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Hi-lume® A-Series Driver Overview EcoSystem® or 3-wire control

Hi-lume® A-Series Driver is a high-performance LED driver that provides smooth, continuous 1% dimming for virtually any LED fixture, whether it requires constant-current or constant-voltage. It is the most versatile LED driver offered today due to its compatibility with a wide variety of LED arrays, multiple form factors, and numerous control options.

Features

- Continuous, flicker-free dimming from 100% to 1%.
- Compatible with Energi Savr Node™ unit with EcoSystem®, GRAFIK Eye® QS control unit, PowPak® dimming module with EcoSystem®, and Quantum® systems, allowing for integration into a planned or existing EcoSystem® lighting control solution. Please see **Compatible Controls** chart or contact Lutron for details regarding compatible controls.
- Standard 3-wire, line-voltage phase-control technology for consistent dimming performance and compatibility with all Lutron® 3-wire fluorescent controls.
- QwikFig™ compatible. For more information please refer to Lutron® P/N 041473 (K and M case only).
- Line voltage miswire protection on EcoSystem® control inputs.
- 100% performance tested at factory.
- A rated lifetime of 50,000 hours @:
  - t_c = 149 °F (65 °C) for 40 W drivers
  - t_c = 158 °F (70 °C) for 50 W drivers
- UL® recognized for United States and Canada.
- Type TL Rated.
- FCC Part 15 compliant for commercial applications at 120 V~ or 277 V~.
- Pulse Width Modulation (PWM) or Constant-Current Reduction (CCR) dimming methods available. See Application Note #360 for details.
- RoHS Compliant.
- For more information please go to: www.lutron.com/HilumeLED

Hi-lume® A-Series, case type K

3.00 in (76 mm) W x 1.00 in (25 mm) H x 4.90 in (124 mm) L

Hi-lume® A-Series, case type M

1.18 in (30 mm) W x 1.00 in (25 mm) H x 14.25 in (362 mm) L

Hi-lume® A-Series, case type KL

K-case mounted on a 4.00 in (102 mm) W x 1.50 in (38 mm) H x 4.00 in (102 mm) L junction box to provide UL® listed wiring compartment

The Hi-lume® A-Series family of drivers includes models which operate at a maximum power of 40 W or less as well as models which can operate up to 50 W.

- 40 W or less models - output ranges A-M and X-Z
- 50 W models - output ranges N and W (K-case only)

For a description of the output ranges please see following pages.

LUTRON® SPECIFICATION SUBMITTAL

Page

Job Name:	Model Numbers:
Job Number:	

Specifications

Regulatory Approvals

- Meets ANSI C62.41 category A surge protection standards up to and including 4 kV.
- FCC Part 15 compliant for commercial applications at 120 V~ or 277 V~.
- Manufacturing facilities employ ESD reduction practices that comply with the requirements of ANSI/ESD S20.20.
- Lutron® Quality Systems registered to ISO 9001.2008.
- UL® 8750 recognized.
- UL® 8750 listed form factor available.
- Class 2 output available.
- Models available to meet LED Driver requirements for Energy Star 1.1.
- Type TL Rated.

UL® 8750 Listed Option

- cULus® for United States and Canada available for certain operating regions.
- Pre-wired and installation ready.
- See **KL Enclosure** page for more specific details regarding UL® listed option.

Environmental

- Sound Rating: Inaudible in 27 dB ambient.
- Relative Humidity: Maximum 90% non-condensing.
- Minimum operating ambient temperature t_a = 32 °F (0 °C).

Performance

- Dimming Range: 100% to 1%.
- Operating Voltage: 120–277 V~ at 50/60 Hz.
- Lifetime: 50,000 hours @:
  - t_c = 149 °F (65 °C)[1] for 40 W drivers.
  - t_c = 158 °F (70 °C)[1] for 50 W drivers.
  - For rated warranty, t_c not to exceed the maximum rated temperatures listed here.[1]
- Patented thermal foldback protection.
- LEDs turn on to any dimmed level without going to full brightness.
- Non-volatile memory restores all driver settings after power failure.
- Power Factor: >0.90 for loads greater than 25 W
- Standby Power Consumption: <1.0 W
- Total Harmonic Distortion (THD): <20% for loads greater than 25 W.
- Inrush Current: <2 A.
- Inrush Current Limiting Circuitry: eliminates circuit breaker tripping, switch arcing and relay failure.
- Open circuit protected.
- Short circuit protected.
- Turn-on time: ≤1.5 seconds.[2]
- PWM Dimming Frequency: 550 Hz.

Driver Wiring & Mounting

- Driver is grounded by a mounting screw to the grounded fixture (or by terminal connection on the K-case).
- Terminal blocks on the driver accept one solid wire per terminal from 18 AWG to 16 AWG (0.75 mm^2 to 1.5 mm^2).
- Fixture must be grounded in accordance with local and national electrical codes.
- For maximum driver to LED light engine wire lengths see **Driver Leads** section at end of document.

[1] Installer is responsible for ensuring that the driver case temperature does not exceed the maximum rated temperature.

[2] Models available with turn-on time ≤ 1 second.

LUTRON® SPECIFICATION SUBMITTAL Page

Job Name:	Model Numbers:
Job Number:	

How to Build a Model Number: Hi-lume® A-Series

L3DA _ U1U _ _ - _ _ ___

Example: L3DA4U1UKS-HC070
For further assistance selecting your model number, contact our LED Center of Excellence at 1.877.346.5338 or LEDs@lutron.com

Maximum Power:
4 = 40 W maximum
5 = 50 W maximum (K-case only)

Case Size:
K = Compact
M = Stick

Case Style:
S = Studded (K case only)
N = Non-Studded
L = UL® Listed (K case only)

Current Level (for Constant-Current):
020 = 0.20 A; 021 = 0.21 A . . . 070 = 0.70 A . . . 210 = 2.10 A

Voltage Level (for Constant-Voltage):
100 = 10.0 V; 105 = 10.5 V . . . 600 = 60.0 V

Driver Output:
C = Constant-current driver with pulse width modulation (PWM) dimming
A = Constant-current driver with constant-current reduction (CCR) dimming
V = Constant-voltage driver with pulse width modulation (PWM) dimming

LED Load Output Range (see the following pages for more detail):

40 W Drivers

Class 2 Constant-Voltage
A = 10.0 V–12.0 V
B = 12.5 V–20.0 V*
C = 20.5 V–24.0 V*
D = 24.5 V–38.0 V*

Isolated Non-Class 2 Constant-Voltage
X = 38.5 V–60.0 V*

Class 2 Constant-Current
E = 0.20 A–0.50 A 30 V–54 V
F = 0.51 A–1.00 A 30 V–54 V*
G = 0.20 A–0.70 A 8 V–20 V
H = 0.20 A–0.70 A 15 V–38 V
I = 0.71 A–1.05 A 8 V–20 V
J = 0.71 A–1.05 A 15 V–38 V
K = 1.06 A–1.50 A 8 V–20 V
L = 1.06 A–1.50 A 15 V–38 V*
M = 1.51 A–2.10 A 8 V–19.9 V*

Isolated Non-Class 2 Constant-Current
Y = 0.20 A–0.50 A 30 V–60 V
Z = 0.51 A–1.00 A 30 V–60 V*

50 W Drivers

Class 2 Constant-Current
N = 0.71 A–1.05 A 35 V–54 V*

Isolated Non-Class 2 Constant-Current
W = 0.71 A–1.05 A 35 V–60 V*

* Output parameter is power-limited for these output ranges. Consult detailed specifications on the following pages for each range.

Job Name:	Model Numbers:
Job Number:	

How to Build a Bulk Model Number (For use with Lutron® QwikFig™ technology): Hi-lume® A-Series

40 W Drivers

L3DA4U1U _ _ - _ _ BLK

Case Size:
K = Compact
M = Stick

Case Style:[1]
S = Studded (K-case only)
N = Non-Studded (All M-case models)

Bulk Models:

Coverage based on "LED Load Output Range" from standard non-configurable models shown in the **How to Build a Model Number** section.
Example Standard model number: L3DA4U1UKS-**H**C070 has LED load output range = H

K-case and M-case

1A = Covers "LED Load Output Range" Y and Z
2A = Covers "LED Load Output Range" M
3A = Covers "LED Load Output Range" E and F (CCR dimming only)

K-case only

2G = Covers "LED Load Output Range" G
2H = Covers "LED Load Output Range" H
2R= Covers "LED Load Output Range" I and K
2S= Covers "LED Load Output Range" J and L

M-case only

2B = Covers "LED Load Output Range" H, J, and L
2C = Covers "LED Load Output Range" G, I, and K

50 W Drivers

L3DA5U1UK _ - _ _ BLK

Case Style:
S = Studded
N = Non-Studded

1B = Covers "LED Load Output Range" W
3B = Covers "LED Load Output Range" N (CCR dimming only)

Note: Only the model numbers falling into the structure listed above can be configured with QwikFig™. Standard model numbers configured at Lutron will not be capable of being reconfigured at another facility.

[1] QwikFig™ bulk drivers are only available as UL® recognized.

Job Name:	Model Numbers:
Job Number:	

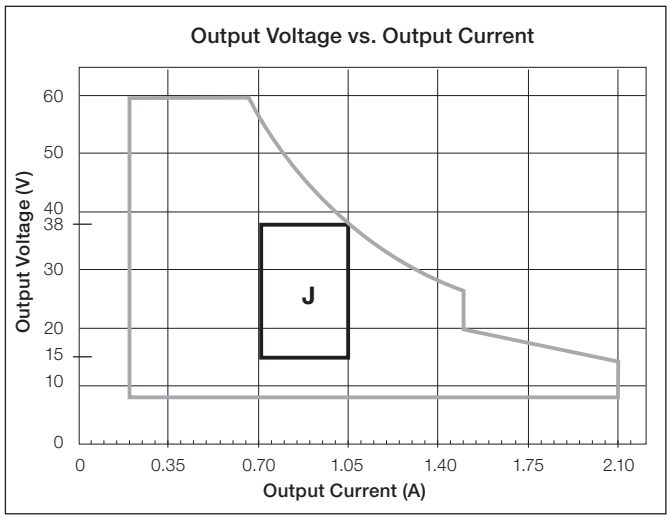
"J" Output Range, Current Driver Models

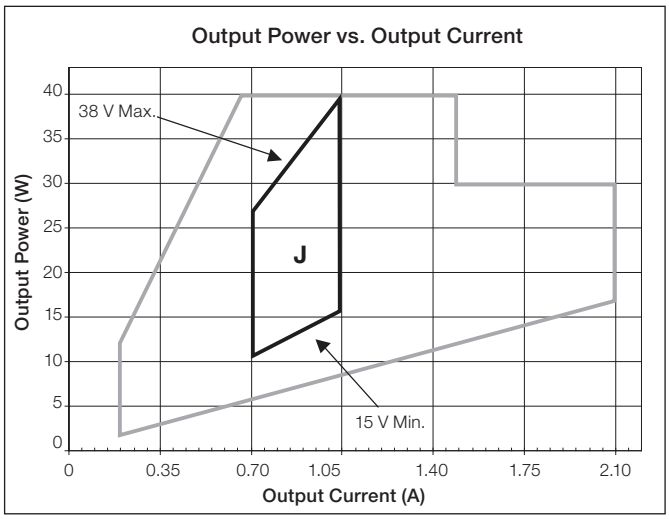
Driver Type	Output Dimming Method	Output Voltage	Output Current	Output Power	Standards Recognition	UL® Listed Option (KL case)
Constant-Current Driver (Class 2)	Pulse Width Modulation (PWM)	15–38 V PWM	0.71–1.05 A	11–40 W	c UL us Type TL 86 °/69 °C - K-case Type TL 89 °/74 °C - M-case	Yes
	Constant-Current Reduction (CCR)	15–38 V⎓				

When using QwikFig™ technology, these models can be built from the following bulk units:
K-case - L3DA4U1UKx-2SBLK*; M-case - L3DA4U1UMN-2BBLK

* x = studded (S) or non-studded (N)

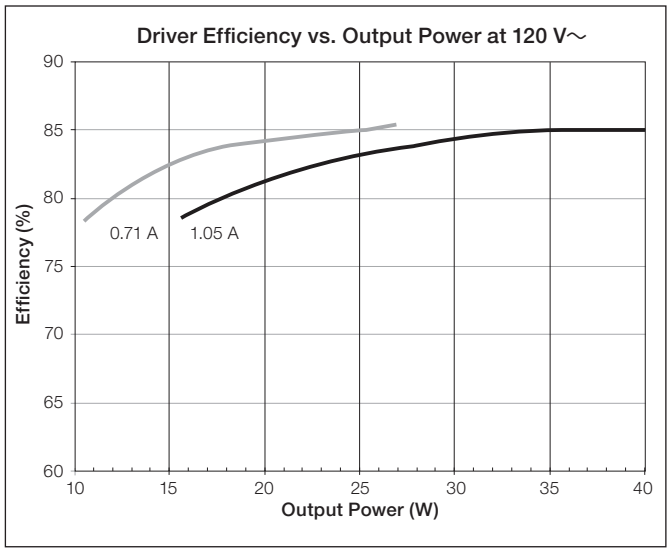
Current Driver Operation Range:

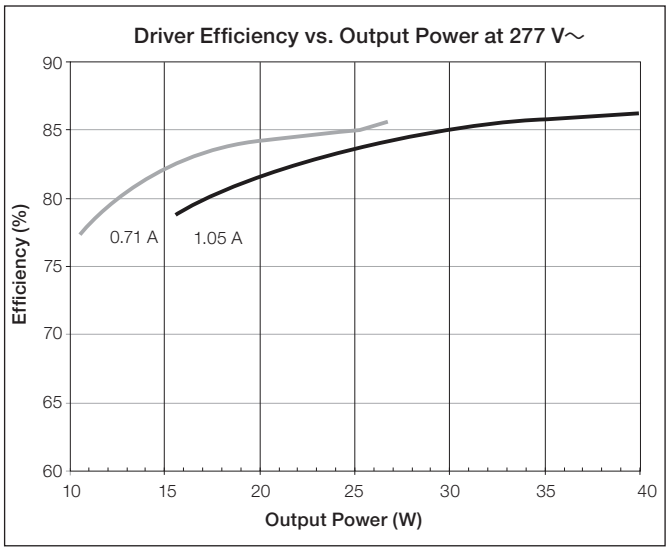




Typical Performance Specifications:

Parameter	120 V~	240 V~	277 V~	Test Conditions
Input Current	390 mA	200 mA	170 mA	t_a = 25 °C, 1.05 A 40 W load, Maximum Light Output, K-case
Power Factor	0.99	0.98	0.97	
THD	6%	9%	10%	
Driver Efficiency	85%	86%	86%	





Job Name:	Model Numbers:
Job Number:	