

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: P170808

Luminaire Tested: **LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170808  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26106)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt  
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 35° Flood Optic, at 30° tilt. --- 27.9W  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2095.4 lumens  
Efficiency: N/A  
Efficacy: 72.0 lumens/watt  
Spacing Criteria (0/90/45): 2.71 / 1.11 / 1.33  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

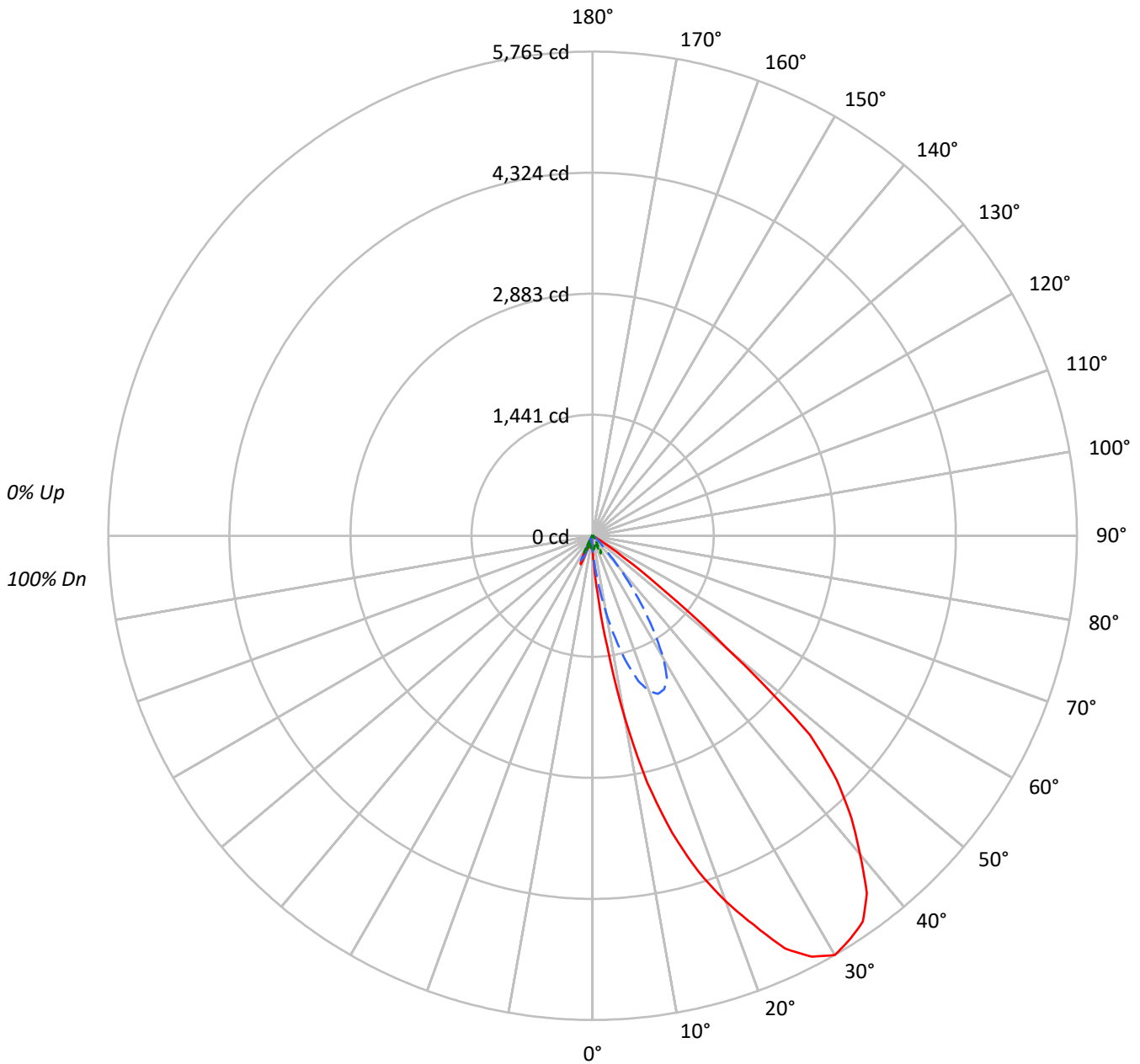
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170808

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt

### Luminous Intensity Polar Plot





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CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					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	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	112	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	82					82			
3	98	90	84	79	96	89	83	79	86	81	77	84	79	76	81	78	75	73					73			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	70	67	65					65			
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58					58			
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52					52			
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47					47			
8	69	57	50	45	68	57	50	45	55	49	44	54	48	44	53	48	44	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35					35			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	21252	21252	21252
5°	85570	20058	9398
10°	275872	16821	5398
15°	467996	13357	4188
20°	608267	11984	12654
25°	738121	31534	44803
30°	821093	11095	11836
35°	844618	6640	5556
40°	797498	2802	1981
45°	716744	1605	541
50°	403395	979	0
55°	100104	667	0
60°	15443	765	0
65°	3590	905	0
70°	757	1118	0
75°	0	1477	0
80°	0	2912	0
85°	0	5802	1415



TEST NUMBER: P170808

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.6	1.7
10°-20°	257.2	12.3
20°-30°	594.0	28.3
30°-40°	666.3	31.8
40°-50°	464.9	22.2
50°-60°	69.4	3.3
60°-70°	4.6	0.2
70°-80°	2.3	0.1
80°-90°	2.2	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°	885.8	42.3
0°-40°	1552.0	74.1
0°-60°	2086.3	99.6
0°-90°	2095.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2095.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	172	172	172	172	172	
5°	691	404	162	94	76	114
15°	3665	1560	105	40	33	1047
25°	5424	2016	232	323	329	2480
35°	5609	1048	44	37	37	3450
45°	4109	158	9	5	3	3015
55°	466	20	3	2	0	612
65°	12	3	3	2	0	19
75°	0	2	3	3	0	1
85°	0	2	4	3	1	0
90°	0	0	0	0	0	



TEST NUMBER: P170808

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3
2.5°	313.8	310.7	302.5	300.5	307.6	301.5	304.6	310.7	304.6	297.4	304.6
5°	691.1	708.6	691.1	688.1	700.4	689.1	694.2	705.5	690.1	675.8	686.0
7.5°	1334.1	1345.4	1296.2	1313.6	1309.5	1312.6	1315.6	1315.6	1306.4	1280.8	1295.1
10°	2202.6	2210.8	2145.2	2167.8	2138.0	2167.8	2162.7	2140.1	2145.2	2110.4	2128.8
12.5°	3008.6	3035.3	2969.7	2991.2	2955.3	2989.2	2975.8	2969.7	2917.4	2917.4	2936.9
15°	3664.9	3725.4	3665.9	3688.5	3647.5	3694.7	3657.7	3674.1	3627.0	3568.5	3619.8
17.5°	4196.1	4255.6	4200.2	4227.9	4189.9	4226.9	4183.8	4218.7	4158.2	4116.1	4151.0
20°	4634.0	4678.1	4612.4	4651.4	4606.3	4643.2	4596.0	4642.2	4571.4	4540.6	4561.2
22.5°	5015.4	5032.9	4999.0	5064.6	4976.5	5015.4	4959.0	5006.2	4922.1	4883.1	4888.3
25°	5423.5	5462.5	5397.9	5422.5	5361.0	5387.7	5324.1	5368.2	5263.6	5208.2	5196.9
27.5°	5650.2	5705.5	5648.1	5675.8	5613.3	5635.8	5572.2	5635.8	5529.2	5474.8	5462.5
30°	5765.0	5791.7	5754.8	5773.2	5702.5	5713.7	5648.1	5716.8	5610.2	5562.0	5555.8
32.5°	5698.4	5751.7	5703.5	5727.1	5661.5	5672.7	5609.2	5683.0	5576.3	5532.2	5510.7
35°	5609.2	5663.5	5618.4	5643.0	5582.5	5590.7	5523.0	5587.6	5464.6	5410.2	5364.1
37.5°	5362.0	5413.3	5375.4	5383.6	5325.1	5319.0	5246.1	5300.5	5180.5	5134.4	5103.6
40°	4952.9	4999.0	4968.3	4985.7	4927.2	4913.9	4864.7	4914.9	4821.6	4787.8	4744.7
42.5°	4561.2	4599.1	4570.4	4598.1	4532.4	4515.0	4470.9	4534.5	4428.9	4401.2	4370.4
45°	4108.9	4132.5	4110.0	4133.5	4071.0	4043.3	4003.3	4057.7	3954.1	3928.5	3861.8
47.5°	3511.1	3485.5	3481.4	3503.9	3426.0	3368.6	3331.7	3401.4	3251.7	3201.4	3124.5
50°	2102.2	2145.2	2163.7	2148.3	2095.0	2016.0	1956.5	2041.6	1961.7	1838.6	1715.6
52.5°	1082.9	1034.7	1044.9	1050.0	986.5	962.9	943.4	962.9	900.3	868.5	790.6
55°	465.5	443.0	451.2	454.3	442.0	413.3	403.0	415.3	386.6	374.3	342.5
57.5°	172.3	172.3	167.1	169.2	165.1	154.8	152.8	157.9	148.7	145.6	133.3
60°	62.6	62.6	62.6	62.6	57.4	56.4	56.4	58.5	55.4	54.3	50.2
62.5°	26.7	27.7	25.6	26.7	25.6	24.6	25.6	24.6	24.6	23.6	23.6
65°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	11.3	11.3
67.5°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.1	5.1	5.1
70°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P170808

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3	172.3
2.5°	295.3	294.3	298.4	294.3	287.1	283.0	288.1	277.9	237.9	197.9	168.2
5°	667.6	662.4	655.3	657.3	639.9	625.5	625.5	597.8	404.0	229.7	162.0
7.5°	1265.4	1253.1	1200.8	1238.7	1201.8	1173.1	1153.6	1097.2	653.2	263.5	149.7
10°	2089.8	2068.3	2031.4	2038.6	1978.1	1929.9	1871.4	1777.1	939.3	293.3	134.3
12.5°	2903.0	2881.5	2783.0	2839.4	2758.4	2711.3	2612.8	2502.1	1248.0	307.6	120.0
15°	3593.1	3574.7	3467.0	3520.3	3420.9	3376.8	3249.6	3126.6	1559.7	302.5	104.6
17.5°	4129.4	4126.4	4002.3	4055.6	3945.9	3910.0	3761.3	3640.3	1812.0	279.9	94.3
20°	4542.7	4535.5	4410.4	4463.7	4343.8	4308.9	4120.2	3993.1	1971.9	249.2	91.3
22.5°	4868.8	4854.4	4720.1	4766.2	4631.9	4586.8	4378.6	4246.3	2037.5	229.7	112.8
25°	5162.1	5136.4	4983.6	5019.5	4871.9	4881.1	4568.3	4422.7	2016.0	258.4	231.7
27.5°	5420.5	5374.3	5220.5	5230.8	5057.5	4967.2	4698.6	4537.6	1917.6	288.1	215.3
30°	5516.9	5471.7	5308.7	5314.9	5134.4	5007.2	4720.1	4540.6	1681.7	180.5	77.9
32.5°	5463.5	5414.3	5244.1	5246.1	5060.5	4931.3	4645.2	4447.3	1367.9	119.0	59.5
35°	5308.7	5257.4	5088.2	5096.4	4917.0	4788.8	4508.9	4297.6	1048.0	94.3	44.1
37.5°	5047.2	5011.3	4850.3	4864.7	4711.9	4575.5	4291.5	4062.8	739.3	67.7	27.7
40°	4710.9	4683.2	4527.3	4549.9	4383.8	4257.6	3953.1	3704.9	460.4	46.1	17.4
42.5°	4317.1	4287.4	4133.5	4151.0	4009.5	3829.0	3518.3	3237.3	241.0	32.8	12.3
45°	3825.9	3791.0	3635.2	3644.4	3477.3	3266.0	2944.0	2695.9	157.9	22.6	9.2
47.5°	3053.8	2991.2	2788.2	2780.0	2643.6	2298.0	1840.7	1490.0	104.6	15.4	6.2
50°	1678.6	1614.0	1435.6	1416.1	1264.4	1037.7	767.0	596.8	60.5	10.3	5.1
52.5°	764.0	730.1	647.1	633.7	569.1	471.7	363.0	298.4	34.9	7.2	4.1
55°	331.2	318.9	284.0	282.0	252.3	218.4	174.3	147.7	20.5	5.1	3.1
57.5°	130.2	126.1	119.0	113.8	102.5	91.3	75.9	63.6	13.3	4.1	3.1
60°	49.2	48.2	44.1	45.1	41.0	39.0	33.8	28.7	8.2	3.1	3.1
62.5°	22.6	22.6	21.5	21.5	20.5	18.5	16.4	15.4	5.1	3.1	3.1
65°	11.3	11.3	10.3	10.3	10.3	9.2	8.2	8.2	3.1	3.1	3.1
67.5°	5.1	5.1	5.1	5.1	5.1	4.1	4.1	4.1	2.1	3.1	3.1
70°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.1	3.1
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	3.1
75°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	3.1
77.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.1	3.1	4.1
80°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.1	3.1	4.1
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	4.1
85°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	4.1
87.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	4.1
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: P170808

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LAL1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	112.5°	135°	157.5°	180°
0°	172.3	172.3	172.3	172.3
2.5°	144.6	128.2	113.8	110.7
5°	119.0	94.3	79.0	75.9
7.5°	96.4	68.7	57.4	55.4
10°	79.0	55.4	45.1	43.1
12.5°	65.6	45.1	35.9	33.8
15°	56.4	40.0	32.8	32.8
17.5°	54.3	44.1	42.0	43.1
20°	70.8	80.0	95.4	96.4
22.5°	164.1	266.6	352.8	369.2
25°	295.3	323.0	314.8	329.2
27.5°	155.9	122.0	124.1	127.2
30°	67.7	74.9	79.0	83.1
32.5°	56.4	58.5	59.5	62.6
35°	36.9	36.9	35.9	36.9
37.5°	22.6	21.5	20.5	20.5
40°	14.4	13.3	12.3	12.3
42.5°	10.3	8.2	7.2	7.2
45°	7.2	5.1	4.1	3.1
47.5°	5.1	3.1	2.1	1.0
50°	4.1	3.1	1.0	0.0
52.5°	3.1	2.1	1.0	0.0
55°	3.1	2.1	0.0	0.0
57.5°	3.1	2.1	0.0	0.0
60°	3.1	2.1	0.0	0.0
62.5°	3.1	2.1	0.0	0.0
65°	3.1	2.1	1.0	0.0
67.5°	3.1	2.1	1.0	0.0
70°	3.1	2.1	1.0	0.0
72.5°	3.1	2.1	1.0	0.0
75°	3.1	3.1	1.0	0.0
77.5°	4.1	3.1	1.0	0.0
80°	4.1	3.1	1.0	0.0
82.5°	4.1	3.1	1.0	0.0
85°	4.1	3.1	1.0	1.0
87.5°	4.1	3.1	1.0	0.0
90°	0.0	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





— 0°-180°    - - 45°-225°    - - - - 90°-270°











(END OF REPORT)