

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: P174901

Luminaire Tested: **LDA4A18940D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174901
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: LDA4A18940D010TE 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: 1622.1 lumens
Efficiency: N/A
Efficacy: 55.7 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

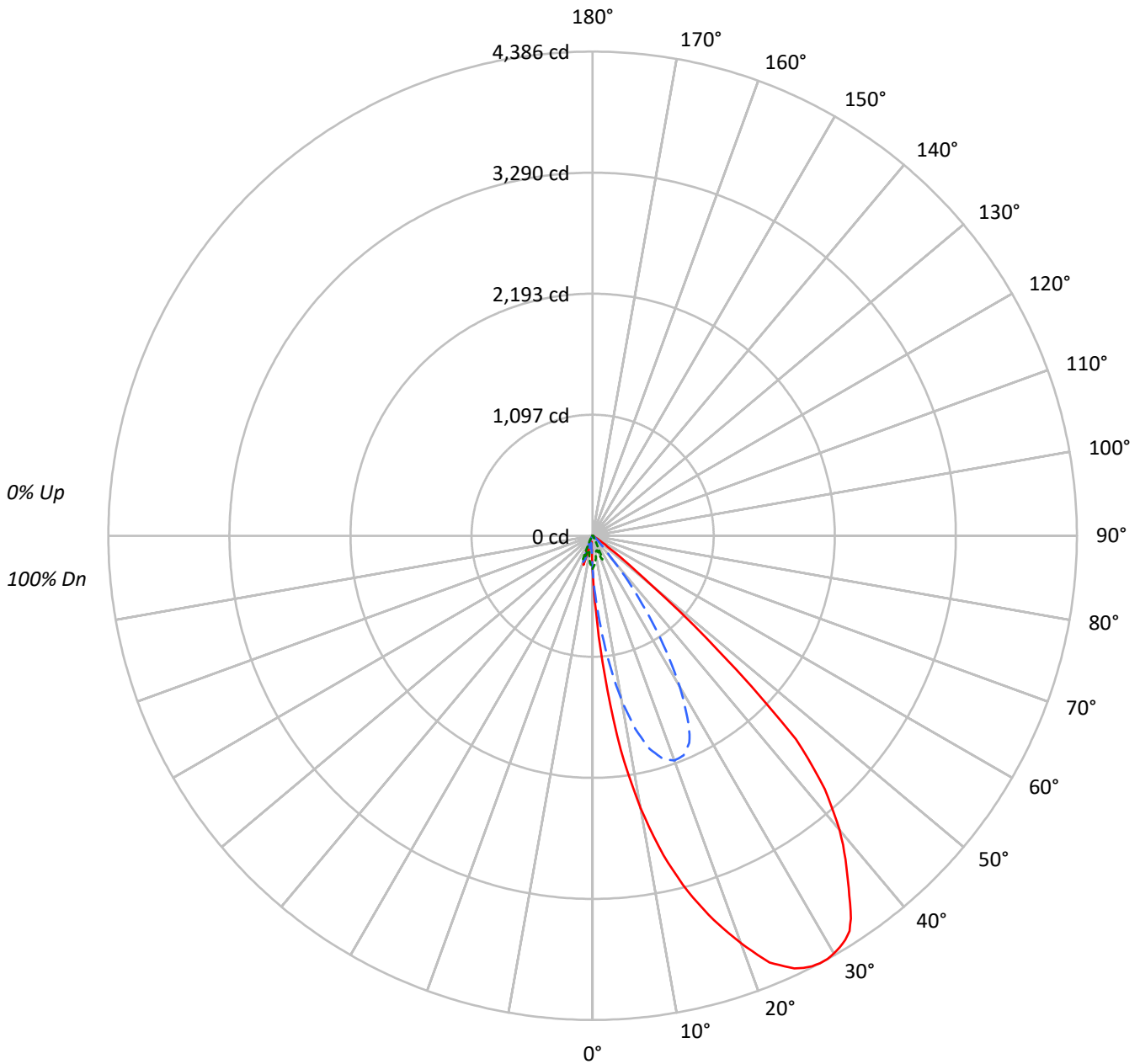
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

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°	37152	37152	37152
5°	156046	31078	11478
10°	313472	21380	6964
15°	426392	17354	15681
20°	515333	26357	29088
25°	588551	15665	8098
30°	622307	7363	3746
35°	612096	3252	1400
40°	560160	1610	370
45°	454374	802	0
50°	134708	441	0
55°	24408	495	0
60°	4564	567	0
65°	1138	671	0
70°	289	829	0
75°	0	1096	0
80°	0	2202	0
85°	0	4387	0



TEST NUMBER: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.7	3.4
10°-20°	283.3	17.5
20°-30°	496.2	30.6
30°-40°	498.3	30.7
40°-50°	262.5	16.2
50°-60°	21.9	1.3
60°-70°	2.2	0.1
70°-80°	1.6	0.1
80°-90°	1.5	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°	834.2	51.4
0°-40°	1332.5	82.1
0°-60°	1616.8	99.7
0°-90°	1622.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1622.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	301	301	301	301	301	
5°	1260	824	251	115	93	161
15°	3339	1998	136	91	123	953
25°	4324	2070	115	66	60	1979
35°	4065	899	22	12	9	2514
45°	2605	93	5	2	0	1785
55°	114	10	2	1	0	171
65°	4	2	2	2	0	6
75°	0	2	2	2	0	0
85°	0	2	3	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	301.2	301.2	301.2	301.2	301.2	301.2	301.2	301.2	301.2	301.2	301.2
2.5°	683.4	684.2	685.0	690.4	678.0	674.9	669.5	661.8	636.3	531.3	400.8
5°	1260.3	1269.6	1267.2	1259.5	1240.2	1229.4	1213.2	1196.2	1126.7	824.0	497.3
7.5°	1958.4	1976.2	1972.3	1960.7	1928.3	1913.6	1872.7	1850.3	1745.3	1169.9	569.1
10°	2502.8	2549.9	2550.7	2539.9	2491.2	2470.4	2427.9	2387.8	2254.9	1508.9	602.3
12.5°	2963.1	2963.8	3000.1	2991.6	2935.3	2926.0	2890.5	2830.2	2690.5	1791.6	602.3
15°	3339.1	3390.1	3381.6	3372.4	3312.9	3300.5	3266.6	3211.0	3048.0	1998.5	573.0
17.5°	3649.6	3695.1	3682.0	3672.0	3612.5	3585.5	3548.4	3482.0	3302.9	2121.3	512.0
20°	3926.0	3969.3	3943.0	3925.3	3845.7	3812.5	3758.5	3682.0	3477.4	2166.9	440.9
22.5°	4184.0	4229.5	4196.3	4171.6	4068.9	4004.8	3928.4	3831.8	3590.9	2152.2	403.1
25°	4324.5	4384.0	4352.3	4333.0	4234.9	4160.0	4058.9	3934.5	3655.8	2069.6	303.5
26°	4355.4	4418.0	4387.8	4370.9	4271.2	4191.7	4083.6	3953.1	3661.2	2001.6	234.0
27°	4377.0	4446.5	4411.8	4390.2	4287.5	4202.5	4089.8	3953.8	3652.7	1909.7	186.1
28°	4385.5	4462.0	4419.5	4393.2	4286.7	4194.0	4074.3	3936.9	3630.3	1803.9	158.3
29°	4384.8	4468.2	4418.7	4390.2	4276.6	4173.9	4051.1	3912.9	3599.4	1693.5	142.9
30°	4369.3	4460.4	4411.0	4374.7	4252.7	4142.3	4017.9	3879.7	3564.6	1573.0	127.4
31°	4348.5	4441.9	4390.2	4345.4	4213.3	4093.6	3971.6	3834.9	3518.3	1444.1	116.6
32°	4318.3	4411.8	4354.6	4295.9	4157.7	4032.6	3915.2	3782.4	3461.9	1308.2	103.5
33°	4270.5	4353.1	4286.7	4218.7	4080.5	3963.1	3851.9	3721.4	3397.8	1166.8	89.6
34°	4183.2	4255.8	4187.1	4118.3	3994.8	3885.9	3779.3	3649.6	3322.9	1036.3	77.2
35°	4065.0	4126.8	4065.0	4007.1	3898.2	3797.1	3695.1	3568.5	3232.6	898.9	66.4
36°	3944.6	3998.6	3941.5	3895.9	3791.7	3701.3	3606.3	3475.1	3130.6	768.4	58.7
37°	3831.8	3880.5	3828.0	3782.4	3692.8	3600.9	3506.7	3372.4	3017.9	643.3	48.7
38°	3719.9	3763.1	3718.3	3667.3	3584.7	3491.3	3396.3	3258.8	2892.0	525.1	41.7
39°	3603.3	3638.8	3595.5	3543.8	3459.6	3366.9	3269.6	3127.6	2747.6	402.3	36.3
40°	3478.9	3512.1	3458.8	3412.5	3328.3	3233.4	3133.7	2986.2	2590.9	269.5	30.9
42.5°	3111.3	3131.4	3086.6	3022.5	2938.4	2834.1	2713.6	2548.4	2089.7	142.1	21.6
45°	2604.8	2608.6	2573.9	2457.3	2344.5	2183.1	2003.2	1755.3	1214.7	92.7	13.9
47.5°	1572.3	1563.0	1508.2	1408.6	1303.5	1132.9	964.5	793.9	471.8	54.1	9.3
50°	702.0	691.2	664.1	612.4	551.4	488.1	413.1	349.8	229.4	29.3	6.2
51°	508.9	499.6	479.6	440.2	395.4	350.6	298.9	255.6	171.4	23.9	5.4
52°	357.5	352.1	338.2	310.4	285.7	251.0	215.5	188.4	129.0	19.3	3.9
53°	249.4	245.6	237.1	218.5	203.9	178.4	156.0	134.4	93.4	15.4	3.9
54°	169.1	166.8	161.4	149.0	136.7	122.8	106.6	94.2	65.6	12.4	3.1
55°	113.5	112.0	107.3	101.2	94.2	85.7	74.9	65.6	46.3	10.0	2.3
57.5°	41.7	41.7	40.2	37.8	35.5	33.2	30.1	27.0	21.6	6.2	2.3
60°	18.5	17.8	17.8	17.0	16.2	15.4	14.7	13.1	10.8	3.9	2.3
61°	13.9	13.9	13.1	12.4	12.4	11.6	10.8	10.0	8.5	3.1	2.3
62°	10.0	10.0	10.0	9.3	9.3	8.5	8.5	7.7	6.2	2.3	2.3
63°	7.7	7.7	7.7	7.0	7.0	7.0	6.2	6.2	4.6	2.3	2.3
64°	5.4	5.4	5.4	5.4	5.4	5.4	4.6	4.6	3.9	1.5	2.3
65°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.1	1.5	2.3
66°	3.1	3.1	3.1	3.1	3.1	3.1	2.3	2.3	2.3	1.5	2.3



TEST NUMBER: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.5	2.3
77.5°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	2.3
80°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	2.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.5	2.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.5	2.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.5	2.3
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: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	301.2	301.2	301.2	301.2	301.2
2.5°	277.2	193.8	154.4	139.8	135.1
5°	251.0	145.2	115.1	98.8	92.7
7.5°	210.8	119.7	86.5	71.8	67.2
10°	170.7	98.8	70.3	58.7	55.6
12.5°	146.0	85.7	65.6	61.0	61.0
15°	135.9	90.4	91.1	109.7	122.8
17.5°	139.8	141.3	220.9	268.7	277.2
20°	200.8	254.1	251.7	228.6	221.6
22.5°	232.4	167.6	126.6	104.3	100.4
25°	115.1	76.5	65.6	60.2	59.5
26°	87.3	64.1	57.1	54.1	52.5
27°	72.6	56.4	51.0	47.1	45.6
28°	64.9	50.2	44.0	40.2	38.6
29°	58.7	43.2	37.1	33.2	32.4
30°	51.7	36.3	30.9	27.0	26.3
31°	44.0	30.1	24.7	22.4	20.9
32°	37.1	24.7	20.1	17.8	16.2
33°	30.9	20.1	17.0	14.7	13.1
34°	26.3	17.0	13.9	11.6	10.8
35°	21.6	13.9	11.6	10.0	9.3
36°	18.5	12.4	9.3	7.7	7.0
37°	16.2	10.0	7.7	6.2	6.2
38°	13.9	8.5	7.0	4.6	4.6
39°	11.6	7.0	5.4	3.9	3.9
40°	10.0	6.2	4.6	3.1	2.3
42.5°	7.0	3.9	3.1	1.5	0.8
45°	4.6	3.1	1.5	0.8	0.0
47.5°	3.1	2.3	1.5	0.8	0.0
50°	2.3	2.3	1.5	0.0	0.0
51°	2.3	1.5	1.5	0.0	0.0
52°	2.3	1.5	0.8	0.0	0.0
53°	2.3	1.5	0.8	0.0	0.0
54°	2.3	1.5	0.8	0.0	0.0
55°	2.3	1.5	0.8	0.0	0.0
57.5°	2.3	1.5	0.8	0.0	0.0
60°	2.3	1.5	1.5	0.0	0.0
61°	2.3	2.3	1.5	0.0	0.0
62°	2.3	2.3	1.5	0.0	0.0
63°	2.3	2.3	1.5	0.0	0.0
64°	2.3	2.3	1.5	0.8	0.0
65°	2.3	2.3	1.5	0.8	0.0
66°	2.3	2.3	1.5	0.8	0.0



TEST NUMBER: P174901

CATALOG NUMBER: LDA4A18940D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	2.3	2.3	1.5	0.8	0.0
75°	2.3	2.3	1.5	0.8	0.0
77.5°	3.1	2.3	1.5	0.8	0.0
80°	3.1	2.3	1.5	0.8	0.0
82.5°	3.1	2.3	1.5	0.8	0.0
85°	3.1	2.3	1.5	0.8	0.0
87.5°	3.1	2.3	1.5	0.8	0.0
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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







67.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.3
70°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3





67.5°	2.3	2.3	1.5	0.8	0.0
70°	2.3	2.3	1.5	0.8	0.0



(END OF REPORT)