

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: P315481

Luminaire Tested: **LDA2B20FL8040D010 PIN1MB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315481
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: LDA2B20FL8040D010 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: 1686.2 lumens
Efficiency: N/A
Efficacy: 81.9 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

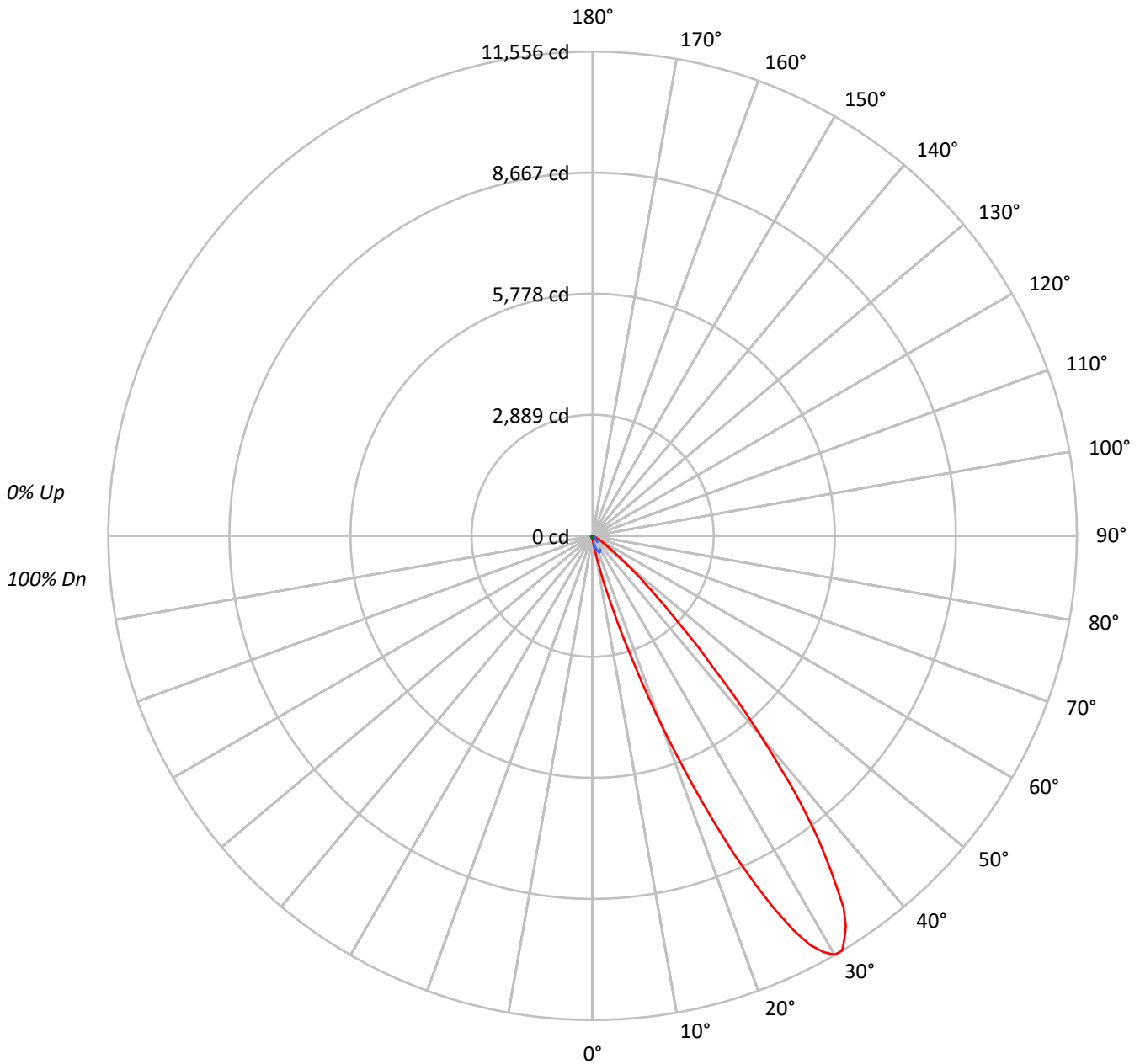
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

Luminous Intensity Polar Plot





TEST NUMBER: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

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°	35423	35423	35423
5°	79140	36549	28526
10°	211761	22794	8116
15°	833672	29420	19103
20°	2521903	18061	14858
25°	4990734	15406	13228
30°	6576103	9229	16122
35°	6068067	13371	19514
40°	4041854	11721	26728
45°	1906447	4256	11303
50°	840604	15504	34923
55°	341824	0	35696
60°	141694	9966	31970
65°	48447	11791	23581
70°	40823	23368	59863
75°	23065	34693	79107
80°	0	17331	34378
85°	22643	22643	114346



TEST NUMBER: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	9.8	0.6
10°-20°	103.2	6.1
20°-30°	530.4	31.5
30°-40°	679.1	40.3
40°-50°	261.1	15.5
50°-60°	53.1	3.1
60°-70°	18.0	1.1
70°-80°	20.9	1.2
80°-90°	10.7	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°	643.3	38.1
0°-40°	1322.4	78.4
0°-60°	1636.6	97.1
0°-90°	1686.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1686.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	72	72	72	72	72	
5°	160	132	74	54	58	24
15°	1632	318	58	34	37	626
25°	9168	415	28	22	24	4185
35°	10075	215	22	18	32	6022
45°	2732	54	6	4	16	2349
55°	397	10	0	8	42	412
65°	42	14	10	14	20	58
75°	12	22	18	30	42	16
85°	4	14	4	16	20	2
90°	0	0	0	0	0	



TEST NUMBER: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8
2.5°	106.2	92.0	96.1	81.9	90.0	92.0	75.8	100.1	90.0	94.0	81.9
5°	159.8	171.9	157.8	151.7	147.6	151.7	147.6	153.7	149.7	131.5	94.0
7.5°	267.0	243.7	243.7	235.6	241.7	239.7	229.6	235.6	221.5	159.8	108.2
10°	422.7	399.4	397.4	391.4	389.3	371.1	361.0	352.9	323.6	189.1	98.1
12.5°	828.2	808.0	793.8	758.4	734.2	720.0	666.4	638.1	554.2	281.1	125.4
15°	1632.2	1528.0	1554.3	1440.0	1356.1	1300.5	1189.2	1091.1	889.9	317.5	121.4
17.5°	2888.1	2787.0	2719.3	2594.9	2424.0	2276.3	2056.9	1839.5	1429.9	361.0	113.3
20°	4803.4	4643.7	4502.1	4288.7	3960.1	3675.9	3289.6	2874.0	2128.7	412.6	102.1
21°	5644.8	5521.4	5357.6	5076.5	4693.2	4313.0	3849.8	3349.3	2426.0	416.6	92.0
22°	6522.6	6442.7	6227.3	5904.7	5457.7	5004.7	4436.4	3886.2	2742.5	422.7	88.0
23°	7436.7	7352.8	7109.1	6740.0	6237.4	5689.3	5026.9	4374.7	3039.8	430.8	86.0
24°	8331.7	8238.7	7966.6	7554.0	6983.7	6353.7	5605.4	4848.9	3316.9	426.7	90.0
25°	9168.0	9038.6	8751.4	8294.3	7668.3	6961.4	6136.3	5258.5	3560.6	414.6	75.8
26°	9914.3	9766.7	9457.2	8958.7	8274.0	7508.5	6579.2	5638.7	3740.6	404.5	71.8
27°	10562.5	10376.4	10045.8	9522.9	8788.8	7943.4	6957.4	5936.0	3899.4	389.3	57.6
28°	11067.1	10853.7	10518.0	9965.9	9190.2	8282.1	7235.5	6122.1	3993.4	391.4	65.7
29°	11358.4	11194.5	10829.5	10251.0	9435.0	8477.3	7382.1	6225.3	4011.6	361.0	61.7
30°	11543.4	11360.4	10985.2	10380.5	9529.0	8521.8	7400.3	6206.0	3958.0	338.8	57.6
31°	11555.6	11364.4	10983.2	10357.2	9492.6	8448.0	7299.2	6091.8	3841.7	315.5	47.5
32°	11338.1	11190.5	10815.3	10169.1	9295.4	8244.7	7081.8	5898.6	3658.7	269.0	32.4
33°	11092.4	10913.4	10540.3	9888.0	9022.4	7966.6	6768.3	5638.7	3468.6	264.9	41.5
34°	10710.2	10494.8	10127.7	9485.5	8643.2	7570.2	6395.1	5291.9	3225.9	241.7	39.4
35°	10075.1	9959.8	9588.7	8954.6	8136.5	7094.9	5946.2	4910.6	2968.0	215.4	28.3
36°	9439.0	9297.4	8946.5	8333.7	7558.1	6528.6	5439.5	4475.8	2676.8	183.0	22.2
37°	8766.5	8581.5	8261.9	7662.2	6852.2	5964.4	4953.1	4061.2	2439.1	193.1	30.3
38°	7982.8	7921.1	7500.4	6942.2	6193.9	5355.6	4430.3	3624.3	2176.2	180.0	49.6
39°	7121.2	7079.8	6660.1	6151.4	5480.0	4709.4	3895.3	3171.3	1913.3	131.5	16.2
40°	6275.8	6157.5	5860.2	5398.1	4813.6	4120.8	3417.0	2785.0	1685.8	129.4	32.4
42.5°	4253.3	4290.7	3969.2	3638.5	3263.3	2793.1	2323.9	1909.2	1179.1	96.1	20.2
45°	2732.4	2740.5	2596.9	2340.0	2094.3	1801.0	1491.6	1242.8	760.5	53.6	6.1
47.5°	1739.4	1735.3	1643.3	1495.6	1334.9	1162.9	969.8	812.0	492.5	41.5	18.2
50°	1095.2	1091.1	1033.5	939.5	849.5	736.2	614.8	522.8	311.5	49.6	20.2
51°	889.9	896.0	847.4	752.4	682.6	574.4	490.5	416.6	243.7	34.4	18.2
52°	734.2	730.1	699.8	619.9	562.3	469.2	399.4	340.8	203.3	30.3	8.1
53°	590.6	592.6	562.3	500.6	445.0	375.2	319.6	264.9	145.6	22.2	6.1
54°	467.2	463.2	453.0	393.4	359.0	297.3	249.8	203.3	125.4	4.0	0.0
55°	397.4	391.4	377.2	325.6	291.2	245.7	199.2	173.9	108.2	10.1	0.0
57.5°	229.6	229.6	221.5	193.1	169.9	151.7	121.4	113.3	55.6	10.1	0.0
60°	143.6	125.4	139.6	119.3	94.0	83.9	69.8	63.7	47.5	18.2	4.0
61°	119.3	96.1	94.0	88.0	81.9	55.6	47.5	51.6	30.3	6.1	4.0
62°	86.0	75.8	81.9	69.8	61.7	43.5	39.4	37.4	18.2	8.1	10.1
63°	77.9	69.8	67.8	51.6	45.5	45.5	34.4	32.4	22.2	16.2	8.1



TEST NUMBER: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
66°	41.5	34.4	30.3	34.4	20.2	26.3	10.1	28.3	6.1	10.1	6.1
67.5°	32.4	20.2	18.2	22.2	14.2	10.1	14.2	18.2	6.1	10.1	14.2
70°	28.3	14.2	20.2	18.2	14.2	18.2	20.2	20.2	6.1	20.2	18.2
72.5°	28.3	18.2	10.1	8.1	8.1	8.1	8.1	8.1	12.1	28.3	22.2
75°	12.1	12.1	6.1	14.2	8.1	12.1	8.1	20.2	8.1	22.2	18.2
77.5°	8.1	10.1	0.0	10.1	0.0	0.0	6.1	14.2	6.1	16.2	20.2
80°	0.0	10.1	6.1	0.0	4.0	6.1	0.0	2.0	4.0	18.2	8.1
82.5°	4.0	6.1	8.1	4.0	4.0	0.0	0.0	0.0	0.0	12.1	10.1
85°	4.0	8.1	0.0	2.0	8.1	4.0	2.0	10.1	4.0	14.2	16.2
87.5°	0.0	4.0	4.0	0.0	6.1	0.0	6.1	4.0	0.0	12.1	6.1
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: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	71.8	71.8	71.8	71.8	71.8
2.5°	61.7	55.6	47.5	59.7	49.6
5°	73.8	67.8	53.6	63.7	57.6
7.5°	75.8	63.7	55.6	51.6	57.6
10°	45.5	30.3	22.2	30.3	16.2
12.5°	75.8	53.6	49.6	55.6	61.7
15°	57.6	34.4	34.4	26.3	37.4
17.5°	32.4	26.3	24.3	32.4	37.4
20°	34.4	22.2	18.2	30.3	28.3
21°	30.3	8.1	24.3	24.3	28.3
22°	43.5	20.2	24.3	39.4	41.5
23°	28.3	22.2	18.2	24.3	32.4
24°	41.5	24.3	22.2	30.3	45.5
25°	28.3	22.2	22.2	28.3	24.3
26°	16.2	22.2	16.2	24.3	20.2
27°	12.1	20.2	12.1	18.2	24.3
28°	26.3	32.4	30.3	32.4	28.3
29°	28.3	34.4	28.3	43.5	32.4
30°	16.2	30.3	14.2	32.4	28.3
31°	16.2	22.2	10.1	32.4	28.3
32°	2.0	12.1	6.1	12.1	12.1
33°	12.1	14.2	16.2	26.3	20.2
34°	20.2	24.3	16.2	28.3	24.3
35°	22.2	12.1	18.2	30.3	32.4
36°	6.1	6.1	10.1	24.3	8.1
37°	12.1	34.4	24.3	41.5	24.3
38°	20.2	41.5	39.4	51.6	41.5
39°	4.0	12.1	14.2	28.3	28.3
40°	18.2	30.3	22.2	41.5	41.5
42.5°	14.2	22.2	16.2	34.4	28.3
45°	6.1	6.1	4.0	22.2	16.2
47.5°	10.1	10.1	18.2	28.3	49.6
50°	20.2	20.2	26.3	47.5	45.5
51°	12.1	10.1	14.2	32.4	41.5
52°	10.1	14.2	14.2	32.4	32.4
53°	4.0	0.0	0.0	24.3	20.2
54°	4.0	2.0	6.1	18.2	28.3
55°	0.0	10.1	8.1	37.4	41.5
57.5°	2.0	16.2	8.1	26.3	32.4
60°	10.1	12.1	22.2	26.3	32.4
61°	0.0	10.1	10.1	24.3	28.3
62°	0.0	8.1	18.2	22.2	28.3
63°	10.1	12.1	16.2	26.3	32.4



TEST NUMBER: P315481

CATALOG NUMBER: LDA2B20FL8040D010 PIN1MB

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
66°	6.1	16.2	20.2	26.3	24.3
67.5°	12.1	14.2	12.1	34.4	41.5
70°	16.2	26.3	28.3	24.3	41.5
72.5°	10.1	14.2	20.2	37.4	41.5
75°	18.2	20.2	30.3	34.4	41.5
77.5°	14.2	20.2	20.2	22.2	41.5
80°	6.1	18.2	20.2	22.2	12.1
82.5°	8.1	12.1	8.1	22.2	16.2
85°	4.0	18.2	16.2	20.2	20.2
87.5°	6.1	10.1	10.1	18.2	12.1
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	45.5	47.5	45.5	32.4	24.3	22.2	16.2	28.3	8.1	8.1	0.0
65°	41.5	45.5	34.4	39.4	26.3	24.3	14.2	28.3	4.0	14.2	10.1





64°	6.1	10.1	10.1	18.2	28.3
65°	10.1	14.2	14.2	26.3	20.2



(END OF REPORT)