

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: P1191457

Luminaire Tested: **LDA4A10935D010TE 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: P1191457
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: LDA4A10935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

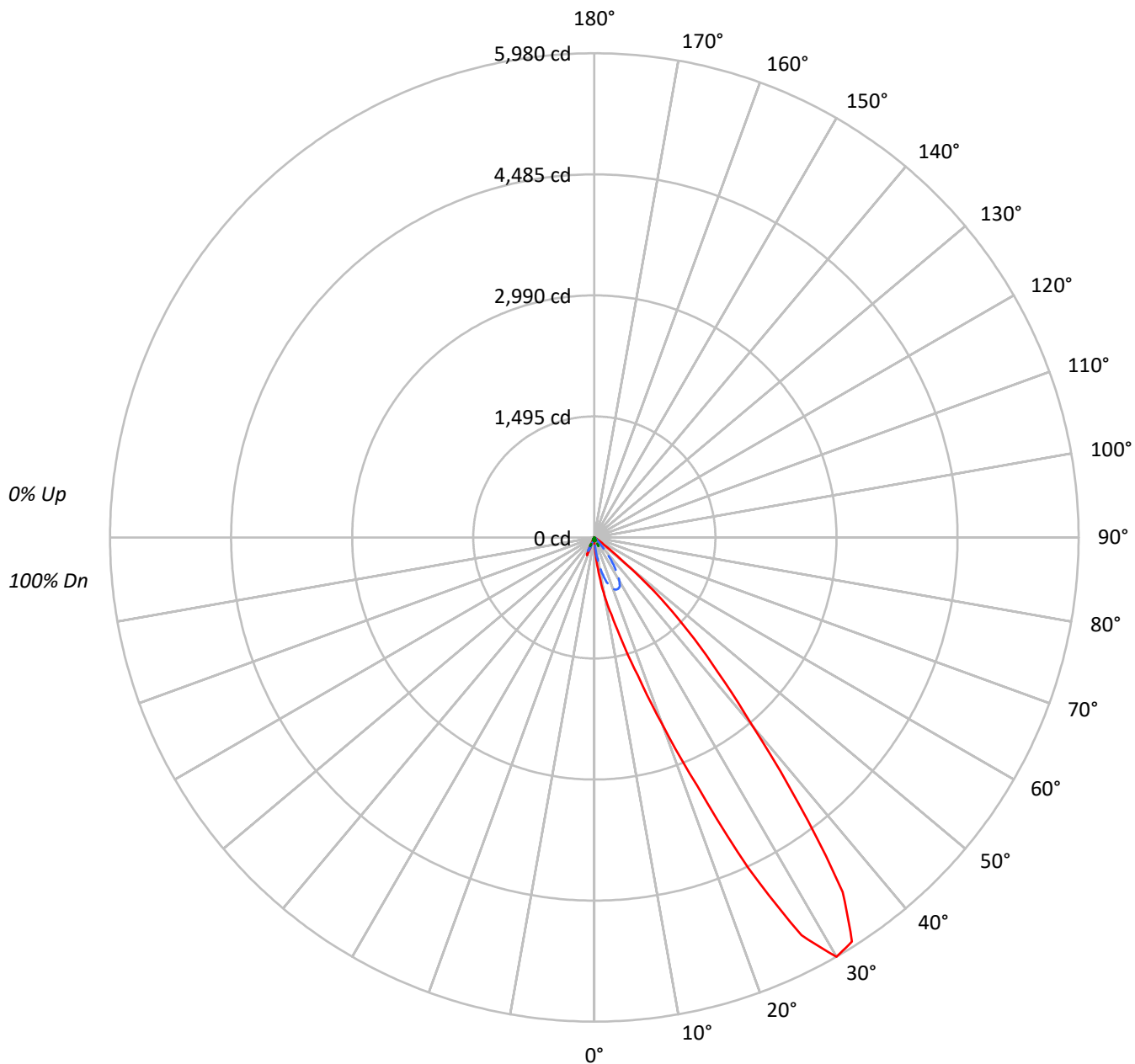
Lumens per Lamp: N/A
Luminaire Lumens: 1035.2 lumens
Efficiency: N/A
Efficacy: 83.5 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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	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°	6019	6019	6019
5°	31784	5696	3034
10°	92934	4835	1991
15°	169058	4061	2247
20°	322523	4620	10947
25°	612939	16073	24184
30°	851772	5426	4700
35°	804941	2469	1807
40°	487863	1095	628
45°	285920	593	192
50°	94890	441	0
55°	18085	366	0
60°	4046	271	0
65°	1138	496	0
70°	397	613	0
75°	0	810	0
80°	0	1208	0
85°	0	2406	708



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.7	1.1
10°-20°	95.3	9.2
20°-30°	337.8	32.6
30°-40°	400.5	38.7
40°-50°	170.4	16.5
50°-60°	15.4	1.5
60°-70°	1.9	0.2
70°-80°	1.2	0.1
80°-90°	1.1	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°	444.7	43.0
0°-40°	845.1	81.6
0°-60°	1030.9	99.6
0°-90°	1035.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1035.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	49	49	49	49	49	
5°	257	127	46	29	24	40
15°	1324	558	32	18	18	427
25°	4504	699	118	186	178	2087
35°	5346	413	16	12	12	3088
45°	1639	46	3	2	1	1285
55°	84	7	2	1	0	118
65°	4	2	2	1	0	6
75°	0	1	2	2	0	0
85°	0	1	2	2	0	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°	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
2.5°	89.7	84.6	88.0	86.9	87.4	89.2	87.4	87.4	86.9	84.6	84.6
5°	256.7	241.2	248.6	244.7	247.0	249.8	245.8	244.7	243.0	237.9	236.8
7.5°	478.0	469.5	478.5	471.8	478.0	479.2	473.5	472.3	469.5	462.1	459.3
10°	742.0	727.8	736.4	729.0	738.6	738.0	729.0	730.1	726.7	717.0	712.5
12.5°	975.9	964.6	973.0	952.1	975.9	960.5	962.3	964.6	960.0	947.5	941.8
15°	1323.9	1292.7	1307.5	1271.1	1307.5	1302.4	1282.5	1281.4	1269.4	1248.4	1235.9
17.5°	1786.1	1794.6	1783.8	1762.2	1810.5	1797.4	1769.0	1763.4	1740.6	1683.3	1682.1
20°	2457.1	2445.7	2463.9	2395.8	2457.7	2397.5	2389.6	2373.6	2335.0	2255.0	2242.4
22.5°	3316.1	3322.3	3290.0	3242.8	3318.9	3225.8	3197.4	3159.4	3089.0	2965.8	2927.2
25°	4503.7	4495.8	4453.8	4375.5	4456.6	4306.2	4235.2	4156.9	4025.7	3833.9	3741.3
27.5°	5538.6	5571.0	5543.2	5463.8	5517.6	5369.5	5205.9	5156.0	4978.3	4736.4	4569.6
30°	5980.4	5995.7	5983.8	5923.1	5942.3	5820.3	5658.5	5599.4	5417.1	5188.4	4972.1
32.5°	5919.6	5927.0	5929.3	5848.0	5851.5	5736.2	5567.1	5479.7	5281.0	5060.6	4802.3
35°	5345.7	5376.4	5396.1	5320.1	5244.5	5129.9	4938.1	4802.3	4593.4	4392.4	4128.5
37.5°	4139.8	4178.4	4209.1	4144.4	4108.6	3970.0	3810.6	3705.5	3561.3	3443.2	3255.8
40°	3029.9	3037.3	3056.0	3022.5	2966.9	2930.0	2838.6	2778.9	2691.6	2628.0	2503.7
42.5°	2252.1	2248.2	2261.3	2242.4	2240.8	2185.1	2127.3	2092.0	2061.9	1994.9	1907.6
45°	1639.1	1640.1	1652.7	1640.7	1608.9	1597.0	1558.9	1527.2	1487.5	1466.5	1397.2
47.5°	1114.4	1117.8	1126.4	1119.5	1090.6	1086.0	1061.7	1029.8	1029.3	997.0	936.2
50°	494.5	495.6	505.8	503.5	469.0	473.5	457.5	428.6	436.5	417.3	370.7
52.5°	164.1	164.7	166.4	165.2	159.5	159.5	155.5	155.0	150.4	145.8	135.7
55°	84.1	84.1	85.2	84.6	81.8	81.8	77.2	80.0	77.8	76.0	69.8
57.5°	35.8	35.8	36.3	36.3	34.6	36.3	34.6	34.6	33.5	33.0	30.7
60°	16.4	16.4	16.4	16.4	15.9	17.1	15.9	15.9	15.9	15.3	14.1
62.5°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.9	7.9	7.9	7.4
65°	3.9	3.9	3.9	3.9	3.9	4.6	3.9	3.9	3.9	3.9	3.9
67.5°	1.7	1.7	1.7	2.3	2.3	2.3	2.3	2.3	1.7	1.7	1.7
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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°	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
2.5°	85.2	82.3	86.2	82.9	85.2	82.9	80.0	81.1	65.3	54.5	48.3
5°	237.3	228.8	236.2	228.8	229.4	225.3	214.6	213.5	126.6	61.9	46.0
7.5°	446.8	445.7	454.7	445.0	443.9	434.3	414.5	406.5	229.4	72.7	42.5
10°	709.6	693.2	701.1	690.9	687.6	669.9	641.5	626.2	341.2	83.4	38.6
12.5°	925.9	919.6	925.4	915.7	912.4	888.4	854.9	834.6	455.9	89.7	34.6
15°	1208.7	1196.2	1200.1	1180.3	1170.1	1124.6	1067.3	1029.8	557.5	89.2	31.8
17.5°	1640.1	1615.8	1613.5	1579.4	1554.4	1472.1	1369.3	1292.1	631.9	82.3	30.7
20°	2180.7	2136.3	2121.6	2067.7	2025.6	1889.4	1731.0	1605.6	678.4	73.2	35.2
22.5°	2828.4	2750.7	2706.8	2620.6	2548.5	2329.9	2097.7	1909.9	698.9	70.4	50.6
25°	3583.4	3450.1	3357.5	3221.8	3100.3	2764.8	2439.0	2175.6	698.9	91.5	118.1
27.5°	4349.3	4138.7	3968.4	3770.2	3585.7	3110.0	2689.9	2347.0	681.8	114.1	107.9
30°	4737.1	4478.1	4246.6	4014.9	3783.3	3211.6	2746.1	2367.9	617.6	67.0	38.1
32.5°	4572.4	4299.3	4043.3	3819.1	3590.3	3032.2	2593.9	2228.8	518.9	39.2	24.5
35°	3941.1	3704.3	3481.8	3314.3	3136.1	2695.5	2303.2	1985.3	412.7	30.7	16.4
37.5°	3145.8	2984.5	2826.1	2718.8	2591.1	2260.1	1943.9	1683.3	295.3	22.2	10.2
40°	2440.1	2329.9	2219.3	2151.1	2060.8	1819.6	1573.2	1366.0	174.2	15.3	6.8
42.5°	1869.0	1792.8	1710.5	1663.4	1598.7	1418.7	1226.2	1079.8	80.6	10.8	5.1
45°	1373.9	1317.7	1254.6	1224.6	1179.1	1060.5	932.8	829.5	45.5	7.9	3.4
47.5°	924.9	874.8	816.3	797.6	753.9	650.0	519.4	417.8	30.1	5.7	2.8
50°	367.9	335.0	315.1	289.0	263.4	220.9	165.2	131.7	18.2	4.6	2.3
52.5°	135.1	127.8	124.3	117.6	111.8	99.9	84.6	73.2	10.8	3.4	1.7
55°	70.4	65.9	63.6	61.3	58.0	51.1	42.5	36.3	6.8	2.3	1.7
57.5°	30.7	28.9	29.6	27.3	25.6	23.3	20.4	17.6	4.6	2.3	1.7
60°	14.8	13.6	14.1	13.1	12.5	12.0	10.8	9.0	2.8	1.7	1.1
62.5°	7.4	7.4	7.4	6.8	6.8	6.2	5.7	5.1	2.3	1.7	1.7
65°	3.9	3.4	3.9	3.4	3.4	3.4	2.8	2.8	1.7	1.7	1.7
67.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.7	1.7
70°	1.1	1.1	1.1	1.1	1.1	1.1	0.5	1.1	1.1	1.7	1.7
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1	1.7	1.7
75°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.1	1.7	1.7
77.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.7	1.7
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.1	1.7	1.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.1	1.7	1.7
85°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.7	1.7
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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CATALOG NUMBER: LDA4A10935D010TE LAR15SP 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	48.8	48.8	48.8	48.8
2.5°	40.9	36.3	33.0	32.4
5°	34.6	28.9	25.0	24.5
7.5°	29.6	23.3	19.9	19.4
10°	26.1	19.9	16.4	15.9
12.5°	23.3	17.6	15.3	14.8
15°	21.5	17.6	17.1	17.6
17.5°	23.3	23.8	26.1	28.9
20°	38.6	55.0	71.6	83.4
22.5°	86.9	160.6	212.8	237.9
25°	164.1	185.6	186.2	177.7
27.5°	89.2	70.9	63.6	60.1
30°	35.2	33.5	33.5	33.0
32.5°	23.3	21.5	21.0	20.4
35°	14.1	12.5	12.0	12.0
37.5°	9.0	7.9	7.4	6.8
40°	6.2	5.1	4.6	3.9
42.5°	4.6	3.4	2.3	2.3
45°	3.4	2.3	1.1	1.1
47.5°	2.8	1.7	0.5	0.5
50°	2.3	1.1	0.5	0.0
52.5°	1.7	1.1	0.0	0.0
55°	1.7	1.1	0.0	0.0
57.5°	1.7	1.1	0.0	0.0
60°	1.7	1.1	0.0	0.0
62.5°	1.7	1.1	0.0	0.0
65°	1.7	1.1	0.5	0.0
67.5°	2.3	1.1	0.5	0.0
70°	2.3	1.1	0.5	0.0
72.5°	2.3	1.1	0.5	0.0
75°	2.3	1.7	0.5	0.0
77.5°	2.3	1.7	0.5	0.0
80°	2.3	1.7	0.5	0.0
82.5°	2.3	1.7	0.5	0.0
85°	2.3	1.7	0.5	0.5
87.5°	2.3	1.7	0.5	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)