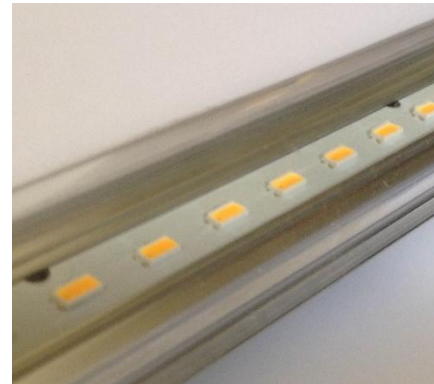


THE HIGH PERFORMANCE

LED Replacement Series for Fluorescent Tubes, High Bays, and Parking Garages.

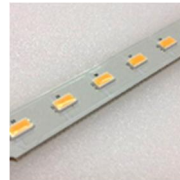


KEY FEATURES INCLUDE:



Advanced Thermal Management

Industry Leading Deep Fin Heat Sinks with Aircraft Grade Aluminum and 9" (23cm) [min] of perimeter conductive surface.



Long Lasting LED Chips

$L_{90}(10k) = 102kHrs$



Multiple Color Options

Three color options ensure that the new lighting will match your current aesthetics, and allows for custom color options.



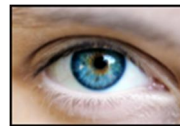
Modular Design

12" modular PC Boards allow for a wide range of sizes to be cost-effectively manufactured.



10 Year Warranty

Industry Leading 10 Year Warranty of operation on all LED Tubes and external drivers.



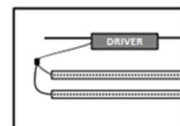
High Color Rendering

Colors are enhanced due to the use of LEDs selected directly on the black body curve.



Manufactured in America

With domestic and imported components. Factory: Southeastern PA. Higher quality control, faster delivery times, and new domestic job creation.



Independent Class II Driver

Safety, improved thermal management, and extended lifetime are gained by locating the driver remote from the LED Tube.

INDEPENDENCE LED

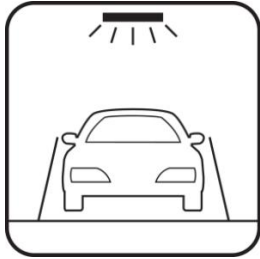


LED Lighting | Forged in America™

Retro-Fit Kits

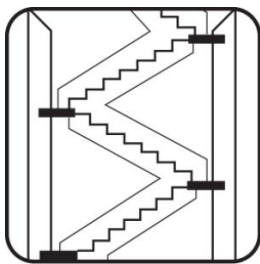
(all lengths & full specification)

24/7 APPLICATIONS



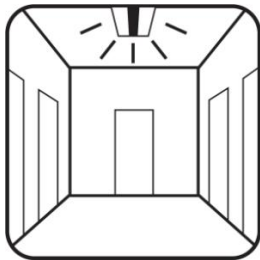
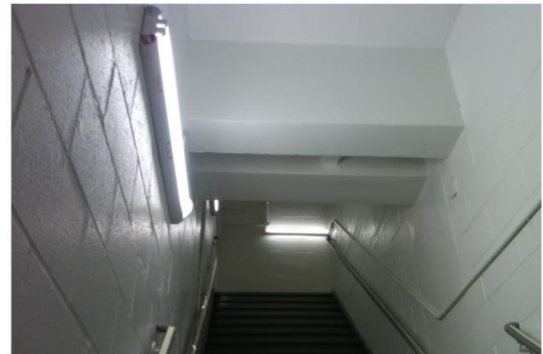
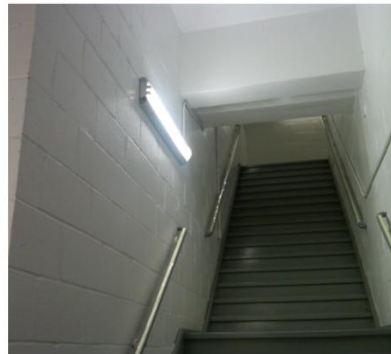
PARKING

Structures, surface and underground garages



STAIRWELL

24/7 fire stairs for any property type



HALLWAY

Hotels, hospitals, multi-family & dorms



INDUSTRIAL HIGH BAYS

Factories, warehouses & distribution centers



Philadelphia Headquarters: 487 Devon Park Drive, Suite 204, Wayne, PA 19087

www.IndependenceLED.com (484) 588-5401



LED Lighting | Forged in America™

Retro-Fit Kits

(all lengths & full specification)

Specification Table	
Lamp Type	Linear LED Tube External Driver
Base	Bi-Pin (G13), Single (Fa8), HO (R17d), None
Environmental	Dry or damp locations only IP2X per EN60529
Operation	V1 -4°F to 140°F/(-20°C to 60°C) V2 -25°F to >158°F/(-31°C to >70°C) V1PHA -4°F to >122°F/(-20°C to >50°C)
Storage	V1PHA -25°F to >185°F/(-31°C to >85°C)
Wattage	See chart below ¹⁰
Input Voltage (nominal)	V1 100-277VAC 50/60Hz .32-.18A V2 100-277VAC 50/60Hz .8-.3A V1PHA 110-277VAC 50/60Hz .3-.15A
Power Factor (PF)	>0.9
Total Harmonic Distortion (ATHD)	<20%
Life Time	SMD 5630
Retro-Fit Kit Rated Life	>100Khrs
LED Tube per TM-21	Calculated L ₇₀ (10k) = 355kHrs ¹³ Calculated L ₉₀ (10k) = 102kHrs ¹³
LED Driver MTBF ² -	Reported L ₇₀ (10k) >60kHrs >100khrs, Full load, 25°C
LM80 Data	NVLap Accreditation
LED Type	SMD 5630 SMD 3W (@CRI 70)
Efficiency	>135lm/W ⁸ (See table below)
Angle [nominal]	160°FW, 120°FWHM
Energy Consumption [nominal]	16 kWh/1000 h
Certifications	cUL, UL, FCC, ABS, CE, DLC
Warranty ¹⁵	LED Driver - 10 years LED Tube - 10 years
Dimming	V1, V2 0-10V <20%-100% V1PHA Phase (ELV) ⁹ - Consult Factory
Tube Diameter in(mm) - (nominal)	T10/1.25 (31.75)
Length ft(mm) -	(See table below)
Off State Power Consumption	0 Watts
On State	Instantaneous
Tube Driver Distance	16" (400mm) standard Up to 12ft(3.5m) ³

LENGTH OPTIONS:

2ft (600mm)- 8ft (1200mm) – standard
others consult factory

OUTPUT WATTAGE OPTIONS

See table below

COLOR OPTIONS:

2700K, 3000K, 3500K, 4000K, 5000K,
6500K ANSI BINNED⁵

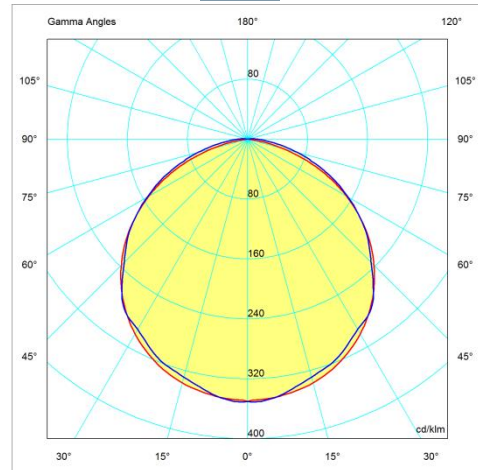
COLOR RENDERING INDEX (CRI) - 85

DRIVER OPTIONS:

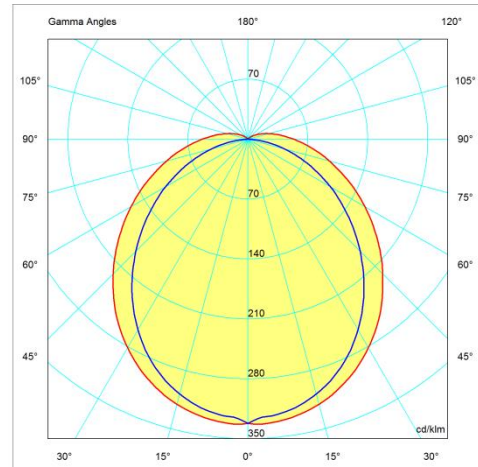
DIMMING STANDARD

MULTI TUBE DRIVER - 1, 2, 3, 4

Clear



Frosted



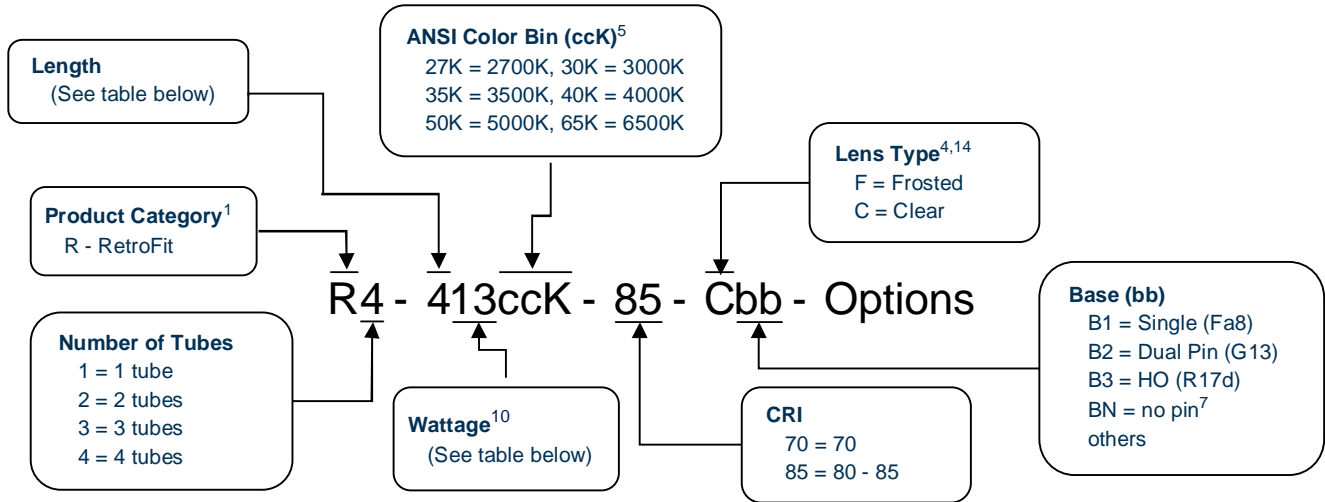
Package Information	
Standard Package	Case
Quantity	12 LED Tubes
Sales Units	Varies
Package Items	LED Tubes and Drivers, Installation Kit and Instructions
Weight lbs(kg)	Others consult factory
2ft(600mm)	10 (5)
4ft(1200mm)	22 (10)





Retro-Fit Kits

(all lengths & full specification)



Accessories:

- DeLamping Bag (PN: 125-1005000)
- DeLamping Kit, 12 lamp pack (PN: (125-1005010)
- Sensors [wired/wireless] (Consult Factory)

- In line battery backup,
4W (172-4100000)
6W (172-4100010)

Most Popular:

- R2-20940K-85-C
- R2-41340K-85-F
- R2-41840K-85-C

- R2-41840K-85-F
- R2-42850K-85-C
- R1-85750K-85-C

 Click Here	R2-20927K-85-C R2-20927K-85-F R2-20930K-85-C R2-20930K-85-F R2-20935K-85-C R2-20935K-85-F R2-20940K-85-C R2-20940K-85-F R2-20950K-85-C R2-20950K-85-F	R3-20927K-85-C R3-20927K-85-F R3-20930K-85-C R3-20930K-85-F R3-20935K-85-C R3-20935K-85-F R3-20940K-85-C R3-20940K-85-F R3-20950K-85-C R3-20950K-85-F	R2-21427K-85-C R2-21427K-85-F R2-21430K-85-C R2-21430K-85-F R2-21435K-85-C R2-21435K-85-F R2-21440K-85-C R2-21440K-85-F R2-21450K-85-C R2-21450K-85-F	R3-21427K-85-C R3-21427K-85-F R3-21430K-85-C R3-21430K-85-F R3-21435K-85-C R3-21435K-85-F R3-21440K-85-C R3-21440K-85-F R3-21450K-85-C R3-21450K-85-F
	R3-41327K-85-C R3-41327K-85-F R3-41330K-85-C R3-41330K-85-F R3-41335K-85-C R3-41335K-85-F R3-41340K-85-C R3-41340K-85-F R3-41350K-85-C R3-41350K-85-F	R2-41327K-85-C R2-41327K-85-F R2-41330K-85-C R2-41330K-85-F R2-41335K-85-C R2-41335K-85-F R2-41340K-85-C R2-41340K-85-F R2-41350K-85-C R2-41350K-85-F	R2-41827K-85-C R2-41827K-85-F R2-41830K-85-C R2-41830K-85-F R2-41835K-85-C R2-41835K-85-F R2-41840K-85-C R2-41840K-85-F R2-41850K-85-C R2-41850K-85-F	R3-41827K-85-C R3-41827K-85-F R3-41830K-85-C R3-41830K-85-F R3-41835K-85-C R3-41835K-85-F R3-41840K-85-C R3-41840K-85-F R3-41850K-85-C R3-41850K-85-F

Length ft (mm)	Wattage ¹⁰	Lumens ¹⁰ @50K (-12%/to 27K)			
		Tubes			
		1	2	3	4
2 (600)	09	1325	2650	3975	5300
	14	1825	3650	4905	7300
	28@CRI 70	3100	6200		
3 (900)	09	1325	2650	3975	
	13	1900	3975	5300	



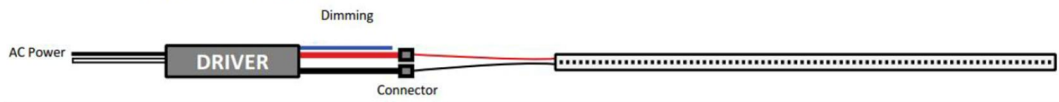


Retro-Fit Kits

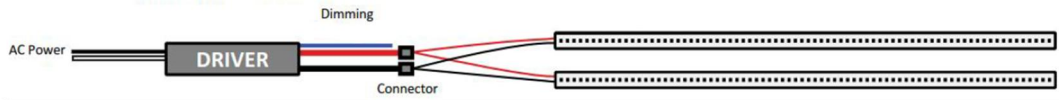
(all lengths & full specification)

Length ft (mm)	Wattage ¹⁰	Lumens ¹⁰ @50K (-12%/to 27K)			
		Tubes			
		1	2	3	4
4 (1200)	09	1325	2650	3975	5300
	13	1900	3975	5000	7950
	18	2575	5150	7725	10300
	28	3875	7725	10300	
	54@CRI 70	6100	12200		
5 (1500)	18	2650	5300		
	28	3975	7950		
	37	5200	10400		
6 (1800)	27	3975	7175		
	38	5300	10600		
7	Contact Factory				
8 (2400)	37	5300	10600		
	57	7950			
	108 @CRI 70	12100			

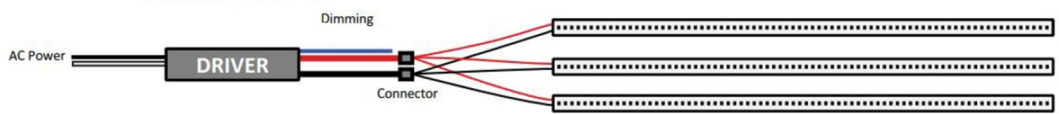
Single Tube Driver R1



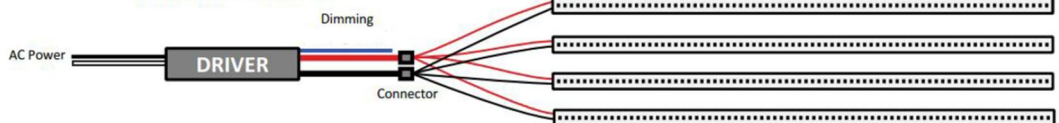
Multi Tube Driver R2



Multi Tube Driver R3



Multi Tube Driver R4



Notes

1. Not all model combinations are available
2. MBTF per MIL-HDBK-217F
3. Extended lead times and minimums maybe required for some models





Retro-Fit Kits

(all lengths & full specification)

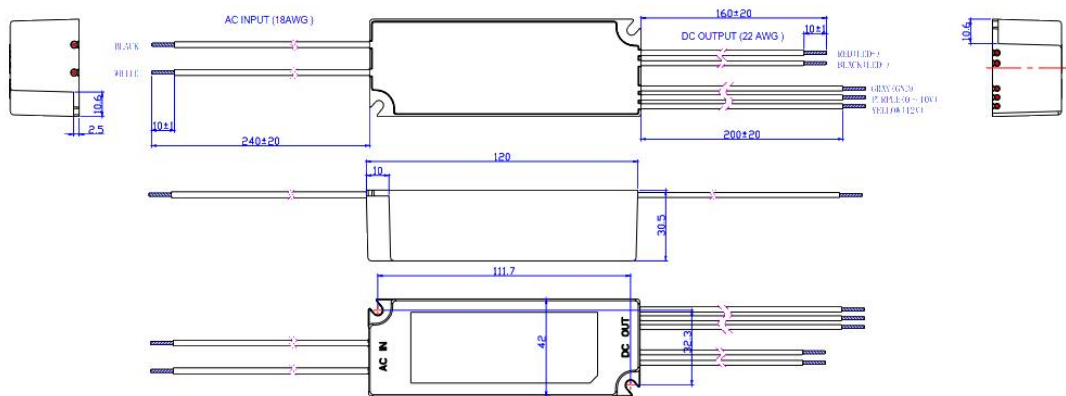
4. Frosted lens has 3% lower lumens than clear lens
5. Other ANSI Color bins available
6. Extended warranties are available
7. Designed for Connecticut Light & Power United Illuminating
8. Specifications and availability subject to change without notice
9. Some models can use ELV Dimming with a special order, consult factory
10. Values are nominal, and will vary depending on color temperature (K), and LED driver ($\pm 10\%$)
11. Patent Pending: USA +40 Countries
12. EPA Act -179d tax incentive ready product given dimming bi-level switching requirements
13. Worst case temperature for R2-428 @25°C
14. Certain chemicals that may exist in end-user locations release airborne contaminants that can impact the integrity and safety of key fixture components that contain acrylic or polycarbonate material
15. Consult website for further details

Compliance Standards

- UL 1993 - Self-Ballasted Lamps and Lamp Adapters, Ed. 4: 2012
- UL 1598 - Luminaires
- UL 1598C - Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits
- UL 8750 - Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, Ed. 1: 2009
- CSA C22.2 No. 250.13 - Light emitting diode (LED) equipment for lighting applications, Ed. 12/2012
- EN 62471:2008 - Photo Biological Safety of Lamps and Lamp Systems
- EN 62031:2008 - LED modules for general lighting. Safety specifications
- EN 61347-1:2008 - Lamp controlgear. General and safety requirements
- EN 55015:2006 - Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
- EN 61347-2-13:2006 - Lamp controlgear. Particular requirements for d.c. or a.c. supplied electronic control gear for LED modules
- EN 61000-3-2:2006 - Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions
- EN 61000-3-3:2008 - Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems
- EN 60598-1:2008 - Luminaires. General requirements and tests
- EN 61547:2009 - Equipment for general lighting purposes. EMC immunity requirements
- FCC Part 15, Subpart B, Class B -
- ANSI/ANSL G C78.81-2010 - Electric Lamps-Double-Capped Fluorescent Lamps-Dimensional and Electrical Characteristics
- ANSI/NEMA/ANSL G C78.377-2008 - American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products
- IEC 60529-2004 - Degrees of Protection Provided by Enclosures (IP Code)
- DOH Article 81.19 (b) - Lighting and ventilation
- FDA Article 6-202.11 - Light Bulbs, Protective Shielding

Specification, LED Driver, V1

(Dimensions may vary)

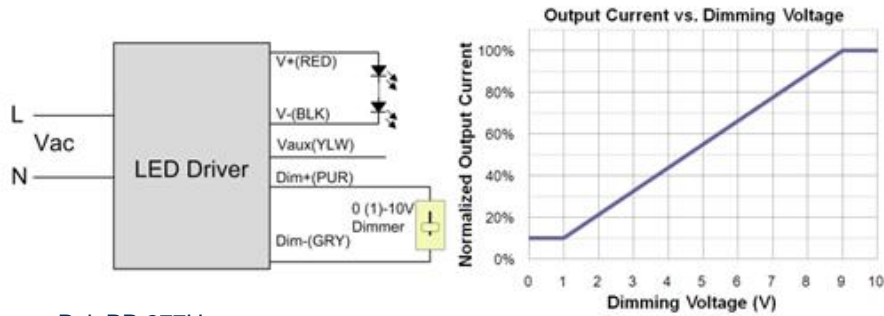




Retro-Fit Kits

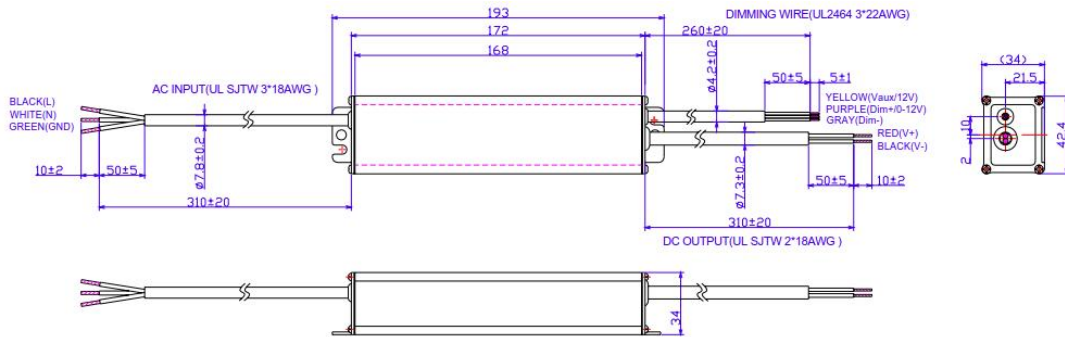
(all lengths & full specification)

Parameter (Values and options may vary consult factory)	Min.	Typ.	Max.
Absolute Maximum Voltage on the 0-10V Wire	-2V		15V
0-10V Wire Current Sourcing Capability	100µA	150µA	200µA
12V output voltage (Vaux)	10.5	12V	12.5V
12V source current (Vaux)			6mA



Example: Lutron Power Pak PP-277H
 Lutron Diva DDTV (0-10V LED Dimmer)
 Leviton AWRMG-7DW

Specification, LED Driver, V2



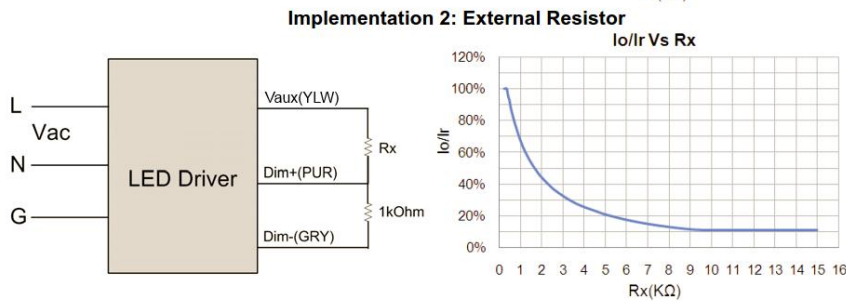
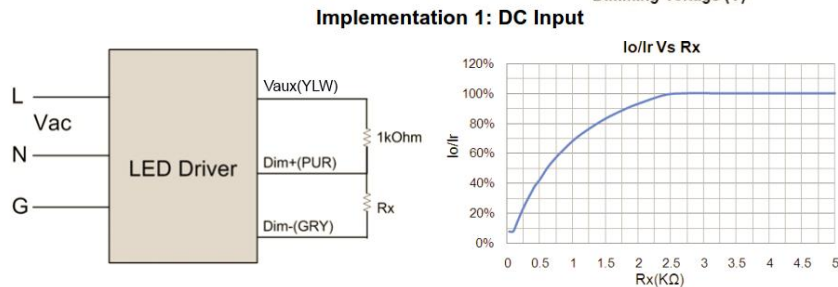
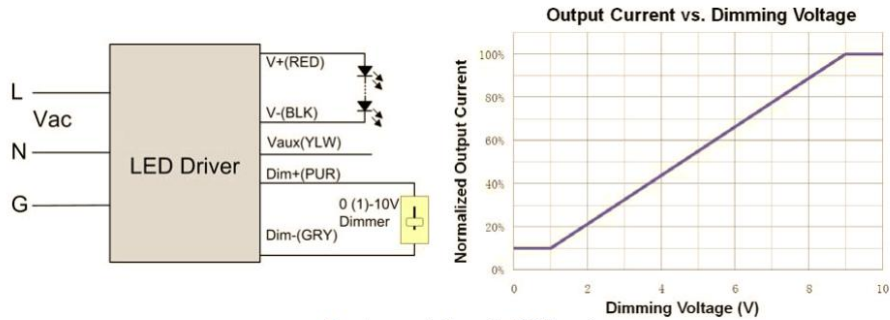
Parameter	Min.	Typ.	Max.
Absolute Maximum Voltage on the 0-10V Wire			15V
0-10V Wire Current Sourcing Capability			200µA
12V output voltage (Vaux)	10.8V	12V	13.2V
12V source current (Vaux)			20mA





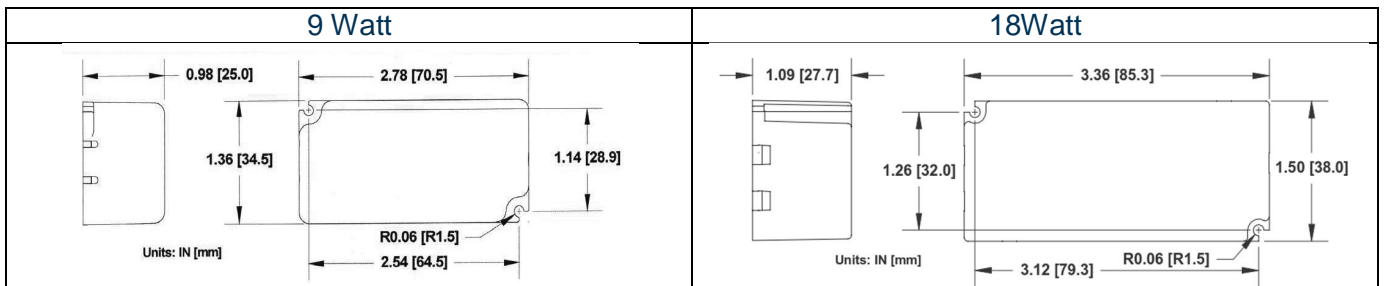
Retro-Fit Kits

(all lengths & full specification)



Example: Lutron Power Pak PP-277H **Implementation 3: External Resistor**
 Lutron Diva DVTV (0-10V LED Dimmer)
 Leviton AWRMG-7DW

Specification, LED Driver, PHA



Parameter
AC Phase - trailing edge compatible
Electronic Low Voltage (ELV)
Example: Lutron DVELV-300P Leviton 6615-P

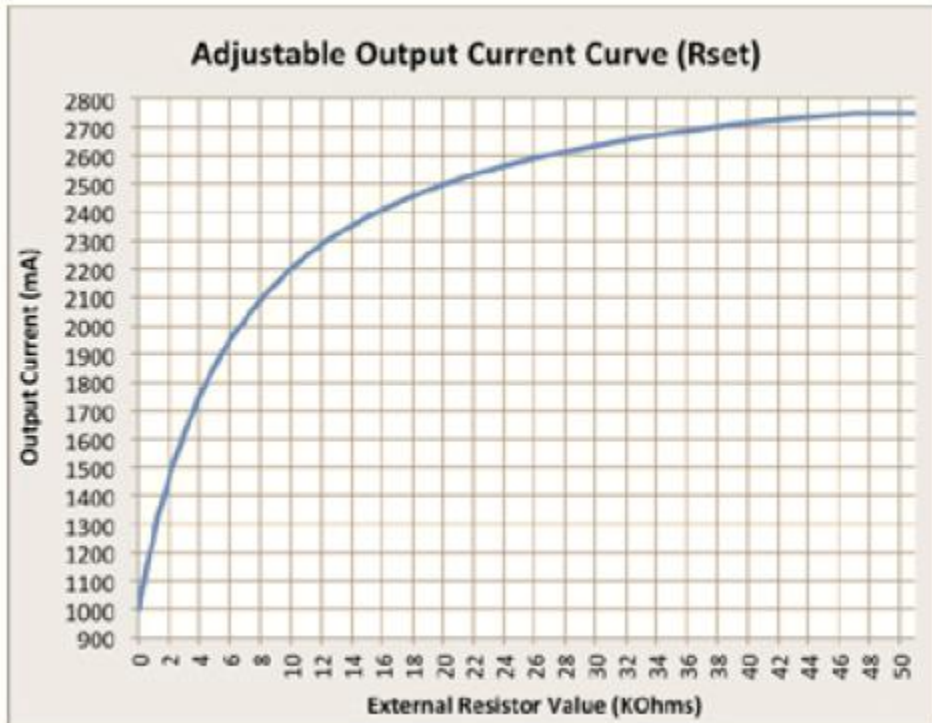
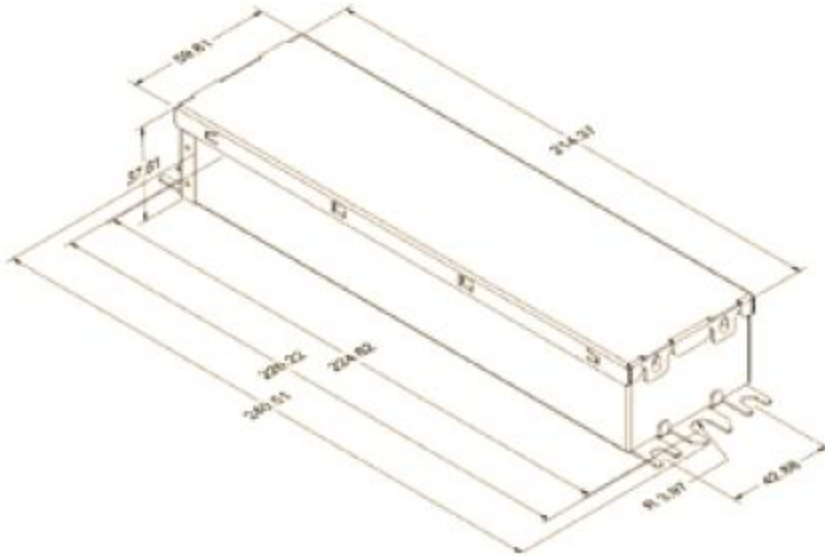




Retro-Fit Kits

(all lengths & full specification)

Specification, LED Driver, V3



Wire Diagram

