

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: P170871

Luminaire Tested: **LDA4A18835D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170871  
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: LDA4A18835D010TE LAR35FL 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1600.0 lumens  
Efficiency: N/A  
Efficacy: 54.9 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

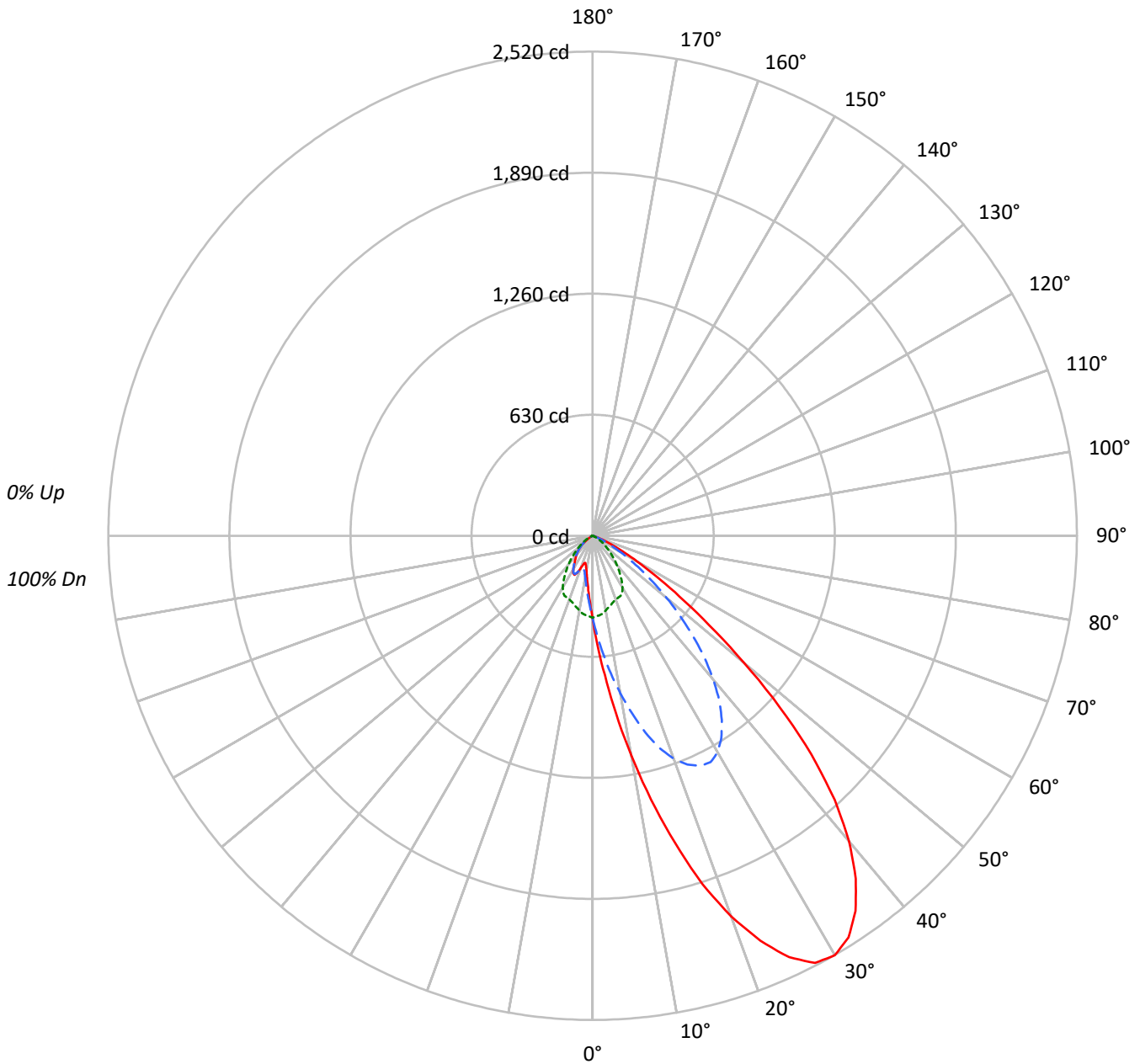
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170871

CATALOG NUMBER: LDA4A18835D010TE 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	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°	52693	52693	52693
5°	89941	51409	33579
10°	145376	49373	22933
15°	211198	47401	18657
20°	276595	46362	23246
25°	329409	46981	30635
30°	358974	44323	28500
35°	359021	37810	24107
40°	334141	31253	20948
45°	280652	24439	17984
50°	196996	18249	13241
55°	118555	13118	7312
60°	65398	8388	2714
65°	31550	4086	292
70°	12622	1443	361
75°	3813	953	0
80°	1421	1421	0
85°	4246	2830	0



TEST NUMBER: P170871

CATALOG NUMBER: LDA4A18835D010TE LAR35FL 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	45.9	2.9
10°-20°	181.6	11.4
20°-30°	368.3	23.0
30°-40°	447.5	28.0
40°-50°	353.1	22.1
50°-60°	159.9	10.0
60°-70°	37.7	2.4
70°-80°	4.1	0.3
80°-90°	1.8	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°	595.8	37.2
0°-40°	1043.3	65.2
0°-60°	1556.3	97.3
0°-90°	1600.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1600.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	427	427	427	427	427	
5°	726	611	415	304	271	83
15°	1654	1060	371	176	146	481
25°	2420	1322	345	220	225	1108
35°	2384	1172	251	163	160	1472
45°	1609	739	140	102	103	1217
55°	551	302	61	41	34	521
65°	108	64	14	3	1	122
75°	8	4	2	1	0	12
85°	3	3	2	1	0	3
90°	0	0	0	0	0	



TEST NUMBER: P170871

CATALOG NUMBER: LDA4A18835D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2
2.5°	567.3	553.3	553.3	543.3	551.3	535.3	538.3	537.3	547.3	544.3	535.3
5°	726.4	714.4	713.4	700.4	710.4	689.4	690.4	687.4	698.4	687.4	674.4
7.5°	931.5	910.5	909.5	894.5	904.5	877.5	876.5	870.5	880.5	859.5	840.5
10°	1160.7	1130.6	1128.6	1110.6	1121.6	1086.6	1083.6	1073.6	1080.6	1047.6	1020.6
12.5°	1405.8	1372.8	1368.8	1349.8	1359.8	1317.7	1309.7	1296.7	1299.7	1251.7	1215.7
15°	1653.9	1625.9	1621.9	1601.9	1611.9	1559.9	1546.9	1530.9	1527.9	1463.8	1417.8
17.5°	1901.1	1844.0	1862.1	1842.0	1851.0	1790.0	1773.0	1753.0	1742.0	1662.9	1604.9
20°	2107.2	2058.2	2071.2	2053.2	2061.2	1991.1	1970.1	1945.1	1926.1	1831.0	1764.0
22.5°	2281.3	2230.3	2223.3	2223.3	2228.3	2152.2	2124.2	2096.2	2069.2	1956.1	1888.1
25°	2420.4	2364.3	2356.3	2354.3	2355.3	2275.3	2242.3	2211.3	2176.2	2052.2	1978.1
27.5°	2506.4	2447.4	2438.4	2437.4	2432.4	2350.3	2313.3	2279.3	2237.3	2110.2	2027.1
30°	2520.4	2466.4	2456.4	2456.4	2443.4	2363.3	2322.3	2286.3	2239.3	2111.2	2022.1
32.5°	2478.4	2423.4	2412.4	2413.4	2392.4	2317.3	2273.3	2236.3	2187.2	2061.2	1969.1
35°	2384.3	2331.3	2321.3	2322.3	2296.3	2226.3	2180.2	2144.2	2092.2	1972.1	1878.1
37.5°	2249.3	2199.2	2189.2	2191.2	2159.2	2096.2	2049.2	2015.1	1962.1	1851.0	1759.0
40°	2075.2	2027.1	2018.1	2019.1	1984.1	1929.1	1883.1	1851.0	1798.0	1699.0	1610.9
42.5°	1864.1	1818.0	1811.0	1810.0	1776.0	1726.0	1681.0	1653.9	1599.9	1520.9	1436.8
45°	1608.9	1569.9	1538.9	1559.9	1524.9	1484.8	1442.8	1420.8	1369.8	1313.7	1238.7
47.5°	1321.7	1287.7	1256.7	1276.7	1244.7	1214.7	1177.7	1163.7	1117.6	1088.6	1025.6
50°	1026.6	997.6	969.5	986.6	961.5	941.5	912.5	905.5	867.5	863.5	814.5
52.5°	762.4	741.4	719.4	732.4	713.4	700.4	678.4	676.4	647.4	657.4	623.4
55°	551.3	536.3	519.3	529.3	515.3	507.3	491.3	492.3	470.3	485.3	461.3
57.5°	390.2	378.2	366.2	372.2	363.2	357.2	346.2	348.2	343.2	348.2	331.2
60°	265.1	258.1	249.1	254.1	246.1	243.1	236.1	237.1	225.1	241.1	229.1
62.5°	174.1	169.1	169.1	166.1	160.1	158.1	154.1	154.1	147.1	159.1	151.1
65°	108.1	106.1	105.1	103.1	99.1	98.1	95.1	95.1	90.1	99.1	93.1
67.5°	64.0	63.0	62.0	61.0	58.0	57.0	56.0	55.0	52.0	58.0	54.0
70°	35.0	35.0	34.0	33.0	31.0	31.0	30.0	30.0	28.0	31.0	28.0
72.5°	17.0	17.0	16.0	16.0	15.0	15.0	14.0	14.0	13.0	15.0	13.0
75°	8.0	8.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	7.0	6.0
77.5°	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
87.5°	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0	5.0	4.0
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: P170871

CATALOG NUMBER: LDA4A18835D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2	427.2
2.5°	538.3	530.3	533.3	524.3	517.3	514.3	514.3	513.3	466.3	419.2	386.2
5°	673.4	658.4	660.4	644.4	637.4	627.4	624.4	611.3	509.3	415.2	351.2
7.5°	833.5	811.5	798.5	783.4	774.4	756.4	747.4	721.4	549.3	407.2	317.2
10°	1005.6	974.6	953.5	929.5	920.5	892.5	875.5	831.5	584.3	394.2	285.2
12.5°	1191.7	1149.7	1111.6	1085.6	1074.6	1020.6	1009.6	946.5	616.3	382.2	259.1
15°	1382.8	1329.8	1281.7	1244.7	1230.7	1177.7	1143.6	1059.6	644.4	371.2	239.1
17.5°	1552.9	1495.8	1437.8	1389.8	1369.8	1294.7	1262.7	1158.7	665.4	360.2	228.1
20°	1704.0	1634.9	1573.9	1507.9	1484.8	1399.8	1347.8	1235.7	677.4	353.2	229.1
22.5°	1819.0	1740.0	1669.9	1595.9	1566.9	1473.8	1414.8	1288.7	681.4	348.2	236.1
25°	1903.1	1815.0	1737.0	1655.9	1621.9	1522.9	1457.8	1321.7	680.4	345.2	239.1
27.5°	1946.1	1852.0	1768.0	1681.0	1643.9	1541.9	1471.8	1328.8	666.4	333.2	239.1
30°	1940.1	1841.0	1753.0	1662.9	1622.9	1521.9	1449.8	1301.7	636.4	311.2	222.1
32.5°	1887.1	1786.0	1696.0	1605.9	1565.9	1466.8	1394.8	1246.7	593.3	282.2	199.1
35°	1799.0	1699.0	1609.9	1521.9	1481.8	1385.8	1315.7	1171.7	544.3	251.1	178.1
37.5°	1684.0	1586.9	1500.8	1420.8	1374.8	1284.7	1216.7	1082.6	490.3	223.1	160.1
40°	1540.9	1448.8	1367.8	1293.7	1244.7	1161.7	1099.6	977.6	433.2	194.1	143.1
42.5°	1375.8	1289.7	1223.7	1149.7	1094.6	1021.6	967.5	861.5	375.2	168.1	125.1
45°	1188.7	1112.6	1055.6	990.6	933.5	871.5	825.5	739.4	316.2	140.1	108.1
47.5°	987.6	924.5	880.5	826.5	770.4	720.4	684.4	615.3	260.1	117.1	92.1
50°	789.4	739.4	707.4	666.4	615.3	577.3	549.3	503.3	206.1	95.1	77.0
52.5°	607.3	571.3	549.3	519.3	474.3	448.3	428.2	396.2	157.1	77.0	62.0
55°	453.3	427.2	413.2	392.2	353.2	335.2	322.2	302.2	117.1	61.0	48.0
57.5°	327.2	310.2	301.2	287.2	255.1	244.1	235.1	223.1	85.0	47.0	35.0
60°	228.1	216.1	211.1	202.1	176.1	169.1	157.1	157.1	60.0	34.0	24.0
62.5°	151.1	143.1	141.1	134.1	114.1	110.1	107.1	105.1	41.0	23.0	14.0
65°	94.1	88.0	87.0	83.0	69.0	67.0	64.0	64.0	26.0	14.0	7.0
67.5°	54.0	51.0	50.0	48.0	38.0	37.0	35.0	37.0	15.0	7.0	3.0
70°	29.0	26.0	26.0	25.0	19.0	18.0	17.0	18.0	8.0	4.0	2.0
72.5°	14.0	12.0	12.0	11.0	8.0	8.0	7.0	9.0	4.0	2.0	2.0
75°	6.0	6.0	5.0	5.0	3.0	3.0	3.0	4.0	2.0	2.0	2.0
77.5°	3.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0	2.0	2.0	2.0
85°	3.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0
87.5°	4.0	4.0	4.0	4.0	3.0	3.0	3.0	5.0	3.0	2.0	2.0
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: P170871

CATALOG NUMBER: LDA4A18835D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	427.2	427.2	427.2
2.5°	358.2	337.2	339.2
5°	304.2	274.2	271.2
7.5°	257.1	225.1	221.1
10°	220.1	188.1	183.1
12.5°	193.1	164.1	159.1
15°	176.1	150.1	146.1
17.5°	173.1	153.1	151.1
20°	185.1	175.1	177.1
22.5°	206.1	203.1	208.1
25°	220.1	219.1	225.1
27.5°	217.1	215.1	219.1
30°	201.1	198.1	200.1
32.5°	182.1	177.1	179.1
35°	163.1	159.1	160.1
37.5°	147.1	144.1	144.1
40°	133.1	130.1	130.1
42.5°	118.1	116.1	117.1
45°	102.1	101.1	103.1
47.5°	86.0	85.0	87.0
50°	71.0	69.0	69.0
52.5°	56.0	53.0	51.0
55°	41.0	36.0	34.0
57.5°	28.0	23.0	21.0
60°	16.0	13.0	11.0
62.5°	8.0	5.0	4.0
65°	3.0	2.0	1.0
67.5°	2.0	1.0	1.0
70°	2.0	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)