

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: P315504

Luminaire Tested: **LDA2B20FL9030D010 PINW1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315504  
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: LDA2B20FL9030D010 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: 1341.8 lumens  
Efficiency: N/A  
Efficacy: 65.1 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

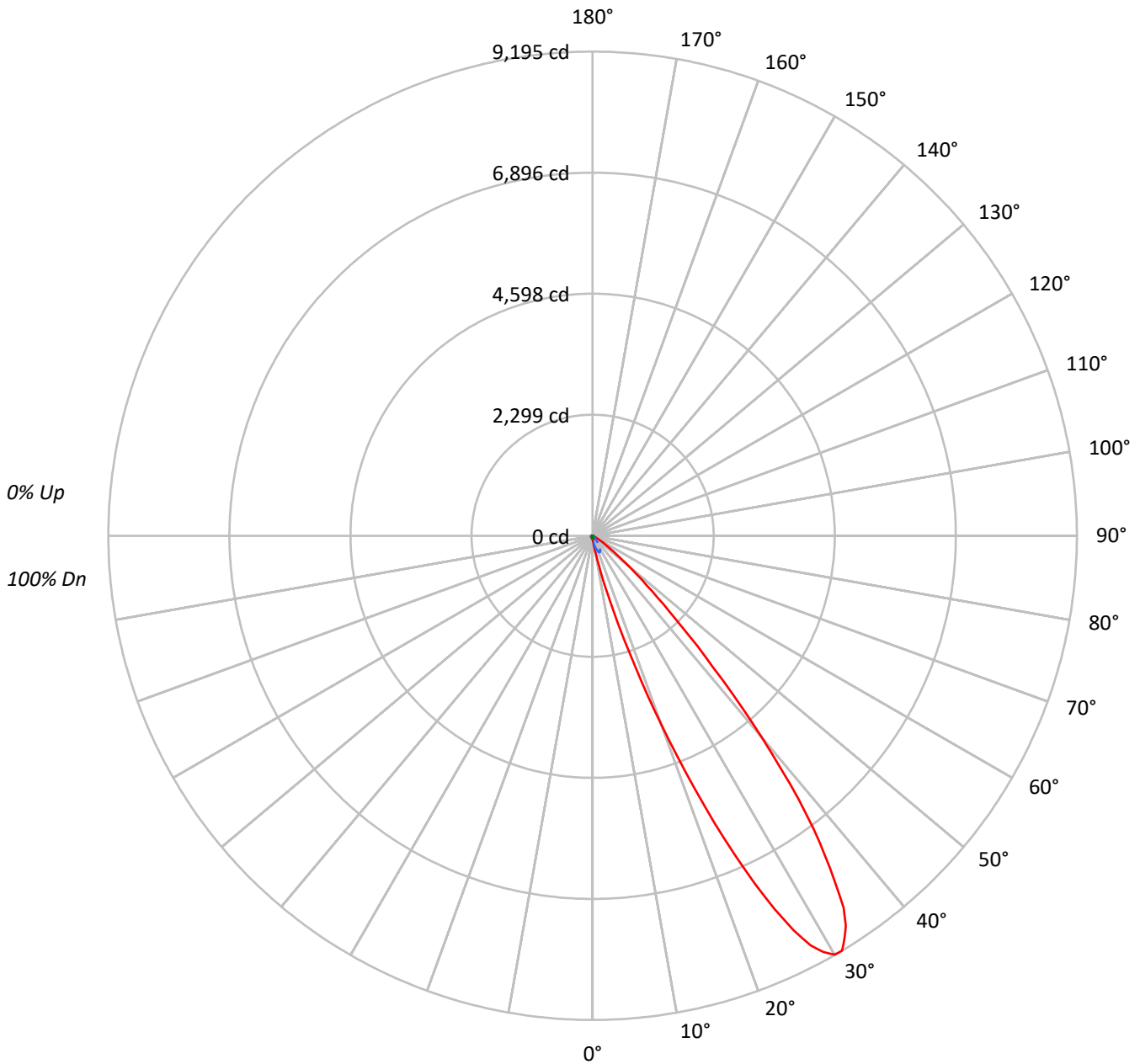
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	28171	28171	28171
5°	62946	29071	22732
10°	168527	18135	6463
15°	663383	23444	15221
20°	2006802	14386	11813
25°	3971302	12248	10506
30°	5232900	7349	12818
35°	4828628	10660	15539
40°	3216262	9339	21253
45°	1517050	3349	9001
50°	668906	12357	27785
55°	271979	0	28385
60°	112783	7894	25457
65°	38524	9339	18795
70°	32456	18608	47602
75°	18490	27640	62905
80°	0	13638	27559
85°	18114	18114	91137



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	7.8	0.6
10°-20°	82.1	6.1
20°-30°	422.0	31.5
30°-40°	540.4	40.3
40°-50°	207.8	15.5
50°-60°	42.2	3.1
60°-70°	14.3	1.1
70°-80°	16.6	1.2
80°-90°	8.5	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°	511.9	38.1
0°-40°	1052.3	78.4
0°-60°	1302.3	97.1
0°-90°	1341.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1341.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	57	57	57	57	57	
5°	127	105	59	43	46	19
15°	1299	253	46	27	30	498
25°	7295	330	22	18	19	3330
35°	8017	171	18	14	26	4792
45°	2174	43	5	3	13	1869
55°	316	8	0	6	33	328
65°	33	11	8	11	16	46
75°	10	18	14	24	33	13
85°	3	11	3	13	16	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°	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1
2.5°	84.5	73.2	76.4	65.2	71.6	73.2	60.4	79.7	71.6	74.8	65.2
5°	127.1	136.8	125.5	120.7	117.5	120.7	117.5	122.3	119.1	104.6	74.8
7.5°	212.4	193.9	193.9	187.5	192.3	190.7	182.7	187.5	176.2	127.1	86.1
10°	336.4	317.9	316.2	311.4	309.8	295.3	287.3	280.8	257.5	150.5	78.1
12.5°	659.0	642.9	631.7	603.5	584.2	572.9	530.3	507.8	441.0	223.7	99.8
15°	1298.8	1215.9	1236.8	1145.9	1079.1	1034.8	946.3	868.3	708.1	252.7	96.6
17.5°	2298.2	2217.7	2163.8	2064.8	1928.8	1811.4	1636.7	1463.7	1137.8	287.3	90.1
20°	3822.3	3695.2	3582.5	3412.7	3151.2	2925.1	2617.7	2286.9	1693.9	328.3	81.3
21°	4491.8	4393.6	4263.3	4039.6	3734.6	3432.0	3063.5	2665.1	1930.5	331.5	73.2
22°	5190.3	5126.7	4955.3	4698.6	4342.9	3982.4	3530.2	3092.4	2182.3	336.4	70.0
23°	5917.7	5850.9	5657.0	5363.3	4963.3	4527.2	4000.1	3481.1	2418.9	342.8	68.4
24°	6629.9	6555.8	6339.4	6011.1	5557.2	5055.9	4460.4	3858.5	2639.4	339.6	71.6
25°	7295.3	7192.3	6963.8	6600.1	6102.0	5539.5	4882.9	4184.4	2833.3	329.9	60.4
26°	7889.2	7771.7	7525.5	7128.8	6584.0	5974.8	5235.3	4487.0	2976.6	321.9	57.1
27°	8405.0	8257.0	7993.8	7577.8	6993.6	6320.9	5536.3	4723.5	3102.9	309.8	45.9
28°	8806.6	8636.8	8369.6	7930.3	7313.1	6590.4	5757.6	4871.6	3177.7	311.4	52.3
29°	9038.3	8908.0	8617.5	8157.2	7507.8	6745.7	5874.3	4953.7	3192.2	287.3	49.1
30°	9185.6	9039.9	8741.4	8260.2	7582.6	6781.1	5888.7	4938.4	3149.6	269.6	45.9
31°	9195.2	9043.1	8739.8	8241.7	7553.7	6722.4	5808.3	4847.5	3057.0	251.1	37.8
32°	9022.2	8904.7	8606.2	8092.0	7396.7	6560.7	5635.3	4693.8	2911.4	214.0	25.8
33°	8826.7	8684.2	8387.3	7868.3	7179.5	6339.4	5385.8	4487.0	2760.1	210.8	33.0
34°	8522.5	8351.1	8059.0	7548.0	6877.7	6023.9	5088.9	4211.0	2567.0	192.3	31.4
35°	8017.2	7925.4	7630.1	7125.6	6474.6	5645.7	4731.6	3907.6	2361.8	171.4	22.5
36°	7511.0	7398.3	7119.1	6631.5	6014.3	5195.1	4328.4	3561.6	2130.0	145.6	17.7
37°	6975.9	6828.6	6574.3	6097.2	5452.6	4746.1	3941.4	3231.6	1940.9	153.7	24.1
38°	6352.2	6303.2	5968.4	5524.2	4928.7	4261.7	3525.4	2884.0	1731.7	143.2	39.4
39°	5666.6	5633.7	5299.7	4894.9	4360.6	3747.5	3099.7	2523.5	1522.5	104.6	12.9
40°	4993.9	4899.8	4663.2	4295.5	3830.3	3279.1	2719.1	2216.1	1341.4	103.0	25.8
42.5°	3384.5	3414.3	3158.4	2895.3	2596.7	2222.6	1849.2	1519.3	938.3	76.4	16.1
45°	2174.3	2180.7	2066.5	1862.1	1666.5	1433.2	1186.9	989.0	605.1	42.6	4.8
47.5°	1384.1	1380.9	1307.6	1190.1	1062.2	925.4	771.7	646.2	391.9	33.0	14.5
50°	871.5	868.3	822.4	747.6	675.9	585.8	489.3	416.0	247.8	39.4	16.1
51°	708.1	713.0	674.3	598.7	543.2	457.1	390.3	331.5	193.9	27.4	14.5
52°	584.2	581.0	556.8	493.3	447.4	373.4	317.9	271.2	161.7	24.1	6.4
53°	469.9	471.6	447.4	398.3	354.1	298.5	254.3	210.8	115.9	17.7	4.8
54°	371.8	368.5	360.5	313.0	285.7	236.6	198.8	161.7	99.8	3.2	0.0
55°	316.2	311.4	300.2	259.1	231.8	195.5	158.5	138.4	86.1	8.0	0.0
57.5°	182.7	182.7	176.2	153.7	135.2	120.7	96.6	90.1	44.3	8.0	0.0
60°	114.3	99.8	111.0	95.0	74.8	66.8	55.5	50.7	37.8	14.5	3.2
61°	95.0	76.4	74.8	70.0	65.2	44.3	37.8	41.0	24.1	4.8	3.2
62°	68.4	60.4	65.2	55.5	49.1	34.6	31.4	29.8	14.5	6.4	8.0
63°	62.0	55.5	53.9	41.0	36.2	36.2	27.4	25.8	17.7	12.9	6.4



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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°	33.0	27.4	24.1	27.4	16.1	20.9	8.0	22.5	4.8	8.0	4.8
67.5°	25.8	16.1	14.5	17.7	11.3	8.0	11.3	14.5	4.8	8.0	11.3
70°	22.5	11.3	16.1	14.5	11.3	14.5	16.1	16.1	4.8	16.1	14.5
72.5°	22.5	14.5	8.0	6.4	6.4	6.4	6.4	6.4	9.7	22.5	17.7
75°	9.7	9.7	4.8	11.3	6.4	9.7	6.4	16.1	6.4	17.7	14.5
77.5°	6.4	8.0	0.0	8.0	0.0	0.0	4.8	11.3	4.8	12.9	16.1
80°	0.0	8.0	4.8	0.0	3.2	4.8	0.0	1.6	3.2	14.5	6.4
82.5°	3.2	4.8	6.4	3.2	3.2	0.0	0.0	0.0	0.0	9.7	8.0
85°	3.2	6.4	0.0	1.6	6.4	3.2	1.6	8.0	3.2	11.3	12.9
87.5°	0.0	3.2	3.2	0.0	4.8	0.0	4.8	3.2	0.0	9.7	4.8
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°	57.1	57.1	57.1	57.1	57.1
2.5°	49.1	44.3	37.8	47.5	39.4
5°	58.7	53.9	42.6	50.7	45.9
7.5°	60.4	50.7	44.3	41.0	45.9
10°	36.2	24.1	17.7	24.1	12.9
12.5°	60.4	42.6	39.4	44.3	49.1
15°	45.9	27.4	27.4	20.9	29.8
17.5°	25.8	20.9	19.3	25.8	29.8
20°	27.4	17.7	14.5	24.1	22.5
21°	24.1	6.4	19.3	19.3	22.5
22°	34.6	16.1	19.3	31.4	33.0
23°	22.5	17.7	14.5	19.3	25.8
24°	33.0	19.3	17.7	24.1	36.2
25°	22.5	17.7	17.7	22.5	19.3
26°	12.9	17.7	12.9	19.3	16.1
27°	9.7	16.1	9.7	14.5	19.3
28°	20.9	25.8	24.1	25.8	22.5
29°	22.5	27.4	22.5	34.6	25.8
30°	12.9	24.1	11.3	25.8	22.5
31°	12.9	17.7	8.0	25.8	22.5
32°	1.6	9.7	4.8	9.7	9.7
33°	9.7	11.3	12.9	20.9	16.1
34°	16.1	19.3	12.9	22.5	19.3
35°	17.7	9.7	14.5	24.1	25.8
36°	4.8	4.8	8.0	19.3	6.4
37°	9.7	27.4	19.3	33.0	19.3
38°	16.1	33.0	31.4	41.0	33.0
39°	3.2	9.7	11.3	22.5	22.5
40°	14.5	24.1	17.7	33.0	33.0
42.5°	11.3	17.7	12.9	27.4	22.5
45°	4.8	4.8	3.2	17.7	12.9
47.5°	8.0	8.0	14.5	22.5	39.4
50°	16.1	16.1	20.9	37.8	36.2
51°	9.7	8.0	11.3	25.8	33.0
52°	8.0	11.3	11.3	25.8	25.8
53°	3.2	0.0	0.0	19.3	16.1
54°	3.2	1.6	4.8	14.5	22.5
55°	0.0	8.0	6.4	29.8	33.0
57.5°	1.6	12.9	6.4	20.9	25.8
60°	8.0	9.7	17.7	20.9	25.8
61°	0.0	8.0	8.0	19.3	22.5
62°	0.0	6.4	14.5	17.7	22.5
63°	8.0	9.7	12.9	20.9	25.8





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.8	12.9	16.1	20.9	19.3
67.5°	9.7	11.3	9.7	27.4	33.0
70°	12.9	20.9	22.5	19.3	33.0
72.5°	8.0	11.3	16.1	29.8	33.0
75°	14.5	16.1	24.1	27.4	33.0
77.5°	11.3	16.1	16.1	17.7	33.0
80°	4.8	14.5	16.1	17.7	9.7
82.5°	6.4	9.7	6.4	17.7	12.9
85°	3.2	14.5	12.9	16.1	16.1
87.5°	4.8	8.0	8.0	14.5	9.7
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	36.2	37.8	36.2	25.8	19.3	17.7	12.9	22.5	6.4	6.4	0.0
65°	33.0	36.2	27.4	31.4	20.9	19.3	11.3	22.5	3.2	11.3	8.0







64°	4.8	8.0	8.0	14.5	22.5
65°	8.0	11.3	11.3	20.9	16.1



(END OF REPORT)