

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: P315525

Luminaire Tested: **LDA2B20FL9727D010 PIN1MW**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P315525  
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: LDA2B20FL9727D010 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: 1114.6 lumens  
Efficiency: N/A  
Efficacy: 54.1 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

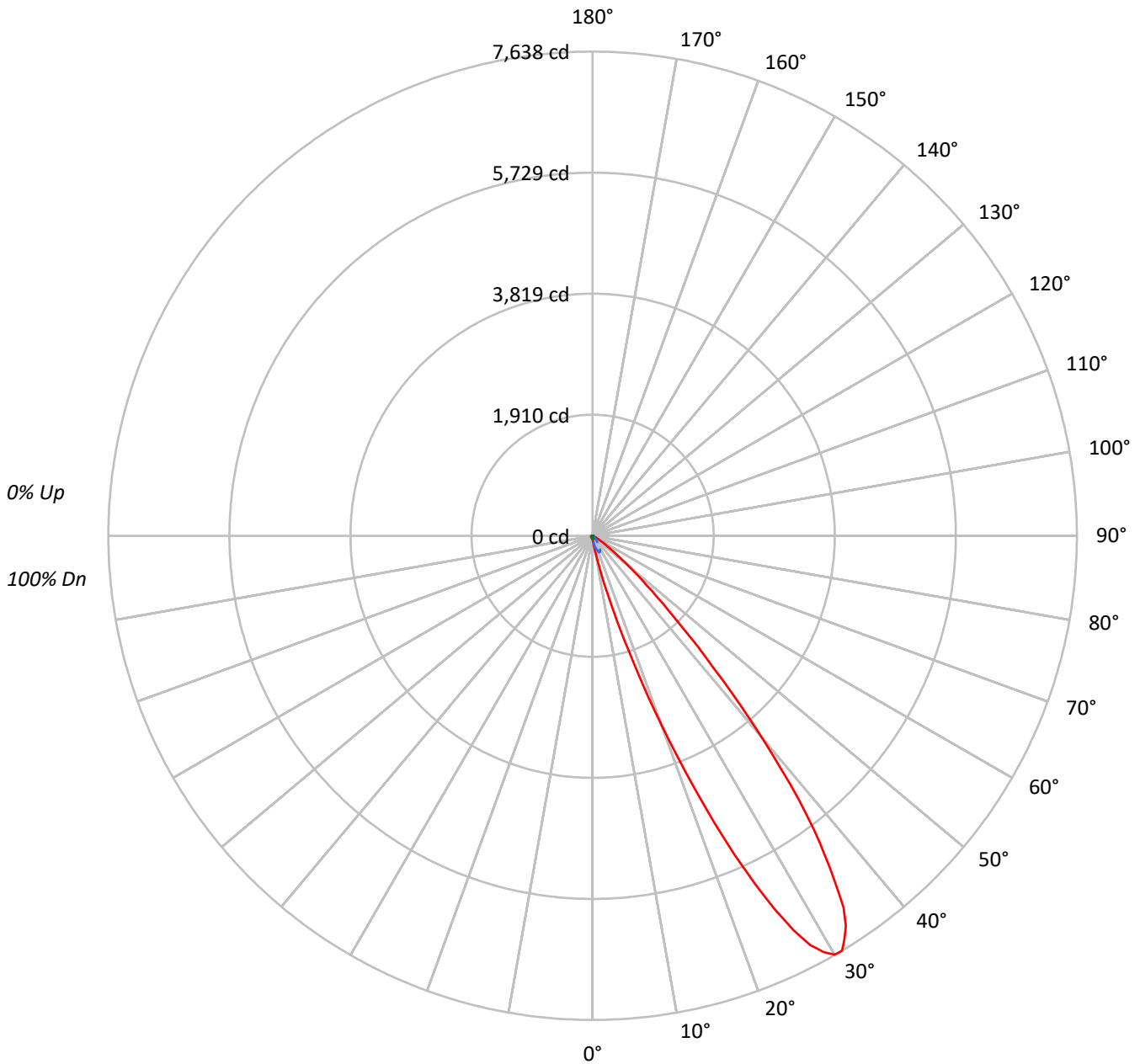
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

### Luminous Intensity Polar Plot





TEST NUMBER: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

**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	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°	23435	23435	23435
5°	52298	24168	18869
10°	139972	15079	5360
15°	551014	19460	12616
20°	1666953	11918	9818
25°	3298794	10180	8710
30°	4346697	6096	10653
35°	4010847	8854	12889
40°	2671599	7728	17647
45°	1260150	2791	7466
50°	555618	10285	23103
55°	225961	0	23568
60°	93640	6611	21116
65°	31987	7822	15643
70°	26975	15435	39524
75°	15250	22874	52230
80°	0	11365	22729
85°	15284	15284	75853



TEST NUMBER: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	6.5	0.6
10°-20°	68.2	6.1
20°-30°	350.6	31.5
30°-40°	448.9	40.3
40°-50°	172.6	15.5
50°-60°	35.1	3.1
60°-70°	11.9	1.1
70°-80°	13.8	1.2
80°-90°	7.1	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°	425.2	38.1
0°-40°	874.1	78.4
0°-60°	1081.8	97.1
0°-90°	1114.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1114.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	48	48	48	48	48	
5°	106	87	49	35	38	16
15°	1079	210	38	23	25	414
25°	6060	274	19	15	16	2766
35°	6659	142	15	12	21	3980
45°	1806	35	4	3	11	1552
55°	263	7	0	5	27	272
65°	27	9	7	9	13	38
75°	8	15	12	20	27	11
85°	3	9	3	11	13	1
90°	0	0	0	0	0	



TEST NUMBER: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
2.5°	70.2	60.8	63.5	54.1	59.5	60.8	50.1	66.2	59.5	62.2	54.1
5°	105.6	113.6	104.3	100.3	97.6	100.3	97.6	101.6	98.9	86.9	62.2
7.5°	176.5	161.1	161.1	155.7	159.8	158.4	151.7	155.7	146.4	105.6	71.5
10°	279.4	264.0	262.7	258.7	257.3	245.3	238.6	233.3	213.9	125.0	64.8
12.5°	547.4	534.1	524.7	501.3	485.3	475.9	440.5	421.8	366.3	185.8	82.9
15°	1078.8	1010.0	1027.4	951.8	896.3	859.6	786.1	721.2	588.2	209.9	80.2
17.5°	1909.0	1842.2	1797.4	1715.2	1602.2	1504.6	1359.6	1215.8	945.1	238.6	74.9
20°	3175.0	3069.4	2975.8	2834.7	2617.5	2429.7	2174.4	1899.6	1407.0	272.7	67.5
21°	3731.1	3649.5	3541.3	3355.4	3102.1	2850.8	2544.7	2213.8	1603.5	275.4	60.8
22°	4311.3	4258.5	4116.1	3902.9	3607.4	3308.0	2932.3	2568.7	1812.7	279.4	58.2
23°	4915.5	4860.0	4699.0	4455.0	4122.8	3760.5	3322.7	2891.6	2009.3	284.7	56.8
24°	5507.1	5445.6	5265.8	4993.1	4616.1	4199.7	3705.0	3205.1	2192.4	282.1	59.5
25°	6059.9	5974.3	5784.5	5482.3	5068.6	4601.4	4055.9	3475.8	2353.5	274.1	50.1
26°	6553.1	6455.6	6251.0	5921.5	5469.0	4963.0	4348.7	3727.1	2472.5	267.4	47.5
27°	6981.6	6858.6	6640.0	6294.5	5809.2	5250.4	4598.7	3923.6	2577.4	257.3	38.1
28°	7315.1	7174.1	6952.2	6587.2	6074.6	5474.3	4782.5	4046.6	2639.6	258.7	43.4
29°	7507.6	7399.4	7158.1	6775.7	6236.3	5603.3	4879.4	4114.8	2651.6	238.6	40.8
30°	7630.0	7509.0	7261.0	6861.3	6298.5	5632.7	4891.5	4102.1	2616.2	223.9	38.1
31°	7638.0	7511.7	7259.7	6845.9	6274.4	5583.9	4824.6	4026.5	2539.3	208.5	31.4
32°	7494.3	7396.7	7148.7	6721.6	6144.1	5449.6	4680.9	3898.9	2418.3	177.8	21.4
33°	7331.8	7213.5	6966.9	6535.8	5963.6	5265.8	4473.7	3727.1	2292.7	175.1	27.4
34°	7079.2	6936.8	6694.2	6269.7	5712.9	5003.8	4227.1	3497.8	2132.2	159.8	26.1
35°	6659.4	6583.2	6337.9	5918.8	5378.1	4689.6	3930.3	3245.8	1961.8	142.4	18.7
36°	6239.0	6145.4	5913.5	5508.4	4995.7	4315.3	3595.4	2958.4	1769.3	121.0	14.7
37°	5794.5	5672.2	5461.0	5064.6	4529.2	3942.3	3273.9	2684.4	1612.2	127.7	20.1
38°	5276.5	5235.7	4957.6	4588.7	4094.0	3539.9	2928.3	2395.6	1438.4	119.0	32.8
39°	4707.0	4679.6	4402.2	4066.0	3622.1	3112.8	2574.7	2096.2	1264.6	86.9	10.7
40°	4148.2	4070.0	3873.5	3568.0	3181.7	2723.8	2258.6	1840.8	1114.2	85.6	21.4
42.5°	2811.4	2836.1	2623.5	2405.0	2157.0	1846.2	1536.0	1262.0	779.4	63.5	13.4
45°	1806.1	1811.4	1716.5	1546.7	1384.3	1190.4	985.9	821.5	502.6	35.4	4.0
47.5°	1149.7	1147.0	1086.2	988.6	882.3	768.7	641.0	536.7	325.5	27.4	12.0
50°	723.9	721.2	683.1	621.0	561.5	486.6	406.4	345.6	205.9	32.8	13.4
51°	588.2	592.2	560.1	497.3	451.2	379.7	324.2	275.4	161.1	22.7	12.0
52°	485.3	482.6	462.5	409.7	371.6	310.1	264.0	225.3	134.4	20.1	5.3
53°	390.4	391.7	371.6	330.9	294.1	248.0	211.2	175.1	96.3	14.7	4.0
54°	308.8	306.1	299.5	260.0	237.3	196.5	165.1	134.4	82.9	2.7	0.0
55°	262.7	258.7	249.3	215.2	192.5	162.4	131.7	115.0	71.5	6.7	0.0
57.5°	151.7	151.7	146.4	127.7	112.3	100.3	80.2	74.9	36.8	6.7	0.0
60°	94.9	82.9	92.2	78.9	62.2	55.5	46.1	42.1	31.4	12.0	2.7
61°	78.9	63.5	62.2	58.2	54.1	36.8	31.4	34.1	20.1	4.0	2.7
62°	56.8	50.1	54.1	46.1	40.8	28.7	26.1	24.7	12.0	5.3	6.7
63°	51.5	46.1	44.8	34.1	30.1	30.1	22.7	21.4	14.7	10.7	5.3



TEST NUMBER: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

**CANDELA DISTRIBUTION (continued):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
66°	27.4	22.7	20.1	22.7	13.4	17.4	6.7	18.7	4.0	6.7	4.0
67.5°	21.4	13.4	12.0	14.7	9.4	6.7	9.4	12.0	4.0	6.7	9.4
70°	18.7	9.4	13.4	12.0	9.4	12.0	13.4	13.4	4.0	13.4	12.0
72.5°	18.7	12.0	6.7	5.3	5.3	5.3	5.3	5.3	8.0	18.7	14.7
75°	8.0	8.0	4.0	9.4	5.3	8.0	5.3	13.4	5.3	14.7	12.0
77.5°	5.3	6.7	0.0	6.7	0.0	0.0	4.0	9.4	4.0	10.7	13.4
80°	0.0	6.7	4.0	0.0	2.7	4.0	0.0	1.3	2.7	12.0	5.3
82.5°	2.7	4.0	5.3	2.7	2.7	0.0	0.0	0.0	0.0	8.0	6.7
85°	2.7	5.3	0.0	1.3	5.3	2.7	1.3	6.7	2.7	9.4	10.7
87.5°	0.0	2.7	2.7	0.0	4.0	0.0	4.0	2.7	0.0	8.0	4.0
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: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
0°	47.5	47.5	47.5	47.5	47.5
2.5°	40.8	36.8	31.4	39.4	32.8
5°	48.8	44.8	35.4	42.1	38.1
7.5°	50.1	42.1	36.8	34.1	38.1
10°	30.1	20.1	14.7	20.1	10.7
12.5°	50.1	35.4	32.8	36.8	40.8
15°	38.1	22.7	22.7	17.4	24.7
17.5°	21.4	17.4	16.0	21.4	24.7
20°	22.7	14.7	12.0	20.1	18.7
21°	20.1	5.3	16.0	16.0	18.7
22°	28.7	13.4	16.0	26.1	27.4
23°	18.7	14.7	12.0	16.0	21.4
24°	27.4	16.0	14.7	20.1	30.1
25°	18.7	14.7	14.7	18.7	16.0
26°	10.7	14.7	10.7	16.0	13.4
27°	8.0	13.4	8.0	12.0	16.0
28°	17.4	21.4	20.1	21.4	18.7
29°	18.7	22.7	18.7	28.7	21.4
30°	10.7	20.1	9.4	21.4	18.7
31°	10.7	14.7	6.7	21.4	18.7
32°	1.3	8.0	4.0	8.0	8.0
33°	8.0	9.4	10.7	17.4	13.4
34°	13.4	16.0	10.7	18.7	16.0
35°	14.7	8.0	12.0	20.1	21.4
36°	4.0	4.0	6.7	16.0	5.3
37°	8.0	22.7	16.0	27.4	16.0
38°	13.4	27.4	26.1	34.1	27.4
39°	2.7	8.0	9.4	18.7	18.7
40°	12.0	20.1	14.7	27.4	27.4
42.5°	9.4	14.7	10.7	22.7	18.7
45°	4.0	4.0	2.7	14.7	10.7
47.5°	6.7	6.7	12.0	18.7	32.8
50°	13.4	13.4	17.4	31.4	30.1
51°	8.0	6.7	9.4	21.4	27.4
52°	6.7	9.4	9.4	21.4	21.4
53°	2.7	0.0	0.0	16.0	13.4
54°	2.7	1.3	4.0	12.0	18.7
55°	0.0	6.7	5.3	24.7	27.4
57.5°	1.3	10.7	5.3	17.4	21.4
60°	6.7	8.0	14.7	17.4	21.4
61°	0.0	6.7	6.7	16.0	18.7
62°	0.0	5.3	12.0	14.7	18.7
63°	6.7	8.0	10.7	17.4	21.4





TEST NUMBER: P315525

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MW

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
66°	4.0	10.7	13.4	17.4	16.0
67.5°	8.0	9.4	8.0	22.7	27.4
70°	10.7	17.4	18.7	16.0	27.4
72.5°	6.7	9.4	13.4	24.7	27.4
75°	12.0	13.4	20.1	22.7	27.4
77.5°	9.4	13.4	13.4	14.7	27.4
80°	4.0	12.0	13.4	14.7	8.0
82.5°	5.3	8.0	5.3	14.7	10.7
85°	2.7	12.0	10.7	13.4	13.4
87.5°	4.0	6.7	6.7	12.0	8.0
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	30.1	31.4	30.1	21.4	16.0	14.7	10.7	18.7	5.3	5.3	0.0
65°	27.4	30.1	22.7	26.1	17.4	16.0	9.4	18.7	2.7	9.4	6.7







64°	4.0	6.7	6.7	12.0	18.7
65°	6.7	9.4	9.4	17.4	13.4



(END OF REPORT)