

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: P170833

Luminaire Tested: **LDA4A28927D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170833
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: LDA4A28927D010TE 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 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2257.3 lumens
Efficiency: N/A
Efficacy: 50.7 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

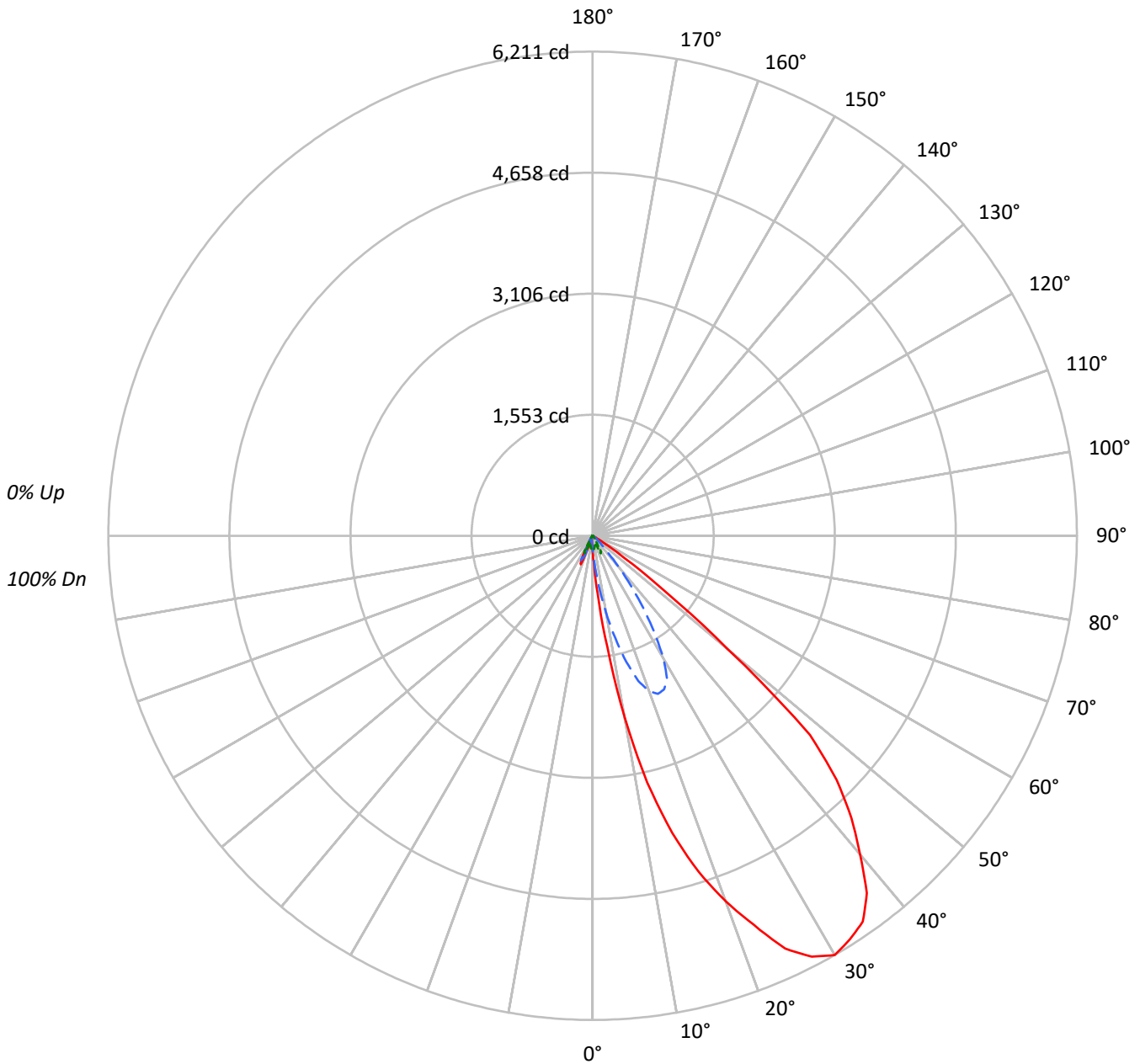
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	22893	22893	22893
5°	92194	21606	10128
10°	297215	18123	5812
15°	504185	14391	4520
20°	655298	12903	13625
25°	795214	33983	48260
30°	884587	11964	12747
35°	909923	7152	5993
40°	859167	3027	2142
45°	772181	1727	576
50°	434577	1055	0
55°	107867	710	0
60°	16627	814	0
65°	3882	963	0
70°	793	1190	0
75°	0	1573	0
80°	0	3125	0
85°	0	6227	1557



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.3	1.7
10°-20°	277.1	12.3
20°-30°	639.9	28.3
30°-40°	717.8	31.8
40°-50°	500.9	22.2
50°-60°	74.8	3.3
60°-70°	4.9	0.2
70°-80°	2.4	0.1
80°-90°	2.4	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°	954.3	42.3
0°-40°	1672.1	74.1
0°-60°	2247.7	99.6
0°-90°	2257.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2257.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	186	186	186	186	186	
5°	745	435	174	102	82	123
15°	3948	1680	113	43	35	1128
25°	5843	2172	250	348	355	2671
35°	6043	1129	48	40	40	3717
45°	4427	170	10	6	3	3248
55°	502	22	3	2	0	659
65°	13	3	3	2	0	20
75°	0	2	3	3	0	1
85°	0	2	4	3	1	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6
2.5°	338.0	334.7	325.9	323.7	331.4	324.8	328.1	334.7	328.1	320.4	328.1
5°	744.6	763.4	744.6	741.3	754.5	742.4	747.9	760.1	743.5	728.0	739.1
7.5°	1437.3	1449.4	1396.4	1415.2	1410.8	1414.1	1417.4	1417.4	1407.4	1379.8	1395.3
10°	2373.0	2381.8	2311.1	2335.4	2303.4	2335.4	2329.9	2305.6	2311.1	2273.6	2293.4
12.5°	3241.3	3270.0	3199.3	3222.5	3183.9	3220.3	3205.9	3199.3	3143.0	3143.0	3164.0
15°	3948.3	4013.5	3949.4	3973.7	3929.6	3980.4	3940.6	3958.3	3907.5	3844.5	3899.7
17.5°	4520.6	4584.7	4525.0	4554.8	4514.0	4553.7	4507.3	4544.9	4479.7	4434.4	4472.0
20°	4992.3	5039.8	4969.1	5011.1	4962.5	5002.3	4951.4	5001.1	4924.9	4891.8	4913.9
22.5°	5403.3	5422.1	5385.6	5456.3	5361.3	5403.3	5342.5	5393.3	5302.7	5260.8	5266.3
25°	5843.0	5884.9	5815.3	5841.9	5775.6	5804.3	5735.8	5783.3	5670.6	5611.0	5598.8
27.5°	6087.1	6146.8	6084.9	6114.7	6047.3	6071.6	6003.1	6071.6	5956.7	5898.2	5884.9
30°	6210.8	6239.6	6199.8	6219.7	6143.4	6155.6	6084.9	6158.9	6044.0	5992.1	5985.5
32.5°	6139.0	6196.5	6144.6	6170.0	6099.3	6111.4	6042.9	6122.5	6007.6	5960.1	5936.9
35°	6042.9	6101.5	6052.9	6079.4	6014.2	6023.0	5950.1	6019.7	5887.1	5828.6	5778.9
37.5°	5776.7	5831.9	5791.0	5799.9	5736.9	5730.3	5651.8	5710.4	5581.1	5531.4	5498.3
40°	5335.9	5385.6	5352.5	5371.2	5308.3	5293.9	5240.9	5295.0	5194.5	5158.0	5111.6
42.5°	4913.9	4954.7	4923.8	4953.6	4882.9	4864.2	4816.7	4885.2	4771.4	4741.5	4708.4
45°	4426.7	4452.1	4427.8	4453.2	4385.8	4356.0	4312.9	4371.4	4259.9	4232.3	4160.4
47.5°	3782.6	3755.0	3750.6	3774.9	3690.9	3629.1	3589.3	3664.4	3503.1	3449.0	3366.1
50°	2264.7	2311.1	2331.0	2314.4	2257.0	2171.9	2107.8	2199.5	2113.4	1980.8	1848.2
52.5°	1166.6	1114.7	1125.7	1131.3	1062.8	1037.3	1016.4	1037.3	970.0	935.7	851.8
55°	501.6	477.2	486.1	489.4	476.1	445.2	434.2	447.4	416.5	403.2	369.0
57.5°	185.6	185.6	180.1	182.3	177.9	166.8	164.6	170.1	160.2	156.9	143.6
60°	67.4	67.4	67.4	67.4	61.9	60.8	60.8	63.0	59.7	58.6	54.1
62.5°	28.7	29.8	27.6	28.7	27.6	26.5	27.6	26.5	26.5	25.4	25.4
65°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	12.2	12.2
67.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	5.5	5.5	5.5
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
72.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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



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CANDELA DISTRIBUTION (continued):

	11°	12°	13°	14°	15°	17.5°	20°	22.5°	45°	67.5°	90°
0°	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6	185.6
2.5°	318.2	317.1	321.5	317.1	309.3	304.9	310.4	299.4	256.3	213.2	181.2
5°	719.2	713.7	705.9	708.1	689.4	673.9	673.9	644.1	435.3	247.5	174.5
7.5°	1363.2	1350.0	1293.6	1334.5	1294.8	1263.8	1242.8	1182.1	703.7	283.9	161.3
10°	2251.5	2228.3	2188.5	2196.2	2131.0	2079.1	2016.1	1914.5	1011.9	316.0	144.7
12.5°	3127.5	3104.3	2998.3	3059.0	2971.7	2920.9	2814.9	2695.6	1344.5	331.4	129.3
15°	3871.0	3851.1	3735.1	3792.6	3685.4	3637.9	3500.9	3368.3	1680.3	325.9	112.7
17.5°	4448.8	4445.5	4311.8	4369.2	4251.0	4212.4	4052.2	3921.8	1952.1	301.6	101.6
20°	4894.0	4886.3	4751.5	4808.9	4679.7	4642.1	4438.8	4301.8	2124.4	268.5	98.3
22.5°	5245.3	5229.8	5085.1	5134.8	4990.1	4941.5	4717.2	4574.7	2195.1	247.5	121.5
25°	5561.3	5533.6	5369.0	5407.7	5248.6	5258.6	4921.6	4764.7	2171.9	278.4	249.7
27.5°	5839.6	5789.9	5624.2	5635.3	5448.6	5351.4	5061.9	4888.5	2065.9	310.4	232.0
30°	5943.5	5894.9	5719.2	5725.9	5531.4	5394.4	5085.1	4891.8	1811.8	194.4	84.0
32.5°	5886.0	5833.0	5649.6	5651.8	5451.9	5312.7	5004.5	4791.2	1473.7	128.1	64.1
35°	5719.2	5664.0	5481.7	5490.5	5297.2	5159.1	4857.5	4630.0	1129.0	101.6	47.5
37.5°	5437.5	5398.9	5225.4	5240.9	5076.3	4929.3	4623.3	4377.0	796.5	72.9	29.8
40°	5075.2	5045.3	4877.4	4901.7	4722.8	4586.9	4258.8	3991.4	496.0	49.7	18.8
42.5°	4650.9	4618.9	4453.2	4472.0	4319.5	4125.1	3790.4	3487.7	259.6	35.4	13.3
45°	4121.8	4084.2	3916.3	3926.2	3746.2	3518.6	3171.7	2904.4	170.1	24.3	9.9
47.5°	3289.9	3222.5	3003.8	2994.9	2848.0	2475.7	1983.0	1605.2	112.7	16.6	6.6
50°	1808.5	1738.9	1546.6	1525.6	1362.1	1118.0	826.3	643.0	65.2	11.0	5.5
52.5°	823.0	786.6	697.1	682.7	613.1	508.2	391.1	321.5	37.6	7.7	4.4
55°	356.8	343.6	306.0	303.8	271.8	235.3	187.8	159.1	22.1	5.5	3.3
57.5°	140.3	135.9	128.1	122.6	110.5	98.3	81.8	68.5	14.4	4.4	3.3
60°	53.0	51.9	47.5	48.6	44.2	42.0	36.5	30.9	8.8	3.3	3.3
62.5°	24.3	24.3	23.2	23.2	22.1	19.9	17.7	16.6	5.5	3.3	3.3
65°	12.2	12.2	11.0	11.0	11.0	9.9	8.8	8.8	3.3	3.3	3.3
67.5°	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	2.2	3.3	3.3
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.3	3.3
72.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	3.3	3.3
75°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	3.3	3.3
77.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	3.3	4.4
80°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	3.3	4.4
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	3.3	4.4
85°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	3.3	4.4
87.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	3.3	4.4
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):

	112.5°	135°	157.5°	180°
0°	185.6	185.6	185.6	185.6
2.5°	155.8	138.1	122.6	119.3
5°	128.1	101.6	85.1	81.8
7.5°	103.8	74.0	61.9	59.7
10°	85.1	59.7	48.6	46.4
12.5°	70.7	48.6	38.7	36.5
15°	60.8	43.1	35.4	35.4
17.5°	58.6	47.5	45.3	46.4
20°	76.2	86.2	102.7	103.8
22.5°	176.8	287.2	380.0	397.7
25°	318.2	348.0	339.2	354.6
27.5°	167.9	131.5	133.7	137.0
30°	72.9	80.6	85.1	89.5
32.5°	60.8	63.0	64.1	67.4
35°	39.8	39.8	38.7	39.8
37.5°	24.3	23.2	22.1	22.1
40°	15.5	14.4	13.3	13.3
42.5°	11.0	8.8	7.7	7.7
45°	7.7	5.5	4.4	3.3
47.5°	5.5	3.3	2.2	1.1
50°	4.4	3.3	1.1	0.0
52.5°	3.3	2.2	1.1	0.0
55°	3.3	2.2	0.0	0.0
57.5°	3.3	2.2	0.0	0.0
60°	3.3	2.2	0.0	0.0
62.5°	3.3	2.2	0.0	0.0
65°	3.3	2.2	1.1	0.0
67.5°	3.3	2.2	1.1	0.0
70°	3.3	2.2	1.1	0.0
72.5°	3.3	2.2	1.1	0.0
75°	3.3	3.3	1.1	0.0
77.5°	4.4	3.3	1.1	0.0
80°	4.4	3.3	1.1	0.0
82.5°	4.4	3.3	1.1	0.0
85°	4.4	3.3	1.1	1.1
87.5°	4.4	3.3	1.1	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)