

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: P1191601

Luminaire Tested: **LDA4A20927D010TE LAR15SP 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-41-14
Report Number: P1191601
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26104)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A20927D010TE LAR15SP 4LAL1 30° Tilt
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 15° Spot Optic, at 30° tilt. --- 27.9W
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

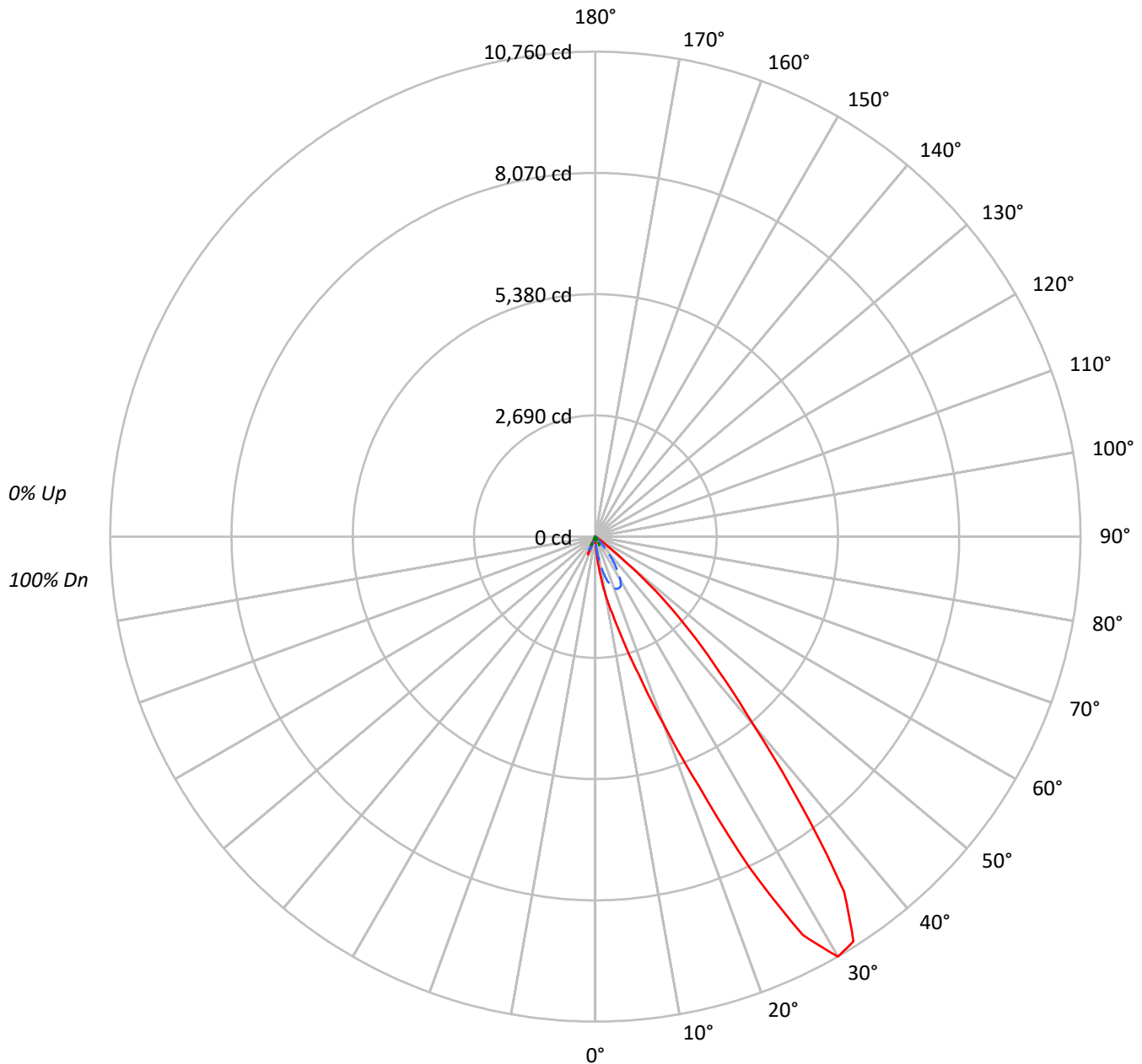
Lumens per Lamp: N/A
Luminaire Lumens: 1862.6 lumens
Efficiency: N/A
Efficacy: 64.7 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 28.8
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

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91		
2	105	100	95	91	103	98	93	90	94	91	88	91	88	86	89	86	84	82		
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74		
4	92	83	76	71	90	82	75	70	79	74	70	77	72	69	75	71	68	66		
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59		
6	80	69	62	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53		
7	74	63	56	51	73	62	55	50	61	55	50	60	54	50	58	53	49	48		
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	54	48	45	43		
9	65	53	46	41	64	52	46	41	51	45	41	50	45	40	49	44	40	39		
10	61	49	42	37	59	48	41	37	47	41	37	46	41	37	46	40	37	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10842	10842	10842
5°	57179	10240	5436
10°	167207	8705	3595
15°	304187	7304	4048
20°	580308	8309	19716
25°	1102861	28907	43510
30°	1532574	9756	8432
35°	1448312	4472	3222
40°	877829	1981	1143
45°	514432	1064	349
50°	170745	787	0
55°	32515	645	0
60°	7327	493	0
65°	2072	876	0
70°	721	1082	0
75°	0	1430	0
80°	0	2131	0
85°	0	4246	1415



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.0	1.1
10°-20°	171.4	9.2
20°-30°	607.7	32.6
30°-40°	720.6	38.7
40°-50°	306.5	16.5
50°-60°	27.7	1.5
60°-70°	3.4	0.2
70°-80°	2.2	0.1
80°-90°	2.0	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°	800.1	43.0
0°-40°	1520.7	81.6
0°-60°	1854.9	99.6
0°-90°	1862.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1862.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	88	88	88	88	88	
5°	462	228	83	52	44	72
15°	2382	1003	57	32	32	768
25°	8104	1257	212	334	320	3755
35°	9618	743	30	22	21	5556
45°	2949	82	6	4	2	2311
55°	151	12	3	2	0	212
65°	7	3	3	2	0	10
75°	0	2	3	3	0	1
85°	0	2	3	3	1	0
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9
2.5°	161.5	152.2	158.3	156.2	157.3	160.4	157.3	157.3	156.2	152.2	152.2
5°	461.8	434.1	447.4	440.3	444.4	449.5	442.4	440.3	437.1	428.0	426.0
7.5°	860.1	844.8	861.1	848.8	860.1	862.1	852.0	849.8	844.8	831.4	826.4
10°	1335.0	1309.6	1324.9	1311.6	1329.0	1328.0	1311.6	1313.6	1307.5	1290.2	1282.1
12.5°	1756.0	1735.6	1750.9	1713.1	1756.0	1728.3	1731.5	1735.6	1727.3	1704.9	1694.7
15°	2382.1	2325.9	2352.5	2287.1	2352.5	2343.3	2307.5	2305.5	2284.1	2246.3	2223.8
17.5°	3213.7	3229.0	3209.6	3170.8	3257.5	3234.1	3183.0	3172.8	3131.9	3028.8	3026.7
20°	4421.0	4400.6	4433.3	4310.8	4422.0	4313.9	4299.5	4270.8	4201.5	4057.4	4035.0
22.5°	5966.6	5977.9	5919.7	5834.8	5971.7	5804.1	5753.2	5684.7	5558.0	5336.3	5266.9
25°	8103.5	8089.3	8013.8	7872.7	8018.8	7748.0	7620.5	7479.4	7243.4	6898.2	6731.7
27.5°	9965.8	10024.0	9973.9	9831.0	9928.0	9661.4	9367.2	9277.3	8957.6	8522.4	8222.1
30°	10760.4	10788.1	10766.7	10657.4	10692.1	10472.4	10181.3	10075.1	9747.1	9335.5	8946.3
32.5°	10651.3	10664.4	10668.6	10522.5	10528.6	10321.3	10016.9	9859.5	9502.0	9105.7	8640.9
35°	9618.4	9673.6	9709.4	9572.5	9436.7	9230.4	8885.0	8640.9	8265.0	7903.4	7428.3
37.5°	7448.8	7518.3	7573.4	7457.0	7392.6	7143.4	6856.4	6667.4	6407.9	6195.4	5858.3
40°	5451.8	5465.0	5498.7	5438.5	5338.3	5272.0	5107.5	5000.2	4842.9	4728.6	4504.8
42.5°	4052.3	4045.1	4068.7	4035.0	4031.9	3931.7	3827.6	3764.2	3710.0	3589.6	3432.3
45°	2949.1	2951.1	2973.6	2952.2	2895.0	2873.5	2805.0	2747.9	2676.3	2638.5	2513.9
47.5°	2005.2	2011.4	2026.6	2014.4	1962.3	1954.1	1910.2	1853.0	1852.0	1793.8	1684.4
50°	889.8	891.8	910.2	906.0	843.7	852.0	823.3	771.2	785.5	750.8	667.1
52.5°	295.2	296.3	299.3	297.3	287.0	287.0	279.9	278.9	270.6	262.5	244.1
55°	151.2	151.2	153.2	152.2	147.1	147.1	138.9	144.1	139.9	136.8	125.7
57.5°	64.3	64.3	65.3	65.3	62.3	65.3	62.3	62.3	60.2	59.2	55.2
60°	29.7	29.7	29.7	29.7	28.7	30.7	28.7	28.7	28.7	27.5	25.5
62.5°	15.3	15.3	15.3	15.3	15.3	15.3	15.3	14.3	14.3	14.3	13.3
65°	7.1	7.1	7.1	7.1	7.1	8.1	7.1	7.1	7.1	7.1	7.1
67.5°	3.0	3.0	3.0	4.1	4.1	4.1	4.1	4.1	3.0	3.0	3.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
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

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CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9
2.5°	153.2	148.1	155.2	149.1	153.2	149.1	144.1	146.1	117.4	98.0	86.9
5°	427.0	411.7	425.0	411.7	412.7	405.6	386.2	384.2	227.8	111.4	82.7
7.5°	803.9	801.9	818.3	800.9	798.9	781.5	745.7	731.4	412.7	130.8	76.6
10°	1276.8	1247.3	1261.5	1243.1	1237.0	1205.3	1154.3	1126.7	613.9	150.2	69.5
12.5°	1666.1	1654.8	1665.0	1647.7	1641.6	1598.6	1538.3	1501.6	820.3	161.5	62.3
15°	2174.7	2152.3	2159.4	2123.8	2105.4	2023.6	1920.5	1853.0	1003.2	160.4	57.2
17.5°	2951.1	2907.1	2903.1	2841.8	2796.9	2648.8	2463.9	2324.9	1137.0	148.1	55.2
20°	3923.6	3844.0	3817.3	3720.3	3644.7	3399.6	3114.6	2888.7	1220.7	131.8	63.3
22.5°	5089.1	4949.2	4870.5	4715.2	4585.5	4192.2	3774.5	3436.4	1257.4	126.7	90.9
25°	6447.8	6207.7	6041.2	5797.0	5578.4	4974.7	4388.4	3914.4	1257.4	164.5	212.4
27.5°	7825.7	7446.7	7140.3	6783.8	6451.8	5595.8	4839.9	4222.9	1226.9	205.3	194.0
30°	8523.4	8057.6	7640.9	7224.0	6807.3	5778.6	4941.0	4260.7	1111.3	120.5	68.5
32.5°	8227.2	7735.9	7275.1	6871.6	6459.9	5455.9	4667.3	4010.4	933.7	70.5	43.9
35°	7091.2	6665.2	6264.9	5963.5	5642.8	4850.0	4144.3	3572.2	742.7	55.2	29.7
37.5°	5660.2	5370.0	5085.1	4892.0	4662.1	4066.5	3497.6	3028.8	531.1	39.8	18.4
40°	4390.5	4192.2	3993.1	3870.5	3708.0	3273.9	2830.5	2457.7	313.6	27.5	12.3
42.5°	3362.8	3226.0	3077.8	2993.0	2876.6	2552.8	2206.4	1942.9	145.1	19.4	9.1
45°	2472.0	2370.9	2257.6	2203.4	2121.6	1908.2	1678.4	1492.4	81.7	14.3	6.1
47.5°	1664.0	1574.1	1469.0	1435.2	1356.6	1169.7	934.7	751.8	54.2	10.3	5.1
50°	661.9	602.7	566.9	520.0	473.9	397.3	297.3	237.0	32.7	8.1	4.1
52.5°	243.1	229.8	223.7	211.4	201.3	179.8	152.2	131.8	19.4	6.1	3.0
55°	126.7	118.4	114.4	110.3	104.3	91.9	76.6	65.3	12.3	4.1	3.0
57.5°	55.2	52.1	53.1	49.1	45.9	41.8	36.8	31.7	8.1	4.1	3.0
60°	26.5	24.5	25.5	23.5	22.4	21.4	19.4	16.4	5.1	3.0	2.0
62.5°	13.3	13.3	13.3	12.3	12.3	11.3	10.3	9.1	4.1	3.0	3.0
65°	7.1	6.1	7.1	6.1	6.1	6.1	5.1	5.1	3.0	3.0	3.0
67.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	3.0	3.0
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
75°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	2.0	3.0	3.0
77.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
80°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	2.0	3.0	3.0
82.5°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	2.0	3.0	3.0
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
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):

	112.5°	135°	157.5°	180°
0°	87.9	87.9	87.9	87.9
2.5°	73.6	65.3	59.2	58.2
5°	62.3	52.1	44.9	43.9
7.5°	53.1	41.8	35.8	34.8
10°	47.1	35.8	29.7	28.7
12.5°	41.8	31.7	27.5	26.5
15°	38.8	31.7	30.7	31.7
17.5°	41.8	42.9	47.1	52.1
20°	69.5	99.0	128.7	150.2
22.5°	156.2	289.0	383.0	428.0
25°	295.2	334.1	335.1	319.7
27.5°	160.4	127.7	114.4	108.3
30°	63.3	60.2	60.2	59.2
32.5°	41.8	38.8	37.8	36.8
35°	25.5	22.4	21.4	21.4
37.5°	16.4	14.3	13.3	12.3
40°	11.3	9.1	8.1	7.1
42.5°	8.1	6.1	4.1	4.1
45°	6.1	4.1	2.0	2.0
47.5°	5.1	3.0	1.0	1.0
50°	4.1	2.0	1.0	0.0
52.5°	3.0	2.0	0.0	0.0
55°	3.0	2.0	0.0	0.0
57.5°	3.0	2.0	0.0	0.0
60°	3.0	2.0	0.0	0.0
62.5°	3.0	2.0	0.0	0.0
65°	3.0	2.0	1.0	0.0
67.5°	4.1	2.0	1.0	0.0
70°	4.1	2.0	1.0	0.0
72.5°	4.1	2.0	1.0	0.0
75°	4.1	3.0	1.0	0.0
77.5°	4.1	3.0	1.0	0.0
80°	4.1	3.0	1.0	0.0
82.5°	4.1	3.0	1.0	0.0
85°	4.1	3.0	1.0	1.0
87.5°	4.1	3.0	1.0	0.0
90°	0.0	0.0	0.0	0.0

Classified

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Scaled Data Report





— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)