

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: P170822

Luminaire Tested: **LDA4A13830D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170822
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: LDA4A13830D010TE 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 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1568.5 lumens
Efficiency: N/A
Efficacy: 70.4 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

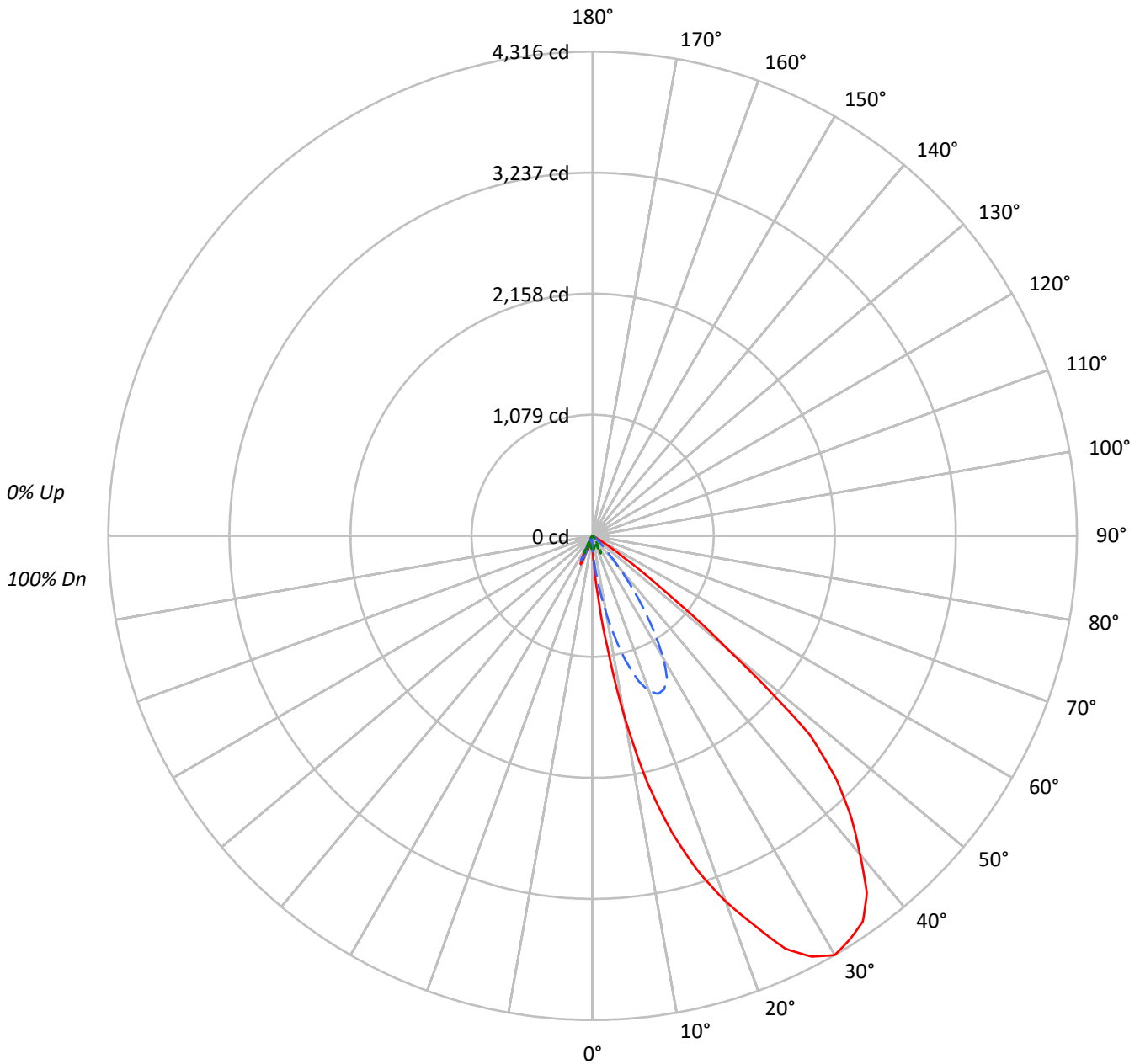
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	83	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°	15912	15912	15912
5°	64063	15019	7033
10°	206522	12600	4033
15°	350336	9999	3141
20°	455334	8965	9477
25°	552553	23613	33534
30°	614659	8304	8859
35°	632259	4969	4156
40°	596984	2093	1481
45°	536551	1204	401
50°	301961	729	0
55°	74944	495	0
60°	11545	567	0
65°	2685	671	0
70°	541	829	0
75°	0	1096	0
80°	0	2202	0
85°	0	4387	1132



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.9	1.7
10°-20°	192.5	12.3
20°-30°	444.6	28.3
30°-40°	498.8	31.8
40°-50°	348.0	22.2
50°-60°	51.9	3.3
60°-70°	3.4	0.2
70°-80°	1.7	0.1
80°-90°	1.7	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°	663.1	42.3
0°-40°	1161.8	74.1
0°-60°	1561.8	99.6
0°-90°	1568.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1568.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	129	129	129	129	129	
5°	517	302	121	71	57	86
15°	2744	1168	78	30	25	784
25°	4060	1509	174	242	246	1856
35°	4199	784	33	28	28	2583
45°	3076	118	7	4	2	2257
55°	348	15	2	2	0	458
65°	9	2	2	2	0	14
75°	0	2	2	2	0	0
85°	0	2	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°	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0
2.5°	234.9	232.6	226.4	224.9	230.3	225.7	228.0	232.6	228.0	222.6	228.0
5°	517.4	530.4	517.4	515.1	524.3	515.8	519.7	528.1	516.6	505.9	513.5
7.5°	998.7	1007.1	970.3	983.3	980.3	982.6	984.9	984.9	978.0	958.8	969.5
10°	1648.9	1655.0	1605.9	1622.8	1600.5	1622.8	1618.9	1602.0	1605.9	1579.8	1593.6
12.5°	2252.2	2272.2	2223.0	2239.2	2212.3	2237.6	2227.6	2223.0	2183.9	2183.9	2198.5
15°	2743.5	2788.8	2744.3	2761.1	2730.4	2765.8	2738.1	2750.4	2715.1	2671.3	2709.7
17.5°	3141.1	3185.6	3144.2	3164.9	3136.5	3164.1	3131.9	3158.0	3112.7	3081.2	3107.3
20°	3468.9	3501.9	3452.8	3481.9	3448.2	3475.8	3440.5	3475.0	3422.1	3399.0	3414.4
22.5°	3754.5	3767.5	3742.2	3791.3	3725.3	3754.5	3712.2	3747.5	3684.6	3655.4	3659.3
25°	4060.0	4089.1	4040.8	4059.2	4013.1	4033.1	3985.5	4018.5	3940.2	3898.8	3890.3
27.5°	4229.6	4271.1	4228.1	4248.8	4202.0	4218.9	4171.3	4218.9	4139.0	4098.3	4089.1
30°	4315.6	4335.5	4307.9	4321.7	4268.8	4277.2	4228.1	4279.5	4199.7	4163.6	4159.0
32.5°	4265.7	4305.6	4269.5	4287.2	4238.1	4246.5	4198.9	4254.2	4174.3	4141.3	4125.2
35°	4198.9	4239.6	4205.8	4224.2	4178.9	4185.1	4134.4	4182.8	4090.7	4050.0	4015.4
37.5°	4013.9	4052.3	4023.9	4030.0	3986.3	3981.7	3927.2	3967.9	3878.0	3843.5	3820.5
40°	3707.6	3742.2	3719.1	3732.2	3688.4	3678.5	3641.6	3679.2	3609.4	3584.0	3551.8
42.5°	3414.4	3442.8	3421.3	3442.0	3392.9	3379.9	3346.8	3394.4	3315.4	3294.6	3271.6
45°	3075.9	3093.5	3076.6	3094.3	3047.5	3026.7	2996.8	3037.5	2960.0	2940.8	2890.9
47.5°	2628.3	2609.2	2606.1	2623.0	2564.6	2521.6	2494.0	2546.2	2434.1	2396.5	2339.0
50°	1573.6	1605.9	1619.7	1608.2	1568.3	1509.2	1464.6	1528.3	1468.5	1376.4	1284.2
52.5°	810.6	774.5	782.2	786.0	738.5	720.8	706.2	720.8	674.0	650.2	591.8
55°	348.5	331.6	337.8	340.1	330.8	309.4	301.7	310.9	289.4	280.2	256.4
57.5°	129.0	129.0	125.1	126.7	123.6	115.9	114.4	118.2	111.3	109.0	99.8
60°	46.8	46.8	46.8	46.8	43.0	42.2	42.2	43.8	41.5	40.7	37.6
62.5°	20.0	20.7	19.2	20.0	19.2	18.4	19.2	18.4	18.4	17.7	17.7
65°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.4	8.4
67.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.8	3.8	3.8
70°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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°	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0
2.5°	221.1	220.3	223.4	220.3	214.9	211.9	215.7	208.0	178.1	148.2	125.9
5°	499.7	495.9	490.5	492.0	479.0	468.3	468.3	447.5	302.4	171.9	121.3
7.5°	947.2	938.0	898.9	927.3	899.7	878.2	863.6	821.4	489.0	197.3	112.1
10°	1564.4	1548.3	1520.7	1526.0	1480.7	1444.7	1400.9	1330.3	703.1	219.5	100.6
12.5°	2173.1	2157.0	2083.3	2125.6	2064.9	2029.6	1955.9	1873.0	934.2	230.3	89.8
15°	2689.8	2675.9	2595.3	2635.3	2560.8	2527.8	2432.6	2340.5	1167.6	226.4	78.3
17.5°	3091.2	3088.9	2996.0	3036.0	2953.8	2927.0	2815.6	2725.1	1356.4	209.6	70.6
20°	3400.6	3395.2	3301.6	3341.5	3251.7	3225.6	3084.3	2989.1	1476.1	186.5	68.3
22.5°	3644.7	3633.9	3533.4	3567.9	3467.4	3433.6	3277.8	3178.7	1525.3	171.9	84.4
25°	3864.2	3845.0	3730.7	3757.5	3647.0	3653.9	3419.8	3310.8	1509.2	193.4	173.5
27.5°	4057.7	4023.1	3908.0	3915.7	3785.9	3718.4	3517.3	3396.7	1435.5	215.7	161.2
30°	4129.8	4096.0	3974.0	3978.6	3843.5	3748.3	3533.4	3399.0	1258.9	135.1	58.3
32.5°	4089.9	4053.1	3925.6	3927.2	3788.2	3691.5	3477.3	3329.2	1024.0	89.0	44.5
35°	3974.0	3935.6	3809.0	3815.1	3680.8	3584.8	3375.2	3217.1	784.5	70.6	33.0
37.5°	3778.2	3751.4	3630.9	3641.6	3527.2	3425.1	3212.5	3041.3	553.5	50.7	20.7
40°	3526.5	3505.7	3389.1	3406.0	3281.6	3187.2	2959.2	2773.4	344.7	34.5	13.0
42.5°	3231.7	3209.4	3094.3	3107.3	3001.4	2866.3	2633.7	2423.4	180.4	24.6	9.2
45°	2864.0	2837.9	2721.2	2728.1	2603.0	2444.9	2203.9	2018.1	118.2	16.9	6.9
47.5°	2286.0	2239.2	2087.2	2081.0	1978.9	1720.2	1377.9	1115.4	78.3	11.5	4.6
50°	1256.6	1208.2	1074.7	1060.1	946.5	776.8	574.2	446.8	45.3	7.7	3.8
52.5°	571.9	546.5	484.4	474.4	426.0	353.1	271.7	223.4	26.1	5.4	3.1
55°	247.9	238.7	212.6	211.1	188.8	163.5	130.5	110.5	15.4	3.8	2.3
57.5°	97.5	94.4	89.0	85.2	76.8	68.3	56.8	47.6	10.0	3.1	2.3
60°	36.8	36.1	33.0	33.8	30.7	29.2	25.3	21.5	6.1	2.3	2.3
62.5°	16.9	16.9	16.1	16.1	15.4	13.8	12.3	11.5	3.8	2.3	2.3
65°	8.4	8.4	7.7	7.7	7.7	6.9	6.1	6.1	2.3	2.3	2.3
67.5°	3.8	3.8	3.8	3.8	3.8	3.1	3.1	3.1	1.5	2.3	2.3
70°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.3	2.3
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
75°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
77.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	2.3	3.1
80°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	2.3	3.1
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	2.3	3.1
85°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	2.3	3.1
87.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	2.3	3.1
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°	129.0	129.0	129.0	129.0
2.5°	108.2	96.0	85.2	82.9
5°	89.0	70.6	59.1	56.8
7.5°	72.2	51.4	43.0	41.5
10°	59.1	41.5	33.8	32.2
12.5°	49.1	33.8	26.9	25.3
15°	42.2	29.9	24.6	24.6
17.5°	40.7	33.0	31.5	32.2
20°	53.0	59.9	71.4	72.2
22.5°	122.8	199.6	264.1	276.3
25°	221.1	241.8	235.7	246.4
27.5°	116.7	91.3	92.9	95.2
30°	50.7	56.0	59.1	62.2
32.5°	42.2	43.8	44.5	46.8
35°	27.6	27.6	26.9	27.6
37.5°	16.9	16.1	15.4	15.4
40°	10.7	10.0	9.2	9.2
42.5°	7.7	6.1	5.4	5.4
45°	5.4	3.8	3.1	2.3
47.5°	3.8	2.3	1.5	0.8
50°	3.1	2.3	0.8	0.0
52.5°	2.3	1.5	0.8	0.0
55°	2.3	1.5	0.0	0.0
57.5°	2.3	1.5	0.0	0.0
60°	2.3	1.5	0.0	0.0
62.5°	2.3	1.5	0.0	0.0
65°	2.3	1.5	0.8	0.0
67.5°	2.3	1.5	0.8	0.0
70°	2.3	1.5	0.8	0.0
72.5°	2.3	1.5	0.8	0.0
75°	2.3	2.3	0.8	0.0
77.5°	3.1	2.3	0.8	0.0
80°	3.1	2.3	0.8	0.0
82.5°	3.1	2.3	0.8	0.0
85°	3.1	2.3	0.8	0.8
87.5°	3.1	2.3	0.8	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)