

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: P1191421

Luminaire Tested: **LDA4A10927D010TE 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: P1191421
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: LDA4A10927D010TE 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

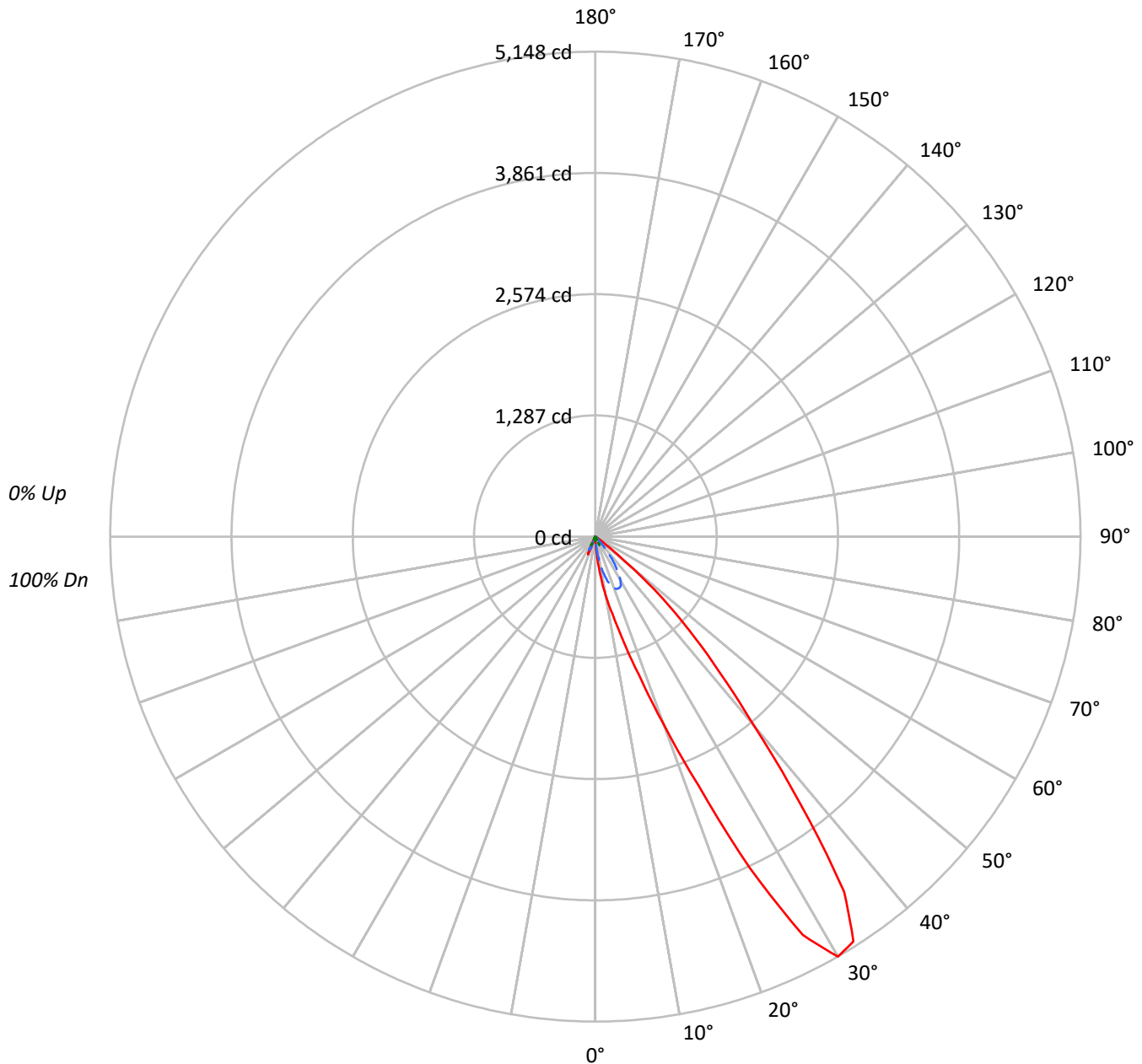
Lumens per Lamp: N/A
Luminaire Lumens: 891.2 lumens
Efficiency: N/A
Efficacy: 71.9 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 12.4
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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			102
1	112	109	106	104	110	107	104	102		103	101	99			99	97	96			96
2	105	100	95	91	103	98	93	90		94	91	88			91	88	86			89
3	99	91	85	80	96	89	84	79		87	82	78			84	80	77			82
4	92	83	76	71	90	82	75	70		79	74	70			77	72	69			75
5	86	75	68	63	84	74	68	63		73	67	62			71	66	62			69
6	80	69	62	56	78	68	61	56		66	60	56			65	59	55			63
7	74	63	56	51	73	62	55	50		61	55	50			60	54	50			58
8	69	58	50	45	68	57	50	45		56	50	45			55	49	45			54
9	65	53	46	41	64	52	46	41		51	45	41			50	45	40			49
10	61	49	42	37	59	48	41	37		47	41	37			46	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5181	5181	5181
5°	27351	4903	2600
10°	80009	4158	1703
15°	145549	3499	1941
20°	277645	3977	9425
25°	527647	13827	20823
30°	733244	4657	4045
35°	692926	2123	1551
40°	419979	950	547
45°	246113	506	174
50°	81688	365	0
55°	15548	323	0
60°	3478	247	0
65°	992	438	0
70°	361	541	0
75°	0	715	0
80°	0	1065	0
85°	0	2123	708



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	10.0	1.1
10°-20°	82.0	9.2
20°-30°	290.8	32.6
30°-40°	344.7	38.7
40°-50°	146.7	16.5
50°-60°	13.3	1.5
60°-70°	1.6	0.2
70°-80°	1.1	0.1
80°-90°	1.0	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°	382.8	43.0
0°-40°	727.5	81.6
0°-60°	887.5	99.6
0°-90°	891.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	891.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	42	42	42	42	42	
5°	221	109	40	25	21	34
15°	1140	480	27	15	15	368
25°	3877	602	102	160	153	1796
35°	4602	355	14	11	10	2658
45°	1411	39	3	2	1	1106
55°	72	6	2	1	0	101
65°	3	2	2	1	0	5
75°	0	1	2	2	0	0
85°	0	1	2	2	0	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°	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
2.5°	77.2	72.9	75.8	74.8	75.3	76.7	75.3	75.3	74.8	72.9	72.9
5°	220.9	207.7	214.1	210.7	212.6	215.0	211.6	210.7	209.1	204.8	203.8
7.5°	411.5	404.2	411.9	406.1	411.5	412.4	407.6	406.6	404.2	397.8	395.4
10°	638.8	626.6	633.8	627.6	635.9	635.3	627.6	628.5	625.5	617.3	613.3
12.5°	840.2	830.4	837.6	819.5	840.2	826.9	828.3	830.4	826.4	815.7	810.7
15°	1139.8	1112.9	1125.5	1094.3	1125.5	1121.2	1104.0	1103.1	1092.8	1074.7	1064.0
17.5°	1537.5	1544.8	1535.5	1517.0	1558.6	1547.4	1522.9	1517.9	1498.4	1449.0	1448.1
20°	2115.2	2105.4	2121.0	2062.5	2115.7	2063.9	2057.0	2043.3	2010.1	1941.2	1930.5
22.5°	2854.6	2860.0	2832.2	2791.6	2857.0	2776.9	2752.4	2719.7	2659.1	2553.1	2519.9
25°	3877.0	3870.2	3834.0	3766.6	3836.4	3707.0	3645.9	3578.5	3465.5	3300.3	3220.7
27.5°	4767.9	4795.8	4771.8	4703.4	4749.9	4622.3	4481.6	4438.5	4285.7	4077.4	3933.7
30°	5148.2	5161.4	5151.2	5098.8	5115.5	5010.4	4871.1	4820.3	4663.3	4466.4	4280.2
32.5°	5095.9	5102.3	5104.2	5034.4	5037.3	4938.1	4792.4	4717.1	4546.1	4356.5	4134.1
35°	4601.8	4628.2	4645.2	4579.8	4514.8	4416.1	4250.9	4134.1	3954.2	3781.3	3554.0
37.5°	3563.7	3596.9	3623.4	3567.6	3536.8	3417.6	3280.3	3189.9	3065.8	2964.1	2802.8
40°	2608.3	2614.6	2630.8	2601.9	2554.0	2522.3	2443.6	2392.2	2317.1	2262.3	2155.3
42.5°	1938.8	1935.3	1946.5	1930.5	1929.0	1881.1	1831.3	1801.0	1775.1	1717.4	1642.1
45°	1410.9	1412.0	1422.7	1412.5	1385.1	1374.8	1342.0	1314.6	1280.5	1262.4	1202.8
47.5°	959.4	962.3	969.6	963.7	938.9	934.9	913.9	886.5	886.0	858.3	805.9
50°	425.7	426.7	435.5	433.5	403.7	407.6	394.0	369.0	375.9	359.2	319.1
52.5°	141.3	141.8	143.2	142.3	137.3	137.3	133.9	133.4	129.5	125.6	116.8
55°	72.3	72.3	73.4	72.9	70.4	70.4	66.5	68.9	67.0	65.5	60.1
57.5°	30.8	30.8	31.3	31.3	29.8	31.3	29.8	29.8	28.8	28.4	26.4
60°	14.1	14.1	14.1	14.1	13.6	14.6	13.6	13.6	13.6	13.2	12.2
62.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	6.9	6.9	6.9	6.4
65°	3.4	3.4	3.4	3.4	3.4	3.9	3.4	3.4	3.4	3.4	3.4
67.5°	1.5	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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°	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
2.5°	73.4	70.8	74.3	71.3	73.4	71.3	68.9	69.9	56.2	46.9	41.5
5°	204.3	196.9	203.3	196.9	197.4	194.0	184.7	183.8	109.0	53.2	39.6
7.5°	384.7	383.7	391.4	383.1	382.1	373.8	356.8	349.9	197.4	62.5	36.7
10°	610.9	596.8	603.6	594.7	591.8	576.8	552.3	539.1	293.7	71.8	33.2
12.5°	797.1	791.8	796.6	788.3	785.4	764.9	736.0	718.4	392.4	77.2	29.8
15°	1040.5	1029.7	1033.1	1016.1	1007.3	968.2	918.8	886.5	479.9	76.7	27.4
17.5°	1412.0	1390.9	1388.9	1359.6	1338.1	1267.3	1178.9	1112.4	543.9	70.8	26.4
20°	1877.1	1839.0	1826.3	1779.9	1743.8	1626.5	1490.2	1382.1	584.0	63.1	30.3
22.5°	2434.8	2367.9	2330.2	2255.9	2193.9	2005.8	1805.8	1644.0	601.6	60.6	43.4
25°	3084.8	2970.0	2890.3	2773.5	2668.9	2380.1	2099.5	1872.8	601.6	78.7	101.6
27.5°	3744.1	3562.8	3416.2	3245.6	3086.8	2677.2	2315.6	2020.4	586.9	98.2	92.9
30°	4077.9	3855.0	3655.7	3456.2	3256.9	2764.7	2364.0	2038.5	531.8	57.7	32.7
32.5°	3936.1	3701.1	3480.6	3287.7	3090.6	2610.3	2233.0	1918.8	446.7	33.8	21.0
35°	3392.8	3189.0	2997.4	2853.2	2699.7	2320.4	1982.7	1709.1	355.2	26.4	14.1
37.5°	2708.0	2569.2	2432.9	2340.5	2230.5	1945.7	1673.3	1449.0	254.1	19.1	8.8
40°	2100.5	2005.8	1910.4	1851.8	1774.1	1566.3	1354.3	1175.9	150.0	13.2	5.9
42.5°	1608.9	1543.4	1472.5	1431.9	1376.3	1221.3	1055.7	929.6	69.4	9.3	4.5
45°	1182.7	1134.3	1080.0	1054.2	1015.1	912.9	803.0	714.1	39.1	6.9	2.9
47.5°	796.1	753.2	702.7	686.7	649.0	559.6	447.2	359.7	25.9	4.8	2.4
50°	316.7	288.4	271.2	248.8	226.7	190.2	142.3	113.4	15.7	3.9	1.9
52.5°	116.3	109.9	107.0	101.1	96.3	86.0	72.9	63.1	9.3	2.9	1.5
55°	60.6	56.7	54.8	52.7	49.8	43.9	36.7	31.3	5.9	1.9	1.5
57.5°	26.4	25.0	25.5	23.4	22.0	20.0	17.6	15.2	3.9	1.9	1.5
60°	12.7	11.7	12.2	11.2	10.7	10.3	9.3	7.8	2.4	1.5	1.0
62.5°	6.4	6.4	6.4	5.9	5.9	5.3	4.8	4.5	1.9	1.5	1.5
65°	3.4	2.9	3.4	2.9	2.9	2.9	2.4	2.4	1.5	1.5	1.5
67.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5
70°	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.5	1.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.5	1.5
75°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5	1.5
77.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.5	1.5
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5	1.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5	1.5
85°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.5	1.5
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.5	1.5
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°	42.0	42.0	42.0	42.0
2.5°	35.2	31.3	28.4	27.9
5°	29.8	25.0	21.5	21.0
7.5°	25.5	20.0	17.1	16.6
10°	22.4	17.1	14.1	13.6
12.5°	20.0	15.2	13.2	12.7
15°	18.6	15.2	14.6	15.2
17.5°	20.0	20.5	22.4	25.0
20°	33.2	47.4	61.5	71.8
22.5°	74.8	138.3	183.3	204.8
25°	141.3	159.9	160.2	153.0
27.5°	76.7	61.1	54.8	51.8
30°	30.3	28.8	28.8	28.4
32.5°	20.0	18.6	18.1	17.6
35°	12.2	10.7	10.3	10.3
37.5°	7.8	6.9	6.4	5.9
40°	5.3	4.5	3.9	3.4
42.5°	3.9	2.9	1.9	1.9
45°	2.9	1.9	1.0	1.0
47.5°	2.4	1.5	0.5	0.5
50°	1.9	1.0	0.5	0.0
52.5°	1.5	1.0	0.0	0.0
55°	1.5	1.0	0.0	0.0
57.5°	1.5	1.0	0.0	0.0
60°	1.5	1.0	0.0	0.0
62.5°	1.5	1.0	0.0	0.0
65°	1.5	1.0	0.5	0.0
67.5°	1.9	1.0	0.5	0.0
70°	1.9	1.0	0.5	0.0
72.5°	1.9	1.0	0.5	0.0
75°	1.9	1.5	0.5	0.0
77.5°	1.9	1.5	0.5	0.0
80°	1.9	1.5	0.5	0.0
82.5°	1.9	1.5	0.5	0.0
85°	1.9	1.5	0.5	0.5
87.5°	1.9	1.5	0.5	0.0
90°	0.0	0.0	0.0	0.0

Classified

Scaled Data Report

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— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)