

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: P174925

Luminaire Tested: **LDA4A28940D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174925
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: LDA4A28940D010TE 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: 2539.8 lumens
Efficiency: N/A
Efficacy: 57.1 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

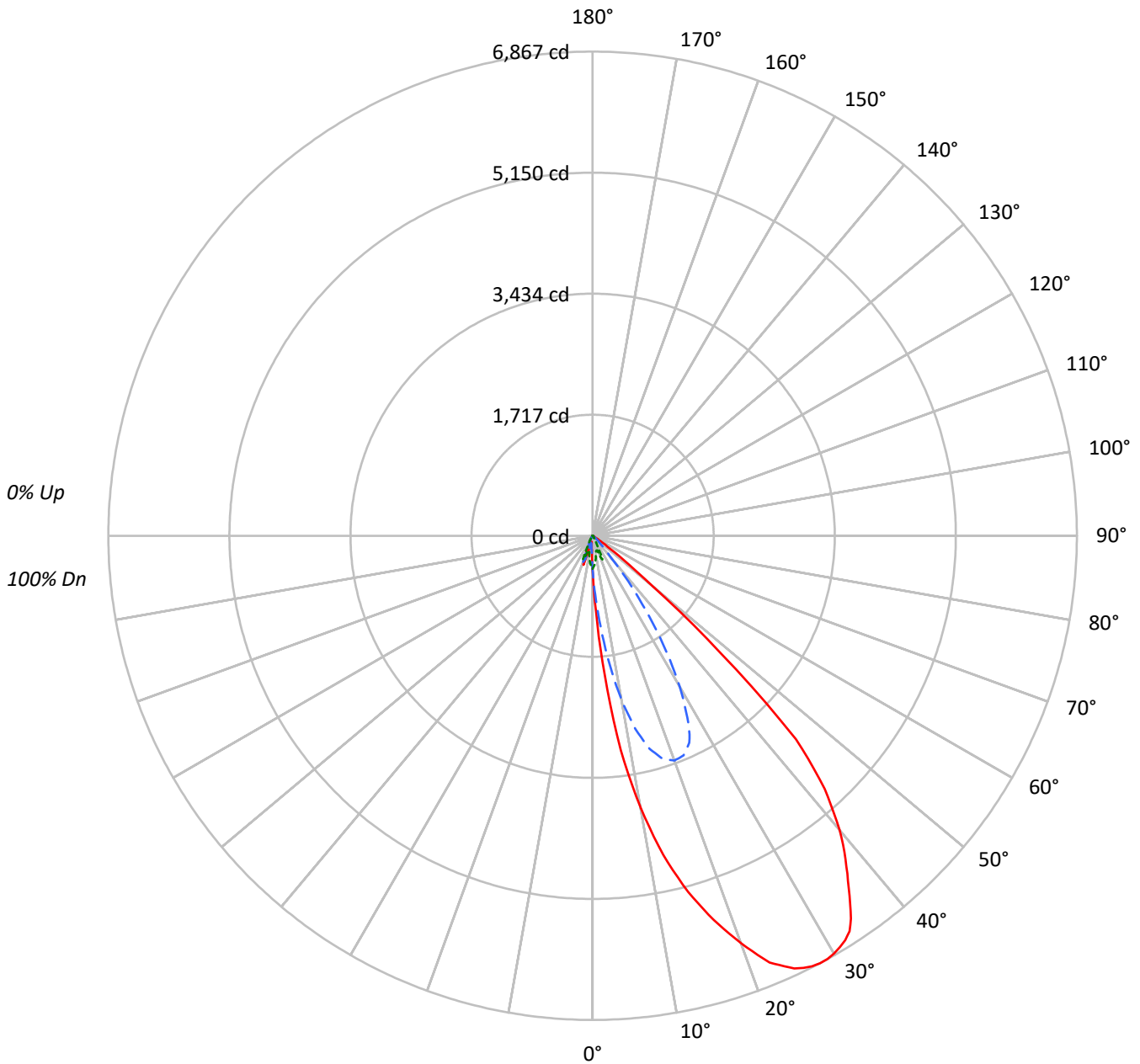
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	58170	58170	58170
5°	244340	48660	17966
10°	490849	33466	10909
15°	667663	27174	24556
20°	806931	41269	45548
25°	921566	24525	12671
30°	974430	11537	5854
35°	958439	5105	2183
40°	877120	2528	580
45°	711459	1273	0
50°	210908	691	0
55°	38214	774	0
60°	7154	888	0
65°	1751	1051	0
70°	433	1298	0
75°	0	1716	0
80°	0	3410	0
85°	0	6793	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.7	3.4
10°-20°	443.6	17.5
20°-30°	776.9	30.6
30°-40°	780.2	30.7
40°-50°	411.0	16.2
50°-60°	34.2	1.3
60°-70°	3.4	0.1
70°-80°	2.5	0.1
80°-90°	2.3	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°	1306.2	51.4
0°-40°	2086.4	82.1
0°-60°	2531.6	99.7
0°-90°	2539.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2539.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	472	472	472	472	472	
5°	1973	1290	393	180	145	253
15°	5228	3129	213	143	192	1493
25°	6771	3241	180	103	93	3098
35°	6365	1408	34	18	14	3936
45°	4079	145	7	2	0	2796
55°	178	16	4	1	0	267
65°	6	2	4	2	0	9
75°	0	2	4	2	0	0
85°	0	2	5	2	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°	471.6	471.6	471.6	471.6	471.6	471.6	471.6	471.6	471.6	471.6	471.6
2.5°	1070.1	1071.3	1072.5	1081.0	1061.7	1056.8	1048.4	1036.3	996.4	831.9	627.6
5°	1973.4	1987.9	1984.3	1972.2	1941.9	1925.0	1899.6	1873.0	1764.2	1290.2	778.7
7.5°	3066.5	3094.3	3088.3	3070.1	3019.3	2996.4	2932.3	2897.2	2732.8	1831.9	891.2
10°	3919.0	3992.7	3993.9	3977.0	3900.8	3868.2	3801.7	3738.8	3530.8	2362.7	943.2
12.5°	4639.6	4640.8	4697.7	4684.4	4596.1	4581.6	4526.0	4431.7	4212.8	2805.3	943.2
15°	5228.5	5308.3	5295.0	5280.5	5187.4	5168.0	5114.8	5027.8	4772.6	3129.4	897.2
17.5°	5714.6	5785.9	5765.4	5749.7	5656.6	5614.2	5556.2	5452.2	5171.7	3321.6	801.7
20°	6147.5	6215.2	6174.1	6146.3	6021.7	5969.7	5885.1	5765.4	5444.9	3393.0	690.4
22.5°	6551.3	6622.7	6570.7	6532.0	6371.2	6270.8	6151.1	6000.0	5622.7	3370.0	631.2
25°	6771.4	6864.5	6815.0	6784.7	6631.2	6513.9	6355.5	6160.8	5724.3	3240.6	475.2
26°	6819.8	6917.7	6870.6	6844.0	6688.0	6563.4	6394.2	6189.8	5732.7	3134.2	366.4
27°	6853.6	6962.5	6908.1	6874.2	6713.4	6580.4	6403.8	6191.0	5719.4	2990.3	291.4
28°	6866.9	6986.7	6920.2	6879.0	6712.2	6567.1	6379.6	6164.4	5684.4	2824.6	247.9
29°	6865.7	6996.3	6918.9	6874.2	6696.5	6535.6	6343.4	6126.9	5636.0	2651.7	223.7
30°	6841.6	6984.2	6906.8	6850.0	6659.0	6486.1	6291.4	6074.9	5581.6	2463.1	199.5
31°	6808.9	6955.2	6874.2	6804.1	6597.3	6409.9	6218.8	6004.8	5509.0	2261.2	182.6
32°	6761.7	6908.1	6818.6	6726.7	6510.2	6314.3	6130.6	5922.6	5420.8	2048.4	162.0
33°	6686.8	6816.2	6712.2	6605.8	6389.3	6205.5	6031.4	5827.0	5320.4	1827.1	140.3
34°	6550.1	6663.8	6556.2	6448.6	6255.1	6084.6	5917.7	5714.6	5203.1	1622.7	120.9
35°	6365.1	6461.9	6365.1	6274.4	6104.0	5945.5	5785.9	5587.6	5061.6	1407.5	104.0
36°	6176.5	6261.1	6171.7	6100.3	5937.1	5795.6	5646.9	5441.3	4902.0	1203.1	91.9
37°	6000.0	6076.1	5993.9	5922.6	5782.3	5638.4	5490.9	5280.5	4725.5	1007.2	76.2
38°	5824.6	5892.3	5822.2	5742.4	5613.0	5466.7	5318.0	5102.7	4528.4	822.2	65.3
39°	5642.0	5697.7	5630.0	5548.9	5417.1	5272.0	5119.7	4897.2	4302.3	630.0	56.8
40°	5447.4	5499.4	5415.9	5343.4	5211.6	5062.8	4906.9	4675.9	4056.8	422.0	48.4
42.5°	4871.8	4903.2	4833.1	4732.7	4600.9	4437.7	4249.1	3990.3	3272.0	222.5	33.9
45°	4078.6	4084.6	4030.2	3847.6	3671.1	3418.4	3136.6	2748.5	1902.0	145.1	21.8
47.5°	2461.9	2447.4	2361.5	2205.5	2041.1	1773.9	1510.3	1243.0	738.8	84.6	14.5
50°	1099.1	1082.2	1039.9	958.9	863.4	764.2	646.9	547.8	359.1	45.9	9.7
51°	796.9	782.3	750.9	689.2	619.1	549.0	468.0	400.2	268.4	37.5	8.5
52°	559.9	551.4	529.6	486.1	447.4	393.0	337.4	295.0	201.9	30.2	6.0
53°	390.6	384.5	371.2	342.2	319.2	279.3	244.3	210.4	146.3	24.2	6.0
54°	264.8	261.2	252.7	233.4	214.0	192.3	166.9	147.5	102.8	19.3	4.8
55°	177.7	175.3	168.1	158.4	147.5	134.2	117.3	102.8	72.6	15.7	3.6
57.5°	65.3	65.3	62.9	59.2	55.6	52.0	47.2	42.3	33.9	9.7	3.6
60°	29.0	27.8	27.8	26.6	25.4	24.2	23.0	20.6	16.9	6.0	3.6
61°	21.8	21.8	20.6	19.3	19.3	18.1	16.9	15.7	13.3	4.8	3.6
62°	15.7	15.7	15.7	14.5	14.5	13.3	13.3	12.1	9.7	3.6	3.6
63°	12.1	12.1	12.1	10.9	10.9	10.9	9.7	9.7	7.3	3.6	3.6
64°	8.5	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.0	2.4	3.6
65°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.8	2.4	3.6
66°	4.8	4.8	4.8	4.8	4.8	4.8	3.6	3.6	3.6	2.4	3.6



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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°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.4	3.6
75°	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.4	3.6
77.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.4	3.6
80°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.4	3.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.4	3.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.4	3.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.4	3.6
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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CATALOG NUMBER: LDA4A28940D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	471.6	471.6	471.6	471.6	471.6
2.5°	434.1	303.5	241.8	218.9	211.6
5°	393.0	227.3	180.2	154.8	145.1
7.5°	330.1	187.4	135.4	112.5	105.2
10°	267.2	154.8	110.0	91.9	87.1
12.5°	228.5	134.2	102.8	95.5	95.5
15°	212.8	141.5	142.7	171.7	192.3
17.5°	218.9	221.3	345.8	420.8	434.1
20°	314.4	397.8	394.2	357.9	347.0
22.5°	364.0	262.4	198.3	163.2	157.2
25°	180.2	119.7	102.8	94.3	93.1
26°	136.6	100.4	89.5	84.6	82.2
27°	113.7	88.3	79.8	73.8	71.3
28°	101.6	78.6	68.9	62.9	60.5
29°	91.9	67.7	58.0	52.0	50.8
30°	81.0	56.8	48.4	42.3	41.1
31°	68.9	47.2	38.7	35.1	32.6
32°	58.0	38.7	31.4	27.8	25.4
33°	48.4	31.4	26.6	23.0	20.6
34°	41.1	26.6	21.8	18.1	16.9
35°	33.9	21.8	18.1	15.7	14.5
36°	29.0	19.3	14.5	12.1	10.9
37°	25.4	15.7	12.1	9.7	9.7
38°	21.8	13.3	10.9	7.3	7.3
39°	18.1	10.9	8.5	6.0	6.0
40°	15.7	9.7	7.3	4.8	3.6
42.5°	10.9	6.0	4.8	2.4	1.2
45°	7.3	4.8	2.4	1.2	0.0
47.5°	4.8	3.6	2.4	1.2	0.0
50°	3.6	3.6	2.4	0.0	0.0
51°	3.6	2.4	2.4	0.0	0.0
52°	3.6	2.4	1.2	0.0	0.0
53°	3.6	2.4	1.2	0.0	0.0
54°	3.6	2.4	1.2	0.0	0.0
55°	3.6	2.4	1.2	0.0	0.0
57.5°	3.6	2.4	1.2	0.0	0.0
60°	3.6	2.4	2.4	0.0	0.0
61°	3.6	3.6	2.4	0.0	0.0
62°	3.6	3.6	2.4	0.0	0.0
63°	3.6	3.6	2.4	0.0	0.0
64°	3.6	3.6	2.4	1.2	0.0
65°	3.6	3.6	2.4	1.2	0.0
66°	3.6	3.6	2.4	1.2	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	3.6	3.6	2.4	1.2	0.0
75°	3.6	3.6	2.4	1.2	0.0
77.5°	4.8	3.6	2.4	1.2	0.0
80°	4.8	3.6	2.4	1.2	0.0
82.5°	4.8	3.6	2.4	1.2	0.0
85°	4.8	3.6	2.4	1.2	0.0
87.5°	4.8	3.6	2.4	1.2	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°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.6
70°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.4	3.6





67.5°	3.6	3.6	2.4	1.2	0.0
70°	3.6	3.6	2.4	1.2	0.0



(END OF REPORT)