

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: P174924

Luminaire Tested: **LDA4A28935D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174924
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: LDA4A28935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2365.6 lumens
Efficiency: N/A
Efficacy: 53.2 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

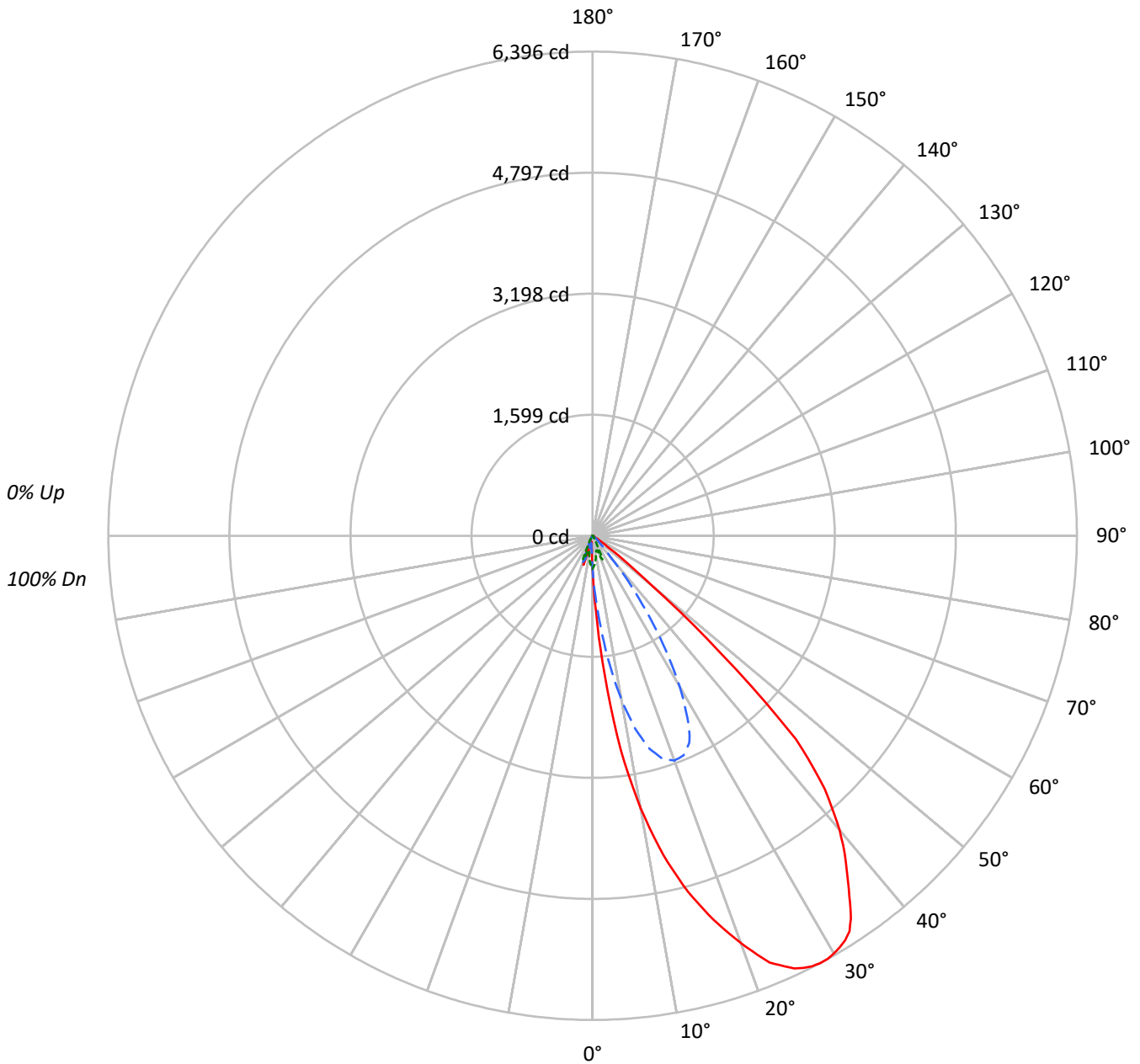
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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																			
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°	54173	54173	54173
5°	227563	45317	16728
10°	457144	31174	10158
15°	621832	25310	22870
20°	751539	38433	42424
25°	858308	22837	11800
30°	907532	10753	5455
35°	892652	4743	2033
40°	816900	2351	547
45°	662617	1186	0
50°	196440	652	0
55°	35590	731	0
60°	6661	839	0
65°	1634	992	0
70°	397	1226	0
75°	0	1620	0
80°	0	3196	0
85°	0	6369	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.8	3.4
10°-20°	413.2	17.5
20°-30°	723.6	30.6
30°-40°	726.6	30.7
40°-50°	382.8	16.2
50°-60°	31.9	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°	1216.6	51.4
0°-40°	1943.2	82.1
0°-60°	2357.9	99.7
0°-90°	2365.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2365.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	439	439	439	439	439	
5°	1838	1202	366	168	135	235
15°	4870	2915	198	133	179	1390
25°	6307	3018	168	96	87	2886
35°	5928	1311	32	17	14	3666
45°	3799	135	7	2	0	2604
55°	166	15	3	1	0	249
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	



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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°	439.2	439.2	439.2	439.2	439.2	439.2	439.2	439.2	439.2	439.2	439.2
2.5°	996.7	997.8	998.9	1006.8	988.8	984.3	976.4	965.1	928.0	774.8	584.5
5°	1837.9	1851.4	1848.1	1836.8	1808.6	1792.9	1769.2	1744.5	1643.1	1201.6	725.3
7.5°	2856.0	2881.9	2876.3	2859.4	2812.1	2790.7	2731.0	2698.3	2545.2	1706.2	830.0
10°	3649.9	3718.6	3719.8	3704.0	3633.1	3602.6	3540.7	3482.1	3288.4	2200.6	878.4
12.5°	4321.2	4322.3	4375.2	4362.8	4280.6	4267.1	4215.3	4127.4	3923.6	2612.7	878.4
15°	4869.6	4943.9	4931.5	4918.0	4831.3	4813.3	4763.7	4682.7	4445.0	2914.6	835.6
17.5°	5322.3	5388.8	5369.6	5355.0	5268.3	5228.9	5174.8	5077.9	4816.7	3093.6	746.7
20°	5725.5	5788.6	5750.3	5724.4	5608.4	5559.9	5481.1	5369.6	5071.2	3160.1	643.0
22.5°	6101.6	6168.1	6119.7	6083.6	5933.8	5840.4	5728.9	5588.1	5236.7	3138.7	587.9
25°	6306.6	6393.3	6347.1	6319.0	6176.0	6066.7	5919.2	5737.9	5331.3	3018.2	442.6
26°	6351.7	6442.9	6399.0	6374.2	6228.9	6112.9	5955.2	5764.9	5339.2	2919.1	341.2
27°	6383.2	6484.5	6433.9	6402.3	6252.5	6128.7	5964.2	5766.0	5326.8	2785.0	271.4
28°	6395.6	6507.1	6445.1	6406.8	6251.4	6116.3	5941.7	5741.3	5294.2	2630.8	230.9
29°	6394.4	6516.1	6444.0	6402.3	6236.8	6087.0	5907.9	5706.4	5249.1	2469.7	208.3
30°	6371.9	6504.8	6432.7	6379.8	6201.9	6040.8	5859.5	5657.9	5198.4	2294.0	185.8
31°	6341.5	6477.8	6402.3	6337.0	6144.4	5969.9	5791.9	5592.6	5130.9	2106.0	170.1
32°	6297.6	6433.9	6350.5	6264.9	6063.4	5880.9	5709.7	5516.0	5048.7	1907.7	150.9
33°	6227.8	6348.3	6251.4	6152.3	5950.7	5779.6	5617.4	5427.1	4955.2	1701.7	130.6
34°	6100.5	6206.4	6106.1	6005.9	5825.7	5666.9	5511.5	5322.3	4846.0	1511.3	112.6
35°	5928.2	6018.3	5928.2	5843.7	5685.0	5537.4	5388.8	5204.1	4714.2	1310.9	96.9
36°	5752.5	5831.4	5748.0	5681.6	5529.5	5397.8	5259.3	5067.8	4565.5	1120.5	85.6
37°	5588.1	5659.1	5582.5	5516.0	5385.4	5251.4	5114.0	4918.0	4401.1	938.1	70.9
38°	5424.8	5487.9	5422.6	5348.2	5227.7	5091.5	4952.9	4752.5	4217.5	765.8	60.8
39°	5254.8	5306.6	5243.5	5168.0	5045.3	4910.1	4768.2	4561.0	4006.9	586.7	52.9
40°	5073.4	5121.9	5044.2	4976.6	4853.8	4715.3	4570.0	4354.9	3778.3	393.0	45.0
42.5°	4537.4	4566.7	4501.3	4407.9	4285.1	4133.1	3957.4	3716.4	3047.4	207.2	31.5
45°	3798.6	3804.2	3753.6	3583.5	3419.1	3183.7	2921.3	2559.8	1771.5	135.1	20.3
47.5°	2292.9	2279.4	2199.4	2054.2	1901.0	1652.1	1406.6	1157.7	688.1	78.8	13.5
50°	1023.7	1007.9	968.5	893.1	804.1	711.7	602.5	510.2	334.5	42.8	9.0
51°	742.2	728.6	699.4	641.9	576.6	511.3	435.8	372.8	250.0	34.9	7.9
52°	521.4	513.5	493.3	452.7	416.7	366.0	314.2	274.8	188.1	28.2	5.6
53°	363.8	358.1	345.7	318.7	297.3	260.1	227.5	196.0	136.3	22.5	5.6
54°	246.6	243.3	235.4	217.4	199.3	179.1	155.4	137.4	95.7	18.0	4.5
55°	165.5	163.3	156.5	147.5	137.4	125.0	109.2	95.7	67.6	14.6	3.4
57.5°	60.8	60.8	58.6	55.2	51.8	48.4	43.9	39.4	31.5	9.0	3.4
60°	27.0	25.9	25.9	24.8	23.6	22.5	21.4	19.1	15.8	5.6	3.4
61°	20.3	20.3	19.1	18.0	18.0	16.9	15.8	14.6	12.4	4.5	3.4
62°	14.6	14.6	14.6	13.5	13.5	12.4	12.4	11.3	9.0	3.4	3.4
63°	11.3	11.3	11.3	10.1	10.1	10.1	9.0	9.0	6.8	3.4	3.4
64°	7.9	7.9	7.9	7.9	7.9	7.9	6.8	6.8	5.6	2.3	3.4
65°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.5	2.3	3.4
66°	4.5	4.5	4.5	4.5	4.5	4.5	3.4	3.4	3.4	2.3	3.4



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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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.3	3.4
75°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.3	3.4
77.5°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.3	3.4
80°	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.3	3.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.3	3.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.3	3.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.3	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



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CATALOG NUMBER: LDA4A28935D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	439.2	439.2	439.2	439.2	439.2
2.5°	404.3	282.7	225.2	203.8	197.1
5°	366.0	211.7	167.8	144.2	135.1
7.5°	307.4	174.6	126.1	104.7	98.0
10°	248.9	144.2	102.5	85.6	81.1
12.5°	212.8	125.0	95.7	89.0	89.0
15°	198.2	131.8	132.9	159.9	179.1
17.5°	203.8	206.1	322.1	391.9	404.3
20°	292.8	370.5	367.1	333.3	323.2
22.5°	339.0	244.4	184.7	152.0	146.4
25°	167.8	111.5	95.7	87.8	86.7
26°	127.3	93.5	83.3	78.8	76.6
27°	105.9	82.2	74.3	68.7	66.4
28°	94.6	73.2	64.2	58.6	56.3
29°	85.6	63.1	54.1	48.4	47.3
30°	75.5	52.9	45.0	39.4	38.3
31°	64.2	43.9	36.0	32.7	30.4
32°	54.1	36.0	29.3	25.9	23.6
33°	45.0	29.3	24.8	21.4	19.1
34°	38.3	24.8	20.3	16.9	15.8
35°	31.5	20.3	16.9	14.6	13.5
36°	27.0	18.0	13.5	11.3	10.1
37°	23.6	14.6	11.3	9.0	9.0
38°	20.3	12.4	10.1	6.8	6.8
39°	16.9	10.1	7.9	5.6	5.6
40°	14.6	9.0	6.8	4.5	3.4
42.5°	10.1	5.6	4.5	2.3	1.1
45°	6.8	4.5	2.3	1.1	0.0
47.5°	4.5	3.4	2.3	1.1	0.0
50°	3.4	3.4	2.3	0.0	0.0
51°	3.4	2.3	2.3	0.0	0.0
52°	3.4	2.3	1.1	0.0	0.0
53°	3.4	2.3	1.1	0.0	0.0
54°	3.4	2.3	1.1	0.0	0.0
55°	3.4	2.3	1.1	0.0	0.0
57.5°	3.4	2.3	1.1	0.0	0.0
60°	3.4	2.3	2.3	0.0	0.0
61°	3.4	3.4	2.3	0.0	0.0
62°	3.4	3.4	2.3	0.0	0.0
63°	3.4	3.4	2.3	0.0	0.0
64°	3.4	3.4	2.3	1.1	0.0
65°	3.4	3.4	2.3	1.1	0.0
66°	3.4	3.4	2.3	1.1	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	3.4	3.4	2.3	1.1	0.0
75°	3.4	3.4	2.3	1.1	0.0
77.5°	4.5	3.4	2.3	1.1	0.0
80°	4.5	3.4	2.3	1.1	0.0
82.5°	4.5	3.4	2.3	1.1	0.0
85°	4.5	3.4	2.3	1.1	0.0
87.5°	4.5	3.4	2.3	1.1	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°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.4
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.3	3.4





67.5°	3.4	3.4	2.3	1.1	0.0
70°	3.4	3.4	2.3	1.1	0.0



(END OF REPORT)