

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: P174921

Luminaire Tested: **LDA4A28840D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P174921  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26217)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A28840D010TE LAR35FL 4LA1 30° Tilt  
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2959.7 lumens  
Efficiency: N/A  
Efficacy: 66.5 lumens/watt  
Spacing Criteria (0/90/45): 2.3 / 0.86 / 1.17  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

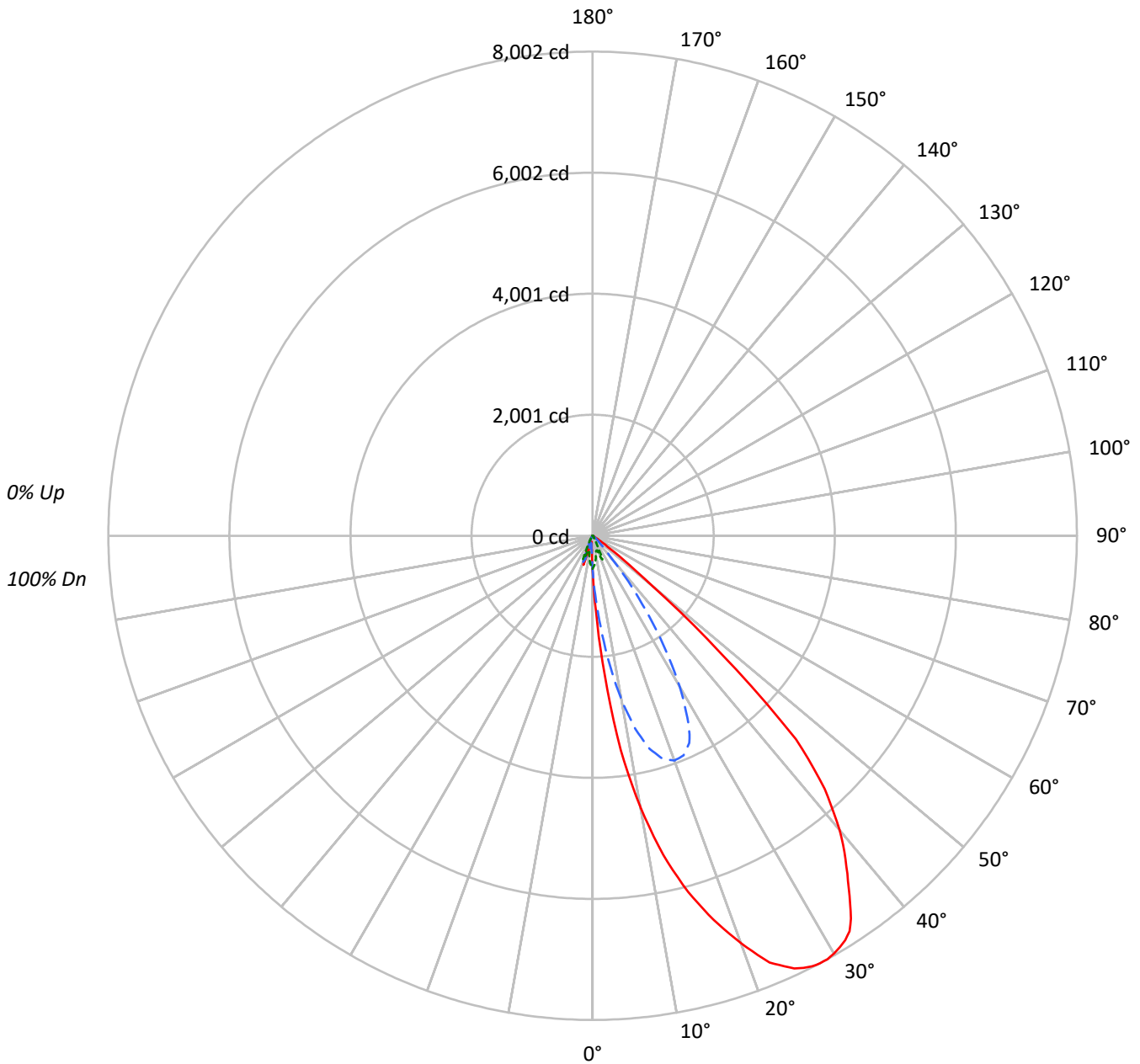
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76					76			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69					69			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62					62			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	66	62	58	57					57			
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52					52			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47					47			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43					43			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40					40			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	67778	67778	67778
5°	284729	56696	20937
10°	571972	39002	12713
15°	778018	31669	28604
20°	940306	48094	53082
25°	1073899	28567	14767
30°	1135487	13445	6822
35°	1116876	5948	2545
40°	1022099	2947	676
45°	829047	1483	0
50°	245775	806	0
55°	44536	903	0
60°	8338	1036	0
65°	2043	1226	0
70°	505	1515	0
75°	0	2002	0
80°	0	3978	0
85°	0	7925	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.9	3.4
10°-20°	516.9	17.5
20°-30°	905.3	30.6
30°-40°	909.2	30.7
40°-50°	478.9	16.2
50°-60°	39.9	1.3
60°-70°	4.0	0.1
70°-80°	2.9	0.1
80°-90°	2.7	0.1
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°	1522.1	51.4
0°-40°	2431.3	82.1
0°-60°	2950.1	99.7
0°-90°	2959.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2959.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	550	550	550	550	550	
5°	2300	1504	458	210	169	295
15°	6093	3647	248	166	224	1739
25°	7891	3776	210	120	108	3611
35°	7417	1640	40	21	17	4586
45°	4753	169	8	3	0	3258
55°	207	18	4	1	0	311
65°	7	3	4	3	0	10
75°	0	3	4	3	0	1
85°	0	3	6	3	0	0
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°	549.5	549.5	549.5	549.5	549.5	549.5	549.5	549.5	549.5	549.5	549.5
2.5°	1247.0	1248.4	1249.8	1259.7	1237.1	1231.5	1221.6	1207.6	1161.1	969.4	731.3
5°	2299.6	2316.5	2312.3	2298.2	2262.9	2243.2	2213.6	2182.6	2055.8	1503.5	907.4
7.5°	3573.4	3605.8	3598.7	3577.6	3518.4	3491.6	3417.0	3376.1	3184.5	2134.7	1038.5
10°	4566.7	4652.7	4654.1	4634.4	4545.6	4507.6	4430.1	4356.8	4114.4	2753.3	1099.1
12.5°	5406.5	5407.9	5474.2	5458.7	5355.8	5338.9	5274.1	5164.2	4909.1	3269.0	1099.1
15°	6092.7	6185.7	6170.2	6153.3	6044.8	6022.3	5960.3	5858.8	5561.5	3646.6	1045.5
17.5°	6659.2	6742.3	6718.4	6700.0	6591.5	6542.2	6474.6	6353.4	6026.5	3870.7	934.2
20°	7163.6	7242.5	7194.6	7162.2	7017.1	6956.5	6857.9	6718.4	6345.0	3953.8	804.6
22.5°	7634.2	7717.4	7656.8	7611.7	7424.3	7307.3	7167.9	6991.7	6552.1	3927.0	735.5
25°	7890.7	7999.2	7941.4	7906.2	7727.2	7590.6	7406.0	7179.1	6670.5	3776.3	553.8
26°	7947.1	8061.2	8006.2	7975.2	7793.5	7648.3	7451.1	7212.9	6680.3	3652.3	426.9
27°	7986.5	8113.3	8049.9	8010.5	7823.1	7668.1	7462.3	7214.3	6664.8	3484.6	339.6
28°	8002.0	8141.5	8064.0	8016.1	7821.7	7652.6	7434.2	7183.4	6624.0	3291.5	288.9
29°	8000.6	8152.8	8062.6	8010.5	7803.3	7615.9	7391.9	7139.7	6567.6	3090.1	260.7
30°	7972.4	8138.7	8048.5	7982.3	7759.7	7558.2	7331.3	7079.1	6504.2	2870.2	232.5
31°	7934.4	8104.9	8010.5	7928.7	7687.8	7469.4	7246.8	6997.4	6419.6	2634.9	212.8
32°	7879.4	8049.9	7945.6	7838.6	7586.3	7358.1	7143.9	6901.5	6316.8	2386.9	188.8
33°	7792.1	7942.8	7821.7	7697.7	7445.4	7231.3	7028.4	6790.2	6199.8	2129.1	163.5
34°	7632.8	7765.3	7639.9	7514.5	7289.0	7090.4	6895.9	6659.2	6063.2	1890.9	140.9
35°	7417.3	7530.0	7417.3	7311.6	7112.9	6928.3	6742.3	6511.2	5898.3	1640.1	121.2
36°	7197.4	7296.1	7191.8	7108.7	6918.4	6753.6	6580.3	6340.7	5712.3	1402.0	107.1
37°	6991.7	7080.5	6984.7	6901.5	6738.1	6570.4	6398.5	6153.3	5506.6	1173.7	88.8
38°	6787.4	6866.3	6784.6	6691.6	6540.8	6370.3	6197.0	5946.2	5276.9	958.2	76.1
39°	6574.6	6639.5	6560.5	6466.1	6312.6	6143.5	5965.9	5706.7	5013.4	734.1	66.2
40°	6347.8	6408.4	6311.1	6226.6	6073.0	5899.7	5717.9	5448.8	4727.4	491.8	56.4
42.5°	5677.1	5713.7	5632.0	5515.0	5361.4	5171.2	4951.4	4649.9	3812.9	259.3	39.5
45°	4752.7	4759.8	4696.4	4483.6	4277.9	3983.4	3655.1	3202.8	2216.4	169.1	25.4
47.5°	2868.8	2851.9	2751.9	2570.1	2378.5	2067.1	1759.9	1448.5	860.9	98.6	16.9
50°	1280.8	1261.1	1211.8	1117.4	1006.1	890.5	753.8	638.3	418.5	53.5	11.3
51°	928.6	911.7	875.0	803.2	721.4	639.7	545.3	466.4	312.8	43.7	9.9
52°	652.4	642.5	617.2	566.4	521.3	457.9	393.1	343.8	235.3	35.2	7.0
53°	455.1	448.1	432.6	398.8	372.0	325.5	284.6	245.2	170.5	28.2	7.0
54°	308.6	304.4	294.5	271.9	249.4	224.0	194.4	171.9	119.8	22.5	5.6
55°	207.1	204.3	195.9	184.6	171.9	156.4	136.7	119.8	84.5	18.3	4.2
57.5°	76.1	76.1	73.3	69.0	64.8	60.6	55.0	49.3	39.5	11.3	4.2
60°	33.8	32.4	32.4	31.0	29.6	28.2	26.8	24.0	19.7	7.0	4.2
61°	25.4	25.4	24.0	22.5	22.5	21.1	19.7	18.3	15.5	5.6	4.2
62°	18.3	18.3	18.3	16.9	16.9	15.5	15.5	14.1	11.3	4.2	4.2
63°	14.1	14.1	14.1	12.7	12.7	12.7	11.3	11.3	8.5	4.2	4.2
64°	9.9	9.9	9.9	9.9	9.9	9.9	8.5	8.5	7.0	2.8	4.2
65°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	5.6	2.8	4.2
66°	5.6	5.6	5.6	5.6	5.6	5.6	4.2	4.2	4.2	2.8	4.2



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**CANDELA DISTRIBUTION (continued):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8	4.2
75°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.2
77.5°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.8	4.2
80°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.8	4.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.2
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°	549.5	549.5	549.5	549.5	549.5
2.5°	505.8	353.7	281.8	255.0	246.6
5°	457.9	264.9	209.9	180.4	169.1
7.5°	384.7	218.4	157.8	131.0	122.6
10°	311.4	180.4	128.2	107.1	101.5
12.5°	266.3	156.4	119.8	111.3	111.3
15°	248.0	164.9	166.3	200.1	224.0
17.5°	255.0	257.9	403.0	490.4	505.8
20°	366.4	463.6	459.4	417.1	404.4
22.5°	424.1	305.8	231.1	190.2	183.2
25°	209.9	139.5	119.8	109.9	108.5
26°	159.2	117.0	104.3	98.6	95.8
27°	132.5	102.9	93.0	86.0	83.1
28°	118.4	91.6	80.3	73.3	70.5
29°	107.1	78.9	67.6	60.6	59.2
30°	94.4	66.2	56.4	49.3	47.9
31°	80.3	55.0	45.1	40.9	38.0
32°	67.6	45.1	36.6	32.4	29.6
33°	56.4	36.6	31.0	26.8	24.0
34°	47.9	31.0	25.4	21.1	19.7
35°	39.5	25.4	21.1	18.3	16.9
36°	33.8	22.5	16.9	14.1	12.7
37°	29.6	18.3	14.1	11.3	11.3
38°	25.4	15.5	12.7	8.5	8.5
39°	21.1	12.7	9.9	7.0	7.0
40°	18.3	11.3	8.5	5.6	4.2
42.5°	12.7	7.0	5.6	2.8	1.4
45°	8.5	5.6	2.8	1.4	0.0
47.5°	5.6	4.2	2.8	1.4	0.0
50°	4.2	4.2	2.8	0.0	0.0
51°	4.2	2.8	2.8	0.0	0.0
52°	4.2	2.8	1.4	0.0	0.0
53°	4.2	2.8	1.4	0.0	0.0
54°	4.2	2.8	1.4	0.0	0.0
55°	4.2	2.8	1.4	0.0	0.0
57.5°	4.2	2.8	1.4	0.0	0.0
60°	4.2	2.8	2.8	0.0	0.0
61°	4.2	4.2	2.8	0.0	0.0
62°	4.2	4.2	2.8	0.0	0.0
63°	4.2	4.2	2.8	0.0	0.0
64°	4.2	4.2	2.8	1.4	0.0
65°	4.2	4.2	2.8	1.4	0.0
66°	4.2	4.2	2.8	1.4	0.0





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
72.5°	4.2	4.2	2.8	1.4	0.0
75°	4.2	4.2	2.8	1.4	0.0
77.5°	5.6	4.2	2.8	1.4	0.0
80°	5.6	4.2	2.8	1.4	0.0
82.5°	5.6	4.2	2.8	1.4	0.0
85°	5.6	4.2	2.8	1.4	0.0
87.5°	5.6	4.2	2.8	1.4	0.0
90°	0.0	0.0	0.0	0.0	0.0



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







67.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	4.2
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8	4.2







67.5°	4.2	4.2	2.8	1.4	0.0
70°	4.2	4.2	2.8	1.4	0.0



(END OF REPORT)