

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: P315498

Luminaire Tested: **LDA2B20FL9027D010 PINW1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315498  
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: LDA2B20FL9027D010 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**

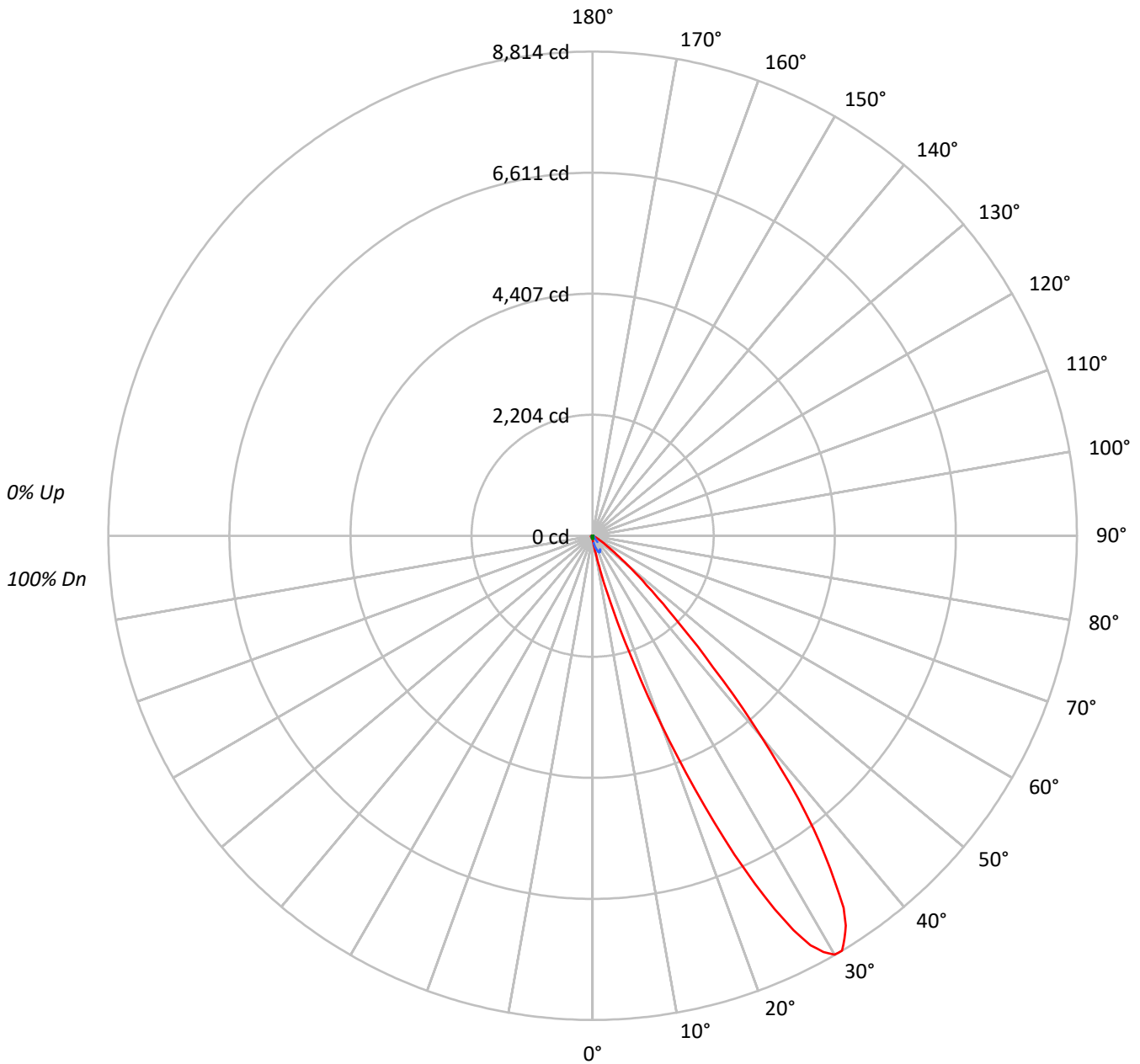
Lumens per Lamp: N/A  
Luminaire Lumens: 1286.1 lumens  
Efficiency: N/A  
Efficacy: 62.4 lumens/watt  
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

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°	27036	27036	27036
5°	60371	27882	21791
10°	161514	17384	6162
15°	635852	22474	14557
20°	1923533	13756	11341
25°	3806523	11758	10071
30°	5015736	7007	12305
35°	4628248	10239	14876
40°	3082817	8952	20352
45°	1454116	3210	8582
50°	641122	11820	26633
55°	260711	0	27181
60°	108046	7598	24372
65°	36890	8989	17978
70°	31158	17743	45583
75°	17728	26496	60236
80°	0	13069	26423
85°	17548	17548	87175



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	7.4	0.6
10°-20°	78.7	6.1
20°-30°	404.5	31.5
30°-40°	518.0	40.3
40°-50°	199.2	15.5
50°-60°	40.5	3.1
60°-70°	13.7	1.1
70°-80°	15.9	1.2
80°-90°	8.2	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°	490.7	38.1
0°-40°	1008.6	78.4
0°-60°	1248.3	97.1
0°-90°	1286.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1286.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	55	55	55	55	55	
5°	122	100	56	41	44	18
15°	1245	242	44	26	28	477
25°	6993	316	22	17	18	3192
35°	7684	164	17	14	25	4593
45°	2084	41	5	3	12	1791
55°	303	8	0	6	32	314
65°	32	11	8	11	15	44
75°	9	17	14	23	32	13
85°	3	11	3	12	15	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°	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8
2.5°	81.0	70.2	73.3	62.5	68.6	70.2	57.8	76.4	68.6	71.7	62.5
5°	121.9	131.1	120.3	115.7	112.6	115.7	112.6	117.2	114.2	100.3	71.7
7.5°	203.6	185.9	185.9	179.7	184.3	182.8	175.1	179.7	168.9	121.9	82.5
10°	322.4	304.7	303.1	298.5	297.0	283.1	275.4	269.2	246.8	144.2	74.8
12.5°	631.7	616.3	605.5	578.5	560.0	549.2	508.3	486.7	422.7	214.4	95.6
15°	1244.9	1165.4	1185.5	1098.3	1034.3	991.9	907.0	832.2	678.7	242.2	92.6
17.5°	2202.8	2125.7	2074.0	1979.2	1848.8	1736.2	1568.8	1403.0	1090.6	275.4	86.4
20°	3663.7	3541.8	3433.8	3271.1	3020.4	2803.7	2509.0	2192.0	1623.6	314.7	77.9
21°	4305.4	4211.3	4086.3	3871.9	3579.6	3289.6	2936.3	2554.5	1850.3	317.8	70.2
22°	4974.9	4913.9	4749.7	4503.6	4162.7	3817.2	3383.7	2964.1	2091.8	322.4	67.1
23°	5672.1	5608.1	5422.2	5140.7	4757.4	4339.3	3834.1	3336.6	2318.5	328.6	65.6
24°	6354.7	6283.8	6076.3	5761.6	5326.6	4846.1	4275.3	3698.4	2529.9	325.5	68.6
25°	6992.6	6893.9	6674.8	6326.2	5848.8	5309.6	4680.2	4010.8	2715.7	316.2	57.8
26°	7561.8	7449.2	7213.2	6832.9	6310.8	5726.9	5018.1	4300.8	2853.0	308.5	54.8
27°	8056.2	7914.3	7662.1	7263.3	6703.4	6058.6	5306.5	4527.5	2974.1	297.0	44.0
28°	8441.1	8278.4	8022.3	7601.2	7009.6	6316.9	5518.6	4669.4	3045.9	298.5	50.1
29°	8663.2	8538.3	8259.8	7818.7	7196.2	6465.8	5630.5	4748.1	3059.7	275.4	47.0
30°	8804.4	8664.8	8378.6	7917.4	7268.0	6499.7	5644.4	4733.5	3018.9	258.4	44.0
31°	8813.6	8667.9	8377.1	7899.6	7240.2	6443.4	5567.2	4646.3	2930.2	240.6	36.3
32°	8647.8	8535.2	8249.0	7756.2	7089.8	6288.4	5401.4	4499.0	2790.6	205.2	24.7
33°	8460.4	8323.9	8039.3	7541.8	6881.5	6076.3	5162.3	4300.8	2645.6	202.1	31.6
34°	8168.8	8004.5	7724.6	7234.8	6592.3	5773.9	4877.7	4036.2	2460.4	184.3	30.1
35°	7684.5	7596.5	7313.5	6829.9	6205.9	5411.4	4535.2	3745.4	2263.8	164.3	21.6
36°	7199.3	7091.3	6823.7	6356.3	5764.7	4979.5	4148.8	3413.8	2041.6	139.6	17.0
37°	6686.4	6545.2	6301.5	5844.1	5226.3	4549.1	3777.8	3097.5	1860.4	147.3	23.1
38°	6088.6	6041.6	5720.7	5295.0	4724.2	4084.8	3379.1	2764.3	1659.8	137.3	37.8
39°	5431.5	5399.9	5079.8	4691.8	4179.7	3591.9	2971.0	2418.8	1459.3	100.3	12.3
40°	4786.7	4696.4	4469.7	4117.2	3671.4	3143.0	2606.2	2124.2	1285.8	98.7	24.7
42.5°	3244.1	3272.6	3027.3	2775.1	2489.0	2130.3	1772.4	1456.2	899.3	73.3	15.4
45°	2084.1	2090.2	1980.7	1784.8	1597.4	1373.7	1137.7	947.9	580.0	40.9	4.6
47.5°	1326.6	1323.5	1253.4	1140.8	1018.1	887.0	739.7	619.4	375.6	31.6	13.9
50°	835.3	832.2	788.3	716.5	647.9	561.5	468.9	398.8	237.6	37.8	15.4
51°	678.7	683.4	646.3	573.8	520.6	438.1	374.1	317.8	185.9	26.2	13.9
52°	560.0	556.9	533.7	472.8	428.8	357.9	304.7	259.9	155.0	23.1	6.2
53°	450.4	452.0	428.8	381.8	339.4	286.2	243.7	202.1	111.1	17.0	4.6
54°	356.3	353.3	345.5	300.0	273.8	226.8	190.5	155.0	95.6	3.1	0.0
55°	303.1	298.5	287.7	248.4	222.1	187.4	151.9	132.7	82.5	7.7	0.0
57.5°	175.1	175.1	168.9	147.3	129.6	115.7	92.6	86.4	42.4	7.7	0.0
60°	109.5	95.6	106.4	91.0	71.7	64.0	53.2	48.6	36.3	13.9	3.1
61°	91.0	73.3	71.7	67.1	62.5	42.4	36.3	39.3	23.1	4.6	3.1
62°	65.6	57.8	62.5	53.2	47.0	33.2	30.1	28.5	13.9	6.2	7.7
63°	59.4	53.2	51.7	39.3	34.7	34.7	26.2	24.7	17.0	12.3	6.2



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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°	31.6	26.2	23.1	26.2	15.4	20.1	7.7	21.6	4.6	7.7	4.6
67.5°	24.7	15.4	13.9	17.0	10.8	7.7	10.8	13.9	4.6	7.7	10.8
70°	21.6	10.8	15.4	13.9	10.8	13.9	15.4	15.4	4.6	15.4	13.9
72.5°	21.6	13.9	7.7	6.2	6.2	6.2	6.2	6.2	9.3	21.6	17.0
75°	9.3	9.3	4.6	10.8	6.2	9.3	6.2	15.4	6.2	17.0	13.9
77.5°	6.2	7.7	0.0	7.7	0.0	0.0	4.6	10.8	4.6	12.3	15.4
80°	0.0	7.7	4.6	0.0	3.1	4.6	0.0	1.5	3.1	13.9	6.2
82.5°	3.1	4.6	6.2	3.1	3.1	0.0	0.0	0.0	0.0	9.3	7.7
85°	3.1	6.2	0.0	1.5	6.2	3.1	1.5	7.7	3.1	10.8	12.3
87.5°	0.0	3.1	3.1	0.0	4.6	0.0	4.6	3.1	0.0	9.3	4.6
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°	54.8	54.8	54.8	54.8	54.8
2.5°	47.0	42.4	36.3	45.5	37.8
5°	56.3	51.7	40.9	48.6	44.0
7.5°	57.8	48.6	42.4	39.3	44.0
10°	34.7	23.1	17.0	23.1	12.3
12.5°	57.8	40.9	37.8	42.4	47.0
15°	44.0	26.2	26.2	20.1	28.5
17.5°	24.7	20.1	18.5	24.7	28.5
20°	26.2	17.0	13.9	23.1	21.6
21°	23.1	6.2	18.5	18.5	21.6
22°	33.2	15.4	18.5	30.1	31.6
23°	21.6	17.0	13.9	18.5	24.7
24°	31.6	18.5	17.0	23.1	34.7
25°	21.6	17.0	17.0	21.6	18.5
26°	12.3	17.0	12.3	18.5	15.4
27°	9.3	15.4	9.3	13.9	18.5
28°	20.1	24.7	23.1	24.7	21.6
29°	21.6	26.2	21.6	33.2	24.7
30°	12.3	23.1	10.8	24.7	21.6
31°	12.3	17.0	7.7	24.7	21.6
32°	1.5	9.3	4.6	9.3	9.3
33°	9.3	10.8	12.3	20.1	15.4
34°	15.4	18.5	12.3	21.6	18.5
35°	17.0	9.3	13.9	23.1	24.7
36°	4.6	4.6	7.7	18.5	6.2
37°	9.3	26.2	18.5	31.6	18.5
38°	15.4	31.6	30.1	39.3	31.6
39°	3.1	9.3	10.8	21.6	21.6
40°	13.9	23.1	17.0	31.6	31.6
42.5°	10.8	17.0	12.3	26.2	21.6
45°	4.6	4.6	3.1	17.0	12.3
47.5°	7.7	7.7	13.9	21.6	37.8
50°	15.4	15.4	20.1	36.3	34.7
51°	9.3	7.7	10.8	24.7	31.6
52°	7.7	10.8	10.8	24.7	24.7
53°	3.1	0.0	0.0	18.5	15.4
54°	3.1	1.5	4.6	13.9	21.6
55°	0.0	7.7	6.2	28.5	31.6
57.5°	1.5	12.3	6.2	20.1	24.7
60°	7.7	9.3	17.0	20.1	24.7
61°	0.0	7.7	7.7	18.5	21.6
62°	0.0	6.2	13.9	17.0	21.6
63°	7.7	9.3	12.3	20.1	24.7





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.6	12.3	15.4	20.1	18.5
67.5°	9.3	10.8	9.3	26.2	31.6
70°	12.3	20.1	21.6	18.5	31.6
72.5°	7.7	10.8	15.4	28.5	31.6
75°	13.9	15.4	23.1	26.2	31.6
77.5°	10.8	15.4	15.4	17.0	31.6
80°	4.6	13.9	15.4	17.0	9.3
82.5°	6.2	9.3	6.2	17.0	12.3
85°	3.1	13.9	12.3	15.4	15.4
87.5°	4.6	7.7	7.7	13.9	9.3
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	34.7	36.3	34.7	24.7	18.5	17.0	12.3	21.6	6.2	6.2	0.0
65°	31.6	34.7	26.2	30.1	20.1	18.5	10.8	21.6	3.1	10.8	7.7







64°	4.6	7.7	7.7	13.9	21.6
65°	7.7	10.8	10.8	20.1	15.4



(END OF REPORT)