

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: P315522

Luminaire Tested: **LDA2B20FL9050D010 PINW1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315522  
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: LDA2B20FL9050D010 PINW1MMS  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, White oculus, matte metallic silver finish  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1461.6 lumens  
Efficiency: N/A  
Efficacy: 71.0 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

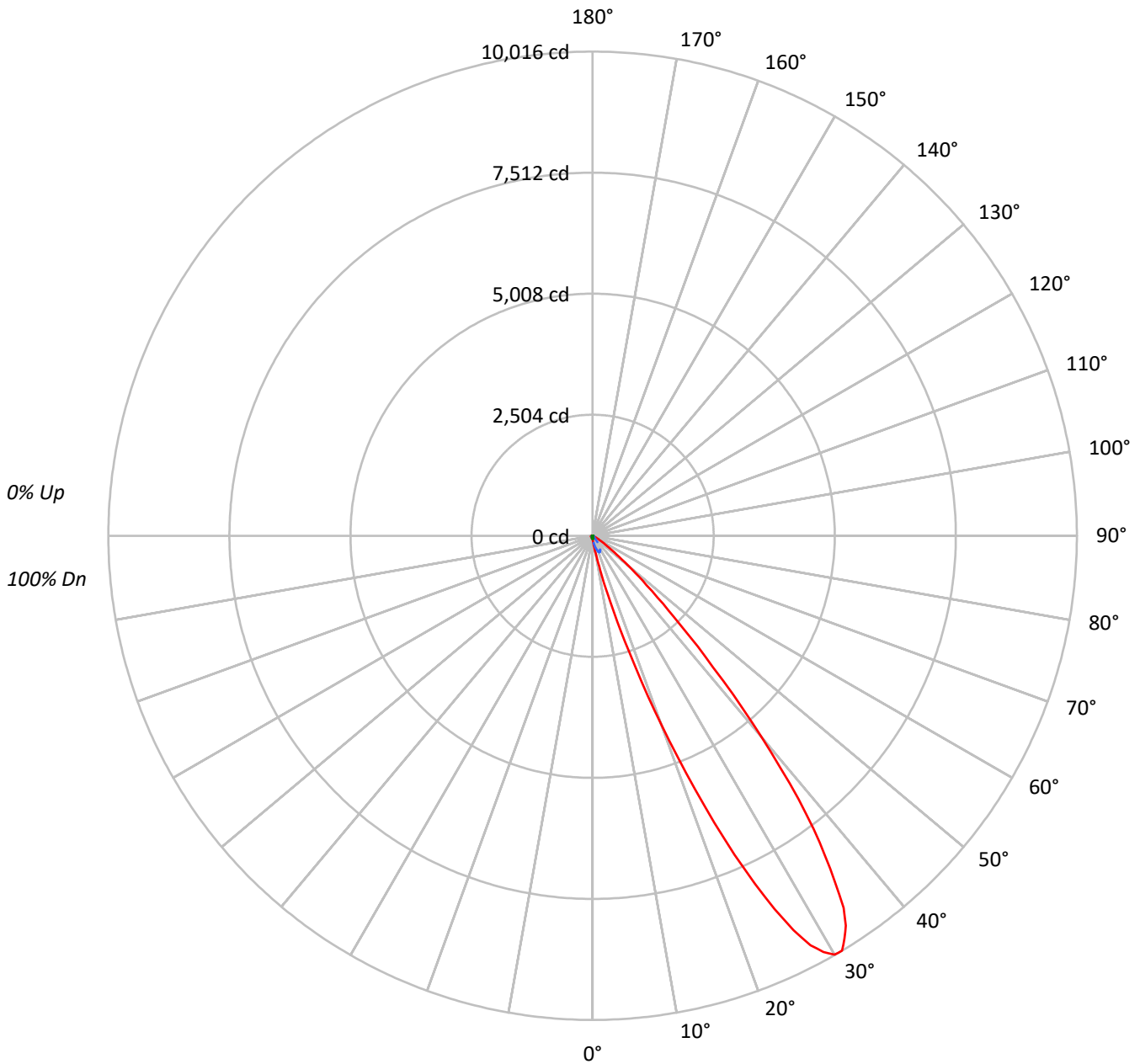
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P315522

CATALOG NUMBER: LDA2B20FL9050D010 PINW1MMS

### 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°	30687	30687	30687
5°	68592	31696	24762
10°	183556	19738	7014
15°	722580	25538	16549
20°	2185888	15646	12863
25°	4325738	13337	11432
30°	5699871	7976	13957
35°	5259501	11624	16864
40°	3503310	10176	23121
45°	1652408	3698	9768
50°	728621	13432	30241
55°	296322	0	30879
60°	122847	8683	27628
65°	41909	10273	20429
70°	35341	20195	51786
75°	20015	30118	68433
80°	0	15058	29832
85°	19812	19812	99062



TEST NUMBER: P315522

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	8.5	0.6
10°-20°	89.4	6.1
20°-30°	459.7	31.5
30°-40°	588.6	40.3
40°-50°	226.3	15.5
50°-60°	46.0	3.1
60°-70°	15.6	1.1
70°-80°	18.1	1.2
80°-90°	9.3	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°	557.6	38.1
0°-40°	1146.2	78.4
0°-60°	1418.6	97.1
0°-90°	1461.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1461.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	62	62	62	62	62	
5°	138	114	64	46	50	21
15°	1415	275	50	30	32	542
25°	7946	359	24	19	21	3627
35°	8733	187	19	16	28	5219
45°	2368	46	5	4	14	2036
55°	344	9	0	7	36	357
65°	36	12	9	12	18	50
75°	10	19	16	26	36	14
85°	4	12	4	14	18	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°	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2
2.5°	92.0	79.8	83.3	71.0	78.0	79.8	65.7	86.8	78.0	81.5	71.0
5°	138.5	149.0	136.7	131.5	128.0	131.5	128.0	133.2	129.7	113.9	81.5
7.5°	231.4	211.2	211.2	204.2	209.5	207.7	199.0	204.2	192.0	138.5	93.8
10°	366.4	346.2	344.5	339.2	337.5	321.7	312.9	305.9	280.5	163.9	85.0
12.5°	717.9	700.3	688.1	657.4	636.3	624.1	577.6	553.1	480.3	243.7	108.7
15°	1414.7	1324.4	1347.2	1248.1	1175.4	1127.2	1030.8	945.8	771.3	275.2	105.2
17.5°	2503.3	2415.7	2356.9	2249.1	2101.0	1973.0	1782.8	1594.4	1239.4	312.9	98.2
20°	4163.4	4024.9	3902.2	3717.3	3432.4	3186.1	2851.3	2491.0	1845.0	357.6	88.5
21°	4892.7	4785.7	4643.7	4400.1	4067.9	3738.3	3336.9	2903.0	2102.7	361.1	79.8
22°	5653.5	5584.2	5397.5	5117.9	4730.5	4337.8	3845.2	3368.4	2377.1	366.4	76.3
23°	6445.8	6373.1	6161.8	5841.9	5406.3	4931.2	4357.1	3791.8	2634.8	373.4	74.5
24°	7221.5	7140.9	6905.1	6547.5	6053.2	5507.1	4858.5	4202.9	2874.9	369.9	78.0
25°	7946.4	7834.2	7585.3	7189.1	6646.6	6033.9	5318.6	4557.8	3086.2	359.4	65.7
26°	8593.3	8465.3	8197.1	7765.0	7171.6	6508.1	5702.6	4887.4	3242.2	350.6	62.2
27°	9155.1	8993.8	8707.2	8254.1	7617.7	6885.0	6030.4	5145.1	3379.8	337.5	50.0
28°	9592.5	9407.6	9116.6	8638.0	7965.7	7178.6	6271.4	5306.4	3461.3	339.2	57.0
29°	9844.9	9702.9	9386.5	8885.2	8177.8	7347.8	6398.5	5395.8	3477.1	312.9	53.5
30°	10005.3	9846.7	9521.5	8997.3	8259.3	7386.3	6414.3	5379.1	3430.6	293.6	50.0
31°	10015.8	9850.2	9519.7	8977.2	8227.8	7322.3	6326.6	5280.1	3329.9	273.5	41.2
32°	9827.4	9699.4	9374.2	8814.2	8056.9	7146.2	6138.2	5112.7	3171.2	233.2	28.0
33°	9614.4	9459.3	9135.8	8570.5	7820.2	6905.1	5866.5	4887.4	3006.4	229.6	35.9
34°	9283.1	9096.4	8778.2	8221.6	7491.5	6561.5	5543.0	4586.8	2796.1	209.5	34.2
35°	8732.6	8632.7	8311.0	7761.5	7052.4	6149.6	5153.9	4256.3	2572.5	186.7	24.5
36°	8181.3	8058.6	7754.5	7223.3	6551.0	5658.7	4714.7	3879.4	2320.1	158.6	19.3
37°	7598.4	7438.0	7161.1	6641.3	5939.2	5169.6	4293.1	3520.1	2114.1	167.4	26.3
38°	6919.1	6865.7	6501.1	6017.2	5368.6	4642.0	3840.0	3141.4	1886.2	156.0	42.9
39°	6172.4	6136.4	5772.7	5331.8	4749.8	4081.9	3376.3	2748.7	1658.4	113.9	14.0
40°	5439.6	5337.1	5079.4	4678.8	4172.2	3571.8	2961.7	2413.9	1461.1	112.2	28.0
42.5°	3686.6	3719.0	3440.3	3153.7	2828.5	2420.9	2014.2	1654.8	1022.0	83.3	17.5
45°	2368.3	2375.3	2250.9	2028.2	1815.2	1561.1	1292.8	1077.2	659.1	46.5	5.3
47.5°	1507.6	1504.1	1424.3	1296.4	1157.0	1008.0	840.6	703.8	426.9	35.9	15.8
50°	949.3	945.8	895.8	814.3	736.3	638.1	532.9	453.2	270.0	42.9	17.5
51°	771.3	776.6	734.5	652.1	591.6	497.9	425.1	361.1	211.2	29.8	15.8
52°	636.3	632.8	606.5	537.3	487.3	406.7	346.2	295.4	176.2	26.3	7.0
53°	511.9	513.6	487.3	433.9	385.7	325.2	277.0	229.6	126.2	19.3	5.3
54°	404.9	401.4	392.7	341.0	311.2	257.7	216.5	176.2	108.7	3.5	0.0
55°	344.5	339.2	326.9	282.2	252.4	213.0	172.7	150.8	93.8	8.8	0.0
57.5°	199.0	199.0	192.0	167.4	147.3	131.5	105.2	98.2	48.2	8.8	0.0
60°	124.5	108.7	121.0	103.4	81.5	72.8	60.5	55.2	41.2	15.8	3.5
61°	103.4	83.3	81.5	76.3	71.0	48.2	41.2	44.7	26.3	5.3	3.5
62°	74.5	65.7	71.0	60.5	53.5	37.7	34.2	32.4	15.8	7.0	8.8
63°	67.5	60.5	58.7	44.7	39.4	39.4	29.8	28.0	19.3	14.0	7.0



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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°	35.9	29.8	26.3	29.8	17.5	22.8	8.8	24.5	5.3	8.8	5.3
67.5°	28.0	17.5	15.8	19.3	12.3	8.8	12.3	15.8	5.3	8.8	12.3
70°	24.5	12.3	17.5	15.8	12.3	15.8	17.5	17.5	5.3	17.5	15.8
72.5°	24.5	15.8	8.8	7.0	7.0	7.0	7.0	7.0	10.5	24.5	19.3
75°	10.5	10.5	5.3	12.3	7.0	10.5	7.0	17.5	7.0	19.3	15.8
77.5°	7.0	8.8	0.0	8.8	0.0	0.0	5.3	12.3	5.3	14.0	17.5
80°	0.0	8.8	5.3	0.0	3.5	5.3	0.0	1.8	3.5	15.8	7.0
82.5°	3.5	5.3	7.0	3.5	3.5	0.0	0.0	0.0	0.0	10.5	8.8
85°	3.5	7.0	0.0	1.8	7.0	3.5	1.8	8.8	3.5	12.3	14.0
87.5°	0.0	3.5	3.5	0.0	5.3	0.0	5.3	3.5	0.0	10.5	5.3
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°	62.2	62.2	62.2	62.2	62.2
2.5°	53.5	48.2	41.2	51.7	42.9
5°	64.0	58.7	46.5	55.2	50.0
7.5°	65.7	55.2	48.2	44.7	50.0
10°	39.4	26.3	19.3	26.3	14.0
12.5°	65.7	46.5	42.9	48.2	53.5
15°	50.0	29.8	29.8	22.8	32.4
17.5°	28.0	22.8	21.0	28.0	32.4
20°	29.8	19.3	15.8	26.3	24.5
21°	26.3	7.0	21.0	21.0	24.5
22°	37.7	17.5	21.0	34.2	35.9
23°	24.5	19.3	15.8	21.0	28.0
24°	35.9	21.0	19.3	26.3	39.4
25°	24.5	19.3	19.3	24.5	21.0
26°	14.0	19.3	14.0	21.0	17.5
27°	10.5	17.5	10.5	15.8	21.0
28°	22.8	28.0	26.3	28.0	24.5
29°	24.5	29.8	24.5	37.7	28.0
30°	14.0	26.3	12.3	28.0	24.5
31°	14.0	19.3	8.8	28.0	24.5
32°	1.8	10.5	5.3	10.5	10.5
33°	10.5	12.3	14.0	22.8	17.5
34°	17.5	21.0	14.0	24.5	21.0
35°	19.3	10.5	15.8	26.3	28.0
36°	5.3	5.3	8.8	21.0	7.0
37°	10.5	29.8	21.0	35.9	21.0
38°	17.5	35.9	34.2	44.7	35.9
39°	3.5	10.5	12.3	24.5	24.5
40°	15.8	26.3	19.3	35.9	35.9
42.5°	12.3	19.3	14.0	29.8	24.5
45°	5.3	5.3	3.5	19.3	14.0
47.5°	8.8	8.8	15.8	24.5	42.9
50°	17.5	17.5	22.8	41.2	39.4
51°	10.5	8.8	12.3	28.0	35.9
52°	8.8	12.3	12.3	28.0	28.0
53°	3.5	0.0	0.0	21.0	17.5
54°	3.5	1.8	5.3	15.8	24.5
55°	0.0	8.8	7.0	32.4	35.9
57.5°	1.8	14.0	7.0	22.8	28.0
60°	8.8	10.5	19.3	22.8	28.0
61°	0.0	8.8	8.8	21.0	24.5
62°	0.0	7.0	15.8	19.3	24.5
63°	8.8	10.5	14.0	22.8	28.0





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	5.3	14.0	17.5	22.8	21.0
67.5°	10.5	12.3	10.5	29.8	35.9
70°	14.0	22.8	24.5	21.0	35.9
72.5°	8.8	12.3	17.5	32.4	35.9
75°	15.8	17.5	26.3	29.8	35.9
77.5°	12.3	17.5	17.5	19.3	35.9
80°	5.3	15.8	17.5	19.3	10.5
82.5°	7.0	10.5	7.0	19.3	14.0
85°	3.5	15.8	14.0	17.5	17.5
87.5°	5.3	8.8	8.8	15.8	10.5
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	39.4	41.2	39.4	28.0	21.0	19.3	14.0	24.5	7.0	7.0	0.0
65°	35.9	39.4	29.8	34.2	22.8	21.0	12.3	24.5	3.5	12.3	8.8







64°	5.3	8.8	8.8	15.8	24.5
65°	8.8	12.3	12.3	22.8	17.5



(END OF REPORT)