

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: P170898

Luminaire Tested: **LDA4A28930D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170898  
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: LDA4A28930D010TE LAR35FL 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2037.9 lumens  
Efficiency: N/A  
Efficacy: 45.8 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

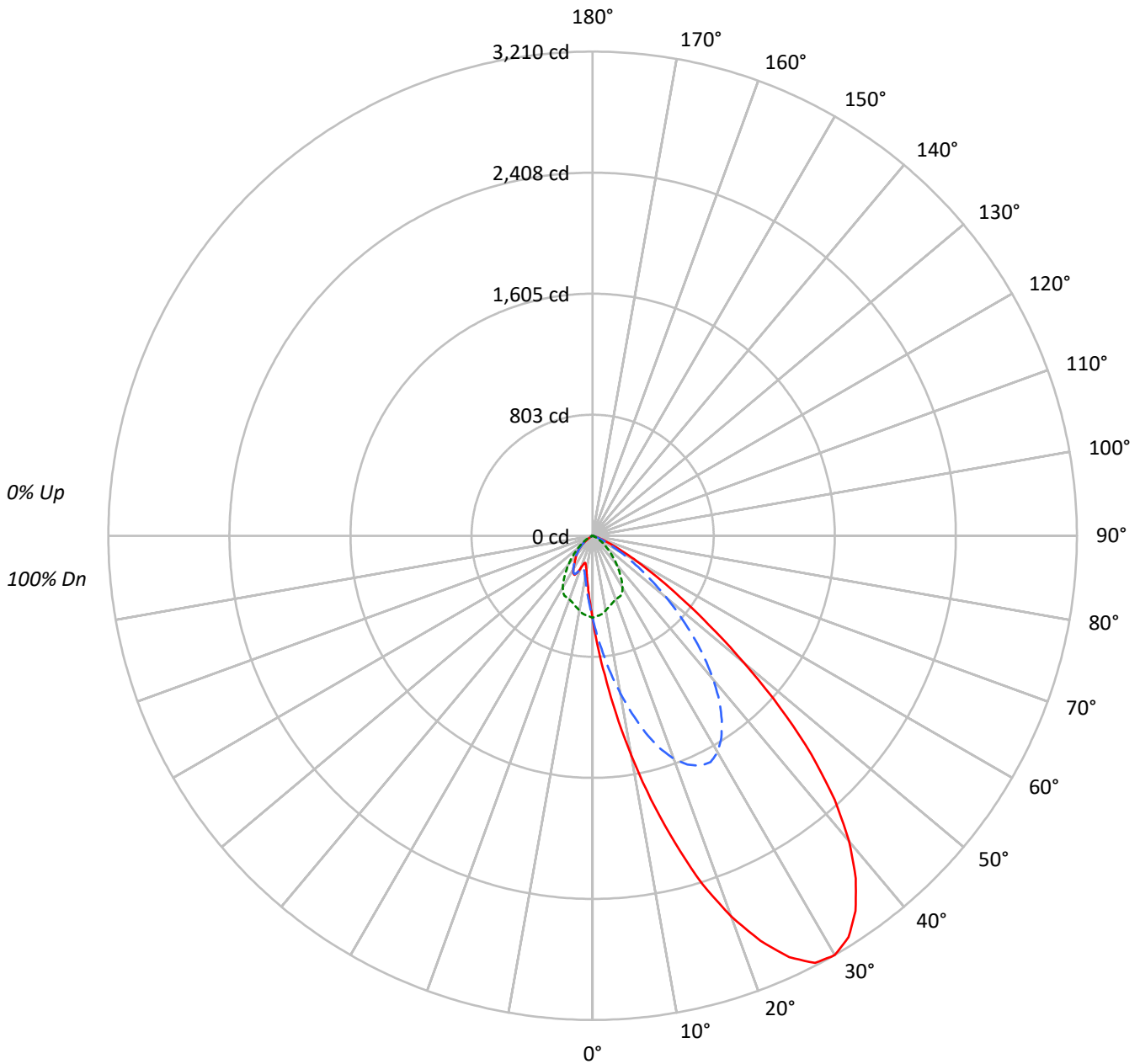
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170898

CATALOG NUMBER: LDA4A28930D010TE 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°	67125	67125	67125
5°	114555	65487	42766
10°	185155	62887	29208
15°	269006	60375	23764
20°	352293	59055	29613
25°	419559	59842	39019
30°	457234	56444	36305
35°	457288	48170	30703
40°	425582	39803	26680
45°	357474	31120	22904
50°	250918	23238	16867
55°	151006	16709	9312
60°	83308	10682	3454
65°	40160	5195	379
70°	16084	1839	469
75°	4861	1191	0
80°	1776	1776	0
85°	5378	3538	0



TEST NUMBER: P170898

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.4	2.9
10°-20°	231.3	11.4
20°-30°	469.1	23.0
30°-40°	570.0	28.0
40°-50°	449.8	22.1
50°-60°	203.7	10.0
60°-70°	48.1	2.4
70°-80°	5.2	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°	758.8	37.2
0°-40°	1328.8	65.2
0°-60°	1982.3	97.3
0°-90°	2037.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2037.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	544	544	544	544	544	
5°	925	779	529	387	345	106
15°	2107	1350	473	224	186	613
25°	3083	1684	440	280	287	1411
35°	3037	1492	320	208	204	1875
45°	2049	942	178	130	131	1551
55°	702	385	78	52	43	663
65°	138	82	18	4	1	155
75°	10	5	2	1	0	16
85°	4	4	2	1	0	3
90°	0	0	0	0	0	



TEST NUMBER: P170898

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2
2.5°	722.6	704.8	704.8	692.0	702.2	681.8	685.6	684.4	697.1	693.3	681.8
5°	925.2	909.9	908.7	892.1	904.8	878.1	879.3	875.5	889.5	875.5	859.0
7.5°	1186.5	1159.7	1158.4	1139.3	1152.1	1117.7	1116.4	1108.7	1121.5	1094.7	1070.5
10°	1478.3	1440.1	1437.5	1414.6	1428.6	1384.0	1380.2	1367.4	1376.4	1334.3	1299.9
12.5°	1790.6	1748.5	1743.4	1719.2	1731.9	1678.4	1668.2	1651.6	1655.5	1594.3	1548.4
15°	2106.6	2070.9	2065.8	2040.3	2053.1	1986.8	1970.2	1949.9	1946.0	1864.5	1805.8
17.5°	2421.4	2348.7	2371.7	2346.2	2357.7	2279.9	2258.3	2232.8	2218.8	2118.1	2044.2
20°	2683.9	2621.5	2638.0	2615.1	2625.3	2536.1	2509.3	2477.5	2453.3	2332.2	2246.8
22.5°	2905.7	2840.7	2831.8	2831.8	2838.1	2741.3	2705.6	2669.9	2635.5	2491.5	2404.8
25°	3082.8	3011.4	3001.2	2998.7	3000.0	2898.0	2856.0	2816.5	2771.9	2613.8	2519.5
27.5°	3192.4	3117.2	3105.8	3104.5	3098.1	2993.6	2946.4	2903.1	2849.6	2687.7	2582.0
30°	3210.3	3141.4	3128.7	3128.7	3112.1	3010.2	2957.9	2912.0	2852.1	2689.0	2575.6
32.5°	3156.7	3086.6	3072.6	3073.9	3047.1	2951.5	2895.5	2848.3	2785.9	2625.3	2508.1
35°	3036.9	2969.4	2956.6	2957.9	2924.8	2835.6	2777.0	2731.1	2664.8	2511.9	2392.1
37.5°	2864.9	2801.2	2788.4	2791.0	2750.2	2669.9	2610.0	2566.7	2499.1	2357.7	2240.4
40°	2643.1	2582.0	2570.5	2571.8	2527.2	2457.1	2398.5	2357.7	2290.1	2164.0	2051.8
42.5°	2374.2	2315.6	2306.7	2305.4	2262.1	2198.4	2141.0	2106.6	2037.8	1937.1	1830.1
45°	2049.3	1999.6	1960.1	1986.8	1942.2	1891.2	1837.7	1809.7	1744.7	1673.3	1577.7
47.5°	1683.5	1640.2	1600.7	1626.2	1585.4	1547.1	1500.0	1482.1	1423.5	1386.6	1306.3
50°	1307.6	1270.6	1234.9	1256.6	1224.7	1199.2	1162.3	1153.3	1104.9	1099.8	1037.4
52.5°	971.1	944.3	916.3	932.9	908.7	892.1	864.1	861.5	824.5	837.3	794.0
55°	702.2	683.1	661.4	674.2	656.3	646.1	625.7	627.0	599.0	618.1	587.5
57.5°	497.0	481.7	466.4	474.1	462.6	455.0	440.9	443.5	437.1	443.5	421.8
60°	337.7	328.8	317.3	323.7	313.5	309.7	300.8	302.0	286.7	307.1	291.8
62.5°	221.7	215.4	215.4	211.6	203.9	201.4	196.3	196.3	187.3	202.6	192.4
65°	137.6	135.1	133.8	131.3	126.2	124.9	121.1	121.1	114.7	126.2	118.5
67.5°	81.6	80.3	79.0	77.7	73.9	72.6	71.4	70.1	66.3	73.9	68.8
70°	44.6	44.6	43.3	42.1	39.5	39.5	38.2	38.2	35.7	39.5	35.7
72.5°	21.7	21.7	20.4	20.4	19.1	19.1	17.8	17.8	16.6	19.1	16.6
75°	10.2	10.2	8.9	8.9	8.9	8.9	7.6	7.6	7.6	8.9	7.6
77.5°	5.1	5.1	5.1	5.1	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	1.3	1.3	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	3.8	3.8	3.8	3.8	5.1	3.8	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



TEST NUMBER: P170898

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2	544.2
2.5°	685.6	675.4	679.3	667.8	658.9	655.0	655.0	653.8	593.9	534.0	491.9
5°	857.7	838.6	841.1	820.7	811.8	799.1	795.2	778.7	648.7	528.9	447.3
7.5°	1061.6	1033.6	1017.0	997.9	986.4	963.5	952.0	918.9	699.7	518.7	404.0
10°	1280.8	1241.3	1214.5	1183.9	1172.5	1136.8	1115.1	1059.0	744.3	502.1	363.2
12.5°	1517.8	1464.3	1415.9	1382.7	1368.7	1299.9	1285.9	1205.6	785.0	486.8	330.1
15°	1761.2	1693.7	1632.5	1585.4	1567.5	1500.0	1456.7	1349.6	820.7	472.8	304.6
17.5°	1977.9	1905.3	1831.3	1770.2	1744.7	1649.1	1608.3	1475.8	847.5	458.8	290.6
20°	2170.3	2082.4	2004.7	1920.5	1891.2	1782.9	1716.6	1573.9	862.8	449.9	291.8
22.5°	2316.9	2216.2	2127.0	2032.7	1995.7	1877.2	1802.0	1641.4	867.9	443.5	300.8
25°	2423.9	2311.8	2212.4	2109.2	2065.8	1939.7	1856.8	1683.5	866.6	439.7	304.6
27.5°	2478.7	2358.9	2251.9	2141.0	2093.9	1963.9	1874.7	1692.4	848.8	424.4	304.6
30°	2471.1	2344.9	2232.8	2118.1	2067.1	1938.4	1846.6	1658.0	810.5	396.3	282.9
32.5°	2403.5	2274.8	2160.1	2045.4	1994.5	1868.3	1776.5	1587.9	755.7	359.4	253.6
35°	2291.4	2164.0	2050.5	1938.4	1887.4	1765.1	1675.9	1492.3	693.3	319.9	226.8
37.5°	2144.8	2021.2	1911.6	1809.7	1751.0	1636.3	1549.7	1378.9	624.5	284.2	203.9
40°	1962.6	1845.4	1742.1	1647.8	1585.4	1479.6	1400.6	1245.1	551.8	247.2	182.2
42.5°	1752.3	1642.7	1558.6	1464.3	1394.2	1301.2	1232.4	1097.3	477.9	214.1	159.3
45°	1514.0	1417.2	1344.5	1261.7	1189.0	1110.0	1051.4	941.8	402.7	178.4	137.6
47.5°	1257.8	1177.6	1121.5	1052.7	981.3	917.6	871.7	783.8	331.3	149.1	117.2
50°	1005.5	941.8	901.0	848.8	783.8	735.3	699.7	641.0	262.5	121.1	98.1
52.5°	773.6	727.7	699.7	661.4	604.1	570.9	545.4	504.7	200.1	98.1	79.0
55°	577.3	544.2	526.3	499.6	449.9	426.9	410.4	384.9	149.1	77.7	61.2
57.5°	416.7	395.1	383.6	365.8	325.0	311.0	299.5	284.2	108.3	59.9	44.6
60°	290.6	275.3	268.9	257.4	224.3	215.4	200.1	200.1	76.5	43.3	30.6
62.5°	192.4	182.2	179.7	170.8	145.3	140.2	136.4	133.8	52.3	29.3	17.8
65°	119.8	112.1	110.9	105.8	87.9	85.4	81.6	81.6	33.1	17.8	8.9
67.5°	68.8	65.0	63.7	61.2	48.4	47.2	44.6	47.2	19.1	8.9	3.8
70°	37.0	33.1	33.1	31.9	24.2	22.9	21.7	22.9	10.2	5.1	2.5
72.5°	17.8	15.3	15.3	14.0	10.2	10.2	8.9	11.5	5.1	2.5	2.5
75°	7.6	7.6	6.4	6.4	3.8	3.8	3.8	5.1	2.5	2.5	2.5
77.5°	3.8	3.8	3.8	3.8	1.3	1.3	1.3	2.5	2.5	2.5	2.5
80°	2.5	2.5	2.5	2.5	0.0	0.0	0.0	2.5	2.5	2.5	2.5
82.5°	2.5	1.3	1.3	1.3	0.0	0.0	0.0	1.3	2.5	2.5	2.5
85°	3.8	3.8	3.8	3.8	2.5	2.5	2.5	3.8	2.5	2.5	2.5
87.5°	5.1	5.1	5.1	5.1	3.8	3.8	3.8	6.4	3.8	2.5	2.5
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: P170898

CATALOG NUMBER: LDA4A28930D010TE LAR35FL 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	544.2	544.2	544.2
2.5°	456.2	429.5	432.0
5°	387.4	349.2	345.4
7.5°	327.5	286.7	281.6
10°	280.4	239.6	233.2
12.5°	246.0	209.0	202.6
15°	224.3	191.2	186.1
17.5°	220.5	195.0	192.4
20°	235.8	223.0	225.6
22.5°	262.5	258.7	265.1
25°	280.4	279.1	286.7
27.5°	276.5	274.0	279.1
30°	256.2	252.3	254.9
32.5°	231.9	225.6	228.1
35°	207.7	202.6	203.9
37.5°	187.3	183.5	183.5
40°	169.5	165.7	165.7
42.5°	150.4	147.8	149.1
45°	130.0	128.7	131.3
47.5°	109.6	108.3	110.9
50°	90.5	87.9	87.9
52.5°	71.4	67.5	65.0
55°	52.3	45.9	43.3
57.5°	35.7	29.3	26.8
60°	20.4	16.6	14.0
62.5°	10.2	6.4	5.1
65°	3.8	2.5	1.3
67.5°	2.5	1.3	1.3
70°	2.5	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)