

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: P170790

Luminaire Tested: **LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170790
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26105)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 25° Narrow 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: 1526.3 lumens
Efficiency: N/A
Efficacy: 68.5 lumens/watt
Spacing Criteria (0/90/45): 2.53 / 1.09 / 1.29
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

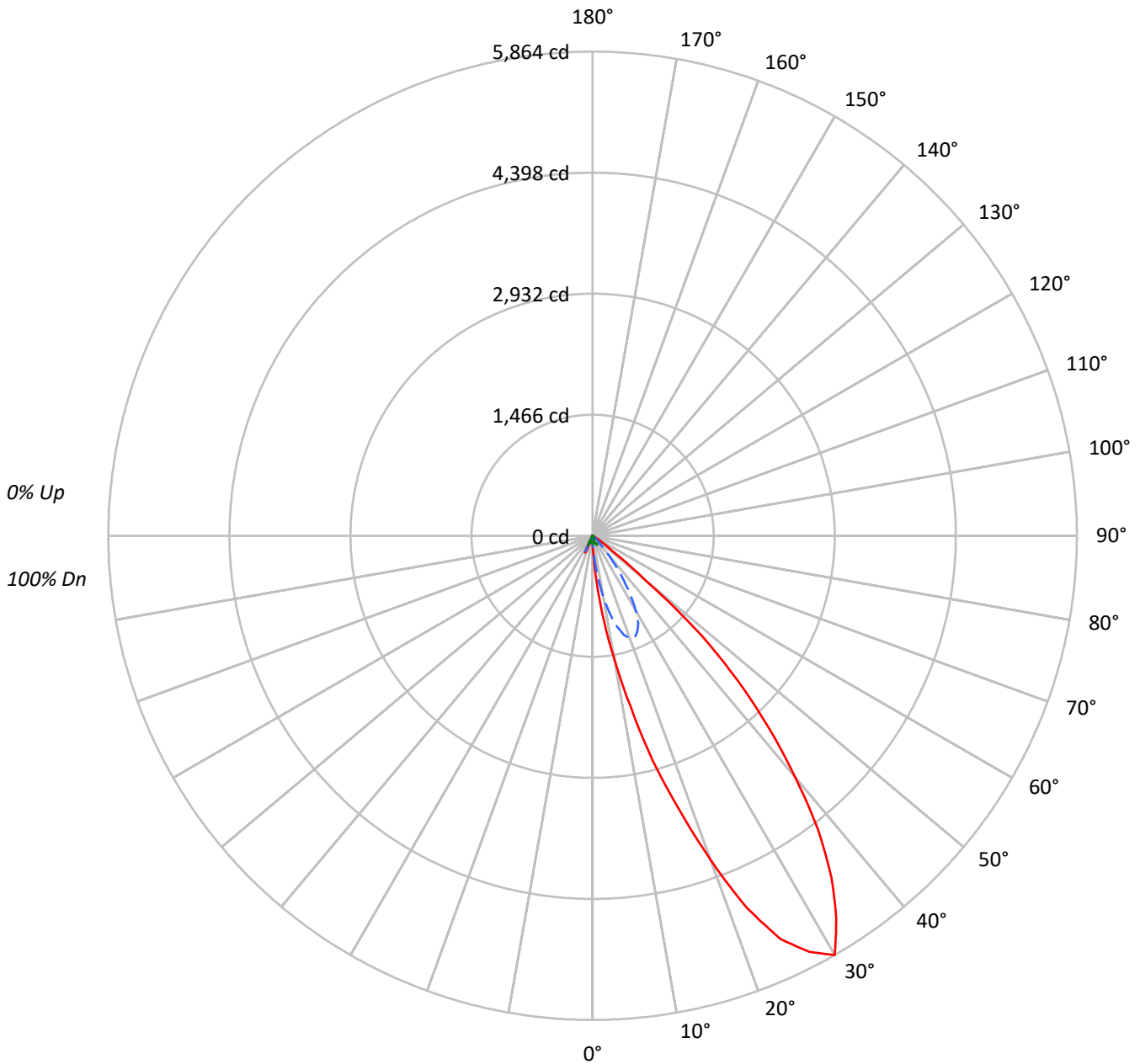
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170790

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170790

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt

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	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	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91					91			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	83					83			
3	99	91	85	81	97	90	84	80	87	82	79	84	81	77	82	79	76	74					74			
4	92	83	77	72	90	82	76	71	80	74	70	78	73	69	76	72	69	67					67			
5	86	76	69	64	84	75	69	64	73	67	63	71	66	62	70	65	62	60					60			
6	80	70	63	57	79	69	62	57	67	61	57	66	60	56	64	60	56	54					54			
7	75	64	57	52	74	63	56	51	62	56	51	61	55	51	59	54	51	49					49			
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44					44			
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40					40			
10	62	50	43	38	60	50	43	38	49	42	38	48	42	38	47	42	38	36					36			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	14012	14012	14012
5°	72037	13026	6079
10°	189877	10859	3169
15°	361395	8530	2452
20°	548910	7049	6550
25°	733453	16822	30295
30°	835136	6338	6124
35°	758563	3584	2771
40°	614390	1610	1111
45°	434767	942	262
50°	158637	595	0
55°	33010	495	0
60°	7943	567	0
65°	2452	671	0
70°	829	829	0
75°	381	1096	0
80°	0	1634	0
85°	0	3255	0



TEST NUMBER: P170790

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.7	1.7
10°-20°	192.0	12.6
20°-30°	486.9	31.9
30°-40°	521.1	34.1
40°-50°	266.3	17.5
50°-60°	27.8	1.8
60°-70°	3.2	0.2
70°-80°	1.8	0.1
80°-90°	1.6	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°	704.6	46.2
0°-40°	1225.6	80.3
0°-60°	1519.8	99.6
0°-90°	1526.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1526.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	114	114	114	114	114	
5°	582	316	105	61	49	85
15°	2830	1138	67	24	19	836
25°	5389	1281	124	207	223	2449
35°	5038	649	24	18	18	3093
45°	2492	87	5	3	2	1860
55°	154	14	2	2	0	208
65°	8	3	2	2	0	11
75°	1	2	2	2	0	1
85°	0	2	2	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P170790

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6
2.5°	229.5	231.8	214.9	220.3	224.1	216.5	214.9	214.9	223.4	218.8	226.4
5°	581.8	579.5	550.4	558.8	564.9	550.4	557.3	546.5	559.6	551.1	559.6
7.5°	1016.3	1043.2	1006.3	1014.8	1020.1	1004.8	1008.6	993.3	1007.8	997.9	1004.8
10°	1516.0	1543.6	1500.6	1507.5	1511.4	1496.8	1497.6	1477.6	1490.7	1479.9	1484.5
12.5°	2113.2	2123.9	2103.2	2108.6	2110.9	2091.7	2055.6	2059.4	2072.5	2054.1	2058.7
15°	2830.1	2822.4	2797.9	2815.5	2797.9	2788.7	2734.2	2731.1	2738.8	2718.0	2685.0
17.5°	3461.8	3520.2	3492.5	3502.5	3481.0	3481.0	3411.2	3399.7	3400.4	3345.2	3339.0
20°	4181.8	4256.3	4188.7	4191.8	4163.4	4162.6	4077.4	4053.6	4043.7	3980.7	3963.1
22.5°	4875.7	4897.2	4896.5	4883.4	4816.6	4855.0	4748.3	4710.7	4680.0	4608.6	4573.3
25°	5389.2	5456.8	5410.7	5377.7	5319.4	5367.8	5248.0	5198.9	5152.8	5093.0	5046.9
27.5°	5679.4	5742.3	5731.6	5682.5	5622.6	5669.4	5538.2	5474.4	5409.2	5365.4	5307.9
30°	5863.6	5959.6	5928.1	5821.4	5733.9	5749.2	5601.9	5516.7	5444.5	5399.2	5326.3
32.5°	5489.8	5588.8	5579.6	5502.1	5456.8	5494.4	5366.2	5281.8	5212.7	5176.6	5095.3
35°	5037.7	5153.6	5128.3	5063.8	5030.8	5074.5	4949.4	4878.8	4808.9	4777.5	4688.4
37.5°	4484.3	4593.3	4567.9	4506.5	4474.3	4506.5	4386.8	4321.5	4255.5	4222.5	4161.9
40°	3815.7	3911.6	3884.8	3828.0	3801.1	3824.1	3720.5	3663.7	3607.7	3583.1	3502.5
42.5°	3162.5	3239.2	3214.7	3165.5	3144.8	3160.2	3075.0	3024.3	2975.2	2954.5	2906.9
45°	2492.4	2568.4	2544.6	2502.3	2483.2	2491.6	2420.2	2374.9	2332.7	2313.5	2270.5
47.5°	1788.5	1873.7	1844.5	1808.4	1788.5	1784.6	1721.7	1681.0	1684.9	1619.6	1579.7
50°	826.7	898.8	869.7	850.5	831.3	820.6	798.3	752.2	765.3	706.2	683.2
52.5°	300.1	317.8	310.9	304.7	298.6	296.3	288.6	277.1	278.6	264.1	257.1
55°	153.5	162.0	159.7	155.8	155.8	153.5	149.7	145.1	142.0	139.7	137.4
57.5°	70.6	75.2	73.7	72.2	72.2	70.6	69.1	66.8	68.3	64.5	63.7
60°	32.2	34.5	33.8	33.0	33.0	33.0	32.2	31.5	31.5	30.7	29.9
62.5°	15.4	16.9	16.1	16.1	16.1	16.1	15.4	15.4	15.4	15.4	14.6
65°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	7.7	8.4	7.7	7.7
67.5°	4.6	4.6	4.6	4.6	3.8	4.6	4.6	3.8	3.8	3.8	3.8
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.0	0.8	0.8	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.8
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	0.8	0.0	0.8	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: P170790

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6
2.5°	208.8	214.2	219.5	218.0	210.3	209.6	206.5	208.0	162.0	131.3	109.8
5°	529.6	536.5	543.5	539.6	520.4	515.8	500.5	497.4	316.2	155.1	105.2
7.5°	967.9	971.8	977.1	972.5	944.1	931.1	898.8	867.4	531.9	187.3	97.5
10°	1443.1	1441.5	1443.8	1437.7	1402.4	1377.1	1327.2	1304.9	753.8	214.9	86.7
12.5°	1997.3	1991.1	1957.4	1973.5	1923.6	1872.2	1790.0	1720.9	963.3	230.3	76.8
15°	2644.3	2625.9	2613.6	2595.2	2533.8	2450.9	2325.8	2249.0	1137.6	228.7	66.8
17.5°	3287.6	3257.6	3203.9	3210.8	3139.4	3023.5	2858.5	2727.2	1258.1	209.6	59.1
20°	3896.3	3851.8	3784.2	3778.8	3692.9	3540.1	3332.1	3169.4	1324.1	178.1	53.7
22.5°	4482.7	4413.6	4323.1	4294.7	4184.1	3967.7	3695.9	3497.9	1330.2	148.9	64.5
25°	4944.8	4858.1	4757.5	4708.4	4586.3	4310.0	3971.5	3728.2	1281.1	147.4	123.6
27.5°	5202.7	5104.5	5003.9	4937.1	4813.6	4500.4	4117.3	3836.4	1196.7	158.1	117.4
30°	5216.5	5106.0	5001.6	4917.2	4794.4	4459.7	4052.9	3760.4	1044.7	99.8	44.5
32.5°	4987.0	4868.8	4764.4	4669.2	4548.0	4211.0	3811.8	3532.4	849.7	69.9	31.5
35°	4585.6	4463.5	4363.7	4263.2	4149.6	3832.6	3466.4	3206.2	649.4	55.3	23.8
37.5°	4039.1	3926.2	3837.9	3769.6	3646.8	3394.3	3059.6	2784.0	459.0	39.1	14.6
40°	3427.3	3332.1	3260.0	3200.8	3087.2	2863.1	2525.4	2292.8	278.6	27.6	10.0
42.5°	2811.7	2722.6	2658.9	2602.9	2497.7	2299.7	2021.8	1788.5	133.6	19.2	6.9
45°	2186.9	2107.0	2053.3	2002.6	1908.2	1713.3	1493.0	1324.1	86.7	13.8	5.4
47.5°	1493.7	1452.3	1364.0	1308.7	1212.0	1063.1	856.6	670.9	57.6	10.0	3.8
50°	621.0	599.5	541.2	503.5	448.3	372.3	270.2	226.4	35.3	6.9	3.1
52.5°	241.0	235.6	221.1	212.6	198.8	178.8	148.9	132.8	21.5	5.4	3.1
55°	129.7	128.2	120.5	115.9	108.2	98.3	80.6	70.6	13.8	3.8	2.3
57.5°	59.9	59.1	55.3	55.3	49.9	46.1	38.4	34.5	8.4	3.1	2.3
60°	28.4	28.4	26.9	26.9	24.6	23.0	19.2	17.7	5.4	2.3	2.3
62.5°	13.8	13.8	13.8	13.8	13.0	12.3	10.7	10.0	3.8	2.3	2.3
65°	7.7	7.7	7.7	7.7	6.9	6.9	6.1	5.4	3.1	2.3	2.3
67.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.1	3.1	2.3	2.3	2.3
70°	2.3	2.3	2.3	2.3	2.3	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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
80°	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
82.5°	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	2.3	2.3
87.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	2.3	2.3
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: P170790

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	113.6	113.6	113.6	113.6
2.5°	94.4	82.1	76.0	74.5
5°	77.5	60.6	52.2	49.1
7.5°	62.9	43.8	36.8	33.8
10°	49.9	34.5	27.6	25.3
12.5°	41.4	27.6	22.3	20.7
15°	35.3	23.8	20.0	19.2
17.5°	32.2	25.3	23.8	24.6
20°	39.1	41.4	48.4	49.9
22.5°	82.9	143.5	195.0	206.5
25°	172.7	207.2	214.9	222.6
27.5°	95.9	74.5	72.9	76.0
30°	39.1	39.9	41.4	43.0
32.5°	29.2	29.2	28.4	29.2
35°	20.0	18.4	17.7	18.4
37.5°	12.3	11.5	10.7	10.7
40°	8.4	7.7	6.9	6.9
42.5°	6.1	4.6	3.8	3.8
45°	4.6	3.1	2.3	1.5
47.5°	3.8	2.3	0.8	0.8
50°	3.1	1.5	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	0.8	0.0
62.5°	2.3	1.5	0.8	0.8
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°	3.1	1.5	0.8	0.0
75°	3.1	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	0.0
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)