

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: P174917

Luminaire Tested: **LDA4A13940D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P174917  
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: LDA4A13940D010TE 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 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1309.3 lumens  
Efficiency: N/A  
Efficacy: 58.8 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

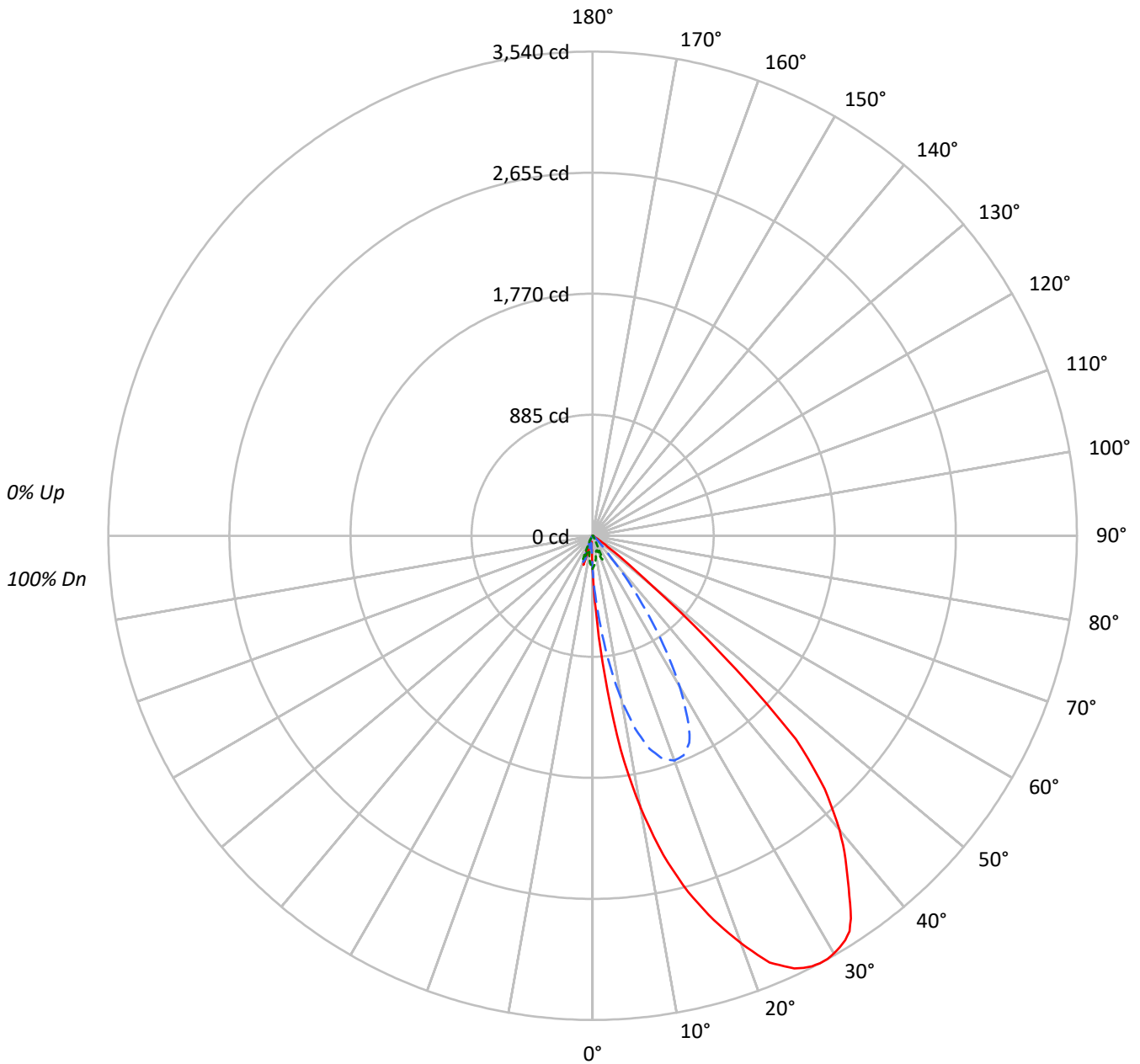
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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				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°	29985	29985	29985
5°	125959	25085	9261
10°	253027	17259	5624
15°	344168	14008	12655
20°	415955	21278	23483
25°	475060	12643	6533
30°	502298	5953	3019
35°	494059	2635	1129
40°	452134	1304	306
45°	366736	645	0
50°	108726	365	0
55°	19698	409	0
60°	3700	469	0
65°	905	555	0
70°	216	685	0
75°	0	905	0
80°	0	1776	0
85°	0	3538	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.2	3.4
10°-20°	228.7	17.5
20°-30°	400.5	30.6
30°-40°	402.2	30.7
40°-50°	211.9	16.2
50°-60°	17.7	1.3
60°-70°	1.8	0.1
70°-80°	1.3	0.1
80°-90°	1.2	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°	673.3	51.4
0°-40°	1075.5	82.1
0°-60°	1305.0	99.7
0°-90°	1309.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1309.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	243	243	243	243	243	
5°	1017	665	203	93	75	130
15°	2695	1613	110	74	99	769
25°	3491	1670	93	53	48	1597
35°	3281	726	18	9	8	2029
45°	2102	75	4	1	0	1441
55°	92	8	2	1	0	138
65°	3	1	2	1	0	5
75°	0	1	2	1	0	0
85°	0	1	2	1	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°	243.1	243.1	243.1	243.1	243.1	243.1	243.1	243.1	243.1	243.1	243.1
2.5°	551.6	552.3	552.9	557.2	547.3	544.8	540.4	534.2	513.6	428.8	323.5
5°	1017.3	1024.7	1022.9	1016.6	1001.0	992.3	979.2	965.5	909.4	665.1	401.4
7.5°	1580.7	1595.1	1592.0	1582.6	1556.4	1544.6	1511.5	1493.5	1408.7	944.3	459.4
10°	2020.2	2058.2	2058.8	2050.1	2010.8	1994.0	1959.7	1927.3	1820.1	1218.0	486.2
12.5°	2391.7	2392.3	2421.6	2414.7	2369.2	2361.7	2333.1	2284.5	2171.6	1446.1	486.2
15°	2695.2	2736.4	2729.5	2722.0	2674.0	2664.1	2636.6	2591.8	2460.2	1613.1	462.5
17.5°	2945.8	2982.6	2972.0	2963.9	2915.9	2894.1	2864.1	2810.5	2665.9	1712.3	413.3
20°	3168.9	3203.9	3182.7	3168.3	3104.1	3077.3	3033.7	2972.0	2806.8	1749.0	355.9
22.5°	3377.1	3413.9	3387.1	3367.2	3284.3	3232.5	3170.8	3092.9	2898.4	1737.2	325.4
25°	3490.6	3538.6	3513.0	3497.4	3418.3	3357.8	3276.2	3175.8	2950.8	1670.5	245.0
26°	3515.5	3566.0	3541.7	3528.0	3447.6	3383.4	3296.1	3190.8	2955.1	1615.6	188.9
27°	3533.0	3589.1	3561.0	3543.6	3460.7	3392.1	3301.1	3191.4	2948.3	1541.5	150.2
28°	3539.8	3601.5	3567.2	3546.1	3460.0	3385.2	3288.6	3177.7	2930.2	1456.1	127.8
29°	3539.2	3606.5	3566.6	3543.6	3451.9	3369.0	3269.9	3158.3	2905.3	1366.9	115.3
30°	3526.7	3600.3	3560.4	3531.1	3432.6	3343.5	3243.1	3131.5	2877.2	1269.7	102.8
31°	3509.9	3585.3	3543.6	3507.4	3400.8	3304.2	3205.7	3095.4	2839.8	1165.6	94.1
32°	3485.6	3561.0	3514.9	3467.5	3355.9	3255.0	3160.2	3053.0	2794.3	1055.9	83.5
33°	3446.9	3513.6	3460.0	3405.2	3293.6	3198.9	3109.1	3003.8	2742.6	941.8	72.3
34°	3376.5	3435.1	3379.6	3324.2	3224.4	3136.5	3050.5	2945.8	2682.1	836.5	62.3
35°	3281.1	3331.0	3281.1	3234.4	3146.5	3064.9	2982.6	2880.3	2609.2	725.5	53.6
36°	3183.9	3227.5	3181.4	3144.6	3060.5	2987.6	2910.9	2804.9	2526.9	620.2	47.4
37°	3092.9	3132.2	3089.8	3053.0	2980.7	2906.5	2830.5	2722.0	2435.9	519.2	39.3
38°	3002.5	3037.4	3001.3	2960.1	2893.4	2818.0	2741.4	2630.4	2334.3	423.9	33.7
39°	2908.4	2937.1	2902.2	2860.4	2792.5	2717.7	2639.1	2524.4	2217.8	324.7	29.3
40°	2808.0	2834.8	2791.8	2754.4	2686.5	2609.8	2529.4	2410.4	2091.2	217.5	24.9
42.5°	2511.3	2527.6	2491.4	2439.7	2371.7	2287.6	2190.3	2056.9	1686.7	114.7	17.5
45°	2102.4	2105.6	2077.5	1983.4	1892.4	1762.1	1616.9	1416.8	980.5	74.8	11.2
47.5°	1269.1	1261.6	1217.3	1136.9	1052.2	914.4	778.5	640.8	380.8	43.6	7.5
50°	566.6	557.9	536.1	494.3	445.0	393.9	333.5	282.4	185.1	23.7	5.0
51°	410.8	403.3	387.1	355.3	319.1	283.0	241.2	206.3	138.4	19.3	4.4
52°	288.6	284.2	273.0	250.6	230.6	202.6	173.9	152.1	104.1	15.6	3.1
53°	201.3	198.2	191.4	176.4	164.6	144.0	125.9	108.5	75.4	12.5	3.1
54°	136.5	134.6	130.3	120.3	110.3	99.1	86.0	76.0	53.0	10.0	2.5
55°	91.6	90.4	86.6	81.7	76.0	69.2	60.5	53.0	37.4	8.1	1.9
57.5°	33.7	33.7	32.4	30.5	28.7	26.8	24.3	21.8	17.5	5.0	1.9
60°	15.0	14.3	14.3	13.7	13.1	12.5	11.8	10.6	8.7	3.1	1.9
61°	11.2	11.2	10.6	10.0	10.0	9.3	8.7	8.1	6.9	2.5	1.9
62°	8.1	8.1	8.1	7.5	7.5	6.9	6.9	6.2	5.0	1.9	1.9
63°	6.2	6.2	6.2	5.6	5.6	5.6	5.0	5.0	3.7	1.9	1.9
64°	4.4	4.4	4.4	4.4	4.4	4.4	3.7	3.7	3.1	1.2	1.9
65°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.5	1.2	1.9
66°	2.5	2.5	2.5	2.5	2.5	2.5	1.9	1.9	1.9	1.2	1.9



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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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2	1.9
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.2	1.9
77.5°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.9
80°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.2	1.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.2	1.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.2	1.9
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°	243.1	243.1	243.1	243.1	243.1
2.5°	223.8	156.5	124.7	112.8	109.1
5°	202.6	117.2	92.9	79.8	74.8
7.5°	170.2	96.6	69.8	58.0	54.2
10°	137.8	79.8	56.7	47.4	44.9
12.5°	117.8	69.2	53.0	49.2	49.2
15°	109.7	72.9	73.6	88.5	99.1
17.5°	112.8	114.1	178.3	216.9	223.8
20°	162.1	205.1	203.2	184.5	178.9
22.5°	187.6	135.3	102.2	84.1	81.0
25°	92.9	61.7	53.0	48.6	48.0
26°	70.4	51.7	46.1	43.6	42.4
27°	58.6	45.5	41.1	38.0	36.8
28°	52.4	40.5	35.5	32.4	31.2
29°	47.4	34.9	29.9	26.8	26.2
30°	41.8	29.3	24.9	21.8	21.2
31°	35.5	24.3	19.9	18.1	16.8
32°	29.9	19.9	16.2	14.3	13.1
33°	24.9	16.2	13.7	11.8	10.6
34°	21.2	13.7	11.2	9.3	8.7
35°	17.5	11.2	9.3	8.1	7.5
36°	15.0	10.0	7.5	6.2	5.6
37°	13.1	8.1	6.2	5.0	5.0
38°	11.2	6.9	5.6	3.7	3.7
39°	9.3	5.6	4.4	3.1	3.1
40°	8.1	5.0	3.7	2.5	1.9
42.5°	5.6	3.1	2.5	1.2	0.6
45°	3.7	2.5	1.2	0.6	0.0
47.5°	2.5	1.9	1.2	0.6	0.0
50°	1.9	1.9	1.2	0.0	0.0
51°	1.9	1.2	1.2	0.0	0.0
52°	1.9	1.2	0.6	0.0	0.0
53°	1.9	1.2	0.6	0.0	0.0
54°	1.9	1.2	0.6	0.0	0.0
55°	1.9	1.2	0.6	0.0	0.0
57.5°	1.9	1.2	0.6	0.0	0.0
60°	1.9	1.2	1.2	0.0	0.0
61°	1.9	1.9	1.2	0.0	0.0
62°	1.9	1.9	1.2	0.0	0.0
63°	1.9	1.9	1.2	0.0	0.0
64°	1.9	1.9	1.2	0.6	0.0
65°	1.9	1.9	1.2	0.6	0.0
66°	1.9	1.9	1.2	0.6	0.0





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
72.5°	1.9	1.9	1.2	0.6	0.0
75°	1.9	1.9	1.2	0.6	0.0
77.5°	2.5	1.9	1.2	0.6	0.0
80°	2.5	1.9	1.2	0.6	0.0
82.5°	2.5	1.9	1.2	0.6	0.0
85°	2.5	1.9	1.2	0.6	0.0
87.5°	2.5	1.9	1.2	0.6	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°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2	1.9







67.5°	1.9	1.9	1.2	0.6	0.0
70°	1.9	1.9	1.2	0.6	0.0



(END OF REPORT)