

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: P170893

Luminaire Tested: **LDA4A28827D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170893
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: LDA4A28827D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2201.4 lumens
Efficiency: N/A
Efficacy: 49.5 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

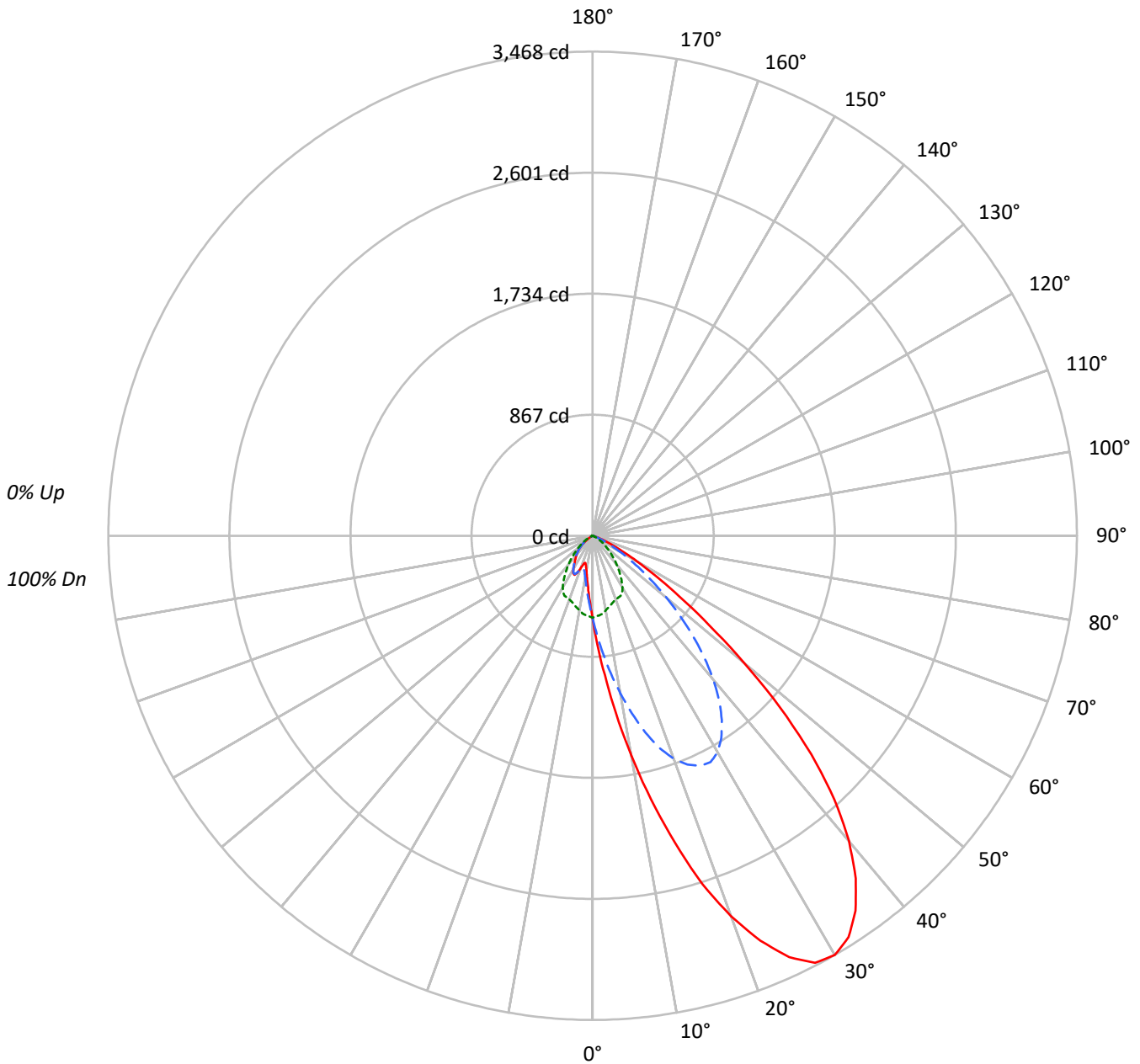
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170893

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LLWW1

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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°	72503	72503	72503
5°	123742	70737	46196
10°	200009	67935	31550
15°	290587	65215	25667
20°	380554	63793	31988
25°	453216	64632	42149
30°	493909	60973	39210
35°	493969	52024	33172
40°	459734	43007	28822
45°	386134	33614	24735
50°	271028	25099	18230
55°	163113	18064	10064
60°	89993	11545	3725
65°	43400	5633	409
70°	17383	1984	505
75°	5242	1334	0
80°	1989	1989	0
85°	5802	3963	0



TEST NUMBER: P170893

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LLWW1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.1	2.9
10°-20°	249.9	11.4
20°-30°	506.7	23.0
30°-40°	615.7	28.0
40°-50°	485.8	22.1
50°-60°	220.1	10.0
60°-70°	51.9	2.4
70°-80°	5.6	0.3
80°-90°	2.5	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°	819.7	37.2
0°-40°	1435.4	65.2
0°-60°	2141.3	97.3
0°-90°	2201.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2201.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	588	588	588	588	588	
5°	999	841	571	418	373	114
15°	2276	1458	511	242	201	662
25°	3330	1818	475	303	310	1524
35°	3280	1612	346	224	220	2026
45°	2214	1017	193	140	142	1675
55°	758	416	84	56	47	716
65°	149	88	19	4	1	167
75°	11	6	3	1	0	17
85°	4	4	3	1	0	4
90°	0	0	0	0	0	



TEST NUMBER: P170893

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LLWW1

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
2.5°	780.6	761.3	761.3	747.5	758.5	736.5	740.6	739.3	753.0	748.9	736.5
5°	999.4	982.9	981.5	963.6	977.4	948.5	949.9	945.8	960.9	945.8	927.9
7.5°	1281.7	1252.7	1251.4	1230.7	1244.5	1207.3	1205.9	1197.7	1211.4	1182.5	1156.4
10°	1596.9	1555.6	1552.9	1528.1	1543.2	1495.0	1490.9	1477.1	1486.8	1441.3	1404.2
12.5°	1934.2	1888.8	1883.2	1857.1	1870.9	1813.0	1802.0	1784.1	1788.3	1722.2	1672.6
15°	2275.6	2237.0	2231.5	2204.0	2217.8	2146.2	2128.3	2106.3	2102.1	2014.0	1950.7
17.5°	2615.6	2537.2	2561.9	2534.4	2546.8	2462.8	2439.4	2411.9	2396.7	2288.0	2208.1
20°	2899.2	2831.8	2849.6	2824.9	2835.9	2739.5	2710.6	2676.2	2650.0	2519.3	2427.0
22.5°	3138.7	3068.5	3058.9	3058.9	3065.8	2961.2	2922.6	2884.1	2846.9	2691.3	2597.7
25°	3330.1	3253.0	3242.0	3239.2	3240.6	3130.5	3085.1	3042.4	2994.2	2823.5	2721.6
27.5°	3448.5	3367.3	3354.9	3353.5	3346.6	3233.7	3182.8	3136.0	3078.2	2903.3	2789.1
30°	3467.8	3393.4	3379.7	3379.7	3361.8	3251.6	3195.2	3145.6	3080.9	2904.7	2782.2
32.5°	3409.9	3334.2	3319.1	3320.5	3291.5	3188.3	3127.7	3076.8	3009.3	2835.9	2709.2
35°	3280.5	3207.6	3193.8	3195.2	3159.4	3063.0	2999.7	2950.1	2878.6	2713.4	2584.0
37.5°	3094.7	3025.9	3012.1	3014.8	2970.8	2884.1	2819.4	2772.6	2699.6	2546.8	2420.1
40°	2855.2	2789.1	2776.7	2778.1	2729.9	2654.2	2590.8	2546.8	2473.8	2337.5	2216.4
42.5°	2564.7	2501.4	2491.7	2490.3	2443.5	2374.7	2312.8	2275.6	2201.2	2092.5	1976.9
45°	2213.6	2160.0	2117.3	2146.2	2098.0	2042.9	1985.1	1954.8	1884.6	1807.5	1704.3
47.5°	1818.5	1771.7	1729.1	1756.6	1712.5	1671.2	1620.3	1601.0	1537.7	1497.8	1411.1
50°	1412.4	1372.5	1334.0	1357.4	1323.0	1295.4	1255.5	1245.9	1193.5	1188.0	1120.6
52.5°	1049.0	1020.1	989.8	1007.7	981.5	963.6	933.4	930.6	890.7	904.5	857.6
55°	758.5	737.9	714.5	728.2	709.0	698.0	675.9	677.3	647.0	667.7	634.6
57.5°	536.9	520.4	503.9	512.1	499.7	491.5	476.3	479.1	472.2	479.1	455.7
60°	364.8	355.2	342.8	349.7	338.7	334.5	324.9	326.3	309.7	331.8	315.3
62.5°	239.5	232.7	232.7	228.5	220.3	217.5	212.0	212.0	202.4	218.9	207.9
65°	148.7	145.9	144.5	141.8	136.3	134.9	130.8	130.8	123.9	136.3	128.0
67.5°	88.1	86.7	85.4	84.0	79.8	78.5	77.1	75.7	71.6	79.8	74.3
70°	48.2	48.2	46.8	45.4	42.7	42.7	41.3	41.3	38.5	42.7	38.5
72.5°	23.4	23.4	22.0	22.0	20.6	20.6	19.3	19.3	17.9	20.6	17.9
75°	11.0	11.0	9.6	9.6	9.6	9.6	8.3	8.3	8.3	9.6	8.3
77.5°	5.5	5.5	5.5	5.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	1.4	1.4	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	4.1	4.1	4.1	4.1	5.5	4.1	5.5	5.5	5.5	5.5	5.5
87.5°	5.5	5.5	5.5	5.5	5.5	6.9	6.9	6.9	5.5	6.9	5.5
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: P170893

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LLWW1

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
2.5°	740.6	729.6	733.7	721.4	711.7	707.6	707.6	706.2	641.5	576.8	531.4
5°	926.5	905.8	908.6	886.6	876.9	863.2	859.0	841.1	700.7	571.3	483.2
7.5°	1146.7	1116.5	1098.6	1077.9	1065.5	1040.7	1028.4	992.6	755.8	560.3	436.4
10°	1383.5	1340.8	1311.9	1278.9	1266.5	1228.0	1204.6	1144.0	804.0	542.4	392.3
12.5°	1639.6	1581.8	1529.4	1493.7	1478.5	1404.2	1389.0	1302.3	848.0	525.9	356.6
15°	1902.5	1829.6	1763.5	1712.5	1693.3	1620.3	1573.5	1457.9	886.6	510.7	329.0
17.5°	2136.5	2058.1	1978.2	1912.2	1884.6	1781.4	1737.3	1594.2	915.5	495.6	313.9
20°	2344.4	2249.4	2165.5	2074.6	2042.9	1925.9	1854.3	1700.2	932.0	486.0	315.3
22.5°	2502.7	2394.0	2297.6	2195.7	2155.8	2027.8	1946.6	1773.1	937.5	479.1	324.9
25°	2618.4	2497.2	2389.8	2278.3	2231.5	2095.2	2005.8	1818.5	936.1	474.9	329.0
27.5°	2677.6	2548.2	2432.5	2312.8	2261.8	2121.4	2025.0	1828.2	916.8	458.4	329.0
30°	2669.3	2533.0	2411.9	2288.0	2232.9	2093.9	1994.8	1791.0	875.5	428.1	305.6
32.5°	2596.3	2457.3	2333.4	2209.5	2154.4	2018.2	1919.0	1715.3	816.3	388.2	274.0
35°	2475.2	2337.5	2215.0	2093.9	2038.8	1906.6	1810.3	1612.0	748.9	345.5	245.0
37.5°	2316.9	2183.4	2065.0	1954.8	1891.5	1767.6	1674.0	1489.5	674.6	307.0	220.3
40°	2120.0	1993.4	1881.9	1780.0	1712.5	1598.3	1512.9	1345.0	596.1	267.1	196.9
42.5°	1892.9	1774.5	1683.6	1581.8	1506.0	1405.6	1331.2	1185.3	516.2	231.3	172.1
45°	1635.5	1530.8	1452.4	1362.9	1284.4	1199.1	1135.7	1017.3	435.0	192.7	148.7
47.5°	1358.7	1272.0	1211.4	1137.1	1060.0	991.2	941.6	846.6	357.9	161.1	126.7
50°	1086.2	1017.3	973.3	916.8	846.6	794.3	755.8	692.5	283.6	130.8	106.0
52.5°	835.6	786.1	755.8	714.5	652.5	616.7	589.2	545.2	216.1	106.0	85.4
55°	623.6	587.8	568.6	539.6	486.0	461.2	443.3	415.7	161.1	84.0	66.1
57.5°	450.2	426.8	414.4	395.1	351.0	335.9	323.5	307.0	117.0	64.7	48.2
60°	313.9	297.4	290.5	278.1	242.3	232.7	216.1	216.1	82.6	46.8	33.0
62.5°	207.9	196.9	194.1	184.5	156.9	151.4	147.3	144.5	56.4	31.7	19.3
65°	129.4	121.1	119.8	114.3	95.0	92.2	88.1	88.1	35.8	19.3	9.6
67.5°	74.3	70.2	68.8	66.1	52.3	50.9	48.2	50.9	20.6	9.6	4.1
70°	39.9	35.8	35.8	34.4	26.2	24.8	23.4	24.8	11.0	5.5	2.8
72.5°	19.3	16.5	16.5	15.1	11.0	11.0	9.6	12.4	5.5	2.8	2.8
75°	8.3	8.3	6.9	6.9	4.1	4.1	4.1	5.5	2.8	2.8	2.8
77.5°	4.1	4.1	4.1	4.1	1.4	1.4	1.4	2.8	2.8	2.8	2.8
80°	2.8	2.8	2.8	2.8	0.0	0.0	0.0	2.8	2.8	2.8	2.8
82.5°	2.8	1.4	1.4	1.4	0.0	0.0	0.0	1.4	2.8	2.8	2.8
85°	4.1	4.1	4.1	4.1	2.8	2.8	2.8	4.1	2.8	2.8	2.8
87.5°	5.5	5.5	5.5	5.5	4.1	4.1	4.1	6.9	4.1	2.8	2.8
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: P170893

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LLWW1

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	587.8	587.8	587.8
2.5°	492.8	463.9	466.7
5°	418.5	377.2	373.1
7.5°	353.8	309.7	304.2
10°	302.9	258.8	251.9
12.5°	265.7	225.8	218.9
15°	242.3	206.5	201.0
17.5°	238.2	210.6	207.9
20°	254.7	240.9	243.7
22.5°	283.6	279.5	286.3
25°	302.9	301.5	309.7
27.5°	298.7	296.0	301.5
30°	276.7	272.6	275.3
32.5°	250.5	243.7	246.4
35°	224.4	218.9	220.3
37.5°	202.4	198.2	198.2
40°	183.1	179.0	179.0
42.5°	162.4	159.7	161.1
45°	140.4	139.0	141.8
47.5°	118.4	117.0	119.8
50°	97.7	95.0	95.0
52.5°	77.1	73.0	70.2
55°	56.4	49.6	46.8
57.5°	38.5	31.7	28.9
60°	22.0	17.9	15.1
62.5°	11.0	6.9	5.5
65°	4.1	2.8	1.4
67.5°	2.8	1.4	1.4
70°	2.8	1.4	1.4
72.5°	1.4	1.4	1.4
75°	1.4	1.4	0.0
77.5°	1.4	1.4	1.4
80°	1.4	1.4	0.0
82.5°	1.4	1.4	0.0
85°	1.4	1.4	0.0
87.5°	1.4	1.4	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)