

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: P315510

Luminaire Tested: **LDA2B20FL9035D010 PINW1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315510  
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: LDA2B20FL9035D010 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: 1393.0 lumens  
Efficiency: N/A  
Efficacy: 67.6 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

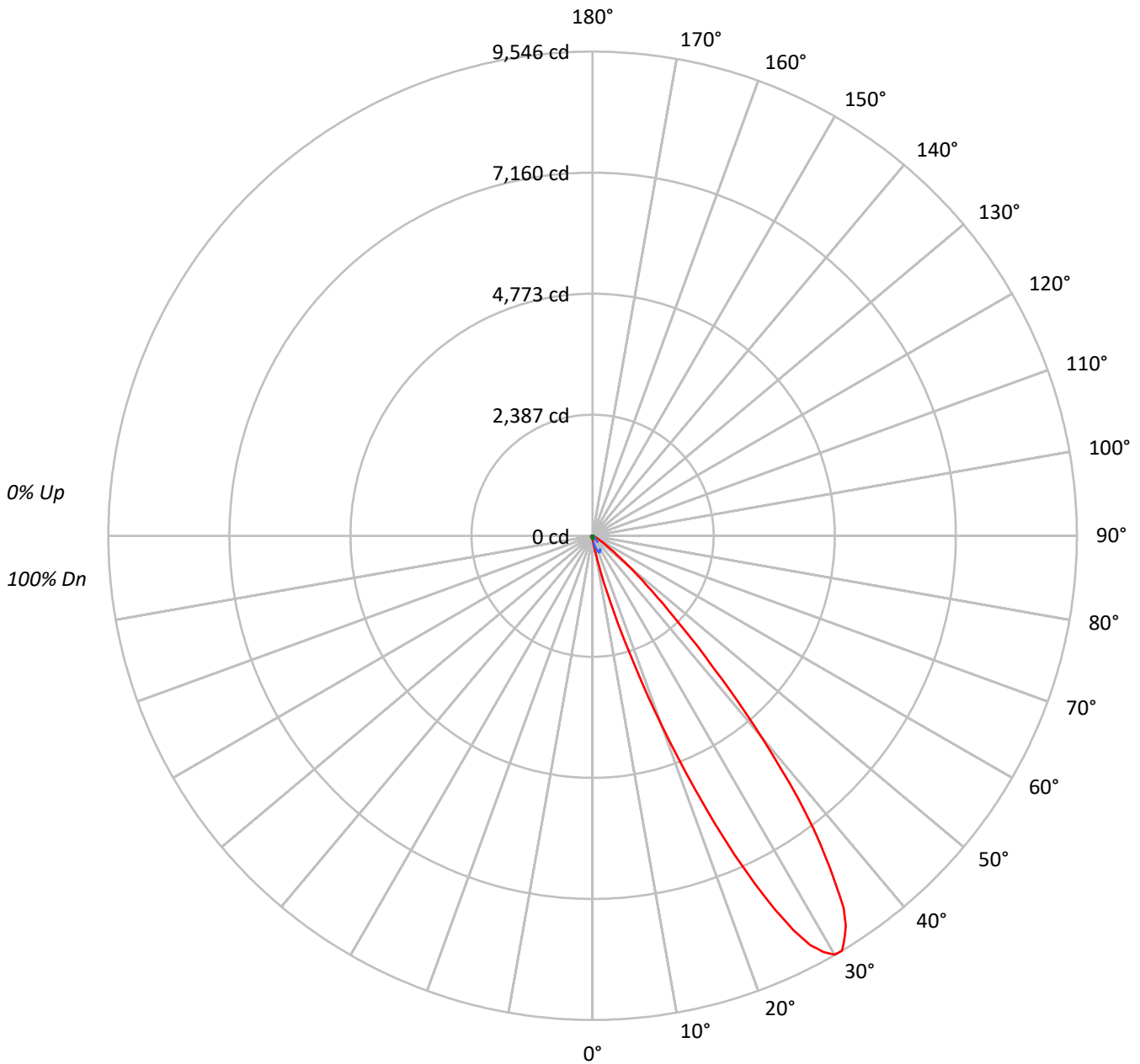
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	29256	29256	29256
5°	65373	30210	23574
10°	174940	18837	6713
15°	688665	24312	15783
20°	2083403	14911	12286
25°	4122908	12738	10887
30°	5432574	7634	13331
35°	5012866	11082	16081
40°	3339015	9661	22091
45°	1574961	3489	9349
50°	694389	12818	28859
55°	282387	0	29503
60°	117025	8288	26346
65°	40042	9806	19495
70°	33754	19329	49478
75°	19062	28593	65383
80°	0	14206	28412
85°	18680	18680	94534



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	8.1	0.6
10°-20°	85.2	6.1
20°-30°	438.1	31.5
30°-40°	561.0	40.3
40°-50°	215.7	15.5
50°-60°	43.9	3.1
60°-70°	14.9	1.1
70°-80°	17.3	1.2
80°-90°	8.8	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°	531.4	38.1
0°-40°	1092.5	78.4
0°-60°	1352.0	97.1
0°-90°	1393.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1393.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	59	59	59	59	59	
5°	132	109	61	44	48	20
15°	1348	262	48	28	31	517
25°	7574	342	23	18	20	3457
35°	8323	178	18	15	27	4975
45°	2257	44	5	3	13	1940
55°	328	8	0	7	34	340
65°	34	12	8	12	17	48
75°	10	18	15	25	34	14
85°	3	12	3	13	17	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°	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3
2.5°	87.7	76.0	79.4	67.7	74.4	76.0	62.7	82.7	74.4	77.7	67.7
5°	132.0	142.0	130.3	125.3	122.0	125.3	122.0	127.0	123.6	108.6	77.7
7.5°	220.5	201.3	201.3	194.6	199.7	198.0	189.6	194.6	183.0	132.0	89.4
10°	349.2	330.0	328.3	323.3	321.6	306.6	298.2	291.6	267.3	156.2	81.0
12.5°	684.2	667.5	655.8	626.6	606.5	594.8	550.5	527.1	457.8	232.2	103.6
15°	1348.3	1262.3	1284.0	1189.6	1120.3	1074.3	982.4	901.4	735.2	262.3	100.2
17.5°	2385.9	2302.4	2246.4	2143.6	2002.5	1880.5	1699.2	1519.6	1181.3	298.2	93.6
20°	3968.2	3836.2	3719.2	3543.0	3271.4	3036.7	2717.6	2374.2	1758.5	340.8	84.4
21°	4663.2	4561.3	4426.0	4193.7	3877.1	3563.0	3180.4	2766.9	2004.1	344.2	76.0
22°	5388.4	5322.4	5144.4	4877.9	4508.7	4134.4	3664.9	3210.5	2265.6	349.2	72.7
23°	6143.6	6074.2	5872.9	5568.0	5152.8	4700.0	4152.8	3614.0	2511.2	355.9	71.0
24°	6882.9	6806.0	6581.3	6240.5	5769.3	5248.8	4630.6	4005.8	2740.1	352.5	74.4
25°	7573.8	7466.8	7229.6	6852.0	6334.9	5750.9	5069.2	4344.1	2941.5	342.5	62.7
26°	8190.3	8068.3	7812.7	7400.8	6835.3	6202.9	5435.1	4658.2	3090.2	334.2	59.3
27°	8725.8	8572.1	8298.9	7867.0	7260.5	6562.1	5747.6	4903.8	3221.3	321.6	47.6
28°	9142.7	8966.4	8689.0	8232.9	7592.2	6842.0	5977.3	5057.5	3299.0	323.3	54.3
29°	9383.3	9247.9	8946.3	8468.5	7794.3	7003.2	6098.5	5142.8	3314.0	298.2	51.0
30°	9536.1	9384.9	9075.0	8575.4	7872.0	7040.0	6113.5	5126.9	3269.8	279.9	47.6
31°	9546.2	9388.3	9073.3	8556.2	7841.9	6979.0	6030.0	5032.5	3173.7	260.6	39.3
32°	9366.6	9244.6	8934.7	8400.8	7679.0	6811.1	5850.3	4872.9	3022.5	222.2	26.7
33°	9163.6	9015.7	8707.4	8168.6	7453.5	6581.3	5591.4	4658.2	2865.4	218.9	34.3
34°	8847.8	8669.8	8366.6	7836.1	7140.2	6253.8	5283.1	4371.7	2664.9	199.7	32.6
35°	8323.1	8227.9	7921.3	7397.5	6721.7	5861.2	4912.2	4056.7	2451.9	177.9	23.4
36°	7797.7	7680.7	7390.8	6884.6	6243.8	5393.4	4493.6	3697.5	2211.3	151.2	18.4
37°	7242.1	7089.2	6825.3	6329.9	5660.7	4927.2	4091.8	3355.0	2015.0	159.6	25.1
38°	6594.7	6543.7	6196.2	5735.1	5116.9	4424.3	3659.9	2994.1	1797.8	148.7	40.9
39°	5882.9	5848.7	5502.0	5081.8	4527.1	3890.5	3218.0	2619.8	1580.6	108.6	13.4
40°	5184.5	5086.8	4841.2	4459.4	3976.5	3404.3	2822.8	2300.7	1392.6	106.9	26.7
42.5°	3513.7	3544.6	3279.0	3005.8	2695.9	2307.4	1919.8	1577.2	974.1	79.4	16.7
45°	2257.3	2263.9	2145.3	1933.1	1730.1	1487.9	1232.2	1026.7	628.2	44.3	5.0
47.5°	1436.9	1433.6	1357.5	1235.6	1102.7	960.7	801.2	670.8	406.8	34.3	15.0
50°	904.7	901.4	853.8	776.1	701.7	608.2	507.9	431.9	257.3	40.9	16.7
51°	735.2	740.2	700.1	621.5	563.9	474.5	405.2	344.2	201.3	28.4	15.0
52°	606.5	603.2	578.1	512.1	464.5	387.6	330.0	281.5	167.9	25.1	6.7
53°	487.9	489.5	464.5	413.5	367.6	309.9	264.0	218.9	120.3	18.4	5.0
54°	386.0	382.6	374.3	325.0	296.6	245.6	206.3	167.9	103.6	3.3	0.0
55°	328.3	323.3	311.6	269.0	240.6	203.0	164.6	143.7	89.4	8.4	0.0
57.5°	189.6	189.6	183.0	159.6	140.3	125.3	100.2	93.6	45.9	8.4	0.0
60°	118.6	103.6	115.3	98.6	77.7	69.3	57.6	52.6	39.3	15.0	3.3
61°	98.6	79.4	77.7	72.7	67.7	45.9	39.3	42.6	25.1	5.0	3.3
62°	71.0	62.7	67.7	57.6	51.0	35.9	32.6	30.9	15.0	6.7	8.4
63°	64.3	57.6	56.0	42.6	37.6	37.6	28.4	26.7	18.4	13.4	6.7



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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°	34.3	28.4	25.1	28.4	16.7	21.7	8.4	23.4	5.0	8.4	5.0
67.5°	26.7	16.7	15.0	18.4	11.7	8.4	11.7	15.0	5.0	8.4	11.7
70°	23.4	11.7	16.7	15.0	11.7	15.0	16.7	16.7	5.0	16.7	15.0
72.5°	23.4	15.0	8.4	6.7	6.7	6.7	6.7	6.7	10.0	23.4	18.4
75°	10.0	10.0	5.0	11.7	6.7	10.0	6.7	16.7	6.7	18.4	15.0
77.5°	6.7	8.4	0.0	8.4	0.0	0.0	5.0	11.7	5.0	13.4	16.7
80°	0.0	8.4	5.0	0.0	3.3	5.0	0.0	1.7	3.3	15.0	6.7
82.5°	3.3	5.0	6.7	3.3	3.3	0.0	0.0	0.0	0.0	10.0	8.4
85°	3.3	6.7	0.0	1.7	6.7	3.3	1.7	8.4	3.3	11.7	13.4
87.5°	0.0	3.3	3.3	0.0	5.0	0.0	5.0	3.3	0.0	10.0	5.0
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°	59.3	59.3	59.3	59.3	59.3
2.5°	51.0	45.9	39.3	49.3	40.9
5°	61.0	56.0	44.3	52.6	47.6
7.5°	62.7	52.6	45.9	42.6	47.6
10°	37.6	25.1	18.4	25.1	13.4
12.5°	62.7	44.3	40.9	45.9	51.0
15°	47.6	28.4	28.4	21.7	30.9
17.5°	26.7	21.7	20.0	26.7	30.9
20°	28.4	18.4	15.0	25.1	23.4
21°	25.1	6.7	20.0	20.0	23.4
22°	35.9	16.7	20.0	32.6	34.3
23°	23.4	18.4	15.0	20.0	26.7
24°	34.3	20.0	18.4	25.1	37.6
25°	23.4	18.4	18.4	23.4	20.0
26°	13.4	18.4	13.4	20.0	16.7
27°	10.0	16.7	10.0	15.0	20.0
28°	21.7	26.7	25.1	26.7	23.4
29°	23.4	28.4	23.4	35.9	26.7
30°	13.4	25.1	11.7	26.7	23.4
31°	13.4	18.4	8.4	26.7	23.4
32°	1.7	10.0	5.0	10.0	10.0
33°	10.0	11.7	13.4	21.7	16.7
34°	16.7	20.0	13.4	23.4	20.0
35°	18.4	10.0	15.0	25.1	26.7
36°	5.0	5.0	8.4	20.0	6.7
37°	10.0	28.4	20.0	34.3	20.0
38°	16.7	34.3	32.6	42.6	34.3
39°	3.3	10.0	11.7	23.4	23.4
40°	15.0	25.1	18.4	34.3	34.3
42.5°	11.7	18.4	13.4	28.4	23.4
45°	5.0	5.0	3.3	18.4	13.4
47.5°	8.4	8.4	15.0	23.4	40.9
50°	16.7	16.7	21.7	39.3	37.6
51°	10.0	8.4	11.7	26.7	34.3
52°	8.4	11.7	11.7	26.7	26.7
53°	3.3	0.0	0.0	20.0	16.7
54°	3.3	1.7	5.0	15.0	23.4
55°	0.0	8.4	6.7	30.9	34.3
57.5°	1.7	13.4	6.7	21.7	26.7
60°	8.4	10.0	18.4	21.7	26.7
61°	0.0	8.4	8.4	20.0	23.4
62°	0.0	6.7	15.0	18.4	23.4
63°	8.4	10.0	13.4	21.7	26.7





TEST NUMBER: P315510

CATALOG NUMBER: LDA2B20FL9035D010 PINW1MMS

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	5.0	13.4	16.7	21.7	20.0
67.5°	10.0	11.7	10.0	28.4	34.3
70°	13.4	21.7	23.4	20.0	34.3
72.5°	8.4	11.7	16.7	30.9	34.3
75°	15.0	16.7	25.1	28.4	34.3
77.5°	11.7	16.7	16.7	18.4	34.3
80°	5.0	15.0	16.7	18.4	10.0
82.5°	6.7	10.0	6.7	18.4	13.4
85°	3.3	15.0	13.4	16.7	16.7
87.5°	5.0	8.4	8.4	15.0	10.0
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	37.6	39.3	37.6	26.7	20.0	18.4	13.4	23.4	6.7	6.7	0.0
65°	34.3	37.6	28.4	32.6	21.7	20.0	11.7	23.4	3.3	11.7	8.4







64°	5.0	8.4	8.4	15.0	23.4
65°	8.4	11.7	11.7	21.7	16.7



(END OF REPORT)