

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: P170830

Luminaire Tested: **LDA4A28830D010TE LAR35FL 4LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170830
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: LDA4A28830D010TE 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: 3042.9 lumens
Efficiency: N/A
Efficacy: 68.4 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

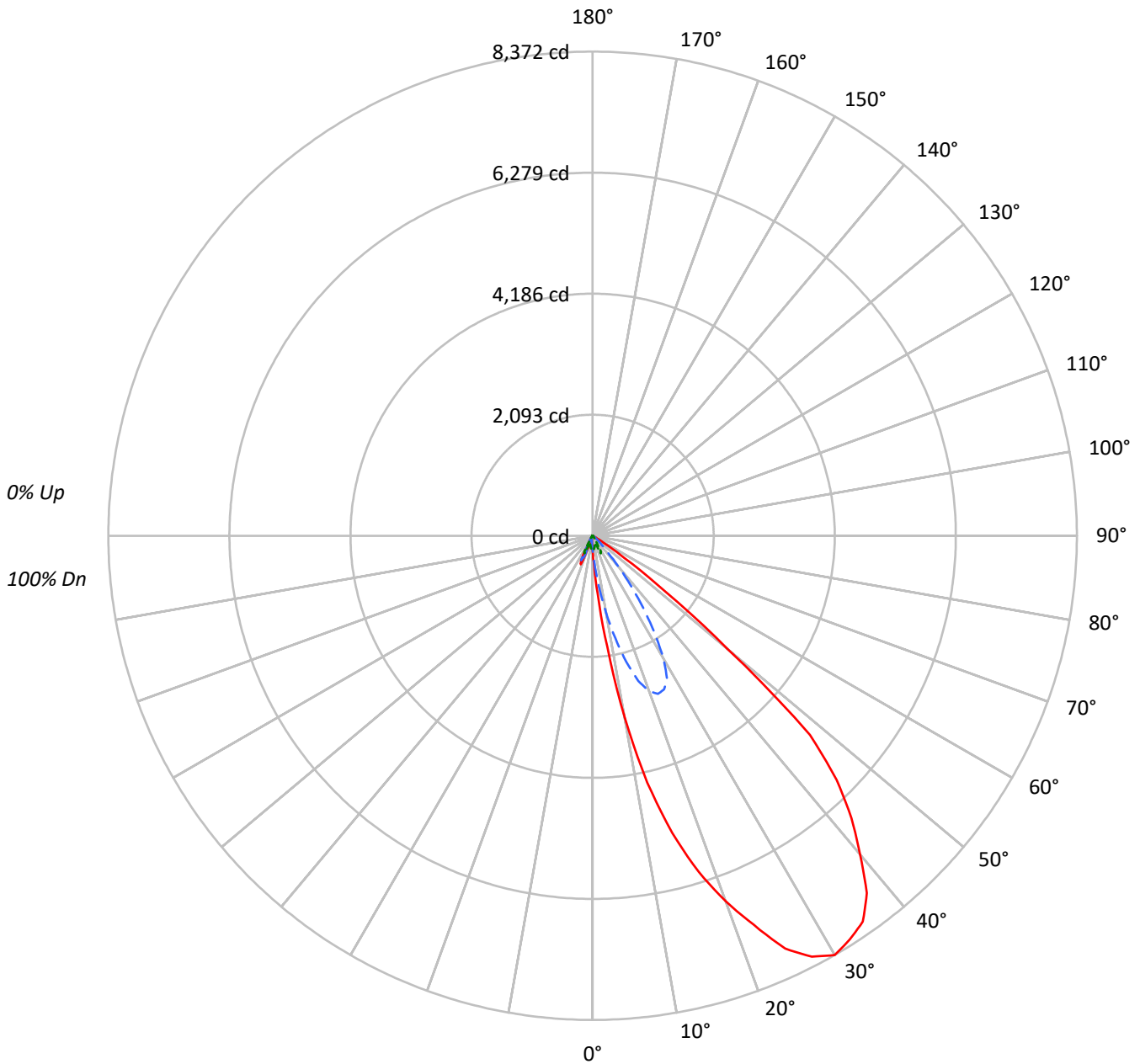
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	30861	30861	30861
5°	124275	29134	13645
10°	400620	24436	7828
15°	679615	19397	6091
20°	883312	17392	18377
25°	1071899	45797	65054
30°	1192387	16123	17177
35°	1226527	9637	8071
40°	1158110	4074	2882
45°	1040848	2337	785
50°	585788	1420	0
55°	145393	968	0
60°	22400	1110	0
65°	5224	1313	0
70°	1082	1623	0
75°	0	2145	0
80°	0	4262	0
85°	0	8491	2123



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.3	1.7
10°-20°	373.4	12.3
20°-30°	862.6	28.3
30°-40°	967.6	31.8
40°-50°	675.1	22.2
50°-60°	100.8	3.3
60°-70°	6.6	0.2
70°-80°	3.3	0.1
80°-90°	3.2	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°	1286.3	42.3
0°-40°	2253.8	74.1
0°-60°	3029.8	99.6
0°-90°	3042.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3042.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	250	250	250	250	250	
5°	1004	587	235	137	110	166
15°	5322	2265	152	58	48	1521
25°	7876	2928	336	469	478	3601
35°	8146	1522	64	54	54	5011
45°	5967	229	13	7	4	4378
55°	676	30	4	3	0	888
65°	18	4	4	3	0	27
75°	0	3	4	4	0	1
85°	0	3	6	4	2	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°	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2
2.5°	455.7	451.2	439.3	436.3	446.7	437.8	442.3	451.2	442.3	431.8	442.3
5°	1003.7	1029.0	1003.7	999.2	1017.1	1000.7	1008.1	1024.5	1002.2	981.3	996.2
7.5°	1937.4	1953.7	1882.3	1907.6	1901.6	1906.1	1910.5	1910.5	1897.1	1859.9	1880.8
10°	3198.6	3210.6	3115.3	3148.0	3104.8	3148.0	3140.6	3107.8	3115.3	3064.6	3091.4
12.5°	4369.1	4407.8	4312.5	4343.8	4291.7	4340.8	4321.4	4312.5	4236.6	4236.6	4264.9
15°	5322.1	5410.0	5323.6	5356.4	5296.8	5365.3	5311.7	5335.5	5267.0	5182.2	5256.6
17.5°	6093.5	6179.9	6099.5	6139.7	6084.6	6138.2	6075.6	6126.3	6038.4	5977.4	6028.0
20°	6729.4	6793.4	6698.1	6754.7	6689.2	6742.8	6674.3	6741.3	6638.5	6593.9	6623.6
22.5°	7283.3	7308.6	7259.5	7354.8	7226.7	7283.3	7201.4	7269.9	7147.8	7091.2	7098.7
25°	7876.0	7932.6	7838.8	7874.5	7785.2	7823.9	7731.5	7795.6	7643.7	7563.3	7546.9
27.5°	8205.1	8285.5	8202.1	8242.3	8151.5	8184.2	8091.9	8184.2	8029.4	7950.4	7932.6
30°	8371.9	8410.6	8357.0	8383.8	8281.0	8297.4	8202.1	8301.9	8147.0	8077.0	8068.1
32.5°	8275.1	8352.5	8282.5	8316.8	8221.5	8237.8	8145.5	8252.7	8097.9	8033.8	8002.6
35°	8145.5	8224.4	8158.9	8194.7	8106.8	8118.7	8020.4	8114.2	7935.6	7856.6	7789.6
37.5°	7786.6	7861.1	7806.0	7817.9	7733.0	7724.1	7618.4	7697.3	7523.1	7456.1	7411.4
40°	7192.5	7259.5	7214.8	7240.1	7155.3	7135.9	7064.4	7137.4	7001.9	6952.7	6890.2
42.5°	6623.6	6678.7	6637.0	6677.2	6581.9	6556.6	6492.6	6584.9	6431.5	6391.3	6346.7
45°	5966.9	6001.2	5968.4	6002.7	5911.8	5871.6	5813.5	5892.5	5742.1	5704.8	5608.0
47.5°	5098.8	5061.5	5055.6	5088.3	4975.2	4891.8	4838.2	4939.4	4722.0	4649.1	4537.4
50°	3052.7	3115.3	3142.1	3119.7	3042.3	2927.6	2841.3	2964.9	2848.7	2670.0	2491.3
52.5°	1572.5	1502.5	1517.4	1524.9	1432.5	1398.3	1370.0	1398.3	1307.5	1261.3	1148.1
55°	676.1	643.3	655.2	659.7	641.8	600.1	585.2	603.1	561.4	543.5	497.4
57.5°	250.2	250.2	242.7	245.7	239.7	224.9	221.9	229.3	215.9	211.5	193.6
60°	90.8	90.8	90.8	90.8	83.4	81.9	81.9	84.9	80.4	78.9	73.0
62.5°	38.7	40.2	37.2	38.7	37.2	35.7	37.2	35.7	35.7	34.2	34.2
65°	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	16.4	16.4
67.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	7.4	7.4	7.4
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°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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°	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2	250.2
2.5°	428.9	427.4	433.3	427.4	417.0	411.0	418.4	403.6	345.5	287.4	244.2
5°	969.4	962.0	951.6	954.5	929.2	908.4	908.4	868.2	586.7	333.6	235.3
7.5°	1837.6	1819.7	1743.8	1798.9	1745.3	1703.6	1675.3	1593.4	948.6	382.7	217.4
10°	3034.8	3003.6	2950.0	2960.4	2872.5	2802.5	2717.7	2580.7	1364.0	425.9	195.1
12.5°	4215.7	4184.4	4041.5	4123.4	4005.7	3937.2	3794.3	3633.5	1812.3	446.7	174.2
15°	5217.9	5191.1	5034.7	5112.2	4967.7	4903.7	4719.0	4540.3	2265.0	439.3	151.9
17.5°	5996.7	5992.2	5812.1	5889.5	5730.2	5678.0	5462.1	5286.4	2631.3	406.5	137.0
20°	6596.8	6586.4	6404.7	6482.2	6307.9	6257.3	5983.3	5798.7	2863.6	361.9	132.5
22.5°	7070.4	7049.5	6854.4	6921.5	6726.4	6660.9	6358.6	6166.5	2958.9	333.6	163.8
25°	7496.3	7459.0	7237.2	7289.3	7074.8	7088.2	6634.1	6422.6	2927.6	375.3	336.5
27.5°	7871.5	7804.5	7581.1	7596.0	7344.4	7213.3	6823.2	6589.4	2784.7	418.4	312.7
30°	8011.5	7946.0	7709.2	7718.1	7456.1	7271.4	6854.4	6593.9	2442.2	262.1	113.2
32.5°	7934.1	7862.6	7615.4	7618.4	7348.8	7161.2	6745.7	6458.3	1986.5	172.7	86.4
35°	7709.2	7634.8	7389.0	7401.0	7140.4	6954.2	6547.7	6240.9	1521.9	137.0	64.0
37.5°	7329.5	7277.4	7043.6	7064.4	6842.5	6644.5	6232.0	5899.9	1073.7	98.3	40.2
40°	6841.0	6800.8	6574.5	6607.3	6366.0	6182.9	5740.6	5380.2	668.6	67.0	25.3
42.5°	6269.2	6226.0	6002.7	6028.0	5822.5	5560.4	5109.2	4701.2	349.9	47.7	17.9
45°	5555.9	5505.3	5279.0	5292.4	5049.6	4742.9	4275.3	3914.9	229.3	32.8	13.4
47.5°	4434.6	4343.8	4048.9	4037.0	3839.0	3337.1	2673.0	2163.7	151.9	22.3	8.9
50°	2437.7	2343.9	2084.8	2056.5	1836.1	1507.0	1113.9	866.7	87.9	14.9	7.4
52.5°	1109.4	1060.3	939.6	920.3	826.5	685.0	527.2	433.3	50.6	10.4	6.0
55°	481.0	463.1	412.5	409.5	366.3	317.2	253.2	214.4	29.8	7.4	4.5
57.5°	189.1	183.2	172.7	165.3	148.9	132.5	110.2	92.3	19.4	6.0	4.5
60°	71.5	70.0	64.0	65.5	59.6	56.6	49.1	41.7	11.9	4.5	4.5
62.5°	32.8	32.8	31.3	31.3	29.8	26.8	23.8	22.3	7.4	4.5	4.5
65°	16.4	16.4	14.9	14.9	14.9	13.4	11.9	11.9	4.5	4.5	4.5
67.5°	7.4	7.4	7.4	7.4	7.4	6.0	6.0	6.0	3.0	4.5	4.5
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5
72.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3.0	4.5	4.5
75°	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	3.0	4.5	4.5
77.5°	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	3.0	4.5	6.0
80°	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	3.0	4.5	6.0
82.5°	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	3.0	4.5	6.0
85°	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	3.0	4.5	6.0
87.5°	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	3.0	4.5	6.0
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°	250.2	250.2	250.2	250.2
2.5°	210.0	186.1	165.3	160.8
5°	172.7	137.0	114.7	110.2
7.5°	140.0	99.8	83.4	80.4
10°	114.7	80.4	65.5	62.5
12.5°	95.3	65.5	52.1	49.1
15°	81.9	58.1	47.7	47.7
17.5°	78.9	64.0	61.1	62.5
20°	102.7	116.2	138.5	140.0
22.5°	238.3	387.2	512.3	536.1
25°	428.9	469.1	457.2	478.0
27.5°	226.3	177.2	180.2	184.7
30°	98.3	108.7	114.7	120.6
32.5°	81.9	84.9	86.4	90.8
35°	53.6	53.6	52.1	53.6
37.5°	32.8	31.3	29.8	29.8
40°	20.8	19.4	17.9	17.9
42.5°	14.9	11.9	10.4	10.4
45°	10.4	7.4	6.0	4.5
47.5°	7.4	4.5	3.0	1.5
50°	6.0	4.5	1.5	0.0
52.5°	4.5	3.0	1.5	0.0
55°	4.5	3.0	0.0	0.0
57.5°	4.5	3.0	0.0	0.0
60°	4.5	3.0	0.0	0.0
62.5°	4.5	3.0	0.0	0.0
65°	4.5	3.0	1.5	0.0
67.5°	4.5	3.0	1.5	0.0
70°	4.5	3.0	1.5	0.0
72.5°	4.5	3.0	1.5	0.0
75°	4.5	4.5	1.5	0.0
77.5°	6.0	4.5	1.5	0.0
80°	6.0	4.5	1.5	0.0
82.5°	6.0	4.5	1.5	0.0
85°	6.0	4.5	1.5	1.5
87.5°	6.0	4.5	1.5	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)