

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: P1191619

Luminaire Tested: **LDA4A20930D010TE 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: P1191619
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: LDA4A20930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

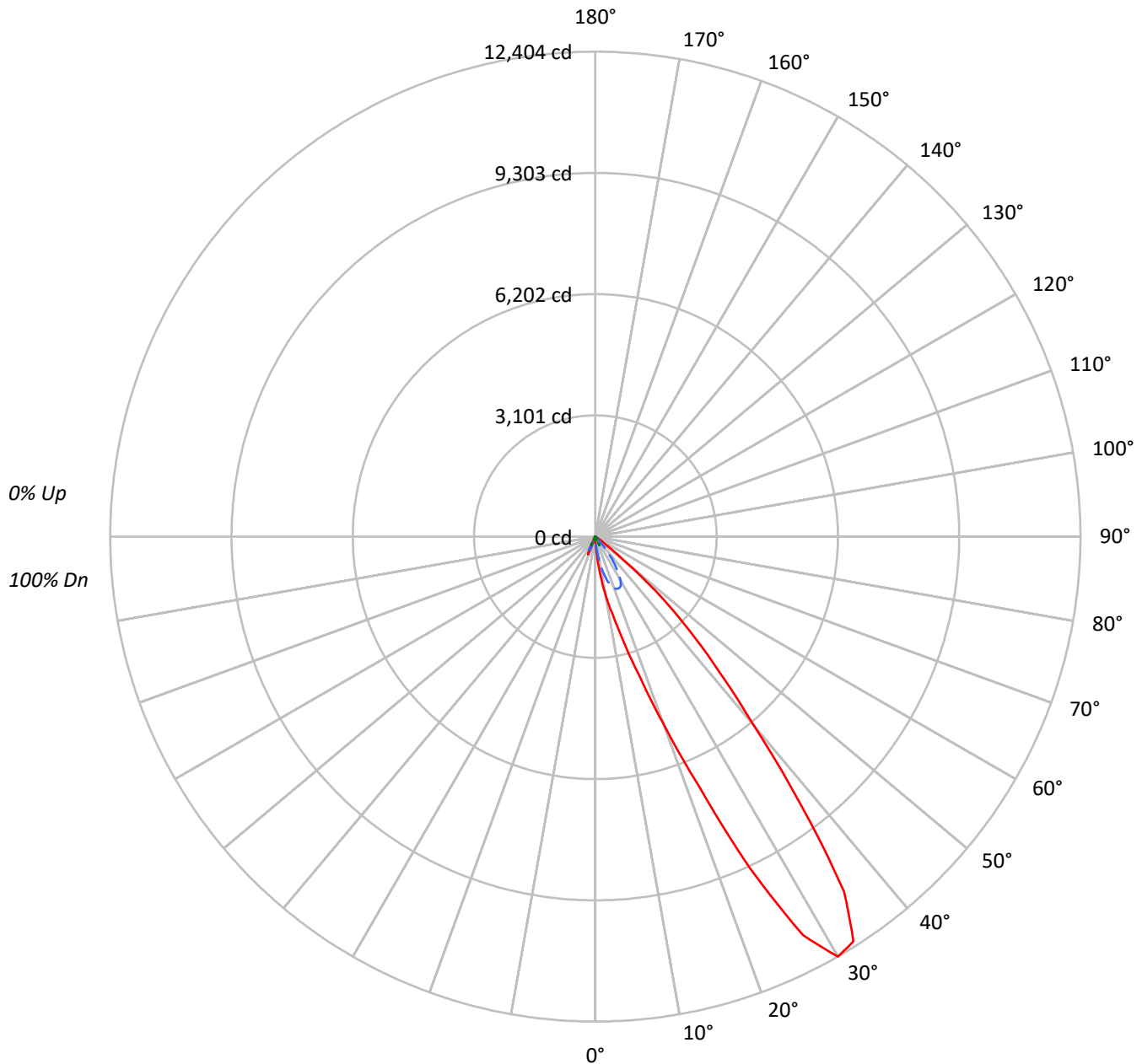
Lumens per Lamp: N/A
Luminaire Lumens: 2147.2 lumens
Efficiency: N/A
Efficacy: 74.6 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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°	12483	12483	12483
5°	65908	11812	6278
10°	192770	10032	4133
15°	350655	8415	4661
20°	668949	9582	22708
25°	1271321	33330	50152
30°	1766682	11238	9728
35°	1669525	5150	3734
40°	1011891	2286	1336
45°	593016	1239	401
50°	196804	921	0
55°	37483	753	0
60°	8437	567	0
65°	2422	1022	0
70°	829	1262	0
75°	0	1668	0
80°	0	2486	0
85°	0	4953	1698



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.2	1.1
10°-20°	197.6	9.2
20°-30°	700.6	32.6
30°-40°	830.6	38.7
40°-50°	353.4	16.5
50°-60°	31.9	1.5
60°-70°	3.9	0.2
70°-80°	2.6	0.1
80°-90°	2.4	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°	922.3	43.0
0°-40°	1753.0	81.6
0°-60°	2138.3	99.6
0°-90°	2147.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2147.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	101	101	101	101	101	
5°	532	262	95	60	51	83
15°	2746	1156	66	36	36	886
25°	9341	1450	245	385	368	4328
35°	11088	856	34	26	25	6405
45°	3400	94	7	5	2	2664
55°	174	14	4	2	0	244
65°	8	4	4	2	0	12
75°	0	2	4	4	0	1
85°	0	2	4	4	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°	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2
2.5°	186.1	175.5	182.4	180.1	181.3	184.9	181.3	181.3	180.1	175.5	175.5
5°	532.3	500.4	515.8	507.5	512.2	518.1	509.8	507.5	504.0	493.3	491.0
7.5°	991.4	973.8	992.6	978.6	991.4	993.9	982.0	979.7	973.8	958.6	952.6
10°	1539.1	1509.5	1527.2	1512.0	1532.0	1530.8	1512.0	1514.3	1507.2	1487.2	1477.8
12.5°	2024.1	2000.7	2018.2	1974.8	2024.1	1992.4	1995.9	2000.7	1991.1	1965.4	1953.5
15°	2746.0	2681.2	2711.8	2636.5	2711.8	2701.2	2660.1	2657.6	2632.9	2589.4	2563.5
17.5°	3704.5	3722.2	3699.8	3655.0	3755.1	3728.0	3669.2	3657.3	3610.3	3491.4	3489.1
20°	5096.3	5072.7	5110.5	4969.2	5097.5	4972.7	4956.2	4923.3	4843.2	4677.2	4651.2
22.5°	6878.0	6890.8	6823.8	6726.1	6883.9	6690.7	6631.8	6552.9	6406.9	6151.4	6071.3
25°	9341.3	9324.8	9237.7	9075.1	9243.5	8931.5	8784.4	8621.9	8349.8	7951.8	7759.9
27.5°	11487.9	11555.1	11497.3	11332.5	11444.3	11137.1	10798.0	10694.3	10325.8	9824.2	9478.0
30°	12404.1	12435.9	12411.2	12285.2	12325.1	12072.0	11736.4	11613.9	11236.0	10761.5	10312.7
32.5°	12278.1	12293.4	12298.1	12129.7	12136.8	11897.7	11546.9	11365.4	10953.3	10496.5	9960.7
35°	11087.5	11151.1	11192.4	11034.6	10878.0	10640.1	10242.1	9960.7	9527.3	9110.5	8563.0
37.5°	8586.6	8666.7	8730.2	8596.0	8521.7	8234.4	7903.6	7685.8	7386.6	7141.6	6753.1
40°	6284.4	6299.8	6338.6	6269.2	6153.8	6077.2	5887.7	5764.0	5582.7	5450.8	5192.9
42.5°	4671.2	4663.0	4690.0	4651.2	4647.8	4532.4	4412.2	4339.2	4276.8	4137.8	3956.5
45°	3399.6	3401.9	3427.8	3403.1	3337.2	3312.4	3233.5	3167.5	3085.1	3041.5	2897.9
47.5°	2311.4	2318.5	2336.2	2322.1	2262.0	2252.6	2202.0	2136.1	2134.9	2067.7	1941.8
50°	1025.6	1027.9	1049.2	1044.4	972.6	982.0	949.2	889.1	905.6	865.5	768.9
52.5°	340.3	341.4	345.1	342.6	330.9	330.9	322.6	321.5	312.0	302.6	281.5
55°	174.3	174.3	176.7	175.5	169.6	169.6	160.1	166.1	161.3	157.8	144.8
57.5°	74.1	74.1	75.3	75.3	71.8	75.3	71.8	71.8	69.5	68.3	63.6
60°	34.2	34.2	34.2	34.2	33.0	35.3	33.0	33.0	33.0	31.9	29.4
62.5°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	16.5	16.5	16.5	15.3
65°	8.3	8.3	8.3	8.3	8.3	9.4	8.3	8.3	8.3	8.3	8.3
67.5°	3.5	3.5	3.5	4.8	4.8	4.8	4.8	4.8	3.5	3.5	3.5
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2
2.5°	176.7	170.7	179.0	171.9	176.7	171.9	166.1	168.4	135.4	113.1	100.1
5°	492.2	474.5	489.9	474.5	475.7	467.4	445.1	442.8	262.5	128.3	95.4
7.5°	926.7	924.4	943.2	923.2	920.8	900.8	859.5	843.2	475.7	150.7	88.3
10°	1471.9	1437.7	1454.2	1433.1	1426.0	1389.5	1330.6	1298.8	707.6	173.0	80.1
12.5°	1920.6	1907.6	1919.3	1899.3	1892.2	1842.9	1773.4	1730.9	945.5	186.1	71.8
15°	2506.9	2481.0	2489.2	2448.1	2426.8	2332.7	2213.7	2136.1	1156.4	184.9	65.9
17.5°	3401.9	3351.2	3346.6	3275.9	3224.1	3053.4	2840.2	2680.1	1310.6	170.7	63.6
20°	4522.9	4431.0	4400.4	4288.5	4201.3	3918.8	3590.3	3330.1	1407.2	151.9	73.0
22.5°	5866.4	5705.1	5614.4	5435.5	5285.9	4832.5	4350.9	3961.3	1449.6	146.0	104.8
25°	7432.5	7155.8	6964.0	6682.5	6430.5	5734.6	5058.7	4512.2	1449.6	189.5	244.9
27.5°	9021.0	8584.1	8231.0	7820.0	7437.3	6450.5	5579.1	4867.9	1414.3	236.7	223.7
30°	9825.3	9288.3	8807.8	8327.5	7847.1	6661.3	5695.7	4911.4	1281.2	139.0	78.9
32.5°	9483.8	8917.4	8386.3	7921.2	7446.7	6289.2	5380.2	4623.0	1076.3	81.2	50.7
35°	8174.3	7683.3	7221.7	6874.3	6504.7	5590.8	4777.2	4117.8	856.1	63.6	34.2
37.5°	6524.6	6190.3	5861.8	5639.2	5374.2	4687.7	4031.8	3491.4	612.4	45.9	21.1
40°	5061.0	4832.5	4603.0	4461.7	4274.5	3774.0	3262.9	2833.1	361.6	31.9	14.2
42.5°	3876.4	3718.6	3547.9	3450.1	3315.9	2942.6	2543.4	2239.6	167.2	22.4	10.6
45°	2849.6	2733.1	2602.3	2539.9	2445.7	2199.6	1934.7	1720.4	94.3	16.5	7.1
47.5°	1918.2	1814.6	1693.3	1654.5	1563.7	1348.2	1077.4	866.6	62.4	11.7	5.9
50°	763.1	694.7	653.5	599.3	546.3	458.0	342.6	273.2	37.6	9.4	4.8
52.5°	280.2	265.0	257.9	243.7	232.0	207.2	175.5	151.9	22.4	7.1	3.5
55°	146.0	136.5	131.9	127.1	120.0	106.0	88.3	75.3	14.2	4.8	3.5
57.5°	63.6	60.1	61.2	56.5	53.0	48.2	42.4	36.5	9.4	4.8	3.5
60°	30.6	28.2	29.4	27.1	25.9	24.8	22.4	18.8	5.9	3.5	2.3
62.5°	15.3	15.3	15.3	14.2	14.2	12.9	11.7	10.6	4.8	3.5	3.5
65°	8.3	7.1	8.3	7.1	7.1	7.1	5.9	5.9	3.5	3.5	3.5
67.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.3	3.5	3.5
70°	2.3	2.3	2.3	2.3	2.3	2.3	1.2	2.3	2.3	3.5	3.5
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.3	3.5	3.5
75°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.3	3.5	3.5
77.5°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.3	3.5	3.5
80°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.3	3.5	3.5
82.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.3	3.5	3.5
85°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.3	3.5	3.5
87.5°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.3	3.5	3.5
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°	101.2	101.2	101.2	101.2
2.5°	84.9	75.3	68.3	67.2
5°	71.8	60.1	51.8	50.7
7.5°	61.2	48.2	41.3	40.0
10°	54.2	41.3	34.2	33.0
12.5°	48.2	36.5	31.9	30.6
15°	44.7	36.5	35.3	36.5
17.5°	48.2	49.5	54.2	60.1
20°	80.1	114.2	148.4	173.0
22.5°	180.1	333.2	441.6	493.3
25°	340.3	385.0	386.2	368.5
27.5°	184.9	147.3	131.9	124.8
30°	73.0	69.5	69.5	68.3
32.5°	48.2	44.7	43.6	42.4
35°	29.4	25.9	24.8	24.8
37.5°	18.8	16.5	15.3	14.2
40°	12.9	10.6	9.4	8.3
42.5°	9.4	7.1	4.8	4.8
45°	7.1	4.8	2.3	2.3
47.5°	5.9	3.5	1.2	1.2
50°	4.8	2.3	1.2	0.0
52.5°	3.5	2.3	0.0	0.0
55°	3.5	2.3	0.0	0.0
57.5°	3.5	2.3	0.0	0.0
60°	3.5	2.3	0.0	0.0
62.5°	3.5	2.3	0.0	0.0
65°	3.5	2.3	1.2	0.0
67.5°	4.8	2.3	1.2	0.0
70°	4.8	2.3	1.2	0.0
72.5°	4.8	2.3	1.2	0.0
75°	4.8	3.5	1.2	0.0
77.5°	4.8	3.5	1.2	0.0
80°	4.8	3.5	1.2	0.0
82.5°	4.8	3.5	1.2	0.0
85°	4.8	3.5	1.2	1.2
87.5°	4.8	3.5	1.2	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)