

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: P170818

Luminaire Tested: **LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170818  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26106)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt  
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 35° Flood Optic, at 30° tilt. --- 27.9W  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 903.8 lumens  
Efficiency: N/A  
Efficacy: 65.3 lumens/watt  
Spacing Criteria (0/90/45): 2.71 / 1.11 / 1.33  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

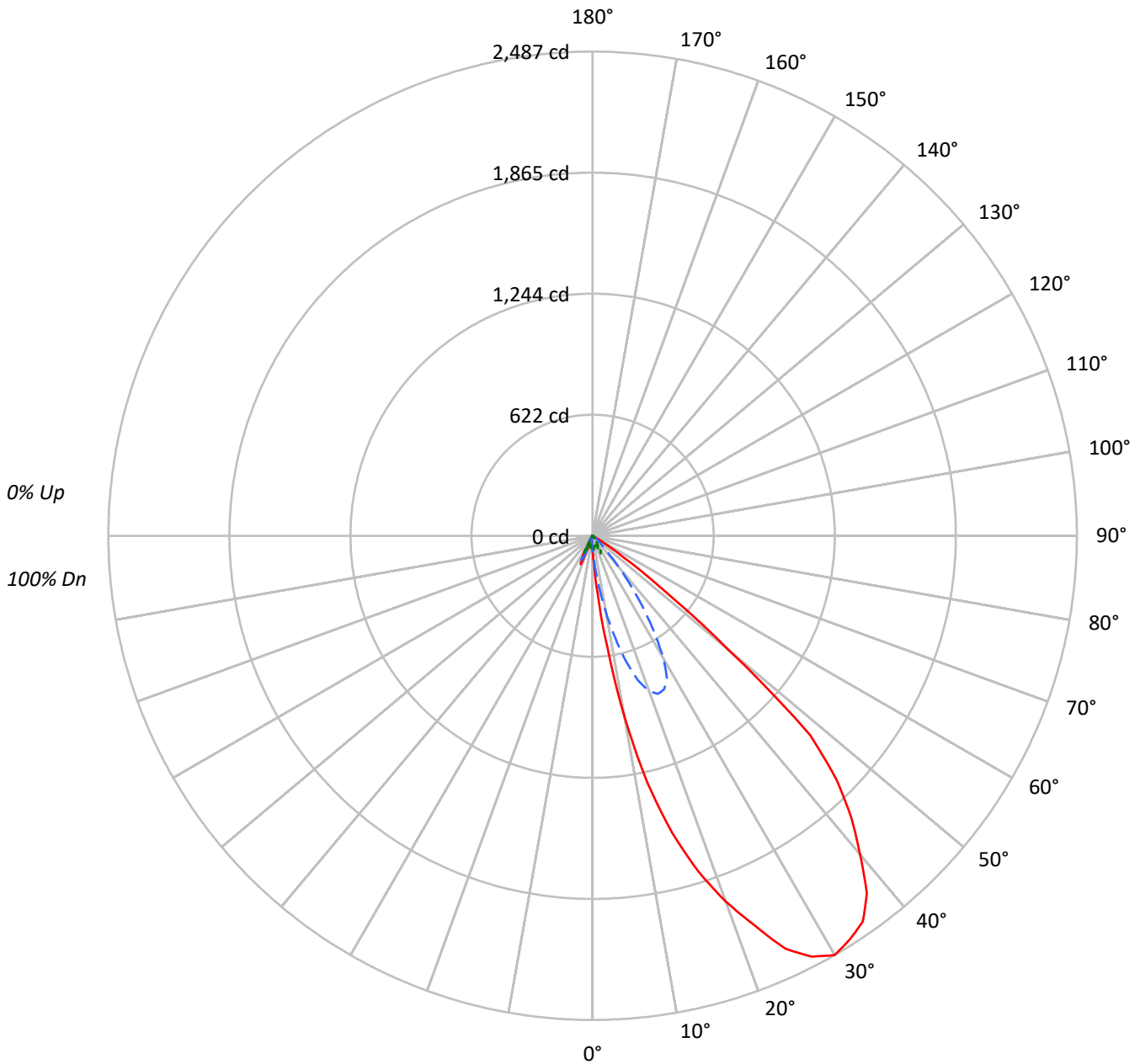
Input Watts (W): 13.84  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170818

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt

### Luminous Intensity Polar Plot





TEST NUMBER: P170818

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt

**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	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82																			
3	98	90	84	79	96	89	83	79	86	81	77	84	79	76	81	78	75	73																			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	70	67	65																			
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58																			
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52																			
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47																			
8	69	57	50	45	68	57	50	45	55	49	44	54	48	44	53	48	44	42																			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38																			
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35																			

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

	0°	90°	180°
0°	9165	9165	9165
5°	36910	8655	4049
10°	118999	7252	2330
15°	201876	5759	1813
20°	262379	5172	5460
25°	318399	13610	19326
30°	354188	4786	5099
35°	364337	2861	2394
40°	344011	1208	853
45°	309172	698	227
50°	174007	422	0
55°	43181	280	0
60°	6661	321	0
65°	1547	379	0
70°	325	469	0
75°	0	620	0
80°	0	1279	0
85°	0	2547	566



TEST NUMBER: P170818

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	14.9	1.7
10°-20°	110.9	12.3
20°-30°	256.2	28.3
30°-40°	287.4	31.8
40°-50°	200.5	22.2
50°-60°	29.9	3.3
60°-70°	1.9	0.2
70°-80°	1.0	0.1
80°-90°	0.9	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°	382.1	42.3
0°-40°	669.5	74.1
0°-60°	900.0	99.6
0°-90°	903.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	903.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	74	74	74	74	74	
5°	298	174	70	41	33	49
15°	1581	673	45	17	14	452
25°	2340	870	100	139	142	1070
35°	2420	452	19	16	16	1488
45°	1772	68	4	2	1	1300
55°	201	9	1	1	0	264
65°	5	1	1	1	0	8
75°	0	1	1	1	0	0
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P170818

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3
2.5°	135.4	134.0	130.5	129.6	132.7	130.0	131.4	134.0	131.4	128.3	131.4
5°	298.1	305.7	298.1	296.8	302.1	297.2	299.5	304.3	297.7	291.5	295.9
7.5°	575.5	580.3	559.1	566.6	564.9	566.2	567.5	567.5	563.5	552.5	558.7
10°	950.1	953.7	925.4	935.1	922.3	935.1	932.9	923.2	925.4	910.3	918.3
12.5°	1297.8	1309.3	1281.0	1290.3	1274.8	1289.4	1283.7	1281.0	1258.4	1258.4	1266.8
15°	1580.9	1607.0	1581.3	1591.1	1573.4	1593.7	1577.8	1584.9	1564.5	1539.3	1561.4
17.5°	1810.0	1835.7	1811.8	1823.7	1807.4	1823.3	1804.7	1819.8	1793.7	1775.5	1790.6
20°	1998.9	2017.9	1989.6	2006.4	1987.0	2002.9	1982.5	2002.5	1971.9	1958.7	1967.5
22.5°	2163.5	2171.0	2156.4	2184.7	2146.7	2163.5	2139.1	2159.5	2123.2	2106.4	2108.6
25°	2339.5	2356.3	2328.5	2339.1	2312.5	2324.0	2296.6	2315.6	2270.5	2246.6	2241.8
27.5°	2437.3	2461.2	2436.4	2448.3	2421.3	2431.1	2403.7	2431.1	2385.1	2361.6	2356.3
30°	2486.8	2498.3	2482.4	2490.3	2459.8	2464.7	2436.4	2466.0	2420.0	2399.2	2396.6
32.5°	2458.1	2481.1	2460.3	2470.4	2442.1	2447.0	2419.6	2451.4	2405.4	2386.4	2377.1
35°	2419.6	2443.0	2423.6	2434.2	2408.1	2411.6	2382.4	2410.3	2357.2	2333.8	2313.9
37.5°	2313.0	2335.1	2318.7	2322.3	2297.0	2294.4	2263.0	2286.4	2234.7	2214.8	2201.5
40°	2136.5	2156.4	2143.1	2150.6	2125.4	2119.7	2098.4	2120.1	2079.9	2065.3	2046.7
42.5°	1967.5	1983.9	1971.5	1983.4	1955.1	1947.6	1928.6	1956.0	1910.4	1898.5	1885.2
45°	1772.4	1782.6	1772.9	1783.1	1756.1	1744.1	1726.9	1750.3	1705.6	1694.6	1665.8
47.5°	1514.6	1503.5	1501.7	1511.5	1477.8	1453.1	1437.1	1467.2	1402.6	1381.0	1347.8
50°	906.8	925.4	933.3	926.7	903.7	869.6	844.0	880.7	846.2	793.1	740.0
52.5°	467.1	446.3	450.7	453.0	425.5	415.4	406.9	415.4	388.4	374.7	341.0
55°	200.8	191.1	194.6	196.0	190.6	178.3	173.8	179.1	166.8	161.5	147.7
57.5°	74.3	74.3	72.1	73.0	71.2	66.8	65.9	68.1	64.1	62.8	57.5
60°	27.0	27.0	27.0	27.0	24.8	24.3	24.3	25.2	23.9	23.4	21.7
62.5°	11.5	11.9	11.1	11.5	11.1	10.6	11.1	10.6	10.6	10.2	10.2
65°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.9	4.9
67.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.2	2.2	2.2
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P170818

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3
2.5°	127.4	127.0	128.7	127.0	123.9	122.1	124.3	119.9	102.6	85.4	72.5
5°	288.0	285.7	282.7	283.5	276.0	269.8	269.8	257.9	174.3	99.1	69.9
7.5°	545.8	540.5	518.0	534.3	518.4	506.0	497.6	473.3	281.8	113.7	64.6
10°	901.5	892.2	876.3	879.4	853.3	832.5	807.3	766.6	405.2	126.5	57.9
12.5°	1252.3	1243.0	1200.5	1224.8	1189.9	1169.5	1127.1	1079.3	538.3	132.7	51.8
15°	1549.9	1542.0	1495.5	1518.5	1475.6	1456.6	1401.8	1348.7	672.8	130.5	45.1
17.5°	1781.3	1780.0	1726.4	1749.4	1702.1	1686.6	1622.5	1570.3	781.6	120.8	40.7
20°	1959.5	1956.4	1902.5	1925.5	1873.7	1858.7	1777.3	1722.5	850.6	107.5	39.4
22.5°	2100.2	2094.0	2036.1	2056.0	1998.0	1978.6	1888.8	1831.7	878.9	99.1	48.7
25°	2226.7	2215.7	2149.8	2165.2	2101.5	2105.5	1970.6	1907.8	869.6	111.5	100.0
27.5°	2338.2	2318.3	2251.9	2256.4	2181.6	2142.7	2026.8	1957.3	827.2	124.3	92.9
30°	2379.8	2360.3	2290.0	2292.6	2214.8	2159.9	2036.1	1958.7	725.4	77.9	33.6
32.5°	2356.8	2335.5	2262.1	2263.0	2182.9	2127.2	2003.8	1918.4	590.1	51.3	25.7
35°	2290.0	2267.9	2194.9	2198.4	2121.0	2065.7	1944.9	1853.8	452.1	40.7	19.0
37.5°	2177.2	2161.7	2092.2	2098.4	2032.5	1973.7	1851.2	1752.5	318.9	29.2	11.9
40°	2032.1	2020.1	1952.9	1962.6	1891.0	1836.6	1705.2	1598.2	198.6	19.9	7.5
42.5°	1862.2	1849.4	1783.1	1790.6	1729.5	1651.7	1517.7	1396.5	103.9	14.2	5.3
45°	1650.4	1635.3	1568.1	1572.1	1500.0	1408.8	1269.9	1162.9	68.1	9.7	4.0
47.5°	1317.3	1290.3	1202.7	1199.2	1140.3	991.3	794.0	642.7	45.1	6.6	2.7
50°	724.1	696.2	619.3	610.9	545.4	447.6	330.9	257.4	26.1	4.4	2.2
52.5°	329.5	314.9	279.1	273.4	245.5	203.5	156.6	128.7	15.0	3.1	1.8
55°	142.9	137.6	122.5	121.6	108.8	94.2	75.2	63.7	8.8	2.2	1.3
57.5°	56.2	54.4	51.3	49.1	44.2	39.4	32.7	27.4	5.8	1.8	1.3
60°	21.2	20.8	19.0	19.5	17.7	16.8	14.6	12.4	3.5	1.3	1.3
62.5°	9.7	9.7	9.3	9.3	8.8	8.0	7.1	6.6	2.2	1.3	1.3
65°	4.9	4.9	4.4	4.4	4.4	4.0	3.5	3.5	1.3	1.3	1.3
67.5°	2.2	2.2	2.2	2.2	2.2	1.8	1.8	1.8	0.9	1.3	1.3
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.3	1.3
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.9	1.3	1.3
75°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.9	1.3	1.3
77.5°	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.9	1.3	1.8
80°	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.9	1.3	1.8
82.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.9	1.3	1.8
85°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.9	1.3	1.8
87.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.9	1.3	1.8
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: P170818

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LAL1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	112.5°	135°	157.5°	180°
0°	74.3	74.3	74.3	74.3
2.5°	62.4	55.3	49.1	47.8
5°	51.3	40.7	34.1	32.7
7.5°	41.6	29.6	24.8	23.9
10°	34.1	23.9	19.5	18.6
12.5°	28.3	19.5	15.5	14.6
15°	24.3	17.3	14.2	14.2
17.5°	23.4	19.0	18.1	18.6
20°	30.5	34.5	41.1	41.6
22.5°	70.8	115.0	152.2	159.2
25°	127.4	139.3	135.8	142.0
27.5°	67.2	52.6	53.5	54.8
30°	29.2	32.3	34.1	35.8
32.5°	24.3	25.2	25.7	27.0
35°	15.9	15.9	15.5	15.9
37.5°	9.7	9.3	8.8	8.8
40°	6.2	5.8	5.3	5.3
42.5°	4.4	3.5	3.1	3.1
45°	3.1	2.2	1.8	1.3
47.5°	2.2	1.3	0.9	0.4
50°	1.8	1.3	0.4	0.0
52.5°	1.3	0.9	0.4	0.0
55°	1.3	0.9	0.0	0.0
57.5°	1.3	0.9	0.0	0.0
60°	1.3	0.9	0.0	0.0
62.5°	1.3	0.9	0.0	0.0
65°	1.3	0.9	0.4	0.0
67.5°	1.3	0.9	0.4	0.0
70°	1.3	0.9	0.4	0.0
72.5°	1.3	0.9	0.4	0.0
75°	1.3	1.3	0.4	0.0
77.5°	1.8	1.3	0.4	0.0
80°	1.8	1.3	0.4	0.0
82.5°	1.8	1.3	0.4	0.0
85°	1.8	1.3	0.4	0.4
87.5°	1.8	1.3	0.4	0.0
90°	0.0	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)