

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: P315513

Luminaire Tested: **LDA2B20FL9040D010 PIN1MW**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315513  
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: LDA2B20FL9040D010 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: 1370.2 lumens  
Efficiency: N/A  
Efficacy: 66.5 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

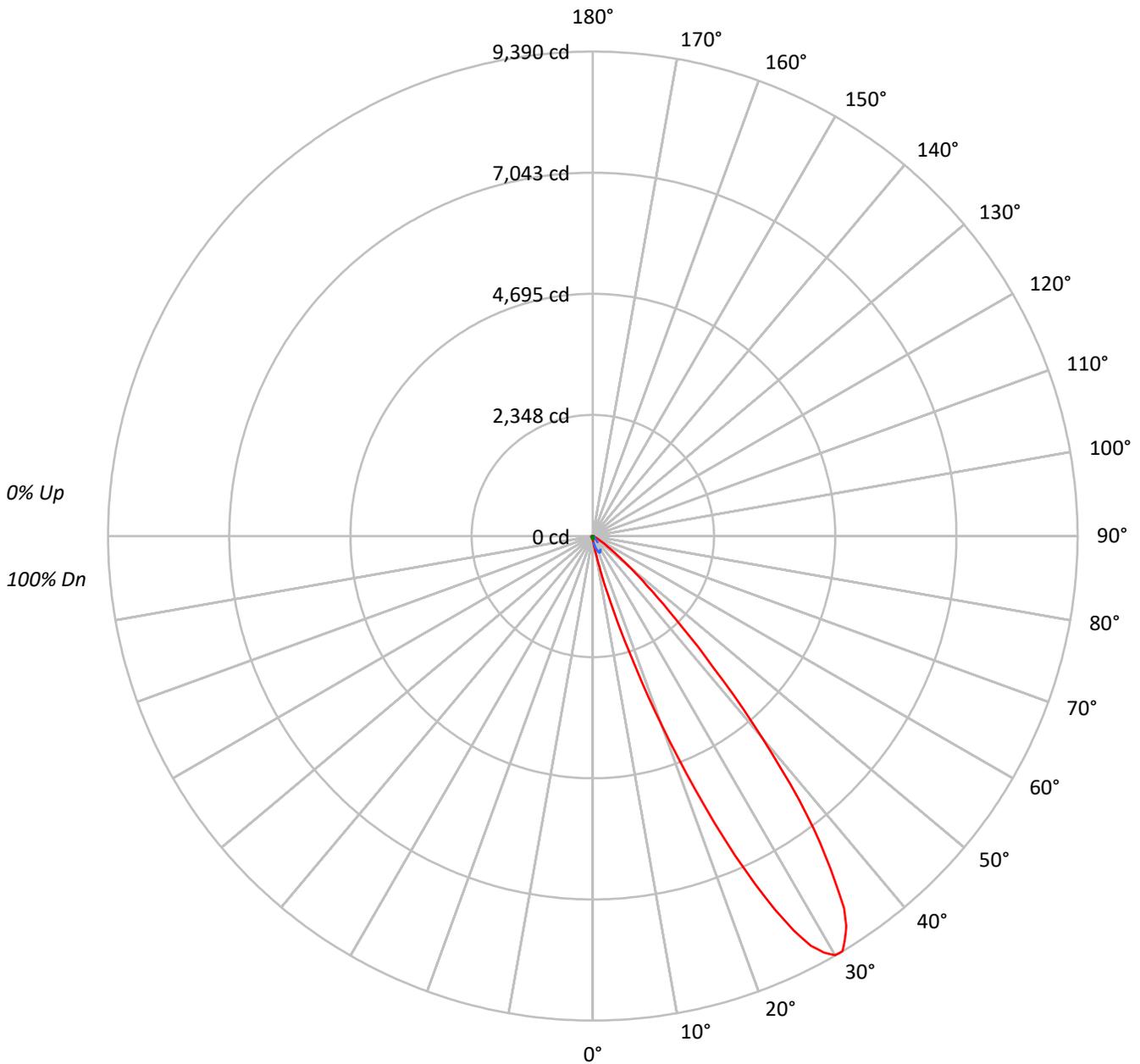
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

### Luminous Intensity Polar Plot





TEST NUMBER: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

**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°	28763	28763	28763
5°	64283	29715	23178
10°	172084	18536	6563
15°	677429	23904	15527
20°	2049276	14648	12076
25°	4055352	12520	10724
30°	5343589	7463	13103
35°	4930775	10901	15840
40°	3284337	9532	21704
45°	1549145	3419	9140
50°	683029	12588	28399
55°	277742	0	28987
60°	115151	8091	25951
65°	39341	9573	19145
70°	33177	18897	48612
75°	18871	28212	64239
80°	0	13922	28127
85°	18680	18680	92835



TEST NUMBER: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	7.9	0.6
10°-20°	83.8	6.1
20°-30°	431.0	31.5
30°-40°	551.8	40.3
40°-50°	212.2	15.5
50°-60°	43.1	3.1
60°-70°	14.6	1.1
70°-80°	17.0	1.2
80°-90°	8.7	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°	522.7	38.1
0°-40°	1074.6	78.4
0°-60°	1329.9	97.1
0°-90°	1370.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1370.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	58	58	58	58	58	
5°	130	107	60	44	47	19
15°	1326	258	47	28	30	509
25°	7450	337	23	18	20	3400
35°	8187	175	18	15	26	4893
45°	2220	44	5	3	13	1908
55°	323	8	0	7	34	335
65°	34	12	8	12	16	47
75°	10	18	15	25	34	13
85°	3	12	3	13	16	2
90°	0	0	0	0	0	



TEST NUMBER: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
2.5°	86.3	74.8	78.1	66.6	73.1	74.8	61.6	81.3	73.1	76.4	66.6
5°	129.8	139.7	128.2	123.3	120.0	123.3	120.0	124.9	121.6	106.8	76.4
7.5°	216.9	198.0	198.0	191.5	196.4	194.7	186.5	191.5	180.0	129.8	87.9
10°	343.5	324.6	322.9	318.0	316.4	301.6	293.4	286.8	262.9	153.7	79.7
12.5°	673.0	656.6	645.0	616.3	596.6	585.1	541.5	518.5	450.3	228.4	101.9
15°	1326.3	1241.6	1263.0	1170.1	1101.9	1056.7	966.3	886.6	723.1	258.0	98.6
17.5°	2346.8	2264.7	2209.6	2108.5	1969.7	1849.7	1671.4	1494.7	1161.9	293.4	92.0
20°	3903.2	3773.3	3658.3	3484.9	3217.8	2986.9	2673.0	2335.3	1729.7	335.3	83.0
21°	4586.8	4486.6	4353.5	4125.0	3813.6	3504.6	3128.3	2721.5	1971.3	338.5	74.8
22°	5300.1	5235.2	5060.1	4798.0	4434.8	4066.7	3604.9	3157.9	2228.5	343.5	71.5
23°	6042.9	5974.7	5776.7	5476.7	5068.3	4623.0	4084.8	3554.7	2470.1	350.1	69.8
24°	6770.1	6694.5	6473.5	6138.2	5674.8	5162.8	4554.8	3940.1	2695.2	346.8	73.1
25°	7449.7	7344.5	7111.1	6739.7	6231.1	5656.7	4986.2	4272.9	2893.3	336.9	61.6
26°	8056.1	7936.1	7684.7	7279.6	6723.3	6101.2	5346.1	4581.9	3039.5	328.7	58.3
27°	8582.8	8431.6	8162.9	7738.1	7141.5	6454.6	5653.4	4823.5	3168.5	316.4	46.8
28°	8992.9	8819.5	8546.7	8098.0	7467.8	6729.9	5879.4	4974.7	3245.0	318.0	53.4
29°	9229.5	9096.4	8799.8	8329.7	7666.6	6888.5	5998.5	5058.5	3259.8	293.4	50.1
30°	9379.9	9231.2	8926.3	8434.9	7743.0	6924.6	6013.3	5042.9	3216.2	275.3	46.8
31°	9389.8	9234.5	8924.7	8416.0	7713.5	6864.6	5931.2	4950.0	3121.7	256.4	38.6
32°	9213.1	9093.1	8788.3	8263.2	7553.2	6699.5	5754.5	4793.1	2973.0	218.6	26.3
33°	9013.4	8868.0	8564.8	8034.7	7331.4	6473.5	5499.8	4581.9	2818.5	215.3	33.7
34°	8702.8	8527.8	8229.5	7707.7	7023.2	6151.4	5196.5	4300.0	2621.3	196.4	32.0
35°	8186.8	8093.1	7791.5	7276.3	6611.5	5765.2	4831.7	3990.3	2411.7	175.0	23.0
36°	7669.9	7554.9	7269.7	6771.8	6141.5	5305.0	4420.0	3636.9	2175.1	148.7	18.1
37°	7123.5	6973.1	6713.4	6226.1	5568.0	4846.5	4024.8	3300.0	1982.0	156.9	24.7
38°	6486.6	6436.5	6094.7	5641.1	5033.0	4351.8	3599.9	2945.0	1768.3	146.3	40.3
39°	5786.5	5752.8	5411.8	4998.5	4452.9	3826.7	3165.3	2576.9	1554.7	106.8	13.1
40°	5099.6	5003.4	4761.8	4386.3	3911.4	3348.5	2776.6	2263.0	1369.8	105.2	26.3
42.5°	3456.1	3486.5	3225.2	2956.5	2651.7	2269.6	1888.3	1551.4	958.1	78.1	16.4
45°	2220.3	2226.9	2110.2	1901.5	1701.8	1463.5	1212.0	1009.9	617.9	43.6	4.9
47.5°	1413.4	1410.1	1335.3	1215.3	1084.7	945.0	788.0	659.8	400.2	33.7	14.8
50°	889.9	886.6	839.8	763.4	690.2	598.2	499.6	424.8	253.1	40.3	16.4
51°	723.1	728.0	688.6	611.4	554.7	466.7	398.5	338.5	198.0	27.9	14.8
52°	596.6	593.3	568.6	503.7	456.9	381.3	324.6	276.9	165.2	24.7	6.6
53°	479.9	481.5	456.9	406.7	361.6	304.9	259.7	215.3	118.3	18.1	4.9
54°	379.6	376.3	368.1	319.6	291.7	241.6	203.0	165.2	101.9	3.3	0.0
55°	322.9	318.0	306.5	264.6	236.7	199.7	161.9	141.3	87.9	8.2	0.0
57.5°	186.5	186.5	180.0	156.9	138.0	123.3	98.6	92.0	45.2	8.2	0.0
60°	116.7	101.9	113.4	97.0	76.4	68.2	56.7	51.8	38.6	14.8	3.3
61°	97.0	78.1	76.4	71.5	66.6	45.2	38.6	41.9	24.7	4.9	3.3
62°	69.8	61.6	66.6	56.7	50.1	35.3	32.0	30.4	14.8	6.6	8.2
63°	63.3	56.7	55.1	41.9	37.0	37.0	27.9	26.3	18.1	13.1	6.6



TEST NUMBER: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

**CANDELA DISTRIBUTION (continued):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
66°	33.7	27.9	24.7	27.9	16.4	21.4	8.2	23.0	4.9	8.2	4.9
67.5°	26.3	16.4	14.8	18.1	11.5	8.2	11.5	14.8	4.9	8.2	11.5
70°	23.0	11.5	16.4	14.8	11.5	14.8	16.4	16.4	4.9	16.4	14.8
72.5°	23.0	14.8	8.2	6.6	6.6	6.6	6.6	6.6	9.9	23.0	18.1
75°	9.9	9.9	4.9	11.5	6.6	9.9	6.6	16.4	6.6	18.1	14.8
77.5°	6.6	8.2	0.0	8.2	0.0	0.0	4.9	11.5	4.9	13.1	16.4
80°	0.0	8.2	4.9	0.0	3.3	4.9	0.0	1.6	3.3	14.8	6.6
82.5°	3.3	4.9	6.6	3.3	3.3	0.0	0.0	0.0	0.0	9.9	8.2
85°	3.3	6.6	0.0	1.6	6.6	3.3	1.6	8.2	3.3	11.5	13.1
87.5°	0.0	3.3	3.3	0.0	4.9	0.0	4.9	3.3	0.0	9.9	4.9
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: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
0°	58.3	58.3	58.3	58.3	58.3
2.5°	50.1	45.2	38.6	48.5	40.3
5°	60.0	55.1	43.6	51.8	46.8
7.5°	61.6	51.8	45.2	41.9	46.8
10°	37.0	24.7	18.1	24.7	13.1
12.5°	61.6	43.6	40.3	45.2	50.1
15°	46.8	27.9	27.9	21.4	30.4
17.5°	26.3	21.4	19.7	26.3	30.4
20°	27.9	18.1	14.8	24.7	23.0
21°	24.7	6.6	19.7	19.7	23.0
22°	35.3	16.4	19.7	32.0	33.7
23°	23.0	18.1	14.8	19.7	26.3
24°	33.7	19.7	18.1	24.7	37.0
25°	23.0	18.1	18.1	23.0	19.7
26°	13.1	18.1	13.1	19.7	16.4
27°	9.9	16.4	9.9	14.8	19.7
28°	21.4	26.3	24.7	26.3	23.0
29°	23.0	27.9	23.0	35.3	26.3
30°	13.1	24.7	11.5	26.3	23.0
31°	13.1	18.1	8.2	26.3	23.0
32°	1.6	9.9	4.9	9.9	9.9
33°	9.9	11.5	13.1	21.4	16.4
34°	16.4	19.7	13.1	23.0	19.7
35°	18.1	9.9	14.8	24.7	26.3
36°	4.9	4.9	8.2	19.7	6.6
37°	9.9	27.9	19.7	33.7	19.7
38°	16.4	33.7	32.0	41.9	33.7
39°	3.3	9.9	11.5	23.0	23.0
40°	14.8	24.7	18.1	33.7	33.7
42.5°	11.5	18.1	13.1	27.9	23.0
45°	4.9	4.9	3.3	18.1	13.1
47.5°	8.2	8.2	14.8	23.0	40.3
50°	16.4	16.4	21.4	38.6	37.0
51°	9.9	8.2	11.5	26.3	33.7
52°	8.2	11.5	11.5	26.3	26.3
53°	3.3	0.0	0.0	19.7	16.4
54°	3.3	1.6	4.9	14.8	23.0
55°	0.0	8.2	6.6	30.4	33.7
57.5°	1.6	13.1	6.6	21.4	26.3
60°	8.2	9.9	18.1	21.4	26.3
61°	0.0	8.2	8.2	19.7	23.0
62°	0.0	6.6	14.8	18.1	23.0
63°	8.2	9.9	13.1	21.4	26.3



TEST NUMBER: P315513

CATALOG NUMBER: LDA2B20FL9040D010 PIN1MW

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.9	13.1	16.4	21.4	19.7
67.5°	9.9	11.5	9.9	27.9	33.7
70°	13.1	21.4	23.0	19.7	33.7
72.5°	8.2	11.5	16.4	30.4	33.7
75°	14.8	16.4	24.7	27.9	33.7
77.5°	11.5	16.4	16.4	18.1	33.7
80°	4.9	14.8	16.4	18.1	9.9
82.5°	6.6	9.9	6.6	18.1	13.1
85°	3.3	14.8	13.1	16.4	16.4
87.5°	4.9	8.2	8.2	14.8	9.9
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	37.0	38.6	37.0	26.3	19.7	18.1	13.1	23.0	6.6	6.6	0.0
65°	33.7	37.0	27.9	32.0	21.4	19.7	11.5	23.0	3.3	11.5	8.2





64°	4.9	8.2	8.2	14.8	23.0
65°	8.2	11.5	11.5	21.4	16.4



(END OF REPORT)