

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: P170900

Luminaire Tested: **LDA4A28940D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170900  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26103)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A28940D010TE LAR35FL 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2205.1 lumens  
Efficiency: N/A  
Efficacy: 49.6 lumens/watt  
Spacing Criteria (0/90/45): 2.19 / 1.11 / 1.55  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

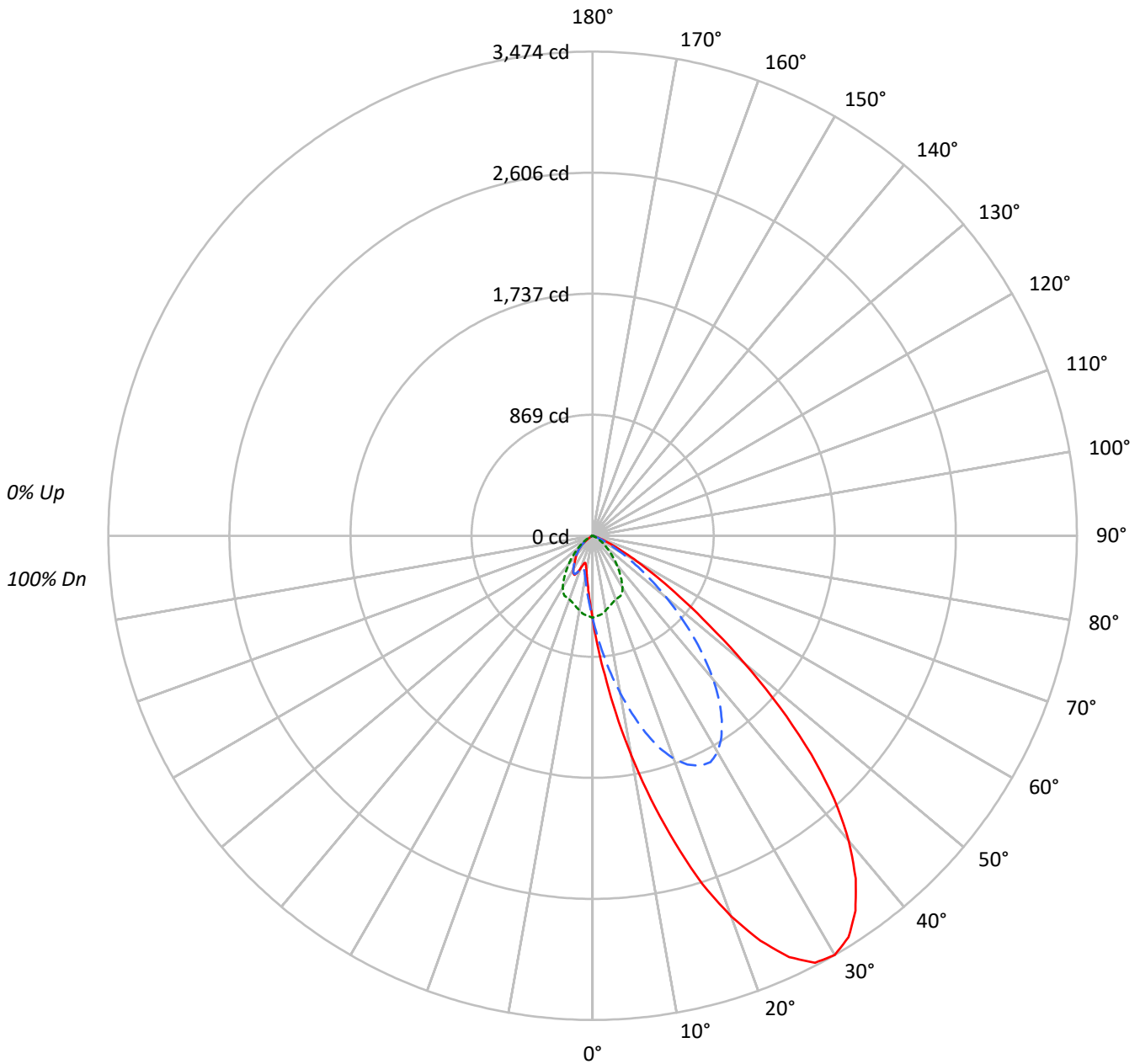
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	92	88	102	96	91	87	93	89	85	89	86	83	87	84	81	80																			
3	97	88	82	76	94	87	81	76	84	79	74	81	77	73	79	75	72	70																			
4	90	80	72	67	87	78	72	66	76	70	66	74	69	65	72	67	64	62																			
5	83	72	64	59	81	71	64	59	69	63	58	67	62	57	65	61	57	55																			
6	77	65	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49																			
7	72	60	52	46	70	59	52	46	57	51	46	56	50	46	55	50	45	44																			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	50	45	41	39																			
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35																			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	72626	72626	72626
5°	123953	70848	46270
10°	200335	68047	31600
15°	291059	65330	25705
20°	381184	63898	32041
25°	453965	64741	42231
30°	494721	61073	39281
35°	494797	52115	33217
40°	460490	43072	28870
45°	386779	33666	24770
50°	271488	25138	18249
55°	163392	18085	10086
60°	90141	11570	3750
65°	43458	5633	409
70°	17419	1984	505
75°	5242	1334	0
80°	1989	1989	0
85°	5802	3963	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	63.2	2.9
10°-20°	250.3	11.4
20°-30°	507.6	23.0
30°-40°	616.7	28.0
40°-50°	486.6	22.1
50°-60°	220.4	10.0
60°-70°	52.0	2.4
70°-80°	5.7	0.3
80°-90°	2.5	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°	821.0	37.2
0°-40°	1437.8	65.2
0°-60°	2144.9	97.3
0°-90°	2205.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2205.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	589	589	589	589	589	
5°	1001	842	572	419	374	114
15°	2279	1460	512	243	201	663
25°	3336	1822	476	303	310	1526
35°	3286	1615	346	225	221	2029
45°	2217	1019	193	141	142	1678
55°	760	416	84	56	47	717
65°	149	88	19	4	1	168
75°	11	6	3	1	0	17
85°	4	4	3	1	0	4
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8
2.5°	781.8	762.5	762.5	748.7	759.8	737.7	741.9	740.5	754.3	750.1	737.7
5°	1001.1	984.5	983.2	965.2	979.0	950.1	951.5	947.3	962.5	947.3	929.4
7.5°	1283.8	1254.8	1253.4	1232.7	1246.5	1209.3	1207.9	1199.7	1213.4	1184.5	1158.3
10°	1599.5	1558.2	1555.4	1530.6	1545.8	1497.5	1493.4	1479.6	1489.2	1443.7	1406.5
12.5°	1937.4	1891.9	1886.4	1860.2	1873.9	1816.0	1805.0	1787.1	1791.2	1725.0	1675.4
15°	2279.3	2240.7	2235.2	2207.6	2221.4	2149.7	2131.8	2109.7	2105.6	2017.4	1953.9
17.5°	2619.9	2541.3	2566.2	2538.6	2551.0	2466.9	2443.4	2415.9	2400.7	2291.8	2211.8
20°	2904.0	2836.4	2854.4	2829.5	2840.6	2744.0	2715.1	2680.6	2654.4	2523.4	2431.0
22.5°	3143.9	3073.6	3063.9	3063.9	3070.8	2966.0	2927.4	2888.8	2851.6	2695.8	2602.0
25°	3335.6	3258.4	3247.3	3244.6	3246.0	3135.6	3090.1	3047.4	2999.1	2828.2	2726.1
27.5°	3454.2	3372.8	3360.4	3359.0	3352.1	3239.1	3188.0	3141.2	3083.2	2908.1	2793.7
30°	3473.5	3399.0	3385.2	3385.2	3367.3	3257.0	3200.5	3150.8	3086.0	2909.5	2786.8
32.5°	3415.6	3339.7	3324.6	3325.9	3297.0	3193.6	3132.9	3081.9	3014.3	2840.6	2713.7
35°	3286.0	3212.9	3199.1	3200.5	3164.6	3068.1	3004.7	2955.0	2883.3	2717.8	2588.2
37.5°	3099.8	3030.9	3017.1	3019.8	2975.7	2888.8	2824.0	2777.1	2704.0	2551.0	2424.1
40°	2859.9	2793.7	2781.3	2782.6	2734.4	2658.5	2595.1	2551.0	2477.9	2341.4	2220.1
42.5°	2568.9	2505.5	2495.8	2494.5	2447.6	2378.6	2316.6	2279.3	2204.9	2095.9	1980.1
45°	2217.3	2163.5	2120.8	2149.7	2101.5	2046.3	1988.4	1958.1	1887.7	1810.5	1707.1
47.5°	1821.5	1774.7	1731.9	1759.5	1715.4	1674.0	1623.0	1603.7	1540.2	1500.3	1413.4
50°	1414.8	1374.8	1336.2	1359.6	1325.1	1297.6	1257.6	1247.9	1195.5	1190.0	1122.4
52.5°	1050.7	1021.8	991.4	1009.4	983.2	965.2	934.9	932.1	892.2	905.9	859.1
55°	759.8	739.1	715.7	729.4	710.1	699.1	677.0	678.4	648.1	668.8	635.7
57.5°	537.8	521.2	504.7	513.0	500.5	492.3	477.1	479.9	473.0	479.9	456.4
60°	365.4	355.8	343.3	350.2	339.2	335.1	325.4	326.8	310.3	332.3	315.8
62.5°	239.9	233.0	233.0	228.9	220.6	217.9	212.4	212.4	202.7	219.2	208.2
65°	148.9	146.2	144.8	142.0	136.5	135.1	131.0	131.0	124.1	136.5	128.2
67.5°	88.3	86.9	85.5	84.1	80.0	78.6	77.2	75.8	71.7	80.0	74.5
70°	48.3	48.3	46.9	45.5	42.7	42.7	41.4	41.4	38.6	42.7	38.6
72.5°	23.4	23.4	22.1	22.1	20.7	20.7	19.3	19.3	17.9	20.7	17.9
75°	11.0	11.0	9.7	9.7	9.7	9.7	8.3	8.3	8.3	9.7	8.3
77.5°	5.5	5.5	5.5	5.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	1.4	1.4	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	4.1	4.1	4.1	4.1	5.5	4.1	5.5	5.5	5.5	5.5	5.5
87.5°	5.5	5.5	5.5	5.5	5.5	6.9	6.9	6.9	5.5	6.9	5.5
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):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8	588.8
2.5°	741.9	730.8	735.0	722.6	712.9	708.8	708.8	707.4	642.6	577.8	532.3
5°	928.0	907.3	910.1	888.0	878.4	864.6	860.4	842.5	701.9	572.2	484.0
7.5°	1148.6	1118.3	1100.4	1079.7	1067.3	1042.5	1030.0	994.2	757.0	561.2	437.1
10°	1385.8	1343.1	1314.1	1281.0	1268.6	1230.0	1206.5	1145.9	805.3	543.3	393.0
12.5°	1642.3	1584.4	1532.0	1496.1	1481.0	1406.5	1391.3	1304.5	849.4	526.7	357.1
15°	1905.7	1832.6	1766.4	1715.4	1696.1	1623.0	1576.1	1460.3	888.0	511.6	329.6
17.5°	2140.1	2061.5	1981.5	1915.3	1887.7	1784.3	1740.2	1596.8	917.0	496.4	314.4
20°	2348.3	2253.1	2169.0	2078.0	2046.3	1929.1	1857.4	1703.0	933.5	486.8	315.8
22.5°	2506.9	2397.9	2301.4	2199.4	2159.4	2031.1	1949.8	1776.0	939.0	479.9	325.4
25°	2622.7	2501.3	2393.8	2282.1	2235.2	2098.7	2009.1	1821.5	937.7	475.7	329.6
27.5°	2682.0	2552.4	2436.5	2316.6	2265.6	2124.9	2028.4	1831.2	918.4	459.2	329.6
30°	2673.7	2537.2	2415.9	2291.8	2236.6	2097.3	1998.0	1794.0	877.0	428.8	306.1
32.5°	2600.6	2461.4	2337.3	2213.2	2158.0	2021.5	1922.2	1718.1	817.7	388.9	274.4
35°	2479.3	2341.4	2218.7	2097.3	2042.2	1909.8	1813.3	1614.7	750.1	346.1	245.4
37.5°	2320.7	2187.0	2068.4	1958.1	1894.6	1770.5	1676.8	1492.0	675.7	307.5	220.6
40°	2123.5	1996.7	1885.0	1782.9	1715.4	1600.9	1515.4	1347.2	597.1	267.5	197.2
42.5°	1896.0	1777.4	1686.4	1584.4	1508.5	1407.9	1333.4	1187.2	517.1	231.7	172.4
45°	1638.1	1533.4	1454.8	1365.1	1286.5	1201.0	1137.6	1019.0	435.7	193.0	148.9
47.5°	1361.0	1274.1	1213.4	1139.0	1061.8	992.8	943.2	848.0	358.5	161.3	126.9
50°	1088.0	1019.0	974.9	918.4	848.0	795.6	757.0	693.6	284.1	131.0	106.2
52.5°	837.0	787.4	757.0	715.7	653.6	617.8	590.2	546.0	216.5	106.2	85.5
55°	624.6	588.8	569.5	540.5	486.8	461.9	444.0	416.4	161.3	84.1	66.2
57.5°	450.9	427.5	415.1	395.7	351.6	336.5	324.0	307.5	117.2	64.8	48.3
60°	314.4	297.8	291.0	278.5	242.7	233.0	216.5	216.5	82.7	46.9	33.1
62.5°	208.2	197.2	194.4	184.8	157.2	151.7	147.5	144.8	56.5	31.7	19.3
65°	129.6	121.3	120.0	114.4	95.1	92.4	88.3	88.3	35.9	19.3	9.7
67.5°	74.5	70.3	68.9	66.2	52.4	51.0	48.3	51.0	20.7	9.7	4.1
70°	40.0	35.9	35.9	34.5	26.2	24.8	23.4	24.8	11.0	5.5	2.8
72.5°	19.3	16.5	16.5	15.2	11.0	11.0	9.7	12.4	5.5	2.8	2.8
75°	8.3	8.3	6.9	6.9	4.1	4.1	4.1	5.5	2.8	2.8	2.8
77.5°	4.1	4.1	4.1	4.1	1.4	1.4	1.4	2.8	2.8	2.8	2.8
80°	2.8	2.8	2.8	2.8	0.0	0.0	0.0	2.8	2.8	2.8	2.8
82.5°	2.8	1.4	1.4	1.4	0.0	0.0	0.0	1.4	2.8	2.8	2.8
85°	4.1	4.1	4.1	4.1	2.8	2.8	2.8	4.1	2.8	2.8	2.8
87.5°	5.5	5.5	5.5	5.5	4.1	4.1	4.1	6.9	4.1	2.8	2.8
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):**

	135°	157.5°	180°
0°	588.8	588.8	588.8
2.5°	493.7	464.7	467.5
5°	419.2	377.8	373.7
7.5°	354.4	310.3	304.7
10°	303.4	259.2	252.3
12.5°	266.1	226.1	219.2
15°	242.7	206.8	201.3
17.5°	238.6	211.0	208.2
20°	255.1	241.3	244.1
22.5°	284.1	279.9	286.8
25°	303.4	302.0	310.3
27.5°	299.2	296.5	302.0
30°	277.2	273.0	275.8
32.5°	251.0	244.1	246.8
35°	224.8	219.2	220.6
37.5°	202.7	198.6	198.6
40°	183.4	179.3	179.3
42.5°	162.7	160.0	161.3
45°	140.6	139.3	142.0
47.5°	118.6	117.2	120.0
50°	97.9	95.1	95.1
52.5°	77.2	73.1	70.3
55°	56.5	49.6	46.9
57.5°	38.6	31.7	29.0
60°	22.1	17.9	15.2
62.5°	11.0	6.9	5.5
65°	4.1	2.8	1.4
67.5°	2.8	1.4	1.4
70°	2.8	1.4	1.4
72.5°	1.4	1.4	1.4
75°	1.4	1.4	0.0
77.5°	1.4	1.4	1.4
80°	1.4	1.4	0.0
82.5°	1.4	1.4	0.0
85°	1.4	1.4	0.0
87.5°	1.4	1.4	0.0
90°	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





— 0°-180°    - - 45°-225°    - - - - 90°-270°











(END OF REPORT)