

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: P170806

Luminaire Tested: **LDA4A18830D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170806
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: LDA4A18830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1943.4 lumens
Efficiency: N/A
Efficacy: 66.7 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

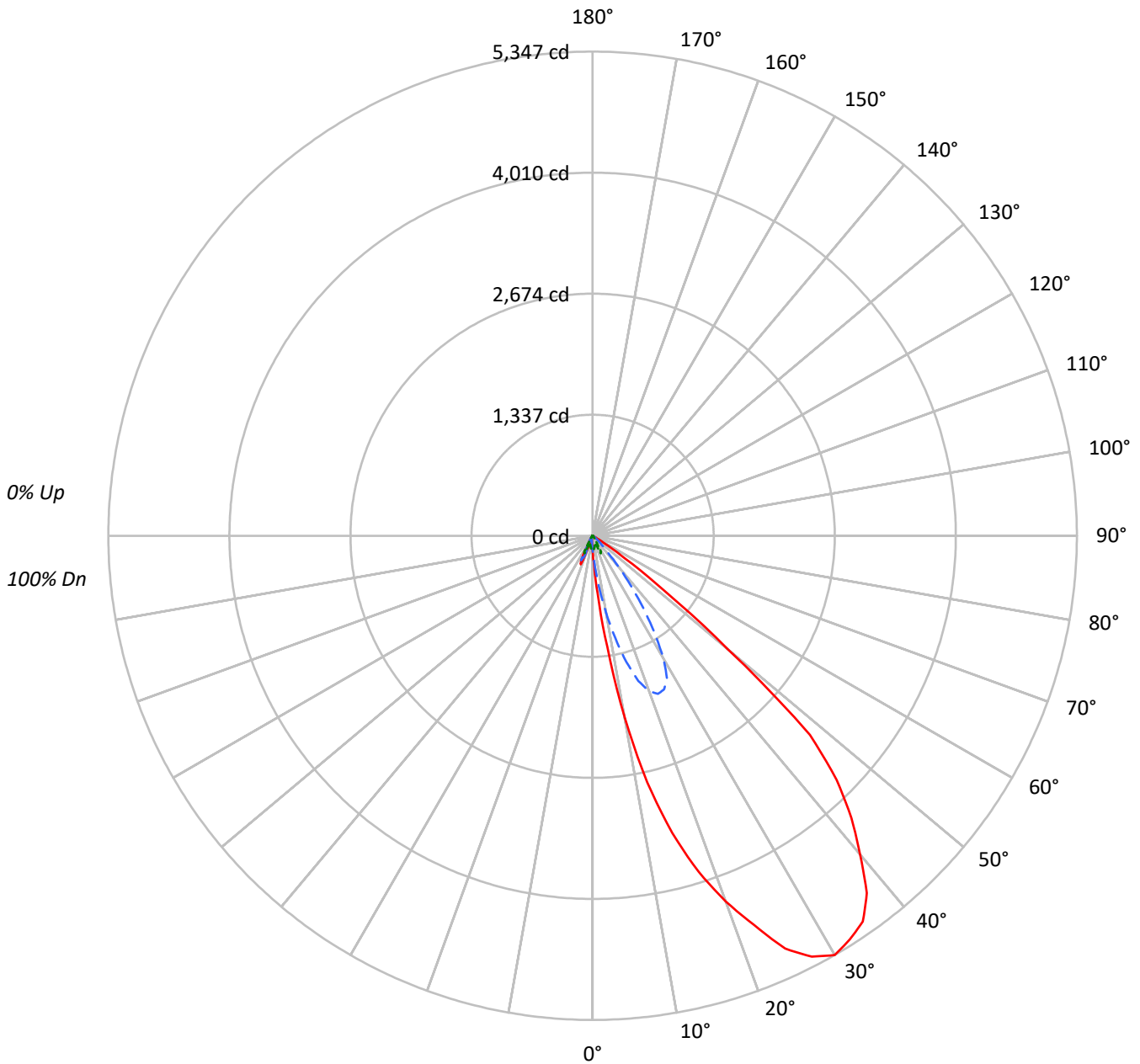
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	82					82			
3	98	90	84	79	96	89	83	79	86	81	77	84	79	76	81	78	75	73					73			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	70	67	65					65			
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58					58			
6	79	68	61	56	78	67	60	55	66	60	55	64	59	55	63	58	54	52					52			
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47					47			
8	69	57	50	45	68	57	50	45	55	49	44	54	48	44	53	48	44	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19711	19711	19711
5°	79367	18610	8717
10°	255857	15606	4997
15°	434029	12387	3882
20°	564123	11105	11735
25°	684554	29247	41550
30°	761502	10297	10967
35°	783318	6159	5150
40°	739612	2608	1836
45°	664727	1500	506
50°	374112	921	0
55°	92857	624	0
60°	14308	715	0
65°	3327	846	0
70°	685	1046	0
75°	0	1382	0
80°	0	2699	0
85°	0	5378	1415



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.1	1.7
10°-20°	238.5	12.3
20°-30°	550.9	28.3
30°-40°	617.9	31.8
40°-50°	431.2	22.2
50°-60°	64.4	3.3
60°-70°	4.2	0.2
70°-80°	2.1	0.1
80°-90°	2.1	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°	821.5	42.3
0°-40°	1439.4	74.1
0°-60°	1934.9	99.6
0°-90°	1943.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1943.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	160	160	160	160	160	
5°	641	375	150	88	70	106
15°	3399	1446	97	37	30	971
25°	5030	1870	215	300	305	2300
35°	5202	972	41	34	34	3200
45°	3811	146	9	5	3	2796
55°	432	19	3	2	0	567
65°	11	3	3	2	0	17
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°	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8
2.5°	291.0	288.2	280.6	278.6	285.3	279.6	282.5	288.2	282.5	275.8	282.5
5°	641.0	657.2	641.0	638.1	649.5	639.1	643.8	654.3	640.0	626.7	636.2
7.5°	1237.3	1247.7	1202.1	1218.3	1214.5	1217.3	1220.2	1220.2	1211.6	1187.8	1201.1
10°	2042.8	2050.4	1989.5	2010.5	1982.9	2010.5	2005.7	1984.8	1989.5	1957.2	1974.3
12.5°	2790.3	2815.0	2754.2	2774.1	2740.8	2772.2	2759.9	2754.2	2705.7	2705.7	2723.7
15°	3398.9	3455.1	3399.9	3420.8	3382.8	3426.5	3392.3	3407.5	3363.8	3309.6	3357.1
17.5°	3891.6	3946.7	3895.4	3921.1	3885.9	3920.1	3880.2	3912.5	3856.4	3817.4	3849.7
20°	4297.7	4338.6	4277.7	4313.8	4272.0	4306.2	4262.5	4305.3	4239.6	4211.1	4230.1
22.5°	4651.4	4667.6	4636.2	4697.1	4615.3	4651.4	4599.1	4642.9	4564.9	4528.8	4533.5
25°	5029.9	5066.1	5006.2	5029.0	4971.9	4996.7	4937.7	4978.6	4881.6	4830.2	4819.8
27.5°	5240.1	5291.5	5238.2	5263.9	5205.9	5226.8	5167.8	5226.8	5127.9	5077.5	5066.1
30°	5346.6	5371.4	5337.1	5354.2	5288.6	5299.1	5238.2	5301.9	5203.0	5158.3	5152.6
32.5°	5284.8	5334.3	5289.6	5311.4	5250.6	5261.0	5202.1	5270.6	5171.6	5130.8	5110.8
35°	5202.1	5252.5	5210.6	5233.5	5177.4	5185.0	5122.2	5182.1	5068.0	5017.6	4974.8
37.5°	4972.9	5020.4	4985.2	4992.9	4938.6	4932.9	4865.4	4915.8	4804.6	4761.8	4733.2
40°	4593.4	4636.2	4607.7	4623.9	4569.7	4557.3	4511.6	4558.2	4471.7	4440.3	4400.4
42.5°	4230.1	4265.3	4238.7	4264.4	4203.5	4187.3	4146.4	4205.4	4107.5	4081.8	4053.2
45°	3810.7	3832.6	3811.7	3833.6	3775.6	3749.9	3712.8	3763.2	3667.1	3643.4	3581.5
47.5°	3256.3	3232.5	3228.7	3249.6	3177.4	3124.1	3089.9	3154.5	3015.7	2969.1	2897.8
50°	1949.6	1989.5	2006.7	1992.4	1942.9	1869.7	1814.5	1893.5	1819.3	1705.2	1591.1
52.5°	1004.3	959.6	969.1	973.8	914.9	893.0	874.9	893.0	835.0	805.5	733.2
55°	431.8	410.8	418.4	421.3	409.9	383.3	373.8	385.2	358.5	347.1	317.6
57.5°	159.8	159.8	155.0	156.9	153.1	143.6	141.7	146.5	137.9	135.0	123.6
60°	58.0	58.0	58.0	58.0	53.3	52.3	52.3	54.2	51.4	50.4	46.6
62.5°	24.7	25.7	23.8	24.7	23.8	22.8	23.8	22.8	22.8	21.9	21.9
65°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	10.5	10.5
67.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	4.8	4.8	4.8
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8	159.8
2.5°	273.9	272.9	276.7	272.9	266.3	262.5	267.2	257.7	220.6	183.5	156.0
5°	619.1	614.4	607.7	609.6	593.4	580.1	580.1	554.4	374.7	213.0	150.3
7.5°	1173.6	1162.1	1113.6	1148.8	1114.6	1088.0	1069.9	1017.6	605.8	244.4	138.8
10°	1938.2	1918.2	1884.0	1890.6	1834.5	1789.8	1735.6	1648.1	871.1	272.0	124.6
12.5°	2692.3	2672.4	2581.1	2633.4	2558.2	2514.5	2423.2	2320.5	1157.4	285.3	111.3
15°	3332.4	3315.3	3215.4	3264.9	3172.6	3131.7	3013.8	2899.7	1446.5	280.6	97.0
17.5°	3829.8	3826.9	3711.8	3761.3	3659.5	3626.2	3488.3	3376.1	1680.5	259.6	87.5
20°	4213.0	4206.4	4090.3	4139.8	4028.5	3996.2	3821.2	3703.3	1828.8	231.1	84.6
22.5°	4515.4	4502.1	4377.5	4420.3	4295.8	4253.9	4060.9	3938.2	1889.7	213.0	104.6
25°	4787.4	4763.7	4622.0	4655.2	4518.3	4526.9	4236.8	4101.8	1869.7	239.7	214.9
27.5°	5027.1	4984.3	4841.6	4851.2	4690.4	4606.7	4357.6	4208.3	1778.4	267.2	199.7
30°	5116.5	5074.6	4923.4	4929.1	4761.8	4643.8	4377.5	4211.1	1559.7	167.4	72.3
32.5°	5067.0	5021.4	4863.5	4865.4	4693.3	4573.5	4308.1	4124.6	1268.7	110.3	55.2
35°	4923.4	4875.9	4719.0	4726.6	4560.1	4441.3	4181.6	3985.7	971.9	87.5	40.9
37.5°	4680.9	4647.6	4498.3	4511.6	4369.9	4243.5	3980.0	3767.9	685.7	62.8	25.7
40°	4369.0	4343.3	4198.8	4219.7	4065.6	3948.6	3666.2	3436.0	427.0	42.8	16.2
42.5°	4003.8	3976.2	3833.6	3849.7	3718.5	3551.1	3263.0	3002.4	223.5	30.4	11.4
45°	3548.3	3515.9	3371.4	3379.9	3224.9	3029.0	2730.4	2500.2	146.5	20.9	8.6
47.5°	2832.1	2774.1	2585.8	2578.2	2451.7	2131.2	1707.1	1381.8	97.0	14.3	5.7
50°	1556.8	1496.9	1331.4	1313.4	1172.6	962.4	711.4	553.5	56.1	9.5	4.8
52.5°	708.5	677.1	600.1	587.7	527.8	437.5	336.7	276.7	32.3	6.7	3.8
55°	307.2	295.8	263.4	261.5	234.0	202.6	161.7	136.9	19.0	4.8	2.9
57.5°	120.8	117.0	110.3	105.6	95.1	84.6	70.4	59.0	12.4	3.8	2.9
60°	45.6	44.7	40.9	41.8	38.0	36.1	31.4	26.6	7.6	2.9	2.9
62.5°	20.9	20.9	20.0	20.0	19.0	17.1	15.2	14.3	4.8	2.9	2.9
65°	10.5	10.5	9.5	9.5	9.5	8.6	7.6	7.6	2.9	2.9	2.9
67.5°	4.8	4.8	4.8	4.8	4.8	3.8	3.8	3.8	1.9	2.9	2.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9	2.9
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
75°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
77.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	3.8
80°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	3.8
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	2.9	3.8
85°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	2.9	3.8
87.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	2.9	3.8
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°	159.8	159.8	159.8	159.8
2.5°	134.1	118.9	105.6	102.7
5°	110.3	87.5	73.2	70.4
7.5°	89.4	63.7	53.3	51.4
10°	73.2	51.4	41.8	39.9
12.5°	60.9	41.8	33.3	31.4
15°	52.3	37.1	30.4	30.4
17.5°	50.4	40.9	39.0	39.9
20°	65.6	74.2	88.4	89.4
22.5°	152.2	247.3	327.2	342.4
25°	273.9	299.6	292.0	305.3
27.5°	144.6	113.2	115.1	117.9
30°	62.8	69.4	73.2	77.0
32.5°	52.3	54.2	55.2	58.0
35°	34.2	34.2	33.3	34.2
37.5°	20.9	20.0	19.0	19.0
40°	13.3	12.4	11.4	11.4
42.5°	9.5	7.6	6.7	6.7
45°	6.7	4.8	3.8	2.9
47.5°	4.8	2.9	1.9	1.0
50°	3.8	2.9	1.0	0.0
52.5°	2.9	1.9	1.0	0.0
55°	2.9	1.9	0.0	0.0
57.5°	2.9	1.9	0.0	0.0
60°	2.9	1.9	0.0	0.0
62.5°	2.9	1.9	0.0	0.0
65°	2.9	1.9	1.0	0.0
67.5°	2.9	1.9	1.0	0.0
70°	2.9	1.9	1.0	0.0
72.5°	2.9	1.9	1.0	0.0
75°	2.9	2.9	1.0	0.0
77.5°	3.8	2.9	1.0	0.0
80°	3.8	2.9	1.0	0.0
82.5°	3.8	2.9	1.0	0.0
85°	3.8	2.9	1.0	1.0
87.5°	3.8	2.9	1.0	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)