

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: P170826

Luminaire Tested: **LDA4A13930D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170826
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: LDA4A13930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1341.4 lumens
Efficiency: N/A
Efficacy: 60.2 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

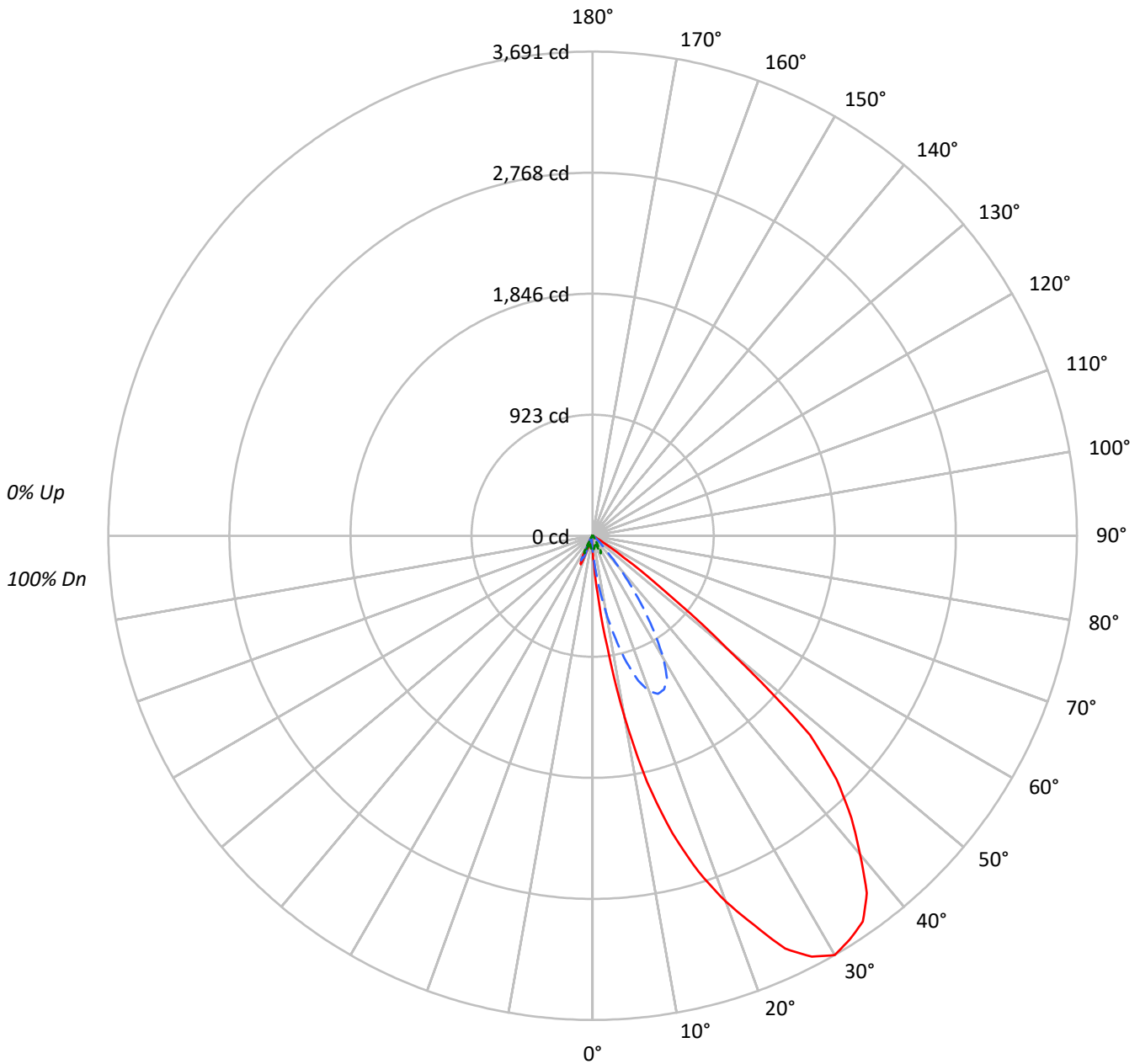
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				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	112	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91			91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	82			82
3	98	90	84	79	96	89	83	79	86	81	77	84	79	76	81	78	75	73			73
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	70	67	65			65
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58			58
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52			52
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47			47
8	69	57	50	45	68	57	50	45	55	49	44	54	48	44	53	48	44	42			42
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38			38
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35			35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13605	13605	13605
5°	54789	12840	6017
10°	176613	10771	3457
15°	299602	8556	2682
20°	389388	7666	8099
25°	472528	20197	28676
30°	525642	7107	7577
35°	540693	4246	3554
40°	510534	1803	1272
45°	458839	1029	349
50°	258229	633	0
55°	64084	430	0
60°	9868	493	0
65°	2306	584	0
70°	469	721	0
75°	0	953	0
80°	0	1847	0
85°	0	3680	991



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	22.2	1.7
10°-20°	164.6	12.3
20°-30°	380.3	28.3
30°-40°	426.5	31.8
40°-50°	297.6	22.2
50°-60°	44.4	3.3
60°-70°	2.9	0.2
70°-80°	1.5	0.1
80°-90°	1.4	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°	567.0	42.3
0°-40°	993.6	74.1
0°-60°	1335.6	99.6
0°-90°	1341.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1341.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	110	110	110	110	110	
5°	442	259	104	60	49	73
15°	2346	998	67	26	21	670
25°	3472	1291	148	207	211	1587
35°	3591	671	28	24	24	2209
45°	2630	101	6	3	2	1930
55°	298	13	2	1	0	392
65°	8	2	2	1	0	12
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°	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3
2.5°	200.9	198.9	193.7	192.3	196.9	193.0	195.0	198.9	195.0	190.4	195.0
5°	442.5	453.6	442.5	440.5	448.4	441.1	444.4	451.6	441.8	432.6	439.2
7.5°	854.1	861.3	829.8	840.9	838.3	840.3	842.2	842.2	836.3	819.9	829.1
10°	1410.1	1415.3	1373.3	1387.8	1368.7	1387.8	1384.5	1370.0	1373.3	1351.0	1362.8
12.5°	1926.1	1943.1	1901.1	1914.9	1891.9	1913.6	1905.0	1901.1	1867.6	1867.6	1880.1
15°	2346.2	2384.9	2346.8	2361.3	2335.0	2365.2	2341.6	2352.1	2321.9	2284.5	2317.3
17.5°	2686.2	2724.3	2688.9	2706.6	2682.3	2705.9	2678.4	2700.7	2661.9	2635.0	2657.3
20°	2966.5	2994.8	2952.8	2977.7	2948.8	2972.4	2942.3	2971.8	2926.5	2906.8	2919.9
22.5°	3210.7	3221.9	3200.2	3242.3	3185.8	3210.7	3174.6	3204.8	3151.0	3126.1	3129.3
25°	3472.0	3497.0	3455.6	3471.4	3432.0	3449.0	3408.3	3436.6	3369.6	3334.2	3326.9
27.5°	3617.1	3652.5	3615.8	3633.5	3593.5	3607.9	3567.2	3607.9	3539.6	3504.8	3497.0
30°	3690.6	3707.7	3684.1	3695.9	3650.6	3657.8	3615.8	3659.8	3591.5	3560.6	3556.7
32.5°	3647.9	3682.1	3651.2	3666.3	3624.3	3631.5	3590.8	3638.1	3569.8	3541.6	3527.8
35°	3590.8	3625.6	3596.7	3612.5	3573.8	3579.0	3535.7	3577.0	3498.3	3463.5	3433.9
37.5°	3432.6	3465.5	3441.2	3446.4	3409.0	3405.1	3358.4	3393.2	3316.4	3286.9	3267.2
40°	3170.7	3200.2	3180.5	3191.7	3154.3	3145.8	3114.2	3146.4	3086.7	3065.0	3037.4
42.5°	2919.9	2944.2	2925.8	2943.6	2901.6	2890.4	2862.2	2902.9	2835.2	2817.5	2797.8
45°	2630.4	2645.5	2631.1	2646.2	2606.1	2588.4	2562.8	2597.6	2531.3	2514.9	2472.2
47.5°	2247.7	2231.3	2228.7	2243.1	2193.2	2156.5	2132.8	2177.5	2081.6	2049.5	2000.2
50°	1345.7	1373.3	1385.1	1375.3	1341.1	1290.6	1252.5	1307.0	1255.8	1177.0	1098.3
52.5°	693.2	662.4	668.9	672.2	631.5	616.4	603.9	616.4	576.4	556.0	506.1
55°	298.0	283.6	288.8	290.8	282.9	264.6	258.0	265.9	247.5	239.6	219.3
57.5°	110.3	110.3	107.0	108.3	105.7	99.1	97.8	101.1	95.2	93.2	85.3
60°	40.0	40.0	40.0	40.0	36.8	36.1	36.1	37.4	35.4	34.8	32.2
62.5°	17.1	17.7	16.4	17.1	16.4	15.8	16.4	15.8	15.8	15.1	15.1
65°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.2	7.2
67.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.3	3.3	3.3
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3	110.3
2.5°	189.1	188.4	191.0	188.4	183.8	181.2	184.5	177.9	152.3	126.7	107.7
5°	427.4	424.1	419.5	420.8	409.6	400.4	400.4	382.7	258.6	147.0	103.7
7.5°	810.1	802.2	768.7	793.0	769.4	751.0	738.5	702.4	418.2	168.7	95.8
10°	1337.9	1324.1	1300.4	1305.0	1266.3	1235.5	1198.0	1137.6	601.3	187.7	86.0
12.5°	1858.4	1844.7	1781.6	1817.7	1765.9	1735.7	1672.7	1601.8	798.9	196.9	76.8
15°	2300.2	2288.4	2219.5	2253.6	2189.9	2161.7	2080.3	2001.5	998.5	193.7	67.0
17.5°	2643.6	2641.6	2562.2	2596.3	2526.1	2503.1	2407.9	2330.4	1160.0	179.2	60.4
20°	2908.1	2903.5	2823.4	2857.6	2780.8	2758.4	2637.7	2556.3	1262.4	159.5	58.4
22.5°	3116.9	3107.7	3021.7	3051.2	2965.2	2936.3	2803.1	2718.4	1304.4	147.0	72.2
25°	3304.6	3288.2	3190.4	3213.4	3118.8	3124.7	2924.5	2831.3	1290.6	165.4	148.4
27.5°	3470.0	3440.5	3342.0	3348.6	3237.7	3179.9	3007.9	2904.8	1227.6	184.5	137.9
30°	3531.8	3502.9	3398.5	3402.4	3286.9	3205.5	3021.7	2906.8	1076.6	115.5	49.9
32.5°	3497.6	3466.1	3357.1	3358.4	3239.6	3156.9	2973.8	2847.1	875.7	76.1	38.1
35°	3398.5	3365.7	3257.4	3262.6	3147.7	3065.7	2886.5	2751.2	670.9	60.4	28.2
37.5°	3231.1	3208.1	3105.1	3114.2	3016.4	2929.1	2747.3	2600.9	473.3	43.3	17.7
40°	3015.8	2998.1	2898.3	2912.7	2806.4	2725.6	2530.7	2371.8	294.8	29.5	11.2
42.5°	2763.7	2744.7	2646.2	2657.3	2566.8	2451.2	2252.3	2072.4	154.3	21.0	7.9
45°	2449.3	2426.9	2327.1	2333.1	2226.1	2090.8	1884.7	1725.8	101.1	14.4	5.9
47.5°	1954.9	1914.9	1784.9	1779.7	1692.4	1471.1	1178.3	953.8	67.0	9.8	3.9
50°	1074.6	1033.3	919.0	906.6	809.4	664.3	491.0	382.1	38.7	6.6	3.3
52.5°	489.1	467.4	414.2	405.7	364.3	302.0	232.4	191.0	22.3	4.6	2.6
55°	212.0	204.2	181.8	180.5	161.5	139.8	111.6	94.5	13.1	3.3	2.0
57.5°	83.4	80.7	76.1	72.9	65.6	58.4	48.6	40.7	8.5	2.6	2.0
60°	31.5	30.9	28.2	28.9	26.3	24.9	21.7	18.4	5.3	2.0	2.0
62.5°	14.4	14.4	13.8	13.8	13.1	11.8	10.5	9.8	3.3	2.0	2.0
65°	7.2	7.2	6.6	6.6	6.6	5.9	5.3	5.3	2.0	2.0	2.0
67.5°	3.3	3.3	3.3	3.3	3.3	2.6	2.6	2.6	1.3	2.0	2.0
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0	2.0
72.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.3	2.0	2.0
75°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	2.0	2.0
77.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	2.0	2.6
80°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	2.0	2.6
82.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	2.0	2.6
85°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	2.0	2.6
87.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	2.0	2.6
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°	110.3	110.3	110.3	110.3
2.5°	92.6	82.1	72.9	70.9
5°	76.1	60.4	50.5	48.6
7.5°	61.7	44.0	36.8	35.4
10°	50.5	35.4	28.9	27.6
12.5°	42.0	28.9	23.0	21.7
15°	36.1	25.6	21.0	21.0
17.5°	34.8	28.2	26.9	27.6
20°	45.3	51.2	61.1	61.7
22.5°	105.0	170.7	225.8	236.3
25°	189.1	206.8	201.5	210.7
27.5°	99.8	78.1	79.4	81.4
30°	43.3	47.9	50.5	53.2
32.5°	36.1	37.4	38.1	40.0
35°	23.6	23.6	23.0	23.6
37.5°	14.4	13.8	13.1	13.1
40°	9.2	8.5	7.9	7.9
42.5°	6.6	5.3	4.6	4.6
45°	4.6	3.3	2.6	2.0
47.5°	3.3	2.0	1.3	0.7
50°	2.6	2.0	0.7	0.0
52.5°	2.0	1.3	0.7	0.0
55°	2.0	1.3	0.0	0.0
57.5°	2.0	1.3	0.0	0.0
60°	2.0	1.3	0.0	0.0
62.5°	2.0	1.3	0.0	0.0
65°	2.0	1.3	0.7	0.0
67.5°	2.0	1.3	0.7	0.0
70°	2.0	1.3	0.7	0.0
72.5°	2.0	1.3	0.7	0.0
75°	2.0	2.0	0.7	0.0
77.5°	2.6	2.0	0.7	0.0
80°	2.6	2.0	0.7	0.0
82.5°	2.6	2.0	0.7	0.0
85°	2.6	2.0	0.7	0.7
87.5°	2.6	2.0	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)