

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: P170793

Luminaire Tested: **LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170793
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: LDA4A13927D010TE 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 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1132.3 lumens
Efficiency: N/A
Efficacy: 50.8 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

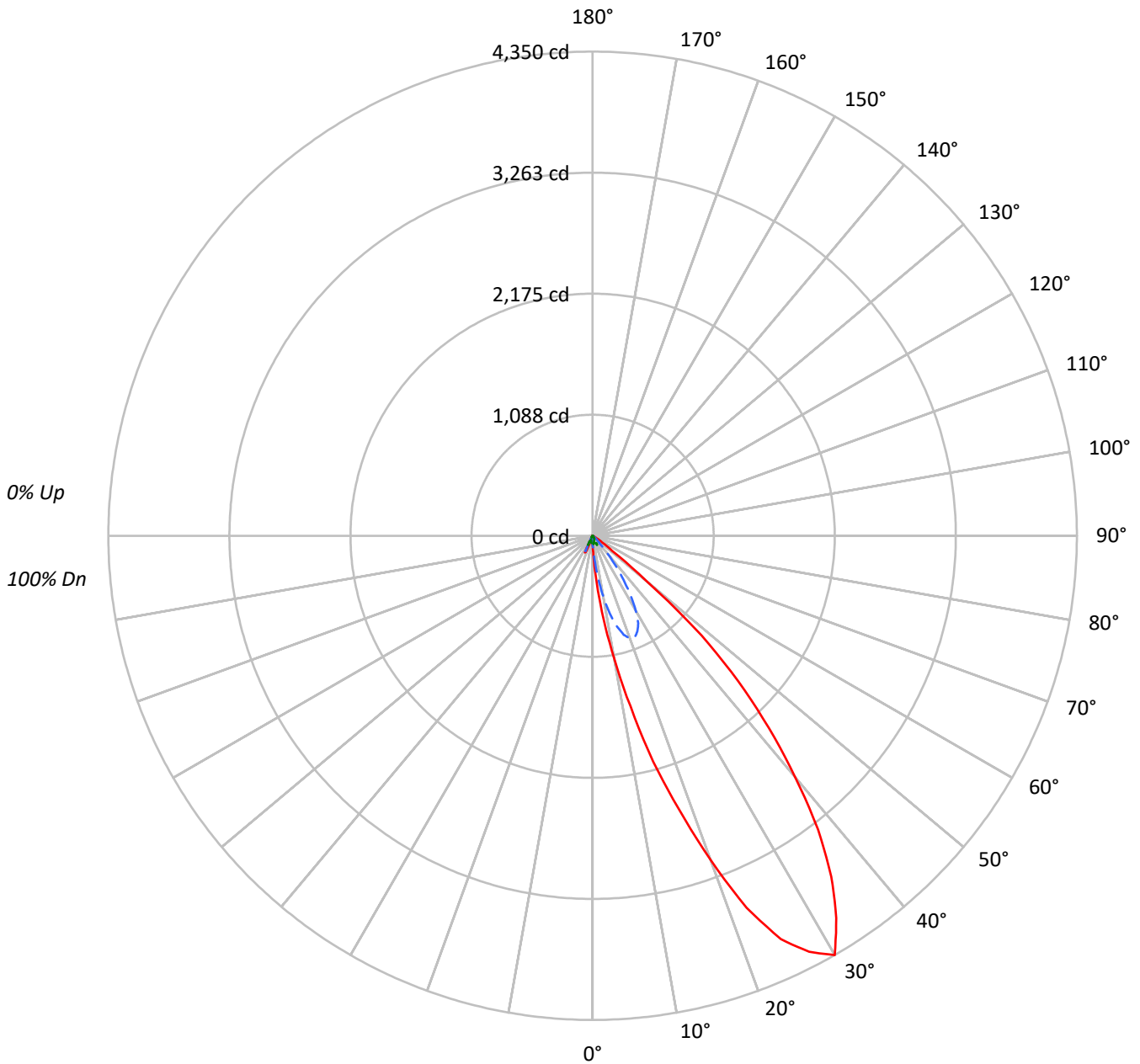
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170793

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170793

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10398	10398	10398
5°	53439	9658	4507
10°	140867	8053	2355
15°	268112	6321	1813
20°	407226	5237	4857
25°	544129	12480	22470
30°	619559	4700	4543
35°	562752	2665	2063
40°	455789	1192	821
45°	322534	698	192
50°	117687	441	0
55°	24494	366	0
60°	5896	419	0
65°	1839	496	0
70°	613	613	0
75°	286	810	0
80°	0	1208	0
85°	0	2406	0



TEST NUMBER: P170793

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.1	1.7
10°-20°	142.4	12.6
20°-30°	361.2	31.9
30°-40°	386.6	34.1
40°-50°	197.6	17.5
50°-60°	20.6	1.8
60°-70°	2.4	0.2
70°-80°	1.3	0.1
80°-90°	1.2	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°	522.7	46.2
0°-40°	909.3	80.3
0°-60°	1127.5	99.6
0°-90°	1132.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1132.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	84	84	84	84	84	
5°	432	235	78	45	36	63
15°	2100	844	50	18	14	620
25°	3998	950	92	154	165	1817
35°	3737	482	18	14	14	2294
45°	1849	64	4	2	1	1380
55°	114	10	2	1	0	154
65°	6	2	2	1	0	8
75°	1	1	2	2	0	1
85°	0	1	2	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P170793

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3
2.5°	170.3	172.0	159.4	163.4	166.3	160.6	159.4	159.4	165.7	162.3	168.0
5°	431.6	429.9	408.3	414.6	419.1	408.3	413.4	405.4	415.1	408.9	415.1
7.5°	754.0	773.9	746.6	752.8	756.8	745.4	748.3	736.9	747.7	740.3	745.4
10°	1124.7	1145.2	1113.3	1118.4	1121.2	1110.4	1111.0	1096.2	1105.9	1097.9	1101.3
12.5°	1567.7	1575.7	1560.3	1564.3	1566.0	1551.8	1525.0	1527.8	1537.5	1523.9	1527.3
15°	2099.6	2093.9	2075.7	2088.7	2075.7	2068.8	2028.4	2026.1	2031.8	2016.4	1991.9
17.5°	2568.2	2611.5	2591.0	2598.4	2582.5	2582.5	2530.6	2522.1	2522.7	2481.7	2477.1
20°	3102.4	3157.6	3107.5	3109.8	3088.7	3088.1	3024.9	3007.3	2999.9	2953.2	2940.1
22.5°	3617.2	3633.1	3632.5	3622.8	3573.3	3601.8	3522.6	3494.7	3471.9	3419.0	3392.8
25°	3998.1	4048.2	4014.1	3989.6	3946.3	3982.2	3893.3	3856.9	3822.7	3778.3	3744.1
27.5°	4213.4	4260.1	4252.1	4215.6	4171.2	4206.0	4108.6	4061.3	4012.9	3980.5	3937.8
30°	4350.0	4421.2	4397.9	4318.7	4253.8	4265.2	4155.9	4092.6	4039.1	4005.5	3951.4
32.5°	4072.7	4146.2	4139.3	4081.8	4048.2	4076.1	3981.0	3918.4	3867.1	3840.4	3780.0
35°	3737.3	3823.3	3804.5	3756.7	3732.2	3764.6	3671.8	3619.4	3567.6	3544.3	3478.2
37.5°	3326.7	3407.6	3388.8	3343.2	3319.3	3343.2	3254.4	3206.0	3157.0	3132.6	3087.6
40°	2830.7	2901.9	2882.0	2839.9	2819.9	2837.0	2760.1	2718.0	2676.4	2658.2	2598.4
42.5°	2346.1	2403.1	2384.9	2348.4	2333.0	2344.4	2281.2	2243.6	2207.2	2191.8	2156.5
45°	1849.0	1905.4	1887.7	1856.4	1842.2	1848.4	1795.5	1761.9	1730.6	1716.3	1684.4
47.5°	1326.8	1390.0	1368.4	1341.6	1326.8	1324.0	1277.3	1247.1	1249.9	1201.5	1171.9
50°	613.3	666.8	645.2	631.0	616.7	608.7	592.2	558.1	567.7	523.9	506.8
52.5°	222.7	235.8	230.6	226.1	221.5	219.8	214.1	205.6	206.7	195.9	190.8
55°	113.9	120.2	118.4	115.6	115.6	113.9	111.0	107.6	105.3	103.6	101.9
57.5°	52.4	55.8	54.7	53.5	53.5	52.4	51.3	49.5	50.7	47.8	47.3
60°	23.9	25.6	25.1	24.5	24.5	24.5	23.9	23.3	23.3	22.8	22.2
62.5°	11.4	12.5	12.0	12.0	12.0	12.0	11.4	11.4	11.4	11.4	10.8
65°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.7	6.3	5.7	5.7
67.5°	3.4	3.4	3.4	3.4	2.8	3.4	3.4	2.8	2.8	2.8	2.8
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.0	0.6	0.6	0.6	0.0	0.6	0.6	0.6	0.6	0.6	0.6
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	0.6	0.0	0.6	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: P170793

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3
2.5°	154.9	158.9	162.9	161.7	156.0	155.5	153.2	154.3	120.2	97.4	81.4
5°	392.9	398.0	403.2	400.3	386.1	382.7	371.3	369.0	234.6	115.0	78.0
7.5°	718.1	720.9	724.9	721.5	700.4	690.7	666.8	643.5	394.6	138.9	72.3
10°	1070.6	1069.4	1071.1	1066.6	1040.4	1021.6	984.6	968.1	559.2	159.4	64.3
12.5°	1481.7	1477.2	1452.1	1464.1	1427.0	1388.9	1328.0	1276.7	714.7	170.8	56.9
15°	1961.8	1948.1	1939.0	1925.3	1879.8	1818.3	1725.4	1668.5	843.9	169.7	49.5
17.5°	2439.0	2416.8	2376.9	2382.0	2329.1	2243.1	2120.6	2023.3	933.3	155.5	43.8
20°	2890.5	2857.5	2807.4	2803.4	2739.6	2626.3	2472.0	2351.3	982.3	132.1	39.9
22.5°	3325.6	3274.3	3207.2	3186.1	3104.1	2943.5	2741.9	2595.0	986.9	110.5	47.8
25°	3668.4	3604.1	3529.5	3493.0	3402.5	3197.5	2946.3	2765.8	950.4	109.3	91.7
27.5°	3859.7	3786.9	3712.3	3662.7	3571.0	3338.7	3054.5	2846.1	887.8	117.3	87.1
30°	3870.0	3788.0	3710.5	3647.9	3556.8	3308.5	3006.7	2789.7	775.0	74.0	33.0
32.5°	3699.7	3612.0	3534.6	3464.0	3374.0	3124.0	2827.9	2620.6	630.4	51.8	23.3
35°	3401.9	3311.4	3237.3	3162.7	3078.5	2843.3	2571.6	2378.6	481.8	41.0	17.7
37.5°	2996.5	2912.7	2847.3	2796.6	2705.5	2518.1	2269.8	2065.4	340.5	29.0	10.8
40°	2542.6	2472.0	2418.5	2374.6	2290.3	2124.1	1873.5	1701.0	206.7	20.5	7.4
42.5°	2085.9	2019.8	1972.6	1931.0	1853.0	1706.1	1499.9	1326.8	99.1	14.2	5.1
45°	1622.4	1563.1	1523.3	1485.7	1415.7	1271.0	1107.6	982.3	64.3	10.3	4.0
47.5°	1108.2	1077.4	1011.9	970.9	899.2	788.7	635.5	497.7	42.7	7.4	2.8
50°	460.7	444.7	401.5	373.6	332.6	276.2	200.4	168.0	26.2	5.1	2.3
52.5°	178.8	174.8	164.0	157.7	147.5	132.7	110.5	98.5	15.9	4.0	2.3
55°	96.2	95.1	89.4	86.0	80.3	72.9	59.8	52.4	10.3	2.8	1.7
57.5°	44.4	43.8	41.0	41.0	37.0	34.2	28.5	25.6	6.3	2.3	1.7
60°	21.1	21.1	19.9	19.9	18.2	17.1	14.2	13.1	4.0	1.7	1.7
62.5°	10.3	10.3	10.3	10.3	9.7	9.1	8.0	7.4	2.8	1.7	1.7
65°	5.7	5.7	5.7	5.7	5.1	5.1	4.6	4.0	2.3	1.7	1.7
67.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.3	2.3	1.7	1.7	1.7
70°	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.7	1.7
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
80°	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
82.5°	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
85°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.1	1.7	1.7
87.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
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: P170793

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	84.3	84.3	84.3	84.3
2.5°	70.0	60.9	56.4	55.2
5°	57.5	45.0	38.7	36.4
7.5°	46.7	32.5	27.3	25.1
10°	37.0	25.6	20.5	18.8
12.5°	30.8	20.5	16.5	15.4
15°	26.2	17.7	14.8	14.2
17.5°	23.9	18.8	17.7	18.2
20°	29.0	30.8	35.9	37.0
22.5°	61.5	106.5	144.6	153.2
25°	128.1	153.8	159.4	165.1
27.5°	71.2	55.2	54.1	56.4
30°	29.0	29.6	30.8	31.9
32.5°	21.6	21.6	21.1	21.6
35°	14.8	13.7	13.1	13.7
37.5°	9.1	8.5	8.0	8.0
40°	6.3	5.7	5.1	5.1
42.5°	4.6	3.4	2.8	2.8
45°	3.4	2.3	1.7	1.1
47.5°	2.8	1.7	0.6	0.6
50°	2.3	1.1	0.6	0.0
52.5°	1.7	1.1	0.6	0.0
55°	1.7	1.1	0.0	0.0
57.5°	1.7	1.1	0.0	0.0
60°	1.7	1.1	0.6	0.0
62.5°	1.7	1.1	0.6	0.6
65°	1.7	1.1	0.6	0.0
67.5°	1.7	1.1	0.6	0.0
70°	1.7	1.1	0.6	0.0
72.5°	2.3	1.1	0.6	0.0
75°	2.3	1.7	0.6	0.0
77.5°	2.3	1.7	0.6	0.0
80°	2.3	1.7	0.6	0.0
82.5°	2.3	1.7	0.6	0.0
85°	2.3	1.7	0.6	0.0
87.5°	2.3	1.7	0.6	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)