

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: P174896

Luminaire Tested: **LDA4A18835D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174896
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: LDA4A18835D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1843.0 lumens
Efficiency: N/A
Efficacy: 63.3 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

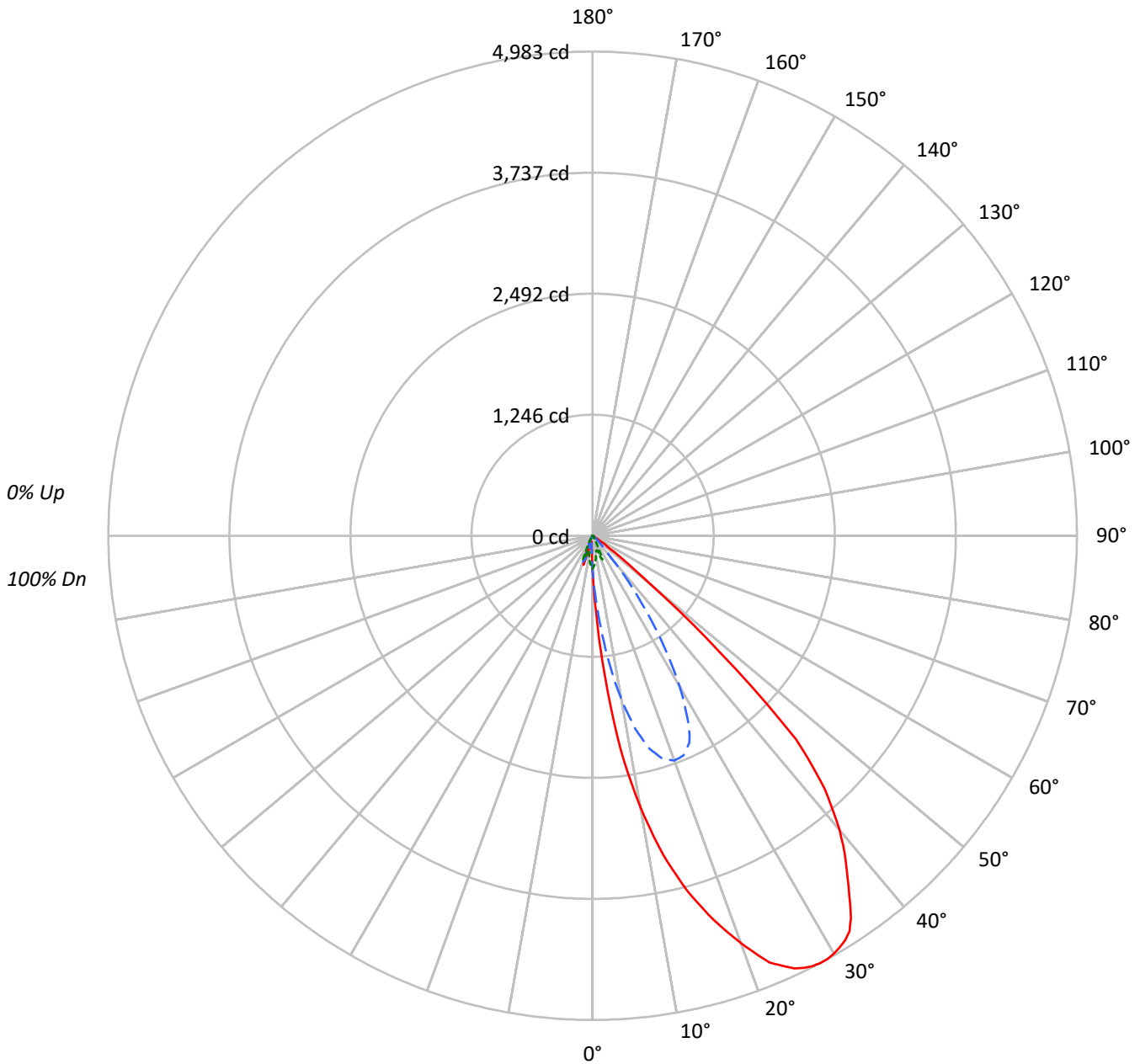
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P174896

CATALOG NUMBER: LDA4A18835D010TE LAR35FL 4LA1 30° Tilt

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	42209	42209	42209
5°	177293	35313	13038
10°	356169	24286	7916
15°	484469	19716	17814
20°	585519	29941	33052
25°	668712	17788	9200
30°	707066	8375	4244
35°	695471	3704	1581
40°	636449	1836	419
45°	516246	925	0
50°	153053	499	0
55°	27741	559	0
60°	5205	641	0
65°	1284	759	0
70°	325	938	0
75°	0	1239	0
80°	0	2486	0
85°	0	4953	0



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CATALOG NUMBER: LDA4A18835D010TE LAR35FL 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.2	3.4
10°-20°	321.9	17.5
20°-30°	563.7	30.6
30°-40°	566.1	30.7
40°-50°	298.2	16.2
50°-60°	24.9	1.3
60°-70°	2.5	0.1
70°-80°	1.8	0.1
80°-90°	1.7	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°	947.8	51.4
0°-40°	1513.9	82.1
0°-60°	1837.0	99.7
0°-90°	1843.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1843.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	342	342	342	342	342	
5°	1432	936	285	131	105	183
15°	3794	2271	154	104	140	1083
25°	4914	2351	131	75	68	2248
35°	4619	1021	25	13	10	2856
45°	2960	105	5	2	0	2028
55°	129	11	3	1	0	194
65°	4	2	3	2	0	6
75°	0	2	3	2	0	0
85°	0	2	4	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P174896

CATALOG NUMBER: LDA4A18835D010TE 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°	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2	342.2
2.5°	776.5	777.4	778.3	784.4	770.4	766.9	760.7	751.9	723.0	603.7	455.4
5°	1431.9	1442.5	1439.8	1431.0	1409.1	1396.8	1378.4	1359.1	1280.1	936.2	565.0
7.5°	2225.1	2245.3	2240.9	2227.7	2190.9	2174.2	2127.7	2102.3	1982.9	1329.3	646.6
10°	2843.7	2897.2	2898.1	2885.8	2830.5	2806.8	2758.6	2712.9	2562.0	1714.5	684.4
12.5°	3366.6	3367.5	3408.7	3399.1	3335.0	3324.5	3284.1	3215.7	3056.9	2035.6	684.4
15°	3793.9	3851.8	3842.2	3831.6	3764.1	3750.0	3711.4	3648.3	3463.1	2270.7	651.0
17.5°	4146.6	4198.4	4183.5	4172.1	4104.5	4073.8	4031.7	3956.2	3752.7	2410.2	581.7
20°	4460.7	4509.9	4480.0	4459.9	4369.5	4331.8	4270.3	4183.5	3951.0	2462.0	501.0
22.5°	4753.8	4805.6	4767.8	4739.7	4623.1	4550.2	4463.4	4353.7	4079.9	2445.3	458.0
25°	4913.5	4981.0	4945.1	4923.1	4811.7	4726.6	4611.6	4470.4	4153.6	2351.4	344.8
26°	4948.6	5019.6	4985.4	4966.1	4852.9	4762.6	4639.7	4491.4	4159.8	2274.2	265.9
27°	4973.1	5052.1	5012.6	4988.1	4871.4	4774.8	4646.7	4492.3	4150.1	2169.8	211.5
28°	4982.8	5069.7	5021.4	4991.6	4870.5	4765.2	4629.2	4473.0	4124.7	2049.6	179.9
29°	4981.9	5076.7	5020.5	4988.1	4859.1	4742.4	4602.9	4445.8	4089.6	1924.2	162.3
30°	4964.4	5067.9	5011.7	4970.5	4831.9	4706.4	4565.1	4408.1	4050.1	1787.3	144.8
31°	4940.7	5046.8	4988.1	4937.2	4787.1	4651.1	4512.5	4357.2	3997.5	1640.7	132.5
32°	4906.5	5012.6	4947.7	4881.0	4724.0	4581.8	4448.4	4297.5	3933.4	1486.3	117.6
33°	4852.1	4945.9	4870.5	4793.3	4636.2	4502.8	4376.5	4228.2	3860.6	1325.8	101.8
34°	4752.9	4835.4	4757.3	4679.2	4538.8	4415.1	4294.0	4146.6	3775.5	1177.5	87.7
35°	4618.7	4688.9	4618.7	4552.9	4429.1	4314.2	4198.4	4054.5	3672.8	1021.3	75.5
36°	4481.8	4543.2	4478.3	4426.5	4308.1	4205.4	4097.5	3948.3	3557.0	873.0	66.7
37°	4353.7	4409.0	4349.3	4297.5	4195.8	4091.3	3984.3	3831.6	3428.9	730.9	55.3
38°	4226.5	4275.6	4224.7	4166.8	4072.9	3966.8	3858.8	3702.7	3285.9	596.6	47.4
39°	4094.0	4134.3	4085.2	4026.4	3930.8	3825.5	3714.9	3553.5	3121.8	457.1	41.2
40°	3952.7	3990.4	3929.9	3877.3	3781.6	3673.7	3560.5	3392.9	2943.7	306.2	35.1
42.5°	3535.1	3557.9	3507.0	3434.2	3338.5	3220.1	3083.2	2895.4	2374.3	161.4	24.6
45°	2959.5	2963.9	2924.4	2791.9	2663.8	2480.4	2276.0	1994.3	1380.2	105.3	15.8
47.5°	1786.4	1775.9	1713.6	1600.4	1481.1	1287.2	1095.9	902.0	536.1	61.4	10.5
50°	797.6	785.3	754.6	695.8	626.5	554.5	469.4	397.5	260.6	33.3	7.0
51°	578.2	567.7	544.9	500.1	449.2	398.3	339.6	290.4	194.8	27.2	6.1
52°	406.2	400.1	384.3	352.7	324.6	285.2	244.8	214.1	146.5	21.9	4.4
53°	283.4	279.0	269.4	248.3	231.6	202.7	177.2	152.7	106.2	17.5	4.4
54°	192.2	189.5	183.4	169.3	155.3	139.5	121.1	107.0	74.6	14.0	3.5
55°	129.0	127.2	122.0	114.9	107.0	97.4	85.1	74.6	52.6	11.4	2.6
57.5°	47.4	47.4	45.6	43.0	40.4	37.7	34.2	30.7	24.6	7.0	2.6
60°	21.1	20.2	20.2	19.3	18.4	17.5	16.7	14.9	12.3	4.4	2.6
61°	15.8	15.8	14.9	14.0	14.0	13.2	12.3	11.4	9.7	3.5	2.6
62°	11.4	11.4	11.4	10.5	10.5	9.7	9.7	8.8	7.0	2.6	2.6
63°	8.8	8.8	8.8	7.9	7.9	7.9	7.0	7.0	5.3	2.6	2.6
64°	6.1	6.1	6.1	6.1	6.1	6.1	5.3	5.3	4.4	1.8	2.6
65°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.5	1.8	2.6
66°	3.5	3.5	3.5	3.5	3.5	3.5	2.6	2.6	2.6	1.8	2.6



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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°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8	2.6
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.8	2.6
77.5°	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	1.8	2.6
80°	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	1.8	2.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.8	2.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.8	2.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.8	2.6
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°	342.2	342.2	342.2	342.2	342.2
2.5°	315.0	220.2	175.5	158.8	153.5
5°	285.2	165.0	130.7	112.3	105.3
7.5°	239.5	136.0	98.3	81.6	76.3
10°	193.9	112.3	79.8	66.7	63.2
12.5°	165.8	97.4	74.6	69.3	69.3
15°	154.4	102.7	103.5	124.6	139.5
17.5°	158.8	160.6	250.9	305.3	315.0
20°	228.1	288.7	286.0	259.7	251.8
22.5°	264.1	190.4	143.9	118.4	114.1
25°	130.7	86.9	74.6	68.4	67.6
26°	99.1	72.8	64.9	61.4	59.7
27°	82.5	64.1	57.9	53.5	51.8
28°	73.7	57.0	50.0	45.6	43.9
29°	66.7	49.1	42.1	37.7	36.9
30°	58.8	41.2	35.1	30.7	29.8
31°	50.0	34.2	28.1	25.4	23.7
32°	42.1	28.1	22.8	20.2	18.4
33°	35.1	22.8	19.3	16.7	14.9
34°	29.8	19.3	15.8	13.2	12.3
35°	24.6	15.8	13.2	11.4	10.5
36°	21.1	14.0	10.5	8.8	7.9
37°	18.4	11.4	8.8	7.0	7.0
38°	15.8	9.7	7.9	5.3	5.3
39°	13.2	7.9	6.1	4.4	4.4
40°	11.4	7.0	5.3	3.5	2.6
42.5°	7.9	4.4	3.5	1.8	0.9
45°	5.3	3.5	1.8	0.9	0.0
47.5°	3.5	2.6	1.8	0.9	0.0
50°	2.6	2.6	1.8	0.0	0.0
51°	2.6	1.8	1.8	0.0	0.0
52°	2.6	1.8	0.9	0.0	0.0
53°	2.6	1.8	0.9	0.0	0.0
54°	2.6	1.8	0.9	0.0	0.0
55°	2.6	1.8	0.9	0.0	0.0
57.5°	2.6	1.8	0.9	0.0	0.0
60°	2.6	1.8	1.8	0.0	0.0
61°	2.6	2.6	1.8	0.0	0.0
62°	2.6	2.6	1.8	0.0	0.0
63°	2.6	2.6	1.8	0.0	0.0
64°	2.6	2.6	1.8	0.9	0.0
65°	2.6	2.6	1.8	0.9	0.0
66°	2.6	2.6	1.8	0.9	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	2.6	2.6	1.8	0.9	0.0
75°	2.6	2.6	1.8	0.9	0.0
77.5°	3.5	2.6	1.8	0.9	0.0
80°	3.5	2.6	1.8	0.9	0.0
82.5°	3.5	2.6	1.8	0.9	0.0
85°	3.5	2.6	1.8	0.9	0.0
87.5°	3.5	2.6	1.8	0.9	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°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.6
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8	2.6





67.5°	2.6	2.6	1.8	0.9	0.0
70°	2.6	2.6	1.8	0.9	0.0



(END OF REPORT)