

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: P170894

Luminaire Tested: **LDA4A28830D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170894  
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: LDA4A28830D010TE LAR35FL 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2383.1 lumens  
Efficiency: N/A  
Efficacy: 53.6 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

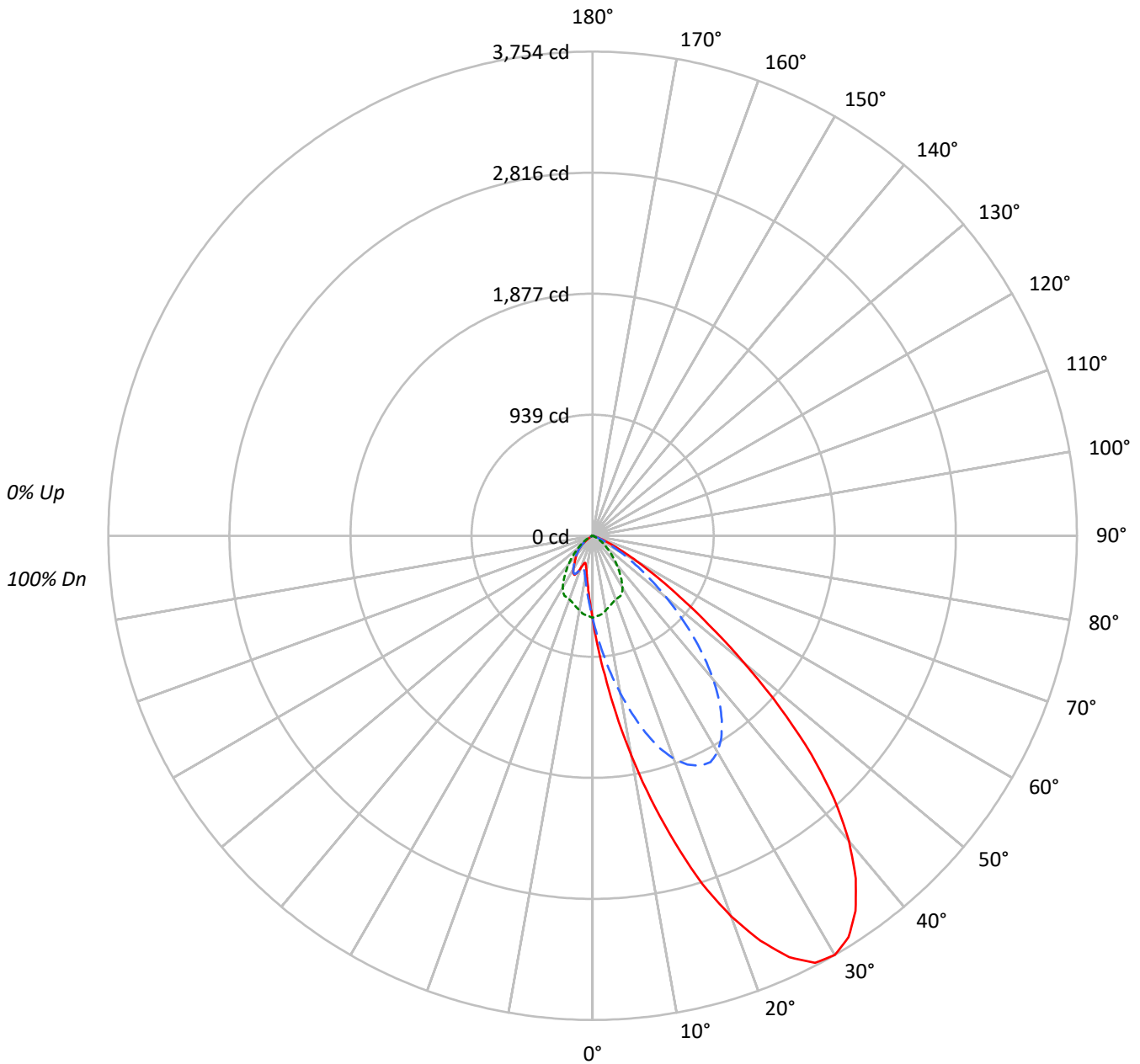
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170894

CATALOG NUMBER: LDA4A28830D010TE LAR35FL 4LLWW1

### 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°	78485	78485	78485
5°	133957	76568	50010
10°	216517	73533	34155
15°	314556	70604	27787
20°	411952	69044	34627
25°	490616	69967	45633
30°	534658	66015	42443
35°	534730	56316	35898
40°	497653	46550	31189
45°	418004	36388	26776
50°	293402	27172	19726
55°	176575	19548	10903
60°	97418	12507	4046
65°	46960	6100	438
70°	18825	2164	541
75°	5671	1430	0
80°	2131	2131	0
85°	6369	4246	0



TEST NUMBER: P170894

CATALOG NUMBER: LDA4A28830D010TE LAR35FL 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.3	2.9
10°-20°	270.5	11.4
20°-30°	548.5	23.0
30°-40°	666.5	28.0
40°-50°	525.9	22.1
50°-60°	238.2	10.0
60°-70°	56.2	2.4
70°-80°	6.1	0.3
80°-90°	2.7	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°	887.3	37.2
0°-40°	1553.8	65.2
0°-60°	2318.0	97.3
0°-90°	2383.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2383.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	636	636	636	636	636	
5°	1082	910	618	453	404	124
15°	2463	1578	553	262	218	717
25°	3605	1969	514	328	335	1650
35°	3551	1745	374	243	238	2193
45°	2396	1101	209	152	154	1813
55°	821	450	91	61	51	775
65°	161	95	21	4	2	181
75°	12	6	3	2	0	19
85°	4	4	3	2	0	4
90°	0	0	0	0	0	



TEST NUMBER: P170894

CATALOG NUMBER: LDA4A28830D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3
2.5°	845.0	824.1	824.1	809.2	821.1	797.3	801.7	800.3	815.2	810.7	797.3
5°	1081.9	1064.0	1062.5	1043.2	1058.1	1026.8	1028.3	1023.8	1040.2	1023.8	1004.4
7.5°	1387.4	1356.1	1354.6	1332.3	1347.2	1306.9	1305.4	1296.5	1311.4	1280.1	1251.8
10°	1728.7	1684.0	1681.0	1654.2	1670.5	1618.4	1613.9	1599.0	1609.4	1560.3	1520.0
12.5°	2093.8	2044.6	2038.6	2010.3	2025.2	1962.6	1950.7	1931.3	1935.8	1864.3	1810.6
15°	2463.3	2421.6	2415.7	2385.9	2400.8	2323.3	2303.9	2280.0	2275.6	2180.2	2111.6
17.5°	2831.4	2746.5	2773.3	2743.5	2756.9	2666.0	2640.7	2610.9	2594.5	2476.8	2390.3
20°	3138.4	3065.4	3084.8	3057.9	3069.9	2965.5	2934.3	2897.0	2868.7	2727.1	2627.3
22.5°	3397.7	3321.7	3311.3	3311.3	3318.7	3205.5	3163.7	3122.0	3081.8	2913.4	2812.1
25°	3604.9	3521.4	3509.5	3506.5	3508.0	3388.8	3339.6	3293.4	3241.2	3056.5	2946.2
27.5°	3733.0	3645.1	3631.7	3630.2	3622.7	3500.5	3445.4	3394.7	3332.1	3142.9	3019.2
30°	3753.9	3673.4	3658.5	3658.5	3639.1	3519.9	3458.8	3405.2	3335.1	3144.4	3011.7
32.5°	3691.3	3609.3	3592.9	3594.4	3563.1	3451.4	3385.8	3330.7	3257.6	3069.9	2932.8
35°	3551.2	3472.2	3457.3	3458.8	3420.1	3315.8	3247.2	3193.6	3116.1	2937.2	2797.2
37.5°	3350.0	3275.5	3260.6	3263.6	3215.9	3122.0	3052.0	3001.3	2922.3	2756.9	2619.8
40°	3090.7	3019.2	3005.8	3007.3	2955.1	2873.2	2804.6	2756.9	2677.9	2530.4	2399.3
42.5°	2776.3	2707.7	2697.3	2695.8	2645.2	2570.6	2503.6	2463.3	2382.9	2265.1	2140.0
45°	2396.3	2338.2	2292.0	2323.3	2271.1	2211.5	2148.9	2116.1	2040.1	1956.7	1844.9
47.5°	1968.6	1917.9	1871.7	1901.5	1853.8	1809.1	1754.0	1733.1	1664.6	1621.4	1527.5
50°	1529.0	1485.8	1444.0	1469.4	1432.1	1402.3	1359.1	1348.7	1292.0	1286.1	1213.0
52.5°	1135.6	1104.3	1071.5	1090.8	1062.5	1043.2	1010.4	1007.4	964.2	979.1	928.4
55°	821.1	798.8	773.4	788.3	767.5	755.5	731.7	733.2	700.4	722.8	687.0
57.5°	581.2	563.3	545.4	554.4	541.0	532.0	515.6	518.6	511.1	518.6	493.3
60°	394.9	384.5	371.1	378.5	366.6	362.1	351.7	353.2	335.3	359.1	341.3
62.5°	259.3	251.8	251.8	247.4	238.4	235.5	229.5	229.5	219.1	236.9	225.0
65°	160.9	158.0	156.5	153.5	147.5	146.0	141.6	141.6	134.1	147.5	138.6
67.5°	95.4	93.9	92.4	90.9	86.4	84.9	83.5	82.0	77.5	86.4	80.5
70°	52.2	52.2	50.7	49.2	46.2	46.2	44.7	44.7	41.7	46.2	41.7
72.5°	25.3	25.3	23.8	23.8	22.4	22.4	20.9	20.9	19.4	22.4	19.4
75°	11.9	11.9	10.4	10.4	10.4	10.4	8.9	8.9	8.9	10.4	8.9
77.5°	6.0	6.0	6.0	6.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5
80°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	1.5	1.5	3.0	3.0
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	4.5	4.5	4.5	4.5	6.0	4.5	6.0	6.0	6.0	6.0	6.0
87.5°	6.0	6.0	6.0	6.0	6.0	7.5	7.5	7.5	6.0	7.5	6.0
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: P170894

CATALOG NUMBER: LDA4A28830D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3	636.3
2.5°	801.7	789.8	794.3	780.9	770.4	766.0	766.0	764.5	694.4	624.4	575.2
5°	1002.9	980.6	983.5	959.7	949.3	934.4	929.9	910.5	758.5	618.4	523.1
7.5°	1241.4	1208.6	1189.2	1166.8	1153.4	1126.6	1113.2	1074.5	818.1	606.5	472.4
10°	1497.7	1451.5	1420.2	1384.4	1371.0	1329.3	1303.9	1238.4	870.3	587.1	424.7
12.5°	1774.9	1712.3	1655.6	1616.9	1600.5	1520.0	1503.6	1409.8	918.0	569.3	386.0
15°	2059.5	1980.5	1909.0	1853.8	1833.0	1754.0	1703.3	1578.1	959.7	552.9	356.2
17.5°	2312.8	2227.9	2141.5	2069.9	2040.1	1928.4	1880.7	1725.7	991.0	536.5	339.8
20°	2537.9	2435.0	2344.1	2245.8	2211.5	2084.8	2007.3	1840.4	1008.9	526.0	341.3
22.5°	2709.2	2591.5	2487.2	2376.9	2333.7	2195.1	2107.2	1919.4	1014.8	518.6	351.7
25°	2834.4	2703.3	2587.0	2466.3	2415.7	2268.1	2171.3	1968.6	1013.4	514.1	356.2
27.5°	2898.5	2758.4	2633.2	2503.6	2448.4	2296.4	2192.1	1979.0	992.5	496.2	356.2
30°	2889.5	2742.0	2610.9	2476.8	2417.1	2266.6	2159.3	1938.8	947.8	463.5	330.8
32.5°	2810.6	2660.1	2525.9	2391.8	2332.2	2184.7	2077.4	1856.8	883.7	420.2	296.6
35°	2679.4	2530.4	2397.8	2266.6	2207.0	2064.0	1959.6	1745.1	810.7	374.0	265.3
37.5°	2508.1	2363.5	2235.3	2116.1	2047.6	1913.4	1812.1	1612.4	730.2	332.3	238.4
40°	2294.9	2157.8	2037.1	1926.9	1853.8	1730.2	1637.8	1456.0	645.3	289.1	213.1
42.5°	2049.1	1920.9	1822.5	1712.3	1630.3	1521.5	1441.0	1283.1	558.8	250.4	186.3
45°	1770.4	1657.1	1572.2	1475.3	1390.4	1298.0	1229.4	1101.3	470.9	208.6	160.9
47.5°	1470.9	1377.0	1311.4	1230.9	1147.5	1073.0	1019.3	916.5	387.5	174.4	137.1
50°	1175.8	1101.3	1053.6	992.5	916.5	859.9	818.1	749.6	307.0	141.6	114.7
52.5°	904.6	850.9	818.1	773.4	706.4	667.6	637.8	590.1	234.0	114.7	92.4
55°	675.1	636.3	615.5	584.2	526.0	499.2	479.9	450.0	174.4	90.9	71.5
57.5°	487.3	462.0	448.6	427.7	380.0	363.6	350.2	332.3	126.7	70.0	52.2
60°	339.8	321.9	314.4	301.0	262.3	251.8	234.0	234.0	89.4	50.7	35.8
62.5°	225.0	213.1	210.1	199.7	169.9	163.9	159.5	156.5	61.1	34.3	20.9
65°	140.1	131.1	129.6	123.7	102.8	99.8	95.4	95.4	38.7	20.9	10.4
67.5°	80.5	76.0	74.5	71.5	56.6	55.1	52.2	55.1	22.4	10.4	4.5
70°	43.2	38.7	38.7	37.3	28.3	26.8	25.3	26.8	11.9	6.0	3.0
72.5°	20.9	17.9	17.9	16.4	11.9	11.9	10.4	13.4	6.0	3.0	3.0
75°	8.9	8.9	7.5	7.5	4.5	4.5	4.5	6.0	3.0	3.0	3.0
77.5°	4.5	4.5	4.5	4.5	1.5	1.5	1.5	3.0	3.0	3.0	3.0
80°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
82.5°	3.0	1.5	1.5	1.5	0.0	0.0	0.0	1.5	3.0	3.0	3.0
85°	4.5	4.5	4.5	4.5	3.0	3.0	3.0	4.5	3.0	3.0	3.0
87.5°	6.0	6.0	6.0	6.0	4.5	4.5	4.5	7.5	4.5	3.0	3.0
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: P170894

CATALOG NUMBER: LDA4A28830D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	636.3	636.3	636.3
2.5°	533.5	502.2	505.2
5°	453.0	408.3	403.9
7.5°	383.0	335.3	329.3
10°	327.8	280.2	272.7
12.5°	287.6	244.4	236.9
15°	262.3	223.5	217.6
17.5°	257.8	228.0	225.0
20°	275.7	260.8	263.8
22.5°	307.0	302.5	310.0
25°	327.8	326.4	335.3
27.5°	323.4	320.4	326.4
30°	299.5	295.1	298.0
32.5°	271.2	263.8	266.8
35°	242.9	236.9	238.4
37.5°	219.1	214.6	214.6
40°	198.2	193.7	193.7
42.5°	175.8	172.9	174.4
45°	152.0	150.5	153.5
47.5°	128.2	126.7	129.6
50°	105.8	102.8	102.8
52.5°	83.5	79.0	76.0
55°	61.1	53.6	50.7
57.5°	41.7	34.3	31.3
60°	23.8	19.4	16.4
62.5°	11.9	7.5	6.0
65°	4.5	3.0	1.5
67.5°	3.0	1.5	1.5
70°	3.0	1.5	1.5
72.5°	1.5	1.5	1.5
75°	1.5	1.5	0.0
77.5°	1.5	1.5	1.5
80°	1.5	1.5	0.0
82.5°	1.5	1.5	0.0
85°	1.5	1.5	0.0
87.5°	1.5	1.5	0.0
90°	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)