

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: P170809

Luminaire Tested: **LDA4A18927D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170809
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: LDA4A18927D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1441.6 lumens
Efficiency: N/A
Efficacy: 49.5 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

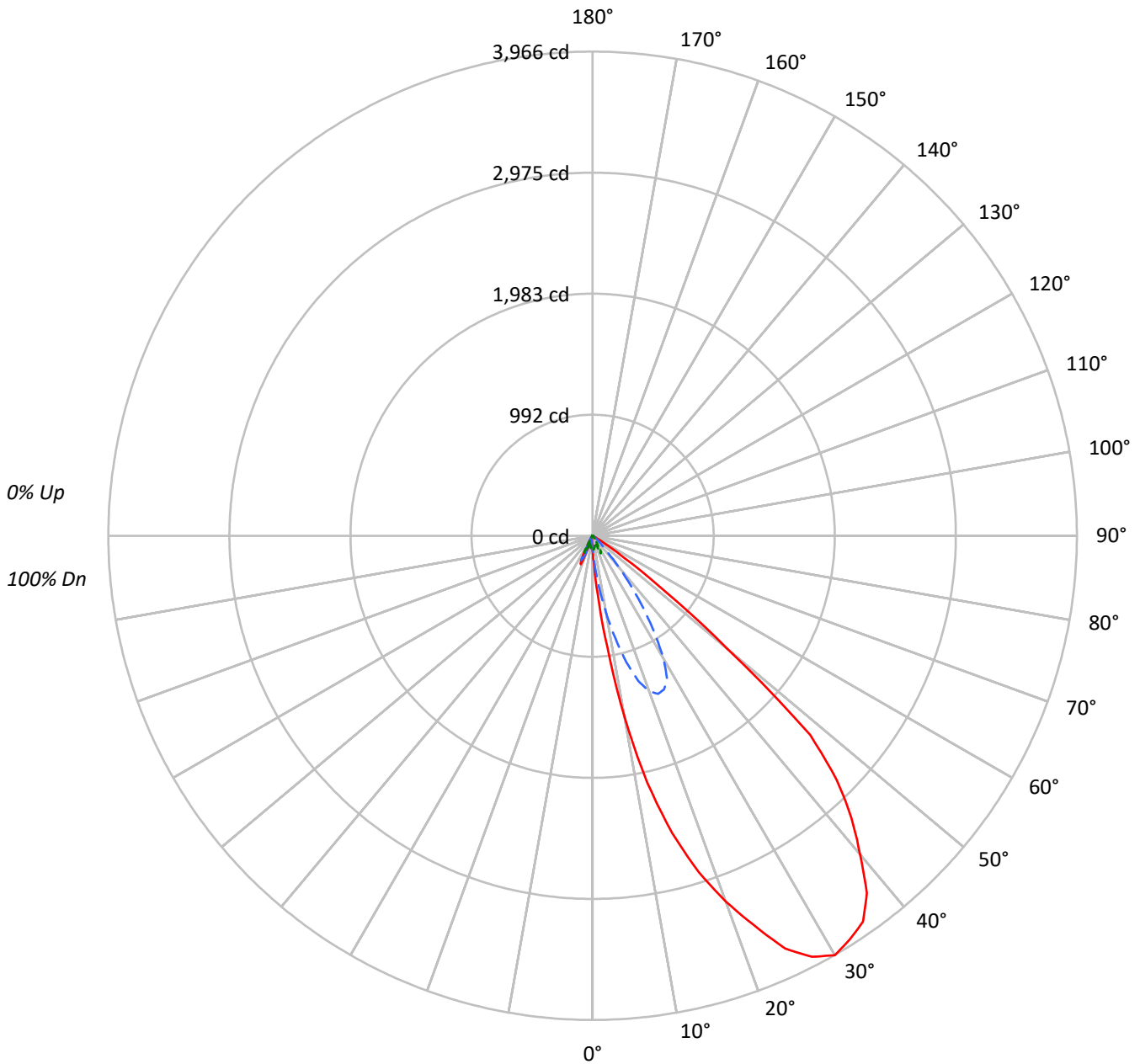
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	14616	14616	14616
5°	58875	13806	6463
10°	189814	11573	3707
15°	322000	9194	2886
20°	418502	8243	8703
25°	507859	21707	30826
30°	564938	7634	8133
35°	581123	4562	3825
40°	548695	1932	1369
45°	493151	1099	366
50°	277533	672	0
55°	68879	452	0
60°	10608	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°	23.8	1.7
10°-20°	176.9	12.3
20°-30°	408.7	28.3
30°-40°	458.4	31.8
40°-50°	319.9	22.2
50°-60°	47.7	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°	609.4	42.3
0°-40°	1067.8	74.1
0°-60°	1435.4	99.6
0°-90°	1441.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1441.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	118	118	118	118	118	
5°	476	278	112	65	52	79
15°	2522	1073	72	28	23	721
25°	3732	1387	160	222	226	1706
35°	3859	721	30	25	25	2374
45°	2827	109	6	4	2	2074
55°	320	14	2	1	0	421
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°	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5
2.5°	215.9	213.8	208.1	206.7	211.7	207.4	209.5	213.8	209.5	204.6	209.5
5°	475.5	487.5	475.5	473.4	481.9	474.1	477.6	485.4	474.8	464.9	472.0
7.5°	917.9	925.7	891.8	903.8	901.0	903.1	905.2	905.2	898.8	881.2	891.1
10°	1515.5	1521.1	1476.0	1491.5	1471.0	1491.5	1488.0	1472.4	1476.0	1452.0	1464.7
12.5°	2070.0	2088.4	2043.2	2058.0	2033.3	2056.6	2047.5	2043.2	2007.2	2007.2	2020.6
15°	2521.6	2563.2	2522.3	2537.8	2509.6	2542.0	2516.6	2527.9	2495.5	2455.3	2490.5
17.5°	2887.0	2928.0	2889.9	2908.9	2882.8	2908.2	2878.6	2902.6	2860.9	2832.0	2856.0
20°	3188.3	3218.6	3173.5	3200.3	3169.3	3194.7	3162.2	3193.9	3145.3	3124.1	3138.2
22.5°	3450.8	3462.8	3439.5	3484.6	3424.0	3450.8	3412.0	3444.4	3386.6	3359.7	3363.3
25°	3731.6	3758.4	3713.9	3730.9	3688.5	3706.9	3663.1	3693.5	3621.5	3583.4	3575.6
27.5°	3887.5	3925.6	3886.1	3905.1	3862.1	3877.6	3833.9	3877.6	3804.2	3766.8	3758.4
30°	3966.5	3984.9	3959.5	3972.2	3923.5	3931.2	3886.1	3933.3	3860.0	3826.8	3822.6
32.5°	3920.6	3957.3	3924.2	3940.4	3895.2	3903.0	3859.3	3910.1	3836.7	3806.4	3791.5
35°	3859.3	3896.7	3865.6	3882.5	3840.9	3846.6	3800.0	3844.5	3759.8	3722.4	3690.6
37.5°	3689.2	3724.5	3698.4	3704.0	3663.8	3659.6	3609.5	3646.9	3564.4	3532.6	3511.4
40°	3407.7	3439.5	3418.3	3430.3	3390.1	3380.9	3347.0	3381.6	3317.4	3294.1	3264.5
42.5°	3138.2	3164.3	3144.6	3163.6	3118.5	3106.5	3076.1	3119.9	3047.2	3028.1	3007.0
45°	2827.1	2843.3	2827.8	2844.0	2801.0	2781.9	2754.4	2791.8	2720.5	2702.9	2657.0
47.5°	2415.7	2398.1	2395.3	2410.8	2357.2	2317.7	2292.3	2340.3	2237.2	2202.7	2149.8
50°	1446.3	1476.0	1488.7	1478.1	1441.4	1387.1	1346.2	1404.7	1349.7	1265.0	1180.4
52.5°	745.0	711.9	718.9	722.5	678.7	662.5	649.1	662.5	619.5	597.6	544.0
55°	320.3	304.8	310.4	312.6	304.1	284.3	277.3	285.7	266.0	257.5	235.6
57.5°	118.5	118.5	115.0	116.4	113.6	106.5	105.1	108.7	102.3	100.2	91.7
60°	43.0	43.0	43.0	43.0	39.5	38.8	38.8	40.2	38.1	37.4	34.6
62.5°	18.3	19.0	17.6	18.3	17.6	16.9	17.6	16.9	16.9	16.2	16.2
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°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.5	3.5	3.5
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°	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5
2.5°	203.2	202.5	205.3	202.5	197.5	194.7	198.3	191.2	163.7	136.2	115.7
5°	459.3	455.8	450.8	452.2	440.3	430.4	430.4	411.3	278.0	158.0	111.5
7.5°	870.6	862.2	826.2	852.3	826.9	807.1	793.7	754.9	449.4	181.3	103.0
10°	1437.9	1423.1	1397.7	1402.6	1361.0	1327.8	1287.6	1222.7	646.3	201.8	92.4
12.5°	1997.4	1982.5	1914.8	1953.6	1897.9	1865.4	1797.7	1721.5	858.6	211.7	82.5
15°	2472.2	2459.5	2385.4	2422.1	2353.7	2323.3	2235.8	2151.2	1073.1	208.1	72.0
17.5°	2841.2	2839.1	2753.7	2790.4	2714.9	2690.2	2587.9	2504.6	1246.7	192.6	64.9
20°	3125.5	3120.6	3034.5	3071.2	2988.6	2964.7	2834.8	2747.3	1356.7	171.4	62.8
22.5°	3349.9	3340.0	3247.6	3279.3	3186.9	3155.9	3012.6	2921.6	1401.9	158.0	77.6
25°	3551.7	3534.0	3428.9	3453.6	3352.0	3358.3	3143.2	3043.0	1387.1	177.8	159.5
27.5°	3729.4	3697.7	3591.9	3598.9	3479.7	3417.6	3232.8	3122.0	1319.3	198.3	148.2
30°	3795.8	3764.7	3652.5	3656.8	3532.6	3445.1	3247.6	3124.1	1157.1	124.2	53.6
32.5°	3759.1	3725.2	3608.1	3609.5	3481.8	3392.9	3196.1	3059.9	941.2	81.8	40.9
35°	3652.5	3617.3	3500.9	3506.5	3383.0	3294.8	3102.2	2956.9	721.1	64.9	30.3
37.5°	3472.6	3447.9	3337.2	3347.0	3241.9	3148.1	2952.7	2795.3	508.7	46.6	19.0
40°	3241.2	3222.2	3114.9	3130.5	3016.2	2929.4	2719.8	2549.1	316.8	31.7	12.0
42.5°	2970.3	2949.8	2844.0	2856.0	2758.6	2634.5	2420.7	2227.4	165.8	22.6	8.5
45°	2632.3	2608.4	2501.1	2507.5	2392.5	2247.1	2025.6	1854.8	108.7	15.5	6.3
47.5°	2101.1	2058.0	1918.3	1912.7	1818.9	1581.1	1266.4	1025.1	72.0	10.6	4.2
50°	1155.0	1110.5	987.7	974.3	869.9	714.0	527.7	410.6	41.6	7.1	3.5
52.5°	525.6	502.3	445.2	436.0	391.6	324.5	249.8	205.3	24.0	4.9	2.8
55°	227.9	219.4	195.4	194.0	173.6	150.3	119.9	101.6	14.1	3.5	2.1
57.5°	89.6	86.8	81.8	78.3	70.6	62.8	52.2	43.7	9.2	2.8	2.1
60°	33.9	33.2	30.3	31.0	28.2	26.8	23.3	19.8	5.6	2.1	2.1
62.5°	15.5	15.5	14.8	14.8	14.1	12.7	11.3	10.6	3.5	2.1	2.1
65°	7.8	7.8	7.1	7.1	7.1	6.3	5.6	5.6	2.1	2.1	2.1
67.5°	3.5	3.5	3.5	3.5	3.5	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°	118.5	118.5	118.5	118.5
2.5°	99.5	88.2	78.3	76.2
5°	81.8	64.9	54.3	52.2
7.5°	66.3	47.3	39.5	38.1
10°	54.3	38.1	31.0	29.6
12.5°	45.2	31.0	24.7	23.3
15°	38.8	27.5	22.6	22.6
17.5°	37.4	30.3	28.9	29.6
20°	48.7	55.0	65.6	66.3
22.5°	112.9	183.4	242.7	254.0
25°	203.2	222.2	216.6	226.5
27.5°	107.2	84.0	85.4	87.5
30°	46.6	51.5	54.3	57.1
32.5°	38.8	40.2	40.9	43.0
35°	25.4	25.4	24.7	25.4
37.5°	15.5	14.8	14.1	14.1
40°	9.9	9.2	8.5	8.5
42.5°	7.1	5.6	4.9	4.9
45°	4.9	3.5	2.8	2.1
47.5°	3.5	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)