

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: P170742

Luminaire Tested: **LDA4A18830D010TE LAR15SP 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170742
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: LDA4A18830D010TE 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 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1734.1 lumens
Efficiency: N/A
Efficacy: 59.6 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

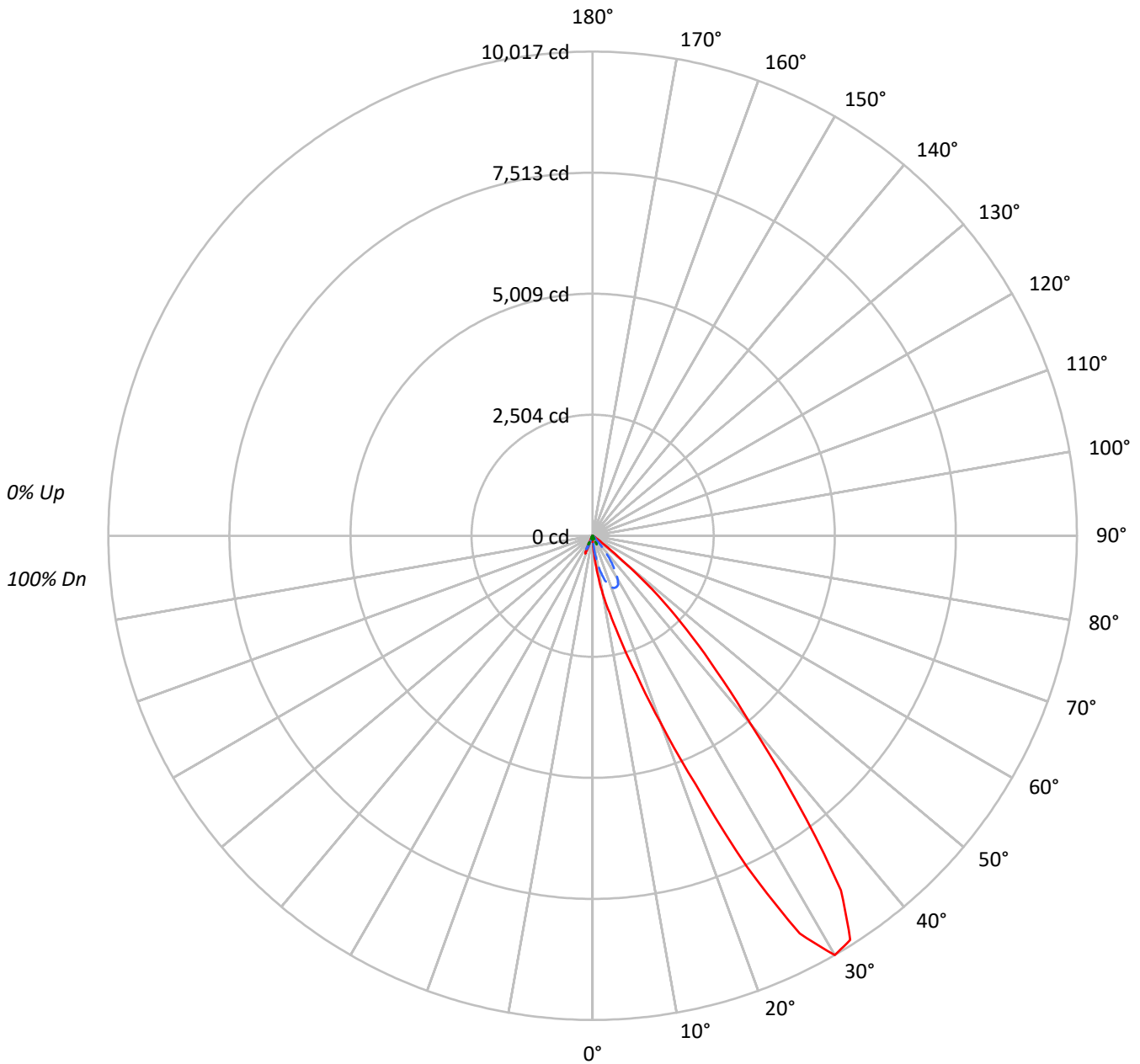
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	93	90	94	91	88	91	88	86	89	86	84	82																			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74																			
4	92	83	76	71	90	82	75	70	79	74	70	77	72	69	75	71	68	66																			
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59																			
6	80	69	62	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53																			
7	74	63	56	51	73	62	55	50	61	55	50	60	54	50	58	53	49	48																			
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	54	48	45	43																			
9	65	53	46	41	64	52	46	41	51	45	41	50	45	40	49	44	40	39																			
10	61	49	42	37	59	48	41	37	47	41	37	46	41	37	46	40	36	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10090	10090	10090
5°	53216	9534	5064
10°	155671	8104	3332
15°	283180	6806	3767
20°	540221	7744	18350
25°	1026674	26920	40502
30°	1426694	9073	7862
35°	1348253	4156	3012
40°	817174	1836	1079
45°	478882	994	331
50°	158944	729	0
55°	30257	624	0
60°	6809	469	0
65°	1955	846	0
70°	685	1046	0
75°	0	1382	0
80°	0	2060	0
85°	0	4104	1415



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.5	1.1
10°-20°	159.5	9.2
20°-30°	565.8	32.6
30°-40°	670.8	38.7
40°-50°	285.4	16.5
50°-60°	25.8	1.5
60°-70°	3.2	0.2
70°-80°	2.1	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°	744.8	43.0
0°-40°	1415.6	81.6
0°-60°	1726.8	99.6
0°-90°	1734.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1734.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	82	82	82	82	82	
5°	430	212	77	48	41	67
15°	2218	934	53	30	30	715
25°	7544	1171	198	311	298	3495
35°	8954	691	28	21	20	5172
45°	2745	76	6	4	2	2152
55°	141	11	3	2	0	197
65°	7	3	3	2	0	9
75°	0	2	3	3	0	1
85°	0	2	3	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°	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8
2.5°	150.2	141.7	147.4	145.5	146.4	149.3	146.4	146.4	145.5	141.7	141.7
5°	429.8	404.1	416.5	409.8	413.7	418.4	411.8	409.8	407.0	398.4	396.5
7.5°	800.7	786.4	801.6	790.2	800.7	802.6	793.1	791.2	786.4	774.1	769.3
10°	1242.9	1219.1	1233.3	1221.0	1237.2	1236.2	1221.0	1222.9	1217.2	1201.0	1193.4
12.5°	1634.6	1615.6	1629.9	1594.7	1634.6	1609.0	1611.8	1615.6	1608.0	1587.1	1577.6
15°	2217.6	2165.3	2190.0	2129.1	2190.0	2181.4	2148.1	2146.2	2126.3	2091.1	2070.2
17.5°	2991.6	3005.9	2987.8	2951.7	3032.5	3010.6	2963.1	2953.6	2915.5	2819.5	2817.6
20°	4115.6	4096.6	4127.0	4012.9	4116.6	4015.8	4002.4	3975.8	3911.2	3777.1	3756.2
22.5°	5554.4	5564.8	5510.6	5431.7	5559.1	5403.2	5355.6	5291.9	5174.0	4967.6	4903.0
25°	7543.7	7530.4	7460.0	7328.8	7464.8	7212.8	7093.9	6962.7	6743.0	6421.6	6266.6
27.5°	9277.2	9331.4	9284.8	9151.7	9242.0	8993.8	8720.0	8636.3	8338.7	7933.6	7654.0
30°	10017.0	10042.7	10022.7	9921.0	9953.3	9748.9	9477.9	9379.0	9073.7	8690.5	8328.2
32.5°	9915.3	9927.7	9931.5	9795.5	9801.2	9608.1	9324.8	9178.3	8845.5	8476.5	8043.9
35°	8953.9	9005.3	9038.5	8911.1	8784.6	8592.6	8271.1	8043.9	7693.9	7357.3	6915.1
37.5°	6934.1	6998.8	7050.2	6941.8	6881.8	6649.8	6382.6	6206.7	5965.2	5767.4	5453.6
40°	5075.1	5087.4	5118.8	5062.7	4969.5	4907.7	4754.6	4654.8	4508.3	4401.8	4193.6
42.5°	3772.3	3765.7	3787.5	3756.2	3753.3	3660.1	3563.1	3504.2	3453.8	3341.5	3195.1
45°	2745.3	2747.2	2768.1	2748.2	2694.9	2675.0	2611.2	2558.0	2491.4	2456.2	2340.2
47.5°	1866.7	1872.4	1886.6	1875.2	1826.7	1819.1	1778.2	1725.0	1724.0	1669.8	1568.1
50°	828.3	830.2	847.3	843.5	785.5	793.1	766.4	717.9	731.3	698.9	621.0
52.5°	274.8	275.8	278.6	276.7	267.2	267.2	260.6	259.6	252.0	244.4	227.3
55°	140.7	140.7	142.6	141.7	136.9	136.9	129.3	134.1	130.3	127.4	117.0
57.5°	59.9	59.9	60.9	60.9	58.0	60.9	58.0	58.0	56.1	55.2	51.3
60°	27.6	27.6	27.6	27.6	26.6	28.5	26.6	26.6	26.6	25.7	23.8
62.5°	14.3	14.3	14.3	14.3	14.3	14.3	14.3	13.3	13.3	13.3	12.4
65°	6.7	6.7	6.7	6.7	6.7	7.6	6.7	6.7	6.7	6.7	6.7
67.5°	2.9	2.9	2.9	3.8	3.8	3.8	3.8	3.8	2.9	2.9	2.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.0
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°	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°	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8
2.5°	142.6	137.9	144.5	138.8	142.6	138.8	134.1	136.0	109.4	91.3	80.8
5°	397.5	383.2	395.6	383.2	384.2	377.5	359.4	357.5	212.1	103.7	77.0
7.5°	748.4	746.5	761.7	745.5	743.6	727.5	694.2	680.9	384.2	121.7	71.3
10°	1188.7	1161.1	1174.4	1157.3	1151.6	1122.1	1074.5	1048.9	571.5	139.8	64.7
12.5°	1551.0	1540.5	1550.0	1533.8	1528.1	1488.2	1432.1	1397.9	763.6	150.2	58.0
15°	2024.5	2003.6	2010.3	1977.0	1959.9	1883.8	1787.7	1725.0	933.8	149.3	53.3
17.5°	2747.2	2706.3	2702.5	2645.5	2603.6	2465.7	2293.6	2164.3	1058.4	137.9	51.3
20°	3652.5	3578.3	3553.6	3463.3	3392.9	3164.7	2899.4	2689.2	1136.4	122.7	59.0
22.5°	4737.5	4607.2	4534.0	4389.5	4268.7	3902.6	3513.7	3198.9	1170.6	117.9	84.6
25°	6002.2	5778.8	5623.8	5396.5	5193.0	4631.0	4085.2	3643.9	1170.6	153.1	197.8
27.5°	7285.0	6932.2	6647.0	6315.1	6006.0	5209.2	4505.5	3931.1	1142.1	191.1	180.7
30°	7934.5	7500.9	7112.9	6724.9	6337.0	5379.4	4599.6	3966.3	1034.6	112.2	63.7
32.5°	7658.7	7201.4	6772.5	6396.9	6013.6	5078.9	4344.8	3733.3	869.1	65.6	40.9
35°	6601.3	6204.8	5832.0	5551.5	5252.9	4515.0	3857.9	3325.4	691.3	51.3	27.6
37.5°	5269.1	4999.0	4733.7	4554.0	4340.0	3785.6	3256.0	2819.5	494.5	37.1	17.1
40°	4087.1	3902.6	3717.2	3603.1	3451.9	3047.7	2635.0	2287.9	291.9	25.7	11.4
42.5°	3130.4	3003.0	2865.1	2786.2	2677.8	2376.4	2054.0	1808.7	135.0	18.1	8.6
45°	2301.2	2207.1	2101.5	2051.1	1975.1	1776.3	1562.4	1389.3	76.1	13.3	5.7
47.5°	1549.1	1465.4	1367.4	1336.0	1262.8	1088.8	870.1	699.9	50.4	9.5	4.8
50°	616.2	561.0	527.8	484.0	441.2	369.9	276.7	220.6	30.4	7.6	3.8
52.5°	226.3	214.0	208.3	196.8	187.3	167.4	141.7	122.7	18.1	5.7	2.9
55°	117.9	110.3	106.5	102.7	97.0	85.6	71.3	60.9	11.4	3.8	2.9
57.5°	51.3	48.5	49.4	45.6	42.8	39.0	34.2	29.5	7.6	3.8	2.9
60°	24.7	22.8	23.8	21.9	20.9	20.0	18.1	15.2	4.8	2.9	1.9
62.5°	12.4	12.4	12.4	11.4	11.4	10.5	9.5	8.6	3.8	2.9	2.9
65°	6.7	5.7	6.7	5.7	5.7	5.7	4.8	4.8	2.9	2.9	2.9
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	1.9	2.9	2.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.0	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	0.0	0.0	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	2.9
80°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9	2.9	2.9
82.5°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9	2.9	2.9
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	2.9	2.9
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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CATALOG NUMBER: LDA4A18830D010TE LAR15SP 4LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
0°	81.8	81.8	81.8	81.8
2.5°	68.5	60.9	55.2	54.2
5°	58.0	48.5	41.8	40.9
7.5°	49.4	39.0	33.3	32.3
10°	43.7	33.3	27.6	26.6
12.5°	39.0	29.5	25.7	24.7
15°	36.1	29.5	28.5	29.5
17.5°	39.0	39.9	43.7	48.5
20°	64.7	92.2	119.8	139.8
22.5°	145.5	269.1	356.6	398.4
25°	274.8	311.0	311.9	297.6
27.5°	149.3	118.9	106.5	100.8
30°	59.0	56.1	56.1	55.2
32.5°	39.0	36.1	35.2	34.2
35°	23.8	20.9	20.0	20.0
37.5°	15.2	13.3	12.4	11.4
40°	10.5	8.6	7.6	6.7
42.5°	7.6	5.7	3.8	3.8
45°	5.7	3.8	1.9	1.9
47.5°	4.8	2.9	1.0	1.0
50°	3.8	1.9	1.0	0.0
52.5°	2.9	1.9	0.0	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°	3.8	1.9	1.0	0.0
70°	3.8	1.9	1.0	0.0
72.5°	3.8	1.9	1.0	0.0
75°	3.8	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)