

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: P174914

Luminaire Tested: **LDA4A13927D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174914
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26217)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A13927D010TE LAR35FL 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1049.7 lumens
Efficiency: N/A
Efficacy: 47.1 lumens/watt
Spacing Criteria (0/90/45): 2.3 / 0.86 / 1.17
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

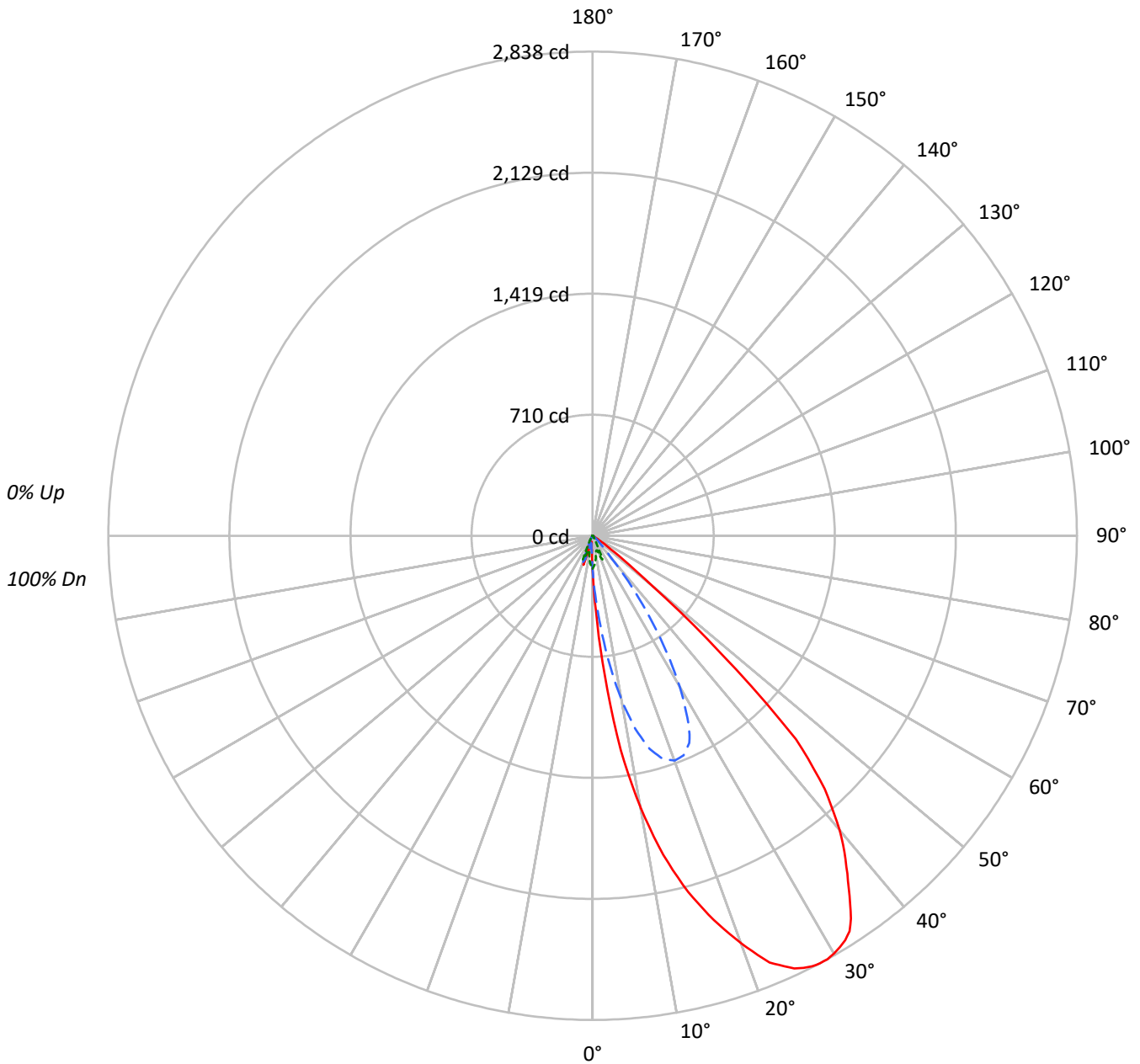
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92																			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84																			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76																			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69																			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62																			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	66	62	58	57																			
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52																			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47																			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43																			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	24040	24040	24040
5°	100985	20108	7429
10°	202865	13827	4509
15°	275940	11237	10152
20°	333497	17051	18823
25°	380881	10139	5240
30°	402727	4771	2421
35°	396123	2108	903
40°	362512	1047	242
45°	294049	523	0
50°	87176	288	0
55°	15806	323	0
60°	2960	370	0
65°	730	438	0
70°	180	541	0
75°	0	715	0
80°	0	1421	0
85°	0	2830	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.4	3.4
10°-20°	183.3	17.5
20°-30°	321.1	30.6
30°-40°	322.5	30.7
40°-50°	169.9	16.2
50°-60°	14.2	1.3
60°-70°	1.4	0.1
70°-80°	1.0	0.1
80°-90°	0.9	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°	539.9	51.4
0°-40°	862.3	82.1
0°-60°	1046.3	99.7
0°-90°	1049.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1049.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	195	195	195	195	195	
5°	816	533	162	74	60	104
15°	2161	1293	88	59	80	617
25°	2799	1339	74	42	38	1281
35°	2631	582	14	8	6	1627
45°	1686	60	3	1	0	1155
55°	74	6	2	0	0	110
65°	2	1	2	1	0	4
75°	0	1	2	1	0	0
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	194.9	194.9	194.9	194.9	194.9	194.9	194.9	194.9	194.9	194.9	194.9
2.5°	442.3	442.8	443.3	446.8	438.8	436.8	433.3	428.3	411.8	343.8	259.4
5°	815.6	821.6	820.1	815.1	802.6	795.6	785.1	774.1	729.1	533.2	321.8
7.5°	1267.4	1278.9	1276.4	1268.9	1247.9	1238.4	1211.9	1197.4	1129.4	757.1	368.3
10°	1619.7	1650.2	1650.7	1643.7	1612.2	1598.7	1571.2	1545.2	1459.3	976.5	389.8
12.5°	1917.5	1918.0	1941.5	1936.0	1899.5	1893.6	1870.6	1831.6	1741.1	1159.4	389.8
15°	2160.9	2193.9	2188.4	2182.4	2143.9	2135.9	2113.9	2078.0	1972.5	1293.4	370.8
17.5°	2361.8	2391.3	2382.8	2376.3	2337.8	2320.3	2296.3	2253.4	2137.4	1372.8	331.3
20°	2540.7	2568.7	2551.7	2540.2	2488.8	2467.3	2432.3	2382.8	2250.4	1402.3	285.4
22.5°	2707.6	2737.1	2715.6	2699.6	2633.2	2591.7	2542.2	2479.8	2323.8	1392.8	260.9
25°	2798.6	2837.1	2816.6	2804.1	2740.6	2692.1	2626.7	2546.2	2365.8	1339.3	196.4
26°	2818.6	2859.1	2839.6	2828.6	2764.1	2712.6	2642.7	2558.2	2369.3	1295.4	151.4
27°	2832.6	2877.6	2855.1	2841.1	2774.6	2719.6	2646.7	2558.7	2363.8	1235.9	120.4
28°	2838.1	2887.6	2860.1	2843.1	2774.1	2714.1	2636.7	2547.7	2349.3	1167.4	102.4
29°	2837.6	2891.5	2859.6	2841.1	2767.6	2701.1	2621.7	2532.2	2329.3	1096.0	92.5
30°	2827.6	2886.6	2854.6	2831.1	2752.1	2680.7	2600.2	2510.7	2306.8	1018.0	82.5
31°	2814.1	2874.6	2841.1	2812.1	2726.6	2649.2	2570.2	2481.8	2276.9	934.5	75.5
32°	2794.6	2855.1	2818.1	2780.1	2690.7	2609.7	2533.7	2447.8	2240.4	846.6	67.0
33°	2763.6	2817.1	2774.1	2730.1	2640.7	2564.7	2492.7	2408.3	2198.9	755.1	58.0
34°	2707.1	2754.1	2709.6	2665.2	2585.2	2514.7	2445.8	2361.8	2150.4	670.7	50.0
35°	2630.7	2670.7	2630.7	2593.2	2522.7	2457.3	2391.3	2309.3	2092.0	581.7	43.0
36°	2552.7	2587.7	2550.7	2521.2	2453.8	2395.3	2333.8	2248.9	2026.0	497.3	38.0
37°	2479.8	2511.2	2477.3	2447.8	2389.8	2330.3	2269.4	2182.4	1953.0	416.3	31.5
38°	2407.3	2435.3	2406.3	2373.3	2319.8	2259.4	2197.9	2108.9	1871.6	339.8	27.0
39°	2331.8	2354.8	2326.8	2293.3	2238.9	2178.9	2115.9	2024.0	1778.1	260.4	23.5
40°	2251.4	2272.9	2238.4	2208.4	2153.9	2092.5	2028.0	1932.5	1676.7	174.4	20.0
42.5°	2013.5	2026.5	1997.5	1956.0	1901.5	1834.1	1756.1	1649.2	1352.3	92.0	14.0
45°	1685.7	1688.2	1665.7	1590.2	1517.2	1412.8	1296.3	1135.9	786.1	60.0	9.0
47.5°	1017.5	1011.5	976.0	911.5	843.6	733.1	624.2	513.7	305.3	35.0	6.0
50°	454.3	447.3	429.8	396.3	356.8	315.8	267.4	226.4	148.4	19.0	4.0
51°	329.3	323.3	310.3	284.9	255.9	226.9	193.4	165.4	110.9	15.5	3.5
52°	231.4	227.9	218.9	200.9	184.9	162.4	139.4	121.9	83.5	12.5	2.5
53°	161.4	158.9	153.4	141.4	131.9	115.4	100.9	87.0	60.5	10.0	2.5
54°	109.4	107.9	104.4	96.5	88.5	79.5	69.0	61.0	42.5	8.0	2.0
55°	73.5	72.5	69.5	65.5	61.0	55.5	48.5	42.5	30.0	6.5	1.5
57.5°	27.0	27.0	26.0	24.5	23.0	21.5	19.5	17.5	14.0	4.0	1.5
60°	12.0	11.5	11.5	11.0	10.5	10.0	9.5	8.5	7.0	2.5	1.5
61°	9.0	9.0	8.5	8.0	8.0	7.5	7.0	6.5	5.5	2.0	1.5
62°	6.5	6.5	6.5	6.0	6.0	5.5	5.5	5.0	4.0	1.5	1.5
63°	5.0	5.0	5.0	4.5	4.5	4.5	4.0	4.0	3.0	1.5	1.5
64°	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	2.5	1.0	1.5
65°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	1.0	1.5
66°	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.0	1.5



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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.5
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5
77.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.5
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.5
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):

	90°	112.5°	135°	157.5°	180°
0°	194.9	194.9	194.9	194.9	194.9
2.5°	179.4	125.4	99.9	90.5	87.5
5°	162.4	94.0	74.5	64.0	60.0
7.5°	136.4	77.5	56.0	46.5	43.5
10°	110.4	64.0	45.5	38.0	36.0
12.5°	94.5	55.5	42.5	39.5	39.5
15°	88.0	58.5	59.0	71.0	79.5
17.5°	90.5	91.5	142.9	173.9	179.4
20°	129.9	164.4	162.9	147.9	143.4
22.5°	150.4	108.4	82.0	67.5	65.0
25°	74.5	49.5	42.5	39.0	38.5
26°	56.5	41.5	37.0	35.0	34.0
27°	47.0	36.5	33.0	30.5	29.5
28°	42.0	32.5	28.5	26.0	25.0
29°	38.0	28.0	24.0	21.5	21.0
30°	33.5	23.5	20.0	17.5	17.0
31°	28.5	19.5	16.0	14.5	13.5
32°	24.0	16.0	13.0	11.5	10.5
33°	20.0	13.0	11.0	9.5	8.5
34°	17.0	11.0	9.0	7.5	7.0
35°	14.0	9.0	7.5	6.5	6.0
36°	12.0	8.0	6.0	5.0	4.5
37°	10.5	6.5	5.0	4.0	4.0
38°	9.0	5.5	4.5	3.0	3.0
39°	7.5	4.5	3.5	2.5	2.5
40°	6.5	4.0	3.0	2.0	1.5
42.5°	4.5	2.5	2.0	1.0	0.5
45°	3.0	2.0	1.0	0.5	0.0
47.5°	2.0	1.5	1.0	0.5	0.0
50°	1.5	1.5	1.0	0.0	0.0
51°	1.5	1.0	1.0	0.0	0.0
52°	1.5	1.0	0.5	0.0	0.0
53°	1.5	1.0	0.5	0.0	0.0
54°	1.5	1.0	0.5	0.0	0.0
55°	1.5	1.0	0.5	0.0	0.0
57.5°	1.5	1.0	0.5	0.0	0.0
60°	1.5	1.0	1.0	0.0	0.0
61°	1.5	1.5	1.0	0.0	0.0
62°	1.5	1.5	1.0	0.0	0.0
63°	1.5	1.5	1.0	0.0	0.0
64°	1.5	1.5	1.0	0.5	0.0
65°	1.5	1.5	1.0	0.5	0.0
66°	1.5	1.5	1.0	0.5	0.0



TEST NUMBER: P174914

CATALOG NUMBER: LDA4A13927D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	1.5	1.5	1.0	0.5	0.0
75°	1.5	1.5	1.0	0.5	0.0
77.5°	2.0	1.5	1.0	0.5	0.0
80°	2.0	1.5	1.0	0.5	0.0
82.5°	2.0	1.5	1.0	0.5	0.0
85°	2.0	1.5	1.0	0.5	0.0
87.5°	2.0	1.5	1.0	0.5	0.0
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°







67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.5





67.5°	1.5	1.5	1.0	0.5	0.0
70°	1.5	1.5	1.0	0.5	0.0



(END OF REPORT)