

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: P1191607

Luminaire Tested: **LDA4A20927D010TE LAR25NF 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-41-14
Report Number: P1191607
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26105)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A20927D010TE LAR25NF 4LAL1 30° Tilt
Description: PORTFOLIO 4" Lensed Adjustable, Self-flanged, 25° Narrow Flood
Optic, at 30° tilt. --- 27.9W
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

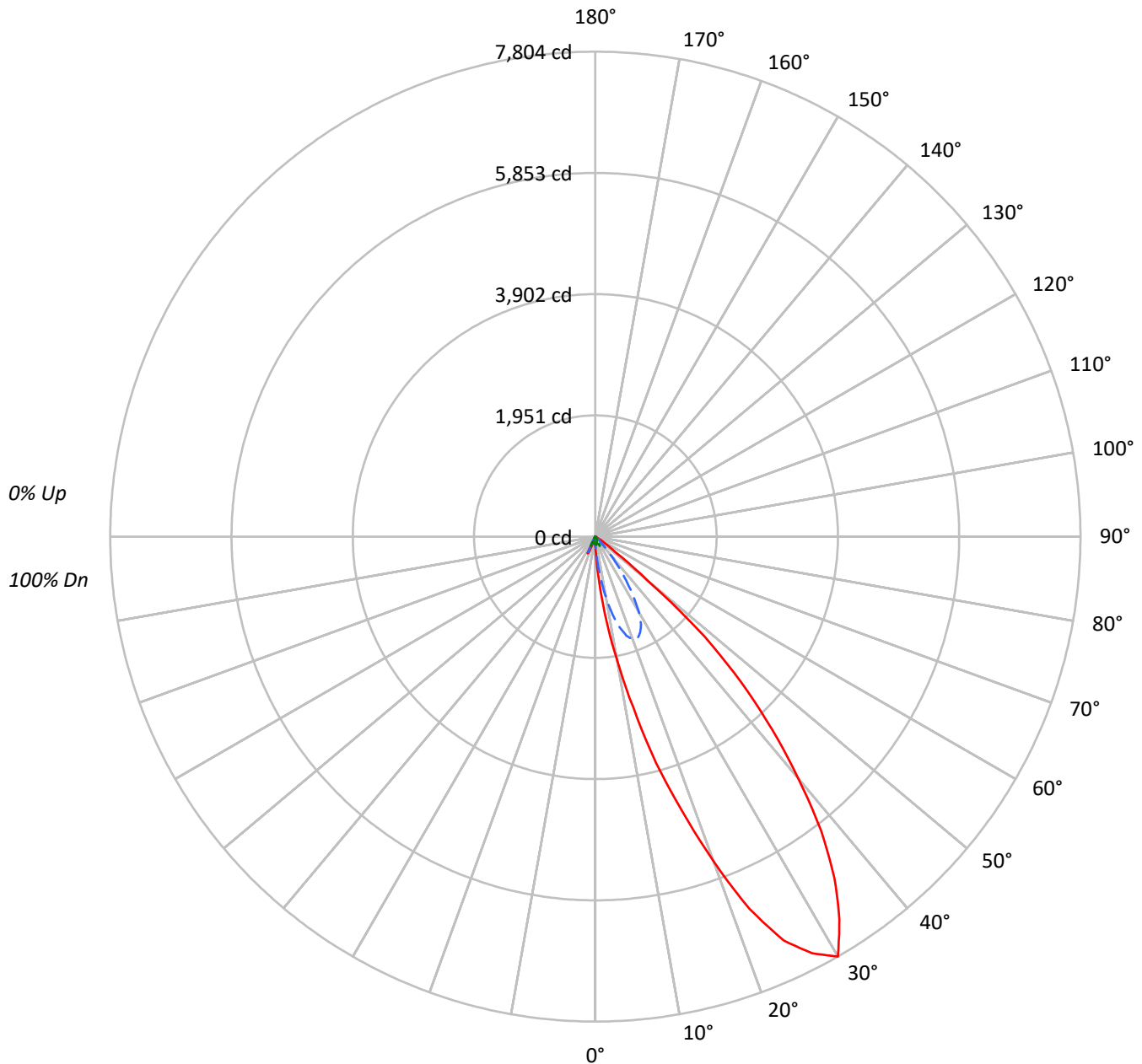
Lumens per Lamp: N/A
Luminaire Lumens: 2031.2 lumens
Efficiency: N/A
Efficacy: 70.5 lumens/watt
Spacing Criteria (0/90/45): 2.53 / 1.09 / 1.29
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 28.8
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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	98	96	96	94	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	83		
3	99	91	85	81	97	90	84	80	87	82	79	84	81	77	82	79	76	74		
4	92	83	77	72	90	82	76	71	80	74	70	78	73	69	76	72	69	67		
5	86	76	69	64	84	75	69	64	73	67	63	71	66	62	70	65	62	60		
6	80	70	63	57	79	69	62	57	67	61	57	66	60	56	64	60	56	54		
7	75	64	57	52	74	63	56	51	62	56	51	61	55	51	59	54	51	49		
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44		
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40		
10	62	50	43	38	60	50	43	38	49	42	38	48	42	38	47	42	38	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18650	18650	18650
5°	95884	17334	8098
10°	252701	14454	4221
15°	480970	11352	3256
20°	730537	9385	8729
25°	976127	22388	40325
30°	1111460	8432	8147
35°	1009545	4773	3689
40°	817657	2142	1465
45°	578625	1239	349
50°	211119	787	0
55°	43934	645	0
60°	10583	740	0
65°	3298	876	0
70°	1082	1082	0
75°	477	1430	0
80°	0	2131	0
85°	0	4246	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.2	1.7
10°-20°	255.5	12.6
20°-30°	648.0	31.9
30°-40°	693.5	34.1
40°-50°	354.5	17.5
50°-60°	37.0	1.8
60°-70°	4.2	0.2
70°-80°	2.3	0.1
80°-90°	2.0	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°	937.7	46.2
0°-40°	1631.2	80.3
0°-60°	2022.6	99.6
0°-90°	2031.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2031.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	151	151	151	151	151	
5°	774	421	140	81	65	113
15°	3766	1514	89	32	26	1113
25°	7172	1705	164	276	296	3259
35°	6704	864	32	24	24	4116
45°	3317	115	7	4	2	2475
55°	204	18	3	2	0	277
65°	11	4	3	2	0	15
75°	1	2	3	3	0	1
85°	0	2	3	3	0	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°	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2
2.5°	305.4	308.6	286.0	293.2	298.3	288.2	286.0	286.0	297.3	291.2	301.3
5°	774.4	771.3	732.4	743.7	751.8	732.4	741.7	727.3	744.7	733.4	744.7
7.5°	1352.6	1388.3	1339.2	1350.5	1357.6	1337.2	1342.3	1321.9	1341.3	1328.1	1337.2
10°	2017.6	2054.4	1997.2	2006.3	2011.4	1992.0	1993.0	1966.5	1983.9	1969.6	1975.6
12.5°	2812.3	2826.6	2799.1	2806.2	2809.2	2783.8	2735.7	2740.9	2758.3	2733.7	2739.9
15°	3766.5	3756.2	3723.5	3747.1	3723.5	3711.3	3638.8	3634.7	3644.9	3617.4	3573.3
17.5°	4607.2	4684.8	4648.0	4661.4	4632.7	4632.7	4539.7	4524.5	4525.5	4452.0	4443.7
20°	5565.5	5664.5	5574.6	5578.7	5540.9	5539.9	5426.5	5394.8	5381.6	5297.8	5274.3
22.5°	6488.9	6517.5	6516.5	6499.2	6410.3	6461.4	6319.3	6269.4	6228.4	6133.4	6086.5
25°	7172.3	7262.2	7201.0	7157.0	7079.4	7143.8	6984.4	6919.1	6857.7	6778.0	6716.8
27.5°	7558.5	7642.2	7628.0	7562.6	7482.9	7545.2	7370.6	7285.7	7199.0	7140.6	7064.0
30°	7803.7	7931.4	7889.5	7747.5	7631.1	7651.5	7455.3	7341.9	7245.9	7185.7	7088.6
32.5°	7306.1	7437.9	7425.7	7322.5	7262.2	7312.3	7141.8	7029.3	6937.5	6889.4	6781.1
35°	6704.5	6858.7	6825.0	6739.2	6695.4	6753.6	6587.1	6493.1	6400.1	6358.1	6239.7
37.5°	5967.9	6113.0	6079.2	5997.6	5954.7	5997.6	5838.2	5751.4	5663.5	5619.6	5538.9
40°	5078.1	5205.8	5170.0	5094.5	5058.7	5089.4	4951.5	4876.0	4801.4	4768.7	4661.4
42.5°	4208.9	4311.0	4278.2	4212.9	4185.3	4205.7	4092.3	4025.0	3959.5	3932.0	3868.6
45°	3317.1	3418.1	3386.4	3330.2	3304.7	3316.0	3220.9	3160.7	3104.5	3079.0	3021.8
47.5°	2380.2	2493.6	2454.8	2406.8	2380.2	2375.1	2291.3	2237.1	2242.4	2155.5	2102.3
50°	1100.2	1196.2	1157.4	1131.9	1106.4	1092.1	1062.4	1001.1	1018.5	939.9	909.2
52.5°	399.5	423.0	413.7	405.6	397.3	394.3	384.2	368.8	370.8	351.4	342.2
55°	204.3	215.6	212.4	207.4	207.4	204.3	199.2	193.0	189.0	185.9	182.9
57.5°	94.0	100.1	98.0	96.0	96.0	94.0	91.9	88.9	90.9	85.9	84.9
60°	42.9	45.9	44.9	43.9	43.9	43.9	42.9	41.8	41.8	40.8	39.8
62.5°	20.4	22.4	21.4	21.4	21.4	21.4	20.4	20.4	20.4	20.4	19.4
65°	11.3	11.3	11.3	11.3	11.3	11.3	11.3	10.3	11.3	10.3	10.3
67.5°	6.1	6.1	6.1	6.1	5.1	6.1	6.1	5.1	5.1	5.1	5.1
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
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	1.0	0.0	1.0	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°	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2	151.2
2.5°	277.9	285.0	292.2	290.2	279.9	278.9	274.8	276.9	215.6	174.6	146.1
5°	704.9	714.0	723.3	718.2	692.6	686.5	666.1	662.0	420.9	206.3	140.0
7.5°	1288.1	1293.3	1300.4	1294.4	1256.6	1239.2	1196.2	1154.3	707.9	249.2	129.7
10°	1920.5	1918.4	1921.5	1913.4	1866.3	1832.7	1766.3	1736.7	1003.2	286.0	115.4
12.5°	2658.1	2650.0	2604.9	2626.4	2560.0	2491.6	2382.2	2290.3	1282.1	306.5	102.2
15°	3519.2	3494.7	3478.4	3453.9	3372.2	3261.9	3095.4	2993.1	1514.0	304.4	88.9
17.5°	4375.4	4335.4	4264.0	4273.2	4178.2	4024.0	3804.3	3629.5	1674.3	278.9	78.6
20°	5185.4	5126.2	5036.3	5029.2	4914.8	4711.5	4434.6	4218.0	1762.2	237.0	71.5
22.5°	5965.9	5873.9	5753.4	5715.7	5568.5	5280.4	4918.8	4655.3	1770.3	198.2	85.9
25°	6580.8	6465.4	6331.6	6266.2	6103.9	5736.1	5285.6	4961.7	1705.0	196.2	164.5
27.5°	6924.1	6793.4	6659.6	6570.7	6406.2	5989.3	5479.6	5105.8	1592.6	210.4	156.2
30°	6942.5	6795.4	6656.4	6544.0	6380.7	5935.3	5393.8	5004.5	1390.4	132.8	59.2
32.5°	6637.0	6479.8	6340.7	6214.2	6052.7	5604.3	5073.0	4701.2	1130.9	93.0	41.8
35°	6102.8	5940.4	5807.6	5673.8	5522.5	5100.7	4613.3	4267.1	864.3	73.6	31.7
37.5°	5375.4	5225.2	5107.8	5016.9	4853.4	4517.3	4071.9	3705.3	610.9	52.1	19.4
40°	4561.3	4434.6	4338.6	4259.8	4108.7	3810.4	3360.9	3051.3	370.8	36.8	13.3
42.5°	3741.9	3623.5	3538.7	3464.2	3324.2	3060.6	2690.8	2380.2	177.8	25.5	9.1
45°	2910.5	2804.2	2732.6	2665.3	2539.6	2280.1	1986.9	1762.2	115.4	18.4	7.1
47.5°	1987.9	1932.8	1815.3	1741.8	1613.1	1414.8	1140.0	892.8	76.6	13.3	5.1
50°	826.4	797.8	720.2	670.1	596.6	495.5	359.5	301.3	47.1	9.1	4.1
52.5°	320.7	313.6	294.2	282.9	264.5	238.0	198.2	176.8	28.7	7.1	4.1
55°	172.6	170.6	160.4	154.2	144.1	130.8	107.3	94.0	18.4	5.1	3.0
57.5°	79.6	78.6	73.6	73.6	66.5	61.2	51.1	45.9	11.3	4.1	3.0
60°	37.8	37.8	35.8	35.8	32.7	30.7	25.5	23.5	7.1	3.0	3.0
62.5°	18.4	18.4	18.4	18.4	17.4	16.4	14.3	13.3	5.1	3.0	3.0
65°	10.3	10.3	10.3	10.3	9.1	9.1	8.1	7.1	4.1	3.0	3.0
67.5°	5.1	5.1	5.1	5.1	5.1	5.1	4.1	4.1	3.0	3.0	3.0
70°	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	3.0	3.0
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
80°	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
82.5°	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
87.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0
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):

	112.5°	135°	157.5°	180°
0°	151.2	151.2	151.2	151.2
2.5°	125.7	109.3	101.1	99.0
5°	103.2	80.7	69.5	65.4
7.5°	83.8	58.2	49.1	44.9
10°	66.5	45.9	36.8	33.7
12.5°	55.2	36.8	29.7	27.5
15°	47.1	31.7	26.5	25.5
17.5°	42.9	33.7	31.7	32.7
20°	52.1	55.2	64.3	66.5
22.5°	110.3	191.0	259.5	274.8
25°	229.8	275.8	286.0	296.3
27.5°	127.7	99.0	97.0	101.1
30°	52.1	53.1	55.2	57.2
32.5°	38.8	38.8	37.8	38.8
35°	26.5	24.5	23.5	24.5
37.5°	16.4	15.3	14.3	14.3
40°	11.3	10.3	9.1	9.1
42.5°	8.1	6.1	5.1	5.1
45°	6.1	4.1	3.0	2.0
47.5°	5.1	3.0	1.0	1.0
50°	4.1	2.0	1.0	0.0
52.5°	3.0	2.0	1.0	0.0
55°	3.0	2.0	0.0	0.0
57.5°	3.0	2.0	0.0	0.0
60°	3.0	2.0	1.0	0.0
62.5°	3.0	2.0	1.0	1.0
65°	3.0	2.0	1.0	0.0
67.5°	3.0	2.0	1.0	0.0
70°	3.0	2.0	1.0	0.0
72.5°	4.1	2.0	1.0	0.0
75°	4.1	3.0	1.0	0.0
77.5°	4.1	3.0	1.0	0.0
80°	4.1	3.0	1.0	0.0
82.5°	4.1	3.0	1.0	0.0
85°	4.1	3.0	1.0	0.0
87.5°	4.1	3.0	1.0	0.0
90°	0.0	0.0	0.0	0.0

Classified

Scaled Data Report

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— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)