

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: P315511

Luminaire Tested: **LDA2B20FL9035D010 PIN1MB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315511
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 PIN1MB
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, Black oculus black finish
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1341.7 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

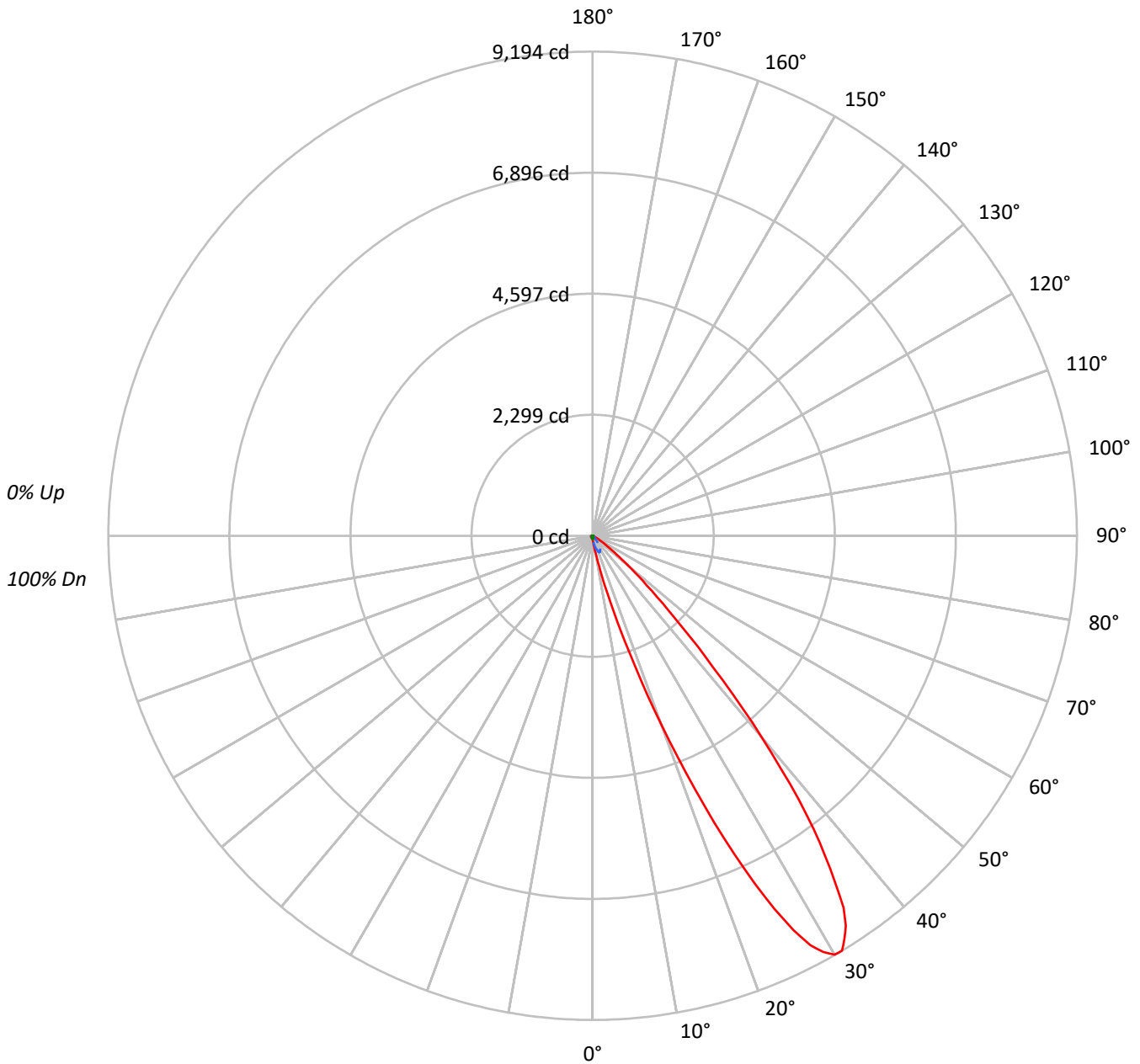
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90					90			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80					80			
3	97	89	82	77	95	87	82	77	85	80	75	82	78	74	80	76	73	71					71			
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63					63			
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56					56			
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50					50			
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45					45			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40					40			
9	63	51	43	38	61	50	43	38	49	42	38	48	42	38	47	41	37	36					36			
10	59	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32					32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	28171	28171	28171
5°	62946	29071	22732
10°	168477	18135	6463
15°	663280	23444	15221
20°	2006592	14386	11813
25°	3970921	12248	10506
30°	5232330	7349	12818
35°	4828085	10660	15479
40°	3215940	9339	21253
45°	1516911	3349	9001
50°	668830	12357	27785
55°	271979	0	28385
60°	112783	7894	25359
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°	540.3	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°	511.8	38.1
0°-40°	1052.2	78.4
0°-60°	1302.2	97.1
0°-90°	1341.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1341.7	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°	8016	171	18	14	26	4791
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	60.3	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	182.6	187.5	176.2	127.1	86.1
10°	336.3	317.8	316.2	311.4	309.8	295.3	287.2	280.8	257.5	150.5	78.0
12.5°	659.0	642.9	631.6	603.5	584.1	572.9	530.2	507.7	440.9	223.7	99.8
15°	1298.6	1215.8	1236.7	1145.8	1079.0	1034.7	946.2	868.2	708.1	252.6	96.6
17.5°	2298.0	2217.5	2163.6	2064.6	1928.7	1811.2	1636.6	1463.6	1137.7	287.2	90.1
20°	3821.9	3694.8	3582.1	3412.4	3150.9	2924.8	2617.4	2286.7	1693.7	328.3	81.3
21°	4491.3	4393.2	4262.8	4039.1	3734.2	3431.7	3063.2	2664.9	1930.3	331.5	73.2
22°	5189.7	5126.2	4954.8	4698.1	4342.5	3982.0	3529.8	3092.1	2182.1	336.3	70.0
23°	5917.1	5850.3	5656.4	5362.7	4962.8	4526.7	3999.7	3480.7	2418.7	342.8	68.4
24°	6629.2	6555.2	6338.7	6010.4	5556.6	5055.4	4460.0	3858.1	2639.1	339.5	71.6
25°	7294.6	7191.6	6963.1	6599.4	6101.4	5538.9	4882.4	4184.0	2833.0	329.9	60.3
26°	7888.4	7770.9	7524.7	7128.0	6583.3	5974.2	5234.8	4486.5	2976.3	321.8	57.1
27°	8404.2	8256.1	7993.0	7577.0	6992.9	6320.2	5535.7	4723.1	3102.6	309.8	45.9
28°	8805.7	8635.9	8368.8	7929.4	7312.3	6589.8	5757.0	4871.1	3177.4	311.4	52.3
29°	9037.4	8907.0	8616.6	8156.3	7507.0	6745.1	5873.7	4953.2	3191.9	287.2	49.1
30°	9184.6	9039.0	8740.5	8259.3	7581.8	6780.5	5888.1	4937.9	3149.2	269.5	45.9
31°	9194.3	9042.2	8738.9	8240.8	7552.9	6721.7	5807.7	4847.0	3056.7	251.0	37.8
32°	9021.3	8903.8	8605.3	8091.2	7396.0	6560.0	5634.7	4693.3	2911.1	214.0	25.7
33°	8825.8	8683.4	8386.5	7867.5	7178.7	6338.7	5385.3	4486.5	2759.8	210.8	33.0
34°	8521.6	8350.3	8058.2	7547.2	6877.0	6023.3	5088.4	4210.5	2566.7	192.3	31.4
35°	8016.3	7924.6	7629.3	7124.8	6473.9	5645.1	4731.1	3907.2	2361.5	171.4	22.5
36°	7510.2	7397.6	7118.4	6630.8	6013.7	5194.6	4328.0	3561.2	2129.8	145.6	17.7
37°	6975.2	6827.9	6573.7	6096.5	5452.0	4745.6	3941.0	3231.3	1940.7	153.7	24.1
38°	6351.6	6302.5	5967.8	5523.7	4928.2	4261.2	3525.0	2883.7	1731.5	143.2	39.4
39°	5666.1	5633.1	5299.2	4894.4	4360.2	3747.1	3099.4	2523.3	1522.3	104.6	12.9
40°	4993.4	4899.3	4662.7	4295.0	3829.9	3278.8	2718.8	2215.9	1341.3	103.0	25.7
42.5°	3384.2	3414.0	3158.1	2895.0	2596.5	2222.3	1849.0	1519.1	938.2	76.4	16.1
45°	2174.1	2180.5	2066.2	1861.9	1666.3	1433.0	1186.8	988.9	605.1	42.6	4.8
47.5°	1383.9	1380.7	1307.5	1190.0	1062.1	925.3	771.6	646.1	391.8	33.0	14.5
50°	871.4	868.2	822.3	747.5	675.9	585.8	489.2	416.0	247.8	39.4	16.1
51°	708.1	712.9	674.3	598.6	543.1	457.0	390.2	331.5	193.9	27.4	14.5
52°	584.1	580.9	556.8	493.2	447.4	373.3	317.8	271.2	161.7	24.1	6.4
53°	469.9	471.5	447.4	398.3	354.0	298.5	254.3	210.8	115.9	17.7	4.8
54°	371.7	368.5	360.5	313.0	285.6	236.6	198.7	161.7	99.8	3.2	0.0
55°	316.2	311.4	300.1	259.1	231.7	195.5	158.5	138.4	86.1	8.0	0.0
57.5°	182.6	182.6	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	94.9	74.8	66.8	55.5	50.7	37.8	14.5	3.2
61°	94.9	76.4	74.8	70.0	65.2	44.3	37.8	41.0	24.1	4.8	3.2
62°	68.4	60.3	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	25.7	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°	25.7	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°	60.3	50.7	44.3	41.0	45.9
10°	36.2	24.1	17.7	24.1	12.9
12.5°	60.3	42.6	39.4	44.3	49.1
15°	45.9	27.4	27.4	20.9	29.8
17.5°	25.7	20.9	19.3	25.7	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	25.7
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	25.7	24.1	25.7	22.5
29°	22.5	27.4	22.5	34.6	25.7
30°	12.9	24.1	11.3	25.7	22.5
31°	12.9	17.7	8.0	25.7	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	25.7
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	25.7	33.0
52°	8.0	11.3	11.3	25.7	25.7
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	25.7
60°	8.0	9.7	17.7	20.9	25.7
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	25.7



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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	25.7	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)