

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: P315501

Luminaire Tested: **LDA2B20FL9030D010 PIN1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315501
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 PIN1MW
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in
Adj PinHole, Black oculus, matte white finish
Light Source: -
Ballast/Driver: -

Summary

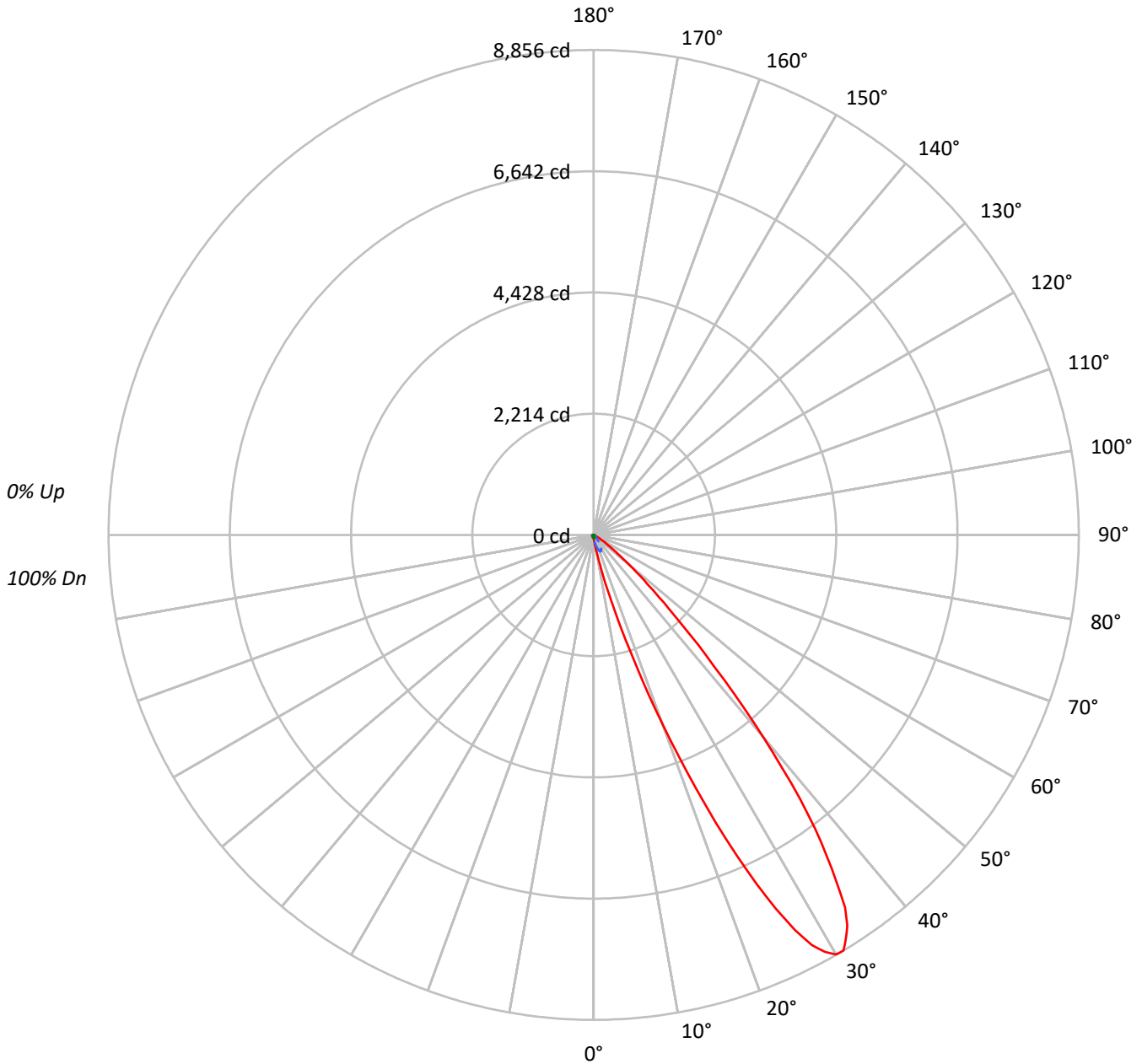
Lumens per Lamp: N/A
Luminaire Lumens: 1292.5 lumens
Efficiency: N/A
Efficacy: 62.7 lumens/watt
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

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									
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°	27135	27135	27135
5°	60668	28031	21890
10°	162315	17484	6212
15°	638917	22576	14659
20°	1932826	13861	11393
25°	3824923	11813	10125
30°	5040004	7064	12362
35°	4650593	10299	14937
40°	3097694	9017	20480
45°	1461093	3279	8652
50°	644269	11897	26787
55°	262002	0	27353
60°	108638	7696	24471
65°	37123	9106	18095
70°	31302	17887	45871
75°	17728	26687	60617
80°	0	13353	26423
85°	17548	17548	87741



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	7.5	0.6
10°-20°	79.1	6.1
20°-30°	406.5	31.4
30°-40°	520.5	40.3
40°-50°	200.2	15.5
50°-60°	40.7	3.1
60°-70°	13.8	1.1
70°-80°	16.1	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°	493.0	38.1
0°-40°	1013.5	78.4
0°-60°	1254.4	97.1
0°-90°	1292.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1292.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	55	55	55	55	55	
5°	122	101	57	41	44	18
15°	1251	243	44	26	29	480
25°	7026	318	22	17	19	3207
35°	7722	165	17	14	25	4615
45°	2094	41	5	3	12	1800
55°	305	8	0	6	32	316
65°	32	11	8	11	16	45
75°	9	17	14	23	32	13
85°	3	11	3	12	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°	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0
2.5°	81.4	70.5	73.6	62.8	69.0	70.5	58.1	76.7	69.0	72.1	62.8
5°	122.5	131.8	120.9	116.3	113.2	116.3	113.2	117.8	114.7	100.8	72.1
7.5°	204.6	186.8	186.8	180.6	185.2	183.7	175.9	180.6	169.7	122.5	82.9
10°	324.0	306.1	304.6	299.9	298.4	284.4	276.7	270.5	248.0	144.9	75.2
12.5°	634.8	619.3	608.4	581.3	562.7	551.8	510.7	489.0	424.7	215.5	96.1
15°	1250.9	1171.1	1191.2	1103.6	1039.3	996.7	911.4	836.3	682.0	243.4	93.0
17.5°	2213.5	2136.0	2084.1	1988.7	1857.8	1744.6	1576.4	1409.8	1095.9	276.7	86.8
20°	3681.4	3558.9	3450.4	3286.9	3035.0	2817.2	2521.2	2202.6	1631.4	316.2	78.3
21°	4326.2	4231.7	4106.1	3890.7	3596.9	3305.5	2950.5	2566.9	1859.3	319.3	70.5
22°	4999.0	4937.7	4772.6	4525.4	4182.8	3835.6	3400.1	2978.4	2101.9	324.0	67.4
23°	5699.6	5635.3	5448.5	5165.6	4780.4	4360.3	3852.7	3352.8	2329.7	330.2	65.9
24°	6385.5	6314.2	6105.7	5789.5	5352.4	4869.5	4296.0	3716.3	2542.1	327.1	69.0
25°	7026.4	6927.2	6707.1	6356.8	5877.1	5335.3	4702.9	4030.2	2728.9	317.8	58.1
26°	7598.4	7485.3	7248.1	6866.0	6341.3	5754.6	5042.4	4321.6	2866.8	310.0	55.0
27°	8095.2	7952.6	7699.2	7298.5	6735.8	6087.9	5332.2	4549.4	2988.5	298.4	44.2
28°	8481.9	8318.4	8061.1	7637.9	7043.5	6347.5	5545.4	4692.0	3060.6	299.9	50.4
29°	8705.2	8579.6	8299.8	7856.5	7231.0	6497.1	5657.7	4771.1	3074.5	276.7	47.3
30°	8847.0	8706.7	8419.2	7955.7	7303.1	6531.2	5671.7	4756.4	3033.5	259.6	44.2
31°	8856.3	8709.8	8417.6	7937.9	7275.2	6474.6	5594.2	4668.8	2944.3	241.8	36.4
32°	8689.7	8576.5	8289.0	7793.7	7124.1	6318.8	5427.5	4520.8	2804.1	206.2	24.8
33°	8501.3	8364.1	8078.2	7578.3	6914.8	6105.7	5187.3	4321.6	2658.4	203.1	31.8
34°	8208.4	8043.3	7761.9	7269.8	6624.2	5801.9	4901.3	4055.7	2472.4	185.2	30.2
35°	7721.6	7633.3	7348.8	6862.9	6235.9	5437.6	4557.2	3763.6	2274.7	165.1	21.7
36°	7234.1	7125.6	6856.7	6387.0	5792.6	5003.6	4168.9	3430.3	2051.5	140.3	17.1
37°	6718.7	6576.9	6332.0	5872.4	5251.6	4571.1	3796.1	3112.5	1869.4	148.0	23.3
38°	6118.1	6070.8	5748.4	5320.6	4747.1	4104.6	3395.4	2777.7	1667.9	138.0	38.0
39°	5457.8	5426.0	5104.4	4714.5	4199.9	3609.3	2985.4	2430.5	1466.4	100.8	12.4
40°	4809.8	4719.2	4491.3	4137.1	3689.1	3158.3	2618.8	2134.4	1292.0	99.2	24.8
42.5°	3259.8	3288.5	3042.0	2788.6	2501.0	2140.6	1781.0	1463.3	903.7	73.6	15.5
45°	2094.1	2100.3	1990.3	1793.4	1605.1	1380.3	1143.2	952.5	582.8	41.1	4.7
47.5°	1333.1	1330.0	1259.4	1146.3	1023.0	891.3	743.3	622.4	377.4	31.8	14.0
50°	839.4	836.3	792.1	720.0	651.0	564.2	471.2	400.7	238.7	38.0	15.5
51°	682.0	686.7	649.5	576.6	523.1	440.2	375.9	319.3	186.8	26.4	14.0
52°	562.7	559.6	536.3	475.1	430.9	359.6	306.1	261.2	155.8	23.3	6.2
53°	452.6	454.2	430.9	383.6	341.0	287.5	244.9	203.1	111.6	17.1	4.7
54°	358.1	355.0	347.2	301.5	275.1	227.9	191.4	155.8	96.1	3.1	0.0
55°	304.6	299.9	289.1	249.6	223.2	188.3	152.7	133.3	82.9	7.8	0.0
57.5°	175.9	175.9	169.7	148.0	130.2	116.3	93.0	86.8	42.6	7.8	0.0
60°	110.1	96.1	107.0	91.5	72.1	64.3	53.5	48.8	36.4	14.0	3.1
61°	91.5	73.6	72.1	67.4	62.8	42.6	36.4	39.5	23.3	4.7	3.1
62°	65.9	58.1	62.8	53.5	47.3	33.3	30.2	28.7	14.0	6.2	7.8
63°	59.7	53.5	51.9	39.5	34.9	34.9	26.4	24.8	17.1	12.4	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°	31.8	26.4	23.3	26.4	15.5	20.2	7.8	21.7	4.7	7.8	4.7
67.5°	24.8	15.5	14.0	17.1	10.9	7.8	10.9	14.0	4.7	7.8	10.9
70°	21.7	10.9	15.5	14.0	10.9	14.0	15.5	15.5	4.7	15.5	14.0
72.5°	21.7	14.0	7.8	6.2	6.2	6.2	6.2	6.2	9.3	21.7	17.1
75°	9.3	9.3	4.7	10.9	6.2	9.3	6.2	15.5	6.2	17.1	14.0
77.5°	6.2	7.8	0.0	7.8	0.0	0.0	4.7	10.9	4.7	12.4	15.5
80°	0.0	7.8	4.7	0.0	3.1	4.7	0.0	1.6	3.1	14.0	6.2
82.5°	3.1	4.7	6.2	3.1	3.1	0.0	0.0	0.0	0.0	9.3	7.8
85°	3.1	6.2	0.0	1.6	6.2	3.1	1.6	7.8	3.1	10.9	12.4
87.5°	0.0	3.1	3.1	0.0	4.7	0.0	4.7	3.1	0.0	9.3	4.7
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°	55.0	55.0	55.0	55.0	55.0
2.5°	47.3	42.6	36.4	45.7	38.0
5°	56.6	51.9	41.1	48.8	44.2
7.5°	58.1	48.8	42.6	39.5	44.2
10°	34.9	23.3	17.1	23.3	12.4
12.5°	58.1	41.1	38.0	42.6	47.3
15°	44.2	26.4	26.4	20.2	28.7
17.5°	24.8	20.2	18.6	24.8	28.7
20°	26.4	17.1	14.0	23.3	21.7
21°	23.3	6.2	18.6	18.6	21.7
22°	33.3	15.5	18.6	30.2	31.8
23°	21.7	17.1	14.0	18.6	24.8
24°	31.8	18.6	17.1	23.3	34.9
25°	21.7	17.1	17.1	21.7	18.6
26°	12.4	17.1	12.4	18.6	15.5
27°	9.3	15.5	9.3	14.0	18.6
28°	20.2	24.8	23.3	24.8	21.7
29°	21.7	26.4	21.7	33.3	24.8
30°	12.4	23.3	10.9	24.8	21.7
31°	12.4	17.1	7.8	24.8	21.7
32°	1.6	9.3	4.7	9.3	9.3
33°	9.3	10.9	12.4	20.2	15.5
34°	15.5	18.6	12.4	21.7	18.6
35°	17.1	9.3	14.0	23.3	24.8
36°	4.7	4.7	7.8	18.6	6.2
37°	9.3	26.4	18.6	31.8	18.6
38°	15.5	31.8	30.2	39.5	31.8
39°	3.1	9.3	10.9	21.7	21.7
40°	14.0	23.3	17.1	31.8	31.8
42.5°	10.9	17.1	12.4	26.4	21.7
45°	4.7	4.7	3.1	17.1	12.4
47.5°	7.8	7.8	14.0	21.7	38.0
50°	15.5	15.5	20.2	36.4	34.9
51°	9.3	7.8	10.9	24.8	31.8
52°	7.8	10.9	10.9	24.8	24.8
53°	3.1	0.0	0.0	18.6	15.5
54°	3.1	1.6	4.7	14.0	21.7
55°	0.0	7.8	6.2	28.7	31.8
57.5°	1.6	12.4	6.2	20.2	24.8
60°	7.8	9.3	17.1	20.2	24.8
61°	0.0	7.8	7.8	18.6	21.7
62°	0.0	6.2	14.0	17.1	21.7
63°	7.8	9.3	12.4	20.2	24.8



TEST NUMBER: P315501

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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
66°	4.7	12.4	15.5	20.2	18.6
67.5°	9.3	10.9	9.3	26.4	31.8
70°	12.4	20.2	21.7	18.6	31.8
72.5°	7.8	10.9	15.5	28.7	31.8
75°	14.0	15.5	23.3	26.4	31.8
77.5°	10.9	15.5	15.5	17.1	31.8
80°	4.7	14.0	15.5	17.1	9.3
82.5°	6.2	9.3	6.2	17.1	12.4
85°	3.1	14.0	12.4	15.5	15.5
87.5°	4.7	7.8	7.8	14.0	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°	34.9	36.4	34.9	24.8	18.6	17.1	12.4	21.7	6.2	6.2	0.0
65°	31.8	34.9	26.4	30.2	20.2	18.6	10.9	21.7	3.1	10.9	7.8





64°	4.7	7.8	7.8	14.0	21.7
65°	7.8	10.9	10.9	20.2	15.5



(END OF REPORT)