

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: P1191637

Luminaire Tested: **LDA4A20935D010TE LAR15SP 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: P1191637
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: LDA4A20935D010TE 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 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

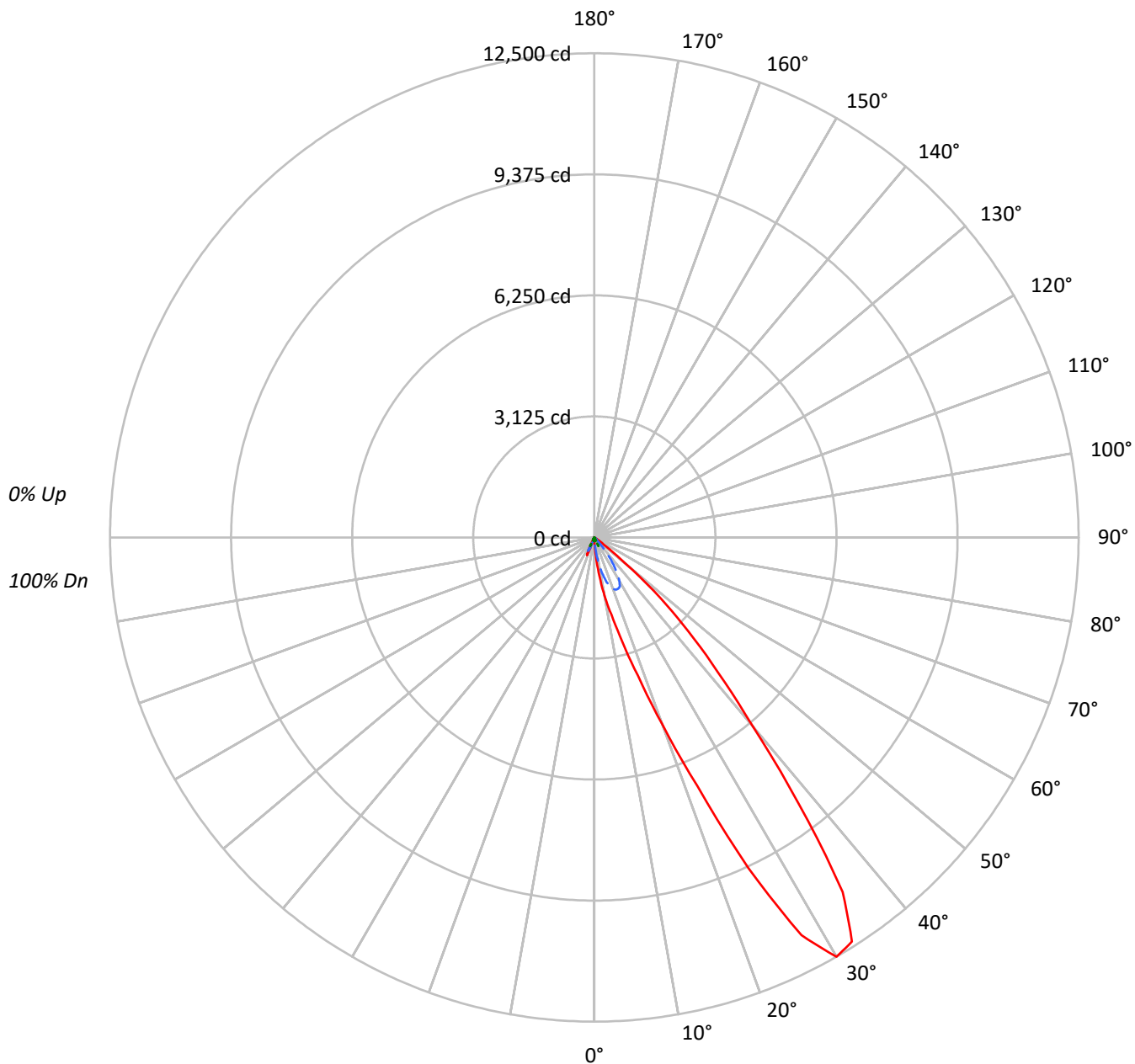
Lumens per Lamp: N/A
Luminaire Lumens: 2163.9 lumens
Efficiency: N/A
Efficacy: 75.1 lumens/watt
Spacing Criteria (0/90/45): 2.57 / 1.16 / 1.36
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			102
1	112	109	106	104	110	107	104	102		103	101	99			99	97	96			96
2	105	100	95	91	103	98	93	90		94	91	88			91	88	86			89
3	99	91	85	80	96	89	84	79		87	82	78			84	80	77			82
4	92	83	76	71	90	82	75	70		79	74	70			77	72	69			75
5	86	75	68	63	84	74	68	63		73	67	62			71	66	62			69
6	80	69	62	56	78	68	61	56		66	60	56			65	59	55			63
7	74	63	56	51	73	62	55	50		61	55	50			60	54	50			58
8	69	58	50	45	68	57	50	45		56	50	45			55	49	45			54
9	65	53	46	41	64	52	46	41		51	45	41			50	45	40			49
10	61	49	42	37	59	48	41	37		47	41	37			46	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12594	12594	12594
5°	66403	11899	6315
10°	194248	10108	4158
15°	353375	8492	4699
20°	674121	9661	22905
25°	1281148	33602	50546
30°	1780327	11323	9799
35°	1682444	5195	3749
40°	1019732	2286	1336
45°	597586	1239	401
50°	198339	921	0
55°	37762	774	0
60°	8511	567	0
65°	2422	1051	0
70°	829	1298	0
75°	0	1716	0
80°	0	2557	0
85°	0	5095	1698



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.4	1.1
10°-20°	199.1	9.2
20°-30°	706.0	32.6
30°-40°	837.0	38.7
40°-50°	356.1	16.5
50°-60°	32.2	1.5
60°-70°	4.0	0.2
70°-80°	2.7	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°	929.4	43.0
0°-40°	1766.5	81.6
0°-60°	2154.8	99.6
0°-90°	2163.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2163.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	102	102	102	102	102	
5°	536	264	96	60	51	83
15°	2767	1165	66	37	37	893
25°	9414	1461	247	388	371	4362
35°	11173	863	34	26	25	6454
45°	3426	95	7	5	2	2685
55°	176	14	4	2	0	246
65°	8	4	4	2	0	12
75°	0	2	4	4	0	1
85°	0	2	4	4	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°	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1
2.5°	187.5	176.8	183.9	181.6	182.7	186.4	182.7	182.7	181.6	176.8	176.8
5°	536.3	504.3	519.7	511.4	516.2	522.1	513.7	511.4	507.8	497.2	494.8
7.5°	999.1	981.3	1000.3	986.1	999.1	1001.6	989.7	987.2	981.3	966.0	960.0
10°	1550.9	1521.3	1539.1	1523.6	1543.8	1542.5	1523.6	1526.0	1518.9	1498.7	1489.3
12.5°	2039.8	2016.0	2033.8	1990.0	2039.8	2007.8	2011.3	2016.0	2006.6	1980.4	1968.5
15°	2767.3	2701.9	2732.8	2656.9	2732.8	2722.1	2680.5	2678.2	2653.3	2609.4	2583.2
17.5°	3733.1	3750.9	3728.4	3683.3	3784.2	3756.8	3697.6	3685.7	3638.2	3518.3	3516.0
20°	5135.7	5112.0	5149.9	5007.6	5136.9	5011.1	4994.6	4961.2	4880.6	4713.2	4687.1
22.5°	6931.1	6944.1	6876.5	6778.0	6937.0	6742.4	6683.1	6603.6	6456.4	6198.8	6118.2
25°	9413.5	9396.9	9309.0	9145.4	9314.9	9000.6	8852.1	8688.5	8414.3	8013.3	7819.9
27.5°	11576.7	11644.3	11586.2	11420.0	11532.8	11223.1	10881.4	10777.0	10405.5	9900.1	9551.1
30°	12499.9	12531.9	12507.0	12380.0	12420.4	12165.3	11827.0	11703.7	11322.7	10844.6	10392.4
32.5°	12372.9	12388.3	12393.1	12223.4	12230.4	11989.6	11636.0	11453.3	11038.0	10577.6	10037.6
35°	11173.3	11237.3	11278.8	11119.8	10962.0	10722.4	10321.3	10037.6	9600.9	9180.8	8629.2
37.5°	8652.9	8733.6	8797.6	8662.3	8587.6	8298.0	7964.7	7745.2	7443.7	7196.8	6805.3
40°	6333.1	6348.4	6387.5	6317.6	6201.3	6124.1	5933.1	5808.5	5625.7	5492.8	5233.0
42.5°	4707.3	4699.0	4726.4	4687.1	4683.7	4567.3	4446.3	4372.6	4309.8	4169.8	3987.0
45°	3425.8	3428.1	3454.3	3429.3	3363.0	3337.9	3258.4	3191.9	3109.0	3065.1	2920.3
47.5°	2329.4	2336.5	2354.3	2340.0	2279.6	2270.0	2219.0	2152.6	2151.3	2083.7	1956.7
50°	1033.6	1035.9	1057.3	1052.5	980.1	989.7	956.4	895.9	912.5	872.1	774.8
52.5°	342.9	344.2	347.7	345.3	333.5	333.5	325.1	323.9	314.5	304.9	283.7
55°	175.6	175.6	178.0	176.8	170.9	170.9	161.5	167.2	162.6	159.0	146.0
57.5°	74.7	74.7	75.9	75.9	72.4	75.9	72.4	72.4	70.1	68.8	64.1
60°	34.5	34.5	34.5	34.5	33.2	35.6	33.2	33.2	33.2	32.0	29.7
62.5°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	16.7	16.7	16.7	15.5
65°	8.3	8.3	8.3	8.3	8.3	9.6	8.3	8.3	8.3	8.3	8.3
67.5°	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	3.6	3.6	3.6
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1	102.1
2.5°	178.0	172.0	180.4	173.2	178.0	173.2	167.2	169.7	136.4	114.0	100.9
5°	495.9	478.3	493.6	478.3	479.4	471.0	448.6	446.1	264.5	129.3	96.1
7.5°	933.8	931.5	950.5	930.3	927.9	907.7	866.2	849.7	479.4	151.9	89.1
10°	1483.3	1448.9	1465.5	1444.1	1437.0	1400.2	1340.8	1308.8	713.1	174.5	80.7
12.5°	1935.4	1922.4	1934.2	1914.0	1906.9	1857.0	1787.1	1744.4	952.9	187.5	72.4
15°	2526.3	2500.2	2508.5	2466.9	2445.7	2350.7	2230.9	2152.6	1165.2	186.4	66.5
17.5°	3428.1	3377.1	3372.4	3301.1	3249.0	3077.0	2862.1	2700.8	1320.7	172.0	64.1
20°	4557.8	4465.3	4434.5	4321.7	4233.9	3949.1	3617.9	3355.7	1418.0	153.1	73.6
22.5°	5911.7	5749.2	5657.9	5477.5	5326.7	4869.9	4384.5	3991.8	1460.7	147.1	105.6
25°	7490.0	7211.1	7017.7	6734.0	6480.2	5778.8	5097.8	4547.1	1460.7	191.0	246.9
27.5°	9090.8	8650.4	8294.5	7880.4	7494.7	6500.3	5622.3	4905.5	1425.1	238.5	225.5
30°	9901.2	9360.1	8875.9	8391.8	7907.6	6712.7	5739.7	4949.4	1291.0	140.0	79.5
32.5°	9557.0	8986.2	8451.2	7982.5	7504.2	6337.7	5421.7	4658.6	1084.5	81.8	51.0
35°	8237.5	7742.7	7277.6	6927.5	6554.9	5634.1	4814.1	4149.6	862.7	64.1	34.5
37.5°	6575.0	6238.1	5907.1	5682.8	5415.8	4723.9	4063.1	3518.3	617.0	46.3	21.4
40°	5100.1	4869.9	4638.5	4496.2	4307.5	3803.1	3288.1	2855.0	364.3	32.0	14.2
42.5°	3906.4	3747.4	3575.2	3476.8	3341.5	2965.3	2563.1	2257.0	168.5	22.6	10.7
45°	2871.7	2754.2	2622.5	2559.6	2464.6	2216.6	1949.6	1733.7	95.0	16.7	7.1
47.5°	1933.1	1828.5	1706.3	1667.2	1575.8	1358.6	1085.7	873.3	62.8	11.9	5.9
50°	768.9	700.1	658.5	604.0	550.5	461.6	345.3	275.3	37.9	9.6	4.8
52.5°	282.4	267.0	259.9	245.6	233.7	208.8	176.8	153.1	22.6	7.1	3.6
55°	147.1	137.7	132.9	128.1	121.1	106.9	89.1	75.9	14.2	4.8	3.6
57.5°	64.1	60.5	61.7	56.9	53.4	48.7	42.7	36.8	9.6	4.8	3.6
60°	30.8	28.5	29.7	27.2	26.1	24.9	22.6	19.0	5.9	3.6	2.3
62.5°	15.5	15.5	15.5	14.2	14.2	13.0	11.9	10.7	4.8	3.6	3.6
65°	8.3	7.1	8.3	7.1	7.1	7.1	5.9	5.9	3.6	3.6	3.6
67.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.3	3.6	3.6
70°	2.3	2.3	2.3	2.3	2.3	2.3	1.2	2.3	2.3	3.6	3.6
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.3	3.6	3.6
75°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.3	3.6	3.6
77.5°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.3	3.6	3.6
80°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.3	3.6	3.6
82.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.3	3.6	3.6
85°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.3	3.6	3.6
87.5°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	2.3	3.6	3.6
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°	102.1	102.1	102.1	102.1
2.5°	85.4	75.9	68.8	67.6
5°	72.4	60.5	52.3	51.0
7.5°	61.7	48.7	41.6	40.4
10°	54.6	41.6	34.5	33.2
12.5°	48.7	36.8	32.0	30.8
15°	45.0	36.8	35.6	36.8
17.5°	48.7	49.8	54.6	60.5
20°	80.7	115.1	149.6	174.5
22.5°	181.6	335.8	445.0	497.2
25°	342.9	388.1	389.2	371.4
27.5°	186.4	148.3	132.9	125.8
30°	73.6	70.1	70.1	68.8
32.5°	48.7	45.0	43.9	42.7
35°	29.7	26.1	24.9	24.9
37.5°	19.0	16.7	15.5	14.2
40°	13.0	10.7	9.6	8.3
42.5°	9.6	7.1	4.8	4.8
45°	7.1	4.8	2.3	2.3
47.5°	5.9	3.6	1.2	1.2
50°	4.8	2.3	1.2	0.0
52.5°	3.6	2.3	0.0	0.0
55°	3.6	2.3	0.0	0.0
57.5°	3.6	2.3	0.0	0.0
60°	3.6	2.3	0.0	0.0
62.5°	3.6	2.3	0.0	0.0
65°	3.6	2.3	1.2	0.0
67.5°	4.8	2.3	1.2	0.0
70°	4.8	2.3	1.2	0.0
72.5°	4.8	2.3	1.2	0.0
75°	4.8	3.6	1.2	0.0
77.5°	4.8	3.6	1.2	0.0
80°	4.8	3.6	1.2	0.0
82.5°	4.8	3.6	1.2	0.0
85°	4.8	3.6	1.2	1.2
87.5°	4.8	3.6	1.2	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)