

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: P315490

Luminaire Tested: **LDA2B20FL9024D010 PINW1MW**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315490  
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: LDA2B20FL9024D010 PINW1MW  
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: 1193.6 lumens  
Efficiency: N/A  
Efficacy: 57.9 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

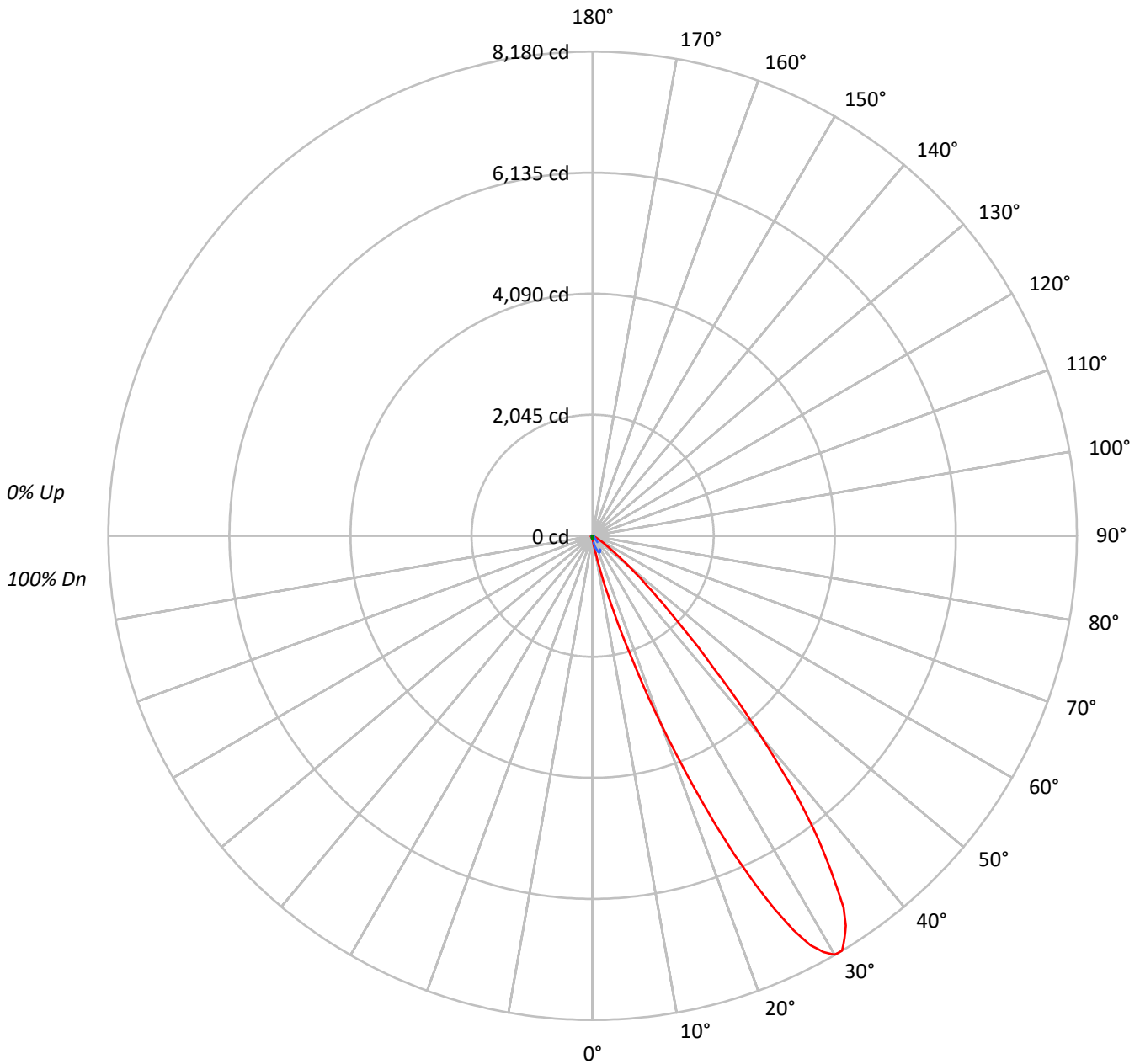
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: LDA2B20FL9024D010 PINW1MW

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

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

	0°	90°	180°
0°	25063	25063	25063
5°	56012	25901	20206
10°	149891	16131	5761
15°	590088	20839	13535
20°	1785189	12758	10500
25°	3532762	10887	9363
30°	4655011	6551	11394
35°	4295366	9456	13792
40°	2861075	8308	18870
45°	1349528	3000	8024
50°	594993	10976	24715
55°	241960	0	25202
60°	100251	7104	22596
65°	34205	8405	16694
70°	28850	16589	42265
75°	16393	24590	55852
80°	0	12217	24434
85°	16416	16416	80948



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	6.9	0.6
10°-20°	73.0	6.1
20°-30°	375.4	31.5
30°-40°	480.7	40.3
40°-50°	184.9	15.5
50°-60°	37.6	3.1
60°-70°	12.8	1.1
70°-80°	14.8	1.2
80°-90°	7.6	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°	455.4	38.1
0°-40°	936.1	78.4
0°-60°	1158.5	97.1
0°-90°	1193.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1193.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	51	51	51	51	51	
5°	113	93	52	38	41	17
15°	1155	225	41	24	26	443
25°	6490	294	20	16	17	2962
35°	7132	152	16	13	23	4263
45°	1934	38	4	3	12	1662
55°	281	7	0	6	29	291
65°	29	10	7	10	14	41
75°	9	16	13	22	29	12
85°	3	10	3	12	14	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°	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
2.5°	75.2	65.1	68.0	58.0	63.7	65.1	53.7	70.9	63.7	66.6	58.0
5°	113.1	121.7	111.7	107.4	104.5	107.4	104.5	108.8	105.9	93.1	66.6
7.5°	189.0	172.5	172.5	166.8	171.1	169.7	162.5	166.8	156.8	113.1	76.6
10°	299.2	282.8	281.3	277.0	275.6	262.7	255.6	249.8	229.1	133.9	69.4
12.5°	586.3	571.9	561.9	536.9	519.7	509.7	471.7	451.7	392.3	199.0	88.8
15°	1155.3	1081.6	1100.2	1019.3	959.9	920.6	841.8	772.4	629.9	224.8	85.9
17.5°	2044.4	1972.8	1924.9	1836.8	1715.8	1611.3	1456.0	1302.1	1012.2	255.6	80.2
20°	3400.2	3287.1	3186.9	3035.8	2803.2	2602.0	2328.6	2034.4	1506.8	292.1	72.3
21°	3995.7	3908.4	3792.5	3593.5	3322.2	3053.0	2725.2	2370.8	1717.3	294.9	65.1
22°	4617.1	4560.5	4408.1	4179.7	3863.3	3542.6	3140.3	2750.9	1941.3	299.2	62.3
23°	5264.2	5204.8	5032.3	4771.0	4415.2	4027.2	3558.4	3096.7	2151.8	304.9	60.8
24°	5897.7	5831.8	5639.3	5347.2	4943.5	4497.5	3967.8	3432.4	2347.9	302.1	63.7
25°	6489.7	6398.1	6194.8	5871.2	5428.1	4927.8	4343.6	3722.3	2520.4	293.5	53.7
26°	7018.0	6913.5	6694.4	6341.5	5856.9	5315.0	4657.2	3991.5	2647.8	286.3	50.8
27°	7476.8	7345.1	7111.0	6740.9	6221.3	5622.8	4924.9	4201.9	2760.2	275.6	40.8
28°	7834.0	7683.0	7445.3	7054.5	6505.4	5862.6	5121.7	4333.6	2826.8	277.0	46.5
29°	8040.2	7924.2	7665.8	7256.3	6678.7	6000.8	5225.5	4406.6	2839.7	255.6	43.7
30°	8171.2	8041.6	7776.0	7348.0	6745.2	6032.3	5238.4	4393.0	2801.7	239.8	40.8
31°	8179.8	8044.5	7774.6	7331.5	6719.5	5980.0	5166.8	4312.1	2719.4	223.3	33.6
32°	8025.9	7921.3	7655.8	7198.4	6579.9	5836.1	5012.9	4175.4	2589.9	190.4	22.9
33°	7851.9	7725.2	7461.1	6999.4	6386.6	5639.3	4791.0	3991.5	2455.3	187.5	29.3
34°	7581.3	7428.9	7169.0	6714.5	6118.2	5358.7	4526.9	3745.9	2283.5	171.1	27.9
35°	7131.8	7050.2	6787.5	6338.7	5759.5	5022.2	4209.1	3476.1	2101.0	152.5	20.0
36°	6681.5	6581.3	6332.9	5899.1	5350.1	4621.4	3850.4	3168.3	1894.8	129.6	15.7
37°	6205.5	6074.5	5848.3	5423.8	4850.4	4222.0	3506.1	2874.8	1726.6	136.7	21.5
38°	5650.7	5607.1	5309.3	4914.2	4384.4	3791.0	3136.0	2565.5	1540.5	127.4	35.1
39°	5040.9	5011.5	4714.4	4354.4	3879.1	3333.6	2757.4	2244.8	1354.3	93.1	11.5
40°	4442.4	4358.7	4148.2	3821.1	3407.3	2917.0	2418.8	1971.4	1193.3	91.6	22.9
42.5°	3010.8	3037.3	2809.6	2575.5	2310.0	1977.1	1645.0	1351.5	834.7	68.0	14.3
45°	1934.2	1939.9	1838.2	1656.4	1482.5	1274.9	1055.8	879.8	538.3	37.9	4.3
47.5°	1231.2	1228.4	1163.2	1058.7	944.9	823.2	686.5	574.8	348.6	29.3	12.9
50°	775.2	772.4	731.6	665.0	601.3	521.1	435.2	370.1	220.5	35.1	14.3
51°	629.9	634.2	599.9	532.6	483.2	406.6	347.2	294.9	172.5	24.3	12.9
52°	519.7	516.8	495.4	438.8	398.0	332.1	282.8	241.2	143.9	21.5	5.7
53°	418.0	419.5	398.0	354.3	315.0	265.6	226.2	187.5	103.1	15.7	4.3
54°	330.7	327.8	320.7	278.5	254.1	210.5	176.8	143.9	88.8	2.9	0.0
55°	281.3	277.0	267.0	230.5	206.2	173.9	141.0	123.1	76.6	7.2	0.0
57.5°	162.5	162.5	156.8	136.7	120.3	107.4	85.9	80.2	39.4	7.2	0.0
60°	101.6	88.8	98.8	84.5	66.6	59.4	49.4	45.1	33.6	12.9	2.9
61°	84.5	68.0	66.6	62.3	58.0	39.4	33.6	36.5	21.5	4.3	2.9
62°	60.8	53.7	58.0	49.4	43.7	30.8	27.9	26.5	12.9	5.7	7.2
63°	55.1	49.4	48.0	36.5	32.2	32.2	24.3	22.9	15.7	11.5	5.7



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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°	29.3	24.3	21.5	24.3	14.3	18.6	7.2	20.0	4.3	7.2	4.3
67.5°	22.9	14.3	12.9	15.7	10.0	7.2	10.0	12.9	4.3	7.2	10.0
70°	20.0	10.0	14.3	12.9	10.0	12.9	14.3	14.3	4.3	14.3	12.9
72.5°	20.0	12.9	7.2	5.7	5.7	5.7	5.7	5.7	8.6	20.0	15.7
75°	8.6	8.6	4.3	10.0	5.7	8.6	5.7	14.3	5.7	15.7	12.9
77.5°	5.7	7.2	0.0	7.2	0.0	0.0	4.3	10.0	4.3	11.5	14.3
80°	0.0	7.2	4.3	0.0	2.9	4.3	0.0	1.4	2.9	12.9	5.7
82.5°	2.9	4.3	5.7	2.9	2.9	0.0	0.0	0.0	0.0	8.6	7.2
85°	2.9	5.7	0.0	1.4	5.7	2.9	1.4	7.2	2.9	10.0	11.5
87.5°	0.0	2.9	2.9	0.0	4.3	0.0	4.3	2.9	0.0	8.6	4.3
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):**

	90°	112.5°	135°	157.5°	180°
0°	50.8	50.8	50.8	50.8	50.8
2.5°	43.7	39.4	33.6	42.2	35.1
5°	52.3	48.0	37.9	45.1	40.8
7.5°	53.7	45.1	39.4	36.5	40.8
10°	32.2	21.5	15.7	21.5	11.5
12.5°	53.7	37.9	35.1	39.4	43.7
15°	40.8	24.3	24.3	18.6	26.5
17.5°	22.9	18.6	17.2	22.9	26.5
20°	24.3	15.7	12.9	21.5	20.0
21°	21.5	5.7	17.2	17.2	20.0
22°	30.8	14.3	17.2	27.9	29.3
23°	20.0	15.7	12.9	17.2	22.9
24°	29.3	17.2	15.7	21.5	32.2
25°	20.0	15.7	15.7	20.0	17.2
26°	11.5	15.7	11.5	17.2	14.3
27°	8.6	14.3	8.6	12.9	17.2
28°	18.6	22.9	21.5	22.9	20.0
29°	20.0	24.3	20.0	30.8	22.9
30°	11.5	21.5	10.0	22.9	20.0
31°	11.5	15.7	7.2	22.9	20.0
32°	1.4	8.6	4.3	8.6	8.6
33°	8.6	10.0	11.5	18.6	14.3
34°	14.3	17.2	11.5	20.0	17.2
35°	15.7	8.6	12.9	21.5	22.9
36°	4.3	4.3	7.2	17.2	5.7
37°	8.6	24.3	17.2	29.3	17.2
38°	14.3	29.3	27.9	36.5	29.3
39°	2.9	8.6	10.0	20.0	20.0
40°	12.9	21.5	15.7	29.3	29.3
42.5°	10.0	15.7	11.5	24.3	20.0
45°	4.3	4.3	2.9	15.7	11.5
47.5°	7.2	7.2	12.9	20.0	35.1
50°	14.3	14.3	18.6	33.6	32.2
51°	8.6	7.2	10.0	22.9	29.3
52°	7.2	10.0	10.0	22.9	22.9
53°	2.9	0.0	0.0	17.2	14.3
54°	2.9	1.4	4.3	12.9	20.0
55°	0.0	7.2	5.7	26.5	29.3
57.5°	1.4	11.5	5.7	18.6	22.9
60°	7.2	8.6	15.7	18.6	22.9
61°	0.0	7.2	7.2	17.2	20.0
62°	0.0	5.7	12.9	15.7	20.0
63°	7.2	8.6	11.5	18.6	22.9





TEST NUMBER: P315490

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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.3	11.5	14.3	18.6	17.2
67.5°	8.6	10.0	8.6	24.3	29.3
70°	11.5	18.6	20.0	17.2	29.3
72.5°	7.2	10.0	14.3	26.5	29.3
75°	12.9	14.3	21.5	24.3	29.3
77.5°	10.0	14.3	14.3	15.7	29.3
80°	4.3	12.9	14.3	15.7	8.6
82.5°	5.7	8.6	5.7	15.7	11.5
85°	2.9	12.9	11.5	14.3	14.3
87.5°	4.3	7.2	7.2	12.9	8.6
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	32.2	33.6	32.2	22.9	17.2	15.7	11.5	20.0	5.7	5.7	0.0
65°	29.3	32.2	24.3	27.9	18.6	17.2	10.0	20.0	2.9	10.0	7.2







64°	4.3	7.2	7.2	12.9	20.0
65°	7.2	10.0	10.0	18.6	14.3



(END OF REPORT)