

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: P170828

Luminaire Tested: **LDA4A13940D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170828
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26106)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A13940D010TE LAR35FL 4LAL1 30° Tilt
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 35° Flood 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: 1451.3 lumens
Efficiency: N/A
Efficacy: 65.2 lumens/watt
Spacing Criteria (0/90/45): 2.71 / 1.11 / 1.33
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

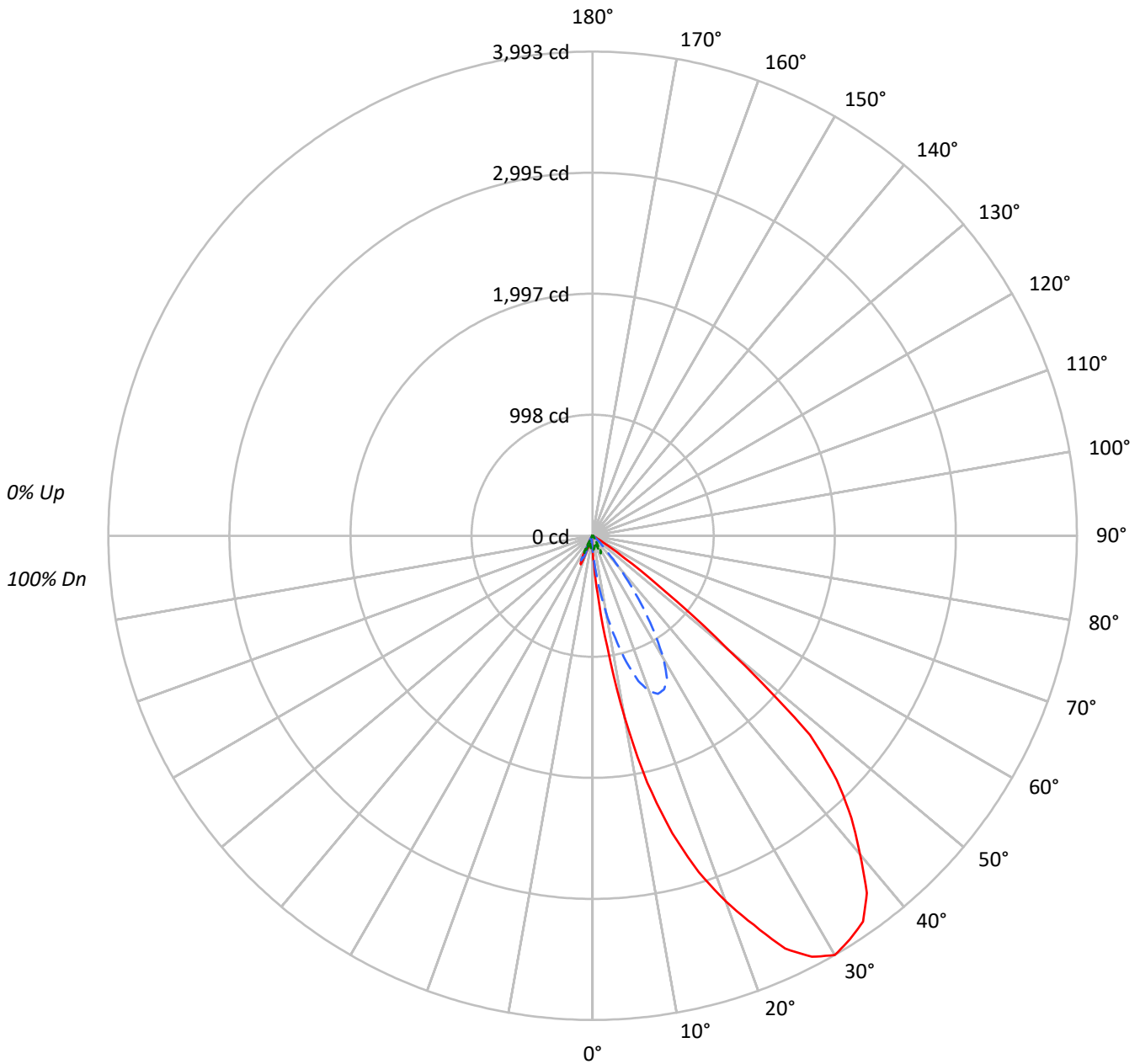
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	112	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82																			
3	98	90	84	79	96	89	83	79	86	81	77	84	79	76	81	78	75	73																			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	70	67	65																			
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58																			
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52																			
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47																			
8	69	57	50	45	68	57	50	45	55	49	44	54	48	44	53	48	44	42																			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38																			
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	14715	14715	14715
5°	59271	13892	6513
10°	191092	11648	3732
15°	324171	9245	2899
20°	421324	8296	8768
25°	511275	21844	31030
30°	568741	7691	8190
35°	585038	4593	3855
40°	552399	1948	1369
45°	496465	1116	366
50°	279414	691	0
55°	69353	452	0
60°	10682	518	0
65°	2481	613	0
70°	505	757	0
75°	0	1001	0
80°	0	1989	0
85°	0	3963	991



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.0	1.7
10°-20°	178.1	12.3
20°-30°	411.4	28.3
30°-40°	461.5	31.8
40°-50°	322.0	22.2
50°-60°	48.1	3.3
60°-70°	3.1	0.2
70°-80°	1.5	0.1
80°-90°	1.5	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°	613.5	42.3
0°-40°	1075.0	74.1
0°-60°	1445.1	99.6
0°-90°	1451.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1451.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	119	119	119	119	119	
5°	479	280	112	65	53	79
15°	2539	1080	72	28	23	725
25°	3757	1396	160	224	228	1717
35°	3885	726	30	26	26	2390
45°	2846	109	6	4	2	2088
55°	322	14	2	1	0	424
65°	8	2	2	1	0	13
75°	0	1	2	2	0	0
85°	0	1	3	2	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°	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3
2.5°	217.3	215.2	209.5	208.1	213.1	208.8	211.0	215.2	211.0	206.0	211.0
5°	478.7	490.8	478.7	476.6	485.1	477.3	480.9	488.7	478.0	468.1	475.2
7.5°	924.1	931.9	897.8	909.9	907.0	909.2	911.3	911.3	904.9	887.1	897.1
10°	1525.7	1531.4	1485.9	1501.5	1480.9	1501.5	1498.0	1482.4	1485.9	1461.8	1474.6
12.5°	2084.0	2102.4	2057.0	2071.9	2047.0	2070.5	2061.3	2057.0	2020.8	2020.8	2034.3
15°	2538.6	2580.5	2539.3	2554.9	2526.5	2559.2	2533.6	2545.0	2512.3	2471.8	2507.3
17.5°	2906.5	2947.7	2909.3	2928.5	2902.2	2927.8	2898.0	2922.1	2880.2	2851.1	2875.2
20°	3209.8	3240.3	3194.9	3221.9	3190.6	3216.2	3183.5	3215.5	3166.5	3145.2	3159.4
22.5°	3474.0	3486.1	3462.6	3508.1	3447.0	3474.0	3434.9	3467.6	3409.4	3382.4	3385.9
25°	3756.7	3783.7	3739.0	3756.0	3713.4	3731.8	3687.8	3718.4	3645.9	3607.5	3599.7
27.5°	3913.7	3952.0	3912.3	3931.4	3888.1	3903.7	3859.7	3903.7	3829.9	3792.2	3783.7
30°	3993.2	4011.7	3986.1	3998.9	3949.9	3957.7	3912.3	3959.9	3886.0	3852.6	3848.3
32.5°	3947.1	3984.0	3950.6	3967.0	3921.5	3929.3	3885.3	3936.4	3862.5	3832.0	3817.1
35°	3885.3	3922.9	3891.7	3908.7	3866.8	3872.5	3825.6	3870.4	3785.1	3747.5	3715.5
37.5°	3714.1	3749.6	3723.3	3729.0	3688.5	3684.3	3633.8	3671.5	3588.4	3556.4	3535.1
40°	3430.7	3462.6	3441.3	3453.4	3412.9	3403.7	3369.6	3404.4	3339.8	3316.3	3286.5
42.5°	3159.4	3185.6	3165.7	3184.9	3139.5	3127.4	3096.9	3140.9	3067.7	3048.6	3027.2
45°	2846.1	2862.5	2846.8	2863.2	2819.8	2800.7	2773.0	2810.6	2738.9	2721.1	2674.9
47.5°	2432.0	2414.3	2411.4	2427.1	2373.1	2333.3	2307.7	2356.0	2252.3	2217.5	2164.2
50°	1456.1	1485.9	1498.7	1488.1	1451.1	1396.4	1355.2	1414.2	1358.8	1273.5	1188.3
52.5°	750.1	716.7	723.8	727.3	683.3	667.0	653.5	667.0	623.6	601.6	547.6
55°	322.5	306.8	312.5	314.7	306.1	286.2	279.1	287.7	267.8	259.3	237.2
57.5°	119.3	119.3	115.8	117.2	114.4	107.3	105.8	109.4	103.0	100.9	92.3
60°	43.3	43.3	43.3	43.3	39.8	39.1	39.1	40.5	38.4	37.6	34.8
62.5°	18.5	19.2	17.8	18.5	17.8	17.0	17.8	17.0	17.0	16.3	16.3
65°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.8	7.8
67.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.6	3.6	3.6
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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°	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3
2.5°	204.6	203.9	206.7	203.9	198.9	196.0	199.6	192.5	164.8	137.1	116.5
5°	462.4	458.8	453.9	455.3	443.2	433.3	433.3	414.1	279.9	159.1	112.2
7.5°	876.5	868.0	831.7	858.0	832.5	812.6	799.1	760.0	452.5	182.5	103.7
10°	1447.6	1432.6	1407.1	1412.1	1370.1	1336.8	1296.3	1230.9	650.6	203.1	93.0
12.5°	2010.8	1995.9	1927.7	1966.8	1910.7	1878.0	1809.8	1733.1	864.4	213.1	83.1
15°	2488.8	2476.1	2401.5	2438.4	2369.5	2339.0	2250.9	2165.7	1080.3	209.5	72.4
17.5°	2860.3	2858.2	2772.3	2809.2	2733.2	2708.3	2605.3	2521.5	1255.1	193.9	65.3
20°	3146.6	3141.6	3054.9	3091.9	3008.8	2984.6	2853.9	2765.9	1365.9	172.6	63.2
22.5°	3372.4	3362.5	3269.5	3301.4	3208.4	3177.1	3032.9	2941.3	1411.3	159.1	78.1
25°	3575.6	3557.8	3452.0	3476.9	3374.6	3381.0	3164.3	3063.5	1396.4	179.0	160.5
27.5°	3754.6	3722.6	3616.1	3623.2	3503.1	3440.6	3254.5	3143.0	1328.2	199.6	149.2
30°	3821.3	3790.1	3677.2	3681.4	3556.4	3468.3	3269.5	3145.2	1164.9	125.0	54.0
32.5°	3784.4	3750.3	3632.4	3633.8	3505.3	3415.8	3217.6	3080.5	947.5	82.4	41.2
35°	3677.2	3641.6	3524.4	3530.1	3405.8	3317.0	3123.1	2976.8	725.9	65.3	30.5
37.5°	3496.0	3471.2	3359.7	3369.6	3263.8	3169.3	2972.6	2814.2	512.1	46.9	19.2
40°	3263.1	3243.9	3135.9	3151.5	3036.5	2949.1	2738.2	2566.3	318.9	32.0	12.1
42.5°	2990.3	2969.7	2863.2	2875.2	2777.2	2652.2	2437.0	2242.4	166.9	22.7	8.5
45°	2650.1	2625.9	2518.0	2524.4	2408.6	2262.3	2039.2	1867.3	109.4	15.6	6.4
47.5°	2115.2	2071.9	1931.3	1925.6	1831.1	1591.8	1275.0	1032.0	72.4	10.7	4.3
50°	1162.7	1118.0	994.4	980.9	875.8	718.8	531.3	413.4	41.9	7.1	3.6
52.5°	529.2	505.7	448.2	439.0	394.2	326.7	251.4	206.7	24.1	5.0	2.8
55°	229.4	220.9	196.7	195.3	174.7	151.3	120.7	102.3	14.2	3.6	2.1
57.5°	90.2	87.4	82.4	78.8	71.0	63.2	52.6	44.0	9.2	2.8	2.1
60°	34.1	33.4	30.5	31.3	28.4	27.0	23.4	19.9	5.7	2.1	2.1
62.5°	15.6	15.6	14.9	14.9	14.2	12.8	11.4	10.7	3.6	2.1	2.1
65°	7.8	7.8	7.1	7.1	7.1	6.4	5.7	5.7	2.1	2.1	2.1
67.5°	3.6	3.6	3.6	3.6	3.6	2.8	2.8	2.8	1.4	2.1	2.1
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.1	2.1
72.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.4	2.1	2.1
75°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	2.1	2.1
77.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.4	2.1	2.8
80°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.4	2.1	2.8
82.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	2.1	2.8
85°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	2.1	2.8
87.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	2.1	2.8
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°	119.3	119.3	119.3	119.3
2.5°	100.2	88.8	78.8	76.7
5°	82.4	65.3	54.7	52.6
7.5°	66.8	47.6	39.8	38.4
10°	54.7	38.4	31.3	29.8
12.5°	45.5	31.3	24.9	23.4
15°	39.1	27.7	22.7	22.7
17.5°	37.6	30.5	29.1	29.8
20°	49.0	55.4	66.1	66.8
22.5°	113.6	184.7	244.3	255.7
25°	204.6	223.7	218.1	228.0
27.5°	108.0	84.5	85.9	88.1
30°	46.9	51.9	54.7	57.5
32.5°	39.1	40.5	41.2	43.3
35°	25.6	25.6	24.9	25.6
37.5°	15.6	14.9	14.2	14.2
40°	9.9	9.2	8.5	8.5
42.5°	7.1	5.7	5.0	5.0
45°	5.0	3.6	2.8	2.1
47.5°	3.6	2.1	1.4	0.7
50°	2.8	2.1	0.7	0.0
52.5°	2.1	1.4	0.7	0.0
55°	2.1	1.4	0.0	0.0
57.5°	2.1	1.4	0.0	0.0
60°	2.1	1.4	0.0	0.0
62.5°	2.1	1.4	0.0	0.0
65°	2.1	1.4	0.7	0.0
67.5°	2.1	1.4	0.7	0.0
70°	2.1	1.4	0.7	0.0
72.5°	2.1	1.4	0.7	0.0
75°	2.1	2.1	0.7	0.0
77.5°	2.8	2.1	0.7	0.0
80°	2.8	2.1	0.7	0.0
82.5°	2.8	2.1	0.7	0.0
85°	2.8	2.1	0.7	0.7
87.5°	2.8	2.1	0.7	0.0
90°	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)