

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: P315459

Luminaire Tested: **LDA2B20FL8027D010 PIN1MW**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315459  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-15)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B20FL8027D010 PIN1MW  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, Black oculus, matte white finish  
Light Source: -  
Ballast/Driver: -

**Summary**

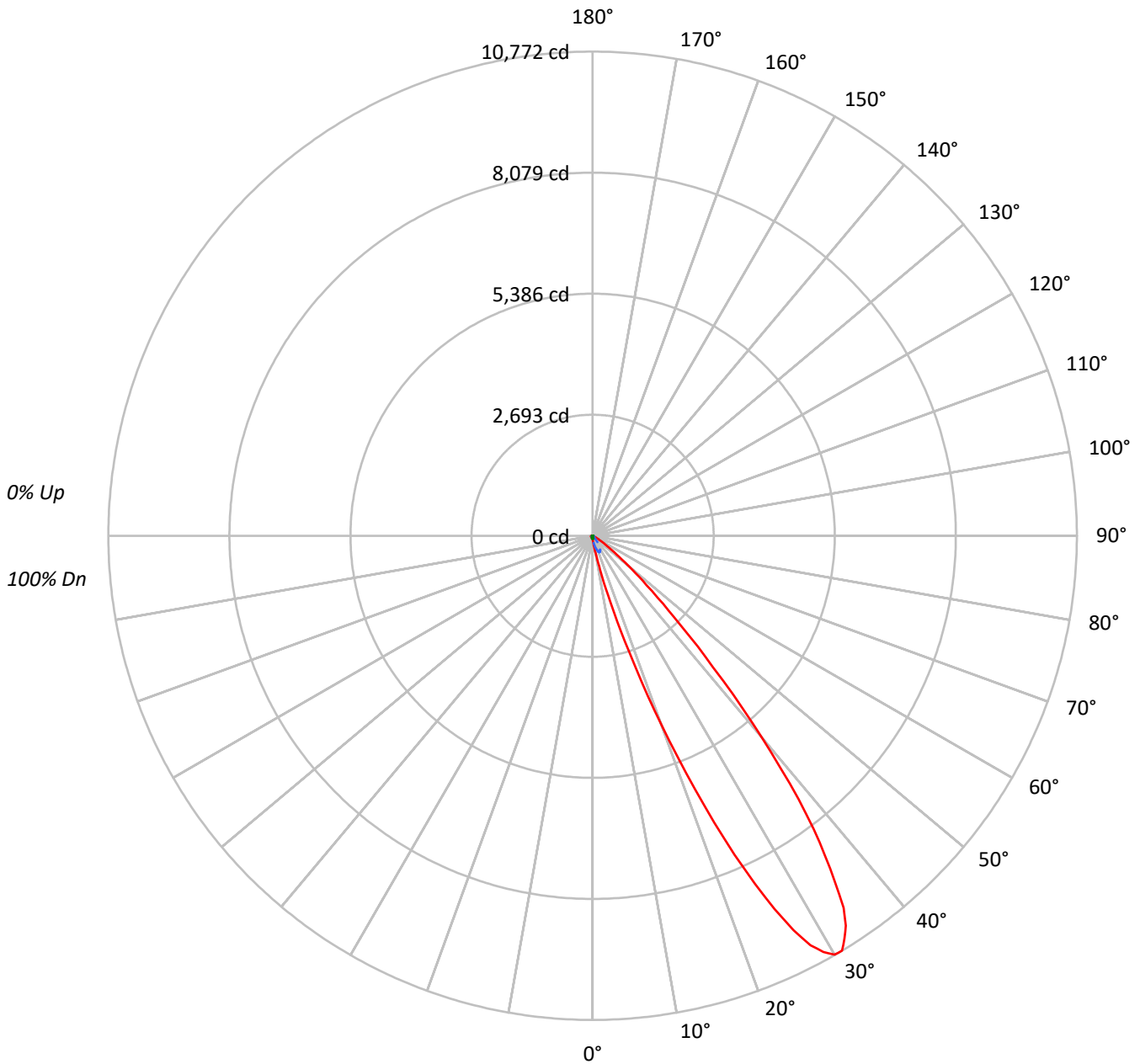
Lumens per Lamp: N/A  
Luminaire Lumens: 1571.9 lumens  
Efficiency: N/A  
Efficacy: 76.3 lumens/watt  
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 20.6  
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					20					
RC	80					70					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90					90			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80					80			
3	97	89	82	77	95	87	82	77	85	80	75	82	78	74	80	76	73	71					71			
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63					63			
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56					56			
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50					50			
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45					45			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40					40			
9	63	51	43	38	61	50	43	38	49	42	38	48	42	38	47	41	37	36					36			
10	59	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32					32			

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

	0°	90°	180°
0°	33006	33006	33006
5°	73742	34073	26595
10°	197383	21241	7565
15°	777130	27428	17826
20°	2350903	16853	13861
25°	4652302	14371	12303
30°	6130211	8602	15040
35°	5656587	12467	18189
40°	3767816	10949	24860
45°	1777160	3977	10536
50°	783576	14506	32543
55°	318686	0	33202
60°	132122	9275	29799
65°	45061	10973	22064
70°	38082	21782	55680
75°	21540	32405	73579
80°	0	16195	32105
85°	21511	21511	106987



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	9.1	0.6
10°-20°	96.2	6.1
20°-30°	494.4	31.5
30°-40°	633.1	40.3
40°-50°	243.4	15.5
50°-60°	49.5	3.1
60°-70°	16.8	1.1
70°-80°	19.5	1.2
80°-90°	10.0	0.6
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°	599.7	38.1
0°-40°	1232.7	78.4
0°-60°	1525.7	97.1
0°-90°	1571.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1571.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	67	67	67	67	67	
5°	149	122	69	50	54	22
15°	1522	296	54	32	35	583
25°	8546	386	26	21	23	3901
35°	9392	201	21	17	30	5613
45°	2547	50	6	4	15	2189
55°	370	9	0	8	39	384
65°	39	13	9	13	19	54
75°	11	21	17	28	39	15
85°	4	13	4	15	19	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9
2.5°	99.0	85.8	89.6	76.4	83.9	85.8	70.7	93.3	83.9	87.7	76.4
5°	148.9	160.3	147.1	141.4	137.6	141.4	137.6	143.3	139.5	122.5	87.7
7.5°	248.9	227.2	227.2	219.6	225.3	223.4	214.0	219.6	206.4	148.9	100.9
10°	394.0	372.4	370.5	364.8	362.9	346.0	336.5	329.0	301.7	176.3	91.4
12.5°	772.1	753.2	740.0	707.0	684.4	671.2	621.2	594.8	516.6	262.1	116.9
15°	1521.5	1424.4	1448.9	1342.4	1264.1	1212.3	1108.6	1017.1	829.6	296.0	113.1
17.5°	2692.3	2598.0	2534.9	2418.9	2259.6	2122.0	1917.4	1714.7	1332.9	336.5	105.6
20°	4477.7	4328.8	4196.8	3997.9	3691.5	3426.6	3066.5	2679.1	1984.3	384.6	95.2
21°	5262.0	5147.0	4994.3	4732.2	4375.0	4020.5	3588.8	3122.1	2261.5	388.4	85.8
22°	6080.3	6005.8	5805.0	5504.3	5087.6	4665.3	4135.5	3622.7	2556.5	394.0	82.0
23°	6932.4	6854.2	6627.0	6282.9	5814.4	5303.5	4686.0	4078.0	2833.7	401.6	80.1
24°	7766.7	7680.0	7426.4	7041.8	6510.1	5922.8	5225.3	4520.1	3092.0	397.8	83.9
25°	8546.3	8425.6	8157.9	7731.8	7148.3	6489.4	5720.2	4901.9	3319.2	386.5	70.7
26°	9242.0	9104.4	8815.9	8351.2	7713.0	6999.4	6133.1	5256.4	3487.0	377.1	66.9
27°	9846.3	9672.8	9364.6	8877.2	8192.8	7404.7	6485.6	5533.5	3635.0	362.9	53.7
28°	10316.7	10117.8	9804.8	9290.1	8567.1	7720.5	6744.9	5707.0	3722.6	364.8	61.3
29°	10588.2	10435.4	10095.1	9555.9	8795.2	7902.5	6881.5	5803.1	3739.6	336.5	57.5
30°	10760.7	10590.0	10240.3	9676.6	8882.8	7943.9	6898.5	5785.2	3689.6	315.8	53.7
31°	10772.0	10593.8	10238.4	9654.9	8848.9	7875.1	6804.2	5678.7	3581.2	294.1	44.3
32°	10569.3	10431.7	10081.9	9479.6	8665.1	7685.6	6601.6	5498.6	3410.6	250.8	30.2
33°	10340.2	10173.4	9825.5	9217.5	8410.6	7426.4	6309.3	5256.4	3233.4	247.0	38.6
34°	9983.9	9783.1	9440.9	8842.3	8057.1	7056.9	5961.5	4933.0	3007.1	225.3	36.8
35°	9391.9	9284.4	8938.5	8347.4	7584.8	6613.8	5542.9	4577.6	2766.8	200.8	26.4
36°	8799.0	8667.0	8339.9	7768.6	7045.6	6085.9	5070.7	4172.3	2495.3	170.6	20.7
37°	8172.1	7999.6	7701.7	7142.7	6387.6	5559.9	4617.2	3785.8	2273.7	180.1	28.3
38°	7441.5	7384.0	6991.8	6471.5	5773.9	4992.4	4129.9	3378.6	2028.6	167.8	46.2
39°	6638.3	6599.7	6208.5	5734.3	5108.4	4390.0	3631.2	2956.2	1783.5	122.5	15.1
40°	5850.3	5740.0	5462.8	5032.0	4487.1	3841.4	3185.3	2596.1	1571.4	120.7	30.2
42.5°	3964.9	3999.8	3700.0	3391.8	3042.0	2603.7	2166.3	1779.8	1099.2	89.6	18.9
45°	2547.1	2554.7	2420.8	2181.4	1952.3	1678.9	1390.4	1158.6	708.9	50.0	5.7
47.5°	1621.4	1617.6	1531.9	1394.2	1244.3	1084.1	904.0	757.0	459.1	38.6	17.0
50°	1020.9	1017.1	963.4	875.7	791.8	686.3	573.1	487.4	290.3	46.2	18.9
51°	829.6	835.2	790.0	701.4	636.3	535.4	457.2	388.4	227.2	32.1	17.0
52°	684.4	680.6	652.3	577.9	524.1	437.4	372.4	317.7	189.5	28.3	7.5
53°	550.5	552.4	524.1	466.6	414.8	349.7	297.9	247.0	135.7	20.7	5.7
54°	435.5	431.7	422.3	366.7	334.7	277.1	232.8	189.5	116.9	3.8	0.0
55°	370.5	364.8	351.6	303.5	271.5	229.1	185.7	162.1	100.9	9.4	0.0
57.5°	214.0	214.0	206.4	180.1	158.4	141.4	113.1	105.6	51.8	9.4	0.0
60°	133.9	116.9	130.1	111.2	87.7	78.2	65.0	59.4	44.3	17.0	3.8
61°	111.2	89.6	87.7	82.0	76.4	51.8	44.3	48.1	28.3	5.7	3.8
62°	80.1	70.7	76.4	65.0	57.5	40.5	36.8	34.9	17.0	7.5	9.4
63°	72.6	65.0	63.2	48.1	42.4	42.4	32.1	30.2	20.7	15.1	7.5



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**CANDELA DISTRIBUTION (continued):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
66°	38.6	32.1	28.3	32.1	18.9	24.5	9.4	26.4	5.7	9.4	5.7
67.5°	30.2	18.9	17.0	20.7	13.2	9.4	13.2	17.0	5.7	9.4	13.2
70°	26.4	13.2	18.9	17.0	13.2	17.0	18.9	18.9	5.7	18.9	17.0
72.5°	26.4	17.0	9.4	7.5	7.5	7.5	7.5	7.5	11.3	26.4	20.7
75°	11.3	11.3	5.7	13.2	7.5	11.3	7.5	18.9	7.5	20.7	17.0
77.5°	7.5	9.4	0.0	9.4	0.0	0.0	5.7	13.2	5.7	15.1	18.9
80°	0.0	9.4	5.7	0.0	3.8	5.7	0.0	1.9	3.8	17.0	7.5
82.5°	3.8	5.7	7.5	3.8	3.8	0.0	0.0	0.0	0.0	11.3	9.4
85°	3.8	7.5	0.0	1.9	7.5	3.8	1.9	9.4	3.8	13.2	15.1
87.5°	0.0	3.8	3.8	0.0	5.7	0.0	5.7	3.8	0.0	11.3	5.7
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: P315459

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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
0°	66.9	66.9	66.9	66.9	66.9
2.5°	57.5	51.8	44.3	55.6	46.2
5°	68.8	63.2	50.0	59.4	53.7
7.5°	70.7	59.4	51.8	48.1	53.7
10°	42.4	28.3	20.7	28.3	15.1
12.5°	70.7	50.0	46.2	51.8	57.5
15°	53.7	32.1	32.1	24.5	34.9
17.5°	30.2	24.5	22.6	30.2	34.9
20°	32.1	20.7	17.0	28.3	26.4
21°	28.3	7.5	22.6	22.6	26.4
22°	40.5	18.9	22.6	36.8	38.6
23°	26.4	20.7	17.0	22.6	30.2
24°	38.6	22.6	20.7	28.3	42.4
25°	26.4	20.7	20.7	26.4	22.6
26°	15.1	20.7	15.1	22.6	18.9
27°	11.3	18.9	11.3	17.0	22.6
28°	24.5	30.2	28.3	30.2	26.4
29°	26.4	32.1	26.4	40.5	30.2
30°	15.1	28.3	13.2	30.2	26.4
31°	15.1	20.7	9.4	30.2	26.4
32°	1.9	11.3	5.7	11.3	11.3
33°	11.3	13.2	15.1	24.5	18.9
34°	18.9	22.6	15.1	26.4	22.6
35°	20.7	11.3	17.0	28.3	30.2
36°	5.7	5.7	9.4	22.6	7.5
37°	11.3	32.1	22.6	38.6	22.6
38°	18.9	38.6	36.8	48.1	38.6
39°	3.8	11.3	13.2	26.4	26.4
40°	17.0	28.3	20.7	38.6	38.6
42.5°	13.2	20.7	15.1	32.1	26.4
45°	5.7	5.7	3.8	20.7	15.1
47.5°	9.4	9.4	17.0	26.4	46.2
50°	18.9	18.9	24.5	44.3	42.4
51°	11.3	9.4	13.2	30.2	38.6
52°	9.4	13.2	13.2	30.2	30.2
53°	3.8	0.0	0.0	22.6	18.9
54°	3.8	1.9	5.7	17.0	26.4
55°	0.0	9.4	7.5	34.9	38.6
57.5°	1.9	15.1	7.5	24.5	30.2
60°	9.4	11.3	20.7	24.5	30.2
61°	0.0	9.4	9.4	22.6	26.4
62°	0.0	7.5	17.0	20.7	26.4
63°	9.4	11.3	15.1	24.5	30.2





TEST NUMBER: P315459

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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	5.7	15.1	18.9	24.5	22.6
67.5°	11.3	13.2	11.3	32.1	38.6
70°	15.1	24.5	26.4	22.6	38.6
72.5°	9.4	13.2	18.9	34.9	38.6
75°	17.0	18.9	28.3	32.1	38.6
77.5°	13.2	18.9	18.9	20.7	38.6
80°	5.7	17.0	18.9	20.7	11.3
82.5°	7.5	11.3	7.5	20.7	15.1
85°	3.8	17.0	15.1	18.9	18.9
87.5°	5.7	9.4	9.4	17.0	11.3
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	42.4	44.3	42.4	30.2	22.6	20.7	15.1	26.4	7.5	7.5	0.0
65°	38.6	42.4	32.1	36.8	24.5	22.6	13.2	26.4	3.8	13.2	9.4







64°	5.7	9.4	9.4	17.0	26.4
65°	9.4	13.2	13.2	24.5	18.9



(END OF REPORT)