

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: P315516

Luminaire Tested: **LDA2B20FL9040D010 PINW1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315516  
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: LDA2B20FL9040D010 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: 1422.7 lumens  
Efficiency: N/A  
Efficacy: 69.1 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

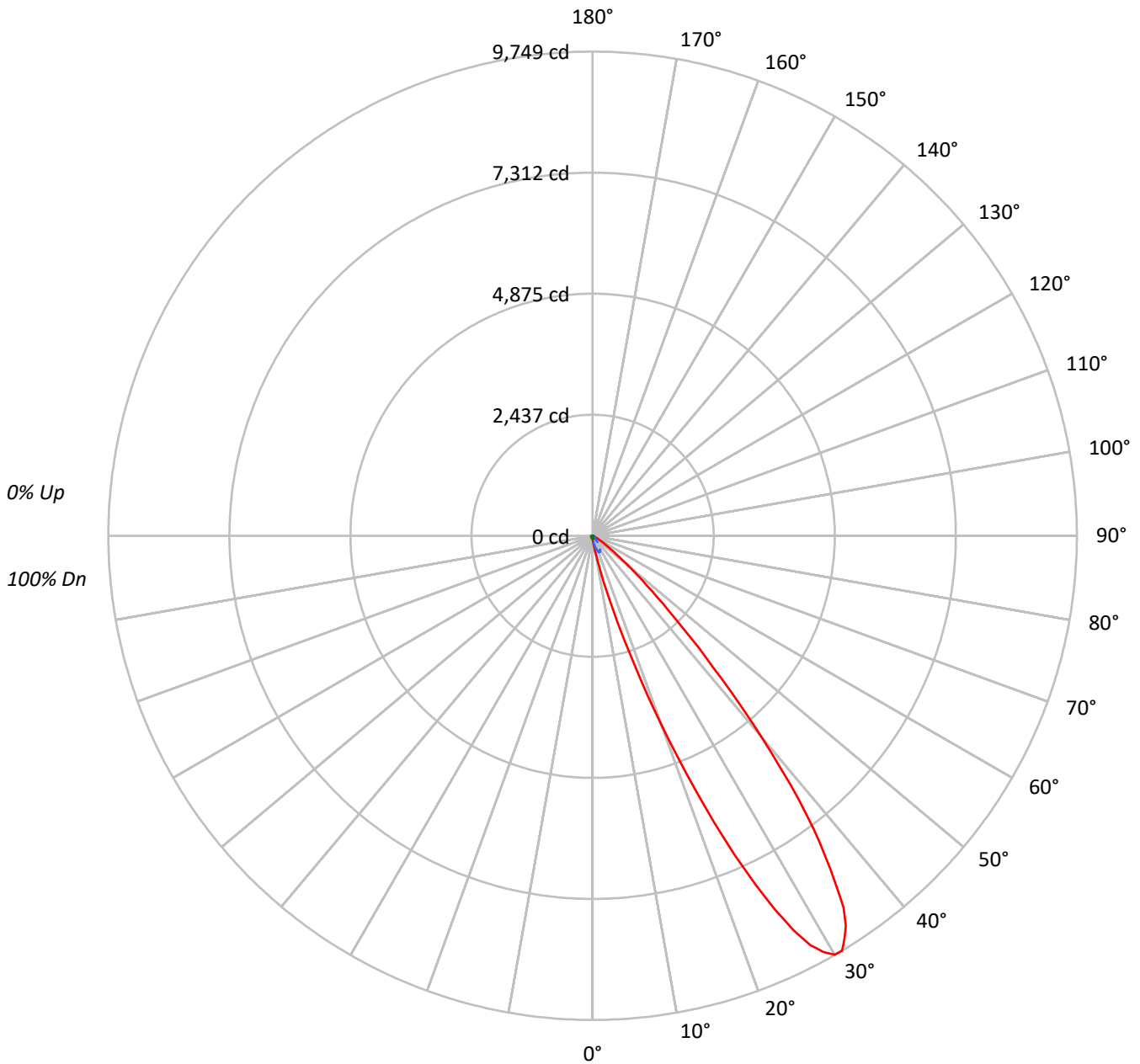
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: LDA2B20FL9040D010 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°	29898	29898	29898
5°	66759	30854	24069
10°	178647	19237	6863
15°	703324	24823	16140
20°	2127662	15226	12548
25°	4210551	13010	11159
30°	5548106	7805	13615
35°	5119470	11323	16442
40°	3409988	9918	22541
45°	1608451	3558	9559
50°	709202	13125	29473
55°	288408	0	30105
60°	119492	8387	26938
65°	40859	9923	19962
70°	34476	19762	50487
75°	19443	29356	66717
80°	0	14490	28980
85°	19246	19246	96798



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	8.2	0.6
10°-20°	87.0	6.1
20°-30°	447.5	31.5
30°-40°	573.0	40.3
40°-50°	220.3	15.5
50°-60°	44.8	3.1
60°-70°	15.2	1.1
70°-80°	17.7	1.2
80°-90°	9.0	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°	542.7	38.1
0°-40°	1115.7	78.4
0°-60°	1380.8	97.1
0°-90°	1422.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1422.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	61	61	61	61	61	
5°	135	111	62	45	49	20
15°	1377	268	49	29	32	528
25°	7735	350	24	19	20	3531
35°	8500	182	19	15	27	5080
45°	2305	45	5	3	14	1981
55°	335	8	0	7	35	347
65°	35	12	8	12	17	49
75°	10	19	15	26	35	14
85°	3	12	3	14	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°	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6
2.5°	89.6	77.6	81.1	69.1	75.9	77.6	64.0	84.5	75.9	79.3	69.1
5°	134.8	145.0	133.1	128.0	124.6	128.0	124.6	129.7	126.3	110.9	79.3
7.5°	225.2	205.6	205.6	198.8	203.9	202.2	193.7	198.8	186.8	134.8	91.3
10°	356.6	337.0	335.3	330.2	328.5	313.1	304.6	297.8	273.0	159.5	82.8
12.5°	698.7	681.7	669.7	639.9	619.4	607.5	562.2	538.3	467.5	237.2	105.8
15°	1377.0	1289.1	1311.3	1214.9	1144.1	1097.2	1003.3	920.6	750.8	267.9	102.4
17.5°	2436.6	2351.3	2294.2	2189.2	2045.0	1920.5	1735.3	1551.9	1206.4	304.6	95.6
20°	4052.5	3917.7	3798.3	3618.3	3341.0	3101.3	2775.3	2424.7	1795.9	348.1	86.2
21°	4762.4	4658.3	4520.1	4282.9	3959.5	3638.8	3248.0	2825.7	2046.7	351.5	77.6
22°	5502.9	5435.5	5253.8	4981.6	4604.5	4222.3	3742.8	3278.7	2313.8	356.6	74.2
23°	6274.2	6203.4	5997.8	5686.3	5262.3	4799.9	4241.1	3690.8	2564.6	363.4	72.5
24°	7029.2	6950.7	6721.2	6373.1	5892.0	5360.4	4729.1	4090.9	2798.4	360.0	75.9
25°	7734.8	7625.6	7383.3	6997.7	6469.6	5873.2	5177.0	4436.5	3004.0	349.8	64.0
26°	8364.4	8239.9	7978.8	7558.2	6980.6	6334.8	5550.7	4757.2	3155.9	341.3	60.6
27°	8911.3	8754.3	8475.3	8034.3	7414.9	6701.6	5869.8	5008.1	3289.8	328.5	48.6
28°	9337.0	9157.0	8873.8	8407.9	7753.6	6987.4	6104.4	5165.1	3369.1	330.2	55.5
29°	9582.8	9444.5	9136.5	8648.5	7960.0	7152.1	6228.1	5252.1	3384.5	304.6	52.0
30°	9738.9	9584.5	9267.9	8757.7	8039.4	7189.6	6243.5	5235.9	3339.3	285.8	48.6
31°	9749.1	9587.9	9266.2	8738.1	8008.7	7127.3	6158.1	5139.5	3241.2	266.2	40.1
32°	9565.7	9441.1	9124.6	8579.4	7842.3	6955.9	5974.7	4976.5	3086.8	226.9	27.3
33°	9358.4	9207.4	8892.5	8342.3	7611.9	6721.2	5710.2	4757.2	2926.4	223.5	35.0
34°	9035.9	8854.1	8544.5	8002.7	7292.0	6386.8	5395.4	4464.6	2721.6	203.9	33.3
35°	8500.1	8402.8	8089.7	7554.8	6864.6	5985.8	5016.6	4143.0	2504.0	181.7	23.9
36°	7963.4	7844.0	7548.0	7030.9	6376.6	5508.0	4589.2	3776.1	2258.3	154.4	18.8
37°	7396.1	7240.0	6970.4	6464.4	5781.0	5032.0	4178.8	3426.3	2057.8	163.0	25.6
38°	6734.9	6682.8	6327.9	5857.0	5225.6	4518.4	3737.7	3057.7	1836.0	151.9	41.8
39°	6008.0	5973.0	5618.9	5189.8	4623.3	3973.2	3286.4	2675.5	1614.2	110.9	13.7
40°	5294.7	5194.9	4944.1	4554.2	4061.1	3476.6	2882.8	2349.6	1422.2	109.2	27.3
42.5°	3588.4	3620.0	3348.7	3069.7	2753.2	2356.4	1960.6	1610.8	994.8	81.1	17.1
45°	2305.3	2312.1	2190.9	1974.2	1766.9	1519.5	1258.4	1048.5	641.6	45.2	5.1
47.5°	1467.4	1464.0	1386.4	1261.8	1126.2	981.1	818.2	685.1	415.5	35.0	15.4
50°	924.0	920.6	871.9	792.6	716.7	621.1	518.7	441.1	262.8	41.8	17.1
51°	750.8	755.9	715.0	634.8	575.9	484.6	413.8	351.5	205.6	29.0	15.4
52°	619.4	616.0	590.4	523.0	474.4	395.9	337.0	287.5	171.5	25.6	6.8
53°	498.2	500.0	474.4	422.3	375.4	316.5	269.6	223.5	122.9	18.8	5.1
54°	394.2	390.7	382.2	331.9	302.9	250.8	210.7	171.5	105.8	3.4	0.0
55°	335.3	330.2	318.2	274.7	245.7	207.3	168.1	146.7	91.3	8.5	0.0
57.5°	193.7	193.7	186.8	163.0	143.3	128.0	102.4	95.6	46.9	8.5	0.0
60°	121.1	105.8	117.7	100.7	79.3	70.8	58.9	53.7	40.1	15.4	3.4
61°	100.7	81.1	79.3	74.2	69.1	46.9	40.1	43.5	25.6	5.1	3.4
62°	72.5	64.0	69.1	58.9	52.0	36.7	33.3	31.6	15.4	6.8	8.5
63°	65.7	58.9	57.2	43.5	38.4	38.4	29.0	27.3	18.8	13.7	6.8



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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°	35.0	29.0	25.6	29.0	17.1	22.2	8.5	23.9	5.1	8.5	5.1
67.5°	27.3	17.1	15.4	18.8	11.9	8.5	11.9	15.4	5.1	8.5	11.9
70°	23.9	11.9	17.1	15.4	11.9	15.4	17.1	17.1	5.1	17.1	15.4
72.5°	23.9	15.4	8.5	6.8	6.8	6.8	6.8	6.8	10.2	23.9	18.8
75°	10.2	10.2	5.1	11.9	6.8	10.2	6.8	17.1	6.8	18.8	15.4
77.5°	6.8	8.5	0.0	8.5	0.0	0.0	5.1	11.9	5.1	13.7	17.1
80°	0.0	8.5	5.1	0.0	3.4	5.1	0.0	1.7	3.4	15.4	6.8
82.5°	3.4	5.1	6.8	3.4	3.4	0.0	0.0	0.0	0.0	10.2	8.5
85°	3.4	6.8	0.0	1.7	6.8	3.4	1.7	8.5	3.4	11.9	13.7
87.5°	0.0	3.4	3.4	0.0	5.1	0.0	5.1	3.4	0.0	10.2	5.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P315516

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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
0°	60.6	60.6	60.6	60.6	60.6
2.5°	52.0	46.9	40.1	50.3	41.8
5°	62.3	57.2	45.2	53.7	48.6
7.5°	64.0	53.7	46.9	43.5	48.6
10°	38.4	25.6	18.8	25.6	13.7
12.5°	64.0	45.2	41.8	46.9	52.0
15°	48.6	29.0	29.0	22.2	31.6
17.5°	27.3	22.2	20.5	27.3	31.6
20°	29.0	18.8	15.4	25.6	23.9
21°	25.6	6.8	20.5	20.5	23.9
22°	36.7	17.1	20.5	33.3	35.0
23°	23.9	18.8	15.4	20.5	27.3
24°	35.0	20.5	18.8	25.6	38.4
25°	23.9	18.8	18.8	23.9	20.5
26°	13.7	18.8	13.7	20.5	17.1
27°	10.2	17.1	10.2	15.4	20.5
28°	22.2	27.3	25.6	27.3	23.9
29°	23.9	29.0	23.9	36.7	27.3
30°	13.7	25.6	11.9	27.3	23.9
31°	13.7	18.8	8.5	27.3	23.9
32°	1.7	10.2	5.1	10.2	10.2
33°	10.2	11.9	13.7	22.2	17.1
34°	17.1	20.5	13.7	23.9	20.5
35°	18.8	10.2	15.4	25.6	27.3
36°	5.1	5.1	8.5	20.5	6.8
37°	10.2	29.0	20.5	35.0	20.5
38°	17.1	35.0	33.3	43.5	35.0
39°	3.4	10.2	11.9	23.9	23.9
40°	15.4	25.6	18.8	35.0	35.0
42.5°	11.9	18.8	13.7	29.0	23.9
45°	5.1	5.1	3.4	18.8	13.7
47.5°	8.5	8.5	15.4	23.9	41.8
50°	17.1	17.1	22.2	40.1	38.4
51°	10.2	8.5	11.9	27.3	35.0
52°	8.5	11.9	11.9	27.3	27.3
53°	3.4	0.0	0.0	20.5	17.1
54°	3.4	1.7	5.1	15.4	23.9
55°	0.0	8.5	6.8	31.6	35.0
57.5°	1.7	13.7	6.8	22.2	27.3
60°	8.5	10.2	18.8	22.2	27.3
61°	0.0	8.5	8.5	20.5	23.9
62°	0.0	6.8	15.4	18.8	23.9
63°	8.5	10.2	13.7	22.2	27.3





TEST NUMBER: P315516

CATALOG NUMBER: LDA2B20FL9040D010 PINW1MMS

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	5.1	13.7	17.1	22.2	20.5
67.5°	10.2	11.9	10.2	29.0	35.0
70°	13.7	22.2	23.9	20.5	35.0
72.5°	8.5	11.9	17.1	31.6	35.0
75°	15.4	17.1	25.6	29.0	35.0
77.5°	11.9	17.1	17.1	18.8	35.0
80°	5.1	15.4	17.1	18.8	10.2
82.5°	6.8	10.2	6.8	18.8	13.7
85°	3.4	15.4	13.7	17.1	17.1
87.5°	5.1	8.5	8.5	15.4	10.2
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	38.4	40.1	38.4	27.3	20.5	18.8	13.7	23.9	6.8	6.8	0.0
65°	35.0	38.4	29.0	33.3	22.2	20.5	11.9	23.9	3.4	11.9	8.5







64°	5.1	8.5	8.5	15.4	23.9
65°	8.5	11.9	11.9	22.2	17.1



(END OF REPORT)