

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: P1191655

Luminaire Tested: **LDA4A20940D010TE 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: P1191655
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: LDA4A20940D010TE 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

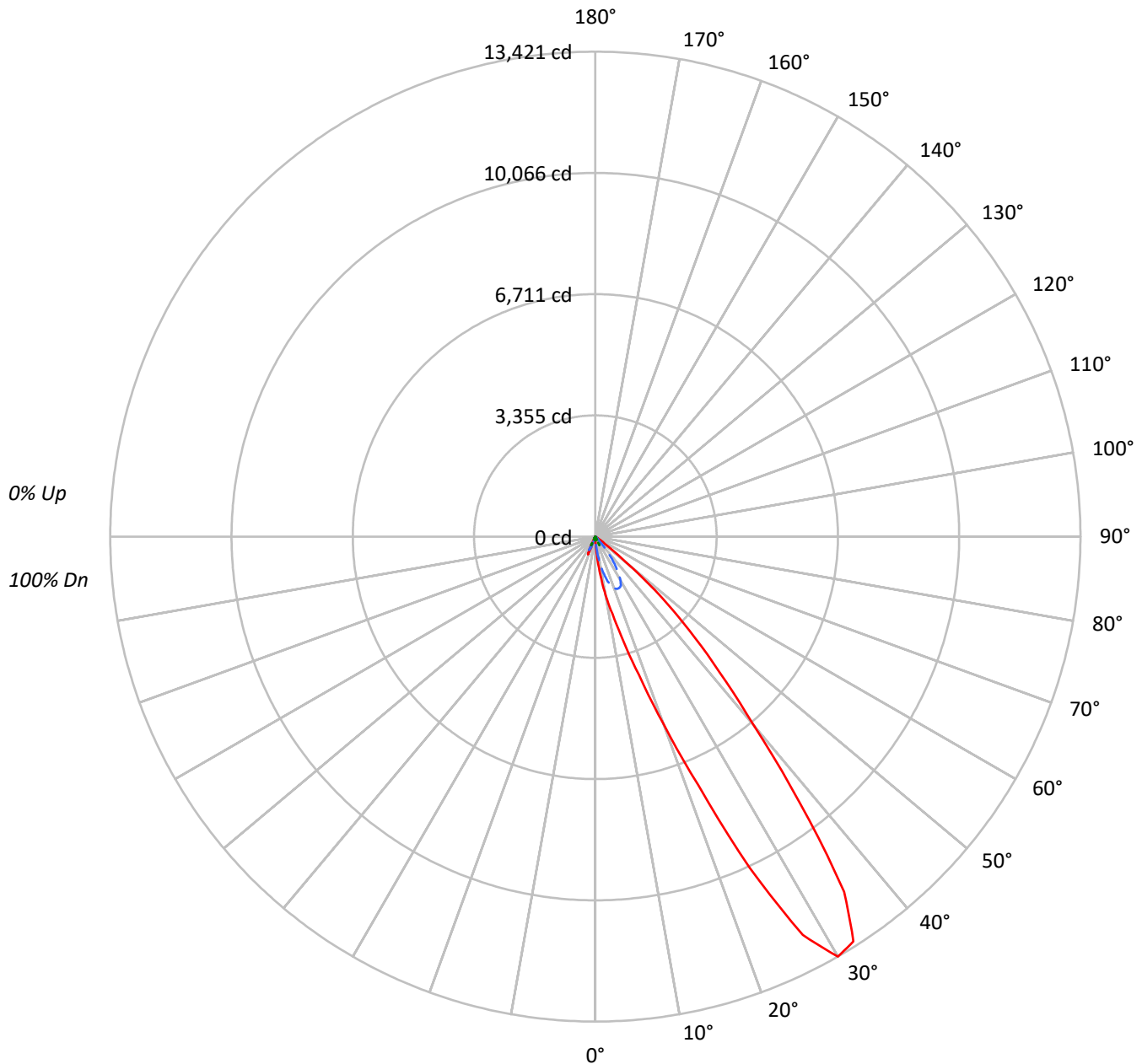
Lumens per Lamp: N/A
Luminaire Lumens: 2323.3 lumens
Efficiency: N/A
Efficacy: 80.7 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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	36	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13519	13519	13519
5°	71306	12778	6773
10°	208564	10847	4459
15°	379400	9118	5044
20°	723803	10383	24572
25°	1375572	36066	54275
30°	1911531	12163	10511
35°	1806430	5556	4035
40°	1094879	2464	1449
45°	641632	1343	454
50°	212942	979	0
55°	40536	817	0
60°	9103	641	0
65°	2627	1109	0
70°	938	1370	0
75°	0	1811	0
80°	0	2699	0
85°	0	5378	1840



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.2	1.1
10°-20°	213.8	9.2
20°-30°	758.0	32.6
30°-40°	898.7	38.7
40°-50°	382.3	16.5
50°-60°	34.6	1.5
60°-70°	4.3	0.2
70°-80°	2.9	0.1
80°-90°	2.6	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°	998.0	43.0
0°-40°	1896.7	81.6
0°-60°	2313.6	99.6
0°-90°	2323.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2323.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	110	110	110	110	110	
5°	576	284	103	65	55	90
15°	2971	1251	71	40	40	958
25°	10107	1568	265	417	399	4683
35°	11997	926	37	28	27	6930
45°	3678	102	8	5	3	2883
55°	188	15	4	3	0	264
65°	9	4	4	3	0	13
75°	0	3	4	4	0	1
85°	0	3	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°	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6
2.5°	201.3	189.8	197.5	194.9	196.2	200.0	196.2	196.2	194.9	189.8	189.8
5°	575.9	541.5	558.1	549.1	554.3	560.7	551.7	549.1	545.3	533.9	531.3
7.5°	1072.8	1053.7	1074.1	1058.8	1072.8	1075.3	1062.5	1060.1	1053.7	1037.1	1030.7
10°	1665.2	1633.3	1652.4	1635.9	1657.5	1656.4	1635.9	1638.4	1630.9	1609.2	1599.0
12.5°	2190.1	2164.6	2183.7	2136.7	2190.1	2155.8	2159.5	2164.6	2154.5	2126.4	2113.6
15°	2971.1	2901.0	2934.2	2852.7	2934.2	2922.8	2878.2	2875.6	2848.8	2801.7	2773.6
17.5°	4008.3	4027.3	4003.1	3954.8	4063.1	4033.7	3970.1	3957.4	3906.4	3777.7	3775.1
20°	5514.2	5488.8	5529.4	5376.7	5515.5	5380.4	5362.6	5326.9	5240.3	5060.6	5032.6
22.5°	7441.9	7455.8	7383.3	7277.6	7448.3	7239.4	7175.7	7090.2	6932.3	6655.8	6569.1
25°	10107.3	10089.4	9995.2	9819.4	10001.6	9663.9	9504.6	9328.8	9034.4	8603.8	8396.2
27.5°	12430.0	12502.5	12440.1	12261.7	12382.8	12050.3	11683.3	11571.2	11172.4	10629.7	10255.1
30°	13421.1	13455.6	13428.8	13292.4	13335.8	13061.9	12698.7	12566.2	12157.3	11643.9	11158.4
32.5°	13284.9	13301.4	13306.4	13124.3	13132.0	12873.4	12493.7	12297.5	11851.5	11357.2	10777.4
35°	11996.7	12065.5	12110.1	11939.4	11770.0	11512.5	11081.9	10777.4	10308.5	9857.6	9265.1
37.5°	9290.6	9377.2	9446.0	9300.7	9220.5	8909.6	8551.7	8316.0	7992.3	7727.3	7306.8
40°	6799.8	6816.3	6858.4	6783.3	6658.3	6575.5	6370.4	6236.6	6040.4	5897.7	5618.6
42.5°	5054.2	5045.4	5074.6	5032.6	5028.7	4903.9	4774.0	4695.0	4627.5	4477.2	4280.8
45°	3678.3	3680.8	3708.9	3682.1	3610.7	3583.9	3498.6	3427.2	3338.1	3291.0	3135.5
47.5°	2501.0	2508.6	2527.8	2512.6	2447.5	2437.3	2382.5	2311.1	2310.0	2237.3	2100.9
50°	1109.7	1112.2	1135.2	1130.2	1052.4	1062.5	1026.9	961.9	979.7	936.4	832.0
52.5°	368.2	369.5	373.3	370.7	358.1	358.1	349.1	347.8	337.7	327.4	304.5
55°	188.5	188.5	191.1	189.8	183.5	183.5	173.3	179.7	174.5	170.7	156.7
57.5°	80.2	80.2	81.5	81.5	77.8	81.5	77.8	77.8	75.2	73.8	68.8
60°	36.9	36.9	36.9	36.9	35.6	38.2	35.6	35.6	35.6	34.5	31.9
62.5°	19.1	19.1	19.1	19.1	19.1	19.1	19.1	17.8	17.8	17.8	16.5
65°	9.0	9.0	9.0	9.0	9.0	10.1	9.0	9.0	9.0	9.0	9.0
67.5°	3.8	3.8	3.8	5.1	5.1	5.1	5.1	5.1	3.8	3.8	3.8
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.3
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6	109.6
2.5°	191.1	184.8	193.6	186.1	191.1	186.1	179.7	182.2	146.5	122.4	108.3
5°	532.6	513.5	530.0	513.5	514.8	505.8	481.6	479.0	284.1	138.9	103.2
7.5°	1002.7	1000.1	1020.5	998.8	996.4	974.6	930.0	912.2	514.8	163.0	95.6
10°	1592.6	1555.7	1573.5	1550.5	1543.0	1503.4	1439.7	1405.3	765.7	187.2	86.6
12.5°	2078.0	2064.0	2076.7	2055.1	2047.5	1993.9	1918.7	1872.8	1023.1	201.3	77.8
15°	2712.5	2684.4	2693.4	2648.8	2625.9	2524.0	2395.3	2311.1	1251.2	200.0	71.4
17.5°	3680.8	3626.1	3621.0	3544.5	3488.5	3303.7	3073.1	2899.7	1418.0	184.8	68.8
20°	4893.8	4794.3	4761.3	4640.2	4546.0	4240.1	3884.7	3603.0	1522.6	164.3	79.1
22.5°	6347.4	6172.9	6074.8	5881.2	5719.4	5228.8	4707.7	4286.1	1568.5	158.0	113.4
25°	8042.0	7742.5	7534.9	7230.4	6957.7	6204.8	5473.4	4882.3	1568.5	205.2	265.0
27.5°	9760.8	9288.0	8905.9	8461.2	8047.1	6979.5	6036.5	5267.1	1530.2	256.1	242.1
30°	10630.9	10049.9	9530.1	9010.3	8490.4	7207.5	6162.8	5314.1	1386.2	150.3	85.4
32.5°	10261.5	9648.5	9074.0	8570.8	8057.3	6804.8	5821.2	5002.1	1164.5	87.9	54.7
35°	8844.6	8313.3	7813.9	7438.0	7038.0	6049.3	5168.9	4455.5	926.3	68.8	36.9
37.5°	7059.7	6697.8	6342.3	6101.5	5814.8	5072.2	4362.5	3777.7	662.5	49.7	22.9
40°	5476.0	5228.8	4980.4	4827.5	4624.9	4083.5	3530.5	3065.4	391.1	34.5	15.3
42.5°	4194.2	4023.5	3838.8	3733.1	3587.8	3184.0	2752.0	2423.4	180.9	24.2	11.4
45°	3083.2	2957.1	2815.8	2748.1	2646.2	2379.9	2093.4	1861.4	101.9	17.8	7.7
47.5°	2075.4	1963.3	1832.1	1790.2	1692.0	1458.8	1165.8	937.7	67.5	12.7	6.4
50°	825.6	751.7	707.1	648.6	591.2	495.6	370.7	295.5	40.8	10.1	5.1
52.5°	303.2	286.7	279.0	263.7	250.9	224.3	189.8	164.3	24.2	7.7	3.8
55°	158.0	147.8	142.6	137.6	129.9	114.7	95.6	81.5	15.3	5.1	3.8
57.5°	68.8	65.0	66.3	61.1	57.3	52.3	45.9	39.5	10.1	5.1	3.8
60°	33.2	30.6	31.9	29.2	28.1	26.8	24.2	20.4	6.4	3.8	2.6
62.5°	16.5	16.5	16.5	15.3	15.3	14.0	12.7	11.4	5.1	3.8	3.8
65°	9.0	7.7	9.0	7.7	7.7	7.7	6.4	6.4	3.8	3.8	3.8
67.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	2.6	3.8	3.8
70°	2.6	2.6	2.6	2.6	2.6	2.6	1.3	2.6	2.6	3.8	3.8
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.6	3.8	3.8
75°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.8	3.8
77.5°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.6	3.8	3.8
80°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.8	3.8
82.5°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	2.6	3.8	3.8
85°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.6	3.8	3.8
87.5°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.6	3.8	3.8
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°	109.6	109.6	109.6	109.6
2.5°	91.8	81.5	73.8	72.7
5°	77.8	65.0	56.0	54.7
7.5°	66.3	52.3	44.6	43.3
10°	58.6	44.6	36.9	35.6
12.5°	52.3	39.5	34.5	33.2
15°	48.4	39.5	38.2	39.5
17.5°	52.3	53.6	58.6	65.0
20°	86.6	123.5	160.6	187.2
22.5°	194.9	360.5	477.8	533.9
25°	368.2	416.6	417.9	398.8
27.5°	200.0	159.3	142.6	135.1
30°	79.1	75.2	75.2	73.8
32.5°	52.3	48.4	47.2	45.9
35°	31.9	28.1	26.8	26.8
37.5°	20.4	17.8	16.5	15.3
40°	14.0	11.4	10.1	9.0
42.5°	10.1	7.7	5.1	5.1
45°	7.7	5.1	2.6	2.6
47.5°	6.4	3.8	1.3	1.3
50°	5.1	2.6	1.3	0.0
52.5°	3.8	2.6	0.0	0.0
55°	3.8	2.6	0.0	0.0
57.5°	3.8	2.6	0.0	0.0
60°	3.8	2.6	0.0	0.0
62.5°	3.8	2.6	0.0	0.0
65°	3.8	2.6	1.3	0.0
67.5°	5.1	2.6	1.3	0.0
70°	5.1	2.6	1.3	0.0
72.5°	5.1	2.6	1.3	0.0
75°	5.1	3.8	1.3	0.0
77.5°	5.1	3.8	1.3	0.0
80°	5.1	3.8	1.3	0.0
82.5°	5.1	3.8	1.3	0.0
85°	5.1	3.8	1.3	1.3
87.5°	5.1	3.8	1.3	0.0
90°	0.0	0.0	0.0	0.0

Classified

Scaled Data Report

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Scaled Data Report





— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)