

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: P315499

Luminaire Tested: **LDA2B20FL9027D010 PIN1MB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315499  
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: LDA2B20FL9027D010 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: 1238.8 lumens  
Efficiency: N/A  
Efficacy: 60.1 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

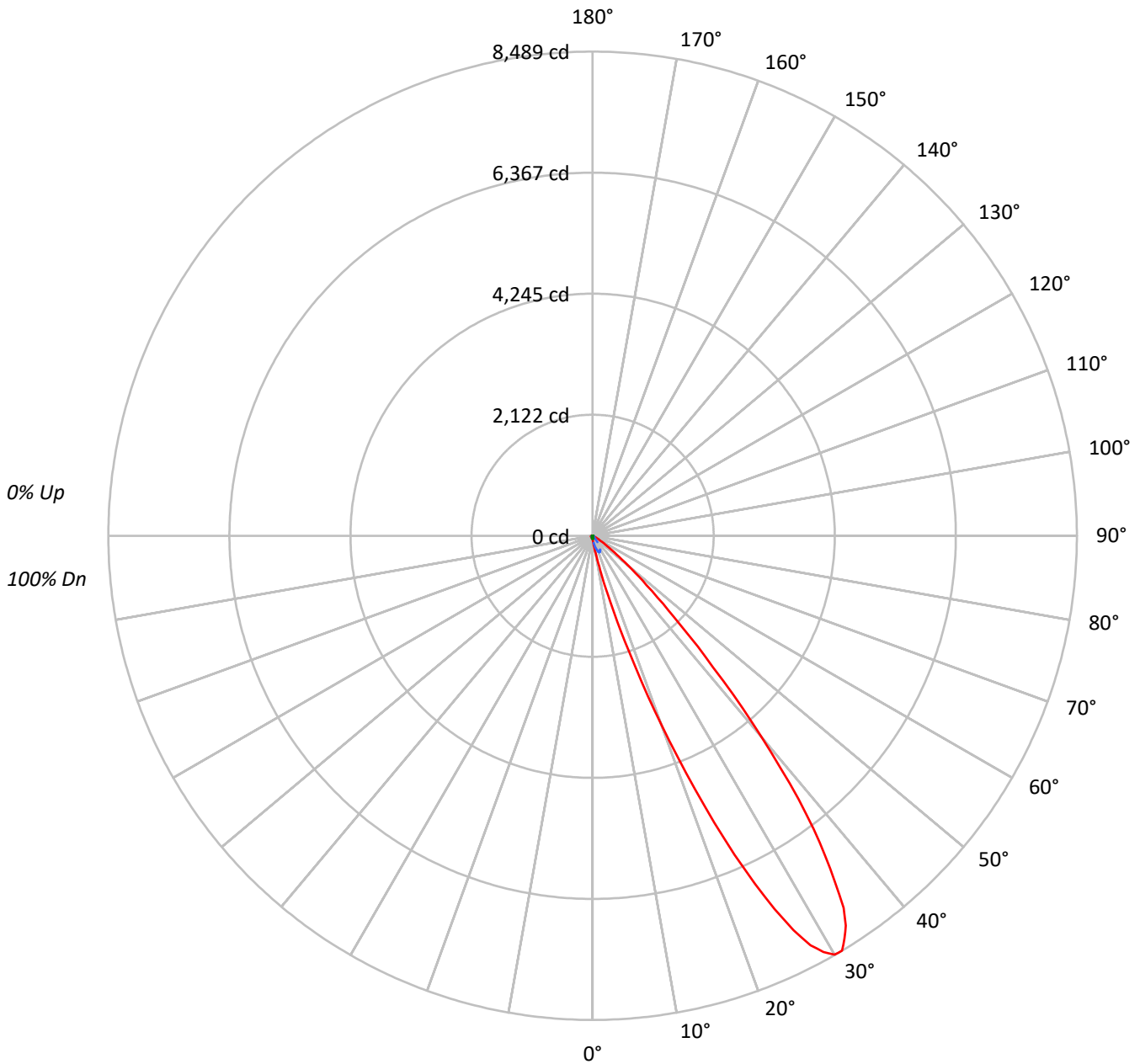
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	26000	26000	26000
5°	58142	26842	20949
10°	155552	16732	5962
15°	612408	21605	14046
20°	1852602	13283	10921
25°	3666186	11323	9690
30°	4830816	6779	11849
35°	4457621	9817	14334
40°	2969144	8630	19643
45°	1400461	3140	8303
50°	617482	11436	25636
55°	251078	0	26235
60°	104099	7302	23484
65°	35606	8639	17394
70°	30004	17166	43996
75°	16965	25543	58139
80°	0	12785	25286
85°	16982	16982	84344



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	7.2	0.6
10°-20°	75.8	6.1
20°-30°	389.6	31.5
30°-40°	498.9	40.3
40°-50°	191.8	15.5
50°-60°	39.0	3.1
60°-70°	13.2	1.1
70°-80°	15.4	1.2
80°-90°	7.9	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°	472.6	38.1
0°-40°	971.5	78.4
0°-60°	1202.3	97.1
0°-90°	1238.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1238.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	53	53	53	53	53	
5°	117	97	54	39	42	17
15°	1199	233	42	25	28	460
25°	6735	305	21	16	18	3074
35°	7401	158	16	13	24	4424
45°	2007	39	4	3	12	1725
55°	292	7	0	6	30	302
65°	30	10	7	10	15	43
75°	9	16	13	22	30	12
85°	3	10	3	12	15	2
90°	0	0	0	0	0	



TEST NUMBER: P315499

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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°	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7
2.5°	78.0	67.6	70.6	60.2	66.1	67.6	55.7	73.5	66.1	69.1	60.2
5°	117.4	126.3	115.9	111.4	108.5	111.4	108.5	112.9	109.9	96.6	69.1
7.5°	196.1	179.0	179.0	173.1	177.5	176.1	168.6	173.1	162.7	117.4	79.5
10°	310.5	293.4	291.9	287.5	286.0	272.6	265.2	259.3	237.7	138.9	72.1
12.5°	608.4	593.6	583.2	557.2	539.3	528.9	489.6	468.7	407.1	206.5	92.1
15°	1199.0	1122.5	1141.8	1057.8	996.2	955.3	873.6	801.6	653.7	233.3	89.1
17.5°	2121.6	2047.3	1997.6	1906.2	1780.7	1672.2	1511.0	1351.3	1050.4	265.2	83.2
20°	3528.6	3411.3	3307.3	3150.5	2909.1	2700.3	2416.6	2111.2	1563.7	303.1	75.0
21°	4146.7	4056.1	3935.7	3729.2	3447.7	3168.3	2828.1	2460.4	1782.1	306.1	67.6
22°	4791.5	4732.8	4574.6	4337.6	4009.3	3676.5	3259.0	2854.8	2014.7	310.5	64.6
23°	5463.1	5401.4	5222.4	4951.2	4582.0	4179.4	3692.8	3213.6	2233.1	316.5	63.1
24°	6120.5	6052.1	5852.3	5549.2	5130.2	4667.4	4117.7	3562.1	2436.6	313.5	66.1
25°	6734.8	6639.8	6428.8	6093.0	5633.2	5113.9	4507.7	3862.9	2615.6	304.6	55.7
26°	7283.1	7174.6	6947.3	6581.1	6078.1	5515.8	4833.1	4142.2	2747.9	297.1	52.7
27°	7759.3	7622.6	7379.7	6995.6	6456.3	5835.2	5110.9	4360.6	2864.5	286.0	42.3
28°	8130.0	7973.2	7726.6	7321.0	6751.2	6084.1	5315.2	4497.3	2933.6	287.5	48.3
29°	8343.9	8223.6	7955.4	7530.5	6931.0	6227.5	5422.9	4573.1	2947.0	265.2	45.3
30°	8479.8	8345.4	8069.8	7625.5	7000.0	6260.2	5436.3	4559.0	2907.6	248.9	42.3
31°	8488.8	8348.4	8068.3	7608.5	6973.3	6205.9	5362.0	4475.0	2822.2	231.8	34.9
32°	8329.0	8220.6	7945.0	7470.3	6828.4	6056.6	5202.3	4333.2	2687.7	197.6	23.8
33°	8148.5	8017.0	7742.9	7263.8	6627.9	5852.3	4972.0	4142.2	2548.0	194.6	30.5
34°	7867.7	7709.5	7439.8	6968.1	6349.3	5561.1	4697.9	3887.4	2369.8	177.5	29.0
35°	7401.2	7316.5	7043.9	6578.1	5977.1	5212.0	4368.1	3607.4	2180.3	158.2	20.8
36°	6933.9	6829.9	6572.2	6122.0	5552.2	4796.0	3995.9	3287.9	1966.4	134.5	16.3
37°	6439.9	6304.0	6069.2	5628.7	5033.7	4381.4	3638.6	2983.4	1791.8	141.9	22.3
38°	5864.2	5818.9	5509.9	5099.8	4550.1	3934.2	3254.5	2662.4	1598.7	132.2	36.4
39°	5231.3	5200.8	4892.5	4518.9	4025.6	3459.5	2861.5	2329.6	1405.5	96.6	11.9
40°	4610.2	4523.3	4304.9	3965.4	3536.1	3027.2	2510.2	2045.9	1238.4	95.1	23.8
42.5°	3124.5	3152.0	2915.8	2672.8	2397.2	2051.8	1707.1	1402.5	866.2	70.6	14.9
45°	2007.2	2013.2	1907.7	1719.0	1538.5	1323.0	1095.7	913.0	558.6	39.4	4.5
47.5°	1277.7	1274.8	1207.2	1098.7	980.6	854.3	712.4	596.5	361.8	30.5	13.4
50°	804.5	801.6	759.2	690.1	624.0	540.8	451.7	384.1	228.8	36.4	14.9
51°	653.7	658.2	622.5	552.7	501.4	421.9	360.3	306.1	179.0	25.3	13.4
52°	539.3	536.4	514.1	455.4	413.0	344.7	293.4	250.3	149.3	22.3	5.9
53°	433.8	435.3	413.0	367.7	326.9	275.6	234.7	194.6	107.0	16.3	4.5
54°	343.2	340.2	332.8	289.0	263.7	218.4	183.5	149.3	92.1	3.0	0.0
55°	291.9	287.5	277.1	239.2	213.9	180.5	146.3	127.8	79.5	7.4	0.0
57.5°	168.6	168.6	162.7	141.9	124.8	111.4	89.1	83.2	40.9	7.4	0.0
60°	105.5	92.1	102.5	87.7	69.1	61.7	51.3	46.8	34.9	13.4	3.0
61°	87.7	70.6	69.1	64.6	60.2	40.9	34.9	37.9	22.3	4.5	3.0
62°	63.1	55.7	60.2	51.3	45.3	31.9	29.0	27.5	13.4	5.9	7.4
63°	57.2	51.3	49.8	37.9	33.4	33.4	25.3	23.8	16.3	11.9	5.9



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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°	30.5	25.3	22.3	25.3	14.9	19.3	7.4	20.8	4.5	7.4	4.5
67.5°	23.8	14.9	13.4	16.3	10.4	7.4	10.4	13.4	4.5	7.4	10.4
70°	20.8	10.4	14.9	13.4	10.4	13.4	14.9	14.9	4.5	14.9	13.4
72.5°	20.8	13.4	7.4	5.9	5.9	5.9	5.9	5.9	8.9	20.8	16.3
75°	8.9	8.9	4.5	10.4	5.9	8.9	5.9	14.9	5.9	16.3	13.4
77.5°	5.9	7.4	0.0	7.4	0.0	0.0	4.5	10.4	4.5	11.9	14.9
80°	0.0	7.4	4.5	0.0	3.0	4.5	0.0	1.5	3.0	13.4	5.9
82.5°	3.0	4.5	5.9	3.0	3.0	0.0	0.0	0.0	0.0	8.9	7.4
85°	3.0	5.9	0.0	1.5	5.9	3.0	1.5	7.4	3.0	10.4	11.9
87.5°	0.0	3.0	3.0	0.0	4.5	0.0	4.5	3.0	0.0	8.9	4.5
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°	52.7	52.7	52.7	52.7	52.7
2.5°	45.3	40.9	34.9	43.8	36.4
5°	54.2	49.8	39.4	46.8	42.3
7.5°	55.7	46.8	40.9	37.9	42.3
10°	33.4	22.3	16.3	22.3	11.9
12.5°	55.7	39.4	36.4	40.9	45.3
15°	42.3	25.3	25.3	19.3	27.5
17.5°	23.8	19.3	17.8	23.8	27.5
20°	25.3	16.3	13.4	22.3	20.8
21°	22.3	5.9	17.8	17.8	20.8
22°	31.9	14.9	17.8	29.0	30.5
23°	20.8	16.3	13.4	17.8	23.8
24°	30.5	17.8	16.3	22.3	33.4
25°	20.8	16.3	16.3	20.8	17.8
26°	11.9	16.3	11.9	17.8	14.9
27°	8.9	14.9	8.9	13.4	17.8
28°	19.3	23.8	22.3	23.8	20.8
29°	20.8	25.3	20.8	31.9	23.8
30°	11.9	22.3	10.4	23.8	20.8
31°	11.9	16.3	7.4	23.8	20.8
32°	1.5	8.9	4.5	8.9	8.9
33°	8.9	10.4	11.9	19.3	14.9
34°	14.9	17.8	11.9	20.8	17.8
35°	16.3	8.9	13.4	22.3	23.8
36°	4.5	4.5	7.4	17.8	5.9
37°	8.9	25.3	17.8	30.5	17.8
38°	14.9	30.5	29.0	37.9	30.5
39°	3.0	8.9	10.4	20.8	20.8
40°	13.4	22.3	16.3	30.5	30.5
42.5°	10.4	16.3	11.9	25.3	20.8
45°	4.5	4.5	3.0	16.3	11.9
47.5°	7.4	7.4	13.4	20.8	36.4
50°	14.9	14.9	19.3	34.9	33.4
51°	8.9	7.4	10.4	23.8	30.5
52°	7.4	10.4	10.4	23.8	23.8
53°	3.0	0.0	0.0	17.8	14.9
54°	3.0	1.5	4.5	13.4	20.8
55°	0.0	7.4	5.9	27.5	30.5
57.5°	1.5	11.9	5.9	19.3	23.8
60°	7.4	8.9	16.3	19.3	23.8
61°	0.0	7.4	7.4	17.8	20.8
62°	0.0	5.9	13.4	16.3	20.8
63°	7.4	8.9	11.9	19.3	23.8





TEST NUMBER: P315499

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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.5	11.9	14.9	19.3	17.8
67.5°	8.9	10.4	8.9	25.3	30.5
70°	11.9	19.3	20.8	17.8	30.5
72.5°	7.4	10.4	14.9	27.5	30.5
75°	13.4	14.9	22.3	25.3	30.5
77.5°	10.4	14.9	14.9	16.3	30.5
80°	4.5	13.4	14.9	16.3	8.9
82.5°	5.9	8.9	5.9	16.3	11.9
85°	3.0	13.4	11.9	14.9	14.9
87.5°	4.5	7.4	7.4	13.4	8.9
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	33.4	34.9	33.4	23.8	17.8	16.3	11.9	20.8	5.9	5.9	0.0
65°	30.5	33.4	25.3	29.0	19.3	17.8	10.4	20.8	3.0	10.4	7.4







64°	4.5	7.4	7.4	13.4	20.8
65°	7.4	10.4	10.4	19.3	14.9



(END OF REPORT)