

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: P315473

Luminaire Tested: **LDA2B20FL8035D010 PIN1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315473
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: LDA2B20FL8035D010 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

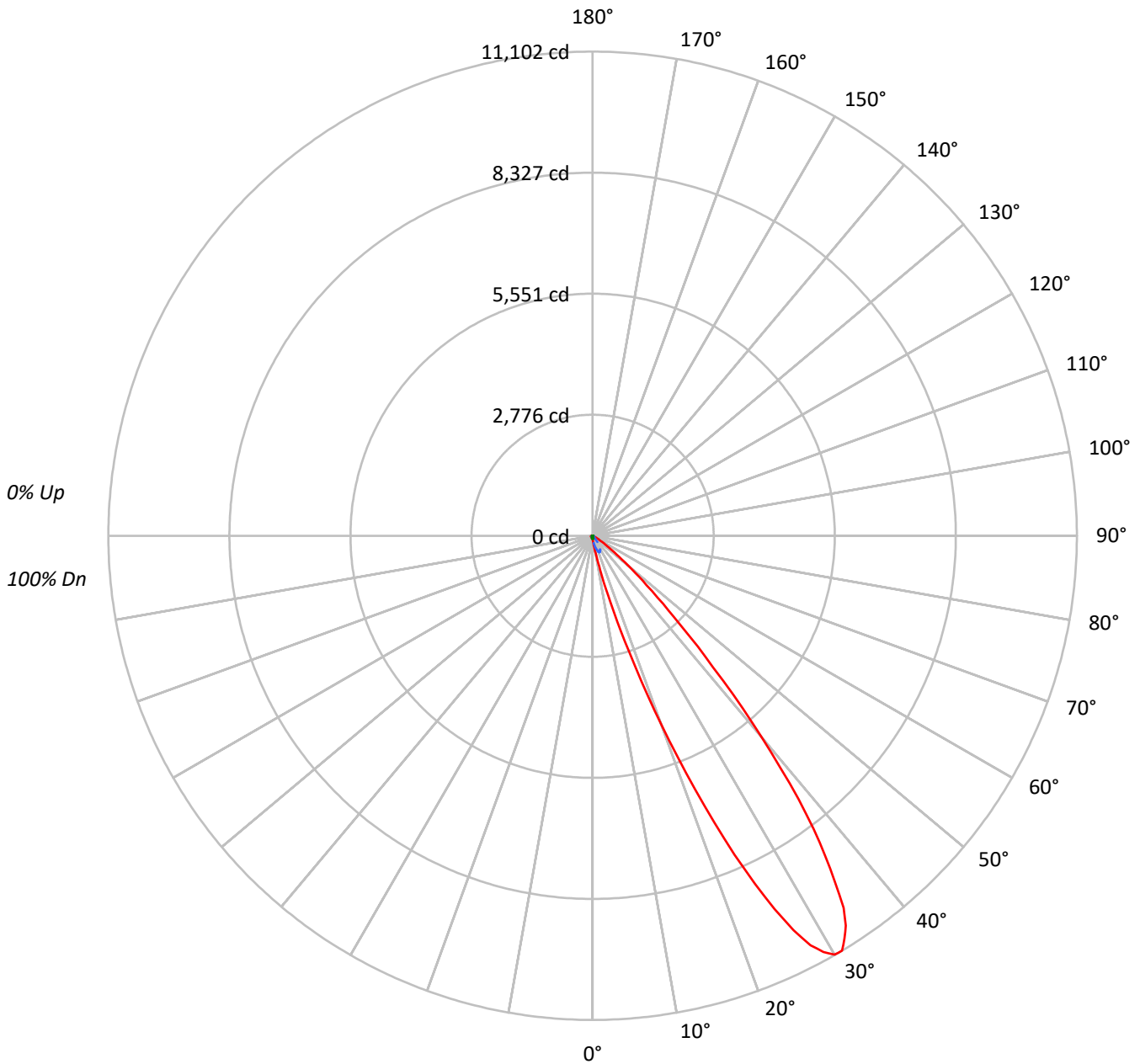
Lumens per Lamp: N/A
Luminaire Lumens: 1620.0 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

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°	34042	34042	34042
5°	76020	35113	27437
10°	203445	21893	7765
15°	800881	28296	18336
20°	2422831	17326	14281
25°	4794599	14807	12684
30°	6317694	8830	15495
35°	5829623	12889	18731
40°	3883034	11271	25633
45°	1831512	4047	10815
50°	807523	14890	33541
55°	328405	0	34234
60°	136168	9571	30687
65°	46462	11324	22647
70°	39236	22359	57411
75°	22303	33359	75867
80°	0	16479	33242
85°	22077	22077	109817



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	9.4	0.6
10°-20°	99.1	6.1
20°-30°	509.5	31.5
30°-40°	652.4	40.3
40°-50°	250.9	15.5
50°-60°	51.0	3.1
60°-70°	17.3	1.1
70°-80°	20.1	1.2
80°-90°	10.3	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°	618.0	38.1
0°-40°	1270.4	78.4
0°-60°	1572.3	97.1
0°-90°	1620.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1620.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	69	69	69	69	69	
5°	154	126	71	52	55	23
15°	1568	305	55	33	36	601
25°	8808	398	27	21	23	4020
35°	9679	207	21	18	31	5785
45°	2625	52	6	4	16	2256
55°	382	10	0	8	40	396
65°	40	14	10	14	19	56
75°	12	21	18	29	40	16
85°	4	14	4	16	19	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°	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0
2.5°	102.0	88.4	92.3	78.7	86.5	88.4	72.9	96.2	86.5	90.4	78.7
5°	153.5	165.2	151.6	145.7	141.8	145.7	141.8	147.7	143.8	126.3	90.4
7.5°	256.5	234.1	234.1	226.4	232.2	230.2	220.5	226.4	212.8	153.5	104.0
10°	406.1	383.7	381.8	376.0	374.0	356.5	346.8	339.1	310.9	181.7	94.2
12.5°	795.7	776.2	762.6	728.6	705.3	691.7	640.2	613.0	532.4	270.1	120.5
15°	1568.0	1468.0	1493.2	1383.4	1302.8	1249.4	1142.5	1048.3	854.9	305.1	116.6
17.5°	2774.6	2677.5	2612.4	2492.9	2328.7	2186.9	1976.1	1767.2	1373.7	346.8	108.8
20°	4614.7	4461.2	4325.2	4120.2	3804.4	3531.5	3160.3	2761.0	2045.0	396.4	98.1
21°	5423.0	5304.5	5147.1	4877.0	4508.8	4143.5	3698.6	3217.7	2330.7	400.3	88.4
22°	6266.3	6189.5	5982.6	5672.7	5243.3	4808.0	4262.0	3733.5	2634.7	406.1	84.5
23°	7144.5	7063.9	6829.7	6475.1	5992.3	5465.7	4829.4	4202.8	2920.4	413.9	82.6
24°	8004.3	7914.9	7653.6	7257.2	6709.3	6104.0	5385.1	4658.4	3186.6	410.0	86.5
25°	8807.7	8683.4	8407.5	7968.4	7367.0	6687.9	5895.1	5051.9	3420.7	398.3	72.9
26°	9524.7	9382.9	9085.6	8606.6	7948.9	7213.5	6320.7	5417.2	3593.6	388.6	69.0
27°	10147.5	9968.7	9651.0	9148.7	8443.4	7631.2	6684.0	5702.8	3746.2	374.0	55.4
28°	10632.3	10427.3	10104.7	9574.3	8829.1	7956.7	6951.2	5881.5	3836.5	376.0	63.1
29°	10912.0	10754.7	10403.9	9848.2	9064.2	8144.2	7092.1	5980.6	3854.0	346.8	59.3
30°	11089.8	10914.0	10553.6	9972.6	9154.6	8186.9	7109.5	5962.2	3802.5	325.5	55.4
31°	11101.5	10917.9	10551.6	9950.2	9119.6	8116.0	7012.4	5852.4	3690.8	303.1	45.7
32°	10892.6	10750.8	10390.3	9769.5	8930.2	7920.8	6803.5	5666.8	3514.9	258.4	31.1
33°	10656.5	10484.6	10126.1	9499.5	8667.8	7653.6	6502.3	5417.2	3332.3	254.5	39.8
34°	10289.3	10082.4	9729.7	9112.8	8303.5	7272.8	6143.9	5083.9	3099.1	232.2	37.9
35°	9679.2	9568.4	9211.9	8602.8	7816.8	6816.1	5712.5	4717.7	2851.4	206.9	27.2
36°	9068.1	8932.1	8595.0	8006.2	7261.1	6272.1	5225.8	4299.9	2571.6	175.8	21.4
37°	8422.1	8244.3	7937.3	7361.2	6583.0	5730.0	4758.5	3901.6	2343.3	185.6	29.1
38°	7669.1	7609.9	7205.7	6669.4	5950.5	5145.1	4256.2	3481.9	2090.7	172.9	47.6
39°	6841.4	6801.6	6398.4	5909.7	5264.6	4524.3	3742.3	3046.7	1838.1	126.3	15.5
40°	6029.2	5915.5	5629.9	5185.9	4624.4	3958.9	3282.7	2675.6	1619.5	124.4	31.1
42.5°	4086.2	4122.1	3813.2	3495.5	3135.1	2683.3	2232.5	1834.2	1132.8	92.3	19.4
45°	2625.0	2632.8	2494.8	2248.1	2012.0	1730.3	1433.0	1194.0	730.6	51.5	5.8
47.5°	1671.0	1667.1	1578.7	1436.9	1282.4	1117.2	931.7	780.1	473.1	39.8	17.5
50°	1052.1	1048.3	992.9	902.5	816.1	707.3	590.7	502.3	299.2	47.6	19.4
51°	854.9	860.8	814.1	722.8	655.8	551.8	471.2	400.3	234.1	33.0	17.5
52°	705.3	701.4	672.3	595.5	540.2	450.8	383.7	327.4	195.3	29.1	7.8
53°	567.4	569.3	540.2	480.9	427.5	360.4	307.0	254.5	139.9	21.4	5.8
54°	448.8	445.0	435.2	377.9	344.9	285.6	240.0	195.3	120.5	3.9	0.0
55°	381.8	376.0	362.4	312.8	279.8	236.1	191.4	167.1	104.0	9.7	0.0
57.5°	220.5	220.5	212.8	185.6	163.2	145.7	116.6	108.8	53.4	9.7	0.0
60°	138.0	120.5	134.1	114.6	90.4	80.6	67.0	61.2	45.7	17.5	3.9
61°	114.6	92.3	90.4	84.5	78.7	53.4	45.7	49.5	29.1	5.8	3.9
62°	82.6	72.9	78.7	67.0	59.3	41.8	37.9	35.9	17.5	7.8	9.7
63°	74.8	67.0	65.1	49.5	43.7	43.7	33.0	31.1	21.4	15.5	7.8



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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°	39.8	33.0	29.1	33.0	19.4	25.3	9.7	27.2	5.8	9.7	5.8
67.5°	31.1	19.4	17.5	21.4	13.6	9.7	13.6	17.5	5.8	9.7	13.6
70°	27.2	13.6	19.4	17.5	13.6	17.5	19.4	19.4	5.8	19.4	17.5
72.5°	27.2	17.5	9.7	7.8	7.8	7.8	7.8	7.8	11.7	27.2	21.4
75°	11.7	11.7	5.8	13.6	7.8	11.7	7.8	19.4	7.8	21.4	17.5
77.5°	7.8	9.7	0.0	9.7	0.0	0.0	5.8	13.6	5.8	15.5	19.4
80°	0.0	9.7	5.8	0.0	3.9	5.8	0.0	1.9	3.9	17.5	7.8
82.5°	3.9	5.8	7.8	3.9	3.9	0.0	0.0	0.0	0.0	11.7	9.7
85°	3.9	7.8	0.0	1.9	7.8	3.9	1.9	9.7	3.9	13.6	15.5
87.5°	0.0	3.9	3.9	0.0	5.8	0.0	5.8	3.9	0.0	11.7	5.8
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°	69.0	69.0	69.0	69.0	69.0
2.5°	59.3	53.4	45.7	57.3	47.6
5°	70.9	65.1	51.5	61.2	55.4
7.5°	72.9	61.2	53.4	49.5	55.4
10°	43.7	29.1	21.4	29.1	15.5
12.5°	72.9	51.5	47.6	53.4	59.3
15°	55.4	33.0	33.0	25.3	35.9
17.5°	31.1	25.3	23.3	31.1	35.9
20°	33.0	21.4	17.5	29.1	27.2
21°	29.1	7.8	23.3	23.3	27.2
22°	41.8	19.4	23.3	37.9	39.8
23°	27.2	21.4	17.5	23.3	31.1
24°	39.8	23.3	21.4	29.1	43.7
25°	27.2	21.4	21.4	27.2	23.3
26°	15.5	21.4	15.5	23.3	19.4
27°	11.7	19.4	11.7	17.5	23.3
28°	25.3	31.1	29.1	31.1	27.2
29°	27.2	33.0	27.2	41.8	31.1
30°	15.5	29.1	13.6	31.1	27.2
31°	15.5	21.4	9.7	31.1	27.2
32°	1.9	11.7	5.8	11.7	11.7
33°	11.7	13.6	15.5	25.3	19.4
34°	19.4	23.3	15.5	27.2	23.3
35°	21.4	11.7	17.5	29.1	31.1
36°	5.8	5.8	9.7	23.3	7.8
37°	11.7	33.0	23.3	39.8	23.3
38°	19.4	39.8	37.9	49.5	39.8
39°	3.9	11.7	13.6	27.2	27.2
40°	17.5	29.1	21.4	39.8	39.8
42.5°	13.6	21.4	15.5	33.0	27.2
45°	5.8	5.8	3.9	21.4	15.5
47.5°	9.7	9.7	17.5	27.2	47.6
50°	19.4	19.4	25.3	45.7	43.7
51°	11.7	9.7	13.6	31.1	39.8
52°	9.7	13.6	13.6	31.1	31.1
53°	3.9	0.0	0.0	23.3	19.4
54°	3.9	1.9	5.8	17.5	27.2
55°	0.0	9.7	7.8	35.9	39.8
57.5°	1.9	15.5	7.8	25.3	31.1
60°	9.7	11.7	21.4	25.3	31.1
61°	0.0	9.7	9.7	23.3	27.2
62°	0.0	7.8	17.5	21.4	27.2
63°	9.7	11.7	15.5	25.3	31.1



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
66°	5.8	15.5	19.4	25.3	23.3
67.5°	11.7	13.6	11.7	33.0	39.8
70°	15.5	25.3	27.2	23.3	39.8
72.5°	9.7	13.6	19.4	35.9	39.8
75°	17.5	19.4	29.1	33.0	39.8
77.5°	13.6	19.4	19.4	21.4	39.8
80°	5.8	17.5	19.4	21.4	11.7
82.5°	7.8	11.7	7.8	21.4	15.5
85°	3.9	17.5	15.5	19.4	19.4
87.5°	5.8	9.7	9.7	17.5	11.7
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







64°	43.7	45.7	43.7	31.1	23.3	21.4	15.5	27.2	7.8	7.8	0.0
65°	39.8	43.7	33.0	37.9	25.3	23.3	13.6	27.2	3.9	13.6	9.7





64°	5.8	9.7	9.7	17.5	27.2
65°	9.7	13.6	13.6	25.3	19.4



(END OF REPORT)