

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: P170819

Luminaire Tested: **LDA4A09935D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170819
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: LDA4A09935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 910.8 lumens
Efficiency: N/A
Efficacy: 65.8 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

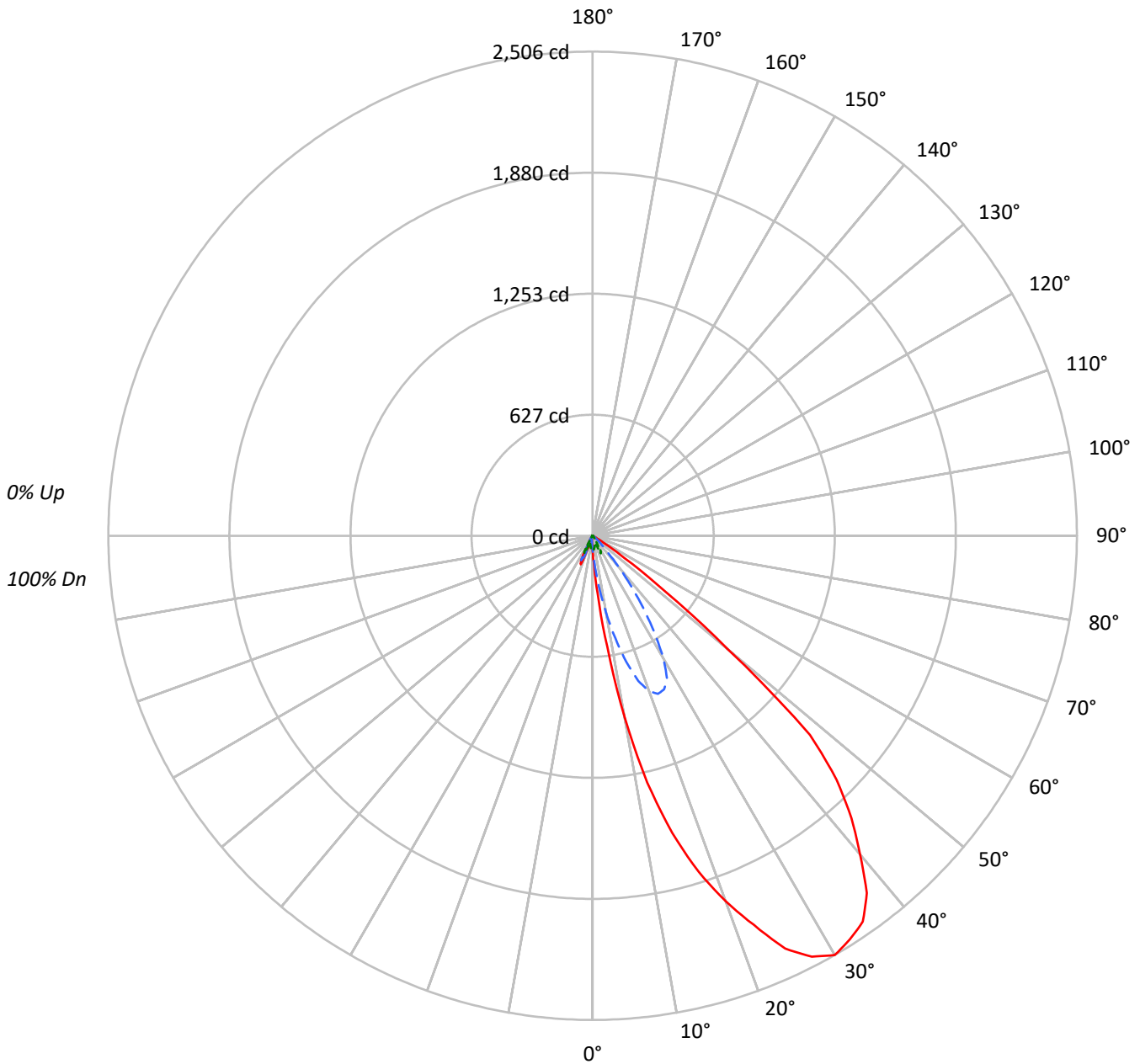
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170819

CATALOG NUMBER: LDA4A09935D010TE LAR35FL 4LAL1 30° Tilt

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	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°	9239	9239	9239
5°	37195	8717	4086
10°	119925	7315	2342
15°	203434	5810	1826
20°	264414	5211	5500
25°	320862	13705	19475
30°	356923	4828	5142
35°	367152	2891	2409
40°	346668	1224	853
45°	311562	698	227
50°	175351	422	0
55°	43525	280	0
60°	6710	321	0
65°	1547	379	0
70°	325	469	0
75°	0	620	0
80°	0	1279	0
85°	0	2547	566



TEST NUMBER: P170819

CATALOG NUMBER: LDA4A09935D010TE LAR35FL 4LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.0	1.7
10°-20°	111.8	12.3
20°-30°	258.2	28.4
30°-40°	289.6	31.8
40°-50°	202.1	22.2
50°-60°	30.2	3.3
60°-70°	2.0	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°	385.0	42.3
0°-40°	674.7	74.1
0°-60°	906.9	99.6
0°-90°	910.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	910.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	75	75	75	75	75	
5°	300	176	70	41	33	50
15°	1593	678	46	17	14	455
25°	2358	876	101	140	143	1078
35°	2438	456	19	16	16	1500
45°	1786	69	4	2	1	1310
55°	202	9	1	1	0	266
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: P170819

CATALOG NUMBER: LDA4A09935D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9
2.5°	136.4	135.1	131.5	130.6	133.7	131.1	132.4	135.1	132.4	129.3	132.4
5°	300.4	308.0	300.4	299.1	304.4	299.5	301.8	306.7	300.0	293.8	298.2
7.5°	579.9	584.8	563.4	571.0	569.2	570.6	571.9	571.9	567.9	556.7	563.0
10°	957.5	961.0	932.5	942.3	929.4	942.3	940.1	930.3	932.5	917.4	925.4
12.5°	1307.8	1319.4	1290.9	1300.3	1284.7	1299.4	1293.6	1290.9	1268.2	1268.2	1276.6
15°	1593.1	1619.4	1593.6	1603.4	1585.5	1606.0	1590.0	1597.1	1576.6	1551.2	1573.5
17.5°	1824.0	1849.9	1825.8	1837.8	1821.3	1837.4	1818.7	1833.8	1807.5	1789.2	1804.4
20°	2014.4	2033.5	2005.0	2021.9	2002.3	2018.4	1997.9	2017.9	1987.2	1973.8	1982.7
22.5°	2180.2	2187.8	2173.0	2201.6	2163.2	2180.2	2155.7	2176.2	2139.6	2122.7	2124.9
25°	2357.6	2374.5	2346.4	2357.1	2330.4	2342.0	2314.3	2333.5	2288.0	2264.0	2259.1
27.5°	2456.1	2480.2	2455.2	2467.2	2440.0	2449.9	2422.2	2449.9	2403.5	2379.9	2374.5
30°	2506.0	2517.6	2501.6	2509.6	2478.8	2483.7	2455.2	2485.1	2438.7	2417.8	2415.1
32.5°	2477.0	2500.2	2479.3	2489.5	2461.0	2465.9	2438.3	2470.4	2424.0	2404.8	2395.5
35°	2438.3	2461.9	2442.3	2453.0	2426.7	2430.2	2400.8	2428.9	2375.4	2351.8	2331.7
37.5°	2330.8	2353.1	2336.6	2340.2	2314.8	2312.1	2280.5	2304.1	2251.9	2231.9	2218.5
40°	2153.0	2173.0	2159.7	2167.2	2141.8	2136.0	2114.6	2136.5	2095.9	2081.2	2062.5
42.5°	1982.7	1999.2	1986.7	1998.8	1970.2	1962.6	1943.5	1971.1	1925.2	1913.2	1899.8
45°	1786.1	1796.4	1786.6	1796.8	1769.6	1757.6	1740.2	1763.8	1718.8	1707.7	1678.7
47.5°	1526.3	1515.1	1513.3	1523.1	1489.3	1464.3	1448.2	1478.6	1413.5	1391.6	1358.2
50°	913.8	932.5	940.5	933.9	910.7	876.3	850.5	887.5	852.7	799.2	745.7
52.5°	470.7	449.8	454.2	456.5	428.8	418.6	410.1	418.6	391.4	377.6	343.7
55°	202.4	192.6	196.1	197.5	192.1	179.6	175.2	180.5	168.0	162.7	148.9
57.5°	74.9	74.9	72.7	73.5	71.8	67.3	66.4	68.6	64.6	63.3	57.9
60°	27.2	27.2	27.2	27.2	25.0	24.5	24.5	25.4	24.1	23.6	21.8
62.5°	11.6	12.0	11.1	11.6	11.1	10.7	11.1	10.7	10.7	10.3	10.3
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: P170819

CATALOG NUMBER: LDA4A09935D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9
2.5°	128.4	127.9	129.7	127.9	124.8	123.0	125.3	120.8	103.4	86.0	73.1
5°	290.2	288.0	284.8	285.7	278.1	271.9	271.9	259.9	175.6	99.8	70.4
7.5°	550.1	544.7	522.0	538.5	522.4	509.9	501.5	477.0	283.9	114.6	65.1
10°	908.4	899.1	883.0	886.2	859.9	838.9	813.5	772.5	408.3	127.5	58.4
12.5°	1261.9	1252.6	1209.8	1234.3	1199.1	1178.6	1135.8	1087.6	542.5	133.7	52.2
15°	1561.9	1553.9	1507.1	1530.3	1487.0	1467.9	1412.6	1359.1	678.0	131.5	45.5
17.5°	1795.0	1793.7	1739.8	1762.9	1715.3	1699.7	1635.0	1582.4	787.6	121.7	41.0
20°	1974.7	1971.6	1917.2	1940.4	1888.2	1873.1	1791.0	1735.8	857.2	108.3	39.7
22.5°	2116.4	2110.2	2051.8	2071.9	2013.5	1993.8	1903.4	1845.9	885.7	99.8	49.0
25°	2243.9	2232.8	2166.4	2182.0	2117.8	2121.8	1985.8	1922.5	876.3	112.3	100.7
27.5°	2356.2	2336.2	2269.3	2273.8	2198.4	2159.2	2042.4	1972.5	833.6	125.3	93.6
30°	2398.1	2378.5	2307.7	2310.3	2231.9	2176.6	2051.8	1973.8	731.0	78.5	33.9
32.5°	2375.0	2353.6	2279.6	2280.5	2199.8	2143.6	2019.3	1933.2	594.6	51.7	25.9
35°	2307.7	2285.4	2211.8	2215.4	2137.4	2081.7	1960.0	1868.1	455.6	41.0	19.2
37.5°	2194.0	2178.4	2108.4	2114.6	2048.2	1988.9	1865.5	1766.1	321.4	29.4	12.0
40°	2047.8	2035.8	1968.0	1977.8	1905.6	1850.8	1718.4	1610.5	200.1	20.1	7.6
42.5°	1876.6	1863.7	1796.8	1804.4	1742.9	1664.4	1529.4	1407.2	104.8	14.3	5.3
45°	1663.1	1647.9	1580.2	1584.2	1511.5	1419.7	1279.8	1171.9	68.6	9.8	4.0
47.5°	1327.5	1300.3	1212.0	1208.4	1149.1	998.9	800.1	647.7	45.5	6.7	2.7
50°	729.7	701.6	624.1	615.6	549.6	451.1	333.4	259.4	26.3	4.5	2.2
52.5°	332.1	317.4	281.3	275.5	247.4	205.0	157.8	129.7	15.2	3.1	1.8
55°	144.0	138.6	123.5	122.6	109.7	94.9	75.8	64.2	8.9	2.2	1.3
57.5°	56.6	54.8	51.7	49.5	44.6	39.7	33.0	27.6	5.8	1.8	1.3
60°	21.4	21.0	19.2	19.6	17.8	16.9	14.7	12.5	3.6	1.3	1.3
62.5°	9.8	9.8	9.4	9.4	8.9	8.0	7.1	6.7	2.2	1.3	1.3
65°	4.9	4.9	4.5	4.5	4.5	4.0	3.6	3.6	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: P170819

CATALOG NUMBER: LDA4A09935D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	74.9	74.9	74.9	74.9
2.5°	62.9	55.7	49.5	48.1
5°	51.7	41.0	34.3	33.0
7.5°	41.9	29.9	25.0	24.1
10°	34.3	24.1	19.6	18.7
12.5°	28.5	19.6	15.6	14.7
15°	24.5	17.4	14.3	14.3
17.5°	23.6	19.2	18.3	18.7
20°	30.8	34.8	41.5	41.9
22.5°	71.3	115.9	153.3	160.5
25°	128.4	140.4	136.8	143.1
27.5°	67.8	53.0	53.9	55.3
30°	29.4	32.5	34.3	36.1
32.5°	24.5	25.4	25.9	27.2
35°	16.0	16.0	15.6	16.0
37.5°	9.8	9.4	8.9	8.9
40°	6.2	5.8	5.3	5.3
42.5°	4.5	3.6	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)