

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: P170811

Luminaire Tested: **LDA4A18935D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170811
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: LDA4A18935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1674.7 lumens
Efficiency: N/A
Efficacy: 57.5 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

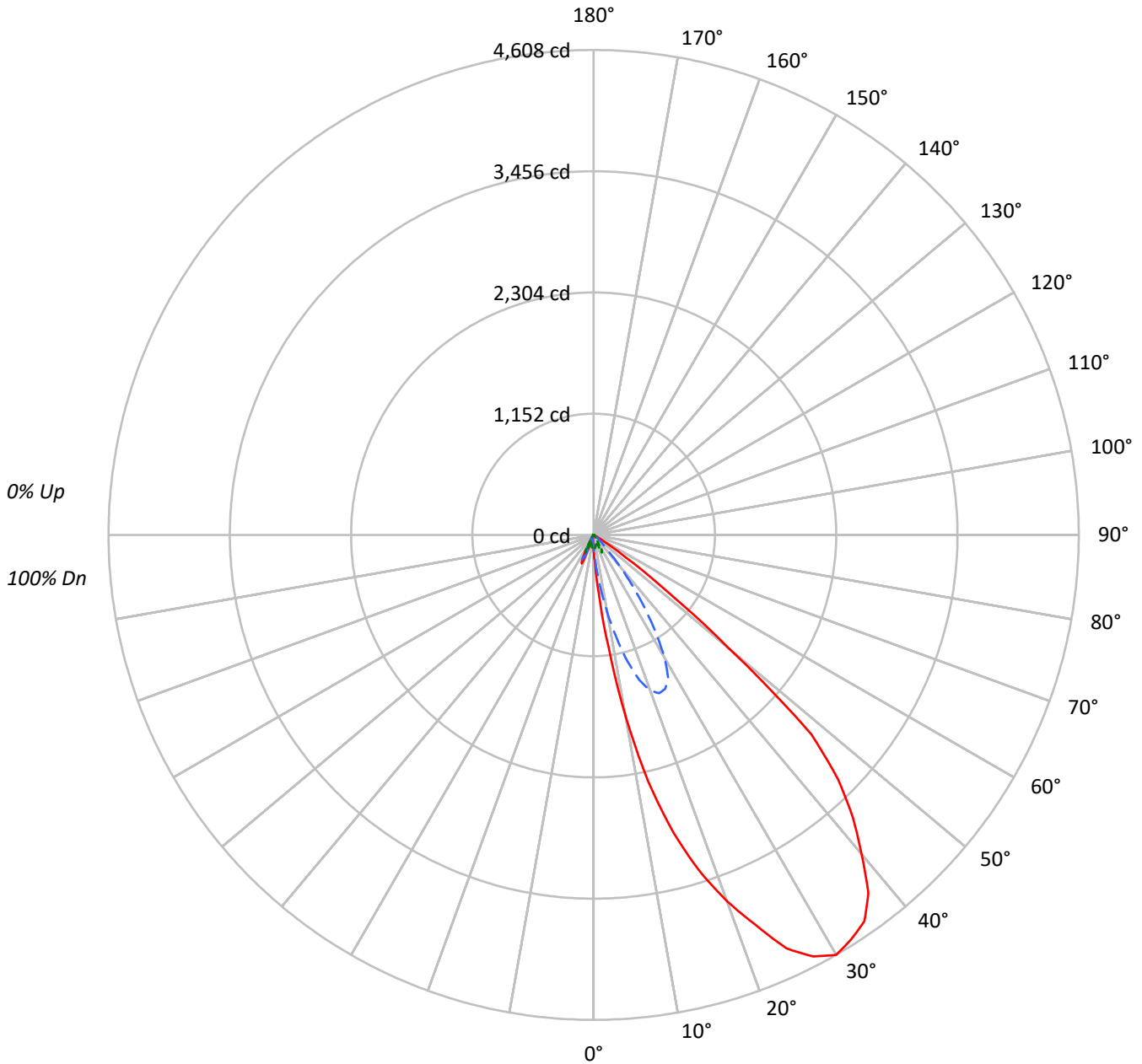
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170811

CATALOG NUMBER: LDA4A18935D010TE LAR35FL 4LAL1 30° Tilt

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°	16985	16985	16985
5°	68396	16034	7503
10°	220500	13452	4309
15°	374049	10675	3346
20°	486154	9569	10107
25°	589953	25205	35807
30°	656262	8873	9457
35°	675053	5300	4442
40°	637399	2238	1578
45°	572869	1291	436
50°	322397	787	0
55°	80019	538	0
60°	12335	617	0
65°	2860	730	0
70°	577	902	0
75°	0	1191	0
80°	0	2344	0
85°	0	4670	1132



TEST NUMBER: P170811

CATALOG NUMBER: LDA4A18935D010TE LAR35FL 4LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.7	1.7
10°-20°	205.5	12.3
20°-30°	474.7	28.3
30°-40°	532.5	31.8
40°-50°	371.6	22.2
50°-60°	55.5	3.3
60°-70°	3.6	0.2
70°-80°	1.8	0.1
80°-90°	1.8	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°	707.9	42.3
0°-40°	1240.4	74.1
0°-60°	1667.5	99.6
0°-90°	1674.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1674.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	138	138	138	138	138	
5°	552	323	130	75	61	91
15°	2929	1247	84	32	26	837
25°	4335	1611	185	258	263	1982
35°	4483	838	35	30	30	2758
45°	3284	126	7	4	2	2409
55°	372	16	2	2	0	489
65°	10	2	2	2	0	15
75°	0	2	2	2	0	0
85°	0	2	3	2	1	0
90°	0	0	0	0	0	



TEST NUMBER: P170811

CATALOG NUMBER: LDA4A18935D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7
2.5°	250.8	248.3	241.8	240.1	245.9	241.0	243.4	248.3	243.4	237.7	243.4
5°	552.4	566.3	552.4	549.9	559.8	550.8	554.9	563.9	551.6	540.1	548.3
7.5°	1066.3	1075.3	1035.9	1049.9	1046.6	1049.1	1051.5	1051.5	1044.1	1023.7	1035.1
10°	1760.5	1767.0	1714.6	1732.6	1708.8	1732.6	1728.5	1710.5	1714.6	1686.7	1701.4
12.5°	2404.6	2426.0	2373.5	2390.7	2362.0	2389.1	2378.4	2373.5	2331.7	2331.7	2347.3
15°	2929.2	2977.5	2930.0	2948.0	2915.2	2952.9	2923.4	2936.5	2898.8	2852.1	2893.1
17.5°	3353.7	3401.3	3357.0	3379.1	3348.8	3378.3	3343.9	3371.7	3323.4	3289.8	3317.7
20°	3703.7	3738.9	3686.5	3717.6	3681.5	3711.1	3673.4	3710.2	3653.7	3629.1	3645.5
22.5°	4008.6	4022.5	3995.4	4047.9	3977.4	4008.6	3963.5	4001.2	3934.0	3902.8	3906.9
25°	4334.8	4365.9	4314.3	4333.9	4284.8	4306.1	4255.3	4290.5	4206.9	4162.6	4153.6
27.5°	4515.9	4560.1	4514.2	4536.4	4486.4	4504.4	4453.6	4504.4	4419.2	4375.7	4365.9
30°	4607.7	4629.0	4599.5	4614.2	4557.7	4566.7	4514.2	4569.1	4483.9	4445.4	4440.5
32.5°	4554.4	4597.0	4558.5	4577.3	4524.9	4533.9	4483.1	4542.1	4456.9	4421.6	4404.4
35°	4483.1	4526.5	4490.5	4510.1	4461.8	4468.3	4414.2	4465.9	4367.5	4324.1	4287.2
37.5°	4285.6	4326.6	4296.2	4302.8	4256.1	4251.2	4193.0	4236.4	4140.5	4103.6	4079.0
40°	3958.6	3995.4	3970.9	3984.8	3938.1	3927.4	3888.1	3928.2	3853.7	3826.6	3792.2
42.5°	3645.5	3675.8	3652.9	3675.0	3622.5	3608.6	3573.4	3624.2	3539.8	3517.6	3493.0
45°	3284.1	3302.9	3284.9	3303.7	3253.7	3231.6	3199.6	3243.1	3160.3	3139.8	3086.5
47.5°	2806.2	2785.7	2782.5	2800.5	2738.2	2692.3	2662.8	2718.5	2598.9	2558.7	2497.3
50°	1680.1	1714.6	1729.3	1717.0	1674.4	1611.3	1563.8	1631.8	1567.9	1469.5	1371.2
52.5°	865.5	827.0	835.2	839.2	788.4	769.6	754.0	769.6	719.6	694.2	631.9
55°	372.1	354.1	360.6	363.1	353.2	330.3	322.1	331.9	309.0	299.1	273.7
57.5°	137.7	137.7	133.6	135.2	132.0	123.8	122.1	126.2	118.8	116.4	106.5
60°	50.0	50.0	50.0	50.0	45.9	45.1	45.1	46.7	44.3	43.4	40.2
62.5°	21.3	22.1	20.5	21.3	20.5	19.7	20.5	19.7	19.7	18.9	18.9
65°	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.0	9.0
67.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.1	4.1	4.1
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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



TEST NUMBER: P170811

CATALOG NUMBER: LDA4A18935D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7
2.5°	236.0	235.2	238.5	235.2	229.5	226.2	230.3	222.1	190.1	158.2	134.4
5°	533.5	529.4	523.7	525.3	511.4	499.9	499.9	477.8	322.9	183.6	129.5
7.5°	1011.4	1001.5	959.7	990.1	960.5	937.6	922.0	876.9	522.1	210.6	119.7
10°	1670.3	1653.1	1623.6	1629.3	1581.0	1542.4	1495.7	1420.3	750.7	234.4	107.4
12.5°	2320.2	2303.0	2224.3	2269.4	2204.7	2167.0	2088.3	1999.8	997.4	245.9	95.9
15°	2871.8	2857.1	2771.0	2813.6	2734.1	2698.9	2597.2	2498.9	1246.6	241.8	83.6
17.5°	3300.4	3298.0	3198.8	3241.4	3153.7	3125.1	3006.2	2909.5	1448.2	223.7	75.4
20°	3630.7	3625.0	3525.0	3567.6	3471.7	3443.9	3293.1	3191.4	1576.0	199.2	72.9
22.5°	3891.4	3879.9	3772.5	3809.4	3702.0	3666.0	3499.6	3393.9	1628.5	183.6	90.2
25°	4125.8	4105.3	3983.2	4011.8	3893.8	3901.2	3651.2	3534.8	1611.3	206.5	185.2
27.5°	4332.3	4295.4	4172.5	4180.7	4042.2	3970.0	3755.3	3626.6	1532.6	230.3	172.1
30°	4409.3	4373.3	4243.0	4247.9	4103.6	4002.0	3772.5	3629.1	1344.1	144.2	62.3
32.5°	4366.7	4327.4	4191.3	4193.0	4044.6	3941.4	3712.7	3554.5	1093.3	95.1	47.5
35°	4243.0	4202.0	4066.7	4073.3	3929.9	3827.4	3603.7	3434.9	837.6	75.4	35.2
37.5°	4034.0	4005.3	3876.6	3888.1	3766.0	3657.0	3429.9	3247.2	590.9	54.1	22.1
40°	3765.1	3743.0	3618.4	3636.5	3503.7	3402.9	3159.5	2961.1	368.0	36.9	13.9
42.5°	3450.4	3426.7	3303.7	3317.7	3204.6	3060.3	2812.0	2587.4	192.6	26.2	9.8
45°	3057.8	3030.0	2905.4	2912.8	2779.2	2610.4	2353.0	2154.7	126.2	18.0	7.4
47.5°	2440.7	2390.7	2228.4	2221.9	2112.9	1836.7	1471.1	1190.8	83.6	12.3	4.9
50°	1341.6	1290.0	1147.4	1131.8	1010.5	829.4	613.0	477.0	48.4	8.2	4.1
52.5°	610.6	583.5	517.2	506.5	454.9	377.0	290.1	238.5	27.9	5.7	3.3
55°	264.7	254.9	227.0	225.4	201.6	174.6	139.3	118.0	16.4	4.1	2.5
57.5°	104.1	100.8	95.1	91.0	82.0	72.9	60.6	50.8	10.7	3.3	2.5
60°	39.3	38.5	35.2	36.1	32.8	31.1	27.0	22.9	6.6	2.5	2.5
62.5°	18.0	18.0	17.2	17.2	16.4	14.8	13.1	12.3	4.1	2.5	2.5
65°	9.0	9.0	8.2	8.2	8.2	7.4	6.6	6.6	2.5	2.5	2.5
67.5°	4.1	4.1	4.1	4.1	4.1	3.3	3.3	3.3	1.6	2.5	2.5
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.5	2.5
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6	2.5	2.5
75°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	2.5	2.5
77.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	2.5	3.3
80°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	2.5	3.3
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	2.5	3.3
85°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	2.5	3.3
87.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	2.5	3.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P170811

CATALOG NUMBER: LDA4A18935D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	137.7	137.7	137.7	137.7
2.5°	115.6	102.4	91.0	88.5
5°	95.1	75.4	63.1	60.6
7.5°	77.0	54.9	45.9	44.3
10°	63.1	44.3	36.1	34.4
12.5°	52.5	36.1	28.7	27.0
15°	45.1	32.0	26.2	26.2
17.5°	43.4	35.2	33.6	34.4
20°	56.6	63.9	76.2	77.0
22.5°	131.1	213.1	281.9	295.0
25°	236.0	258.2	251.6	263.1
27.5°	124.6	97.5	99.2	101.6
30°	54.1	59.8	63.1	66.4
32.5°	45.1	46.7	47.5	50.0
35°	29.5	29.5	28.7	29.5
37.5°	18.0	17.2	16.4	16.4
40°	11.5	10.7	9.8	9.8
42.5°	8.2	6.6	5.7	5.7
45°	5.7	4.1	3.3	2.5
47.5°	4.1	2.5	1.6	0.8
50°	3.3	2.5	0.8	0.0
52.5°	2.5	1.6	0.8	0.0
55°	2.5	1.6	0.0	0.0
57.5°	2.5	1.6	0.0	0.0
60°	2.5	1.6	0.0	0.0
62.5°	2.5	1.6	0.0	0.0
65°	2.5	1.6	0.8	0.0
67.5°	2.5	1.6	0.8	0.0
70°	2.5	1.6	0.8	0.0
72.5°	2.5	1.6	0.8	0.0
75°	2.5	2.5	0.8	0.0
77.5°	3.3	2.5	0.8	0.0
80°	3.3	2.5	0.8	0.0
82.5°	3.3	2.5	0.8	0.0
85°	3.3	2.5	0.8	0.8
87.5°	3.3	2.5	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)