

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: P174919

Luminaire Tested: **LDA4A28830D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P174919  
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: LDA4A28830D010TE 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 / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2744.9 lumens  
Efficiency: N/A  
Efficacy: 61.7 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

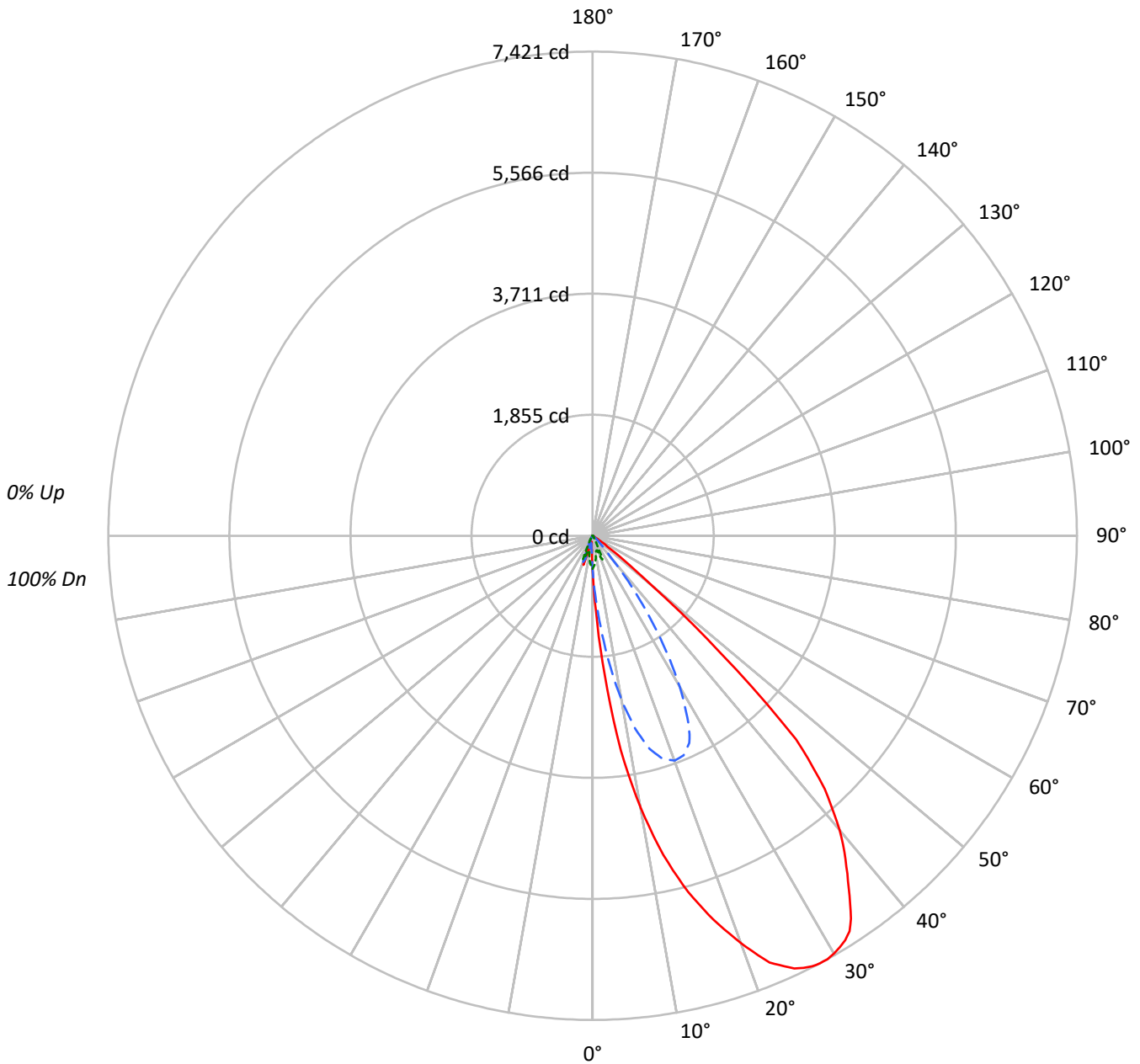
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	62857	62857	62857
5°	264064	52585	19414
10°	530465	36172	11786
15°	721563	29370	26535
20°	872063	44603	49223
25°	995957	26498	13691
30°	1053079	12477	6324
35°	1035821	5511	2364
40°	947919	2737	628
45°	768884	1361	0
50°	227948	748	0
55°	41310	839	0
60°	7746	962	0
65°	1897	1138	0
70°	469	1406	0
75°	0	1859	0
80°	0	3694	0
85°	0	7359	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.6	3.4
10°-20°	479.4	17.5
20°-30°	839.6	30.6
30°-40°	843.2	30.7
40°-50°	444.2	16.2
50°-60°	37.0	1.3
60°-70°	3.7	0.1
70°-80°	2.7	0.1
80°-90°	2.5	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°	1411.7	51.4
0°-40°	2254.8	82.1
0°-60°	2736.0	99.7
0°-90°	2744.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2744.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	510	510	510	510	510	
5°	2133	1394	425	195	157	273
15°	5651	3382	230	154	208	1613
25°	7318	3502	195	111	101	3349
35°	6879	1521	37	20	16	4254
45°	4408	157	8	3	0	3021
55°	192	17	4	1	0	289
65°	6	3	4	3	0	10
75°	0	3	4	3	0	1
85°	0	3	5	3	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°	509.6	509.6	509.6	509.6	509.6	509.6	509.6	509.6	509.6	509.6	509.6
2.5°	1156.5	1157.8	1159.1	1168.3	1147.4	1142.1	1133.0	1119.9	1076.8	899.1	678.2
5°	2132.7	2148.4	2144.4	2131.4	2098.7	2080.4	2053.0	2024.2	1906.6	1394.3	841.6
7.5°	3314.0	3344.1	3337.6	3317.9	3263.1	3238.2	3169.0	3131.1	2953.4	1979.8	963.1
10°	4235.3	4315.0	4316.3	4298.0	4215.7	4180.4	4108.6	4040.6	3815.8	2553.5	1019.3
12.5°	5014.2	5015.5	5076.9	5062.5	4967.1	4951.4	4891.3	4789.4	4552.9	3031.8	1019.3
15°	5650.6	5736.8	5722.4	5706.8	5606.1	5585.2	5527.7	5433.6	5157.9	3382.0	969.6
17.5°	6175.9	6253.0	6230.8	6213.8	6113.2	6067.4	6004.7	5892.3	5589.2	3589.8	866.4
20°	6643.7	6716.9	6672.5	6642.4	6507.8	6451.6	6360.2	6230.8	5884.5	3666.9	746.2
22.5°	7080.2	7157.3	7101.1	7059.3	6885.5	6777.0	6647.7	6484.3	6076.6	3642.0	682.1
25°	7318.0	7418.7	7365.1	7332.4	7166.5	7039.7	6868.5	6658.1	6186.4	3502.2	513.6
26°	7370.3	7476.2	7425.2	7396.5	7227.9	7093.3	6910.3	6689.5	6195.5	3387.2	396.0
27°	7406.9	7524.5	7465.7	7429.1	7255.3	7111.6	6920.8	6690.8	6181.1	3231.7	314.9
28°	7421.3	7550.7	7478.8	7434.3	7254.0	7097.2	6894.6	6662.0	6143.2	3052.7	267.9
29°	7420.0	7561.1	7477.5	7429.1	7237.0	7063.2	6855.4	6621.5	6091.0	2865.8	241.8
30°	7393.8	7548.0	7464.4	7403.0	7196.5	7009.6	6799.2	6565.3	6032.2	2661.9	215.6
31°	7358.6	7516.7	7429.1	7353.3	7129.9	6927.3	6720.8	6489.5	5953.8	2443.7	197.3
32°	7307.6	7465.7	7369.0	7269.7	7035.8	6824.1	6625.4	6400.7	5858.4	2213.7	175.1
33°	7226.6	7366.4	7254.0	7139.0	6905.1	6706.5	6518.3	6297.4	5749.9	1974.6	151.6
34°	7078.9	7201.7	7085.4	6969.1	6760.0	6575.8	6395.4	6175.9	5623.1	1753.7	130.7
35°	6879.0	6983.5	6879.0	6781.0	6596.7	6425.5	6253.0	6038.7	5470.2	1521.1	112.4
36°	6675.1	6766.6	6669.9	6592.8	6416.4	6263.5	6102.7	5880.6	5297.7	1300.3	99.3
37°	6484.3	6566.6	6477.8	6400.7	6249.1	6093.6	5934.1	5706.8	5106.9	1088.6	82.3
38°	6294.8	6368.0	6292.2	6206.0	6066.1	5908.0	5747.3	5514.7	4893.9	888.6	70.6
39°	6097.5	6157.6	6084.4	5996.9	5854.4	5697.6	5533.0	5292.5	4649.6	680.8	61.4
40°	5887.1	5943.3	5853.1	5774.7	5632.3	5471.5	5303.0	5053.4	4384.3	456.1	52.3
42.5°	5265.1	5299.0	5223.3	5114.8	4972.3	4795.9	4592.1	4312.4	3536.2	240.4	36.6
45°	4407.8	4414.3	4355.5	4158.2	3967.4	3694.3	3389.8	2970.3	2055.6	156.8	23.5
47.5°	2660.6	2644.9	2552.2	2383.6	2205.9	1917.1	1632.2	1343.4	798.5	91.5	15.7
50°	1187.9	1169.6	1123.8	1036.3	933.1	825.9	699.1	592.0	388.1	49.7	10.5
51°	861.2	845.5	811.5	744.9	669.1	593.3	505.7	432.5	290.1	40.5	9.1
52°	605.0	595.9	572.4	525.3	483.5	424.7	364.6	318.9	218.2	32.7	6.5
53°	422.1	415.6	401.2	369.8	345.0	301.9	264.0	227.4	158.1	26.1	6.5
54°	286.2	282.3	273.1	252.2	231.3	207.8	180.3	159.4	111.1	20.9	5.2
55°	192.1	189.5	181.6	171.2	159.4	145.1	126.8	111.1	78.4	17.0	3.9
57.5°	70.6	70.6	68.0	64.0	60.1	56.2	51.0	45.7	36.6	10.5	3.9
60°	31.4	30.1	30.1	28.7	27.4	26.1	24.8	22.2	18.3	6.5	3.9
61°	23.5	23.5	22.2	20.9	20.9	19.6	18.3	17.0	14.4	5.2	3.9
62°	17.0	17.0	17.0	15.7	15.7	14.4	14.4	13.1	10.5	3.9	3.9
63°	13.1	13.1	13.1	11.8	11.8	11.8	10.5	10.5	7.8	3.9	3.9
64°	9.1	9.1	9.1	9.1	9.1	9.1	7.8	7.8	6.5	2.6	3.9
65°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.2	2.6	3.9
66°	5.2	5.2	5.2	5.2	5.2	5.2	3.9	3.9	3.9	2.6	3.9



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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°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.6	3.9
75°	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.9
77.5°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.6	3.9
80°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.6	3.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.9
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°	509.6	509.6	509.6	509.6	509.6
2.5°	469.1	328.0	261.4	236.5	228.7
5°	424.7	245.7	194.7	167.3	156.8
7.5°	356.8	202.6	146.4	121.5	113.7
10°	288.8	167.3	118.9	99.3	94.1
12.5°	247.0	145.1	111.1	103.2	103.2
15°	230.0	152.9	154.2	185.6	207.8
17.5°	236.5	239.1	373.7	454.8	469.1
20°	339.8	429.9	426.0	386.8	375.0
22.5°	393.3	283.6	214.3	176.4	169.9
25°	194.7	129.4	111.1	101.9	100.6
26°	147.7	108.5	96.7	91.5	88.9
27°	122.8	95.4	86.2	79.7	77.1
28°	109.8	84.9	74.5	68.0	65.3
29°	99.3	73.2	62.7	56.2	54.9
30°	87.6	61.4	52.3	45.7	44.4
31°	74.5	51.0	41.8	37.9	35.3
32°	62.7	41.8	34.0	30.1	27.4
33°	52.3	34.0	28.7	24.8	22.2
34°	44.4	28.7	23.5	19.6	18.3
35°	36.6	23.5	19.6	17.0	15.7
36°	31.4	20.9	15.7	13.1	11.8
37°	27.4	17.0	13.1	10.5	10.5
38°	23.5	14.4	11.8	7.8	7.8
39°	19.6	11.8	9.1	6.5	6.5
40°	17.0	10.5	7.8	5.2	3.9
42.5°	11.8	6.5	5.2	2.6	1.3
45°	7.8	5.2	2.6	1.3	0.0
47.5°	5.2	3.9	2.6	1.3	0.0
50°	3.9	3.9	2.6	0.0	0.0
51°	3.9	2.6	2.6	0.0	0.0
52°	3.9	2.6	1.3	0.0	0.0
53°	3.9	2.6	1.3	0.0	0.0
54°	3.9	2.6	1.3	0.0	0.0
55°	3.9	2.6	1.3	0.0	0.0
57.5°	3.9	2.6	1.3	0.0	0.0
60°	3.9	2.6	2.6	0.0	0.0
61°	3.9	3.9	2.6	0.0	0.0
62°	3.9	3.9	2.6	0.0	0.0
63°	3.9	3.9	2.6	0.0	0.0
64°	3.9	3.9	2.6	1.3	0.0
65°	3.9	3.9	2.6	1.3	0.0
66°	3.9	3.9	2.6	1.3	0.0





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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
72.5°	3.9	3.9	2.6	1.3	0.0
75°	3.9	3.9	2.6	1.3	0.0
77.5°	5.2	3.9	2.6	1.3	0.0
80°	5.2	3.9	2.6	1.3	0.0
82.5°	5.2	3.9	2.6	1.3	0.0
85°	5.2	3.9	2.6	1.3	0.0
87.5°	5.2	3.9	2.6	1.3	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°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.9
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.6	3.9







67.5°	3.9	3.9	2.6	1.3	0.0
70°	3.9	3.9	2.6	1.3	0.0



(END OF REPORT)