

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: P170899

Luminaire Tested: **LDA4A28935D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170899
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: LDA4A28935D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 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: 2053.7 lumens
Efficiency: N/A
Efficacy: 46.2 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

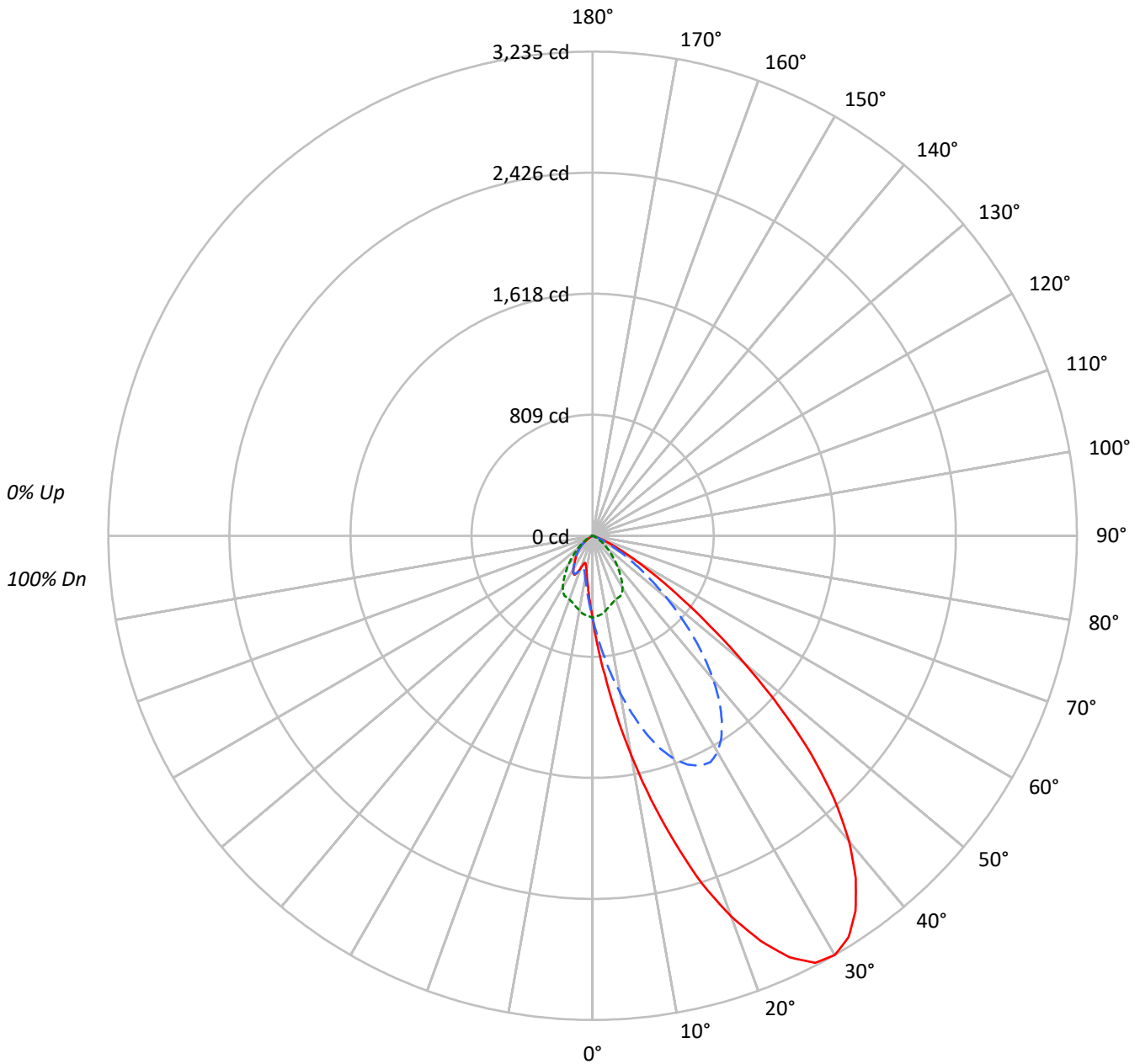
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	67643	67643	67643
5°	115447	65994	43088
10°	186583	63376	29433
15°	271088	60848	23943
20°	355023	59501	29836
25°	422798	60305	39332
30°	460766	56885	36590
35°	460826	48531	30944
40°	428883	40109	26890
45°	360230	31364	23078
50°	252856	23411	17002
55°	152167	16838	9398
60°	83949	10780	3478
65°	40481	5253	379
70°	16193	1839	469
75°	4909	1239	0
80°	1847	1847	0
85°	5519	3680	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.9	2.9
10°-20°	233.1	11.4
20°-30°	472.7	23.0
30°-40°	574.4	28.0
40°-50°	453.2	22.1
50°-60°	205.3	10.0
60°-70°	48.5	2.4
70°-80°	5.3	0.3
80°-90°	2.3	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°	764.7	37.2
0°-40°	1339.1	65.2
0°-60°	1997.6	97.3
0°-90°	2053.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2053.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	548	548	548	548	548	
5°	932	785	533	390	348	106
15°	2123	1360	476	226	188	618
25°	3107	1696	443	282	289	1422
35°	3060	1504	322	209	206	1890
45°	2065	949	180	131	132	1563
55°	708	388	78	53	44	668
65°	139	82	18	4	1	156
75°	10	5	3	1	0	16
85°	4	4	3	1	0	4
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°	20°	22.5°	25°
0°	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4
2.5°	728.2	710.2	710.2	697.4	707.6	687.1	690.9	689.6	702.5	698.6	687.1
5°	932.4	917.0	915.7	899.0	911.8	884.9	886.1	882.3	896.4	882.3	865.6
7.5°	1195.6	1168.7	1167.4	1148.1	1161.0	1126.3	1125.0	1117.3	1130.1	1103.2	1078.8
10°	1489.7	1451.2	1448.6	1425.5	1439.7	1394.7	1390.9	1378.0	1387.0	1344.6	1309.9
12.5°	1804.4	1762.0	1756.9	1732.5	1745.3	1691.4	1681.1	1664.4	1668.3	1606.6	1560.4
15°	2122.9	2086.9	2081.8	2056.1	2068.9	2002.2	1985.5	1964.9	1961.1	1878.9	1819.8
17.5°	2440.1	2366.9	2390.0	2364.3	2375.9	2297.5	2275.7	2250.0	2235.9	2134.4	2060.0
20°	2704.7	2641.7	2658.4	2635.3	2645.6	2555.7	2528.7	2496.6	2472.2	2350.2	2264.1
22.5°	2928.1	2862.6	2853.6	2853.6	2860.0	2762.4	2726.5	2690.5	2655.8	2510.7	2423.4
25°	3106.6	3034.7	3024.4	3021.9	3023.1	2920.4	2878.0	2838.2	2793.3	2634.0	2539.0
27.5°	3217.1	3141.3	3129.7	3128.5	3122.0	3016.7	2969.2	2925.5	2871.6	2708.5	2601.9
30°	3235.1	3165.7	3152.9	3152.9	3136.2	3033.4	2980.8	2934.5	2874.2	2709.8	2595.5
32.5°	3181.1	3110.5	3096.4	3097.6	3070.7	2974.3	2917.8	2870.3	2807.4	2645.6	2527.4
35°	3060.4	2992.3	2979.5	2980.8	2947.4	2857.5	2798.4	2752.2	2685.4	2531.3	2410.6
37.5°	2887.0	2822.8	2810.0	2812.5	2771.4	2690.5	2630.2	2586.5	2518.4	2375.9	2257.7
40°	2663.6	2601.9	2590.4	2591.6	2546.7	2476.1	2417.0	2375.9	2307.8	2180.7	2067.7
42.5°	2392.6	2333.5	2324.5	2323.2	2279.6	2215.3	2157.6	2122.9	2053.5	1952.1	1844.2
45°	2065.1	2015.0	1975.2	2002.2	1957.2	1905.8	1851.9	1823.6	1758.2	1686.2	1589.9
47.5°	1696.5	1652.8	1613.0	1638.7	1597.6	1559.1	1511.6	1493.6	1434.5	1397.3	1316.4
50°	1317.7	1280.4	1244.4	1266.3	1234.2	1208.5	1171.2	1162.3	1113.5	1108.3	1045.4
52.5°	978.6	951.6	923.4	940.1	915.7	899.0	870.7	868.2	830.9	843.8	800.1
55°	707.6	688.4	666.5	679.4	661.4	651.1	630.6	631.9	603.6	622.9	592.0
57.5°	500.9	485.5	470.0	477.7	466.2	458.5	444.4	446.9	440.5	446.9	425.1
60°	340.3	331.3	319.8	326.2	315.9	312.1	303.1	304.4	289.0	309.5	294.1
62.5°	223.5	217.0	217.0	213.2	205.5	202.9	197.8	197.8	188.8	204.2	193.9
65°	138.7	136.1	134.8	132.3	127.1	125.9	122.0	122.0	115.6	127.1	119.4
67.5°	82.2	80.9	79.6	78.3	74.5	73.2	71.9	70.6	66.8	74.5	69.4
70°	44.9	44.9	43.7	42.4	39.8	39.8	38.5	38.5	36.0	39.8	36.0
72.5°	21.8	21.8	20.5	20.5	19.3	19.3	18.0	18.0	16.7	19.3	16.7
75°	10.3	10.3	9.0	9.0	9.0	9.0	7.7	7.7	7.7	9.0	7.7
77.5°	5.1	5.1	5.1	5.1	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	2.6	2.6	2.6	2.6	2.6	1.3	1.3	1.3	1.3	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
85°	3.9	3.9	3.9	3.9	5.1	3.9	5.1	5.1	5.1	5.1	5.1
87.5°	5.1	5.1	5.1	5.1	5.1	6.4	6.4	6.4	5.1	6.4	5.1
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4	548.4
2.5°	690.9	680.7	684.5	673.0	664.0	660.1	660.1	658.8	598.5	538.1	495.7
5°	864.3	845.0	847.6	827.1	818.1	805.2	801.4	784.7	653.7	533.0	450.8
7.5°	1069.8	1041.5	1024.8	1005.6	994.0	970.9	959.3	926.0	705.1	522.7	407.1
10°	1290.7	1250.9	1223.9	1193.1	1181.5	1145.6	1123.7	1067.2	750.0	506.0	366.0
12.5°	1529.6	1475.6	1426.8	1393.4	1379.3	1309.9	1295.8	1214.9	791.1	490.6	332.6
15°	1774.8	1706.8	1645.1	1597.6	1579.6	1511.6	1467.9	1360.0	827.1	476.5	306.9
17.5°	1993.2	1920.0	1845.5	1783.8	1758.2	1661.8	1620.7	1487.2	854.0	462.3	292.8
20°	2187.1	2098.5	2020.1	1935.4	1905.8	1796.7	1729.9	1586.1	869.4	453.3	294.1
22.5°	2334.8	2233.3	2143.4	2048.4	2011.2	1891.7	1815.9	1654.1	874.6	446.9	303.1
25°	2442.7	2329.6	2229.5	2125.4	2081.8	1954.6	1871.2	1696.5	873.3	443.1	306.9
27.5°	2497.9	2377.2	2269.3	2157.6	2110.0	1979.0	1889.1	1705.5	855.3	427.7	306.9
30°	2490.2	2363.0	2250.0	2134.4	2083.1	1953.4	1860.9	1670.8	816.8	399.4	285.1
32.5°	2422.1	2292.4	2176.8	2061.2	2009.9	1882.7	1790.3	1600.2	761.6	362.2	255.6
35°	2309.1	2180.7	2066.4	1953.4	1902.0	1778.7	1688.8	1503.9	698.6	322.3	228.6
37.5°	2161.4	2036.8	1926.4	1823.6	1764.6	1649.0	1561.7	1389.6	629.3	286.4	205.5
40°	1977.8	1859.6	1755.6	1660.5	1597.6	1491.0	1411.4	1254.7	556.1	249.1	183.6
42.5°	1765.9	1655.4	1570.6	1475.6	1405.0	1311.2	1241.9	1105.7	481.6	215.8	160.5
45°	1525.7	1428.1	1354.9	1271.4	1198.2	1118.6	1059.5	949.1	405.8	179.8	138.7
47.5°	1267.6	1186.7	1130.1	1060.8	988.9	924.7	878.4	789.8	333.9	150.3	118.2
50°	1013.3	949.1	908.0	855.3	789.8	741.0	705.1	646.0	264.6	122.0	98.9
52.5°	779.5	733.3	705.1	666.5	608.7	575.3	549.7	508.6	201.6	98.9	79.6
55°	581.8	548.4	530.4	503.4	453.3	430.2	413.5	387.8	150.3	78.3	61.6
57.5°	420.0	398.1	386.6	368.6	327.5	313.4	301.8	286.4	109.2	60.4	44.9
60°	292.8	277.4	271.0	259.4	226.0	217.0	201.6	201.6	77.1	43.7	30.8
62.5°	193.9	183.6	181.1	172.1	146.4	141.3	137.4	134.8	52.7	29.5	18.0
65°	120.7	113.0	111.7	106.6	88.6	86.0	82.2	82.2	33.4	18.0	9.0
67.5°	69.4	65.5	64.2	61.6	48.8	47.5	44.9	47.5	19.3	9.0	3.9
70°	37.2	33.4	33.4	32.1	24.4	23.1	21.8	23.1	10.3	5.1	2.6
72.5°	18.0	15.4	15.4	14.1	10.3	10.3	9.0	11.6	5.1	2.6	2.6
75°	7.7	7.7	6.4	6.4	3.9	3.9	3.9	5.1	2.6	2.6	2.6
77.5°	3.9	3.9	3.9	3.9	1.3	1.3	1.3	2.6	2.6	2.6	2.6
80°	2.6	2.6	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6	2.6
82.5°	2.6	1.3	1.3	1.3	0.0	0.0	0.0	1.3	2.6	2.6	2.6
85°	3.9	3.9	3.9	3.9	2.6	2.6	2.6	3.9	2.6	2.6	2.6
87.5°	5.1	5.1	5.1	5.1	3.9	3.9	3.9	6.4	3.9	2.6	2.6
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):

	135°	157.5°	180°
0°	548.4	548.4	548.4
2.5°	459.8	432.8	435.4
5°	390.4	351.9	348.0
7.5°	330.1	289.0	283.8
10°	282.5	241.4	235.0
12.5°	247.9	210.6	204.2
15°	226.0	192.6	187.5
17.5°	222.2	196.5	193.9
20°	237.6	224.7	227.3
22.5°	264.6	260.7	267.1
25°	282.5	281.3	289.0
27.5°	278.7	276.1	281.3
30°	258.1	254.3	256.9
32.5°	233.7	227.3	229.9
35°	209.3	204.2	205.5
37.5°	188.8	184.9	184.9
40°	170.8	167.0	167.0
42.5°	151.5	149.0	150.3
45°	131.0	129.7	132.3
47.5°	110.4	109.2	111.7
50°	91.2	88.6	88.6
52.5°	71.9	68.1	65.5
55°	52.7	46.2	43.7
57.5°	36.0	29.5	27.0
60°	20.5	16.7	14.1
62.5°	10.3	6.4	5.1
65°	3.9	2.6	1.3
67.5°	2.6	1.3	1.3
70°	2.6	1.3	1.3
72.5°	1.3	1.3	1.3
75°	1.3	1.3	0.0
77.5°	1.3	1.3	1.3
80°	1.3	1.3	0.0
82.5°	1.3	1.3	0.0
85°	1.3	1.3	0.0
87.5°	1.3	1.3	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)