

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: P1191565

Luminaire Tested: **LDA4A15940D010TE 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: P1191565
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: LDA4A15940D010TE 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

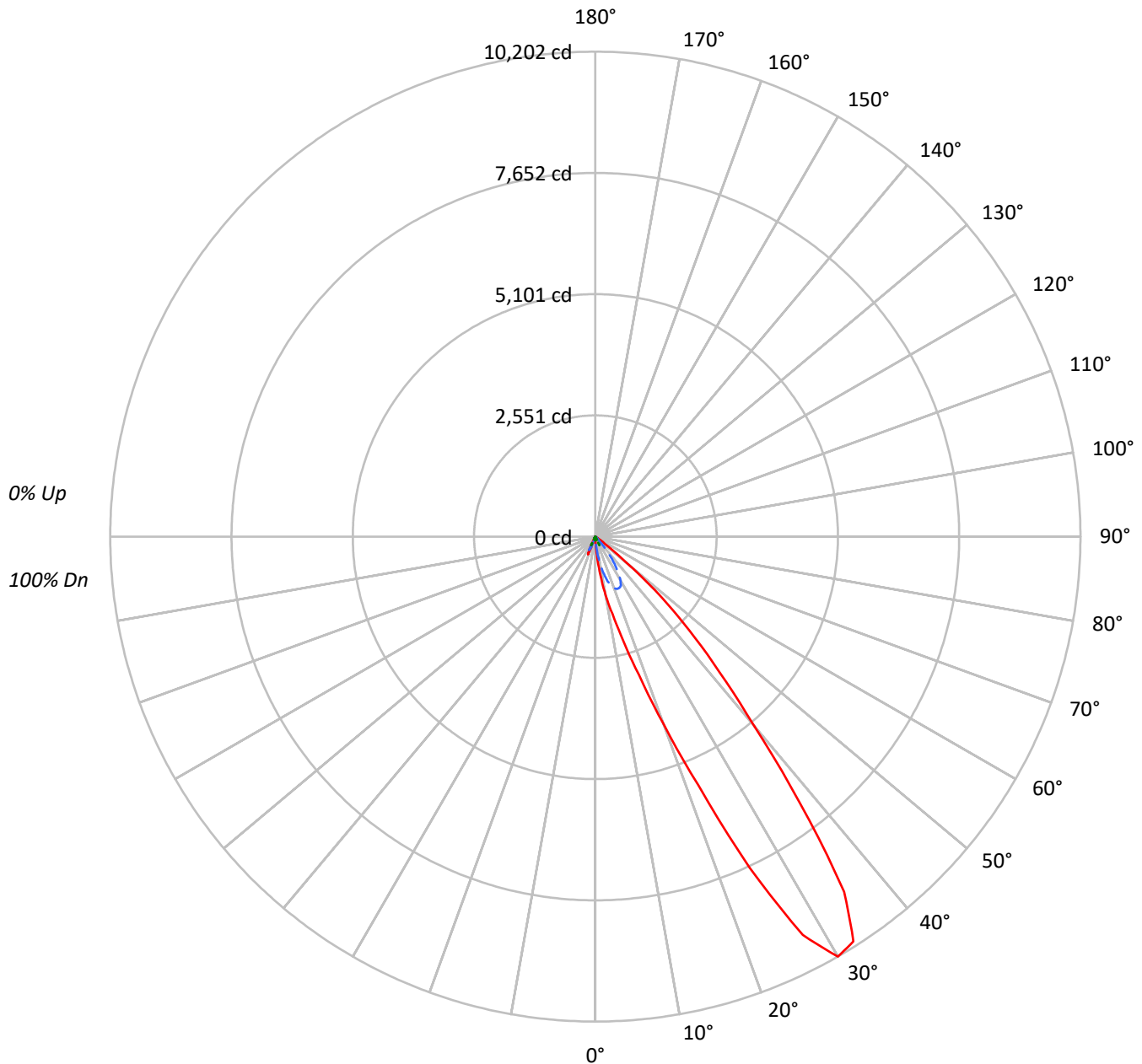
Lumens per Lamp: N/A
Luminaire Lumens: 1766.0 lumens
Efficiency: N/A
Efficacy: 86.6 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20.4
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	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10275	10275	10275
5°	54195	9707	5151
10°	158552	8254	3394
15°	288403	6934	3831
20°	550196	7876	18692
25°	1045618	27410	41251
30°	1453029	9244	8004
35°	1373144	4231	3057
40°	832245	1868	1095
45°	487726	1029	331
50°	161861	729	0
55°	30816	624	0
60°	6932	469	0
65°	1985	846	0
70°	685	1046	0
75°	0	1382	0
80°	0	2060	0
85°	0	4104	1415



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.9	1.1
10°-20°	162.5	9.2
20°-30°	576.2	32.6
30°-40°	683.2	38.7
40°-50°	290.6	16.5
50°-60°	26.3	1.5
60°-70°	3.2	0.2
70°-80°	2.1	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°	758.6	43.0
0°-40°	1441.7	81.6
0°-60°	1758.6	99.6
0°-90°	1766.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1766.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	83	83	83	83	83	
5°	438	216	78	49	42	68
15°	2258	951	54	30	30	729
25°	7683	1192	201	317	303	3560
35°	9119	704	28	21	20	5268
45°	2796	78	6	4	2	2191
55°	143	12	3	2	0	201
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°	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3
2.5°	153.0	144.3	150.1	148.2	149.2	152.0	149.2	149.2	148.2	144.3	144.3
5°	437.7	411.5	424.2	417.4	421.2	426.1	419.3	417.4	414.5	405.8	403.9
7.5°	815.5	800.9	816.4	804.8	815.5	817.4	807.7	805.8	800.9	788.3	783.5
10°	1265.9	1241.6	1256.0	1243.5	1260.0	1259.0	1243.5	1245.4	1239.7	1223.2	1215.4
12.5°	1664.9	1645.5	1660.0	1624.1	1664.9	1638.7	1641.5	1645.5	1637.7	1616.5	1606.6
15°	2258.5	2205.3	2230.4	2168.5	2230.4	2221.6	2187.8	2185.9	2165.5	2129.7	2108.3
17.5°	3046.8	3061.4	3043.0	3006.1	3088.5	3066.1	3017.7	3008.1	2969.3	2871.6	2869.6
20°	4191.6	4172.2	4203.1	4087.0	4192.5	4089.8	4076.3	4049.2	3983.3	3846.8	3825.6
22.5°	5656.9	5667.6	5612.3	5532.0	5661.7	5502.8	5454.4	5389.7	5269.5	5059.4	4993.5
25°	7682.9	7669.4	7597.7	7464.0	7602.6	7345.9	7224.8	7091.2	6867.4	6540.2	6382.2
27.5°	9448.5	9503.6	9456.2	9320.6	9412.7	9159.8	8881.0	8795.8	8492.6	8080.0	7795.2
30°	10201.9	10228.1	10207.8	10104.2	10137.0	9928.8	9652.8	9552.2	9241.3	8851.0	8482.0
32.5°	10098.3	10111.0	10114.8	9976.3	9982.1	9785.5	9496.9	9347.8	9008.8	8633.1	8192.3
35°	9119.2	9171.4	9205.4	9075.6	8946.8	8751.2	8423.9	8192.3	7836.0	7493.1	7042.8
37.5°	7062.2	7128.0	7180.2	7069.9	7008.8	6772.5	6500.5	6321.3	6075.3	5873.9	5554.2
40°	5168.7	5181.4	5213.3	5156.2	5061.3	4998.3	4842.4	4740.7	4591.5	4483.1	4271.1
42.5°	3841.9	3835.2	3857.5	3825.6	3822.6	3727.6	3628.9	3568.8	3517.5	3403.2	3254.1
45°	2796.0	2797.9	2819.2	2798.9	2744.7	2724.3	2659.5	2605.2	2537.5	2501.6	2383.4
47.5°	1901.2	1906.9	1921.5	1909.8	1860.4	1852.6	1811.1	1756.8	1755.8	1700.6	1597.0
50°	843.5	845.5	862.9	859.1	799.9	807.7	780.5	731.2	744.8	711.8	632.5
52.5°	280.0	280.9	283.8	281.9	272.2	272.2	265.4	264.4	256.6	248.9	231.4
55°	143.3	143.3	145.2	144.3	139.5	139.5	131.7	136.5	132.7	129.8	119.2
57.5°	61.0	61.0	62.0	62.0	59.0	62.0	59.0	59.0	57.1	56.2	52.4
60°	28.1	28.1	28.1	28.1	27.1	29.0	27.1	27.1	27.1	26.2	24.3
62.5°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	13.5	13.5	13.5	12.5
65°	6.8	6.8	6.8	6.8	6.8	7.8	6.8	6.8	6.8	6.8	6.8
67.5°	2.9	2.9	2.9	3.8	3.8	3.8	3.8	3.8	2.9	2.9	2.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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°	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.3
2.5°	145.2	140.5	147.3	141.4	145.2	141.4	136.5	138.5	111.4	93.0	82.4
5°	404.9	390.3	402.8	390.3	391.2	384.5	366.1	364.1	216.0	105.5	78.4
7.5°	762.1	760.2	775.8	759.3	757.4	740.9	707.0	693.4	391.2	124.0	72.7
10°	1210.6	1182.5	1196.0	1178.6	1172.9	1142.9	1094.3	1068.3	582.0	142.4	65.9
12.5°	1579.6	1568.9	1578.7	1562.2	1556.3	1515.7	1458.5	1423.6	777.7	153.0	59.0
15°	2061.8	2040.6	2047.4	2013.4	1996.1	1918.5	1820.7	1756.8	951.0	152.0	54.3
17.5°	2797.9	2756.3	2752.4	2694.3	2651.7	2511.3	2335.9	2204.3	1078.0	140.5	52.4
20°	3719.9	3644.3	3619.2	3527.2	3455.5	3223.1	2952.8	2738.9	1157.3	124.9	60.0
22.5°	4825.0	4692.3	4617.7	4470.6	4347.6	3974.6	3578.5	3258.0	1192.2	120.1	86.2
25°	6113.1	5885.5	5727.6	5496.2	5288.9	4716.6	4160.6	3711.1	1192.2	155.9	201.4
27.5°	7419.6	7060.2	6769.7	6431.6	6116.9	5305.4	4588.6	4003.6	1163.2	194.7	184.0
30°	8080.9	7639.4	7244.2	6849.0	6454.0	5478.7	4684.5	4039.5	1053.7	114.3	64.9
32.5°	7800.2	7334.3	6897.6	6514.9	6124.7	5172.7	4425.0	3802.2	885.1	66.8	41.6
35°	6723.2	6319.4	5939.7	5653.9	5349.8	4598.3	3929.1	3386.7	704.0	52.4	28.1
37.5°	5366.3	5091.3	4821.1	4638.0	4420.1	3855.6	3316.1	2871.6	503.6	37.8	17.5
40°	4162.5	3974.6	3785.7	3669.6	3515.6	3103.9	2683.6	2330.2	297.3	26.2	11.6
42.5°	3188.2	3058.5	2918.1	2837.6	2727.3	2420.2	2092.0	1842.0	137.6	18.4	8.7
45°	2343.7	2247.8	2140.4	2089.0	2011.5	1809.1	1591.2	1414.9	77.5	13.5	5.9
47.5°	1577.6	1492.4	1392.7	1360.8	1286.2	1108.9	886.1	712.8	51.3	9.7	4.9
50°	627.5	571.4	537.5	493.0	449.3	376.8	281.9	224.7	31.0	7.8	3.8
52.5°	230.5	217.9	212.0	200.5	190.8	170.5	144.3	124.9	18.4	5.9	2.9
55°	120.1	112.4	108.4	104.6	98.7	87.1	72.7	62.0	11.6	3.8	2.9
57.5°	52.4	49.4	50.3	46.5	43.6	39.7	34.9	30.0	7.8	3.8	2.9
60°	25.2	23.2	24.3	22.2	21.3	20.3	18.4	15.5	4.9	2.9	1.9
62.5°	12.5	12.5	12.5	11.6	11.6	10.6	9.7	8.7	3.8	2.9	2.9
65°	6.8	5.9	6.8	5.9	5.9	5.9	4.9	4.9	2.9	2.9	2.9
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	1.9	2.9	2.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.0	1.9	1.9	2.9	2.9
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
75°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9	2.9	2.9
77.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
80°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9	2.9	2.9
82.5°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9	2.9	2.9
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
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°	83.3	83.3	83.3	83.3
2.5°	69.7	62.0	56.2	55.2
5°	59.0	49.4	42.5	41.6
7.5°	50.3	39.7	34.0	32.9
10°	44.6	34.0	28.1	27.1
12.5°	39.7	30.0	26.2	25.2
15°	36.8	30.0	29.0	30.0
17.5°	39.7	40.6	44.6	49.4
20°	65.9	94.0	122.0	142.4
22.5°	148.2	274.1	363.1	405.8
25°	280.0	316.6	317.7	303.1
27.5°	152.0	121.1	108.4	102.7
30°	60.0	57.1	57.1	56.2
32.5°	39.7	36.8	35.9	34.9
35°	24.3	21.3	20.3	20.3
37.5°	15.5	13.5	12.5	11.6
40°	10.6	8.7	7.8	6.8
42.5°	7.8	5.9	3.8	3.8
45°	5.9	3.8	1.9	1.9
47.5°	4.9	2.9	1.0	1.0
50°	3.8	1.9	1.0	0.0
52.5°	2.9	1.9	0.0	0.0
55°	2.9	1.9	0.0	0.0
57.5°	2.9	1.9	0.0	0.0
60°	2.9	1.9	0.0	0.0
62.5°	2.9	1.9	0.0	0.0
65°	2.9	1.9	1.0	0.0
67.5°	3.8	1.9	1.0	0.0
70°	3.8	1.9	1.0	0.0
72.5°	3.8	1.9	1.0	0.0
75°	3.8	2.9	1.0	0.0
77.5°	3.8	2.9	1.0	0.0
80°	3.8	2.9	1.0	0.0
82.5°	3.8	2.9	1.0	0.0
85°	3.8	2.9	1.0	1.0
87.5°	3.8	2.9	1.0	0.0
90°	0.0	0.0	0.0	0.0

Classified

Scaled Data Report

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Scaled Data Report



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— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)