

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: P1212818

Luminaire Tested: **LDA4A35950D010TE 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: P1212818
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: LDA4A35950D010TE 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 / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

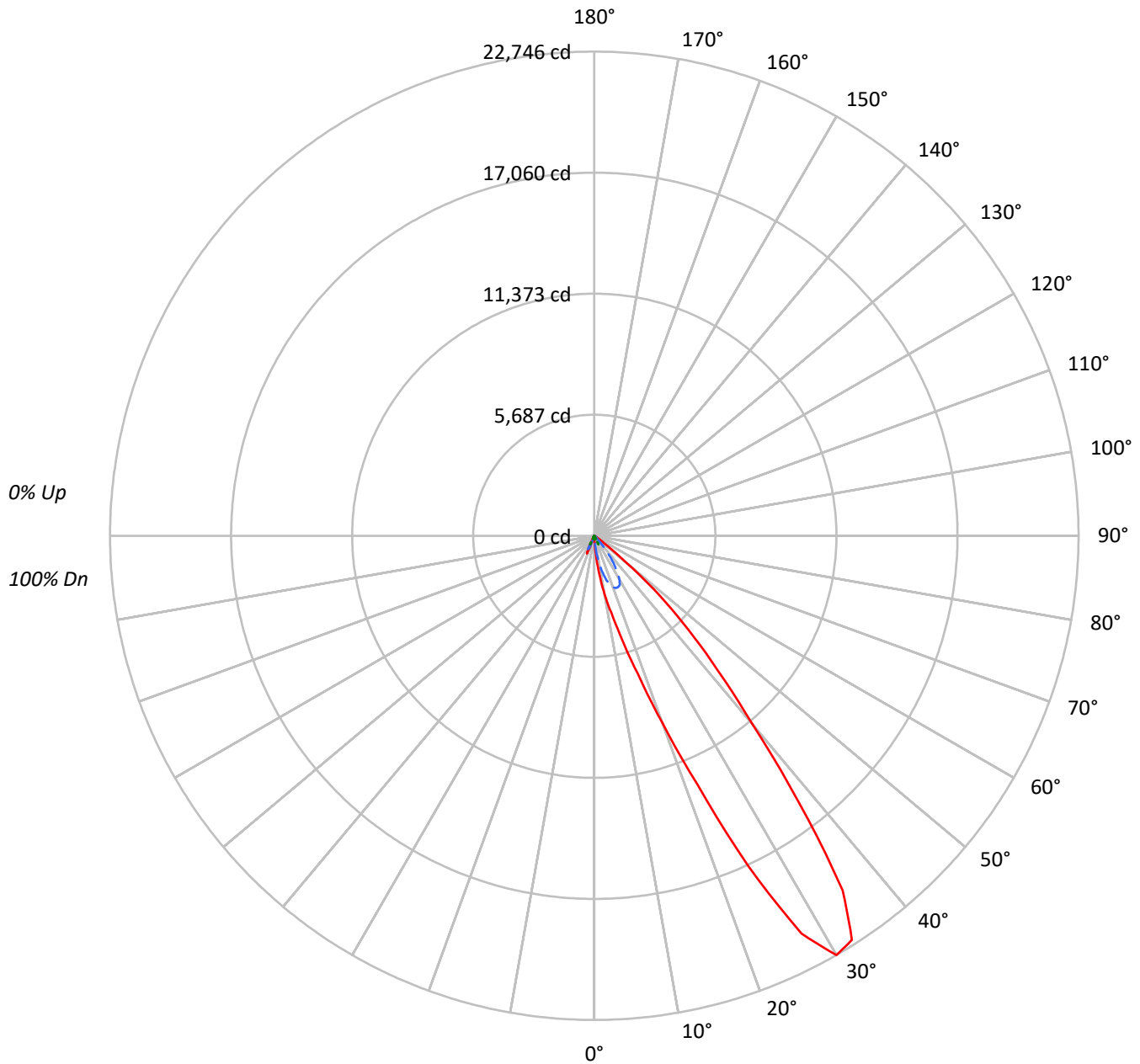
Lumens per Lamp: N/A
Luminaire Lumens: 3937.4 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 47.1
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	36	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	22905	22905	22905
5°	120833	21656	11490
10°	353451	18386	7578
15°	642992	15451	8543
20°	1226653	17563	41662
25°	2331257	61135	91974
30°	3239579	20609	17832
35°	3061460	9441	6821
40°	1855536	4170	2431
45°	1087406	2268	768
50°	360872	1650	0
55°	68729	1376	0
60°	15468	1085	0
65°	4407	1868	0
70°	1587	2308	0
75°	0	3050	0
80°	0	4546	0
85°	0	9057	3114



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.3	1.1
10°-20°	362.3	9.2
20°-30°	1284.7	32.6
30°-40°	1523.1	38.7
40°-50°	648.0	16.5
50°-60°	58.6	1.5
60°-70°	7.2	0.2
70°-80°	4.8	0.1
80°-90°	4.4	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°	1691.3	43.0
0°-40°	3214.4	81.6
0°-60°	3921.0	99.6
0°-90°	3937.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3937.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	186	186	186	186	186	
5°	976	481	175	110	93	152
15°	5035	2120	121	67	67	1624
25°	17129	2658	449	706	676	7937
35°	20332	1570	63	48	45	11745
45°	6234	173	13	9	4	4886
55°	320	26	6	4	0	447
65°	15	6	6	4	0	21
75°	0	4	6	6	0	1
85°	0	4	6	6	2	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°	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7
2.5°	341.2	321.8	334.8	330.4	332.6	339.0	332.6	332.6	330.4	321.8	321.8
5°	975.9	917.6	945.8	930.6	939.2	950.0	935.0	930.6	924.1	904.8	900.3
7.5°	1818.1	1785.7	1820.2	1794.3	1818.1	1822.4	1800.8	1796.5	1785.7	1757.6	1746.8
10°	2822.0	2768.2	2800.6	2772.4	2809.2	2807.1	2772.4	2776.8	2763.8	2727.1	2709.8
12.5°	3711.8	3668.5	3700.9	3621.1	3711.8	3653.5	3660.0	3668.5	3651.3	3603.8	3582.2
15°	5035.3	4916.7	4972.8	4834.5	4972.8	4953.3	4877.8	4873.4	4828.1	4748.2	4700.7
17.5°	6793.0	6825.4	6784.3	6702.4	6885.8	6836.2	6728.2	6706.5	6620.2	6402.2	6397.9
20°	9345.1	9302.1	9371.1	9112.0	9347.3	9118.5	9088.2	9027.8	8881.0	8576.6	8528.9
22.5°	12612.2	12635.9	12512.9	12333.7	12623.0	12268.8	12160.8	12016.2	11748.5	11279.8	11133.0
25°	17129.4	17099.2	16939.3	16641.4	16950.1	16377.9	16108.0	15810.0	15311.3	14581.4	14229.4
27.5°	21065.6	21188.6	21082.9	20780.6	20985.6	20422.1	19800.2	19610.2	18934.4	18014.6	17379.9
30°	22745.5	22803.8	22758.5	22527.3	22600.9	22136.6	21521.2	21296.6	20603.5	19733.3	18910.6
32.5°	22514.4	22542.5	22551.2	22242.4	22255.3	21817.1	21173.6	20841.0	20085.3	19247.5	18265.1
35°	20331.5	20448.1	20523.7	20234.3	19947.1	19510.9	18781.0	18265.1	17470.4	16706.0	15702.1
37.5°	15745.2	15892.0	16008.6	15762.4	15626.4	15099.7	14492.8	14093.4	13545.0	13095.8	12383.2
40°	11523.9	11552.0	11623.2	11495.8	11284.3	11143.8	10796.2	10569.5	10236.9	9995.1	9522.2
42.5°	8565.8	8550.6	8600.3	8528.9	8522.5	8311.0	8090.8	7956.7	7842.3	7587.5	7255.1
45°	6233.8	6238.0	6285.7	6240.2	6119.4	6073.9	5929.2	5808.4	5657.2	5577.2	5314.0
47.5°	4238.5	4251.5	4284.0	4258.0	4147.9	4130.7	4037.8	3917.0	3914.8	3791.5	3560.5
50°	1880.6	1885.0	1923.9	1915.3	1783.5	1800.8	1740.4	1630.2	1660.5	1587.1	1410.0
52.5°	624.1	626.1	632.7	628.3	606.6	606.6	591.7	589.5	572.2	554.9	516.0
55°	319.6	319.6	324.0	321.8	311.0	311.0	293.7	304.5	295.9	289.3	265.6
57.5°	136.0	136.0	138.2	138.2	131.7	138.2	131.7	131.7	127.4	125.2	116.6
60°	62.7	62.7	62.7	62.7	60.5	64.7	60.5	60.5	60.5	58.3	53.9
62.5°	32.4	32.4	32.4	32.4	32.4	32.4	32.4	30.3	30.3	30.3	28.1
65°	15.1	15.1	15.1	15.1	15.1	17.3	15.1	15.1	15.1	15.1	15.1
67.5°	6.4	6.4	6.4	8.6	8.6	8.6	8.6	8.6	6.4	6.4	6.4
70°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	2.2
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7
2.5°	324.0	313.1	328.2	315.3	324.0	315.3	304.5	308.8	248.2	207.4	183.6
5°	902.5	870.2	898.1	870.2	872.4	857.3	816.2	811.8	481.4	235.4	174.9
7.5°	1699.4	1695.0	1729.6	1692.9	1688.5	1651.8	1576.3	1546.1	872.4	276.4	161.9
10°	2699.1	2636.4	2666.7	2627.8	2614.9	2548.0	2440.0	2381.7	1297.6	317.4	146.8
12.5°	3521.6	3498.0	3519.5	3482.9	3470.0	3379.3	3251.8	3174.1	1733.8	341.2	131.7
15°	4597.0	4549.5	4564.7	4489.2	4450.3	4277.4	4059.4	3917.0	2120.5	339.0	121.0
17.5°	6238.0	6145.3	6136.6	6007.0	5912.0	5598.8	5208.2	4914.5	2403.1	313.1	116.6
20°	8293.7	8125.2	8069.2	7864.0	7704.1	7186.0	6583.6	6106.4	2580.2	278.5	133.8
22.5°	10757.3	10461.5	10295.2	9967.0	9692.9	8861.5	7978.4	7263.8	2658.0	267.7	192.2
25°	13629.2	13121.7	12769.8	12253.8	11791.6	10515.5	9276.1	8274.2	2658.0	347.6	449.2
27.5°	16542.0	15741.0	15093.1	14339.5	13637.7	11828.4	10230.5	8926.4	2593.2	434.0	410.3
30°	18016.8	17032.2	16151.1	15270.2	14389.2	12214.9	10444.2	9006.2	2349.3	254.8	144.7
32.5°	17390.7	16352.0	15378.2	14525.3	13655.0	11532.6	9865.6	8477.2	1973.6	149.0	92.8
35°	14989.5	14089.1	13242.6	12605.6	11927.7	10252.1	8760.1	7550.8	1569.8	116.6	62.7
37.5°	11964.5	11351.2	10748.7	10340.6	9854.8	8596.0	7393.2	6402.2	1122.8	84.1	38.9
40°	9280.4	8861.5	8440.5	8181.4	7838.2	6920.4	5983.3	5195.2	662.9	58.3	25.9
42.5°	7108.3	6819.0	6505.8	6326.5	6080.5	5395.9	4664.1	4106.9	306.6	41.1	19.4
45°	5225.4	5011.7	4771.8	4657.4	4484.8	4033.5	3547.8	3154.6	172.7	30.3	13.0
47.5°	3517.5	3327.4	3104.9	3033.7	2867.5	2472.3	1975.6	1589.1	114.4	21.6	10.8
50°	1399.2	1274.0	1198.5	1099.1	1001.9	839.9	628.3	500.9	69.2	17.3	8.6
52.5°	513.9	485.9	472.8	447.0	425.4	380.0	321.8	278.5	41.1	13.0	6.4
55°	267.7	250.4	241.8	233.2	220.2	194.4	161.9	138.2	25.9	8.6	6.4
57.5°	116.6	110.1	112.2	103.6	97.1	88.5	77.7	66.9	17.3	8.6	6.4
60°	56.1	51.9	53.9	49.7	47.5	45.3	41.1	34.5	10.8	6.4	4.4
62.5°	28.1	28.1	28.1	25.9	25.9	23.8	21.6	19.4	8.6	6.4	6.4
65°	15.1	13.0	15.1	13.0	13.0	13.0	10.8	10.8	6.4	6.4	6.4
67.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	4.4	6.4	6.4
70°	4.4	4.4	4.4	4.4	4.4	4.4	2.2	4.4	4.4	6.4	6.4
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	4.4	6.4	6.4
75°	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	4.4	6.4	6.4
77.5°	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	4.4	6.4	6.4
80°	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	4.4	6.4	6.4
82.5°	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	4.4	6.4	6.4
85°	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	4.4	6.4	6.4
87.5°	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	4.4	6.4	6.4
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°	185.7	185.7	185.7	185.7
2.5°	155.5	138.2	125.2	123.0
5°	131.7	110.1	95.0	92.8
7.5°	112.2	88.5	75.5	73.3
10°	99.3	75.5	62.7	60.5
12.5°	88.5	66.9	58.3	56.1
15°	82.2	66.9	64.7	66.9
17.5°	88.5	90.8	99.3	110.1
20°	146.8	209.4	272.1	317.4
22.5°	330.4	611.1	809.7	904.8
25°	624.1	706.1	708.2	675.8
27.5°	339.0	269.9	241.8	228.8
30°	133.8	127.4	127.4	125.2
32.5°	88.5	82.2	80.0	77.7
35°	53.9	47.5	45.3	45.3
37.5°	34.5	30.3	28.1	25.9
40°	23.8	19.4	17.3	15.1
42.5°	17.3	13.0	8.6	8.6
45°	13.0	8.6	4.4	4.4
47.5°	10.8	6.4	2.2	2.2
50°	8.6	4.4	2.2	0.0
52.5°	6.4	4.4	0.0	0.0
55°	6.4	4.4	0.0	0.0
57.5°	6.4	4.4	0.0	0.0
60°	6.4	4.4	0.0	0.0
62.5°	6.4	4.4	0.0	0.0
65°	6.4	4.4	2.2	0.0
67.5°	8.6	4.4	2.2	0.0
70°	8.6	4.4	2.2	0.0
72.5°	8.6	4.4	2.2	0.0
75°	8.6	6.4	2.2	0.0
77.5°	8.6	6.4	2.2	0.0
80°	8.6	6.4	2.2	0.0
82.5°	8.6	6.4	2.2	0.0
85°	8.6	6.4	2.2	2.2
87.5°	8.6	6.4	2.2	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)