

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: P174908

Luminaire Tested: **LDA4A09935D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174908
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26217)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A09935D010TE LAR35FL 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 821.7 lumens
Efficiency: N/A
Efficacy: 59.4 lumens/watt
Spacing Criteria (0/90/45): 2.3 / 0.86 / 1.17
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

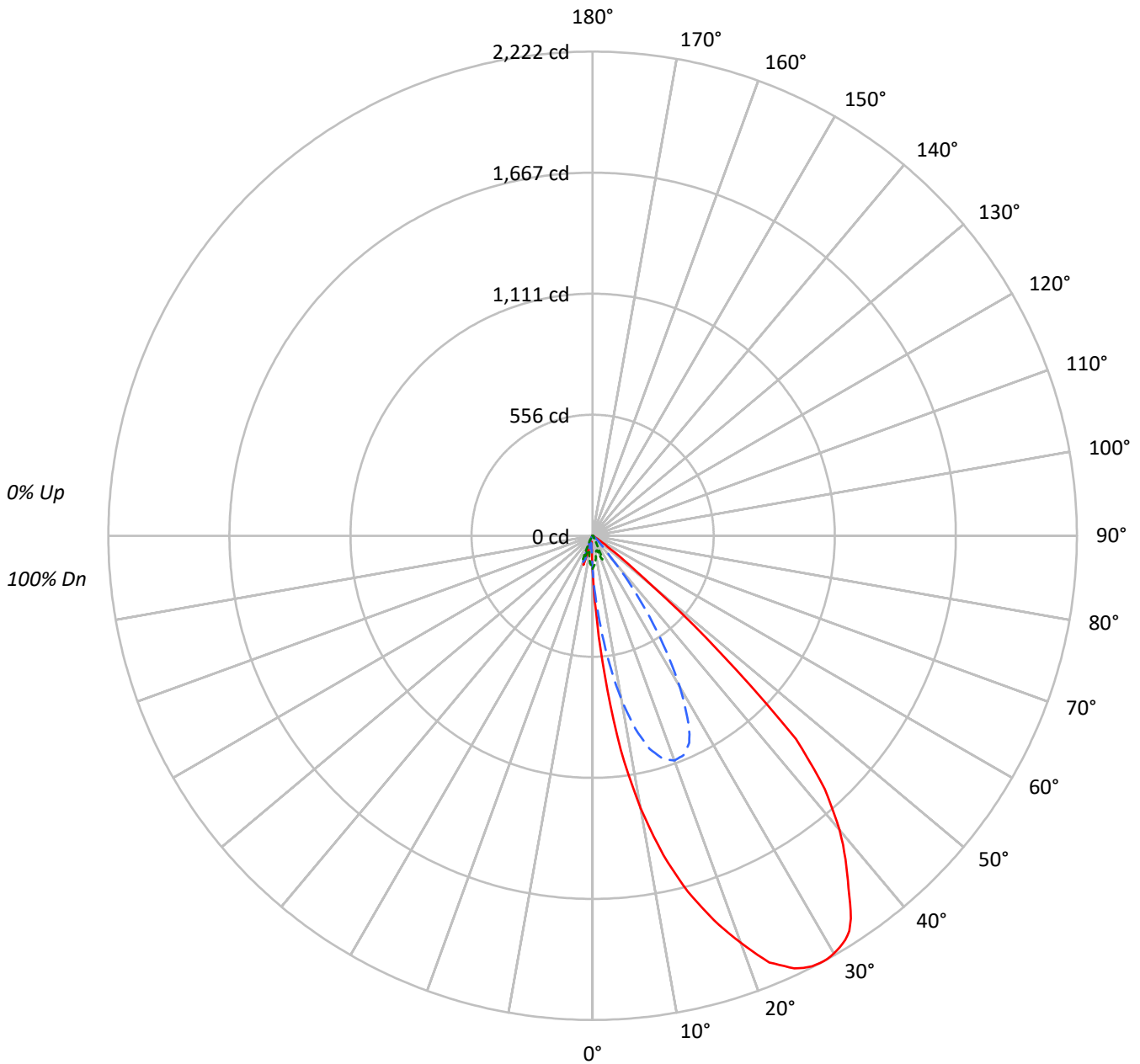
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92																			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84																			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76																			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69																			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62																			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	66	62	58	57																			
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52																			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47																			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43																			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18823	18823	18823
5°	79045	15737	5807
10°	158790	10821	3532
15°	215986	8786	7943
20°	261040	13349	14741
25°	298134	7934	4097
30°	315234	3732	1894
35°	310054	1656	708
40°	283743	821	193
45°	230152	401	0
50°	68237	230	0
55°	12365	258	0
60°	2319	296	0
65°	584	350	0
70°	144	433	0
75°	0	572	0
80°	0	1137	0
85°	0	2264	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.7	3.4
10°-20°	143.5	17.5
20°-30°	251.3	30.6
30°-40°	252.4	30.7
40°-50°	133.0	16.2
50°-60°	11.1	1.3
60°-70°	1.1	0.1
70°-80°	0.8	0.1
80°-90°	0.8	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°	422.6	51.4
0°-40°	675.0	82.1
0°-60°	819.0	99.7
0°-90°	821.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	821.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	153	153	153	153	153	
5°	638	417	127	58	47	82
15°	1691	1012	69	46	62	483
25°	2191	1048	58	33	30	1002
35°	2059	455	11	6	5	1273
45°	1319	47	2	1	0	904
55°	58	5	1	0	0	86
65°	2	1	1	1	0	3
75°	0	1	1	1	0	0
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	152.6	152.6	152.6	152.6	152.6	152.6	152.6	152.6	152.6	152.6	152.6
2.5°	346.2	346.6	347.0	349.7	343.4	341.9	339.1	335.2	322.3	269.1	203.0
5°	638.4	643.1	641.9	638.0	628.2	622.7	614.5	605.9	570.7	417.4	251.9
7.5°	992.0	1001.0	999.1	993.2	976.8	969.3	948.6	937.3	884.1	592.6	288.3
10°	1267.8	1291.7	1292.0	1286.6	1261.9	1251.4	1229.8	1209.5	1142.2	764.4	305.1
12.5°	1500.9	1501.3	1519.7	1515.4	1486.8	1482.2	1464.2	1433.6	1362.8	907.5	305.1
15°	1691.4	1717.2	1712.9	1708.3	1678.1	1671.9	1654.7	1626.5	1544.0	1012.4	290.3
17.5°	1848.7	1871.8	1865.1	1860.0	1829.9	1816.2	1797.4	1763.8	1673.0	1074.6	259.3
20°	1988.7	2010.6	1997.3	1988.3	1948.0	1931.2	1903.8	1865.1	1761.5	1097.6	223.4
22.5°	2119.4	2142.5	2125.6	2113.1	2061.1	2028.6	1989.9	1941.0	1819.0	1090.2	204.2
25°	2190.6	2220.7	2204.7	2194.9	2145.2	2107.2	2056.0	1993.0	1851.8	1048.3	153.7
26°	2206.2	2237.9	2222.6	2214.0	2163.6	2123.3	2068.5	2002.4	1854.6	1013.9	118.5
27°	2217.2	2252.4	2234.8	2223.8	2171.8	2128.8	2071.7	2002.8	1850.2	967.4	94.3
28°	2221.5	2260.2	2238.7	2225.4	2171.4	2124.5	2063.8	1994.2	1838.9	913.8	80.2
29°	2221.1	2263.3	2238.3	2223.8	2166.3	2114.3	2052.1	1982.1	1823.3	857.8	72.4
30°	2213.3	2259.4	2234.4	2216.0	2154.2	2098.3	2035.3	1965.3	1805.7	796.8	64.5
31°	2202.7	2250.0	2223.8	2201.1	2134.2	2073.6	2011.8	1942.6	1782.2	731.5	59.1
32°	2187.4	2234.8	2205.8	2176.1	2106.1	2042.7	1983.2	1916.0	1753.6	662.6	52.4
33°	2163.2	2205.0	2171.4	2137.0	2067.0	2007.5	1951.2	1885.1	1721.2	591.1	45.4
34°	2119.0	2155.8	2120.9	2086.1	2023.5	1968.4	1914.4	1848.7	1683.2	525.0	39.1
35°	2059.1	2090.4	2059.1	2029.8	1974.6	1923.4	1871.8	1807.6	1637.5	455.3	33.6
36°	1998.1	2025.5	1996.5	1973.5	1920.7	1874.9	1826.8	1760.3	1585.8	389.2	29.7
37°	1941.0	1965.6	1939.0	1916.0	1870.6	1824.0	1776.3	1708.3	1528.7	325.8	24.6
38°	1884.3	1906.2	1883.5	1857.7	1815.8	1768.5	1720.4	1650.8	1464.9	266.0	21.1
39°	1825.2	1843.2	1821.3	1795.1	1752.5	1705.5	1656.2	1584.3	1391.8	203.8	18.4
40°	1762.2	1779.1	1752.1	1728.6	1686.0	1637.8	1587.4	1512.7	1312.4	136.5	15.6
42.5°	1576.0	1586.2	1563.5	1531.1	1488.4	1435.6	1374.6	1290.9	1058.5	72.0	11.0
45°	1319.4	1321.4	1303.8	1244.7	1187.6	1105.8	1014.7	889.1	615.3	46.9	7.0
47.5°	796.4	791.7	764.0	713.5	660.3	573.9	488.6	402.1	239.0	27.4	4.7
50°	355.6	350.1	336.4	310.2	279.3	247.2	209.3	177.2	116.2	14.9	3.1
51°	257.8	253.1	242.9	223.0	200.3	177.6	151.4	129.5	86.8	12.1	2.7
52°	181.1	178.4	171.3	157.3	144.7	127.1	109.1	95.4	65.3	9.8	2.0
53°	126.3	124.4	120.1	110.7	103.3	90.4	79.0	68.1	47.3	7.8	2.0
54°	85.7	84.5	81.8	75.5	69.2	62.2	54.0	47.7	33.2	6.3	1.6
55°	57.5	56.7	54.4	51.2	47.7	43.4	37.9	33.2	23.5	5.1	1.2
57.5°	21.1	21.1	20.3	19.2	18.0	16.8	15.3	13.7	11.0	3.1	1.2
60°	9.4	9.0	9.0	8.6	8.2	7.8	7.4	6.6	5.5	2.0	1.2
61°	7.0	7.0	6.6	6.3	6.3	5.9	5.5	5.1	4.3	1.6	1.2
62°	5.1	5.1	5.1	4.7	4.7	4.3	4.3	3.9	3.1	1.2	1.2
63°	3.9	3.9	3.9	3.5	3.5	3.5	3.1	3.1	2.3	1.2	1.2
64°	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.0	0.8	1.2
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	0.8	1.2
66°	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	0.8	1.2



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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.2
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.8	1.2
80°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.8	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	152.6	152.6	152.6	152.6	152.6
2.5°	140.4	98.2	78.2	70.8	68.5
5°	127.1	73.5	58.3	50.1	46.9
7.5°	106.8	60.6	43.8	36.4	34.0
10°	86.4	50.1	35.6	29.7	28.2
12.5°	73.9	43.4	33.2	30.9	30.9
15°	68.8	45.8	46.2	55.5	62.2
17.5°	70.8	71.6	111.9	136.1	140.4
20°	101.7	128.7	127.5	115.8	112.3
22.5°	117.7	84.9	64.2	52.8	50.9
25°	58.3	38.7	33.2	30.5	30.1
26°	44.2	32.5	28.9	27.4	26.6
27°	36.8	28.6	25.8	23.9	23.1
28°	32.9	25.4	22.3	20.3	19.6
29°	29.7	21.9	18.8	16.8	16.4
30°	26.2	18.4	15.6	13.7	13.3
31°	22.3	15.3	12.5	11.3	10.6
32°	18.8	12.5	10.2	9.0	8.2
33°	15.6	10.2	8.6	7.4	6.6
34°	13.3	8.6	7.0	5.9	5.5
35°	11.0	7.0	5.9	5.1	4.7
36°	9.4	6.3	4.7	3.9	3.5
37°	8.2	5.1	3.9	3.1	3.1
38°	7.0	4.3	3.5	2.3	2.3
39°	5.9	3.5	2.7	2.0	2.0
40°	5.1	3.1	2.3	1.6	1.2
42.5°	3.5	2.0	1.6	0.8	0.4
45°	2.3	1.6	0.8	0.4	0.0
47.5°	1.6	1.2	0.8	0.4	0.0
50°	1.2	1.2	0.8	0.0	0.0
51°	1.2	0.8	0.8	0.0	0.0
52°	1.2	0.8	0.4	0.0	0.0
53°	1.2	0.8	0.4	0.0	0.0
54°	1.2	0.8	0.4	0.0	0.0
55°	1.2	0.8	0.4	0.0	0.0
57.5°	1.2	0.8	0.4	0.0	0.0
60°	1.2	0.8	0.8	0.0	0.0
61°	1.2	1.2	0.8	0.0	0.0
62°	1.2	1.2	0.8	0.0	0.0
63°	1.2	1.2	0.8	0.0	0.0
64°	1.2	1.2	0.8	0.4	0.0
65°	1.2	1.2	0.8	0.4	0.0
66°	1.2	1.2	0.8	0.4	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	1.2	1.2	0.8	0.4	0.0
75°	1.2	1.2	0.8	0.4	0.0
77.5°	1.6	1.2	0.8	0.4	0.0
80°	1.6	1.2	0.8	0.4	0.0
82.5°	1.6	1.2	0.8	0.4	0.0
85°	1.6	1.2	0.8	0.4	0.0
87.5°	1.6	1.2	0.8	0.4	0.0
90°	0.0	0.0	0.0	0.0	0.0



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







67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
70°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.2





67.5°	1.2	1.2	0.8	0.4	0.0
70°	1.2	1.2	0.8	0.4	0.0



(END OF REPORT)