

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: P174923

Luminaire Tested: **LDA4A28930D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174923
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: LDA4A28930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2347.4 lumens
Efficiency: N/A
Efficacy: 52.8 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

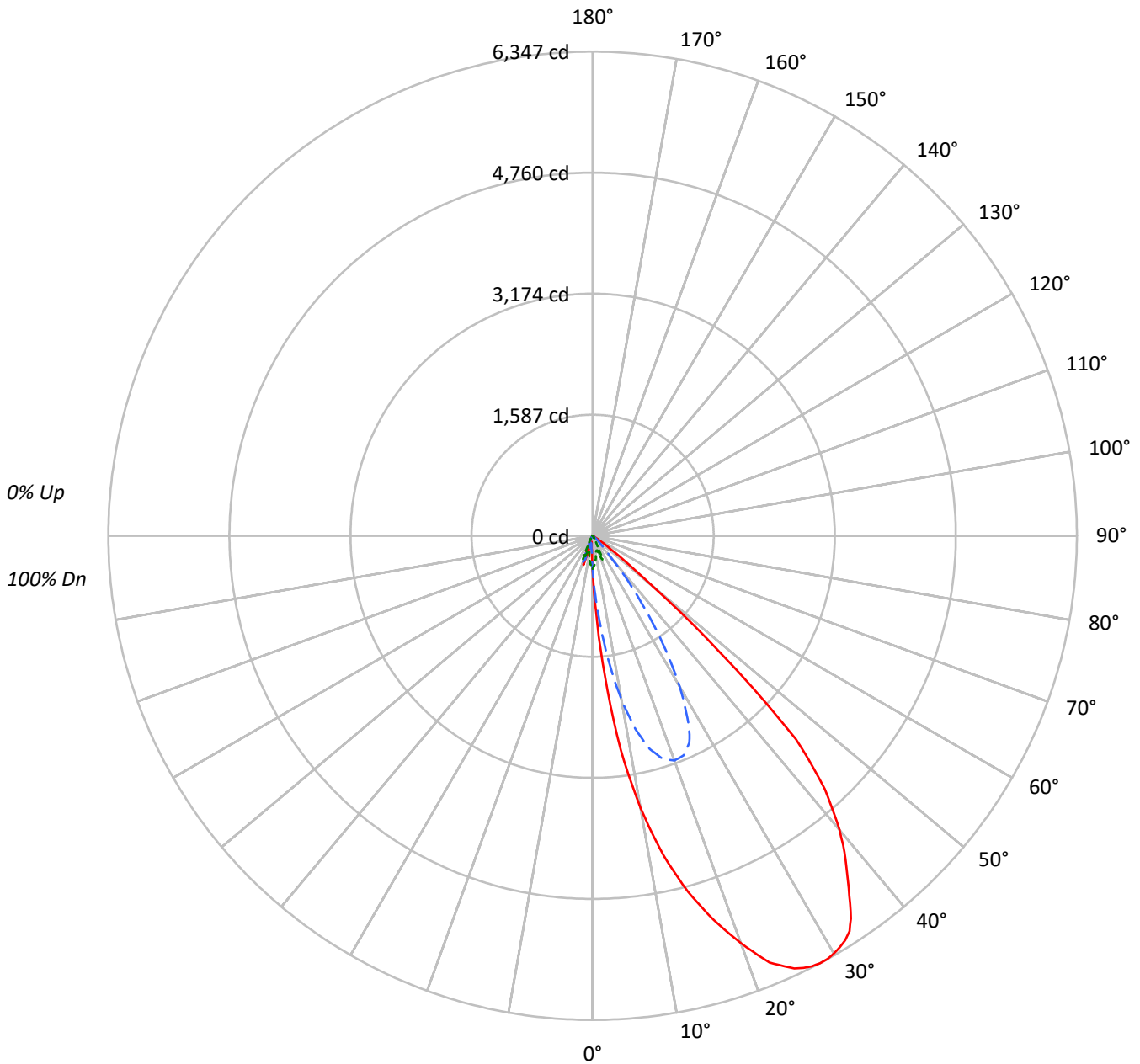
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P174923

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LA1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P174923

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LA1 30° Tilt

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°	53754	53754	53754
5°	225817	44970	16604
10°	453650	30936	10082
15°	617069	25118	22692
20°	745776	38145	42096
25°	851735	22660	11718
30°	900582	10668	5412
35°	885816	4713	2018
40°	810653	2335	547
45°	657540	1169	0
50°	194943	652	0
55°	35332	731	0
60°	6611	839	0
65°	1634	992	0
70°	397	1226	0
75°	0	1620	0
80°	0	3196	0
85°	0	6369	0



TEST NUMBER: P174923

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.2	3.4
10°-20°	410.0	17.5
20°-30°	718.0	30.6
30°-40°	721.1	30.7
40°-50°	379.8	16.2
50°-60°	31.7	1.3
60°-70°	3.2	0.1
70°-80°	2.3	0.1
80°-90°	2.1	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°	1207.2	51.4
0°-40°	1928.3	82.1
0°-60°	2339.8	99.7
0°-90°	2347.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2347.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	436	436	436	436	436	
5°	1824	1192	363	166	134	234
15°	4832	2892	197	132	178	1380
25°	6258	2995	166	95	86	2864
35°	5883	1301	31	17	13	3638
45°	3770	134	7	2	0	2584
55°	164	14	3	1	0	247
65°	6	2	3	2	0	8
75°	0	2	3	2	0	0
85°	0	2	4	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P174923

CATALOG NUMBER: LDA4A28930D010TE 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°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	989.0	990.1	991.3	999.1	981.2	976.7	968.9	957.7	920.9	768.9	580.0
5°	1823.8	1837.2	1833.9	1822.7	1794.8	1779.1	1755.7	1731.1	1630.5	1192.4	719.7
7.5°	2834.1	2859.8	2854.2	2837.5	2790.5	2769.3	2710.1	2677.6	2525.7	1693.1	823.6
10°	3622.0	3690.1	3691.3	3675.6	3605.2	3575.0	3513.6	3455.5	3263.2	2183.7	871.7
12.5°	4288.0	4289.1	4341.7	4329.4	4247.8	4234.4	4183.0	4095.8	3893.5	2592.7	871.7
15°	4832.3	4906.0	4893.7	4880.3	4794.3	4776.4	4727.2	4646.8	4411.0	2892.2	829.2
17.5°	5281.5	5347.5	5328.5	5313.9	5227.9	5188.8	5135.1	5039.0	4779.8	3069.9	740.9
20°	5681.6	5744.2	5706.2	5680.5	5565.4	5517.3	5439.1	5328.5	5032.3	3135.8	638.1
22.5°	6054.9	6120.8	6072.8	6037.0	5888.4	5795.6	5685.0	5545.3	5196.6	3114.6	583.4
25°	6258.3	6344.3	6298.5	6270.6	6128.6	6020.2	5873.8	5693.9	5290.5	2995.0	439.2
26°	6303.0	6393.5	6349.9	6325.3	6181.2	6066.0	5909.6	5720.7	5298.3	2896.7	338.6
27°	6334.3	6434.8	6384.5	6353.3	6204.6	6081.7	5918.5	5721.8	5286.0	2763.7	269.3
28°	6346.6	6457.2	6395.7	6357.7	6203.5	6069.4	5896.2	5697.3	5253.6	2610.6	229.1
29°	6345.4	6466.1	6394.6	6353.3	6189.0	6040.3	5862.7	5662.6	5208.9	2450.8	206.7
30°	6323.1	6455.0	6383.4	6330.9	6154.3	5994.5	5814.6	5614.6	5158.6	2276.4	184.4
31°	6292.9	6428.1	6353.3	6288.4	6097.3	5924.1	5747.5	5549.7	5091.5	2089.8	168.7
32°	6249.3	6384.5	6301.8	6216.9	6016.9	5835.8	5666.0	5473.7	5010.0	1893.1	149.8
33°	6180.0	6299.6	6203.5	6105.2	5905.1	5735.3	5574.3	5385.5	4917.2	1688.6	129.6
34°	6053.8	6158.8	6059.3	5959.9	5781.1	5623.5	5469.3	5281.5	4808.8	1499.7	111.8
35°	5882.8	5972.2	5882.8	5799.0	5641.4	5495.0	5347.5	5164.2	4678.1	1300.8	96.1
36°	5708.4	5786.7	5704.0	5638.0	5487.2	5356.4	5218.9	5029.0	4530.5	1112.0	84.9
37°	5545.3	5615.7	5539.7	5473.7	5344.1	5211.1	5074.8	4880.3	4367.4	930.9	70.4
38°	5383.2	5445.8	5381.0	5307.2	5187.7	5052.4	4915.0	4716.1	4185.2	759.9	60.3
39°	5214.5	5265.9	5203.3	5128.4	5006.6	4872.5	4731.7	4526.1	3976.2	582.2	52.5
40°	5034.6	5082.6	5005.5	4938.4	4816.6	4679.2	4535.0	4321.6	3749.4	390.0	44.7
42.5°	4502.6	4531.7	4466.8	4374.1	4252.3	4101.4	3927.1	3687.9	3024.1	205.6	31.3
45°	3769.5	3775.1	3724.8	3556.0	3392.9	3159.3	2898.9	2540.2	1757.9	134.1	20.1
47.5°	2275.3	2261.9	2182.6	2038.4	1886.4	1639.4	1395.8	1148.8	682.8	78.2	13.4
50°	1015.9	1000.2	961.1	886.2	797.9	706.3	597.9	506.2	331.9	42.5	8.9
51°	736.5	723.1	694.0	637.0	572.2	507.4	432.5	369.9	248.1	34.6	7.8
52°	517.4	509.6	489.5	449.3	413.5	363.2	311.8	272.7	186.6	27.9	5.6
53°	361.0	355.4	343.1	316.3	295.0	258.2	225.7	194.5	135.2	22.4	5.6
54°	244.7	241.4	233.6	215.7	197.8	177.7	154.2	136.3	95.0	17.9	4.5
55°	164.3	162.0	155.3	146.4	136.3	124.0	108.4	95.0	67.1	14.5	3.4
57.5°	60.3	60.3	58.1	54.8	51.4	48.1	43.6	39.1	31.3	8.9	3.4
60°	26.8	25.7	25.7	24.6	23.5	22.4	21.2	19.0	15.6	5.6	3.4
61°	20.1	20.1	19.0	17.9	17.9	16.8	15.6	14.5	12.3	4.5	3.4
62°	14.5	14.5	14.5	13.4	13.4	12.3	12.3	11.2	8.9	3.4	3.4
63°	11.2	11.2	11.2	10.1	10.1	10.1	8.9	8.9	6.7	3.4	3.4
64°	7.8	7.8	7.8	7.8	7.8	7.8	6.7	6.7	5.6	2.2	3.4
65°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.5	2.2	3.4
66°	4.5	4.5	4.5	4.5	4.5	4.5	3.4	3.4	3.4	2.2	3.4



TEST NUMBER: P174923

CATALOG NUMBER: LDA4A28930D010TE 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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	3.4
75°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.2	3.4
77.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	3.4
80°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	3.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.2	3.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.2	3.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.2	3.4
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: P174923

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	435.8	435.8	435.8	435.8	435.8
2.5°	401.2	280.5	223.5	202.3	195.6
5°	363.2	210.1	166.5	143.0	134.1
7.5°	305.1	173.2	125.2	103.9	97.2
10°	247.0	143.0	101.7	84.9	80.5
12.5°	211.2	124.0	95.0	88.3	88.3
15°	196.7	130.8	131.9	158.7	177.7
17.5°	202.3	204.5	319.6	388.9	401.2
20°	290.6	367.7	364.3	330.8	320.7
22.5°	336.4	242.5	183.3	150.9	145.3
25°	166.5	110.6	95.0	87.2	86.1
26°	126.3	92.8	82.7	78.2	76.0
27°	105.0	81.6	73.8	68.2	65.9
28°	93.9	72.6	63.7	58.1	55.9
29°	84.9	62.6	53.6	48.1	46.9
30°	74.9	52.5	44.7	39.1	38.0
31°	63.7	43.6	35.8	32.4	30.2
32°	53.6	35.8	29.1	25.7	23.5
33°	44.7	29.1	24.6	21.2	19.0
34°	38.0	24.6	20.1	16.8	15.6
35°	31.3	20.1	16.8	14.5	13.4
36°	26.8	17.9	13.4	11.2	10.1
37°	23.5	14.5	11.2	8.9	8.9
38°	20.1	12.3	10.1	6.7	6.7
39°	16.8	10.1	7.8	5.6	5.6
40°	14.5	8.9	6.7	4.5	3.4
42.5°	10.1	5.6	4.5	2.2	1.1
45°	6.7	4.5	2.2	1.1	0.0
47.5°	4.5	3.4	2.2	1.1	0.0
50°	3.4	3.4	2.2	0.0	0.0
51°	3.4	2.2	2.2	0.0	0.0
52°	3.4	2.2	1.1	0.0	0.0
53°	3.4	2.2	1.1	0.0	0.0
54°	3.4	2.2	1.1	0.0	0.0
55°	3.4	2.2	1.1	0.0	0.0
57.5°	3.4	2.2	1.1	0.0	0.0
60°	3.4	2.2	2.2	0.0	0.0
61°	3.4	3.4	2.2	0.0	0.0
62°	3.4	3.4	2.2	0.0	0.0
63°	3.4	3.4	2.2	0.0	0.0
64°	3.4	3.4	2.2	1.1	0.0
65°	3.4	3.4	2.2	1.1	0.0
66°	3.4	3.4	2.2	1.1	0.0



TEST NUMBER: P174923

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	3.4	3.4	2.2	1.1	0.0
75°	3.4	3.4	2.2	1.1	0.0
77.5°	4.5	3.4	2.2	1.1	0.0
80°	4.5	3.4	2.2	1.1	0.0
82.5°	4.5	3.4	2.2	1.1	0.0
85°	4.5	3.4	2.2	1.1	0.0
87.5°	4.5	3.4	2.2	1.1	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°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.4
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	3.4





67.5°	3.4	3.4	2.2	1.1	0.0
70°	3.4	3.4	2.2	1.1	0.0



(END OF REPORT)