

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: P1191475

Luminaire Tested: **LDA4A10940D010TE 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: P1191475
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: LDA4A10940D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

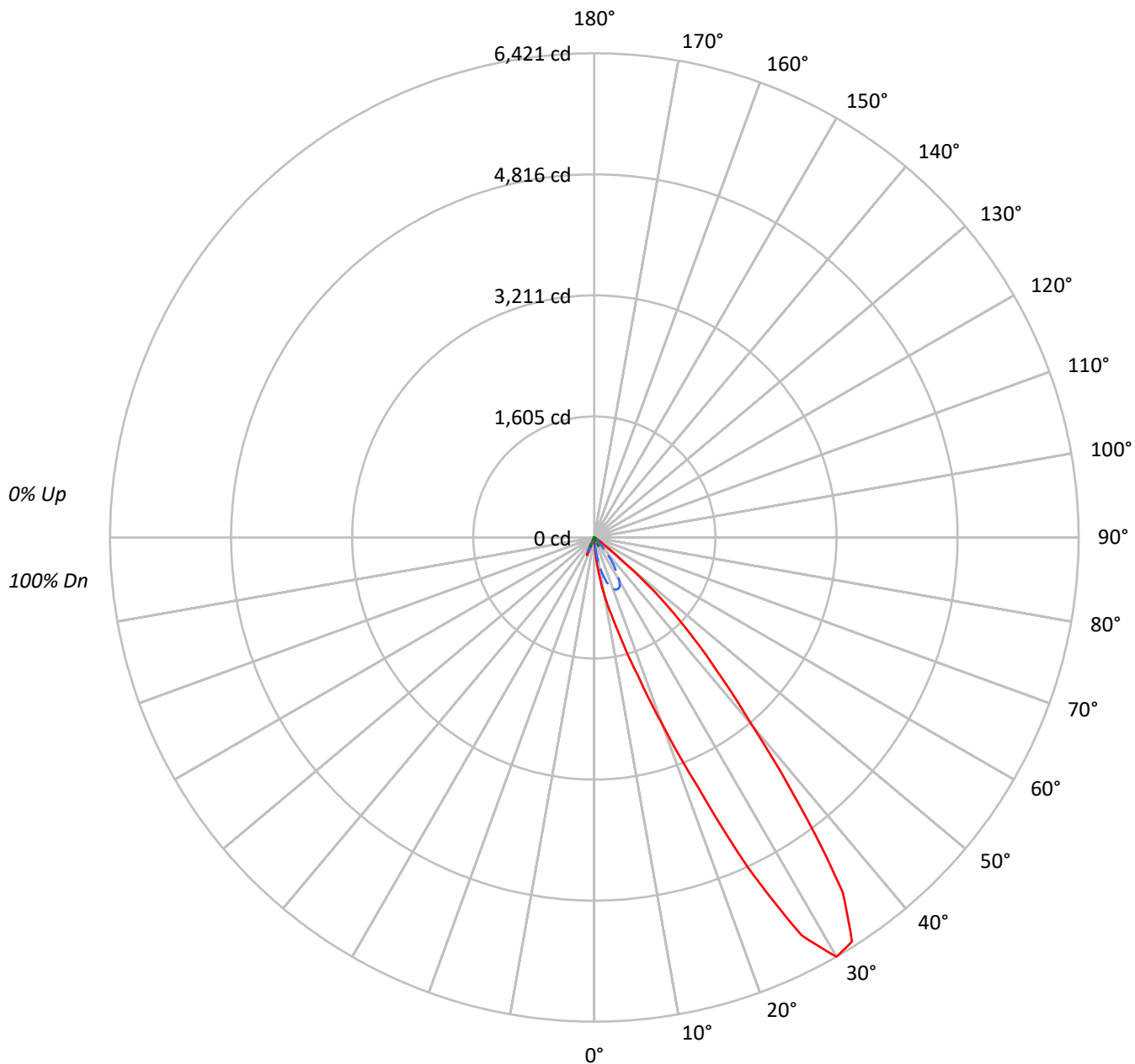
Lumens per Lamp: N/A
Luminaire Lumens: 1111.5 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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	30	10
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	104	110	107	104	102		103	101	99		99	97	96		96	94	93
2	105	100	95	91	103	98	93	90		94	91	88		91	88	86		89	86	84
3	99	91	85	80	96	89	84	79		87	82	78		84	80	77		82	78	76
4	92	83	76	71	90	82	75	70		79	74	70		77	72	69		75	71	68
5	86	75	68	63	84	74	68	63		73	67	62		71	66	62		69	65	61
6	80	69	62	56	78	68	61	56		66	60	56		65	59	55		63	59	55
7	74	63	56	51	73	62	55	50		61	55	50		60	54	50		58	53	49
8	69	58	50	45	68	57	50	45		56	50	45		55	49	45		54	48	45
9	65	53	46	41	64	52	46	41		51	45	41		50	45	40		49	44	40
10	61	49	42	37	59	48	41	37		47	41	37		46	41	37		46	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6476	6476	6476
5°	34112	6117	3244
10°	99785	5185	2142
15°	181521	4354	2413
20°	346295	4962	11748
25°	658123	17243	25967
30°	914540	5825	5042
35°	864253	2665	1912
40°	523834	1175	676
45°	306974	645	227
50°	101875	461	0
55°	19397	387	0
60°	4366	321	0
65°	1226	525	0
70°	469	649	0
75°	0	858	0
80°	0	1279	0
85°	0	2547	849



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.5	1.1
10°-20°	102.3	9.2
20°-30°	362.7	32.6
30°-40°	430.0	38.7
40°-50°	182.9	16.5
50°-60°	16.5	1.5
60°-70°	2.0	0.2
70°-80°	1.4	0.1
80°-90°	1.2	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°	477.4	43.0
0°-40°	907.4	81.6
0°-60°	1106.9	99.6
0°-90°	1111.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1111.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	52	52	52	52	52	
5°	276	136	49	31	26	43
15°	1422	598	34	19	19	459
25°	4836	750	127	199	191	2241
35°	5740	443	18	13	13	3316
45°	1760	49	4	2	1	1379
55°	90	7	2	1	0	126
65°	4	2	2	1	0	6
75°	0	1	2	2	0	0
85°	0	1	2	2	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°	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5
2.5°	96.3	90.8	94.5	93.2	93.9	95.7	93.9	93.9	93.2	90.8	90.8
5°	275.5	259.1	267.0	262.8	265.2	268.3	263.9	262.8	260.9	255.4	254.2
7.5°	513.2	504.2	513.8	506.6	513.2	514.5	508.4	507.2	504.2	496.1	493.2
10°	796.7	781.4	790.6	782.7	793.0	792.4	782.7	783.9	780.3	769.9	765.0
12.5°	1047.8	1035.7	1044.7	1022.2	1047.8	1031.4	1033.3	1035.7	1030.7	1017.3	1011.2
15°	1421.5	1388.0	1403.8	1364.8	1403.8	1398.3	1377.1	1375.8	1363.0	1340.4	1327.0
17.5°	1917.6	1926.8	1915.2	1892.0	1943.9	1929.9	1899.4	1893.3	1869.0	1807.3	1806.2
20°	2638.2	2626.0	2645.5	2572.3	2638.8	2574.1	2565.6	2548.5	2507.1	2421.1	2407.8
22.5°	3560.5	3567.1	3532.4	3481.8	3563.4	3463.6	3433.0	3392.3	3316.6	3184.4	3142.9
25°	4835.7	4827.1	4782.0	4697.8	4785.1	4623.6	4547.3	4463.2	4322.5	4116.4	4017.0
27.5°	5946.9	5981.7	5951.7	5866.4	5924.3	5765.2	5589.7	5536.1	5345.3	5085.6	4906.4
30°	6421.1	6437.5	6424.8	6359.6	6380.3	6249.3	6075.5	6012.1	5816.5	5570.7	5338.5
32.5°	6355.9	6363.8	6366.3	6279.1	6282.8	6159.0	5977.3	5883.5	5670.1	5433.7	5156.3
35°	5739.6	5772.5	5793.9	5712.3	5631.1	5507.9	5302.0	5156.3	4932.0	4716.2	4432.8
37.5°	4444.9	4486.4	4519.3	4449.8	4411.4	4262.7	4091.4	3978.6	3823.8	3697.1	3495.8
40°	3253.3	3261.2	3281.3	3245.3	3185.5	3145.9	3047.8	2983.8	2889.9	2821.6	2688.1
42.5°	2418.1	2413.9	2427.9	2407.8	2406.0	2346.2	2284.1	2246.3	2213.9	2142.1	2048.2
45°	1759.8	1761.1	1774.5	1761.6	1727.5	1714.7	1673.8	1639.7	1597.0	1574.5	1500.1
47.5°	1196.6	1200.3	1209.4	1202.0	1171.0	1166.1	1139.9	1105.7	1105.1	1070.3	1005.1
50°	530.9	532.2	543.1	540.7	503.5	508.4	491.3	460.2	468.7	448.0	398.0
52.5°	176.2	176.8	178.6	177.4	171.3	171.3	167.0	166.4	161.5	156.7	145.7
55°	90.2	90.2	91.5	90.8	87.8	87.8	82.9	86.0	83.6	81.6	75.0
57.5°	38.3	38.3	39.0	39.0	37.2	39.0	37.2	37.2	35.9	35.4	32.9
60°	17.7	17.7	17.7	17.7	17.1	18.3	17.1	17.1	17.1	16.4	15.3
62.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.5	8.5	8.5	7.9
65°	4.2	4.2	4.2	4.2	4.2	4.8	4.2	4.2	4.2	4.2	4.2
67.5°	1.8	1.8	1.8	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.8
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.6
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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°	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5
2.5°	91.5	88.4	92.6	89.0	91.5	89.0	86.0	87.1	70.1	58.5	51.8
5°	254.8	245.7	253.6	245.7	246.2	242.0	230.4	229.1	135.9	66.5	49.4
7.5°	479.7	478.5	488.2	477.9	476.6	466.3	444.9	436.4	246.2	78.1	45.7
10°	762.0	744.3	752.8	741.8	738.1	719.3	688.8	672.3	366.3	89.5	41.4
12.5°	994.2	987.5	993.5	983.2	979.5	953.9	918.0	896.1	489.5	96.3	37.2
15°	1297.7	1284.3	1288.7	1267.3	1256.3	1207.5	1146.0	1105.7	598.5	95.7	34.1
17.5°	1761.1	1734.8	1732.4	1695.7	1669.0	1580.6	1470.3	1387.4	678.4	88.4	32.9
20°	2341.3	2293.8	2278.0	2220.0	2174.9	2028.6	1858.5	1723.9	728.5	78.6	37.8
22.5°	3036.9	2953.3	2906.4	2813.7	2736.3	2501.6	2252.4	2050.6	750.4	75.5	54.3
25°	3847.6	3704.3	3605.0	3459.3	3328.8	2968.6	2618.7	2335.8	750.4	98.1	126.7
27.5°	4669.8	4443.7	4260.8	4048.1	3850.0	3339.1	2888.1	2520.0	732.0	122.5	115.8
30°	5086.2	4808.3	4559.5	4310.9	4062.1	3448.3	2948.5	2542.5	663.2	72.0	40.9
32.5°	4909.4	4616.2	4341.3	4100.6	3854.9	3255.7	2785.1	2393.1	557.1	42.0	26.2
35°	4231.5	3977.4	3738.5	3558.6	3367.3	2894.2	2473.0	2131.6	443.1	32.9	17.7
37.5°	3377.6	3204.5	3034.5	2919.2	2782.0	2426.6	2087.2	1807.3	316.9	23.8	11.0
40°	2619.8	2501.6	2382.8	2309.7	2212.8	1953.7	1689.1	1466.6	187.1	16.4	7.3
42.5°	2006.7	1925.0	1836.6	1786.1	1716.5	1523.3	1316.7	1159.4	86.6	11.6	5.5
45°	1475.1	1414.8	1347.1	1314.8	1266.1	1138.6	1001.5	890.6	48.8	8.5	3.7
47.5°	993.0	939.4	876.6	856.5	809.5	697.9	557.8	448.6	32.4	6.1	3.1
50°	395.0	359.6	338.3	310.3	282.9	237.2	177.4	141.4	19.5	4.8	2.4
52.5°	145.1	137.2	133.5	126.2	120.1	107.2	90.8	78.6	11.6	3.7	1.8
55°	75.5	70.7	68.3	65.9	62.2	54.9	45.7	39.0	7.3	2.4	1.8
57.5°	32.9	31.1	31.7	29.3	27.4	25.0	21.9	18.9	4.8	2.4	1.8
60°	15.8	14.6	15.3	14.0	13.4	12.7	11.6	9.8	3.1	1.8	1.3
62.5°	7.9	7.9	7.9	7.3	7.3	6.8	6.1	5.5	2.4	1.8	1.8
65°	4.2	3.7	4.2	3.7	3.7	3.7	3.1	3.1	1.8	1.8	1.8
67.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.3	1.8	1.8
70°	1.3	1.3	1.3	1.3	1.3	1.3	0.6	1.3	1.3	1.8	1.8
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3	1.8	1.8
75°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.3	1.8	1.8
77.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.8	1.8
80°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.3	1.8	1.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.3	1.8	1.8
85°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.8	1.8
87.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.8	1.8
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°	52.5	52.5	52.5	52.5
2.5°	43.9	39.0	35.4	34.8
5°	37.2	31.1	26.9	26.2
7.5°	31.7	25.0	21.3	20.8
10°	28.0	21.3	17.7	17.1
12.5°	25.0	18.9	16.4	15.8
15°	23.2	18.9	18.3	18.9
17.5°	25.0	25.6	28.0	31.1
20°	41.4	59.1	76.8	89.5
22.5°	93.2	172.5	228.6	255.4
25°	176.2	199.3	200.0	190.8
27.5°	95.7	76.2	68.3	64.6
30°	37.8	35.9	35.9	35.4
32.5°	25.0	23.2	22.5	21.9
35°	15.3	13.4	12.7	12.7
37.5°	9.8	8.5	7.9	7.3
40°	6.8	5.5	4.8	4.2
42.5°	4.8	3.7	2.4	2.4
45°	3.7	2.4	1.3	1.3
47.5°	3.1	1.8	0.6	0.6
50°	2.4	1.3	0.6	0.0
52.5°	1.8	1.3	0.0	0.0
55°	1.8	1.3	0.0	0.0
57.5°	1.8	1.3	0.0	0.0
60°	1.8	1.3	0.0	0.0
62.5°	1.8	1.3	0.0	0.0
65°	1.8	1.3	0.6	0.0
67.5°	2.4	1.3	0.6	0.0
70°	2.4	1.3	0.6	0.0
72.5°	2.4	1.3	0.6	0.0
75°	2.4	1.8	0.6	0.0
77.5°	2.4	1.8	0.6	0.0
80°	2.4	1.8	0.6	0.0
82.5°	2.4	1.8	0.6	0.0
85°	2.4	1.8	0.6	0.6
87.5°	2.4	1.8	0.6	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)