

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: P174905

Luminaire Tested: **LDA4A09840D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174905
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: LDA4A09840D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1028.1 lumens
Efficiency: N/A
Efficacy: 74.3 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

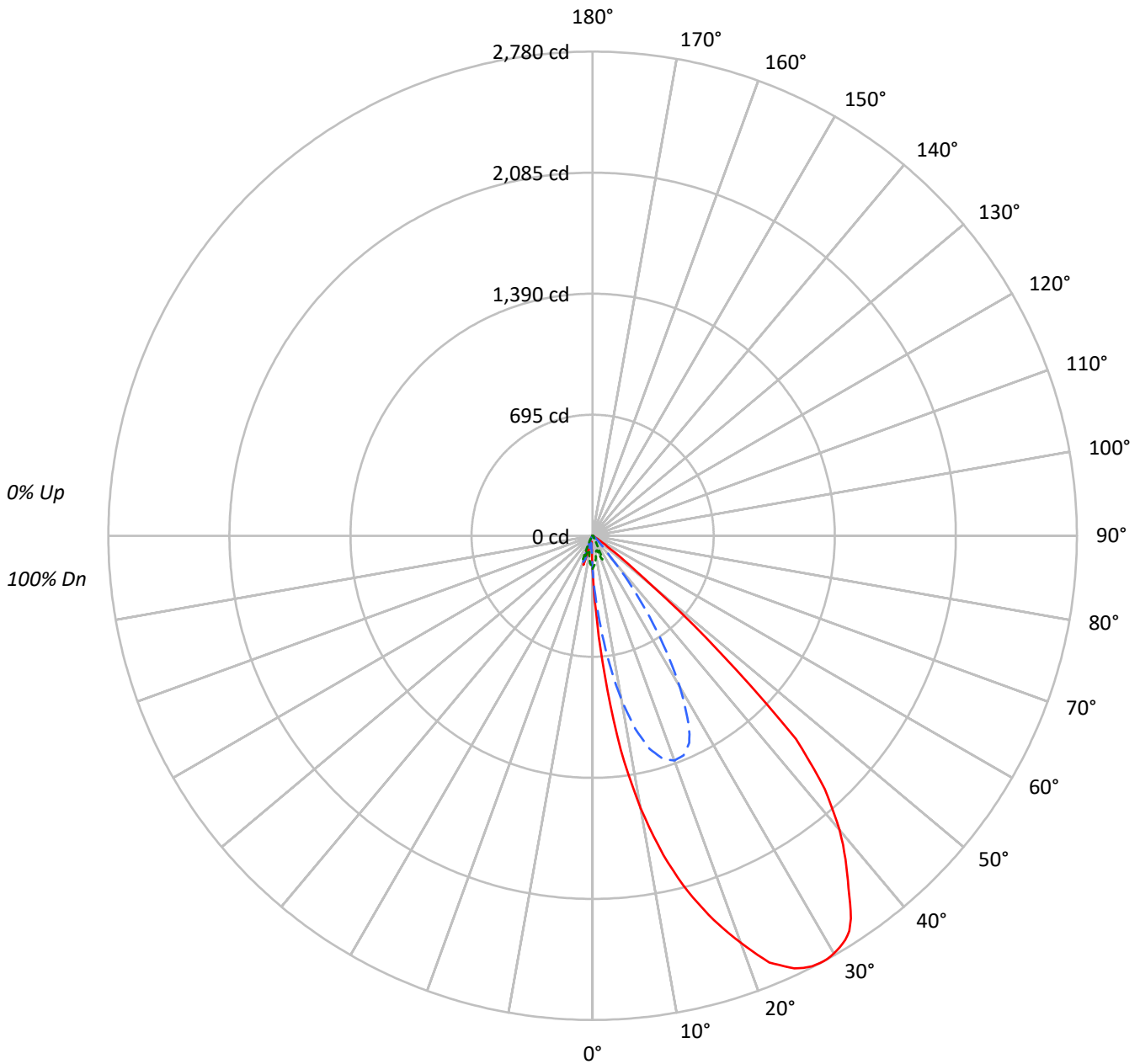
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	23547	23547	23547
5°	98892	19699	7268
10°	198669	13552	4409
15°	270245	10995	9935
20°	326605	16710	18442
25°	373014	9921	5131
30°	394410	4672	2364
35°	387932	2063	888
40°	355025	1031	242
45°	287961	506	0
50°	85373	288	0
55°	15462	323	0
60°	2886	370	0
65°	700	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°	34.7	3.4
10°-20°	179.6	17.5
20°-30°	314.5	30.6
30°-40°	315.8	30.7
40°-50°	166.4	16.2
50°-60°	13.9	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°	528.7	51.4
0°-40°	844.5	82.1
0°-60°	1024.7	99.7
0°-90°	1028.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1028.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	191	191	191	191	191	
5°	799	522	159	73	59	102
15°	2116	1267	86	58	78	604
25°	2741	1312	73	42	38	1254
35°	2576	570	14	7	6	1593
45°	1651	59	3	1	0	1132
55°	72	6	2	0	0	108
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°	190.9	190.9	190.9	190.9	190.9	190.9	190.9	190.9	190.9	190.9	190.9
2.5°	433.1	433.6	434.1	437.5	429.7	427.8	424.3	419.4	403.3	336.7	254.0
5°	798.7	804.6	803.2	798.3	786.0	779.2	768.9	758.1	714.1	522.2	315.2
7.5°	1241.2	1252.4	1250.0	1242.7	1222.1	1212.8	1186.9	1172.7	1106.1	741.5	360.7
10°	1586.2	1616.1	1616.6	1609.7	1578.9	1565.7	1538.8	1513.3	1429.1	956.3	381.8
12.5°	1877.9	1878.4	1901.4	1896.0	1860.3	1854.4	1831.9	1793.8	1705.2	1135.5	381.8
15°	2116.3	2148.6	2143.2	2137.3	2099.6	2091.8	2070.3	2035.0	1931.8	1266.6	363.2
17.5°	2313.0	2341.9	2333.6	2327.2	2289.5	2272.4	2248.9	2206.8	2093.3	1344.5	324.5
20°	2488.2	2515.7	2499.0	2487.8	2437.3	2416.3	2382.0	2333.6	2203.9	1373.3	279.5
22.5°	2651.7	2680.6	2659.5	2643.9	2578.8	2538.2	2489.7	2428.5	2275.8	1364.0	255.5
25°	2740.8	2778.5	2758.4	2746.2	2684.0	2636.5	2572.4	2493.6	2317.0	1311.7	192.3
26°	2760.4	2800.0	2780.9	2770.2	2707.0	2656.6	2588.1	2505.4	2320.4	1268.6	148.3
27°	2774.1	2818.1	2796.1	2782.4	2717.3	2663.5	2592.0	2505.9	2315.0	1210.4	118.0
28°	2779.5	2827.9	2801.0	2784.4	2716.8	2658.1	2582.2	2495.1	2300.8	1143.3	100.3
29°	2779.0	2831.8	2800.5	2782.4	2710.4	2645.4	2567.5	2479.9	2281.2	1073.3	90.5
30°	2769.2	2826.9	2795.6	2772.6	2695.3	2625.3	2546.5	2458.9	2259.2	997.0	80.8
31°	2756.0	2815.2	2782.4	2754.0	2670.3	2594.5	2517.1	2430.5	2229.8	915.2	73.9
32°	2736.9	2796.1	2759.9	2722.7	2635.1	2555.8	2481.4	2397.2	2194.1	829.1	65.6
33°	2706.5	2758.9	2716.8	2673.7	2586.1	2511.7	2441.3	2358.6	2153.5	739.5	56.8
34°	2651.2	2697.2	2653.7	2610.1	2531.8	2462.8	2395.3	2313.0	2106.0	656.8	48.9
35°	2576.3	2615.5	2576.3	2539.6	2470.6	2406.5	2341.9	2261.6	2048.7	569.7	42.1
36°	2500.0	2534.3	2498.0	2469.2	2403.1	2345.8	2285.6	2202.4	1984.1	487.0	37.2
37°	2428.5	2459.4	2426.1	2397.2	2340.4	2282.2	2222.5	2137.3	1912.7	407.7	30.8
38°	2357.6	2385.0	2356.6	2324.3	2271.9	2212.7	2152.5	2065.4	1832.9	332.8	26.4
39°	2283.7	2306.2	2278.8	2246.0	2192.6	2133.9	2072.2	1982.2	1741.4	255.0	23.0
40°	2204.9	2225.9	2192.1	2162.8	2109.4	2049.2	1986.1	1892.6	1642.0	170.8	19.6
42.5°	1971.9	1984.6	1956.2	1915.6	1862.3	1796.2	1719.8	1615.1	1324.4	90.1	13.7
45°	1650.8	1653.3	1631.3	1557.4	1485.9	1383.6	1269.6	1112.5	769.9	58.7	8.8
47.5°	996.5	990.6	955.9	892.7	826.2	718.0	611.3	503.1	299.0	34.3	5.9
50°	444.9	438.0	420.9	388.1	349.5	309.3	261.8	221.7	145.4	18.6	3.9
51°	322.5	316.7	303.9	279.0	250.6	222.2	189.4	162.0	108.7	15.2	3.4
52°	226.6	223.2	214.4	196.7	181.1	159.1	136.6	119.4	81.7	12.2	2.4
53°	158.1	155.6	150.3	138.5	129.2	113.1	98.9	85.2	59.2	9.8	2.4
54°	107.2	105.7	102.3	94.5	86.6	77.8	67.5	59.7	41.6	7.8	2.0
55°	71.9	71.0	68.0	64.1	59.7	54.3	47.5	41.6	29.4	6.4	1.5
57.5°	26.4	26.4	25.5	24.0	22.5	21.0	19.1	17.1	13.7	3.9	1.5
60°	11.7	11.3	11.3	10.8	10.3	9.8	9.3	8.3	6.9	2.4	1.5
61°	8.8	8.8	8.3	7.8	7.8	7.3	6.9	6.4	5.4	2.0	1.5
62°	6.4	6.4	6.4	5.9	5.9	5.4	5.4	4.9	3.9	1.5	1.5
63°	4.9	4.9	4.9	4.4	4.4	4.4	3.9	3.9	2.9	1.5	1.5
64°	3.4	3.4	3.4	3.4	3.4	3.4	2.9	2.9	2.4	1.0	1.5
65°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	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°	190.9	190.9	190.9	190.9	190.9
2.5°	175.7	122.8	97.9	88.6	85.6
5°	159.1	92.0	72.9	62.6	58.7
7.5°	133.6	75.9	54.8	45.5	42.6
10°	108.2	62.6	44.5	37.2	35.2
12.5°	92.5	54.3	41.6	38.7	38.7
15°	86.1	57.3	57.8	69.5	77.8
17.5°	88.6	89.6	140.0	170.3	175.7
20°	127.3	161.0	159.6	144.9	140.5
22.5°	147.3	106.2	80.3	66.1	63.6
25°	72.9	48.5	41.6	38.2	37.7
26°	55.3	40.6	36.2	34.3	33.3
27°	46.0	35.7	32.3	29.9	28.9
28°	41.1	31.8	27.9	25.5	24.5
29°	37.2	27.4	23.5	21.0	20.6
30°	32.8	23.0	19.6	17.1	16.6
31°	27.9	19.1	15.7	14.2	13.2
32°	23.5	15.7	12.7	11.3	10.3
33°	19.6	12.7	10.8	9.3	8.3
34°	16.6	10.8	8.8	7.3	6.9
35°	13.7	8.8	7.3	6.4	5.9
36°	11.7	7.8	5.9	4.9	4.4
37°	10.3	6.4	4.9	3.9	3.9
38°	8.8	5.4	4.4	2.9	2.9
39°	7.3	4.4	3.4	2.4	2.4
40°	6.4	3.9	2.9	2.0	1.5
42.5°	4.4	2.4	2.0	1.0	0.5
45°	2.9	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



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CATALOG NUMBER: LDA4A09840D010TE 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



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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	1.5
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)