

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: P174904

Luminaire Tested: **LDA4A09835D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174904
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: LDA4A09835D010TE 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 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1002.4 lumens
Efficiency: N/A
Efficacy: 72.4 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

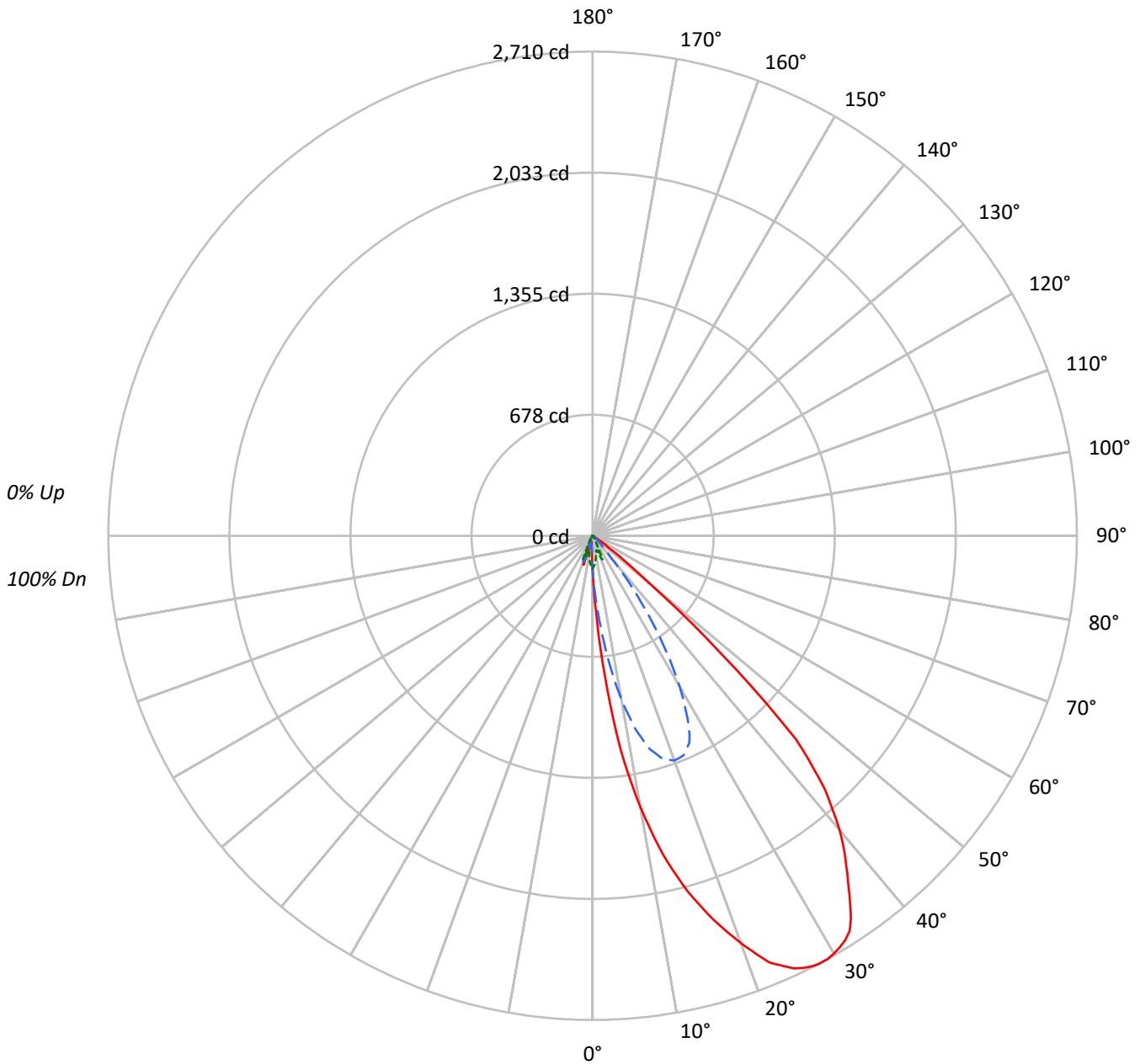
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	22955	22955	22955
5°	96429	19204	7095
10°	193709	13214	4309
15°	263490	10727	9692
20°	318454	16290	17983
25°	363692	9676	4995
30°	384554	4558	2307
35°	378250	2018	858
40°	346153	998	225
45°	280774	506	0
50°	83243	269	0
55°	15075	301	0
60°	2837	345	0
65°	700	409	0
70°	180	505	0
75°	0	667	0
80°	0	1350	0
85°	0	2689	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.8	3.4
10°-20°	175.1	17.5
20°-30°	306.6	30.6
30°-40°	307.9	30.7
40°-50°	162.2	16.2
50°-60°	13.5	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°	515.5	51.4
0°-40°	823.4	82.1
0°-60°	999.1	99.7
0°-90°	1002.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1002.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	186	186	186	186	186	
5°	779	509	155	71	57	100
15°	2063	1235	84	56	76	589
25°	2672	1279	71	41	37	1223
35°	2512	556	13	7	6	1553
45°	1610	57	3	1	0	1103
55°	70	6	1	0	0	105
65°	2	1	1	1	0	4
75°	0	1	1	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°	186.1	186.1	186.1	186.1	186.1	186.1	186.1	186.1	186.1	186.1	186.1
2.5°	422.3	422.8	423.3	426.6	419.0	417.1	413.7	409.0	393.2	328.3	247.7
5°	778.8	784.5	783.1	778.3	766.4	759.7	749.7	739.2	696.2	509.2	307.3
7.5°	1210.2	1221.2	1218.8	1211.6	1191.6	1182.5	1157.2	1143.4	1078.5	723.0	351.7
10°	1546.6	1575.7	1576.2	1569.5	1539.5	1526.6	1500.3	1475.5	1393.4	932.5	372.2
12.5°	1831.0	1831.5	1853.9	1848.7	1813.9	1808.1	1786.2	1749.0	1662.6	1107.1	372.2
15°	2063.4	2094.9	2089.7	2083.9	2047.2	2039.6	2018.6	1984.2	1883.5	1235.0	354.1
17.5°	2255.3	2283.4	2275.3	2269.1	2232.4	2215.7	2192.7	2151.7	2041.0	1310.9	316.4
20°	2426.1	2452.8	2436.6	2425.6	2376.5	2356.0	2322.5	2275.3	2148.8	1339.0	272.5
22.5°	2585.5	2613.6	2593.1	2577.9	2514.4	2474.8	2427.5	2367.9	2219.0	1330.0	249.1
25°	2672.3	2709.1	2689.5	2677.6	2617.0	2570.7	2508.2	2431.4	2259.1	1278.9	187.5
26°	2691.4	2730.1	2711.5	2701.0	2639.4	2590.3	2523.5	2442.8	2262.4	1236.9	144.6
27°	2704.8	2747.7	2726.3	2712.9	2649.4	2596.9	2527.3	2443.3	2257.2	1180.1	115.0
28°	2710.0	2757.3	2731.0	2714.8	2649.0	2591.7	2517.7	2432.8	2243.3	1114.7	97.8
29°	2709.6	2761.1	2730.6	2712.9	2642.8	2579.3	2503.4	2418.0	2224.2	1046.5	88.3
30°	2700.0	2756.3	2725.8	2703.4	2628.0	2559.7	2482.9	2397.5	2202.8	972.1	78.7
31°	2687.1	2744.9	2712.9	2685.2	2603.6	2529.7	2454.3	2369.8	2174.1	892.4	72.1
32°	2668.5	2726.3	2691.0	2654.7	2569.3	2492.0	2419.4	2337.3	2139.3	808.4	63.9
33°	2638.9	2690.0	2649.0	2607.0	2521.5	2449.0	2380.3	2299.6	2099.7	721.1	55.4
34°	2585.0	2629.9	2587.4	2544.9	2468.6	2401.3	2335.4	2255.3	2053.4	640.4	47.7
35°	2512.0	2550.2	2512.0	2476.2	2408.9	2346.4	2283.4	2205.2	1997.6	555.5	41.0
36°	2437.6	2471.0	2435.6	2407.5	2343.1	2287.2	2228.5	2147.4	1934.6	474.8	36.3
37°	2367.9	2397.9	2365.5	2337.3	2282.0	2225.2	2167.0	2083.9	1864.9	397.5	30.1
38°	2298.7	2325.4	2297.7	2266.2	2215.2	2157.4	2098.7	2013.8	1787.1	324.5	25.8
39°	2226.6	2248.6	2221.9	2189.9	2137.9	2080.6	2020.5	1932.7	1697.9	248.6	22.4
40°	2149.8	2170.3	2137.4	2108.8	2056.7	1998.1	1936.5	1845.3	1601.0	166.5	19.1
42.5°	1922.7	1935.1	1907.4	1867.8	1815.8	1751.3	1676.9	1574.8	1291.3	87.8	13.4
45°	1609.6	1612.0	1590.5	1518.5	1448.8	1349.1	1237.9	1084.7	750.6	57.3	8.6
47.5°	971.6	965.9	932.0	870.4	805.5	700.1	596.0	490.6	291.6	33.4	5.7
50°	433.8	427.1	410.4	378.4	340.7	301.6	255.3	216.2	141.7	18.1	3.8
51°	314.5	308.8	296.3	272.0	244.3	216.7	184.7	158.0	105.9	14.8	3.3
52°	220.9	217.6	209.0	191.8	176.6	155.1	133.1	116.4	79.7	11.9	2.4
53°	154.1	151.8	146.5	135.0	126.0	110.2	96.4	83.0	57.7	9.5	2.4
54°	104.5	103.1	99.7	92.1	84.5	75.9	65.9	58.2	40.6	7.6	1.9
55°	70.1	69.2	66.3	62.5	58.2	53.0	46.3	40.6	28.6	6.2	1.4
57.5°	25.8	25.8	24.8	23.4	22.0	20.5	18.6	16.7	13.4	3.8	1.4
60°	11.5	11.0	11.0	10.5	10.0	9.5	9.1	8.1	6.7	2.4	1.4
61°	8.6	8.6	8.1	7.6	7.6	7.2	6.7	6.2	5.2	1.9	1.4
62°	6.2	6.2	6.2	5.7	5.7	5.2	5.2	4.8	3.8	1.4	1.4
63°	4.8	4.8	4.8	4.3	4.3	4.3	3.8	3.8	2.9	1.4	1.4
64°	3.3	3.3	3.3	3.3	3.3	3.3	2.9	2.9	2.4	1.0	1.4
65°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.9	1.0	1.4
66°	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.0	1.4



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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	1.4
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.4
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	1.4
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):

	90°	112.5°	135°	157.5°	180°
0°	186.1	186.1	186.1	186.1	186.1
2.5°	171.3	119.8	95.4	86.4	83.5
5°	155.1	89.7	71.1	61.1	57.3
7.5°	130.3	74.0	53.4	44.4	41.5
10°	105.5	61.1	43.4	36.3	34.4
12.5°	90.2	53.0	40.6	37.7	37.7
15°	84.0	55.8	56.3	67.8	75.9
17.5°	86.4	87.3	136.5	166.1	171.3
20°	124.1	157.0	155.6	141.3	137.0
22.5°	143.6	103.6	78.3	64.4	62.0
25°	71.1	47.2	40.6	37.2	36.7
26°	53.9	39.6	35.3	33.4	32.4
27°	44.9	34.8	31.5	29.1	28.2
28°	40.1	31.0	27.2	24.8	23.9
29°	36.3	26.7	22.9	20.5	20.0
30°	32.0	22.4	19.1	16.7	16.2
31°	27.2	18.6	15.3	13.8	12.9
32°	22.9	15.3	12.4	11.0	10.0
33°	19.1	12.4	10.5	9.1	8.1
34°	16.2	10.5	8.6	7.2	6.7
35°	13.4	8.6	7.2	6.2	5.7
36°	11.5	7.6	5.7	4.8	4.3
37°	10.0	6.2	4.8	3.8	3.8
38°	8.6	5.2	4.3	2.9	2.9
39°	7.2	4.3	3.3	2.4	2.4
40°	6.2	3.8	2.9	1.9	1.4
42.5°	4.3	2.4	1.9	1.0	0.5
45°	2.9	1.9	1.0	0.5	0.0
47.5°	1.9	1.4	1.0	0.5	0.0
50°	1.4	1.4	1.0	0.0	0.0
51°	1.4	1.0	1.0	0.0	0.0
52°	1.4	1.0	0.5	0.0	0.0
53°	1.4	1.0	0.5	0.0	0.0
54°	1.4	1.0	0.5	0.0	0.0
55°	1.4	1.0	0.5	0.0	0.0
57.5°	1.4	1.0	0.5	0.0	0.0
60°	1.4	1.0	1.0	0.0	0.0
61°	1.4	1.4	1.0	0.0	0.0
62°	1.4	1.4	1.0	0.0	0.0
63°	1.4	1.4	1.0	0.0	0.0
64°	1.4	1.4	1.0	0.5	0.0
65°	1.4	1.4	1.0	0.5	0.0
66°	1.4	1.4	1.0	0.5	0.0



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CATALOG NUMBER: LDA4A09835D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	1.4	1.4	1.0	0.5	0.0
75°	1.4	1.4	1.0	0.5	0.0
77.5°	1.9	1.4	1.0	0.5	0.0
80°	1.9	1.4	1.0	0.5	0.0
82.5°	1.9	1.4	1.0	0.5	0.0
85°	1.9	1.4	1.0	0.5	0.0
87.5°	1.9	1.4	1.0	0.5	0.0
90°	0.0	0.0	0.0	0.0	0.0



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— 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	1.4
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.4





67.5°	1.4	1.4	1.0	0.5	0.0
70°	1.4	1.4	1.0	0.5	0.0



(END OF REPORT)