

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: P170825

Luminaire Tested: **LDA4A13927D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170825
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: LDA4A13927D010TE 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: 1163.6 lumens
Efficiency: N/A
Efficacy: 52.3 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

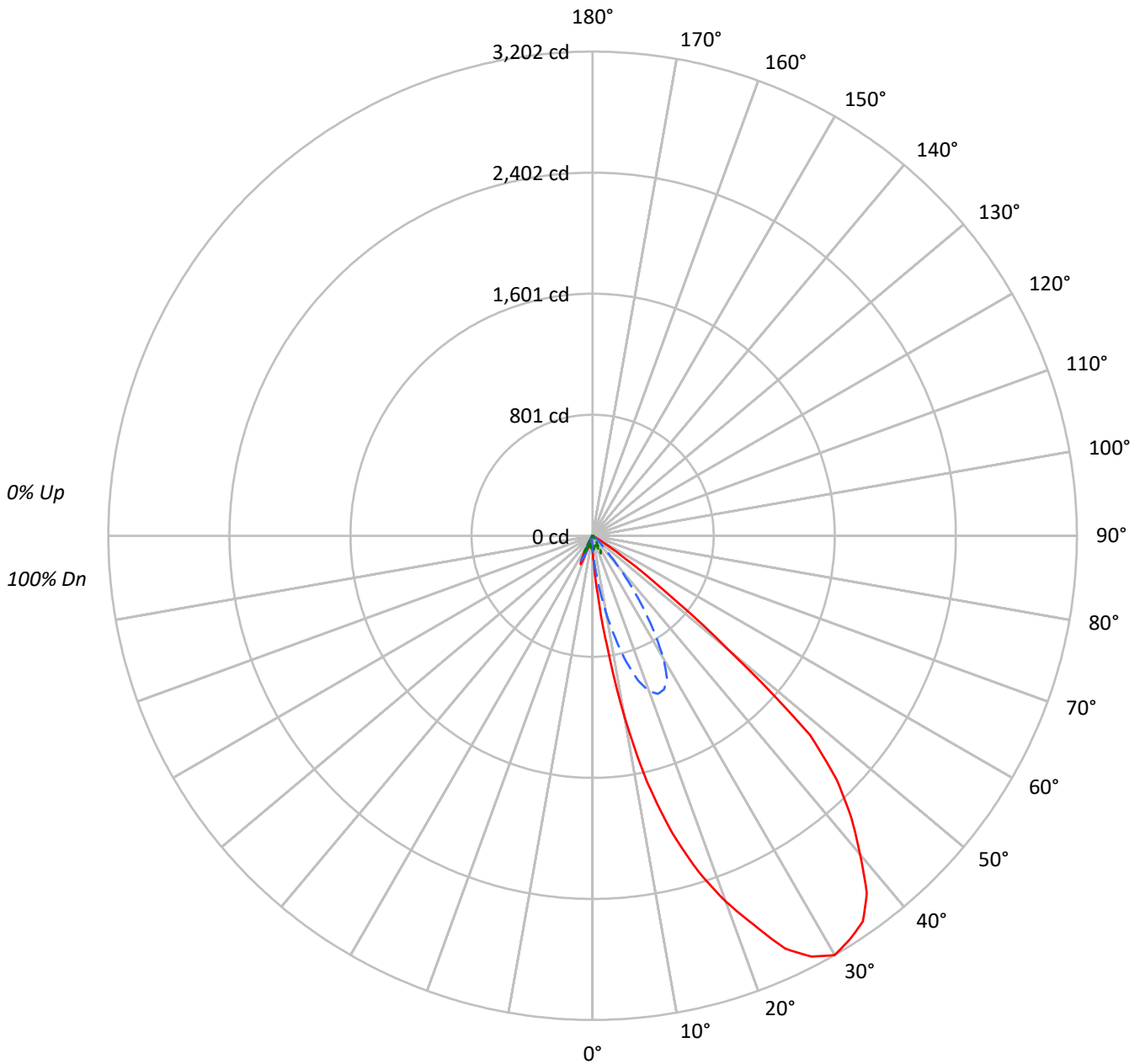
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11804	11804	11804
5°	47521	11144	5213
10°	153204	9344	2993
15°	259901	7419	2324
20°	337802	6655	7022
25°	409924	17516	24879
30°	455995	6167	6566
35°	469048	3689	3087
40°	442891	1562	1095
45°	398048	890	297
50°	224014	537	0
55°	55590	366	0
60°	8560	419	0
65°	1985	496	0
70°	397	613	0
75°	0	810	0
80°	0	1634	0
85°	0	3255	849



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.2	1.7
10°-20°	142.8	12.3
20°-30°	329.9	28.3
30°-40°	370.0	31.8
40°-50°	258.2	22.2
50°-60°	38.5	3.3
60°-70°	2.5	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°	491.9	42.3
0°-40°	861.9	74.1
0°-60°	1158.6	99.6
0°-90°	1163.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1163.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	96	96	96	96	96	
5°	384	224	90	52	42	64
15°	2035	866	58	22	18	582
25°	3012	1120	129	179	183	1377
35°	3115	582	24	20	20	1916
45°	2282	88	5	3	2	1674
55°	258	11	2	1	0	340
65°	7	2	2	1	0	10
75°	0	1	2	2	0	0
85°	0	1	2	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°	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7
2.5°	174.3	172.6	168.0	166.9	170.8	167.4	169.1	172.6	169.1	165.1	169.1
5°	383.8	393.5	383.8	382.1	389.0	382.7	385.5	391.8	383.3	375.3	381.0
7.5°	740.9	747.2	719.8	729.5	727.2	728.9	730.6	730.6	725.5	711.3	719.3
10°	1223.2	1227.8	1191.3	1203.9	1187.4	1203.9	1201.0	1188.5	1191.3	1172.0	1182.2
12.5°	1670.8	1685.7	1649.2	1661.2	1641.2	1660.0	1652.6	1649.2	1620.2	1620.2	1631.0
15°	2035.3	2068.9	2035.9	2048.4	2025.6	2051.8	2031.3	2040.4	2014.2	1981.8	2010.3
17.5°	2330.3	2363.3	2332.6	2348.0	2326.9	2347.4	2323.5	2342.8	2309.2	2285.9	2305.2
20°	2573.5	2598.0	2561.5	2583.2	2558.1	2578.6	2552.4	2578.0	2538.7	2521.6	2533.0
22.5°	2785.3	2795.0	2776.2	2812.7	2763.7	2785.3	2754.0	2780.2	2733.5	2711.9	2714.7
25°	3012.0	3033.6	2997.7	3011.4	2977.2	2992.0	2956.7	2981.2	2923.1	2892.4	2886.1
27.5°	3137.8	3168.6	3136.7	3152.1	3117.3	3129.8	3094.5	3129.8	3070.6	3040.4	3033.6
30°	3201.6	3216.4	3195.9	3206.2	3166.9	3173.1	3136.7	3174.8	3115.6	3088.8	3085.4
32.5°	3164.6	3194.2	3167.4	3180.5	3144.1	3150.4	3115.0	3156.0	3096.8	3072.3	3060.4
35°	3115.0	3145.2	3120.2	3133.8	3100.2	3104.8	3067.2	3103.1	3034.7	3004.6	2978.9
37.5°	2977.8	3006.3	2985.2	2989.8	2957.3	2953.9	2913.4	2943.6	2877.0	2851.4	2834.3
40°	2750.6	2776.2	2759.1	2768.8	2736.3	2728.9	2701.6	2729.5	2677.7	2658.9	2635.0
42.5°	2533.0	2554.1	2538.2	2553.5	2517.1	2507.4	2482.9	2518.2	2459.6	2444.2	2427.1
45°	2281.9	2295.0	2282.5	2295.6	2260.8	2245.5	2223.2	2253.4	2195.9	2181.7	2144.7
47.5°	1949.9	1935.7	1933.4	1945.9	1902.6	1870.7	1850.2	1889.0	1805.8	1777.9	1735.2
50°	1167.4	1191.3	1201.6	1193.1	1163.4	1119.6	1086.6	1133.8	1089.4	1021.1	952.7
52.5°	601.4	574.6	580.3	583.1	547.8	534.7	523.9	534.7	500.0	482.3	439.1
55°	258.5	246.0	250.6	252.3	245.4	229.5	223.8	230.6	214.7	207.9	190.2
57.5°	95.7	95.7	92.8	94.0	91.7	86.0	84.9	87.7	82.6	80.9	74.0
60°	34.7	34.7	34.7	34.7	31.9	31.3	31.3	32.5	30.8	30.2	27.9
62.5°	14.8	15.4	14.2	14.8	14.2	13.7	14.2	13.7	13.7	13.1	13.1
65°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.3	6.3
67.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.8	2.8	2.8
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	0.0	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°	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7
2.5°	164.0	163.4	165.7	163.4	159.5	157.2	160.0	154.3	132.1	109.9	93.4
5°	370.7	367.9	363.9	365.0	355.4	347.4	347.4	332.0	224.4	127.6	90.0
7.5°	702.7	695.9	666.9	687.9	667.4	651.5	640.7	609.3	362.8	146.4	83.1
10°	1160.6	1148.6	1128.1	1132.1	1098.5	1071.8	1039.3	986.9	521.6	162.9	74.6
12.5°	1612.2	1600.2	1545.6	1576.9	1531.9	1505.7	1451.0	1389.5	693.1	170.8	66.6
15°	1995.5	1985.2	1925.4	1955.0	1899.8	1875.3	1804.7	1736.3	866.2	168.0	58.1
17.5°	2293.3	2291.6	2222.7	2252.3	2191.4	2171.4	2088.8	2021.6	1006.3	155.5	52.4
20°	2522.8	2518.8	2449.3	2478.9	2412.3	2392.9	2288.2	2217.5	1095.1	138.4	50.7
22.5°	2703.9	2695.9	2621.3	2646.9	2572.3	2547.3	2431.7	2358.2	1131.6	127.6	62.6
25°	2866.8	2852.5	2767.7	2787.6	2705.6	2710.7	2537.0	2456.2	1119.6	143.5	128.7
27.5°	3010.3	2984.6	2899.2	2904.9	2808.7	2758.6	2609.3	2519.9	1064.9	160.0	119.6
30°	3063.8	3038.7	2948.2	2951.6	2851.4	2780.8	2621.3	2521.6	933.9	100.2	43.3
32.5°	3034.2	3006.8	2912.3	2913.4	2810.4	2738.6	2579.7	2469.8	759.7	66.1	33.0
35°	2948.2	2919.7	2825.7	2830.3	2730.6	2659.5	2504.0	2386.7	582.0	52.4	24.5
37.5°	2803.0	2783.0	2693.6	2701.6	2616.8	2541.0	2383.3	2256.3	410.6	37.6	15.4
40°	2616.2	2600.8	2514.2	2526.8	2434.5	2364.5	2195.3	2057.5	255.7	25.6	9.7
42.5°	2397.5	2381.0	2295.6	2305.2	2226.7	2126.4	1953.9	1797.8	133.8	18.2	6.8
45°	2124.7	2105.4	2018.8	2023.9	1931.1	1813.8	1635.0	1497.2	87.7	12.5	5.1
47.5°	1695.9	1661.2	1548.4	1543.9	1468.1	1276.2	1022.2	827.5	58.1	8.5	3.4
50°	932.2	896.4	797.3	786.4	702.2	576.3	426.0	331.4	33.6	5.7	2.8
52.5°	424.3	405.5	359.3	351.9	316.1	262.0	201.6	165.7	19.4	4.0	2.3
55°	183.9	177.1	157.7	156.6	140.1	121.3	96.8	82.0	11.4	2.8	1.7
57.5°	72.3	70.0	66.1	63.2	56.9	50.7	42.1	35.3	7.4	2.3	1.7
60°	27.3	26.8	24.5	25.1	22.8	21.6	18.8	15.9	4.6	1.7	1.7
62.5°	12.5	12.5	12.0	12.0	11.4	10.3	9.1	8.5	2.8	1.7	1.7
65°	6.3	6.3	5.7	5.7	5.7	5.1	4.6	4.6	1.7	1.7	1.7
67.5°	2.8	2.8	2.8	2.8	2.8	2.3	2.3	2.3	1.1	1.7	1.7
70°	1.1	1.1	1.1	1.1	1.1	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°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.1	1.7	1.7
77.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.1	1.7	2.3
80°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.1	1.7	2.3
82.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.1	1.7	2.3
85°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.1	1.7	2.3
87.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.1	1.7	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



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CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	95.7	95.7	95.7	95.7
2.5°	80.3	71.2	63.2	61.5
5°	66.1	52.4	43.8	42.1
7.5°	53.5	38.2	31.9	30.8
10°	43.8	30.8	25.1	23.9
12.5°	36.4	25.1	19.9	18.8
15°	31.3	22.2	18.2	18.2
17.5°	30.2	24.5	23.3	23.9
20°	39.3	44.4	53.0	53.5
22.5°	91.1	148.1	195.9	205.0
25°	164.0	179.4	174.8	182.8
27.5°	86.6	67.8	68.9	70.6
30°	37.6	41.6	43.8	46.1
32.5°	31.3	32.5	33.0	34.7
35°	20.5	20.5	19.9	20.5
37.5°	12.5	12.0	11.4	11.4
40°	8.0	7.4	6.8	6.8
42.5°	5.7	4.6	4.0	4.0
45°	4.0	2.8	2.3	1.7
47.5°	2.8	1.7	1.1	0.6
50°	2.3	1.7	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	0.0	0.0
62.5°	1.7	1.1	0.0	0.0
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°	1.7	1.1	0.6	0.0
75°	1.7	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	0.6
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)