

■ Features

- Power Rating: 400W
- Input Voltage: 180-528Vac or 250-740Vdc
- Constant voltage design
- Output current (0-16700mA)
- 0-10V/PWM/DALI/DMX (optional) Dimming
- 2% Minimum Dimming Output
- Dim to Off with 1.5W Standby power
- UL Class P, Type HL
- Optional External Thermal Protection NTC
- OVP, SCP, & OTP
- IP67
- 5+ Year Warranty
- Surge Immunity 10kV



*Product images are for illustrative purposes only and may vary from actual design.

■ Application

- Strip lights, Landscape lights, Bay lights, Street lights, Flood lights

■ Model List

Model Number	Input Voltage Range	Output Power	Output Voltage	Output Current Min	Output Current Max	Certification
LHA400-V024-XYZ	180-528Vac	400 W	24V	0	16.7A	UL/cUL
LHA400-V030-XYZ	180-528Vac	400 W	30V	0	13.3A	UL/cUL
LHA400-V036-XYZ	180-528Vac	400 W	36V	0	11.1A	UL/cUL
LHA400-V048-XYZ	180-528Vac	400 W	48V	0	8.3A	UL/cUL

Ordering Options	XY=	Dimming Method	Programmable	12Vaux	Dim-off	Programming Range
	NN	-	-	-	-	
	TR	Timing	√	-	-	100%-115%Vo
	DN	0-10V	-	-	<2.5W	
	EN	0-10V	-	√	<1.5W	
	ER	0-10V	√	√	<1.5W	100%-115%
	AR	DALI	√	-	<2.5W	
	AN	DALI	-	-	<2.5W	
	MX	DMX	Set address	-	V=<2.5W	
Cable Options	Z=	K=UL cable with ground wire (green), S=VDE cable/Class I, D=VDE cable/Class II				
External Thermal Protection NTC Option	-THR	LHA400-V024-XYZ-THR				

*If ordering DMX, Customer must specify DMX512 or RDM

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■ Technical Data

Input Voltage	180-528Vac or 250-740Vdc
Input Frequency	47~63Hz
Power Factor	>0.9@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	1.8 Amax@277Vac & Full-Load, 0.9Amax@480Vac & Full-Load
Inrush Current	65A peak, 1.2ms duration@277Vac , <0.25A2s 70A peak, 1.3ms duration@480Vac , <0.5A2s
Leakage Current	1mA max @277Vac 60Hz, UL8750, 0.75mAmax @380Vac 50Hz, IEC61347-1
Input Under Voltage	Shut down and auto-restart
Surge Protection	Line to line 6kV, line to ground 10kV, IEC 61000-4-5
Voltage Accuracy	±3%Vo
Setup Time	1.2s max.
Overshoot	10% Vo, max.
Output Over Current	120% Io, typ.
Short Circuit	Auto recovery. The output recovers when short is removed.
Over Temperature	Lower the output current when $T_c \geq 105 \pm 10^\circ\text{C}$; Auto Recovery When $T_c \leq 70 \pm 10^\circ\text{C}$ $105 \pm 10^\circ\text{C}$ (relates to internal component temperature / optional settings are possible, contact Autec sales)
Operating Temperature	-40°C~+70°C ; 10%RH~100%RH (See Derating Curve for more details)
Storage Temperature	-40°C~+85°C; 5%RH~100%RH
MTBF	$\geq 280,000$ hours, 75°C case temperature (MIL-HDBK-217F)
Lifetime	$\geq 100,000$ hours, 75°C case temperature, refer to life vs. Tc curve
Case Temperature	90°C max, marked in the Tc point of label
Dimensions	9.44x3.54x1.63 by inch (body), 10.51x3.54x1.63 by inch (endcaps included) 240x90x41.5 by mm (body), 267 x 90 x 41.5 by mm (endcaps included)
Net Weight	1650g
Packing	10pcs/Carton/19.2kg, 490x370x345mm

Notes: Unless specified, all the test results are measured in 25°C room temperature.

Disclaimer:

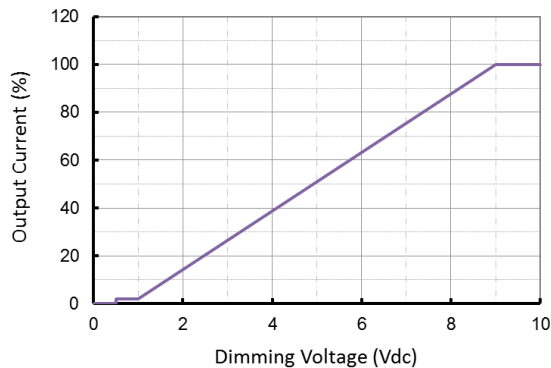
Autec Power Systems' (Autec) LED Drivers are Hi-Pot tested during the manufacturing process. Autec assumes no responsibility for secondary Hi-Pot testing at customer location or designated production line(s). Should customer require further Hi-Pot testing, at their own production line, following assembly of the LED Driver into the customer's assembled fixture, Autec requests advance notice. This request must be communicated to Autec in a timely manner and is recommended to be requested at time of issuing each purchase order.

■ Dimming

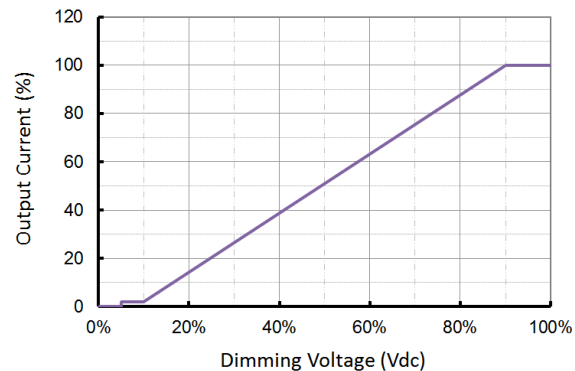
Parameter	Min.	Typ.	Max.
Vdim Sourcing Current	200uA	300uA	450uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	2% (Vdim=1V)	Linear	100% (Vdim=9~10V)
PWM Dimming Range	2% (Duty=10%)	Linear	100% (Duty=90-100%)
Dim-off threshold	0.4V or 4%	0.5V or 5%	0.6V or 6%
Dim-on threshold	0.6V or 6%	0.7V or 7%	0.8V or 8%
PWM High	3V		10V
PWM Low	0V		0.6V
PWM Frequency	300Hz		2kHz
External PWM Controller Current Sinking Capability	300uA		
DALI Interface Standard		IEC62386	
DA1,DA2 High Level	9.5	16	22.5
DA1,DA2 Low Level	-6.5	0	6.5
DA1,DA2 Current	0		2mA

■ Dimming Curve

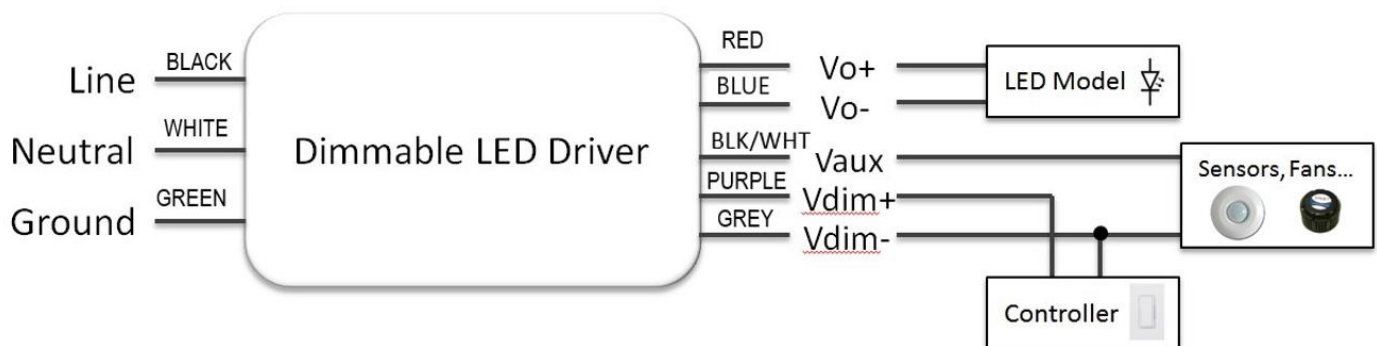
0-10V Dimming Curve



PWM Dimming Curve



■ Wiring Diagram



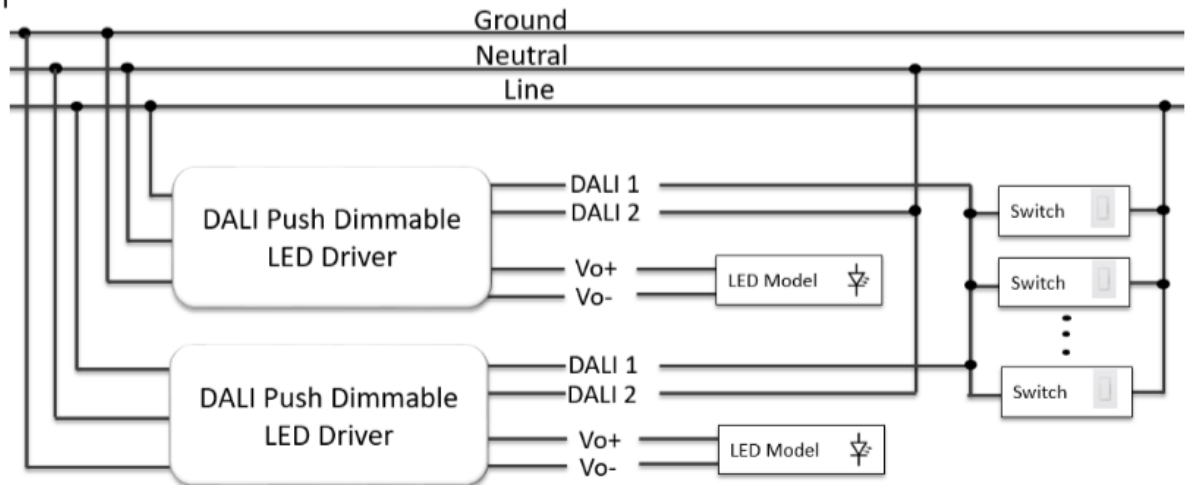
Push (Switch) Dim

A short press (50-600 ms) switches the device on or off

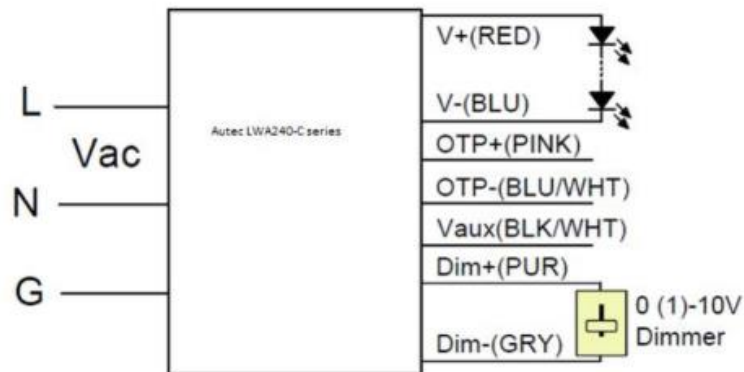
A long press (> 600 ms) fades the connected operating device alternately up and down (between 2 and 100%).

Up and down slew rate is 20%/second.

Long push f



■ Wiring Diagram/Optional External Thermal Protection



■ External Thermal Protection Table(optional)

Parameter	Min.	Typ.	Max.	Notes
External Thermal Protection NTC	R1	-	7.81 kOhm	-
	R2	-	4.16 kOhm	-
	Protection Current Floor	10%loset	60%loset	100%loset
		lomin	60%loset	100%loset

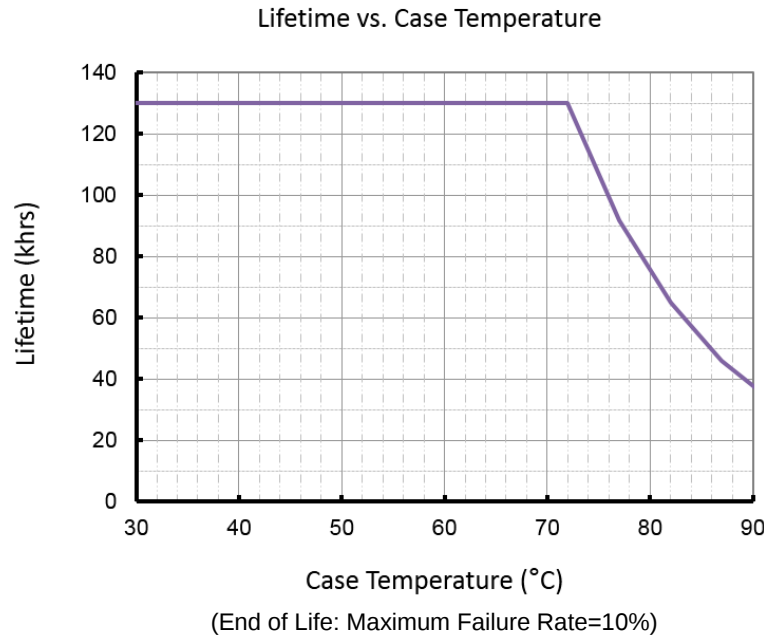
■ Safety/EMC Compliance

Safety Standards	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012	Power units other than class 2
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for DC. or AC supplied electronic control gear for LED modules
EMI Standards	Description
IEC 55015	Conducted emission test & radiated emission test
IEC 61000-3-2	Harmonic current emissions; Class C
IEC 61000-3-3	Voltage fluctuations & flicker
FCC Part 15	ANSI C63.4:2009 Class B
EMS Standards	Description
IEC 61000-4-2	Electrostatic discharge (ESD): 8 kV air discharge, 4 kV contact discharge
IEC 61000-4-3	Radio frequency electromagnetic field susceptibility test (RS)
IEC 61000-4-4	Electrical fast transient (EFT)
IEC 61000-4-5	Surge immunity test
IEC 61000-4-6	Conducted radio frequency disturbances test (CS)
IEC 61000-4-8	Power frequency magnetic field test
IEC 61000-4-11	Voltage dips
IEC 61547	Electromagnetic immunity requirements applies to lighting equipment

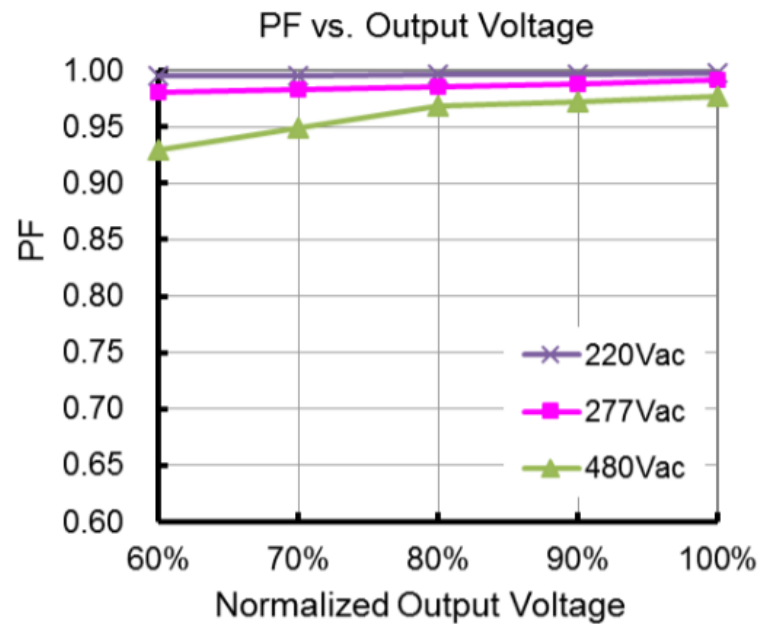
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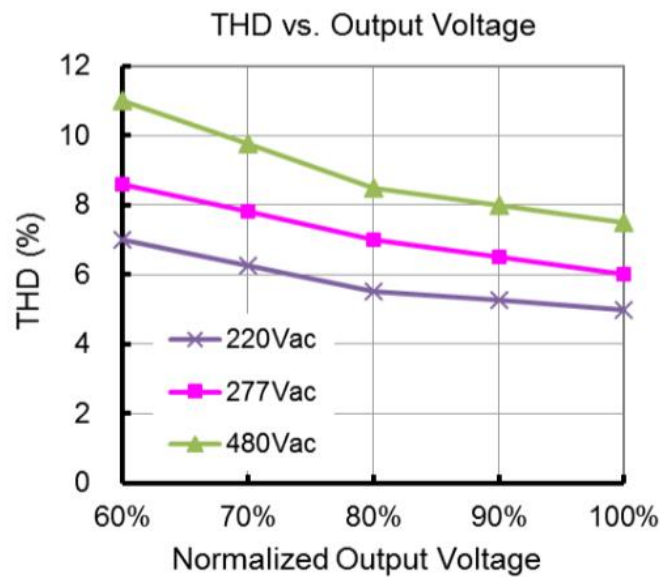
■ Lifetime vs. Case Temperature



■ Power Factor vs Load

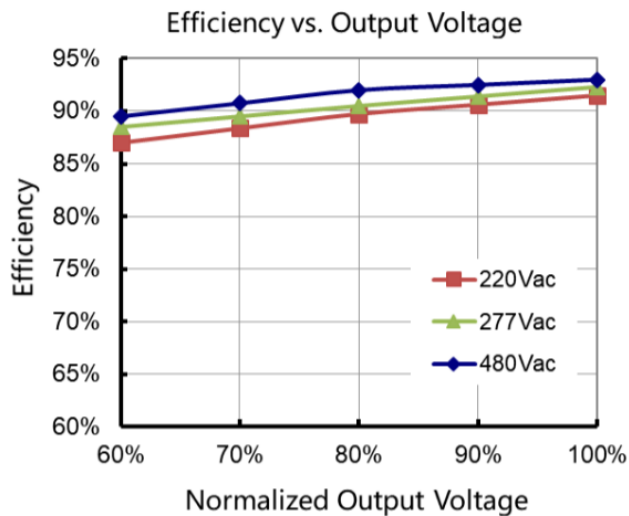


■ THD vs Load

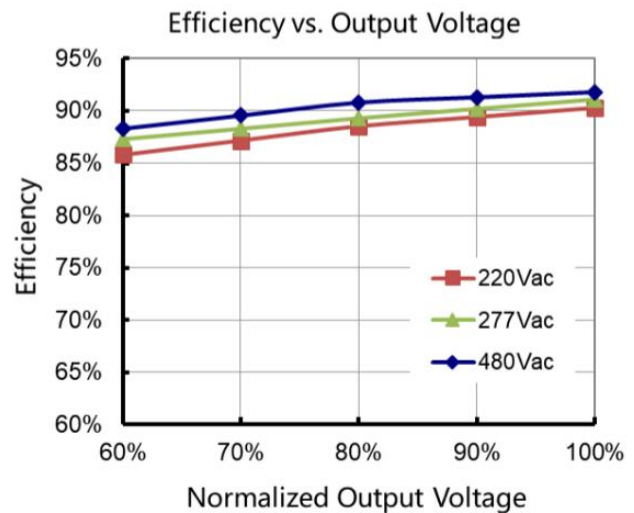


■ Efficiency vs Load (24V and 48V Model)

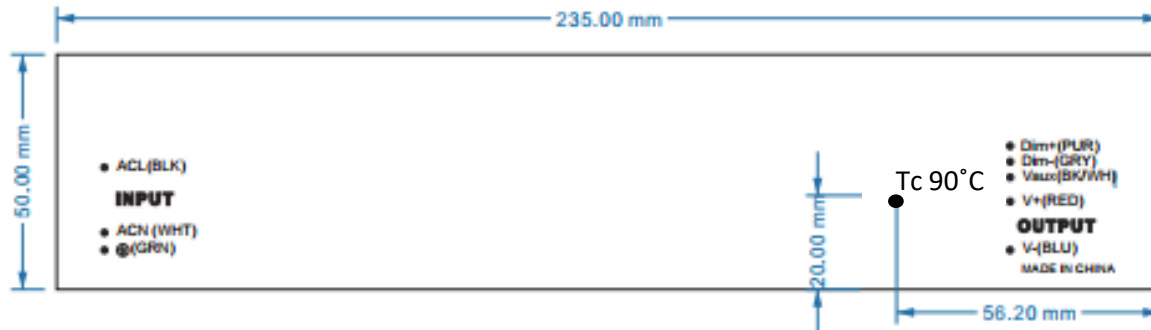
24V Model



48V Model

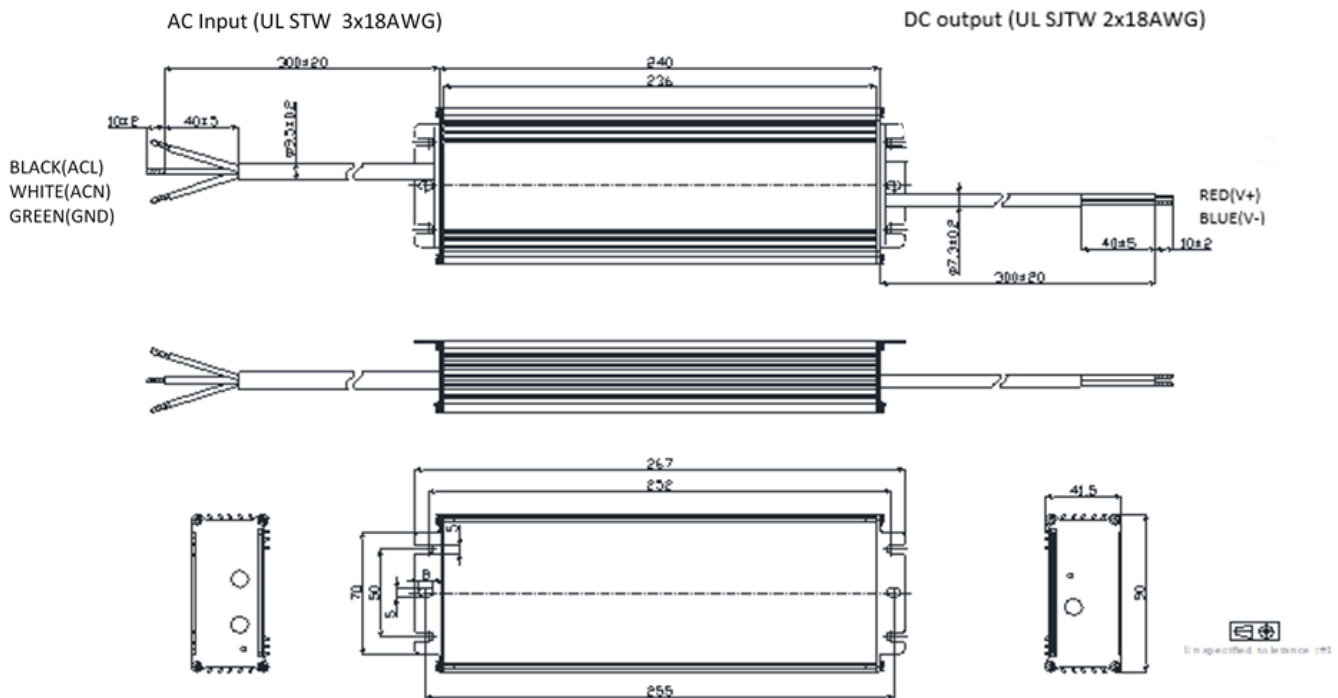


■ Tc Location(LED Driver Label)

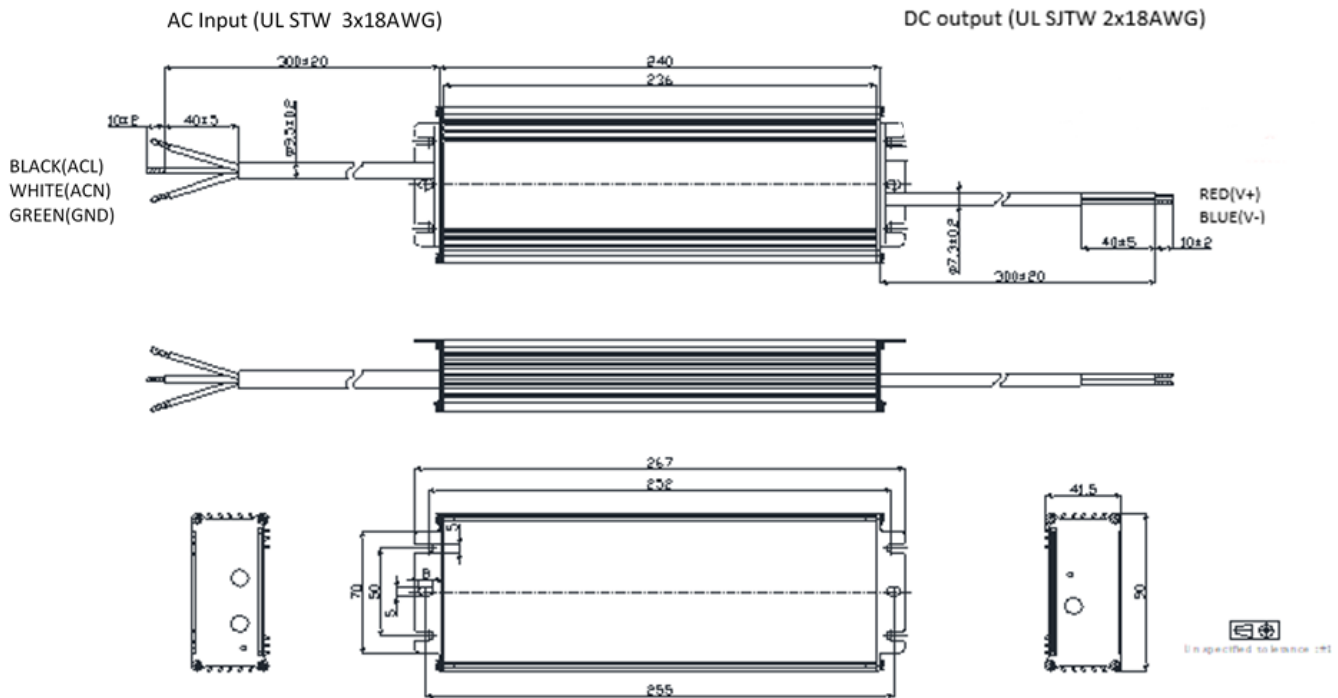


■ Mechanical Design

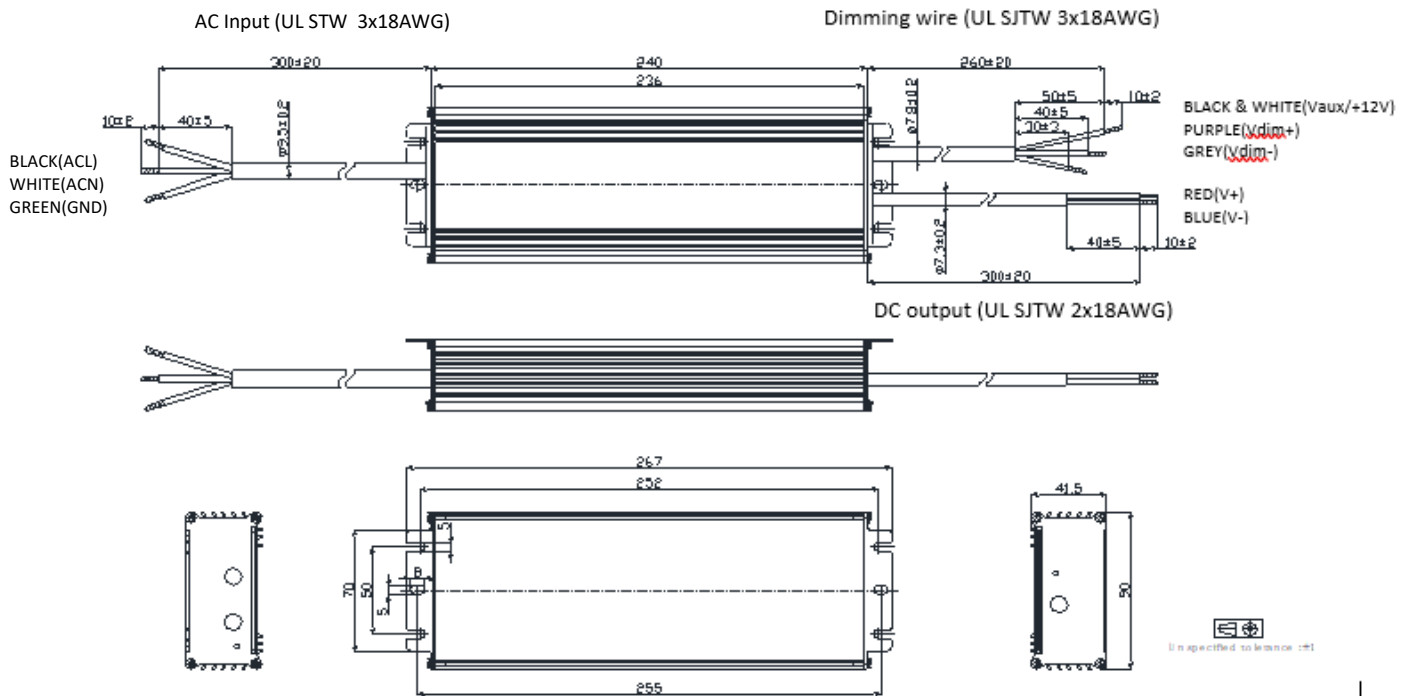
- LHA400-Vxxx-NNK (UL Cable)48V



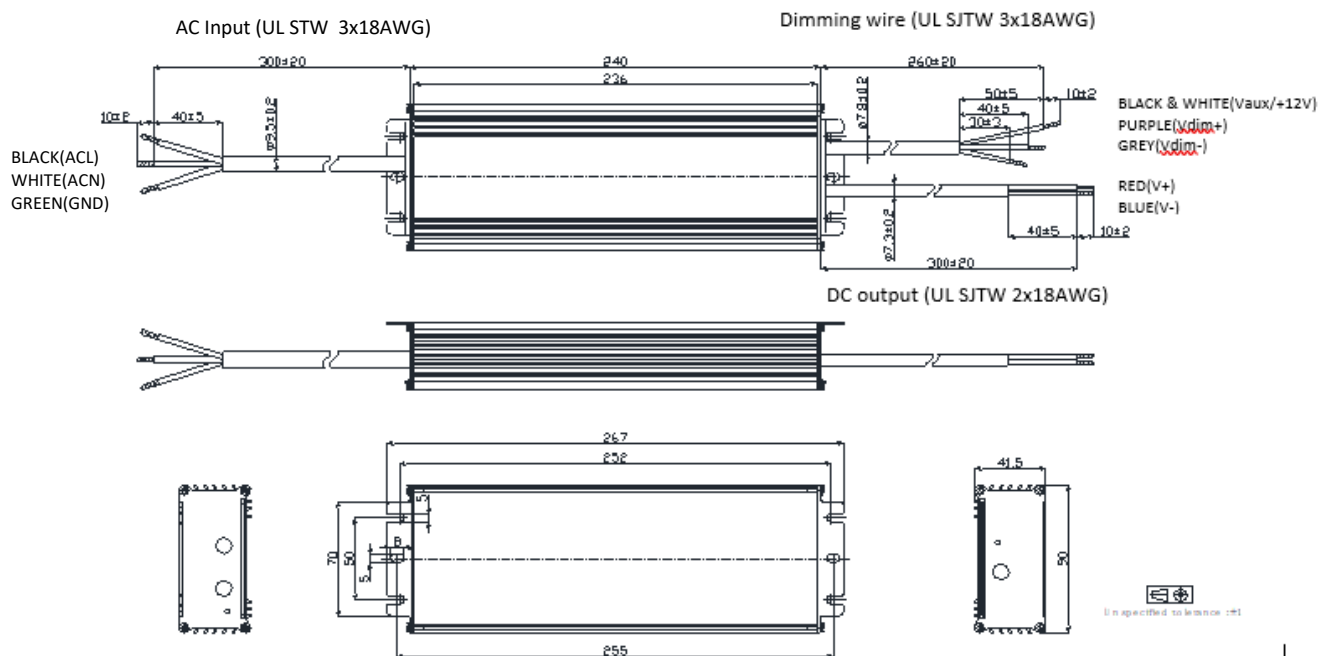
- **LHA400-Vxxx-NNK (UL Cable)24V**



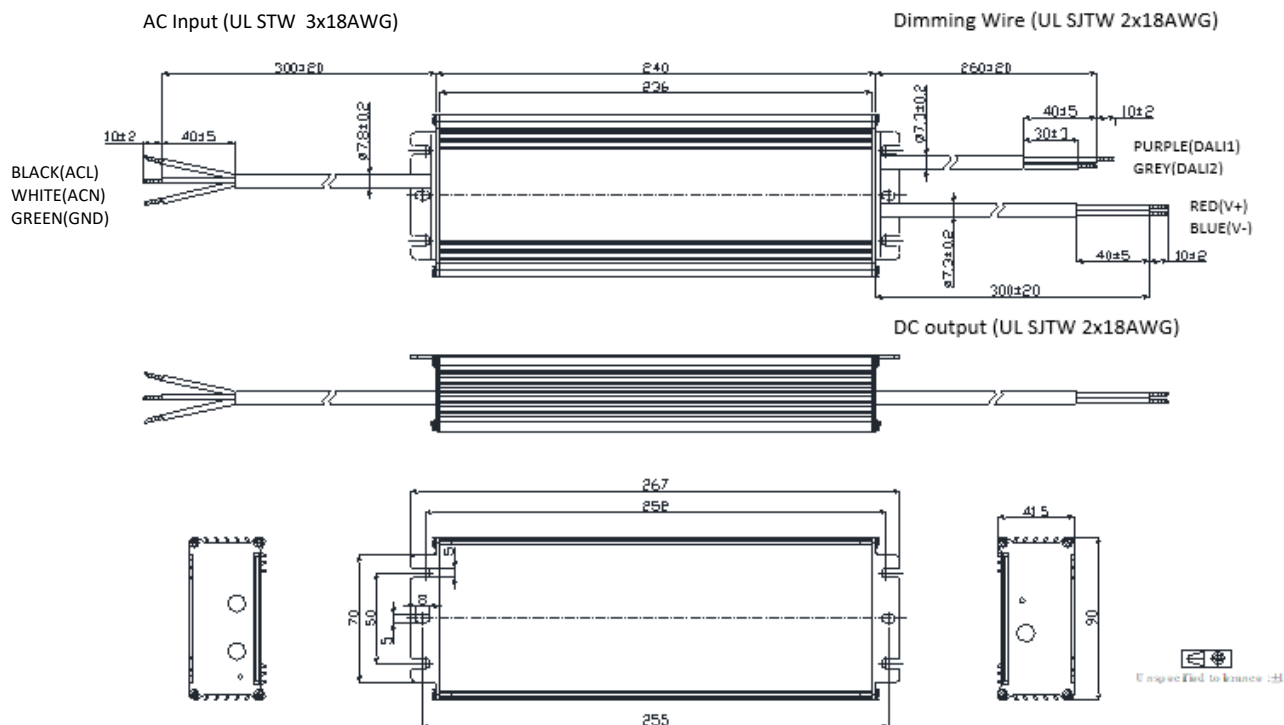
- **LHA400-Vxxx-ENK (UL Cable)48V**



- **LHA400-Vxxx-ENK (UL Cable)24V**



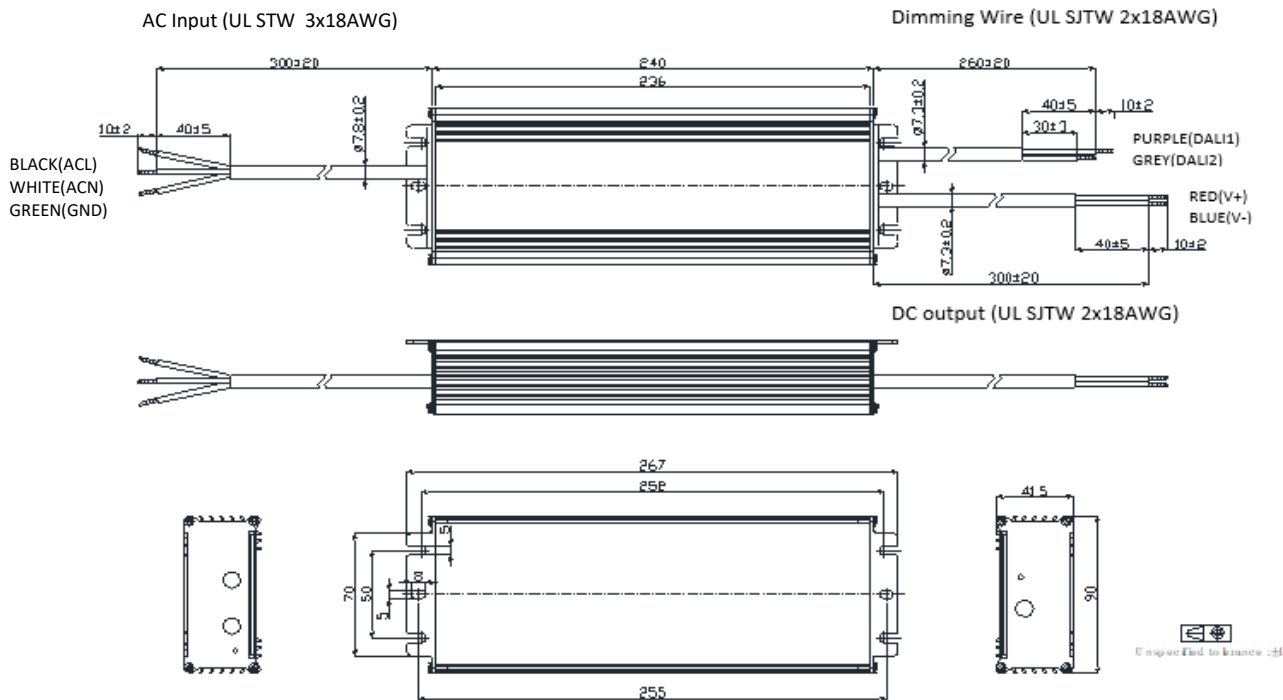
- LHA400-Vxxx-ANK (UL Cable)48V



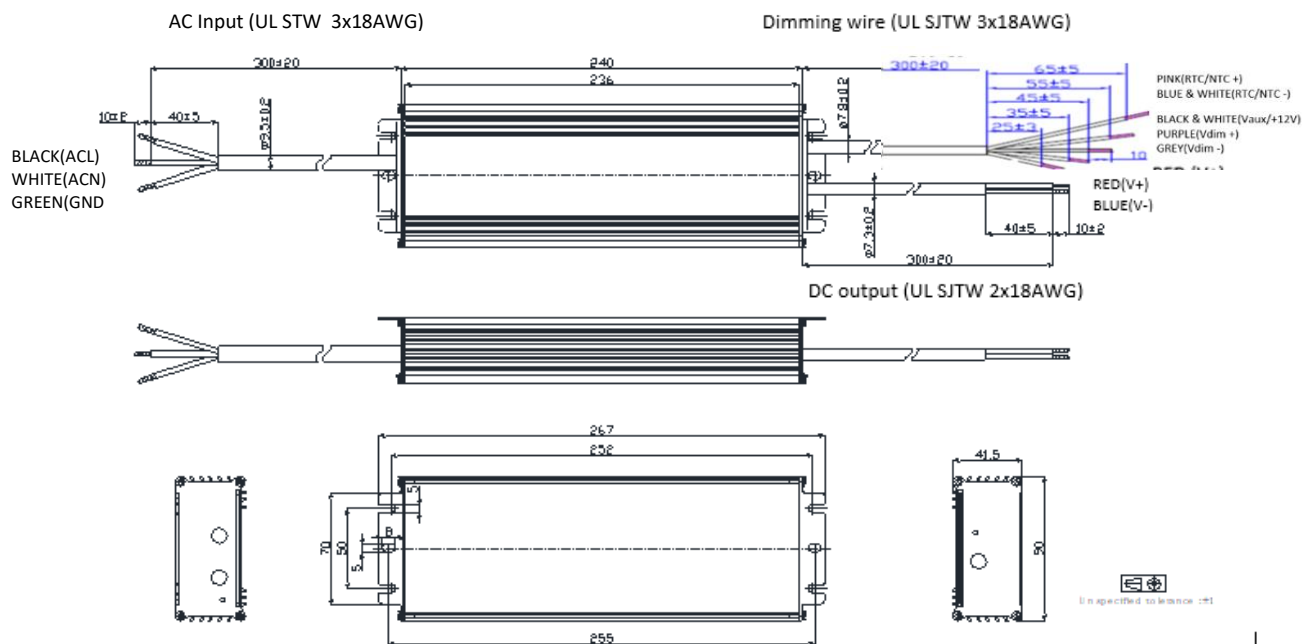
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- LHA400-Vxxx-ANK (UL Cable)24V



- **LHA400-Vxxx-ENK-THR (Optional External Thermal Protection)**

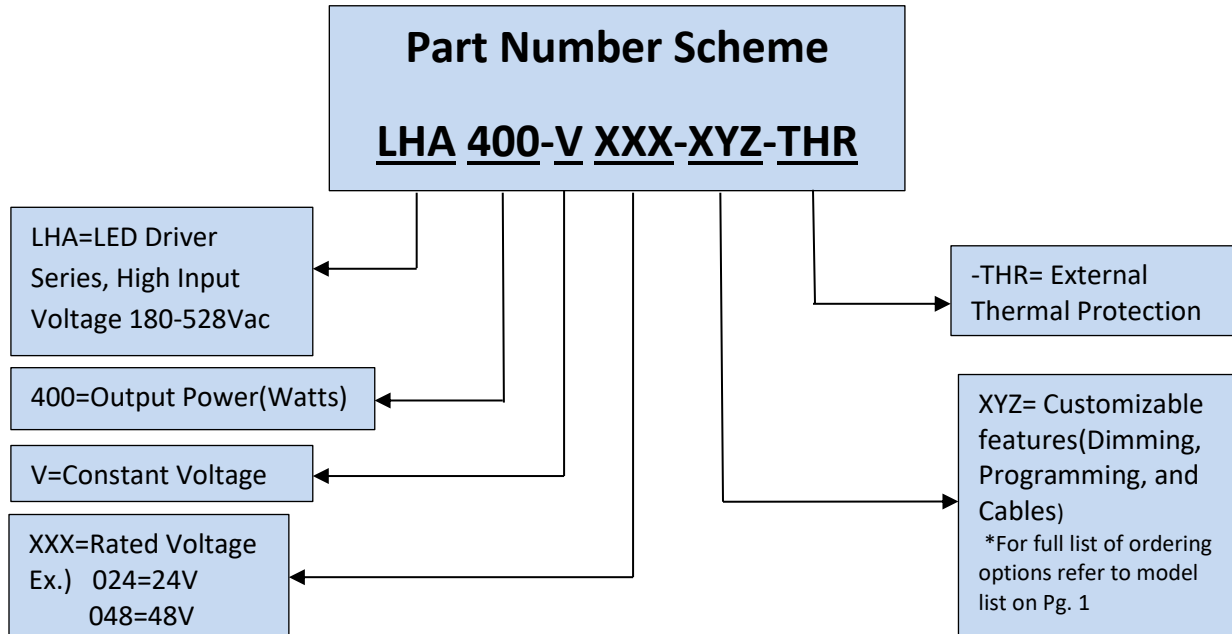
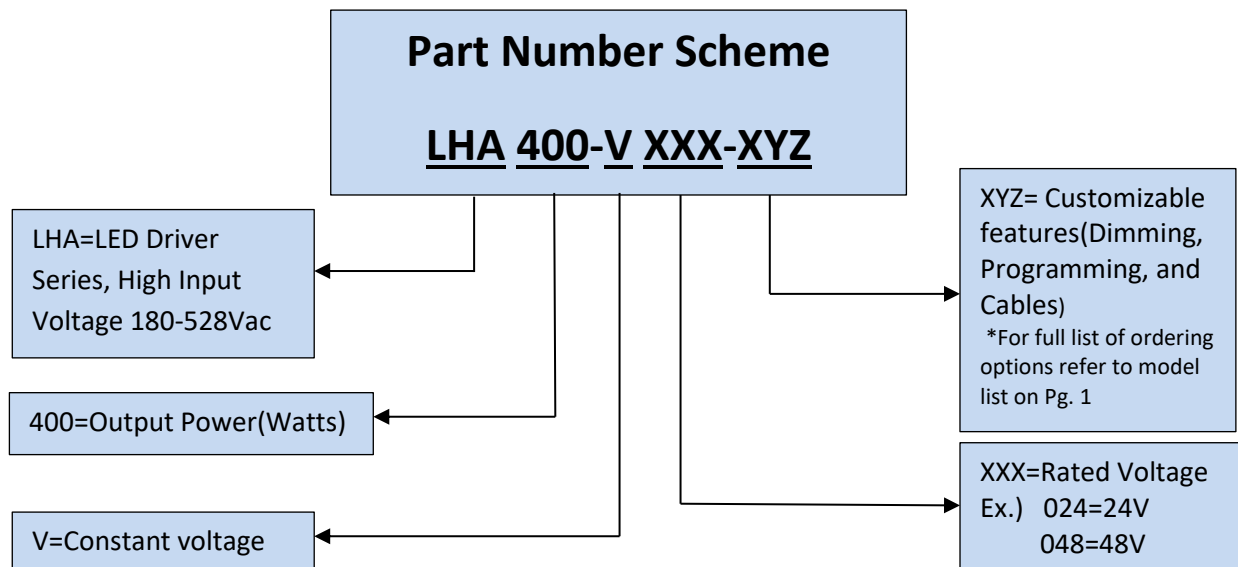


***Contact Autec Sales for non UL Mechanical Diagrams**

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