

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: P170815

Luminaire Tested: **LDA4A09835D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170815
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: LDA4A09835D010TE 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 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1111.1 lumens
Efficiency: N/A
Efficacy: 80.3 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

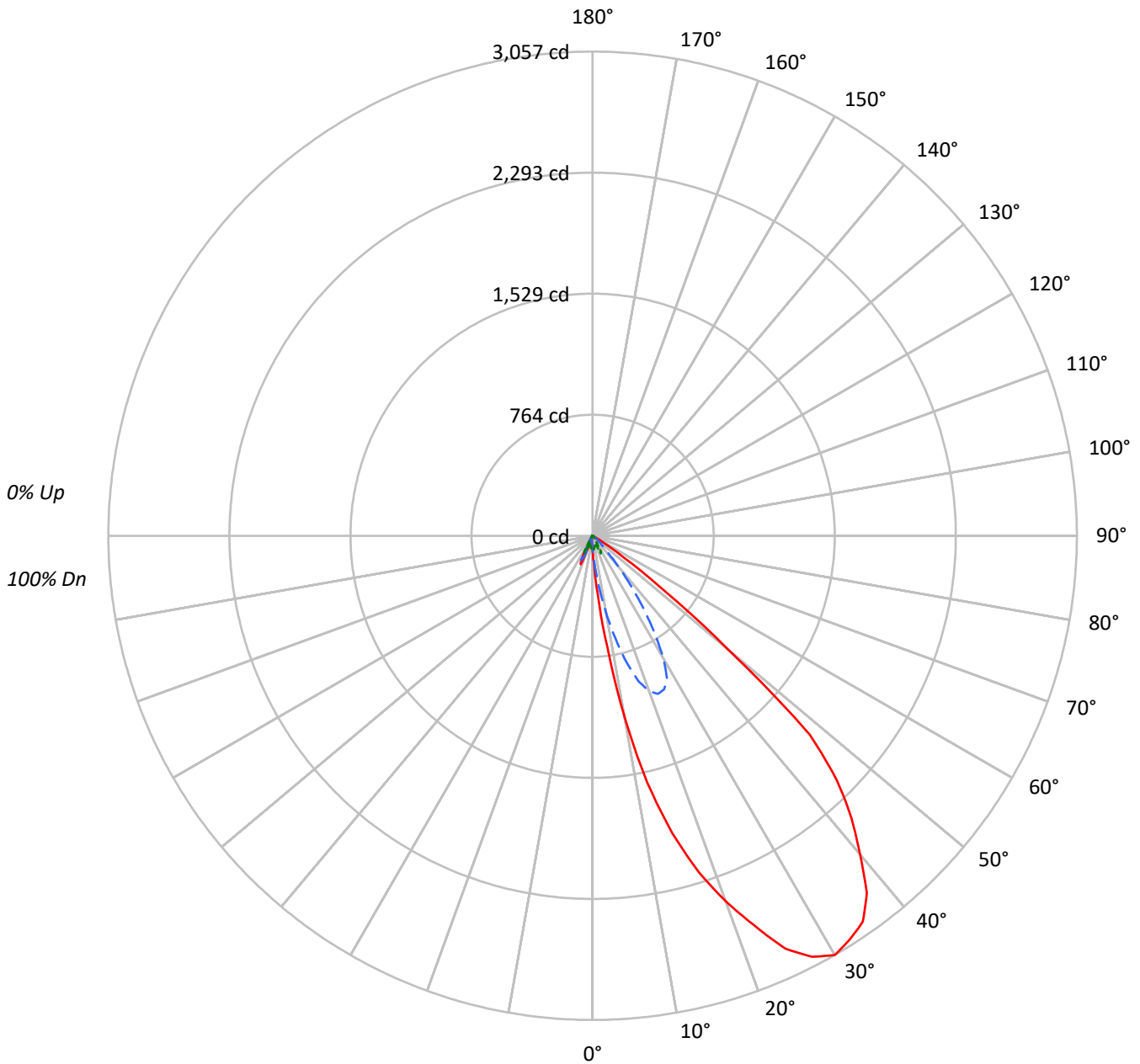
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	84	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°	11274	11274	11274
5°	45379	10636	4977
10°	146303	8918	2856
15°	248179	7087	2222
20°	322562	6353	6707
25°	391428	16726	23763
30°	435429	5882	6267
35°	447892	3524	2951
40°	422909	1481	1047
45°	380098	855	279
50°	213921	518	0
55°	53095	344	0
60°	8190	395	0
65°	1897	467	0
70°	397	577	0
75°	0	763	0
80°	0	1563	0
85°	0	3114	708



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	18.4	1.7
10°-20°	136.4	12.3
20°-30°	315.0	28.3
30°-40°	353.3	31.8
40°-50°	246.5	22.2
50°-60°	36.8	3.3
60°-70°	2.4	0.2
70°-80°	1.2	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°	469.7	42.3
0°-40°	823.0	74.1
0°-60°	1106.4	99.6
0°-90°	1111.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1111.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	91	91	91	91	91	
5°	366	214	86	50	40	61
15°	1944	827	56	21	17	555
25°	2876	1069	123	171	175	1315
35°	2974	556	23	20	20	1830
45°	2179	84	5	3	2	1599
55°	247	11	2	1	0	324
65°	6	2	2	1	0	10
75°	0	1	2	2	0	0
85°	0	1	2	2	0	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°	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
2.5°	166.4	164.8	160.4	159.3	163.1	159.9	161.5	164.8	161.5	157.7	161.5
5°	366.5	375.8	366.5	364.9	371.4	365.4	368.1	374.1	366.0	358.4	363.8
7.5°	707.5	713.4	687.3	696.6	694.4	696.0	697.7	697.7	692.8	679.2	686.8
10°	1168.1	1172.4	1137.6	1149.6	1133.8	1149.6	1146.8	1134.9	1137.6	1119.1	1128.9
12.5°	1595.5	1609.6	1574.8	1586.2	1567.2	1585.1	1578.1	1574.8	1547.1	1547.1	1557.4
15°	1943.5	1975.6	1944.0	1956.0	1934.2	1959.3	1939.7	1948.4	1923.4	1892.4	1919.6
17.5°	2225.2	2256.7	2227.3	2242.0	2221.9	2241.5	2218.6	2237.1	2205.1	2182.8	2201.2
20°	2457.4	2480.8	2446.0	2466.6	2442.7	2462.3	2437.2	2461.7	2424.2	2407.9	2418.8
22.5°	2659.7	2668.9	2651.0	2685.8	2639.0	2659.7	2629.7	2654.8	2610.2	2589.5	2592.2
25°	2876.1	2896.7	2862.5	2875.5	2842.9	2857.1	2823.3	2846.7	2791.3	2761.9	2755.9
27.5°	2996.3	3025.6	2995.2	3009.9	2976.7	2988.6	2954.9	2988.6	2932.1	2903.3	2896.7
30°	3057.2	3071.3	3051.7	3061.5	3024.0	3030.0	2995.2	3031.6	2975.1	2949.5	2946.2
32.5°	3021.8	3050.1	3024.5	3037.0	3002.2	3008.2	2974.5	3013.7	2957.1	2933.7	2922.3
35°	2974.5	3003.3	2979.4	2992.5	2960.4	2964.7	2928.8	2963.1	2897.8	2869.0	2844.5
37.5°	2843.5	2870.6	2850.5	2854.9	2823.9	2820.6	2782.0	2810.8	2747.2	2722.7	2706.4
40°	2626.5	2651.0	2634.6	2643.9	2612.9	2605.8	2579.7	2606.4	2556.9	2538.9	2516.1
42.5°	2418.8	2438.9	2423.7	2438.3	2403.5	2394.3	2370.9	2404.6	2348.6	2333.9	2317.6
45°	2179.0	2191.5	2179.5	2192.0	2158.8	2144.1	2122.9	2151.8	2096.8	2083.2	2047.9
47.5°	1861.9	1848.3	1846.2	1858.1	1816.8	1786.3	1766.8	1803.7	1724.3	1697.7	1656.9
50°	1114.8	1137.6	1147.4	1139.2	1111.0	1069.1	1037.5	1082.7	1040.3	975.0	909.8
52.5°	574.2	548.7	554.1	556.8	523.1	510.6	500.3	510.6	477.4	460.6	419.3
55°	246.9	234.9	239.3	240.9	234.4	219.1	213.7	220.2	205.0	198.5	181.6
57.5°	91.4	91.4	88.6	89.7	87.5	82.1	81.0	83.7	78.8	77.2	70.7
60°	33.2	33.2	33.2	33.2	30.5	29.9	29.9	31.0	29.4	28.8	26.6
62.5°	14.1	14.7	13.6	14.1	13.6	13.1	13.6	13.1	13.1	12.5	12.5
65°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0
67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7
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°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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°	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
2.5°	156.6	156.1	158.2	156.1	152.3	150.1	152.8	147.4	126.2	105.0	89.2
5°	354.0	351.3	347.5	348.6	339.3	331.7	331.7	317.0	214.3	121.8	85.9
7.5°	671.0	664.5	636.8	656.9	637.3	622.1	611.8	581.9	346.4	139.8	79.4
10°	1108.2	1096.8	1077.2	1081.0	1049.0	1023.4	992.4	942.4	498.1	155.5	71.2
12.5°	1539.5	1528.0	1475.8	1505.7	1462.8	1437.8	1385.6	1326.8	661.8	163.1	63.6
15°	1905.4	1895.6	1838.5	1866.8	1814.1	1790.7	1723.3	1658.0	827.1	160.4	55.5
17.5°	2189.8	2188.2	2122.4	2150.7	2092.5	2073.5	1994.6	1930.4	960.9	148.5	50.0
20°	2409.0	2405.2	2338.8	2367.1	2303.5	2285.0	2184.9	2117.5	1045.7	132.1	48.4
22.5°	2581.9	2574.3	2503.0	2527.5	2456.3	2432.4	2322.0	2251.8	1080.5	121.8	59.8
25°	2737.4	2723.8	2642.8	2661.8	2583.5	2588.4	2422.6	2345.3	1069.1	137.0	122.9
27.5°	2874.5	2850.0	2768.4	2773.9	2682.0	2634.1	2491.6	2406.3	1016.9	152.8	114.2
30°	2925.6	2901.6	2815.2	2818.4	2722.7	2655.3	2503.0	2407.9	891.8	95.7	41.3
32.5°	2897.3	2871.2	2780.9	2782.0	2683.6	2615.1	2463.4	2358.4	725.4	63.1	31.5
35°	2815.2	2788.0	2698.3	2702.6	2607.5	2539.5	2391.0	2279.0	555.7	50.0	23.4
37.5°	2676.5	2657.5	2572.1	2579.7	2498.7	2426.4	2275.7	2154.5	392.1	35.9	14.7
40°	2498.2	2483.5	2400.8	2412.8	2324.7	2257.8	2096.3	1964.7	244.2	24.5	9.2
42.5°	2289.3	2273.6	2192.0	2201.2	2126.2	2030.5	1865.7	1716.7	127.8	17.4	6.5
45°	2028.9	2010.4	1927.7	1932.6	1844.0	1732.0	1561.2	1429.6	83.7	12.0	4.9
47.5°	1619.4	1586.2	1478.6	1474.2	1401.9	1218.6	976.1	790.1	55.5	8.2	3.3
50°	890.2	855.9	761.3	751.0	670.5	550.3	406.8	316.5	32.1	5.4	2.7
52.5°	405.1	387.2	343.1	336.1	301.8	250.1	192.5	158.2	18.5	3.8	2.2
55°	175.6	169.1	150.6	149.5	133.8	115.8	92.4	78.3	10.9	2.7	1.6
57.5°	69.1	66.9	63.1	60.4	54.4	48.4	40.2	33.7	7.1	2.2	1.6
60°	26.1	25.6	23.4	23.9	21.8	20.7	17.9	15.2	4.4	1.6	1.6
62.5°	12.0	12.0	11.4	11.4	10.9	9.8	8.7	8.2	2.7	1.6	1.6
65°	6.0	6.0	5.4	5.4	5.4	4.9	4.4	4.4	1.6	1.6	1.6
67.5°	2.7	2.7	2.7	2.7	2.7	2.2	2.2	2.2	1.1	1.6	1.6
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.6	1.6
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1	1.6	1.6
75°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.1	1.6	1.6
77.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.6	2.2
80°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.6	2.2
82.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.1	1.6	2.2
85°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.1	1.6	2.2
87.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.1	1.6	2.2
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°	91.4	91.4	91.4	91.4
2.5°	76.7	68.0	60.4	58.7
5°	63.1	50.0	41.9	40.2
7.5°	51.1	36.4	30.5	29.4
10°	41.9	29.4	23.9	22.8
12.5°	34.8	23.9	19.0	17.9
15°	29.9	21.2	17.4	17.4
17.5°	28.8	23.4	22.3	22.8
20°	37.5	42.4	50.6	51.1
22.5°	87.0	141.4	187.1	195.8
25°	156.6	171.3	166.9	174.6
27.5°	82.7	64.7	65.8	67.4
30°	35.9	39.7	41.9	44.0
32.5°	29.9	31.0	31.5	33.2
35°	19.6	19.6	19.0	19.6
37.5°	12.0	11.4	10.9	10.9
40°	7.6	7.1	6.5	6.5
42.5°	5.4	4.4	3.8	3.8
45°	3.8	2.7	2.2	1.6
47.5°	2.7	1.6	1.1	0.5
50°	2.2	1.6	0.5	0.0
52.5°	1.6	1.1	0.5	0.0
55°	1.6	1.1	0.0	0.0
57.5°	1.6	1.1	0.0	0.0
60°	1.6	1.1	0.0	0.0
62.5°	1.6	1.1	0.0	0.0
65°	1.6	1.1	0.5	0.0
67.5°	1.6	1.1	0.5	0.0
70°	1.6	1.1	0.5	0.0
72.5°	1.6	1.1	0.5	0.0
75°	1.6	1.6	0.5	0.0
77.5°	2.2	1.6	0.5	0.0
80°	2.2	1.6	0.5	0.0
82.5°	2.2	1.6	0.5	0.0
85°	2.2	1.6	0.5	0.5
87.5°	2.2	1.6	0.5	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)