

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: P174920

Luminaire Tested: **LDA4A28835D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174920
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26217)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A28835D010TE LAR35FL 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2885.8 lumens
Efficiency: N/A
Efficacy: 64.9 lumens/watt
Spacing Criteria (0/90/45): 2.3 / 0.86 / 1.17
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

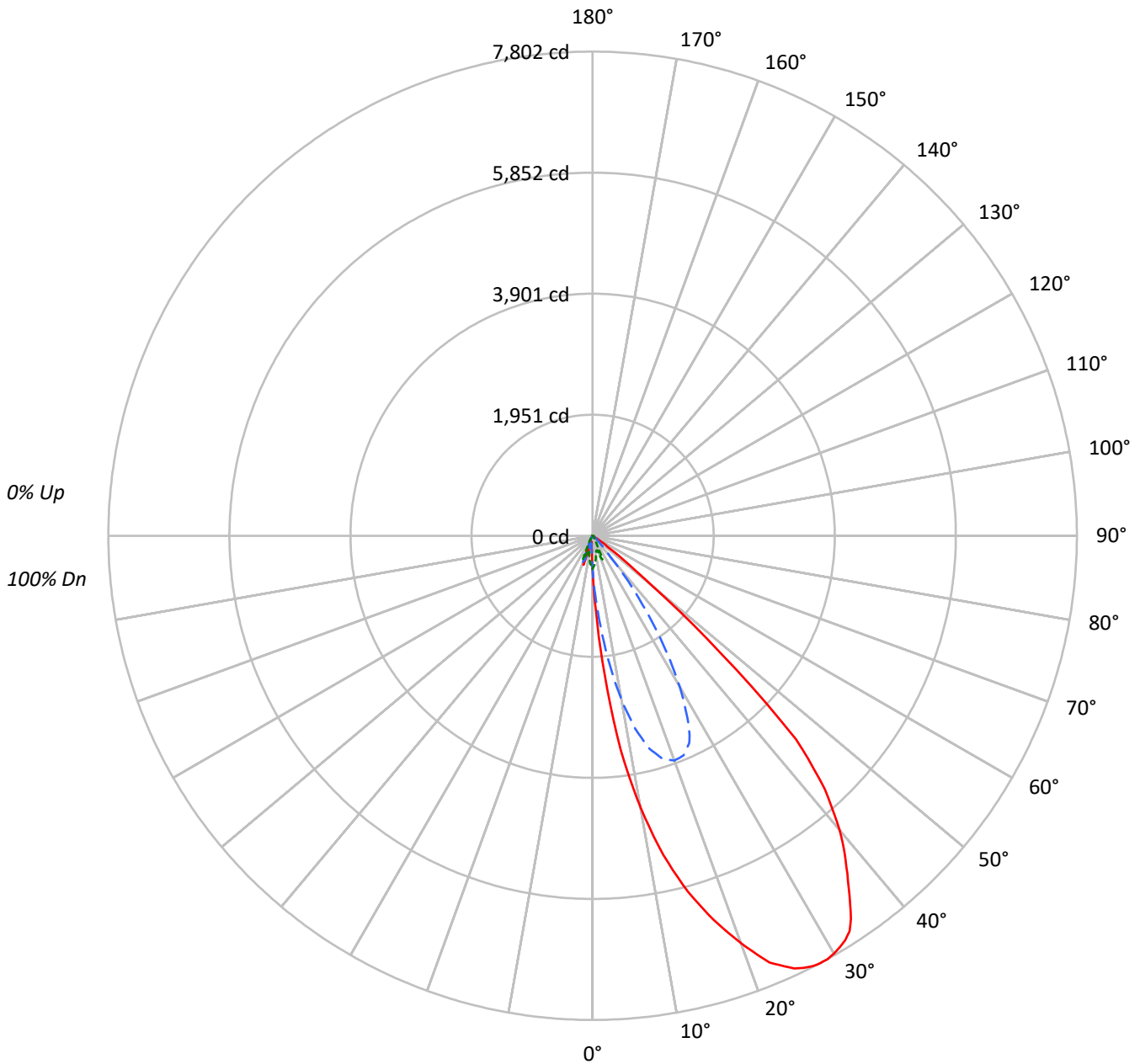
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92																			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84																			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76																			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69																			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62																			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	66	62	58	57																			
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52																			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47																			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43																			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	66089	66089	66089
5°	277610	55284	20417
10°	557694	38025	12387
15°	758596	30877	27889
20°	916823	46887	51756
25°	1047075	27859	14399
30°	1107130	13103	6651
35°	1088974	5797	2485
40°	996562	2882	660
45°	808341	1430	0
50°	239634	787	0
55°	43439	882	0
60°	8141	1011	0
65°	2014	1197	0
70°	505	1479	0
75°	0	1954	0
80°	0	3907	0
85°	0	7784	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.4	3.4
10°-20°	504.0	17.5
20°-30°	882.7	30.6
30°-40°	886.5	30.7
40°-50°	467.0	16.2
50°-60°	38.9	1.3
60°-70°	3.9	0.1
70°-80°	2.8	0.1
80°-90°	2.6	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°	1484.1	51.4
0°-40°	2370.6	82.1
0°-60°	2876.4	99.7
0°-90°	2885.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2885.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	536	536	536	536	536	
5°	2242	1466	446	205	165	287
15°	5941	3556	242	162	218	1696
25°	7694	3682	205	117	106	3520
35°	7232	1599	38	21	16	4472
45°	4634	165	8	3	0	3176
55°	202	18	4	1	0	304
65°	7	3	4	3	0	10
75°	0	3	4	3	0	1
85°	0	3	6	3	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	535.8	535.8	535.8	535.8	535.8	535.8	535.8	535.8	535.8	535.8	535.8
2.5°	1215.9	1217.2	1218.6	1228.2	1206.2	1200.8	1191.1	1177.4	1132.1	945.2	713.0
5°	2242.1	2258.6	2254.5	2240.8	2206.4	2187.2	2158.3	2128.1	2004.5	1465.9	884.8
7.5°	3484.1	3515.7	3508.8	3488.2	3430.5	3404.4	3331.6	3291.8	3104.9	2081.4	1012.5
10°	4452.7	4536.5	4537.9	4518.6	4432.1	4395.0	4319.4	4248.0	4011.7	2684.5	1071.6
12.5°	5271.5	5272.9	5337.4	5322.3	5222.0	5205.6	5142.4	5035.2	4786.5	3187.4	1071.6
15°	5940.6	6031.2	6016.1	5999.6	5893.9	5871.9	5811.4	5712.5	5422.6	3555.5	1019.4
17.5°	6492.9	6573.9	6550.6	6532.7	6426.9	6378.8	6312.9	6194.7	5876.0	3774.0	910.9
20°	6984.7	7061.6	7014.9	6983.3	6841.8	6782.7	6686.6	6550.6	6186.5	3855.0	784.5
22.5°	7443.6	7524.6	7465.6	7421.6	7238.9	7124.8	6988.8	6817.1	6388.4	3828.9	717.2
25°	7693.6	7799.4	7743.1	7708.7	7534.2	7401.0	7221.0	6999.8	6503.9	3681.9	539.9
26°	7748.6	7859.9	7806.3	7776.0	7598.8	7457.3	7265.0	7032.8	6513.5	3561.0	416.3
27°	7787.0	7910.7	7848.9	7810.4	7627.7	7476.5	7276.0	7034.2	6498.4	3397.6	331.1
28°	7802.1	7938.2	7862.6	7815.9	7626.3	7461.4	7248.5	7003.9	6458.5	3209.3	281.6
29°	7800.8	7949.2	7861.2	7810.4	7608.4	7425.7	7207.3	6961.3	6403.6	3012.9	254.2
30°	7773.3	7935.4	7847.5	7782.9	7565.8	7369.4	7148.2	6902.3	6341.7	2798.6	226.7
31°	7736.2	7902.4	7810.4	7730.7	7495.8	7282.8	7065.8	6822.6	6259.3	2569.1	207.5
32°	7682.6	7848.9	7747.2	7642.8	7396.9	7174.3	6965.5	6729.2	6159.0	2327.3	184.1
33°	7597.4	7744.4	7626.3	7505.4	7259.5	7050.6	6852.8	6620.6	6045.0	2075.9	159.4
34°	7442.2	7571.3	7449.1	7326.8	7107.0	6913.3	6723.7	6492.9	5911.7	1843.7	137.4
35°	7232.0	7341.9	7232.0	7129.0	6935.2	6755.3	6573.9	6348.6	5751.0	1599.2	118.2
36°	7017.7	7113.8	7012.2	6931.1	6745.7	6584.9	6415.9	6182.4	5569.6	1367.0	104.4
37°	6817.1	6903.6	6810.2	6729.2	6569.8	6406.3	6238.7	5999.6	5369.0	1144.4	86.6
38°	6617.9	6694.8	6615.1	6524.5	6377.5	6211.2	6042.2	5797.7	5145.1	934.2	74.2
39°	6410.4	6473.6	6396.7	6304.6	6154.9	5990.0	5816.9	5564.1	4888.2	715.8	64.6
40°	6189.2	6248.3	6153.5	6071.1	5921.3	5752.3	5575.1	5312.7	4609.3	479.5	55.0
42.5°	5535.3	5571.0	5491.3	5377.3	5227.5	5042.1	4827.7	4533.7	3717.7	252.8	38.5
45°	4634.0	4640.9	4579.1	4371.6	4171.0	3883.9	3563.8	3122.8	2161.1	164.9	24.7
47.5°	2797.2	2780.7	2683.1	2505.9	2319.1	2015.5	1716.0	1412.3	839.4	96.2	16.5
50°	1248.8	1229.6	1181.5	1089.5	980.9	868.3	735.0	622.4	408.0	52.2	11.0
51°	905.4	888.9	853.2	783.1	703.4	623.7	531.7	454.7	305.0	42.6	9.6
52°	636.1	626.5	601.8	552.3	508.3	446.5	383.3	335.2	229.4	34.3	6.9
53°	443.8	436.9	421.8	388.8	362.7	317.4	277.5	239.1	166.2	27.5	6.9
54°	300.9	296.8	287.1	265.2	243.2	218.4	189.6	167.6	116.8	22.0	5.5
55°	202.0	199.2	191.0	180.0	167.6	152.5	133.3	116.8	82.4	17.9	4.1
57.5°	74.2	74.2	71.4	67.3	63.2	59.1	53.6	48.1	38.5	11.0	4.1
60°	33.0	31.6	31.6	30.2	28.9	27.5	26.1	23.4	19.2	6.9	4.1
61°	24.7	24.7	23.4	22.0	22.0	20.6	19.2	17.9	15.1	5.5	4.1
62°	17.9	17.9	17.9	16.5	16.5	15.1	15.1	13.7	11.0	4.1	4.1
63°	13.7	13.7	13.7	12.4	12.4	12.4	11.0	11.0	8.2	4.1	4.1
64°	9.6	9.6	9.6	9.6	9.6	9.6	8.2	8.2	6.9	2.7	4.1
65°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	5.5	2.7	4.1
66°	5.5	5.5	5.5	5.5	5.5	5.5	4.1	4.1	4.1	2.7	4.1



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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	4.1
75°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.7	4.1
77.5°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.7	4.1
80°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.7	4.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.7	4.1
85°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.7	4.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.7	4.1
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):

	90°	112.5°	135°	157.5°	180°
0°	535.8	535.8	535.8	535.8	535.8
2.5°	493.2	344.8	274.8	248.7	240.4
5°	446.5	258.3	204.7	175.9	164.9
7.5°	375.1	212.9	153.9	127.8	119.5
10°	303.6	175.9	125.0	104.4	98.9
12.5°	259.7	152.5	116.8	108.5	108.5
15°	241.8	160.7	162.1	195.1	218.4
17.5°	248.7	251.4	392.9	478.1	493.2
20°	357.2	452.0	447.9	406.7	394.3
22.5°	413.5	298.1	225.3	185.5	178.6
25°	204.7	136.0	116.8	107.2	105.8
26°	155.2	114.0	101.7	96.2	93.4
27°	129.1	100.3	90.7	83.8	81.1
28°	115.4	89.3	78.3	71.4	68.7
29°	104.4	76.9	65.9	59.1	57.7
30°	92.0	64.6	55.0	48.1	46.7
31°	78.3	53.6	44.0	39.8	37.1
32°	65.9	44.0	35.7	31.6	28.9
33°	55.0	35.7	30.2	26.1	23.4
34°	46.7	30.2	24.7	20.6	19.2
35°	38.5	24.7	20.6	17.9	16.5
36°	33.0	22.0	16.5	13.7	12.4
37°	28.9	17.9	13.7	11.0	11.0
38°	24.7	15.1	12.4	8.2	8.2
39°	20.6	12.4	9.6	6.9	6.9
40°	17.9	11.0	8.2	5.5	4.1
42.5°	12.4	6.9	5.5	2.7	1.4
45°	8.2	5.5	2.7	1.4	0.0
47.5°	5.5	4.1	2.7	1.4	0.0
50°	4.1	4.1	2.7	0.0	0.0
51°	4.1	2.7	2.7	0.0	0.0
52°	4.1	2.7	1.4	0.0	0.0
53°	4.1	2.7	1.4	0.0	0.0
54°	4.1	2.7	1.4	0.0	0.0
55°	4.1	2.7	1.4	0.0	0.0
57.5°	4.1	2.7	1.4	0.0	0.0
60°	4.1	2.7	2.7	0.0	0.0
61°	4.1	4.1	2.7	0.0	0.0
62°	4.1	4.1	2.7	0.0	0.0
63°	4.1	4.1	2.7	0.0	0.0
64°	4.1	4.1	2.7	1.4	0.0
65°	4.1	4.1	2.7	1.4	0.0
66°	4.1	4.1	2.7	1.4	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	4.1	4.1	2.7	1.4	0.0
75°	4.1	4.1	2.7	1.4	0.0
77.5°	5.5	4.1	2.7	1.4	0.0
80°	5.5	4.1	2.7	1.4	0.0
82.5°	5.5	4.1	2.7	1.4	0.0
85°	5.5	4.1	2.7	1.4	0.0
87.5°	5.5	4.1	2.7	1.4	0.0
90°	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°







67.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	4.1
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	4.1





67.5°	4.1	4.1	2.7	1.4	0.0
70°	4.1	4.1	2.7	1.4	0.0



(END OF REPORT)