

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: P170829

Luminaire Tested: **LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170829
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26106)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 35° Flood 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: 2810.9 lumens
Efficiency: N/A
Efficacy: 63.2 lumens/watt
Spacing Criteria (0/90/45): 2.71 / 1.11 / 1.33
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

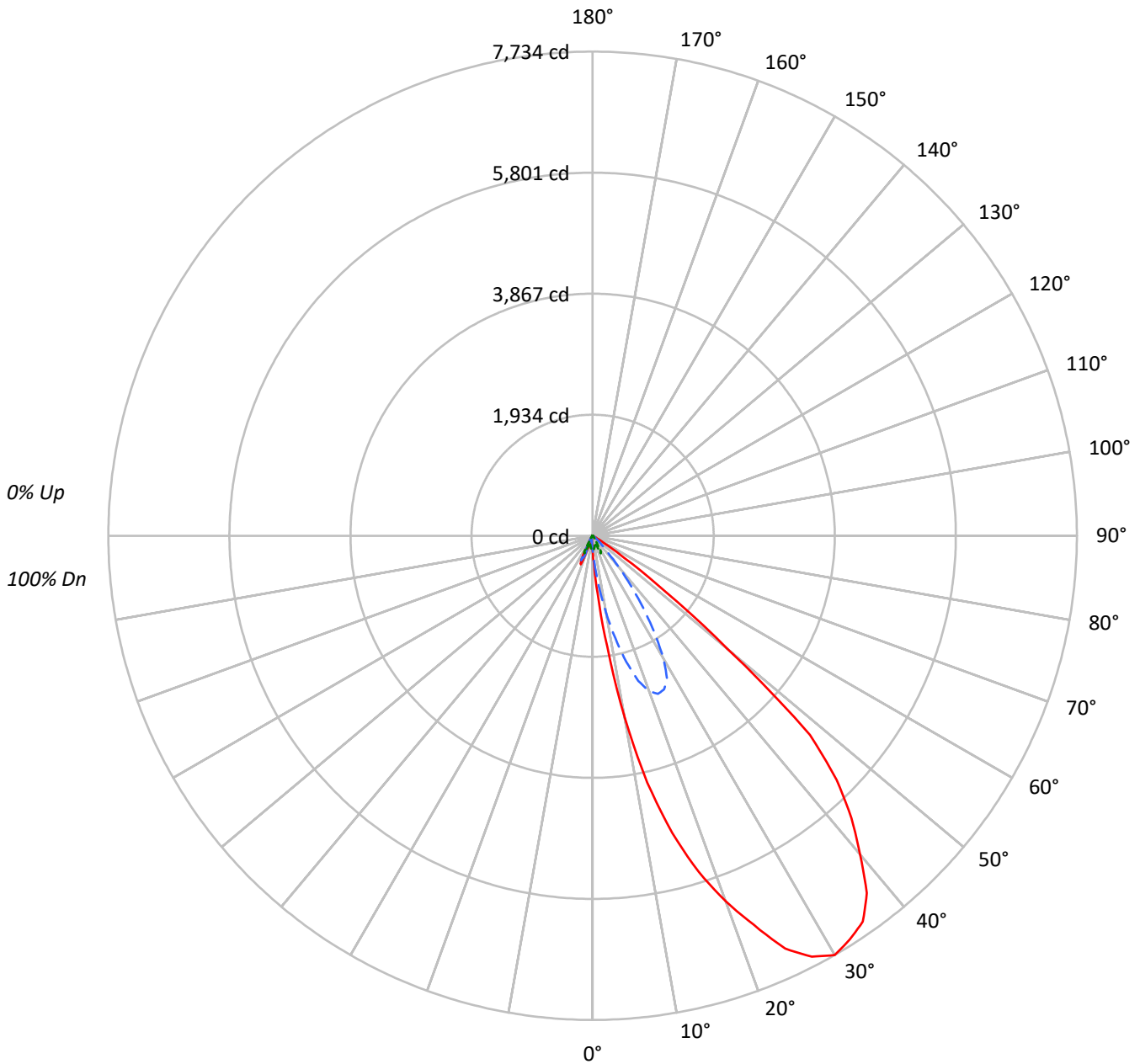
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170829

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170829

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 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	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	82																			
3	98	90	84	79	96	89	83	79	86	81	77	84	79	76	81	78	75	73																			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	70	67	65																			
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58																			
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52																			
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47																			
8	69	57	50	45	68	57	50	45	55	49	44	54	48	44	53	48	44	42																			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38																			
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	28505	28505	28505
5°	114803	26905	12605
10°	370084	22570	7239
15°	627821	17916	5619
20°	815988	16066	16972
25°	990200	42313	60100
30°	1101504	14884	15866
35°	1133048	8914	7454
40°	1069840	3768	2657
45°	961515	2163	715
50°	541135	1324	0
55°	134297	882	0
60°	20697	1011	0
65°	4816	1197	0
70°	1010	1479	0
75°	0	1954	0
80°	0	3907	0
85°	0	7784	1981



TEST NUMBER: P170829

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.4	1.7
10°-20°	345.0	12.3
20°-30°	796.8	28.3
30°-40°	893.8	31.8
40°-50°	623.7	22.2
50°-60°	93.1	3.3
60°-70°	6.1	0.2
70°-80°	3.0	0.1
80°-90°	3.0	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°	1188.2	42.3
0°-40°	2082.0	74.1
0°-60°	2798.8	99.6
0°-90°	2810.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2810.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	231	231	231	231	231	
5°	927	542	217	127	102	154
15°	4916	2092	140	54	44	1405
25°	7276	2704	311	433	442	3326
35°	7525	1406	59	50	50	4629
45°	5512	212	12	7	4	4044
55°	624	28	4	3	0	821
65°	16	4	4	3	0	25
75°	0	3	4	4	0	1
85°	0	3	6	4	1	0
90°	0	0	0	0	0	



TEST NUMBER: P170829

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1
2.5°	420.9	416.8	405.8	403.1	412.7	404.4	408.6	416.8	408.6	398.9	408.6
5°	927.2	950.6	927.2	923.0	939.6	924.4	931.3	946.4	925.8	906.5	920.3
7.5°	1789.7	1804.8	1738.8	1762.2	1756.7	1760.8	1764.9	1764.9	1752.5	1718.2	1737.4
10°	2954.8	2965.8	2877.8	2908.1	2868.2	2908.1	2901.2	2870.9	2877.8	2831.0	2855.8
12.5°	4036.1	4071.9	3983.8	4012.7	3964.6	4009.9	3992.1	3983.8	3913.7	3913.7	3939.8
15°	4916.5	4997.6	4917.9	4948.1	4893.1	4956.4	4906.9	4928.9	4865.6	4787.2	4856.0
17.5°	5629.1	5708.8	5634.6	5671.7	5620.8	5670.3	5612.6	5659.3	5578.2	5521.8	5568.5
20°	6216.5	6275.6	6187.6	6239.8	6179.3	6228.8	6165.6	6227.5	6132.5	6091.3	6118.8
22.5°	6728.2	6751.6	6706.2	6794.2	6675.9	6728.2	6652.5	6715.8	6603.0	6550.7	6557.6
25°	7275.7	7328.0	7241.3	7274.3	7191.8	7227.5	7142.2	7201.4	7061.1	6986.8	6971.7
27.5°	7579.7	7654.0	7576.9	7614.1	7530.2	7560.4	7475.2	7560.4	7417.4	7344.5	7328.0
30°	7733.8	7769.5	7720.0	7744.8	7649.9	7665.0	7576.9	7669.1	7526.0	7461.4	7453.1
32.5°	7644.4	7715.9	7651.2	7682.9	7594.8	7610.0	7524.7	7623.7	7480.7	7421.5	7392.6
35°	7524.7	7597.6	7537.1	7570.1	7488.9	7499.9	7409.1	7495.8	7330.7	7257.8	7195.9
37.5°	7193.1	7261.9	7211.0	7222.0	7143.6	7135.4	7037.7	7110.6	6949.7	6887.8	6846.5
40°	6644.3	6706.2	6664.9	6688.3	6609.9	6592.0	6526.0	6593.4	6468.2	6422.8	6365.0
42.5°	6118.8	6169.7	6131.2	6168.3	6080.3	6056.9	5997.7	6083.0	5941.3	5904.2	5862.9
45°	5512.1	5543.8	5513.5	5545.1	5461.2	5424.1	5370.4	5443.4	5304.4	5270.0	5180.6
47.5°	4710.1	4675.8	4670.2	4700.5	4596.0	4518.9	4469.4	4563.0	4362.1	4294.7	4191.5
50°	2820.0	2877.8	2902.6	2881.9	2810.4	2704.5	2624.7	2738.9	2631.6	2466.5	2301.4
52.5°	1452.7	1388.0	1401.8	1408.6	1323.4	1291.7	1265.6	1291.7	1207.8	1165.2	1060.6
55°	624.5	594.3	605.3	609.4	592.9	554.4	540.6	557.1	518.6	502.1	459.5
57.5°	231.1	231.1	224.2	227.0	221.5	207.7	205.0	211.8	199.5	195.3	178.8
60°	83.9	83.9	83.9	83.9	77.0	75.7	75.7	78.4	74.3	72.9	67.4
62.5°	35.8	37.1	34.4	35.8	34.4	33.0	34.4	33.0	33.0	31.6	31.6
65°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	15.1	15.1
67.5°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	6.9	6.9	6.9
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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: P170829

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1	231.1
2.5°	396.2	394.8	400.3	394.8	385.2	379.7	386.6	372.8	319.1	265.5	225.6
5°	895.5	888.7	879.0	881.8	858.4	839.1	839.1	802.0	542.0	308.1	217.3
7.5°	1697.5	1681.0	1610.9	1661.8	1612.2	1573.7	1547.6	1471.9	876.3	353.5	200.8
10°	2803.5	2774.6	2725.1	2734.7	2653.6	2588.9	2510.5	2384.0	1260.1	393.4	180.2
12.5°	3894.4	3865.5	3733.4	3809.1	3700.4	3637.2	3505.1	3356.5	1674.1	412.7	160.9
15°	4820.2	4795.4	4651.0	4722.5	4589.1	4529.9	4359.4	4194.3	2092.3	405.8	140.3
17.5°	5539.6	5535.5	5369.1	5440.6	5293.4	5245.3	5045.8	4883.5	2430.7	375.5	126.6
20°	6094.0	6084.4	5916.6	5988.1	5827.2	5780.4	5527.3	5356.7	2645.3	334.3	122.4
22.5°	6531.5	6512.2	6332.0	6393.9	6213.7	6153.2	5873.9	5696.5	2733.4	308.1	151.3
25°	6924.9	6890.5	6685.5	6733.7	6535.6	6548.0	6128.4	5933.1	2704.5	346.7	310.9
27.5°	7271.6	7209.7	7003.3	7017.1	6784.6	6663.5	6303.1	6087.1	2572.4	386.6	288.9
30°	7400.9	7340.3	7121.6	7129.9	6887.8	6717.2	6332.0	6091.3	2256.0	242.1	104.5
32.5°	7329.3	7263.3	7035.0	7037.7	6788.7	6615.4	6231.6	5966.1	1835.1	159.6	79.8
35°	7121.6	7052.8	6825.9	6836.9	6596.1	6424.2	6048.6	5765.2	1405.9	126.6	59.2
37.5°	6770.8	6722.7	6506.7	6526.0	6321.0	6138.0	5757.0	5450.2	991.8	90.8	37.1
40°	6319.6	6282.5	6073.4	6103.7	5880.8	5711.6	5303.0	4970.1	617.7	61.9	23.4
42.5°	5791.4	5751.5	5545.1	5568.5	5378.7	5136.6	4719.8	4342.9	323.3	44.0	16.5
45°	5132.5	5085.7	4876.6	4889.0	4664.7	4381.4	3949.4	3616.5	211.8	30.3	12.4
47.5°	4096.6	4012.7	3740.3	3729.3	3546.4	3082.8	2469.2	1998.8	140.3	20.6	8.3
50°	2251.9	2165.2	1925.9	1899.7	1696.1	1392.1	1029.0	800.6	81.2	13.8	6.9
52.5°	1024.8	979.4	868.0	850.1	763.5	632.8	487.0	400.3	46.8	9.6	5.5
55°	444.3	427.8	381.0	378.3	338.4	293.0	233.9	198.1	27.5	6.9	4.1
57.5°	174.7	169.2	159.6	152.7	137.6	122.4	101.8	85.3	17.9	5.5	4.1
60°	66.0	64.7	59.2	60.5	55.0	52.3	45.4	38.5	11.0	4.1	4.1
62.5°	30.3	30.3	28.9	28.9	27.5	24.8	22.0	20.6	6.9	4.1	4.1
65°	15.1	15.1	13.8	13.8	13.8	12.4	11.0	11.0	4.1	4.1	4.1
67.5°	6.9	6.9	6.9	6.9	6.9	5.5	5.5	5.5	2.8	4.1	4.1
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	1.4	1.4	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	5.5
80°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.8	4.1	5.5
82.5°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	2.8	4.1	5.5
85°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	2.8	4.1	5.5
87.5°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	2.8	4.1	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: P170829

CATALOG NUMBER: LDA4A28827D010TE LAR35FL 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	231.1	231.1	231.1	231.1
2.5°	194.0	172.0	152.7	148.6
5°	159.6	126.6	105.9	101.8
7.5°	129.3	92.2	77.0	74.3
10°	105.9	74.3	60.5	57.8
12.5°	88.0	60.5	48.1	45.4
15°	75.7	53.6	44.0	44.0
17.5°	72.9	59.2	56.4	57.8
20°	94.9	107.3	127.9	129.3
22.5°	220.1	357.7	473.2	495.2
25°	396.2	433.3	422.3	441.6
27.5°	209.1	163.7	166.5	170.6
30°	90.8	100.4	105.9	111.4
32.5°	75.7	78.4	79.8	83.9
35°	49.5	49.5	48.1	49.5
37.5°	30.3	28.9	27.5	27.5
40°	19.3	17.9	16.5	16.5
42.5°	13.8	11.0	9.6	9.6
45°	9.6	6.9	5.5	4.1
47.5°	6.9	4.1	2.8	1.4
50°	5.5	4.1	1.4	0.0
52.5°	4.1	2.8	1.4	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°	4.1	2.8	1.4	0.0
70°	4.1	2.8	1.4	0.0
72.5°	4.1	2.8	1.4	0.0
75°	4.1	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)