

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: P170896

Luminaire Tested: **LDA4A28840D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170896  
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: LDA4A28840D010TE LAR35FL 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2569.5 lumens  
Efficiency: N/A  
Efficacy: 57.8 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

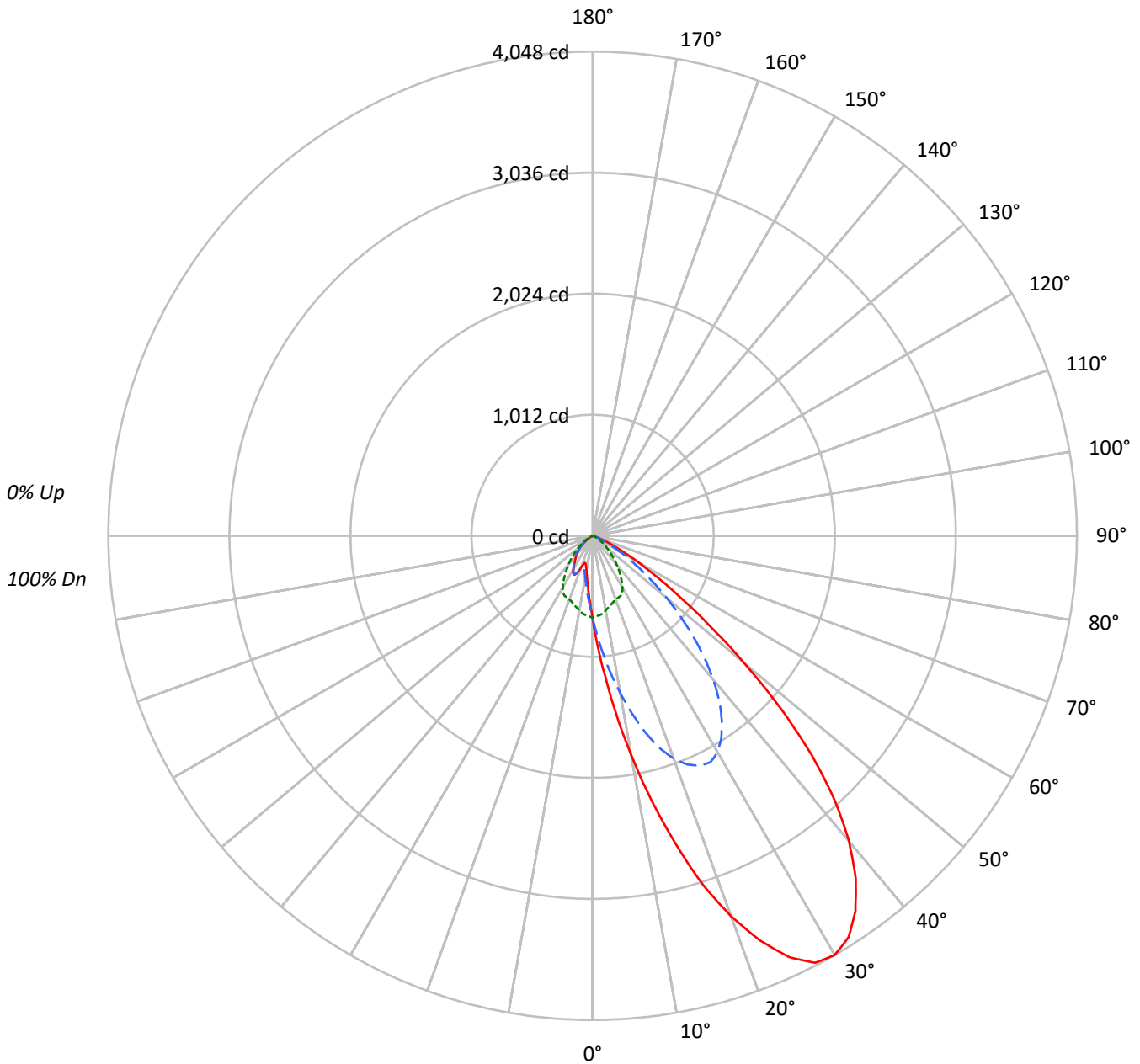
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170896

CATALOG NUMBER: LDA4A28840D010TE LAR35FL 4LLWW1

### 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								
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	75	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	66	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°	84627	84627	84627
5°	144445	82561	53922
10°	233451	79295	36836
15°	339175	76120	29958
20°	444190	74452	37331
25°	528995	75452	49199
30°	576489	71171	45776
35°	576575	60728	38713
40°	536603	50189	33636
45°	450710	39248	28869
50°	316353	29283	21281
55°	190402	21075	11742
60°	105041	13469	4366
65°	50638	6567	467
70°	20268	2308	577
75°	6148	1525	0
80°	2273	2273	0
85°	6793	4529	0



TEST NUMBER: P170896

CATALOG NUMBER: LDA4A28840D010TE LAR35FL 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.6	2.9
10°-20°	291.7	11.4
20°-30°	591.5	23.0
30°-40°	718.7	28.0
40°-50°	567.1	22.1
50°-60°	256.9	10.0
60°-70°	60.6	2.4
70°-80°	6.5	0.3
80°-90°	2.9	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°	956.8	37.2
0°-40°	1675.4	65.2
0°-60°	2499.4	97.3
0°-90°	2569.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2569.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	686	686	686	686	686	
5°	1167	982	667	488	436	133
15°	2656	1702	596	283	235	773
25°	3887	2123	554	354	362	1779
35°	3829	1882	403	262	257	2364
45°	2584	1188	225	164	166	1955
55°	885	485	98	66	55	836
65°	174	103	22	5	2	195
75°	13	6	3	2	0	20
85°	5	5	3	2	0	4
90°	0	0	0	0	0	



TEST NUMBER: P170896

CATALOG NUMBER: LDA4A28840D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1
2.5°	911.1	888.6	888.6	872.5	885.4	859.7	864.5	862.9	878.9	874.1	859.7
5°	1166.6	1147.3	1145.7	1124.8	1140.9	1107.1	1108.7	1103.9	1121.6	1103.9	1083.0
7.5°	1496.0	1462.2	1460.6	1436.5	1452.6	1409.2	1407.6	1397.9	1414.0	1380.3	1349.7
10°	1863.9	1815.7	1812.5	1783.6	1801.3	1745.0	1740.2	1724.1	1735.4	1682.4	1639.0
12.5°	2257.6	2204.6	2198.2	2167.6	2183.7	2116.2	2103.4	2082.5	2087.3	2010.2	1952.3
15°	2656.1	2611.1	2604.7	2572.5	2588.6	2505.1	2484.2	2458.5	2453.6	2350.8	2276.9
17.5°	3053.0	2961.4	2990.3	2958.2	2972.7	2874.6	2847.3	2815.2	2797.5	2670.6	2577.4
20°	3384.0	3305.3	3326.2	3297.2	3310.1	3197.6	3163.9	3123.7	3093.2	2940.5	2832.9
22.5°	3663.6	3581.6	3570.4	3570.4	3578.4	3456.3	3411.3	3366.3	3322.9	3141.4	3032.1
25°	3886.9	3797.0	3784.1	3780.9	3782.5	3654.0	3600.9	3551.1	3494.9	3295.6	3176.7
27.5°	4025.1	3930.3	3915.9	3914.3	3906.2	3774.5	3715.0	3660.4	3592.9	3388.8	3255.5
30°	4047.6	3960.9	3944.8	3944.8	3923.9	3795.4	3729.5	3671.6	3596.1	3390.4	3247.4
32.5°	3980.1	3891.8	3874.1	3875.7	3842.0	3721.4	3650.7	3591.3	3512.6	3310.1	3162.3
35°	3829.1	3743.9	3727.9	3729.5	3687.7	3575.2	3501.3	3443.5	3359.9	3167.1	3016.0
37.5°	3612.2	3531.8	3515.8	3519.0	3467.6	3366.3	3290.8	3236.2	3151.0	2972.7	2824.8
40°	3332.6	3255.5	3241.0	3242.6	3186.4	3098.0	3024.1	2972.7	2887.5	2728.4	2587.0
42.5°	2993.5	2919.6	2908.4	2906.8	2852.1	2771.8	2699.5	2656.1	2569.3	2442.4	2307.4
45°	2583.8	2521.1	2471.3	2505.1	2448.8	2384.5	2317.1	2281.7	2199.8	2109.8	1989.3
47.5°	2122.6	2068.0	2018.2	2050.3	1998.9	1950.7	1891.2	1868.8	1794.8	1748.2	1647.0
50°	1648.6	1602.0	1557.0	1584.3	1544.2	1512.0	1465.4	1454.2	1393.1	1386.7	1308.0
52.5°	1224.4	1190.7	1155.3	1176.2	1145.7	1124.8	1089.4	1086.2	1039.6	1055.7	1001.1
55°	885.4	861.3	833.9	850.0	827.5	814.7	789.0	790.6	755.2	779.3	740.8
57.5°	626.7	607.4	588.1	597.7	583.3	573.6	556.0	559.2	551.1	559.2	531.9
60°	425.8	414.6	400.1	408.1	395.3	390.5	379.2	380.8	361.5	387.2	368.0
62.5°	279.6	271.6	271.6	266.7	257.1	253.9	247.5	247.5	236.2	255.5	242.6
65°	173.5	170.3	168.7	165.5	159.1	157.5	152.6	152.6	144.6	159.1	149.4
67.5°	102.8	101.2	99.6	98.0	93.2	91.6	90.0	88.4	83.6	93.2	86.8
70°	56.2	56.2	54.6	53.0	49.8	49.8	48.2	48.2	45.0	49.8	45.0
72.5°	27.3	27.3	25.7	25.7	24.1	24.1	22.5	22.5	20.9	24.1	20.9
75°	12.9	12.9	11.2	11.2	11.2	11.2	9.6	9.6	9.6	11.2	9.6
77.5°	6.4	6.4	6.4	6.4	4.8	4.8	4.8	4.8	4.8	4.8	4.8
80°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	1.6	1.6	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
85°	4.8	4.8	4.8	4.8	6.4	4.8	6.4	6.4	6.4	6.4	6.4
87.5°	6.4	6.4	6.4	6.4	6.4	8.0	8.0	8.0	6.4	8.0	6.4
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: P170896

CATALOG NUMBER: LDA4A28840D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1	686.1
2.5°	864.5	851.6	856.4	842.0	830.7	825.9	825.9	824.3	748.8	673.3	620.2
5°	1081.4	1057.3	1060.5	1034.8	1023.6	1007.5	1002.7	981.8	817.9	666.8	564.0
7.5°	1338.5	1303.1	1282.3	1258.2	1243.7	1214.8	1200.3	1158.5	882.2	654.0	509.4
10°	1614.9	1565.1	1531.3	1492.8	1478.3	1433.3	1406.0	1335.3	938.4	633.1	457.9
12.5°	1913.7	1846.3	1785.2	1743.4	1725.7	1639.0	1621.3	1520.1	989.8	613.8	416.2
15°	2220.7	2135.5	2058.4	1998.9	1976.4	1891.2	1836.6	1701.6	1034.8	596.1	384.0
17.5°	2493.8	2402.2	2309.0	2231.9	2199.8	2079.2	2027.8	1860.7	1068.5	578.5	366.4
20°	2736.4	2625.6	2527.6	2421.5	2384.5	2248.0	2164.4	1984.4	1087.8	567.2	368.0
22.5°	2921.2	2794.3	2681.8	2562.9	2516.3	2366.9	2272.1	2069.6	1094.3	559.2	379.2
25°	3056.2	2914.8	2789.5	2659.3	2604.7	2445.6	2341.2	2122.6	1092.7	554.4	384.0
27.5°	3125.3	2974.3	2839.3	2699.5	2640.0	2476.1	2363.7	2133.9	1070.2	535.1	384.0
30°	3115.7	2956.6	2815.2	2670.6	2606.3	2444.0	2328.3	2090.5	1021.9	499.7	356.7
32.5°	3030.5	2868.2	2723.6	2579.0	2514.7	2355.6	2239.9	2002.1	952.9	453.1	319.8
35°	2889.1	2728.4	2585.4	2444.0	2379.7	2225.5	2113.0	1881.6	874.1	403.3	286.0
37.5°	2704.3	2548.4	2410.3	2281.7	2207.8	2063.2	1953.9	1738.6	787.4	358.3	257.1
40°	2474.5	2326.7	2196.5	2077.6	1998.9	1865.5	1765.9	1569.9	695.8	311.7	229.8
42.5°	2209.4	2071.2	1965.2	1846.3	1757.9	1640.6	1553.8	1383.5	602.6	269.9	200.9
45°	1908.9	1786.8	1695.2	1590.8	1499.2	1399.6	1325.6	1187.5	507.8	225.0	173.5
47.5°	1586.0	1484.7	1414.0	1327.2	1237.3	1156.9	1099.1	988.2	417.8	188.0	147.8
50°	1267.8	1187.5	1136.0	1070.2	988.2	927.1	882.2	808.2	331.0	152.6	123.7
52.5°	975.4	917.5	882.2	833.9	761.6	719.9	687.7	636.3	252.3	123.7	99.6
55°	727.9	686.1	663.6	629.9	567.2	538.3	517.4	485.3	188.0	98.0	77.1
57.5°	525.4	498.1	483.7	461.2	409.7	392.1	377.6	358.3	136.6	75.5	56.2
60°	366.4	347.1	339.0	324.6	282.8	271.6	252.3	252.3	96.4	54.6	38.6
62.5°	242.6	229.8	226.6	215.3	183.2	176.8	171.9	168.7	65.9	37.0	22.5
65°	151.0	141.4	139.8	133.4	110.9	107.7	102.8	102.8	41.8	22.5	11.2
67.5°	86.8	81.9	80.3	77.1	61.1	59.5	56.2	59.5	24.1	11.2	4.8
70°	46.6	41.8	41.8	40.2	30.5	28.9	27.3	28.9	12.9	6.4	3.2
72.5°	22.5	19.3	19.3	17.7	12.9	12.9	11.2	14.5	6.4	3.2	3.2
75°	9.6	9.6	8.0	8.0	4.8	4.8	4.8	6.4	3.2	3.2	3.2
77.5°	4.8	4.8	4.8	4.8	1.6	1.6	1.6	3.2	3.2	3.2	3.2
80°	3.2	3.2	3.2	3.2	0.0	0.0	0.0	3.2	3.2	3.2	3.2
82.5°	3.2	1.6	1.6	1.6	0.0	0.0	0.0	1.6	3.2	3.2	3.2
85°	4.8	4.8	4.8	4.8	3.2	3.2	3.2	4.8	3.2	3.2	3.2
87.5°	6.4	6.4	6.4	6.4	4.8	4.8	4.8	8.0	4.8	3.2	3.2
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: P170896

CATALOG NUMBER: LDA4A28840D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	686.1	686.1	686.1
2.5°	575.2	541.5	544.7
5°	488.5	440.3	435.5
7.5°	413.0	361.5	355.1
10°	353.5	302.1	294.1
12.5°	310.1	263.5	255.5
15°	282.8	241.0	234.6
17.5°	278.0	245.8	242.6
20°	297.3	281.2	284.4
22.5°	331.0	326.2	334.2
25°	353.5	351.9	361.5
27.5°	348.7	345.5	351.9
30°	323.0	318.2	321.4
32.5°	292.4	284.4	287.6
35°	261.9	255.5	257.1
37.5°	236.2	231.4	231.4
40°	213.7	208.9	208.9
42.5°	189.6	186.4	188.0
45°	163.9	162.3	165.5
47.5°	138.2	136.6	139.8
50°	114.1	110.9	110.9
52.5°	90.0	85.2	81.9
55°	65.9	57.8	54.6
57.5°	45.0	37.0	33.7
60°	25.7	20.9	17.7
62.5°	12.9	8.0	6.4
65°	4.8	3.2	1.6
67.5°	3.2	1.6	1.6
70°	3.2	1.6	1.6
72.5°	1.6	1.6	1.6
75°	1.6	1.6	0.0
77.5°	1.6	1.6	1.6
80°	1.6	1.6	0.0
82.5°	1.6	1.6	0.0
85°	1.6	1.6	0.0
87.5°	1.6	1.6	0.0
90°	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)