

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: P315535

Luminaire Tested: **LDA2B20FL9730D010 PIN1MB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315535  
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: LDA2B20FL9730D010 PIN1MB  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, Black oculus black finish  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1186.3 lumens  
Efficiency: N/A  
Efficacy: 57.6 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

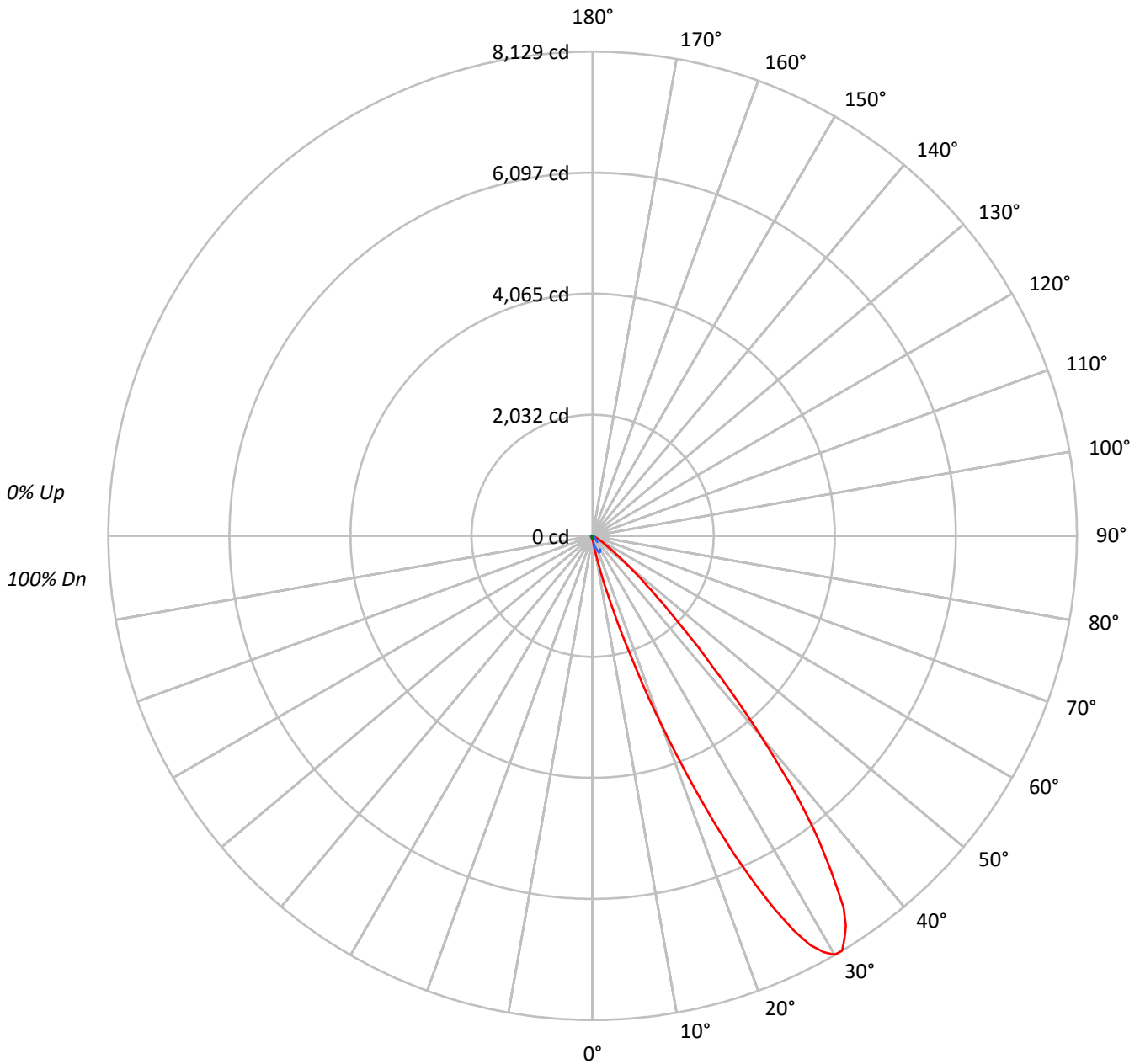
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
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°	24915	24915	24915
5°	55666	25703	20057
10°	148989	16031	5711
15°	586461	20686	13433
20°	1774111	12706	10448
25°	3510824	10833	9309
30°	4626128	6494	11337
35°	4268745	9456	13732
40°	2843364	8244	18806
45°	1341155	3000	7954
50°	591309	10899	24561
55°	240498	0	25116
60°	99659	7006	22497
65°	34088	8288	16577
70°	28706	16444	42121
75°	16203	24399	55661
80°	0	12217	24150
85°	15850	15850	80382



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	6.9	0.6
10°-20°	72.6	6.1
20°-30°	373.1	31.5
30°-40°	477.7	40.3
40°-50°	183.7	15.5
50°-60°	37.3	3.1
60°-70°	12.7	1.1
70°-80°	14.7	1.2
80°-90°	7.5	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°	452.5	38.1
0°-40°	930.3	78.4
0°-60°	1151.3	97.1
0°-90°	1186.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1186.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	50	50	50	50	50	
5°	112	92	52	38	40	17
15°	1148	223	40	24	26	440
25°	6449	292	20	16	17	2944
35°	7088	152	16	13	23	4236
45°	1922	38	4	3	11	1652
55°	280	7	0	6	29	290
65°	29	10	7	10	14	41
75°	8	16	13	21	29	12
85°	3	10	3	11	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°	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
2.5°	74.7	64.7	67.6	57.6	63.3	64.7	53.4	70.4	63.3	66.2	57.6
5°	112.4	120.9	111.0	106.7	103.9	106.7	103.9	108.1	105.3	92.5	66.2
7.5°	187.8	171.4	171.4	165.8	170.0	168.6	161.5	165.8	155.8	112.4	76.1
10°	297.4	281.0	279.6	275.3	273.9	261.1	254.0	248.3	227.6	133.0	69.0
12.5°	582.6	568.4	558.4	533.5	516.5	506.5	468.8	448.9	389.8	197.8	88.2
15°	1148.2	1074.9	1093.4	1013.0	954.0	914.8	836.6	767.6	626.0	223.4	85.4
17.5°	2031.7	1960.6	1912.9	1825.4	1705.2	1601.3	1447.0	1294.0	1005.9	254.0	79.7
20°	3379.1	3266.7	3167.1	3017.0	2785.8	2585.9	2314.1	2021.8	1497.5	290.2	71.9
21°	3971.0	3884.2	3768.9	3571.2	3301.6	3034.1	2708.3	2356.1	1706.6	293.1	64.7
22°	4588.5	4532.3	4380.7	4153.8	3839.4	3520.7	3120.9	2733.9	1929.3	297.4	61.9
23°	5231.6	5172.5	5001.1	4741.4	4387.8	4002.3	3536.3	3077.5	2138.4	303.1	60.5
24°	5861.1	5795.7	5604.3	5314.1	4912.8	4469.7	3943.2	3411.1	2333.4	300.2	63.3
25°	6449.4	6358.4	6156.4	5834.8	5394.5	4897.2	4316.7	3699.2	2504.8	291.7	53.4
26°	6974.5	6870.6	6652.9	6302.2	5820.6	5282.1	4628.3	3966.7	2631.4	284.6	50.5
27°	7430.5	7299.6	7066.9	6699.1	6182.7	5588.0	4894.4	4175.9	2743.1	273.9	40.5
28°	7785.4	7635.3	7399.2	7010.7	6465.1	5826.3	5090.0	4306.7	2809.3	275.3	46.2
29°	7990.3	7875.1	7618.3	7211.3	6637.3	5963.6	5193.1	4379.3	2822.1	254.0	43.4
30°	8120.5	7991.7	7727.8	7302.4	6703.4	5994.9	5205.9	4365.8	2784.4	238.3	40.5
31°	8129.0	7994.6	7726.4	7286.0	6677.8	5942.9	5134.8	4285.4	2702.6	222.0	33.4
32°	7976.1	7872.2	7608.3	7153.7	6539.1	5800.0	4981.9	4149.5	2573.8	189.2	22.8
33°	7803.2	7677.3	7414.8	6956.0	6347.0	5604.3	4761.3	3966.7	2440.1	186.4	29.2
34°	7534.3	7382.8	7124.6	6672.8	6080.2	5325.5	4498.8	3722.7	2269.3	170.0	27.7
35°	7087.6	7006.5	6745.4	6299.3	5723.8	4991.1	4183.0	3454.5	2087.9	151.5	19.9
36°	6640.1	6540.5	6293.7	5862.6	5316.9	4592.7	3826.6	3148.6	1883.0	128.8	15.7
37°	6167.0	6036.8	5812.0	5390.2	4820.4	4195.8	3484.4	2856.9	1715.9	135.9	21.3
38°	5615.7	5572.3	5276.4	4883.7	4357.3	3767.5	3116.6	2549.6	1530.9	126.6	34.9
39°	5009.6	4980.4	4685.2	4327.4	3855.0	3312.9	2740.3	2230.9	1345.9	92.5	11.4
40°	4414.9	4331.6	4122.5	3797.4	3386.2	2898.9	2403.8	1959.2	1185.9	91.1	22.8
42.5°	2992.1	3018.4	2792.2	2559.6	2295.7	1964.9	1634.8	1343.1	829.5	67.6	14.2
45°	1922.2	1927.9	1826.8	1646.2	1473.3	1267.0	1049.3	874.3	535.0	37.7	4.3
47.5°	1223.6	1220.7	1156.0	1052.1	939.0	818.1	682.2	571.2	346.4	29.2	12.8
50°	770.4	767.6	727.0	660.9	597.6	517.9	432.5	367.8	219.1	34.9	14.2
51°	626.0	630.3	596.1	529.3	480.2	404.1	345.0	293.1	171.4	24.2	12.8
52°	516.5	513.6	492.3	436.1	395.5	330.1	281.0	239.7	143.0	21.3	5.7
53°	415.5	416.9	395.5	352.1	313.0	263.9	224.8	186.4	102.4	15.7	4.3
54°	328.7	325.8	318.7	276.7	252.5	209.1	175.7	143.0	88.2	2.8	0.0
55°	279.6	275.3	265.3	229.1	204.9	172.9	140.1	122.4	76.1	7.1	0.0
57.5°	161.5	161.5	155.8	135.9	119.5	106.7	85.4	79.7	39.1	7.1	0.0
60°	101.0	88.2	98.2	83.9	66.2	59.0	49.1	44.8	33.4	12.8	2.8
61°	83.9	67.6	66.2	61.9	57.6	39.1	33.4	36.3	21.3	4.3	2.8
62°	60.5	53.4	57.6	49.1	43.4	30.6	27.7	26.3	12.8	5.7	7.1
63°	54.8	49.1	47.7	36.3	32.0	32.0	24.2	22.8	15.7	11.4	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°	29.2	24.2	21.3	24.2	14.2	18.5	7.1	19.9	4.3	7.1	4.3
67.5°	22.8	14.2	12.8	15.7	10.0	7.1	10.0	12.8	4.3	7.1	10.0
70°	19.9	10.0	14.2	12.8	10.0	12.8	14.2	14.2	4.3	14.2	12.8
72.5°	19.9	12.8	7.1	5.7	5.7	5.7	5.7	5.7	8.5	19.9	15.7
75°	8.5	8.5	4.3	10.0	5.7	8.5	5.7	14.2	5.7	15.7	12.8
77.5°	5.7	7.1	0.0	7.1	0.0	0.0	4.3	10.0	4.3	11.4	14.2
80°	0.0	7.1	4.3	0.0	2.8	4.3	0.0	1.4	2.8	12.8	5.7
82.5°	2.8	4.3	5.7	2.8	2.8	0.0	0.0	0.0	0.0	8.5	7.1
85°	2.8	5.7	0.0	1.4	5.7	2.8	1.4	7.1	2.8	10.0	11.4
87.5°	0.0	2.8	2.8	0.0	4.3	0.0	4.3	2.8	0.0	8.5	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°	50.5	50.5	50.5	50.5	50.5
2.5°	43.4	39.1	33.4	42.0	34.9
5°	51.9	47.7	37.7	44.8	40.5
7.5°	53.4	44.8	39.1	36.3	40.5
10°	32.0	21.3	15.7	21.3	11.4
12.5°	53.4	37.7	34.9	39.1	43.4
15°	40.5	24.2	24.2	18.5	26.3
17.5°	22.8	18.5	17.1	22.8	26.3
20°	24.2	15.7	12.8	21.3	19.9
21°	21.3	5.7	17.1	17.1	19.9
22°	30.6	14.2	17.1	27.7	29.2
23°	19.9	15.7	12.8	17.1	22.8
24°	29.2	17.1	15.7	21.3	32.0
25°	19.9	15.7	15.7	19.9	17.1
26°	11.4	15.7	11.4	17.1	14.2
27°	8.5	14.2	8.5	12.8	17.1
28°	18.5	22.8	21.3	22.8	19.9
29°	19.9	24.2	19.9	30.6	22.8
30°	11.4	21.3	10.0	22.8	19.9
31°	11.4	15.7	7.1	22.8	19.9
32°	1.4	8.5	4.3	8.5	8.5
33°	8.5	10.0	11.4	18.5	14.2
34°	14.2	17.1	11.4	19.9	17.1
35°	15.7	8.5	12.8	21.3	22.8
36°	4.3	4.3	7.1	17.1	5.7
37°	8.5	24.2	17.1	29.2	17.1
38°	14.2	29.2	27.7	36.3	29.2
39°	2.8	8.5	10.0	19.9	19.9
40°	12.8	21.3	15.7	29.2	29.2
42.5°	10.0	15.7	11.4	24.2	19.9
45°	4.3	4.3	2.8	15.7	11.4
47.5°	7.1	7.1	12.8	19.9	34.9
50°	14.2	14.2	18.5	33.4	32.0
51°	8.5	7.1	10.0	22.8	29.2
52°	7.1	10.0	10.0	22.8	22.8
53°	2.8	0.0	0.0	17.1	14.2
54°	2.8	1.4	4.3	12.8	19.9
55°	0.0	7.1	5.7	26.3	29.2
57.5°	1.4	11.4	5.7	18.5	22.8
60°	7.1	8.5	15.7	18.5	22.8
61°	0.0	7.1	7.1	17.1	19.9
62°	0.0	5.7	12.8	15.7	19.9
63°	7.1	8.5	11.4	18.5	22.8





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.3	11.4	14.2	18.5	17.1
67.5°	8.5	10.0	8.5	24.2	29.2
70°	11.4	18.5	19.9	17.1	29.2
72.5°	7.1	10.0	14.2	26.3	29.2
75°	12.8	14.2	21.3	24.2	29.2
77.5°	10.0	14.2	14.2	15.7	29.2
80°	4.3	12.8	14.2	15.7	8.5
82.5°	5.7	8.5	5.7	15.7	11.4
85°	2.8	12.8	11.4	14.2	14.2
87.5°	4.3	7.1	7.1	12.8	8.5
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	32.0	33.4	32.0	22.8	17.1	15.7	11.4	19.9	5.7	5.7	0.0
65°	29.2	32.0	24.2	27.7	18.5	17.1	10.0	19.9	2.8	10.0	7.1







64°	4.3	7.1	7.1	12.8	19.9
65°	7.1	10.0	10.0	18.5	14.2



(END OF REPORT)