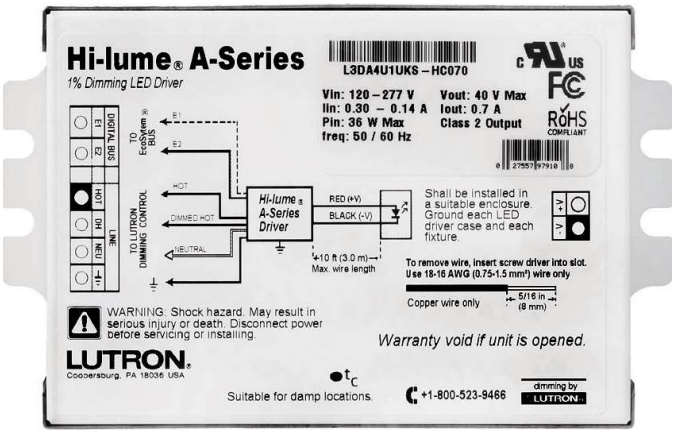
Hi-lume® A-Series LED Overview

Hi-lume A-Series 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 EcoSystem® Energi Savr Node™ GRAFIK Eye® QS, and Quantum® systems, allowing for integration into a planned or existing *EcoSystem* lighting control solution.
- Standard 3-wire line-voltage phase-control technology for consistent dimming performance and compatibility with all *Lutron* 3-wire fluorescent controls.
- Compatible with forward phase control technology for use with *Lutron* forward phase controls (neutral wire required). Please contact *Lutron* for compatible controls with additional details.
- Protected from miswires of input power to *EcoSystem* control inputs.
- 100% performance tested at factory.
- A rated lifetime of 50,000 hours @ t_C = 65 °C.
- UL recognized for United States and Canada.
- FCC Part 15 compliant for commercial applications at 120 V~ or 277 V~ (EcoSystem and 3-wire) or 120 V~ (Forward Phase Control).
- 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

LUTRON® SPECIFICATION SUBMITTAL Page

Job Name:	Model Numbers:
Job Number:	

Specifications

Performance

- Dimming Range: 100% to 1%
- Operating Voltage: 120-277 V~ at 50/60 Hz (EcoSystem and 3-wire)
- Operating Voltage: 120 V~ at 50/60 Hz (Forward Phase Control)
- A rated lifetime of 50,000 hours @ t_C = 65 °C. Contact Lutron for derating information.
- Patented thermal foldback protection
- LEDs turn on to any dimmed level without flashing to full brightness.
- Nonvolatile memory restores all driver settings after power failure.
- Power Factor: >0.90 at 40 W
- Total Harmonic Distortion (THD): < 20% at 40 W
- Inrush Current: <2 A
- Inrush Current Limiting Circuitry: eliminates circuit breaker tripping, switch arcing and relay failure.
- Open circuit protected
- Short circuit protected
- LED load is hot swappable for Class 2 rated drivers.

Environmental

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

Standards

- 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.
- cUL recognized for use in Canada.
- Class 2 output available.

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 to 16 AWG (0.75 to 1.5 mm^2).
- Fixture must be grounded in accordance with local and national electrical codes.
- Maximum driver–to–LED light engine wire length is 10 ft (3.0 m).

Job Name:	Model Numbers:
Job Number:	

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

L __ A4U1U __ - __ __ ___

Control Type:

3D = EcoSystem® or 3-wire control

TE = Forward Phase Control (neutral required)

Case Size:

K = Compact

M = Stick

Case Style:

S = Studded (K case only)

N = Non-Studded

Current Level (for Constant Current):

020 = 0.20 A; 021 = 0.21 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 following pages for explanation and examples):

Class 2 Constant Voltage

A = 10.0 V–12.0 V 3.3 A maximum

B = 12.5 V–20.0 V

C = 20.5 V–24.0 V

D = 24.5 V–38.0 V

Non-Class 2 Constant Voltage

X = 40.5 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 – 20 V 30 W maximum

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

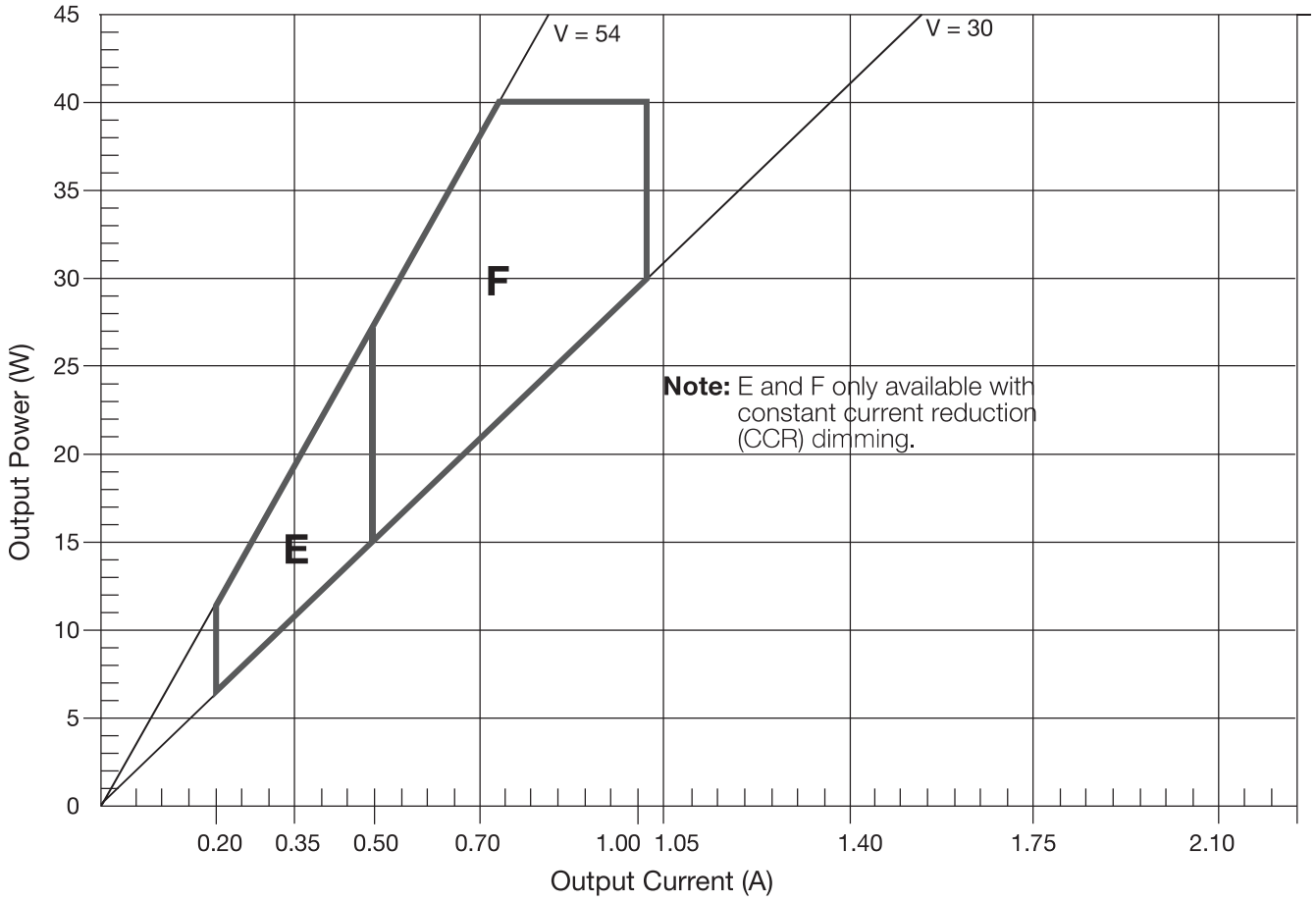
LUTRON® SPECIFICATION SUBMITTAL Page

Job Name:	Model Numbers:
Job Number:	

Constant Current Drivers: Class 2

- 0.20 to 2.10 A (in 10 mA steps).
- See attached graphs for power and voltage capabilities.
- Pulse width modulation (PWM) or constant current reduction (CCR) dimming methods available. See Application Note #360 for details.

LED Load Output Range: Constant Current Drivers E and F



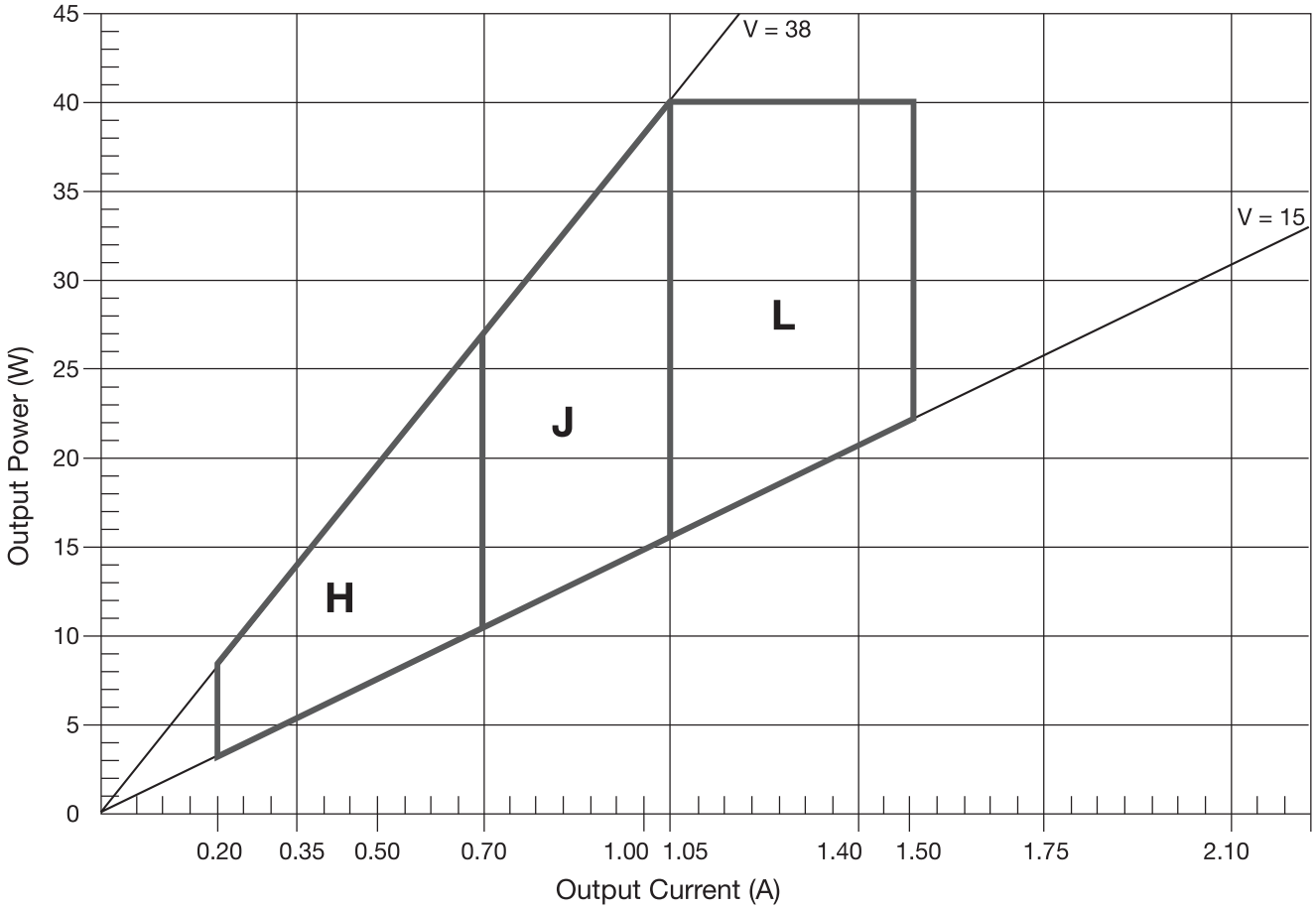
Example Model Number: L3DA4U1UKS-_A070

F (class 2)

(3-wire/EcoSystem® input,
K case with studs,
constant current with CCR dimming,
700 mA output,
output power between 21 and 38 W)

Job Name:	Model Numbers:
Job Number:	

LED Load Output Range: Constant Current Drivers H, J, and L



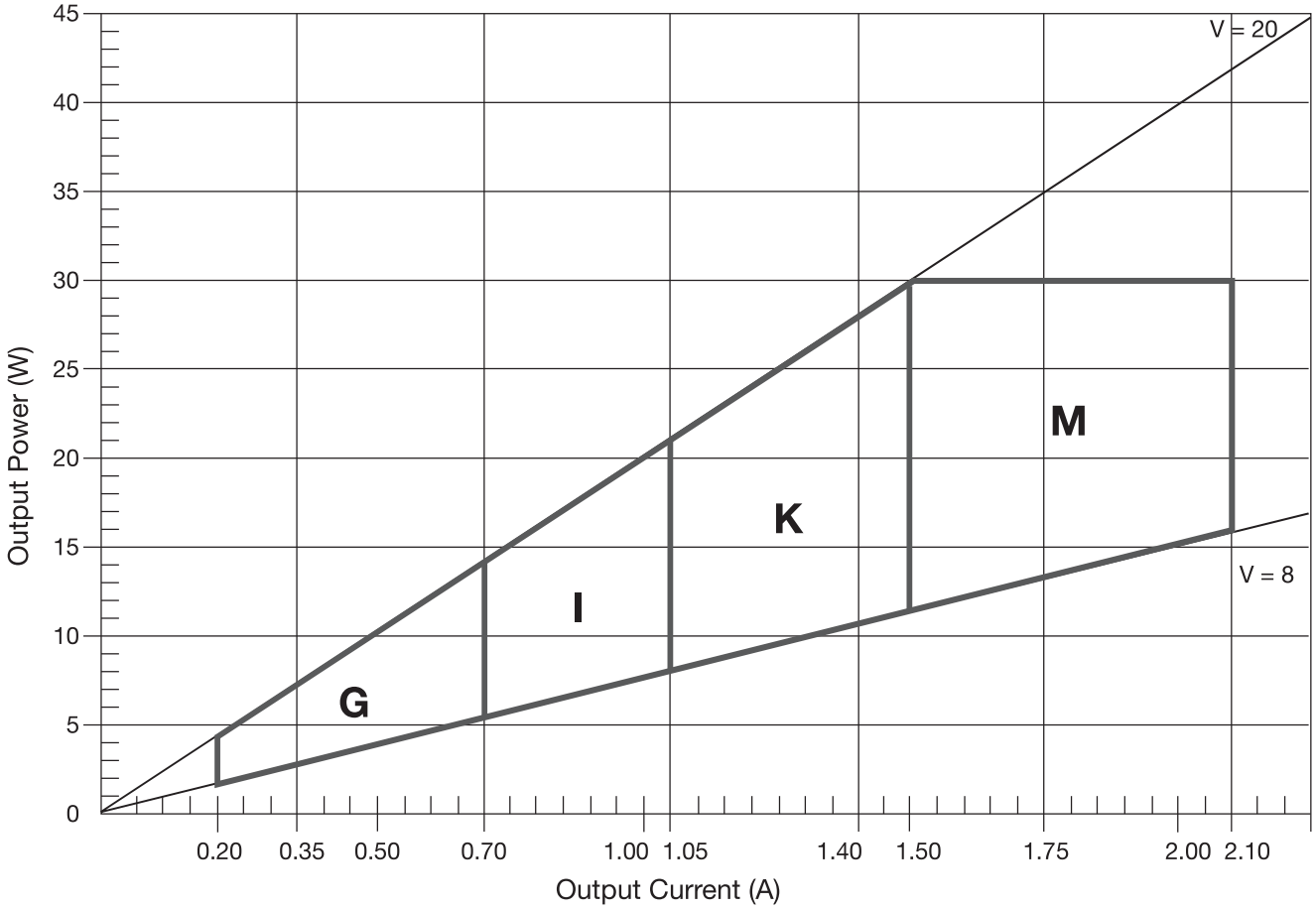
Example Model Number: L3DA4U1UKS-_C140

L

(3-wire/EcoSystem® input,
K case with studs,
constant current with PWM dimming,
1.4 A output,
output power between 21 and 40 W)

Job Name:	Model Numbers:
Job Number:	

LED Load Output Range: Constant Current Drivers G, I, K, and M



Example Model Number: L3DA4U1UKS-_C175

M

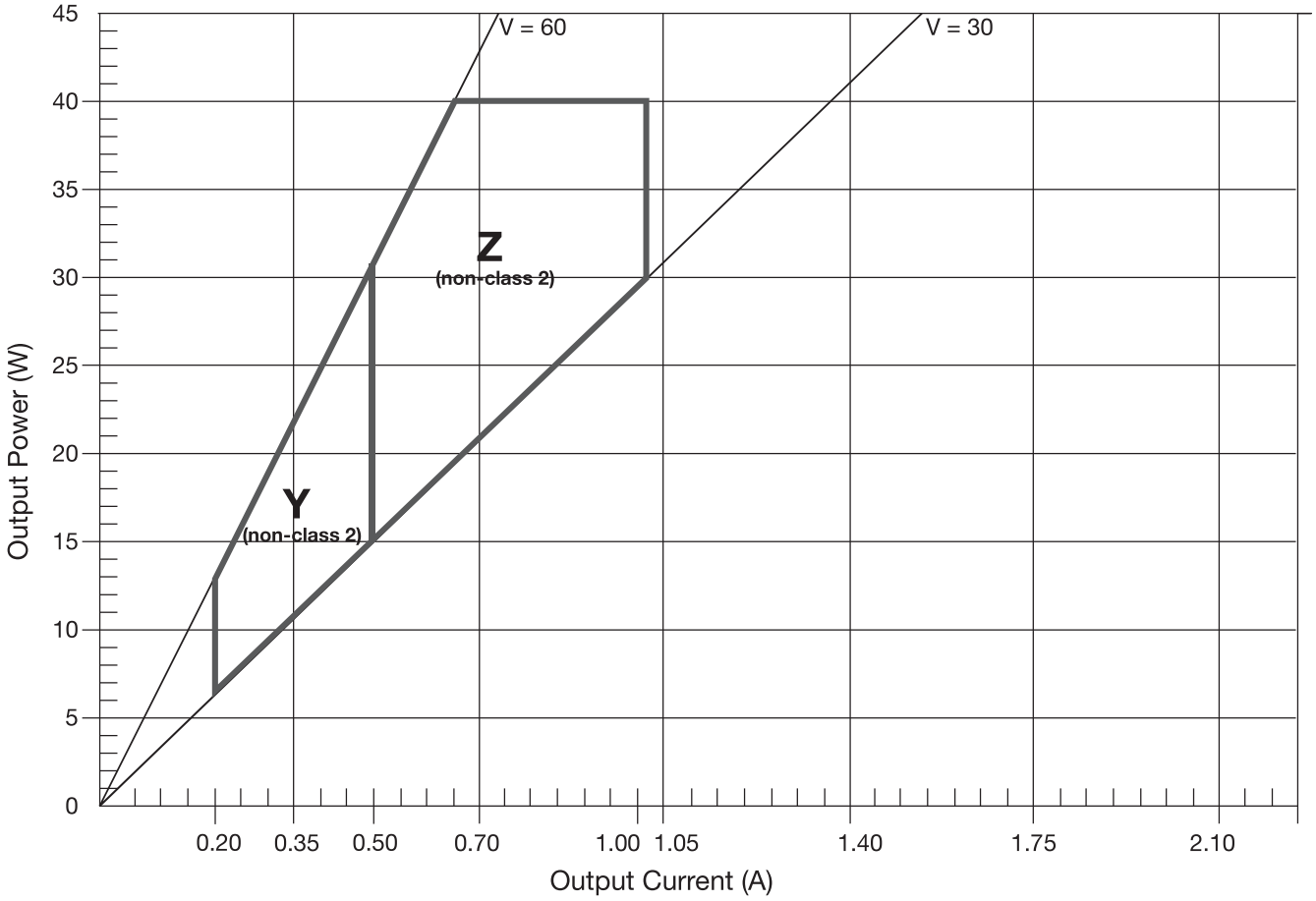
(3-wire/EcoSystem® input,
K case with studs,
constant current with PWM dimming,
1.75 A output,
output power between 14 and 30 W)

Job Name:	Model Numbers:
Job Number:	

Constant Current Drivers: Non-Class 2

- 0.20 to 1.0 A (in 10 mA steps).
- See attached graphs for power and voltage capabilities.
- Pulse width modulation (PWM) or constant current reduction (CCR) dimming methods available. See Application Note #360 for details.

LED Load Output Range: Constant Current Drivers Y and Z



Example Model Number: L3DA4U1UKS-_C070

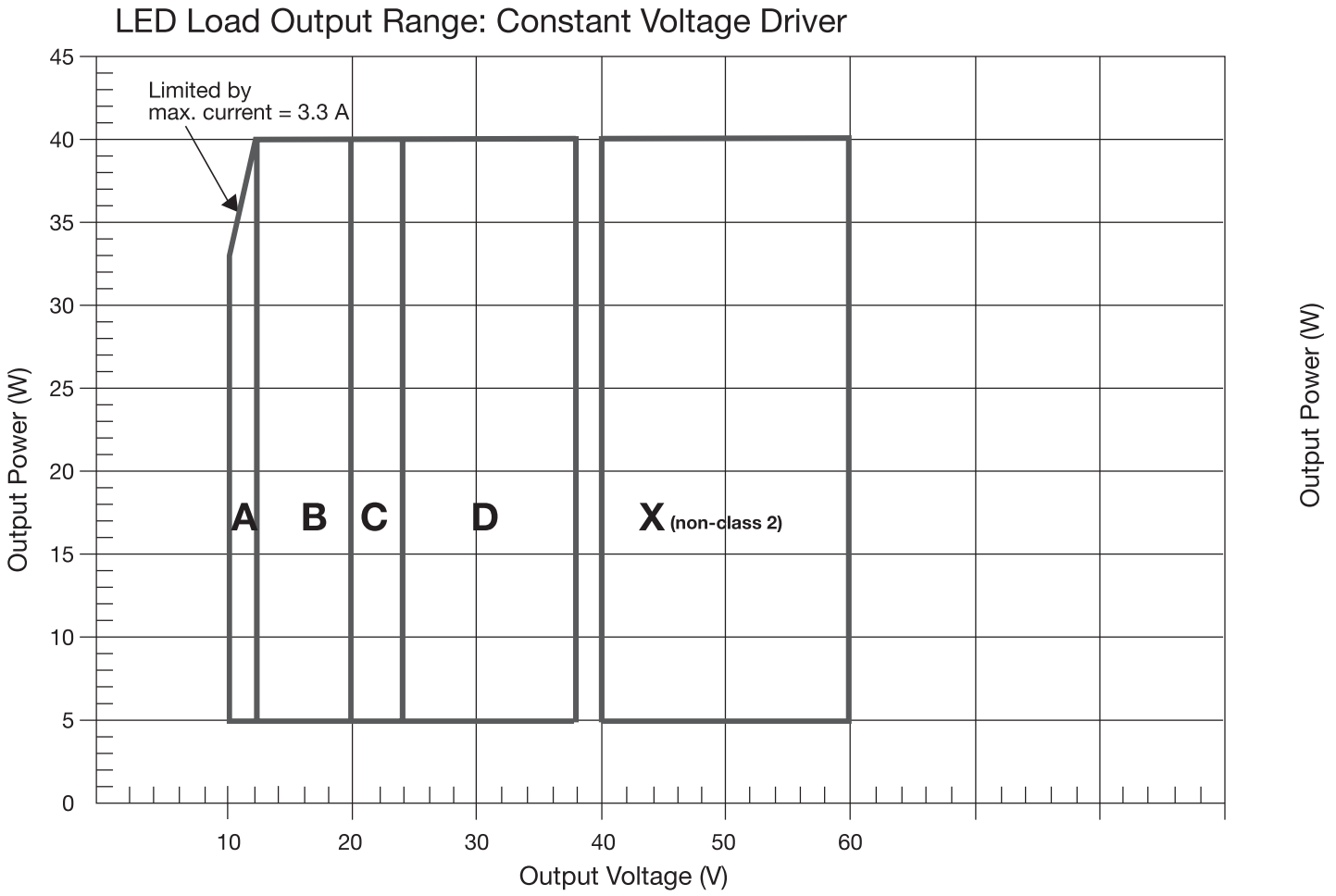
Z (non-class 2)

(3-wire/EcoSystem® input,
K case with studs,
constant current with PWM dimming,
700 mA output,
output power between 21 and 40 W)

Job Name:	Model Numbers:
Job Number:	

Constant Voltage Drivers: Class 2 and Non-Class 2

- 10 V to 38 V (in 0.5 V steps) for Class 2.
- 40.5 V to 60.0 V (in 0.5 V steps) for Non-Class 2.
- See graph below for power and current capabilities.



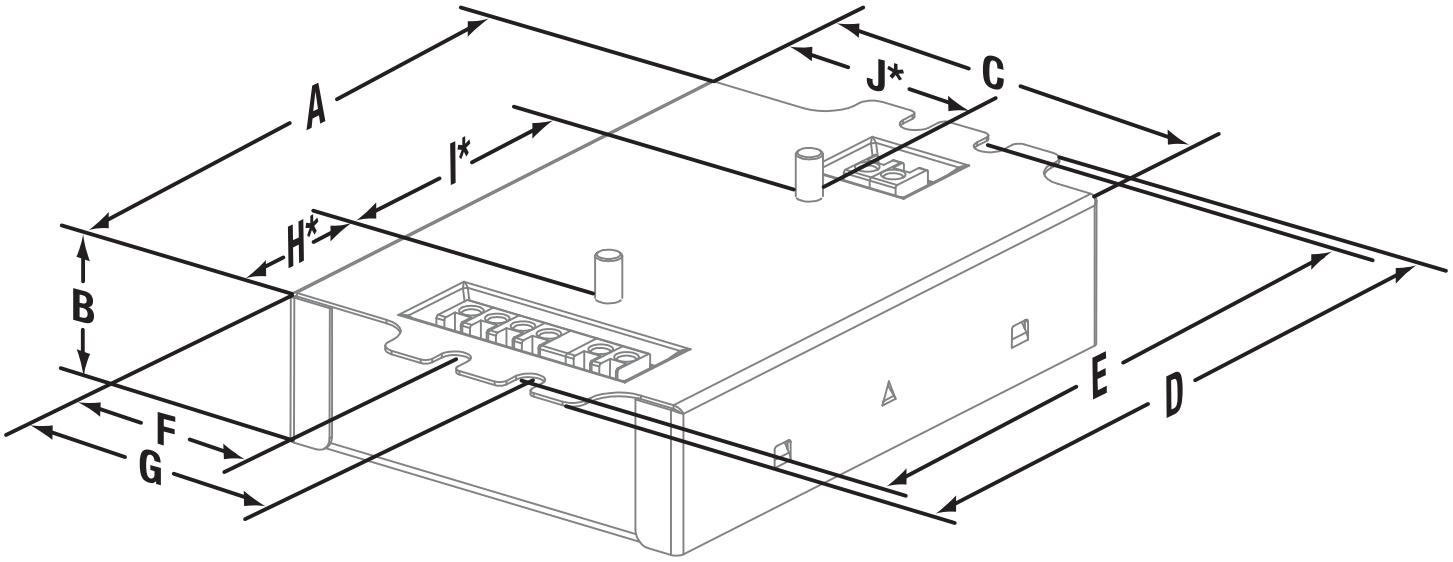
Example Model Number: L3DA4U1UMN-_V120

A

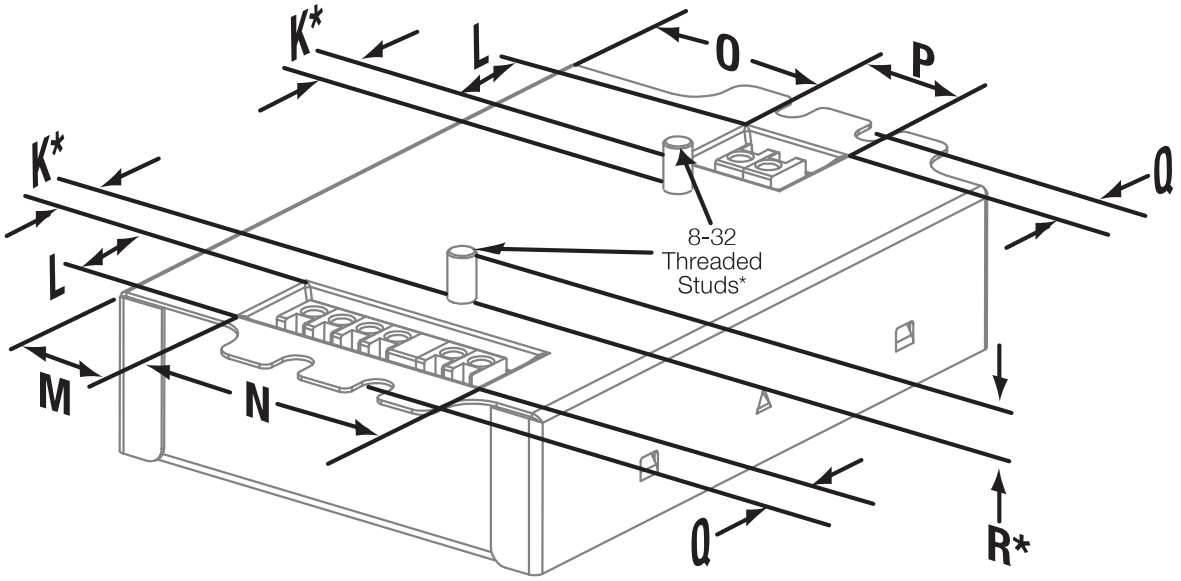
(3-wire/EcoSystem® input,
M case,
constant voltage,
12 V output)

Job Name:	Model Numbers:
Job Number:	

K Case: Case Dimensions



K Case: Connector Location Dimensions

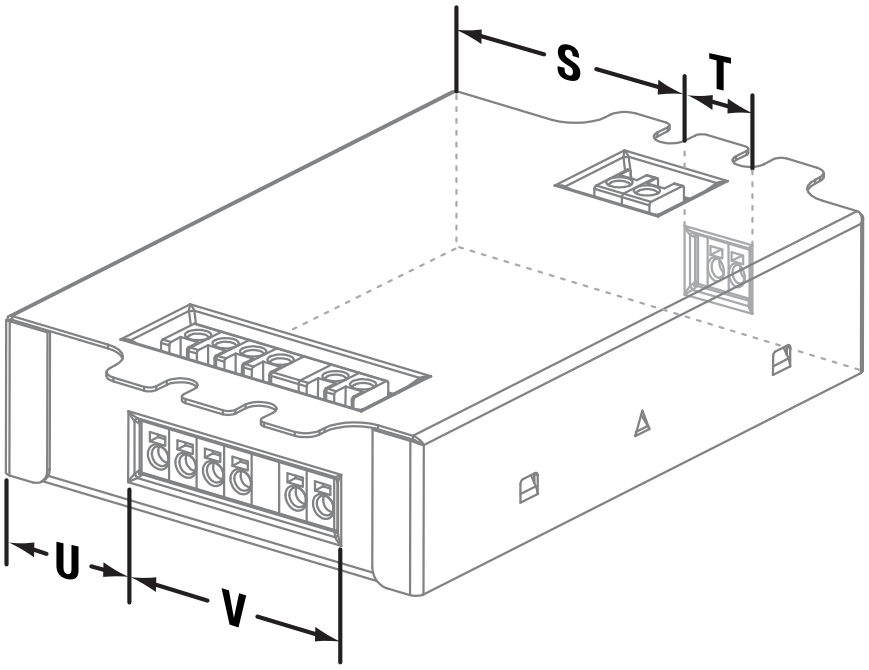


A	4.20 in (107 mm)	F	1.42 in (36 mm)	L	0.65 in (16.5 mm)	R*	0.29 in (7 mm)
B	1.00 in (25 mm)	G	1.99 in (51 mm)	M	0.75 in (19 mm)		
C	3.00 in (76 mm)	H*	1.11 in (28 mm)	N	1.73 in (44 mm)		
D	4.90 in (124 mm)	I*	2.00 in (51 mm)	O	1.33 in (34 mm)		
E	4.60 in (117 mm) (mounting center)	J*	1.60 in (41 mm)	P	0.74 in (19 mm)		
		K*	0.33 in (8.3 mm)	Q	0.32 in (8 mm)		

* Applies to studded K case only.

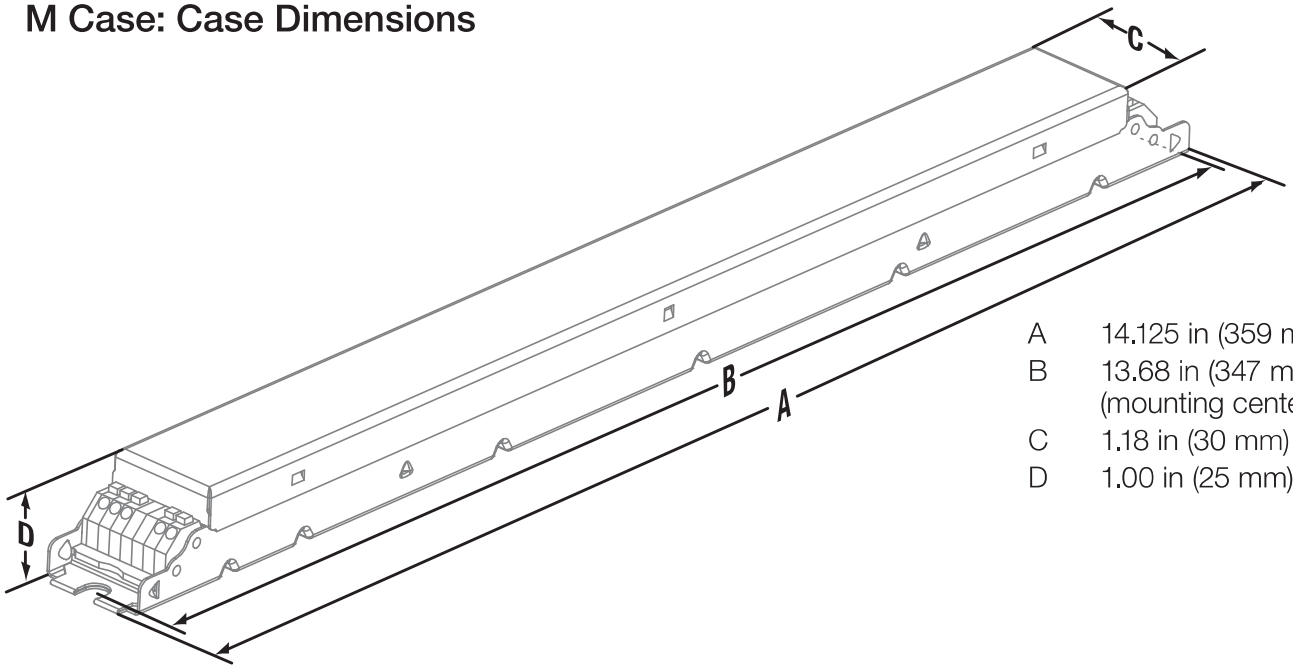
Job Name:	Model Numbers:
Job Number:	

K Case: Side Entry Connector Location Dimensions (Non-Studded)



S	1.38 in (35 mm)
T	0.64 in (16 mm)
U	0.88 in (22 mm)
V	1.53 in (39 mm)

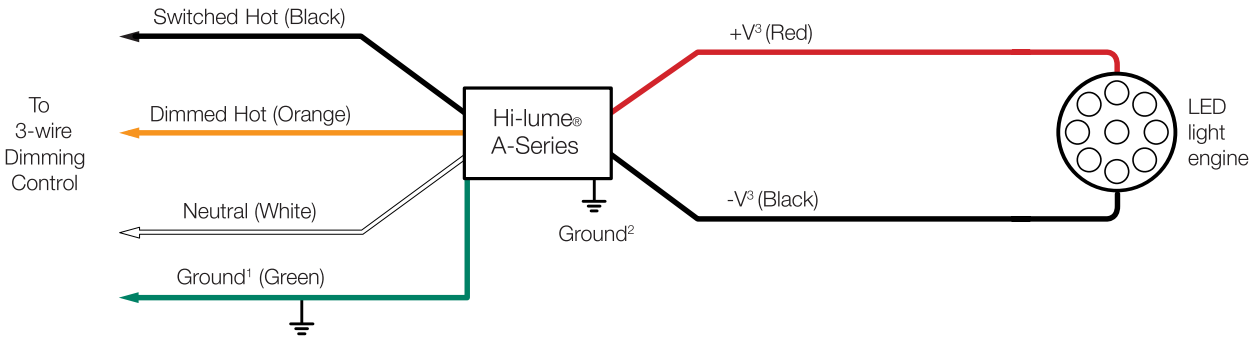
M Case: Case Dimensions



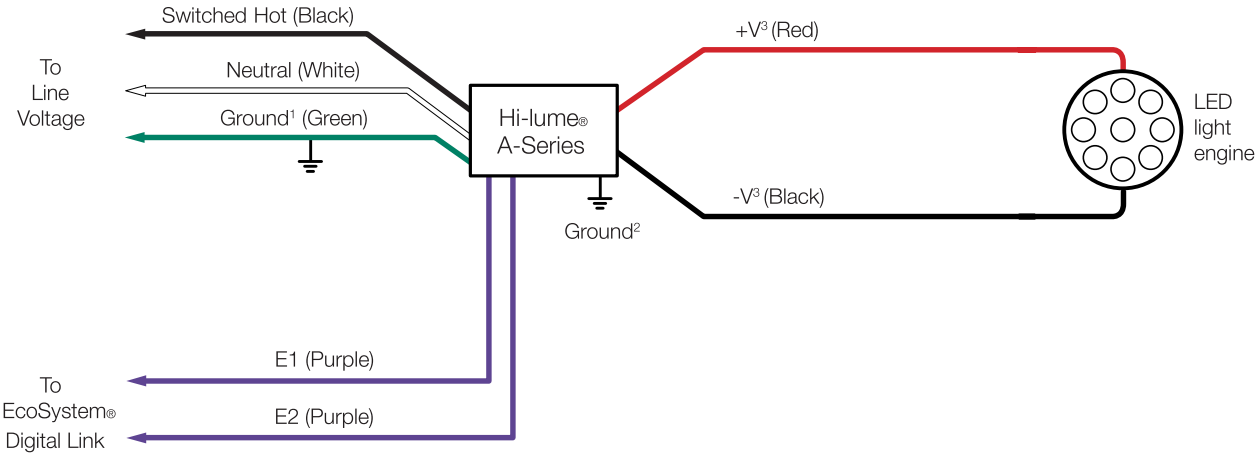
A	14.125 in (359 mm)
B	13.68 in (347 mm) (mounting center)
C	1.18 in (30 mm)
D	1.00 in (25 mm)

Job Name:	Model Numbers:
Job Number:	

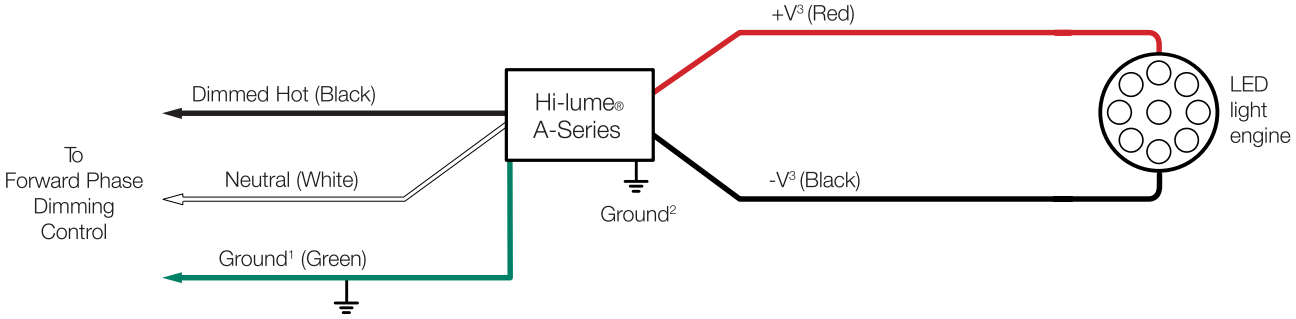
Wiring Diagram for 3-Wire Control



Wiring Diagram for EcoSystem® Digital Control



Wiring Diagram for Forward Phase Control*



*Contact Lutron for compatible controls

Note: Colors shown correspond to terminal blocks on driver.

[1] Ground wire connection available on K case models only.
[2] Fixture and driver case must be grounded in accordance with local and national electrical codes.
[3] Maximum driver–to–LED light engine wire length is 10 ft (3.0 m).

Job Name:	Model Numbers:
Job Number:	

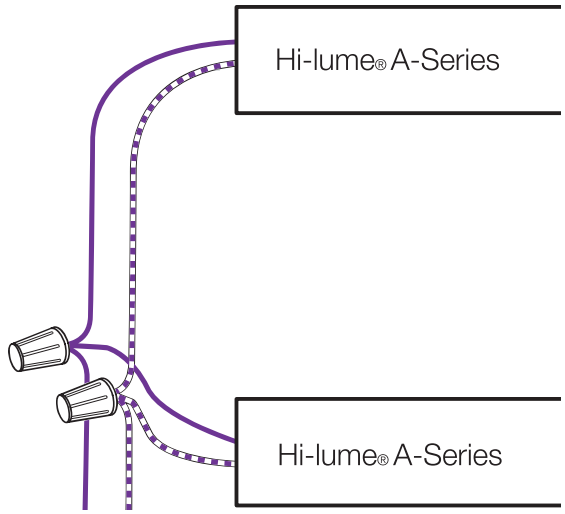
Hi-lume® A-Series Wiring Diagrams:

EcoSystem® Digital Link Overview

- The *EcoSystem* digital link wiring (E1 and E2) connects the drivers together to form a lighting control system.
- Each *EcoSystem* digital link supports up to 64 drivers, 64 occupant sensors, 16 daylight sensors, and 64 wallstations or IR receivers.
- Sensors do not directly connect to *Hi-lume* A-series drivers.
- E1 and E2 (*EcoSystem* digital link wires) are polarity insensitive and can be wired in any topology.
- An *EcoSystem* Energi Savr Node™, GRAFIK Eye® QS with *EcoSystem*, or Quantum® system provides power for the *EcoSystem* digital link and supports system programming.
- All *EcoSystem* digital link programming is completed by using the *EcoSystem* Programmer, *GRAFIK Eye* QS with *EcoSystem*, or *Quantum* system.

EcoSystem Digital Link Wiring

- Driver *EcoSystem* digital link terminals only accept one solid wire per terminal from 18 to 16 AWG (0.75 to 1.5 mm^2).
- Make sure that the supply breaker to the driver and *EcoSystem* digital link supply is OFF when wiring.
- Connect the two conductors to the two driver terminals E1 and E2.
- Using two different colors for E1 and E2 will reduce confusion when wiring several drivers together.
- The *EcoSystem* digital link may be wired Class 1 or Class 2. Consult applicable electrical codes for proper wiring practices.



To the *EcoSystem* digital link supply & up to 64 total drivers

Notes

- The *EcoSystem* digital link supply does not have to be located at the end of the digital link
- E1 and E2 wires are not polarity sensitive
- *EcoSystem* digital link length is limited by the wire gauge used for E1 and E2 as follows:

Wire Gauge	Digital Link Length (max)
12 AWG	2200 ft
14 AWG	1400 ft
16 AWG	900 ft
18 AWG	550 ft

Wire Size	Digital Link Length (max)
4.0 mm^2	828 m
2.5 mm^2	517 m
1.5 mm^2	310 m
1.0 mm^2	207 m
0.75 mm^2	155 m

Job Name:	Model Numbers:
Job Number:	

ELECTRICIANS AND CONTRACTORS

Driver Leads

Maximum driver–to–LED light engine wire length is 10 ft (3.0 m).

Wiring and Grounding

Driver and lighting fixture must be grounded. Drivers must be installed per national and local electrical codes.

Maximum Driver Operating Temperature

Driver case temperature (t_C) must not exceed 85 °C.

FACILITIES MANAGERS

SERVICE

Warranty

5-year limited warranty with Lutron field service commissioning, 3-year standard warranty from date of purchase.

Replacement Parts

When ordering Lutron replacement parts please provide the full model number. Consult Lutron if you have any questions.

Further Information

For further information, please visit us at www.lutron.com/hilumeLED or contact our LED Control Center of Excellence at 1-877-DIM-LED8 or LEDs@lutron.com