

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: P170765

Luminaire Tested: **LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170765
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26104)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 15° Spot Optic, at 30° tilt. --- 27.9W
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2508.2 lumens
Efficiency: N/A
Efficacy: 56.4 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

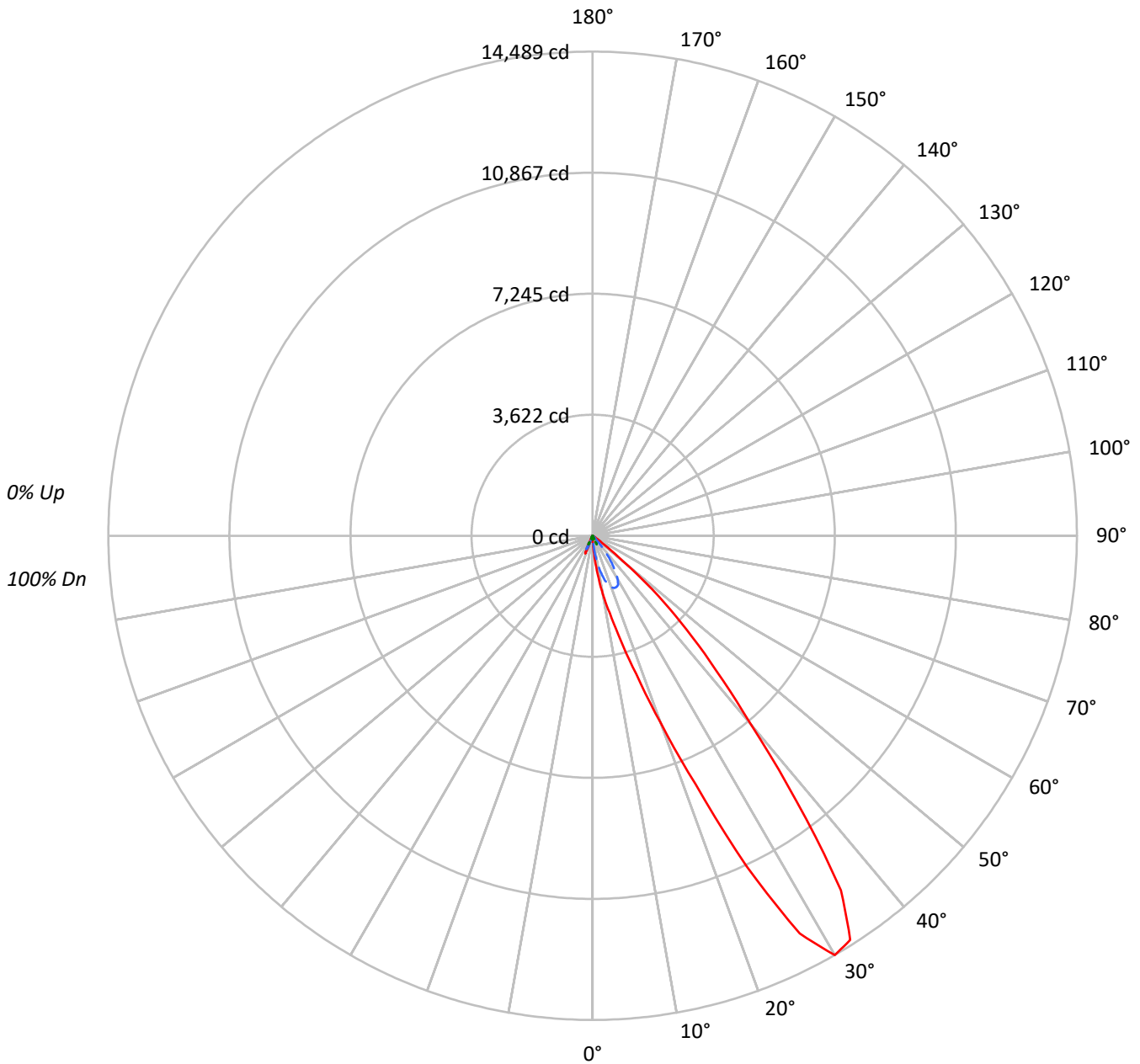
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170765

CATALOG NUMBER: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170765

CATALOG NUMBER: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt

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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	93	90	94	91	88	91	88	86	89	86	84	82																			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74																			
4	92	83	76	71	90	82	75	70	79	74	70	77	72	69	75	71	68	66																			
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59																			
6	80	69	62	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53																			
7	74	63	56	51	73	62	55	50	61	55	50	60	54	50	58	53	49	48																			
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	54	48	45	43																			
9	65	53	46	41	64	52	46	41	51	45	41	50	45	40	49	44	40	39																			
10	61	49	42	37	59	48	41	37	47	41	37	46	41	37	46	40	36	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	14592	14592	14592
5°	76977	13793	7318
10°	225172	11711	4822
15°	409600	9833	5440
20°	781414	11197	26541
25°	1485048	38937	58590
30°	2063686	13132	11366
35°	1950216	6008	4352
40°	1182021	2657	1546
45°	692690	1448	488
50°	229886	1055	0
55°	43783	882	0
60°	9843	691	0
65°	2802	1197	0
70°	1010	1479	0
75°	0	1954	0
80°	0	2912	0
85°	0	5802	1981



TEST NUMBER: P170765

CATALOG NUMBER: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.2	1.1
10°-20°	230.8	9.2
20°-30°	818.4	32.6
30°-40°	970.3	38.7
40°-50°	412.8	16.5
50°-60°	37.3	1.5
60°-70°	4.6	0.2
70°-80°	3.1	0.1
80°-90°	2.8	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°	1077.4	43.0
0°-40°	2047.7	81.6
0°-60°	2497.8	99.6
0°-90°	2508.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2508.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	118	118	118	118	118	
5°	622	307	111	70	59	97
15°	3208	1351	77	43	43	1035
25°	10912	1693	286	450	430	5056
35°	12952	1000	40	30	29	7482
45°	3971	110	8	6	3	3112
55°	204	16	4	3	0	285
65°	10	4	4	3	0	14
75°	0	3	4	4	0	1
85°	0	3	4	4	1	0
90°	0	0	0	0	0	



TEST NUMBER: P170765

CATALOG NUMBER: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3
2.5°	217.3	204.9	213.2	210.4	211.8	216.0	211.8	211.8	210.4	204.9	204.9
5°	621.7	584.6	602.5	592.8	598.3	605.2	595.6	592.8	588.7	576.3	573.6
7.5°	1158.2	1137.5	1159.5	1143.0	1158.2	1160.9	1147.2	1144.4	1137.5	1119.6	1112.8
10°	1797.8	1763.4	1784.0	1766.1	1789.5	1788.1	1766.1	1768.9	1760.6	1737.2	1726.2
12.5°	2364.5	2337.0	2357.6	2306.7	2364.5	2327.3	2331.5	2337.0	2326.0	2295.7	2281.9
15°	3207.6	3132.0	3167.7	3079.7	3167.7	3155.4	3107.2	3104.5	3075.6	3024.7	2994.4
17.5°	4327.3	4347.9	4321.8	4269.5	4386.4	4354.8	4286.0	4272.3	4217.2	4078.3	4075.6
20°	5953.1	5925.6	5969.6	5804.6	5954.5	5808.7	5789.4	5750.9	5657.4	5463.4	5433.2
22.5°	8034.2	8049.4	7971.0	7856.8	8041.1	7815.5	7746.7	7654.6	7484.0	7185.5	7092.0
25°	10911.7	10892.5	10790.7	10600.9	10797.6	10433.1	10261.1	10071.3	9753.6	9288.7	9064.5
27.5°	13419.3	13497.7	13430.3	13237.7	13368.4	13009.4	12613.2	12492.2	12061.7	11475.7	11071.3
30°	14489.4	14526.5	14497.6	14350.5	14397.2	14101.5	13709.5	13566.4	13124.9	12570.6	12046.5
32.5°	14342.2	14360.1	14365.6	14168.9	14177.2	13897.9	13488.0	13276.2	12794.8	12261.1	11635.3
35°	12951.6	13025.9	13074.0	12889.7	12706.8	12428.9	11964.0	11635.3	11129.1	10642.1	10002.5
37.5°	10030.1	10123.6	10197.9	10041.1	9954.4	9618.8	9232.3	8977.8	8628.4	8342.3	7888.4
40°	7341.0	7358.9	7404.3	7323.1	7188.3	7098.9	6877.4	6733.0	6521.2	6367.1	6065.9
42.5°	5456.6	5446.9	5478.6	5433.2	5429.1	5294.3	5154.0	5068.7	4995.8	4833.5	4621.6
45°	3971.0	3973.8	4004.0	3975.2	3898.1	3869.2	3777.1	3700.1	3603.8	3552.9	3385.1
47.5°	2700.1	2708.3	2729.0	2712.5	2642.3	2631.3	2572.2	2495.1	2493.8	2415.4	2268.2
50°	1198.0	1200.8	1225.6	1220.1	1136.2	1147.2	1108.6	1038.5	1057.8	1011.0	898.2
52.5°	397.5	398.9	403.0	400.3	386.5	386.5	376.9	375.5	364.5	353.5	328.7
55°	203.6	203.6	206.3	204.9	198.1	198.1	187.1	193.9	188.4	184.3	169.2
57.5°	86.7	86.7	88.0	88.0	83.9	88.0	83.9	83.9	81.2	79.8	74.3
60°	39.9	39.9	39.9	39.9	38.5	41.3	38.5	38.5	38.5	37.1	34.4
62.5°	20.6	20.6	20.6	20.6	20.6	20.6	20.6	19.3	19.3	19.3	17.9
65°	9.6	9.6	9.6	9.6	9.6	11.0	9.6	9.6	9.6	9.6	9.6
67.5°	4.1	4.1	4.1	5.5	5.5	5.5	5.5	5.5	4.1	4.1	4.1
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1.4
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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: P170765

CATALOG NUMBER: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3
2.5°	206.3	199.4	209.1	200.8	206.3	200.8	193.9	196.7	158.2	132.0	116.9
5°	575.0	554.3	572.2	554.3	555.7	546.1	519.9	517.2	306.7	149.9	111.4
7.5°	1082.5	1079.8	1101.8	1078.4	1075.6	1052.2	1004.1	984.8	555.7	176.1	103.2
10°	1719.4	1679.5	1698.7	1674.0	1665.7	1623.1	1554.3	1517.2	826.7	202.2	93.5
12.5°	2243.4	2228.3	2242.0	2218.7	2210.4	2152.6	2071.5	2022.0	1104.5	217.3	83.9
15°	2928.4	2898.2	2907.8	2859.6	2834.9	2724.8	2585.9	2495.1	1350.7	216.0	77.0
17.5°	3973.8	3914.6	3909.1	3826.6	3766.1	3566.6	3317.7	3130.6	1530.9	199.4	74.3
20°	5283.2	5176.0	5140.2	5009.5	4907.7	4577.6	4193.9	3889.9	1643.7	177.4	85.3
22.5°	6852.7	6664.2	6558.3	6349.3	6174.6	5645.0	5082.4	4627.1	1693.2	170.6	122.4
25°	8682.1	8358.8	8134.6	7805.9	7511.5	6698.6	5909.1	5270.9	1693.2	221.5	286.1
27.5°	10537.6	10027.3	9614.7	9134.6	8687.6	7534.9	6517.1	5686.3	1652.0	276.5	261.3
30°	11477.1	10849.8	10288.6	9727.5	9166.3	7781.1	6653.2	5737.2	1496.5	162.3	92.2
32.5°	11078.2	10416.6	9796.2	9252.9	8698.6	7346.5	6284.6	5400.2	1257.2	94.9	59.1
35°	9548.6	8975.1	8435.9	8030.1	7598.2	6530.8	5580.4	4810.1	1000.0	74.3	39.9
37.5°	7621.6	7230.9	6847.2	6587.2	6277.7	5475.8	4709.7	4078.3	715.3	53.6	24.8
40°	5911.8	5645.0	5376.8	5211.7	4993.0	4408.4	3811.5	3309.4	422.3	37.1	16.5
42.5°	4528.1	4343.8	4144.3	4030.2	3873.4	3437.3	2971.1	2616.2	195.3	26.1	12.4
45°	3328.7	3192.5	3039.8	2966.9	2856.9	2569.4	2259.9	2009.6	110.0	19.3	8.3
47.5°	2240.7	2119.6	1978.0	1932.6	1826.6	1574.9	1258.6	1012.4	72.9	13.8	6.9
50°	891.3	811.5	763.4	700.1	638.2	535.1	400.3	319.1	44.0	11.0	5.5
52.5°	327.4	309.5	301.2	284.7	271.0	242.1	204.9	177.4	26.1	8.3	4.1
55°	170.6	159.6	154.1	148.6	140.3	123.8	103.2	88.0	16.5	5.5	4.1
57.5°	74.3	70.1	71.5	66.0	61.9	56.4	49.5	42.6	11.0	5.5	4.1
60°	35.8	33.0	34.4	31.6	30.3	28.9	26.1	22.0	6.9	4.1	2.8
62.5°	17.9	17.9	17.9	16.5	16.5	15.1	13.8	12.4	5.5	4.1	4.1
65°	9.6	8.3	9.6	8.3	8.3	8.3	6.9	6.9	4.1	4.1	4.1
67.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	2.8	4.1	4.1
70°	2.8	2.8	2.8	2.8	2.8	2.8	1.4	2.8	2.8	4.1	4.1
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8	4.1	4.1
75°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.1	4.1
77.5°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.8	4.1	4.1
80°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.1	4.1
82.5°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.8	4.1	4.1
85°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.8	4.1	4.1
87.5°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.8	4.1	4.1
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: P170765

CATALOG NUMBER: LDA4A28827D010TE LAR15SP 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	118.3	118.3	118.3	118.3
2.5°	99.0	88.0	79.8	78.4
5°	83.9	70.1	60.5	59.1
7.5°	71.5	56.4	48.1	46.8
10°	63.3	48.1	39.9	38.5
12.5°	56.4	42.6	37.1	35.8
15°	52.3	42.6	41.3	42.6
17.5°	56.4	57.8	63.3	70.1
20°	93.5	133.4	173.3	202.2
22.5°	210.4	389.3	515.8	576.3
25°	397.5	449.8	451.2	430.5
27.5°	216.0	171.9	154.1	145.8
30°	85.3	81.2	81.2	79.8
32.5°	56.4	52.3	50.9	49.5
35°	34.4	30.3	28.9	28.9
37.5°	22.0	19.3	17.9	16.5
40°	15.1	12.4	11.0	9.6
42.5°	11.0	8.3	5.5	5.5
45°	8.3	5.5	2.8	2.8
47.5°	6.9	4.1	1.4	1.4
50°	5.5	2.8	1.4	0.0
52.5°	4.1	2.8	0.0	0.0
55°	4.1	2.8	0.0	0.0
57.5°	4.1	2.8	0.0	0.0
60°	4.1	2.8	0.0	0.0
62.5°	4.1	2.8	0.0	0.0
65°	4.1	2.8	1.4	0.0
67.5°	5.5	2.8	1.4	0.0
70°	5.5	2.8	1.4	0.0
72.5°	5.5	2.8	1.4	0.0
75°	5.5	4.1	1.4	0.0
77.5°	5.5	4.1	1.4	0.0
80°	5.5	4.1	1.4	0.0
82.5°	5.5	4.1	1.4	0.0
85°	5.5	4.1	1.4	1.4
87.5°	5.5	4.1	1.4	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)