

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: P209100

Luminaire Tested: **LDSQ4B10D010 EU4B10208027 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209100
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 EU4B10208027 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 2700 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 973.6 lumens
Efficiency: N/A
Efficacy: 96.9 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

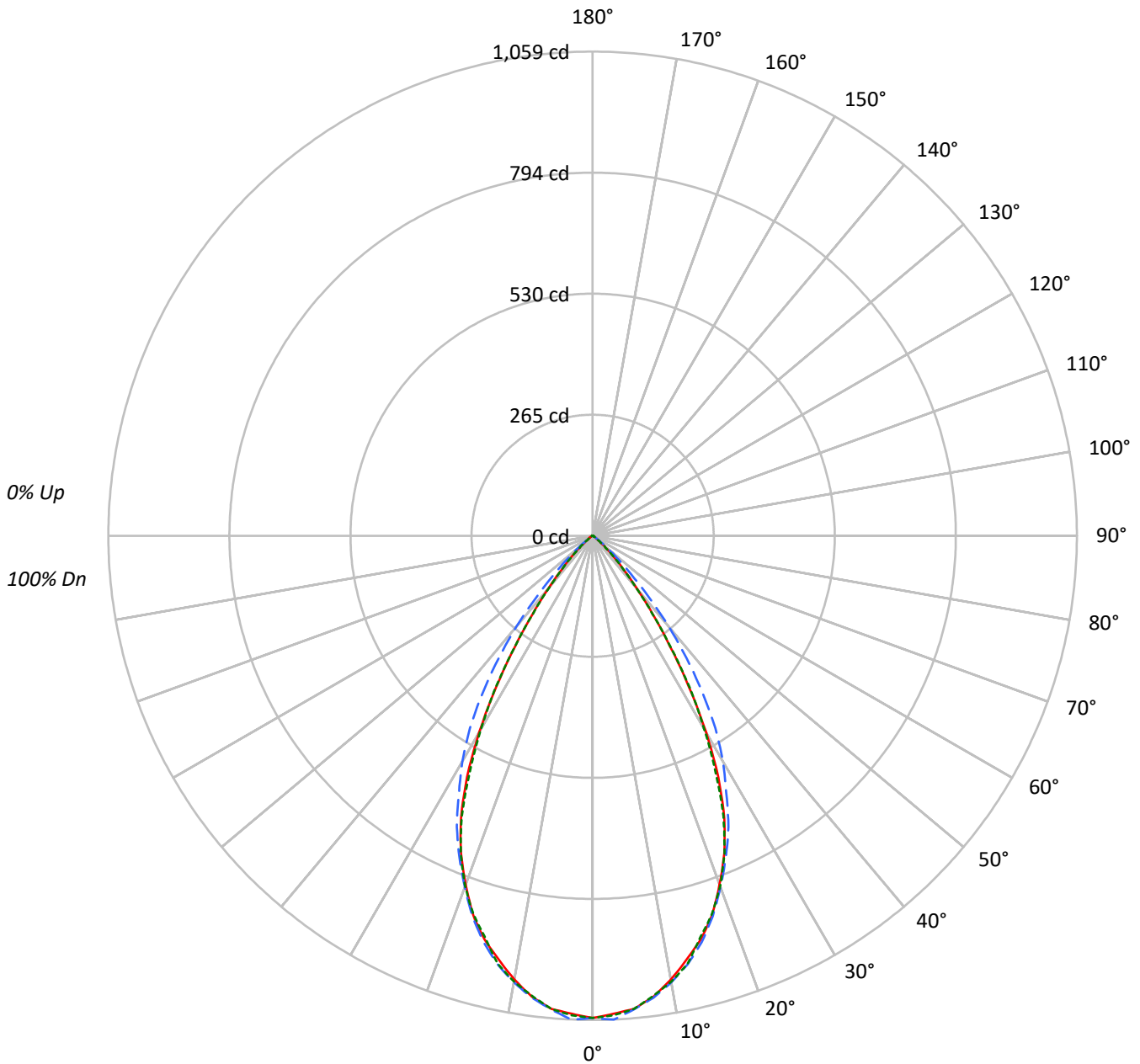
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11420	11420	11420
5°	11289	11303	11289
10°	10837	10903	10888
15°	10245	10321	10193
20°	9350	9419	9396
25°	8141	8397	8085
30°	6191	7121	6099
35°	3897	5535	3933
40°	2102	3656	2065
45°	995	1806	985
50°	372	677	372
55°	177	215	164
60°	117	102	117
65°	69	69	69
70°	41	63	41
75°	29	29	29
80°	44	44	44
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.8	10.0
10°-20°	256.2	26.3
20°-30°	313.0	32.2
30°-40°	218.9	22.5
40°-50°	71.7	7.4
50°-60°	11.4	1.2
60°-70°	3.1	0.3
70°-80°	1.0	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°	667.1	68.5
0°-40°	886.0	91.0
0°-60°	969.2	99.5
0°-90°	973.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	973.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1055	1055	1055	1055	1055	
5°	1038	1039	1040	1034	1038	97
15°	914	918	921	915	909	255
25°	681	692	703	690	677	306
35°	295	348	419	343	298	188
45°	65	80	118	79	64	55
55°	9	10	11	10	9	9
65°	3	3	3	3	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°	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6
2.5°	1046.5	1053.9	1051.9	1056.6	1056.6	1051.2	1052.6	1054.6	1057.2	1059.3	1043.2
5°	1038.5	1045.2	1039.2	1045.9	1041.8	1035.8	1045.9	1040.5	1043.8	1039.8	1042.5
7.5°	1017.0	1027.8	1015.7	1023.7	1021.1	1017.7	1021.7	1020.4	1022.4	1019.1	1011.7
10°	985.6	994.3	986.2	997.6	992.3	988.9	992.3	995.6	994.9	991.6	995.6
12.5°	949.4	959.4	955.4	962.1	956.1	956.1	964.1	962.1	962.8	960.1	964.8
15°	913.9	921.2	915.2	923.9	921.2	913.9	917.2	917.2	922.6	920.6	915.2
17.5°	869.6	875.7	869.0	871.0	868.3	867.0	881.0	871.7	877.0	873.0	873.7
20°	811.4	814.0	812.0	817.4	814.0	818.1	816.7	815.4	815.4	817.4	812.7
22.5°	752.4	752.4	754.4	755.7	758.4	754.4	762.4	755.7	756.4	761.1	759.8
25°	681.4	679.4	684.1	690.8	693.4	690.1	700.8	695.4	699.5	702.8	695.4
27.5°	595.0	595.0	599.6	611.0	613.0	617.1	631.8	631.8	637.2	632.5	637.8
30°	495.1	502.5	508.5	523.3	528.0	536.7	552.1	559.4	571.5	569.5	566.8
32.5°	392.6	402.7	403.3	418.7	431.5	446.2	467.0	484.4	493.1	499.1	492.4
35°	294.8	300.8	306.2	316.9	338.3	357.8	376.5	399.3	414.7	418.7	412.7
37.5°	215.7	217.1	222.4	232.5	248.6	267.3	290.1	314.9	331.0	337.0	330.3
40°	148.7	150.1	152.8	161.5	174.9	188.3	206.4	231.8	246.6	258.6	249.9
42.5°	99.8	101.2	103.8	110.5	117.9	130.6	144.7	160.8	174.9	180.2	175.5
45°	65.0	65.0	66.3	71.0	75.0	85.1	95.1	105.2	114.6	117.9	114.6
47.5°	38.2	38.9	40.2	43.5	48.2	52.3	59.6	66.3	69.0	71.7	70.3
50°	22.1	22.1	24.1	26.1	29.5	32.2	34.8	37.5	38.9	40.2	38.9
52.5°	12.1	12.7	13.4	14.1	15.4	18.1	20.1	20.1	20.8	21.4	20.8
55°	9.4	9.4	9.4	9.4	10.0	10.0	10.0	10.7	10.7	11.4	10.7
57.5°	6.7	6.7	6.7	7.4	7.4	7.4	6.7	6.7	6.7	6.7	6.7
60°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.7	4.7	4.7	4.7
62.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
65°	2.7	2.7	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7
67.5°	2.0	2.0	2.0	2.0	2.7	2.7	2.0	2.0	2.0	2.0	2.0
70°	1.3	1.3	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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



TEST NUMBER: P209100

CATALOG NUMBER: LDSQ4B10D010 EU4B10208027 4LBSQ1LI

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6	1054.6
2.5°	1054.6	1043.2	1044.5	1050.5	1047.2	1050.5	1049.9	1049.9
5°	1043.2	1039.8	1034.5	1032.5	1036.5	1045.2	1043.8	1038.5
7.5°	1021.7	1013.0	1019.1	1021.7	1018.4	1023.7	1026.4	1015.0
10°	996.3	992.9	991.6	992.9	991.6	996.9	990.2	990.2
12.5°	960.1	954.7	954.7	962.8	958.1	954.1	959.4	958.8
15°	923.9	913.2	913.2	915.9	917.9	915.2	915.9	909.2
17.5°	870.3	867.0	862.3	869.6	871.7	869.0	871.0	867.6
20°	820.1	820.1	811.4	814.7	817.4	819.4	820.7	815.4
22.5°	755.7	757.1	751.1	757.8	759.8	753.1	754.4	753.1
25°	696.8	696.1	691.4	688.7	690.1	687.4	686.7	676.7
27.5°	631.8	625.1	615.1	617.7	606.3	597.0	597.0	581.6
30°	561.5	550.1	536.7	523.3	513.2	502.5	496.5	487.8
32.5°	479.0	463.6	446.9	428.8	417.4	401.3	392.6	397.3
35°	397.3	374.5	351.7	333.7	316.2	306.9	296.1	297.5
37.5°	318.2	286.1	266.0	246.6	231.8	219.8	215.1	213.7
40°	232.5	207.0	186.9	172.9	162.8	153.4	148.1	146.1
42.5°	160.8	142.7	126.6	115.2	108.5	102.5	99.8	99.2
45°	104.5	93.8	83.1	75.0	69.7	65.7	65.0	64.3
47.5°	65.7	60.3	53.6	47.6	42.9	40.2	38.2	38.2
50°	37.5	35.5	32.2	28.8	26.1	24.8	22.8	22.1
52.5°	20.1	20.1	18.8	16.1	14.1	12.7	12.7	12.1
55°	10.7	10.7	10.0	10.0	9.4	9.4	9.4	8.7
57.5°	6.7	6.7	7.4	7.4	6.7	6.7	6.7	6.7
60°	4.7	5.4	5.4	5.4	5.4	5.4	5.4	5.4
62.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
65°	2.7	3.3	3.3	3.3	3.3	2.7	2.7	2.7
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)