

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: P170872

Luminaire Tested: **LDA4A18840D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170872  
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: LDA4A18840D010TE 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: 1641.0 lumens  
Efficiency: N/A  
Efficacy: 56.4 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

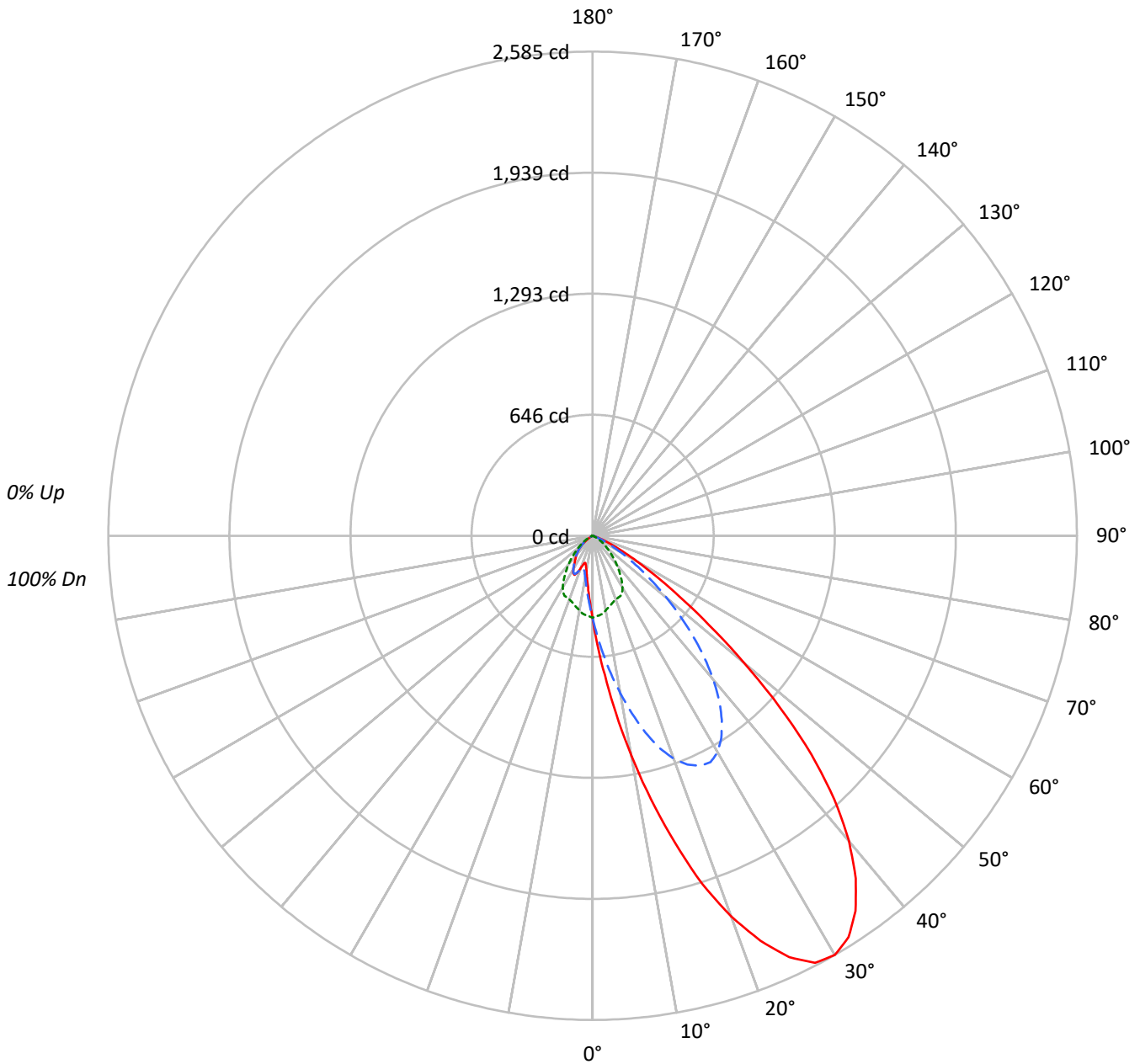
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170872

CATALOG NUMBER: LDA4A18840D010TE 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°	54050	54050	54050
5°	92244	52734	34433
10°	149096	50638	23522
15°	216612	48614	19129
20°	283683	47543	23837
25°	337847	48178	31425
30°	368174	45449	29226
35°	368222	38789	24725
40°	342691	32058	21480
45°	287839	25067	18438
50°	202043	18709	13586
55°	121587	13462	7505
60°	67075	8610	2788
65°	32338	4203	292
70°	12947	1479	361
75°	3908	1001	0
80°	1492	1492	0
85°	4387	2972	0



TEST NUMBER: P170872

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.0	2.9
10°-20°	186.3	11.4
20°-30°	377.7	23.0
30°-40°	459.0	28.0
40°-50°	362.2	22.1
50°-60°	164.1	10.0
60°-70°	38.7	2.4
70°-80°	4.2	0.3
80°-90°	1.9	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°	611.0	37.2
0°-40°	1070.0	65.2
0°-60°	1596.2	97.3
0°-90°	1641.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1641.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	438	438	438	438	438	
5°	745	627	426	312	278	85
15°	1696	1087	381	181	150	494
25°	2482	1356	354	226	231	1136
35°	2445	1202	258	167	164	1510
45°	1650	758	144	105	106	1249
55°	565	310	63	42	35	534
65°	111	66	14	3	1	125
75°	8	4	2	1	0	13
85°	3	3	2	1	0	3
90°	0	0	0	0	0	



TEST NUMBER: P170872

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	581.9	567.5	567.5	557.2	565.4	549.0	552.1	551.1	561.3	558.3	549.0
5°	745.0	732.7	731.7	718.3	728.6	707.0	708.1	705.0	716.3	705.0	691.7
7.5°	955.4	933.8	932.8	917.4	927.7	900.0	898.9	892.8	903.1	881.5	862.0
10°	1190.4	1159.6	1157.5	1139.1	1150.4	1114.4	1111.4	1101.1	1108.3	1074.4	1046.7
12.5°	1441.8	1407.9	1403.8	1384.3	1394.6	1351.5	1343.3	1330.0	1333.0	1283.8	1246.8
15°	1696.3	1667.6	1663.5	1642.9	1653.2	1599.8	1586.5	1570.1	1567.0	1501.3	1454.1
17.5°	1949.8	1891.3	1909.8	1889.2	1898.5	1835.9	1818.4	1797.9	1786.6	1705.5	1646.0
20°	2161.2	2110.9	2124.2	2105.8	2114.0	2042.1	2020.6	1994.9	1975.4	1877.9	1809.2
22.5°	2339.7	2287.4	2280.2	2280.2	2285.3	2207.3	2178.6	2149.9	2122.2	2006.2	1936.4
25°	2482.4	2424.9	2416.7	2414.6	2415.7	2333.6	2299.7	2267.9	2232.0	2104.7	2028.8
27.5°	2570.6	2510.1	2500.8	2499.8	2494.7	2410.5	2372.6	2337.7	2294.6	2164.2	2079.1
30°	2585.0	2529.6	2519.3	2519.3	2506.0	2423.9	2381.8	2344.9	2296.6	2165.3	2073.9
32.5°	2541.9	2485.4	2474.2	2475.2	2453.6	2376.7	2331.5	2293.5	2243.3	2114.0	2019.6
35°	2445.4	2391.0	2380.8	2381.8	2355.1	2283.3	2236.1	2199.1	2145.8	2022.6	1926.2
37.5°	2306.9	2255.6	2245.3	2247.4	2214.5	2149.9	2101.7	2066.8	2012.4	1898.5	1804.1
40°	2128.3	2079.1	2069.8	2070.9	2034.9	1978.5	1931.3	1898.5	1844.1	1742.5	1652.2
42.5°	1911.8	1864.6	1857.4	1856.4	1821.5	1770.2	1724.0	1696.3	1640.9	1559.8	1473.6
45°	1650.1	1610.1	1578.3	1599.8	1563.9	1522.9	1479.8	1457.2	1404.9	1347.4	1270.4
47.5°	1355.6	1320.7	1288.9	1309.4	1276.6	1245.8	1207.8	1193.5	1146.3	1116.5	1051.9
50°	1052.9	1023.1	994.4	1011.8	986.2	965.7	935.9	928.7	889.7	885.6	835.3
52.5°	782.0	760.4	737.8	751.2	731.7	718.3	695.8	693.7	663.9	674.2	639.3
55°	565.4	550.0	532.6	542.9	528.5	520.3	503.9	504.9	482.3	497.7	473.1
57.5°	400.2	387.9	375.6	381.7	372.5	366.4	355.1	357.1	352.0	357.1	339.7
60°	271.9	264.8	255.5	260.7	252.4	249.4	242.2	243.2	230.9	247.3	235.0
62.5°	178.6	173.4	173.4	170.3	164.2	162.1	158.0	158.0	150.9	163.2	155.0
65°	110.8	108.8	107.8	105.7	101.6	100.6	97.5	97.5	92.4	101.6	95.4
67.5°	65.7	64.7	63.6	62.6	59.5	58.5	57.5	56.4	53.4	59.5	55.4
70°	35.9	35.9	34.9	33.9	31.8	31.8	30.8	30.8	28.7	31.8	28.7
72.5°	17.4	17.4	16.4	16.4	15.4	15.4	14.4	14.4	13.3	15.4	13.3
75°	8.2	8.2	7.2	7.2	7.2	7.2	6.2	6.2	6.2	7.2	6.2
77.5°	4.1	4.1	4.1	4.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
80°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	1.0	1.0	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
85°	3.1	3.1	3.1	3.1	4.1	3.1	4.1	4.1	4.1	4.1	4.1
87.5°	4.1	4.1	4.1	4.1	4.1	5.1	5.1	5.1	4.1	5.1	4.1
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: P170872

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	552.1	543.9	547.0	537.7	530.5	527.5	527.5	526.4	478.2	430.0	396.1
5°	690.6	675.2	677.3	660.9	653.7	643.4	640.3	627.0	522.3	425.9	360.2
7.5°	854.8	832.2	818.9	803.5	794.3	775.8	766.6	739.9	563.4	417.7	325.3
10°	1031.3	999.5	978.0	953.3	944.1	915.4	897.9	852.8	599.3	404.3	292.5
12.5°	1222.2	1179.1	1140.1	1113.4	1102.1	1046.7	1035.4	970.8	632.1	392.0	265.8
15°	1418.2	1363.8	1314.6	1276.6	1262.2	1207.8	1172.9	1086.7	660.9	380.7	245.3
17.5°	1592.7	1534.2	1474.6	1425.4	1404.9	1327.9	1295.1	1188.3	682.4	369.4	234.0
20°	1747.6	1676.8	1614.2	1546.5	1522.9	1435.6	1382.3	1267.4	694.7	362.2	235.0
22.5°	1865.6	1784.6	1712.7	1636.8	1607.0	1511.6	1451.0	1321.7	698.8	357.1	242.2
25°	1951.8	1861.5	1781.5	1698.4	1663.5	1561.9	1495.2	1355.6	697.8	354.0	245.3
27.5°	1996.0	1899.5	1813.3	1724.0	1686.0	1581.4	1509.5	1362.8	683.4	341.7	245.3
30°	1989.8	1888.2	1797.9	1705.5	1664.5	1560.8	1487.0	1335.1	652.7	319.1	227.8
32.5°	1935.4	1831.8	1739.4	1647.0	1606.0	1504.4	1430.5	1278.6	608.5	289.4	204.2
35°	1845.1	1742.5	1651.2	1560.8	1519.8	1421.3	1349.4	1201.7	558.3	257.6	182.7
37.5°	1727.1	1627.5	1539.3	1457.2	1410.0	1317.6	1247.9	1110.3	502.8	228.8	164.2
40°	1580.3	1485.9	1402.8	1326.9	1276.6	1191.4	1127.8	1002.6	444.3	199.1	146.7
42.5°	1411.0	1322.8	1255.0	1179.1	1122.7	1047.7	992.3	883.6	384.8	172.4	128.3
45°	1219.1	1141.1	1082.6	1015.9	957.4	893.8	846.6	758.4	324.3	143.7	110.8
47.5°	1012.9	948.2	903.1	847.6	790.2	738.9	701.9	631.1	266.8	120.1	94.4
50°	809.7	758.4	725.5	683.4	631.1	592.1	563.4	516.2	211.4	97.5	79.0
52.5°	622.9	586.0	563.4	532.6	486.4	459.7	439.2	406.4	161.1	79.0	63.6
55°	464.9	438.2	423.8	402.3	362.2	343.8	330.4	309.9	120.1	62.6	49.3
57.5°	335.6	318.1	308.9	294.5	261.7	250.4	241.2	228.8	87.2	48.2	35.9
60°	234.0	221.7	216.5	207.3	180.6	173.4	161.1	161.1	61.6	34.9	24.6
62.5°	155.0	146.7	144.7	137.5	117.0	112.9	109.8	107.8	42.1	23.6	14.4
65°	96.5	90.3	89.3	85.2	70.8	68.8	65.7	65.7	26.7	14.4	7.2
67.5°	55.4	52.3	51.3	49.3	39.0	38.0	35.9	38.0	15.4	7.2	3.1
70°	29.8	26.7	26.7	25.7	19.5	18.5	17.4	18.5	8.2	4.1	2.1
72.5°	14.4	12.3	12.3	11.3	8.2	8.2	7.2	9.2	4.1	2.1	2.1
75°	6.2	6.2	5.1	5.1	3.1	3.1	3.1	4.1	2.1	2.1	2.1
77.5°	3.1	3.1	3.1	3.1	1.0	1.0	1.0	2.1	2.1	2.1	2.1
80°	2.1	2.1	2.1	2.1	0.0	0.0	0.0	2.1	2.1	2.1	2.1
82.5°	2.1	1.0	1.0	1.0	0.0	0.0	0.0	1.0	2.1	2.1	2.1
85°	3.1	3.1	3.1	3.1	2.1	2.1	2.1	3.1	2.1	2.1	2.1
87.5°	4.1	4.1	4.1	4.1	3.1	3.1	3.1	5.1	3.1	2.1	2.1
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: P170872

CATALOG NUMBER: LDA4A18840D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	438.2	438.2	438.2
2.5°	367.4	345.8	347.9
5°	312.0	281.2	278.1
7.5°	263.7	230.9	226.8
10°	225.8	192.9	187.8
12.5°	198.1	168.3	163.2
15°	180.6	153.9	149.8
17.5°	177.5	157.0	155.0
20°	189.8	179.6	181.6
22.5°	211.4	208.3	213.4
25°	225.8	224.7	230.9
27.5°	222.7	220.6	224.7
30°	206.3	203.2	205.2
32.5°	186.8	181.6	183.7
35°	167.3	163.2	164.2
37.5°	150.9	147.8	147.8
40°	136.5	133.4	133.4
42.5°	121.1	119.0	120.1
45°	104.7	103.6	105.7
47.5°	88.3	87.2	89.3
50°	72.9	70.8	70.8
52.5°	57.5	54.4	52.3
55°	42.1	36.9	34.9
57.5°	28.7	23.6	21.6
60°	16.4	13.3	11.3
62.5°	8.2	5.1	4.1
65°	3.1	2.1	1.0
67.5°	2.1	1.0	1.0
70°	2.1	1.0	1.0
72.5°	1.0	1.0	1.0
75°	1.0	1.0	0.0
77.5°	1.0	1.0	1.0
80°	1.0	1.0	0.0
82.5°	1.0	1.0	0.0
85°	1.0	1.0	0.0
87.5°	1.0	1.0	0.0
90°	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)