.5	1097.5
5°	1090.5	1087.0	1081.4	1079.3	1083.5	1092.6	1091.2	1085.6
7.5°	1068.1	1059.0	1065.3	1068.1	1064.6	1070.2	1073.0	1061.1
10°	1041.5	1038.0	1036.6	1038.0	1036.6	1042.2	1035.2	1035.2
12.5°	1003.7	998.1	998.1	1006.5	1001.6	997.4	1003.0	1002.3
15°	965.8	954.6	954.6	957.4	959.5	956.7	957.4	950.4
17.5°	909.8	906.3	901.4	909.1	911.2	908.4	910.5	907.0
20°	857.3	857.3	848.2	851.7	854.5	856.6	858.0	852.4
22.5°	790.0	791.4	785.1	792.1	794.2	787.2	788.6	787.2
25°	728.4	727.7	722.8	720.0	721.4	718.6	717.9	707.4
27.5°	660.5	653.5	643.0	645.8	633.9	624.1	624.1	607.9
30°	586.9	575.0	561.0	547.0	536.5	525.3	519.0	509.9
32.5°	500.8	484.7	467.2	448.3	436.3	419.5	410.4	415.3
35°	415.3	391.5	367.7	348.8	330.6	320.8	309.6	311.0
37.5°	332.7	299.1	278.1	257.7	242.3	229.7	224.8	223.4
40°	243.0	216.4	195.4	180.7	170.2	160.4	154.8	152.7
42.5°	168.1	149.2	132.4	120.5	113.5	107.2	104.4	103.7
45°	109.3	98.1	86.8	78.4	72.8	68.6	67.9	67.2
47.5°	68.6	63.0	56.0	49.7	44.8	42.0	39.9	39.9
50°	39.2	37.1	33.6	30.1	27.3	25.9	23.8	23.1
52.5°	21.0	21.0	19.6	16.8	14.7	13.3	13.3	12.6
55°	11.2	11.2	10.5	10.5	9.8	9.8	9.8	9.1
57.5°	7.0	7.0	7.7	7.7	7.0	7.0	7.0	7.0
60°	4.9	5.6	5.6	5.6	5.6	5.6	5.6	5.6
62.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
65°	2.8	3.5	3.5	3.5	3.5	2.8	2.8	2.8
67.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
70°	2.1	2.1	2.1	2.1	2.1	1.4	1.4	1.4
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
75°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
77.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)