

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: P315521

Luminaire Tested: **LDA2B20FL9050D010 PIN1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315521
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: LDA2B20FL9050D010 PIN1MMS
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, Black oculus, matte metallic silver finish
Light Source: -
Ballast/Driver: -

Summary

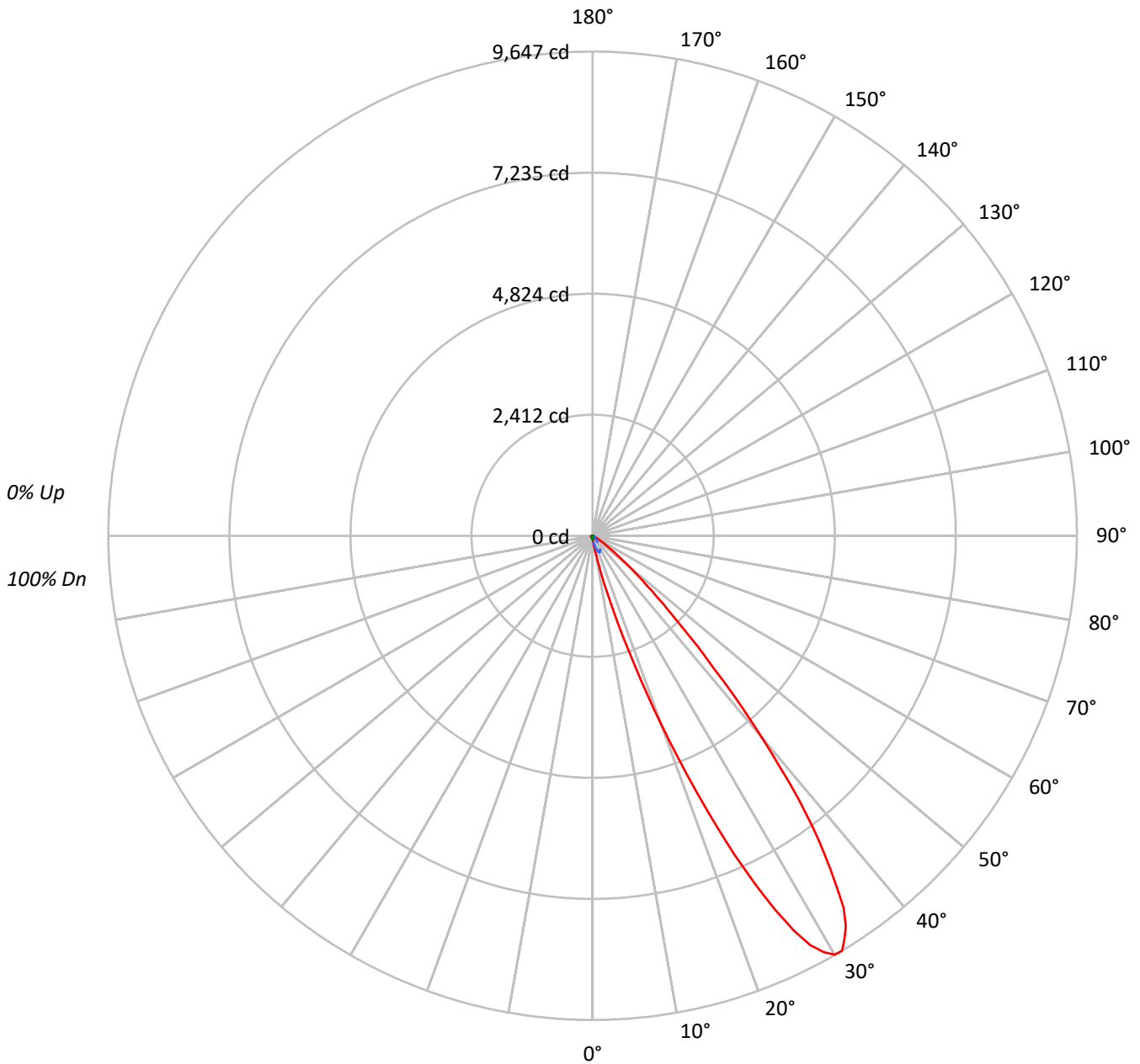
Lumens per Lamp: N/A
Luminaire Lumens: 1407.7 lumens
Efficiency: N/A
Efficacy: 68.3 lumens/watt
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

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°	29552	29552	29552
5°	66066	30507	23821
10°	176793	19037	6763
15°	695918	24568	15936
20°	2105296	15068	12391
25°	4166294	12847	11051
30°	5489771	7691	13445
35°	5065626	11202	16262
40°	3374180	9789	22284
45°	1591497	3558	9419
50°	701757	12971	29166
55°	285398	0	29761
60°	118308	8288	26642
65°	40392	9806	19729
70°	34043	19474	49910
75°	19253	28974	65955
80°	0	14490	28696
85°	19246	19246	95666



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	8.2	0.6
10°-20°	86.1	6.1
20°-30°	442.7	31.5
30°-40°	566.9	40.3
40°-50°	218.0	15.5
50°-60°	44.3	3.1
60°-70°	15.0	1.1
70°-80°	17.5	1.2
80°-90°	8.9	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°	537.0	38.1
0°-40°	1104.0	78.4
0°-60°	1366.3	97.1
0°-90°	1407.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1407.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	60	60	60	60	60	
5°	133	110	62	45	48	20
15°	1362	265	48	29	31	522
25°	7654	346	24	19	20	3493
35°	8411	180	19	15	27	5027
45°	2281	45	5	3	14	1961
55°	332	8	0	7	35	344
65°	35	12	8	12	17	49
75°	10	19	15	25	35	14
85°	3	12	3	14	17	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°	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
2.5°	88.6	76.8	80.2	68.4	75.1	76.8	63.3	83.6	75.1	78.5	68.4
5°	133.4	143.5	131.7	126.6	123.3	126.6	123.3	128.3	124.9	109.7	78.5
7.5°	222.9	203.5	203.5	196.7	201.8	200.1	191.6	196.7	184.9	133.4	90.3
10°	352.9	333.5	331.8	326.7	325.0	309.8	301.4	294.6	270.1	157.9	81.9
12.5°	691.4	674.5	662.7	633.1	612.9	601.1	556.3	532.7	462.6	234.7	104.7
15°	1362.5	1275.6	1297.5	1202.1	1132.1	1085.6	992.8	910.9	742.9	265.1	101.3
17.5°	2411.0	2326.6	2270.0	2166.2	2023.5	1900.3	1717.1	1535.6	1193.7	301.4	94.6
20°	4009.9	3876.6	3758.4	3580.2	3305.9	3068.7	2746.2	2399.2	1777.0	344.4	85.3
21°	4712.3	4609.3	4472.6	4237.9	3917.9	3600.5	3213.9	2796.0	2025.2	347.8	76.8
22°	5445.1	5378.4	5198.6	4929.3	4556.1	4177.9	3703.5	3244.3	2289.5	352.9	73.4
23°	6208.2	6138.2	5934.7	5626.6	5207.0	4749.5	4196.5	3652.0	2537.7	359.6	71.8
24°	6955.4	6877.7	6650.6	6306.2	5830.0	5304.1	4679.4	4047.9	2769.0	356.3	75.1
25°	7653.5	7545.4	7305.7	6924.1	6401.6	5811.5	5122.6	4389.8	2972.4	346.1	63.3
26°	8276.5	8153.3	7894.9	7478.8	6907.2	6268.2	5492.4	4707.3	3122.7	337.7	59.9
27°	8817.7	8662.3	8386.3	7949.8	7336.9	6631.2	5808.1	4955.4	3255.2	325.0	48.1
28°	9238.9	9060.8	8780.5	8319.6	7672.1	6914.0	6040.2	5110.8	3333.7	326.7	54.9
29°	9482.0	9345.3	9040.5	8557.6	7876.4	7076.9	6162.6	5196.9	3348.9	301.4	51.5
30°	9636.5	9483.7	9170.5	8665.7	7954.9	7114.1	6177.8	5180.8	3304.2	282.8	48.1
31°	9646.7	9487.1	9168.8	8646.3	7924.5	7052.4	6093.4	5085.5	3207.1	263.4	39.7
32°	9465.2	9341.9	9028.7	8489.3	7759.9	6882.7	5911.9	4924.2	3054.3	224.6	27.0
33°	9260.0	9110.6	8799.1	8254.6	7531.9	6650.6	5650.2	4707.3	2895.6	221.2	34.6
34°	8940.9	8761.1	8454.6	7918.6	7215.4	6319.7	5338.7	4417.7	2693.0	201.8	32.9
35°	8410.7	8314.5	8004.7	7475.4	6792.4	5922.9	4963.9	4099.4	2477.7	179.8	23.6
36°	7879.7	7761.6	7468.6	6957.0	6309.5	5450.1	4540.9	3736.4	2234.6	152.8	18.6
37°	7318.4	7163.9	6897.1	6396.5	5720.3	4979.1	4134.9	3390.3	2036.2	161.2	25.3
38°	6664.1	6612.6	6261.4	5795.4	5170.7	4470.9	3698.4	3025.6	1816.7	150.3	41.4
39°	5944.8	5910.2	5559.9	5135.3	4574.7	3931.4	3251.9	2647.4	1597.2	109.7	13.5
40°	5239.1	5140.3	4892.1	4506.3	4018.4	3440.1	2852.5	2324.9	1407.3	108.1	27.0
42.5°	3550.7	3581.9	3313.5	3037.4	2724.2	2331.7	1940.0	1593.8	984.3	80.2	16.9
45°	2281.0	2287.8	2167.9	1953.5	1748.3	1503.5	1245.2	1037.5	634.8	44.7	5.1
47.5°	1452.0	1448.6	1371.8	1248.6	1114.3	970.8	809.6	677.9	411.1	34.6	15.2
50°	914.3	910.9	862.8	784.3	709.1	614.6	513.3	436.5	260.0	41.4	16.9
51°	742.9	748.0	707.4	628.1	569.8	479.5	409.4	347.8	203.5	28.7	15.2
52°	612.9	609.5	584.2	517.5	469.4	391.7	333.5	284.5	169.7	25.3	6.8
53°	493.0	494.7	469.4	417.9	371.4	313.2	266.8	221.2	121.6	18.6	5.1
54°	390.0	386.6	378.2	328.4	299.7	248.2	208.5	169.7	104.7	3.4	0.0
55°	331.8	326.7	314.9	271.8	243.1	205.1	166.3	145.2	90.3	8.4	0.0
57.5°	191.6	191.6	184.9	161.2	141.8	126.6	101.3	94.6	46.4	8.4	0.0
60°	119.9	104.7	116.5	99.6	78.5	70.1	58.2	53.2	39.7	15.2	3.4
61°	99.6	80.2	78.5	73.4	68.4	46.4	39.7	43.1	25.3	5.1	3.4
62°	71.8	63.3	68.4	58.2	51.5	36.3	32.9	31.2	15.2	6.8	8.4
63°	65.0	58.2	56.6	43.1	38.0	38.0	28.7	27.0	18.6	13.5	6.8



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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°	34.6	28.7	25.3	28.7	16.9	21.9	8.4	23.6	5.1	8.4	5.1
67.5°	27.0	16.9	15.2	18.6	11.8	8.4	11.8	15.2	5.1	8.4	11.8
70°	23.6	11.8	16.9	15.2	11.8	15.2	16.9	16.9	5.1	16.9	15.2
72.5°	23.6	15.2	8.4	6.8	6.8	6.8	6.8	6.8	10.1	23.6	18.6
75°	10.1	10.1	5.1	11.8	6.8	10.1	6.8	16.9	6.8	18.6	15.2
77.5°	6.8	8.4	0.0	8.4	0.0	0.0	5.1	11.8	5.1	13.5	16.9
80°	0.0	8.4	5.1	0.0	3.4	5.1	0.0	1.7	3.4	15.2	6.8
82.5°	3.4	5.1	6.8	3.4	3.4	0.0	0.0	0.0	0.0	10.1	8.4
85°	3.4	6.8	0.0	1.7	6.8	3.4	1.7	8.4	3.4	11.8	13.5
87.5°	0.0	3.4	3.4	0.0	5.1	0.0	5.1	3.4	0.0	10.1	5.1
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°	59.9	59.9	59.9	59.9	59.9
2.5°	51.5	46.4	39.7	49.8	41.4
5°	61.6	56.6	44.7	53.2	48.1
7.5°	63.3	53.2	46.4	43.1	48.1
10°	38.0	25.3	18.6	25.3	13.5
12.5°	63.3	44.7	41.4	46.4	51.5
15°	48.1	28.7	28.7	21.9	31.2
17.5°	27.0	21.9	20.3	27.0	31.2
20°	28.7	18.6	15.2	25.3	23.6
21°	25.3	6.8	20.3	20.3	23.6
22°	36.3	16.9	20.3	32.9	34.6
23°	23.6	18.6	15.2	20.3	27.0
24°	34.6	20.3	18.6	25.3	38.0
25°	23.6	18.6	18.6	23.6	20.3
26°	13.5	18.6	13.5	20.3	16.9
27°	10.1	16.9	10.1	15.2	20.3
28°	21.9	27.0	25.3	27.0	23.6
29°	23.6	28.7	23.6	36.3	27.0
30°	13.5	25.3	11.8	27.0	23.6
31°	13.5	18.6	8.4	27.0	23.6
32°	1.7	10.1	5.1	10.1	10.1
33°	10.1	11.8	13.5	21.9	16.9
34°	16.9	20.3	13.5	23.6	20.3
35°	18.6	10.1	15.2	25.3	27.0
36°	5.1	5.1	8.4	20.3	6.8
37°	10.1	28.7	20.3	34.6	20.3
38°	16.9	34.6	32.9	43.1	34.6
39°	3.4	10.1	11.8	23.6	23.6
40°	15.2	25.3	18.6	34.6	34.6
42.5°	11.8	18.6	13.5	28.7	23.6
45°	5.1	5.1	3.4	18.6	13.5
47.5°	8.4	8.4	15.2	23.6	41.4
50°	16.9	16.9	21.9	39.7	38.0
51°	10.1	8.4	11.8	27.0	34.6
52°	8.4	11.8	11.8	27.0	27.0
53°	3.4	0.0	0.0	20.3	16.9
54°	3.4	1.7	5.1	15.2	23.6
55°	0.0	8.4	6.8	31.2	34.6
57.5°	1.7	13.5	6.8	21.9	27.0
60°	8.4	10.1	18.6	21.9	27.0
61°	0.0	8.4	8.4	20.3	23.6
62°	0.0	6.8	15.2	18.6	23.6
63°	8.4	10.1	13.5	21.9	27.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
66°	5.1	13.5	16.9	21.9	20.3
67.5°	10.1	11.8	10.1	28.7	34.6
70°	13.5	21.9	23.6	20.3	34.6
72.5°	8.4	11.8	16.9	31.2	34.6
75°	15.2	16.9	25.3	28.7	34.6
77.5°	11.8	16.9	16.9	18.6	34.6
80°	5.1	15.2	16.9	18.6	10.1
82.5°	6.8	10.1	6.8	18.6	13.5
85°	3.4	15.2	13.5	16.9	16.9
87.5°	5.1	8.4	8.4	15.2	10.1
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	38.0	39.7	38.0	27.0	20.3	18.6	13.5	23.6	6.8	6.8	0.0
65°	34.6	38.0	28.7	32.9	21.9	20.3	11.8	23.6	3.4	11.8	8.4





64°	5.1	8.4	8.4	15.2	23.6
65°	8.4	11.8	11.8	21.9	16.9



(END OF REPORT)