

■ Features

- Power Rating: 96W
- Input Voltage: 100-277Vac or 127-420Vdc(90-305Vac)
- Under Input Voltage Lock Out 80Vac
- Constant voltage design
- Output current (0mA-8000mA)
- 0-10V/PWM/Push(Switch)/DALI/DMX (Optional) Dimming
- Dim to Off with 0.5W Standby Power
- 12V 300mA Auxiliary power to power controllers and fans (Optional)
- UL Class P, Type HL
- Class II model available
- Input Over Voltage Protection (Optional)
- OVP, SCP, & OTP
- Tc = 90°C
- 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, Tunnel lights, Flood lights
- Horticultural Lighting

■ Model List

| Model Number | Input Voltage Range | Output Power | Output Voltage | Output Current Min | Output Current Max | Certification |
|-----------------|---------------------|--------------|----------------|--------------------|--------------------|---------------|
| LWA096-V012-XYZ | 120-277 Vac | 96 W | 12V | 0 | 8A | UL/cUL |
| LWA096-V024-XYZ | 120-277 Vac | 96 W | 24V | 0 | 4A | UL/cUL |
| LWA096-V036-XYZ | 120-277 Vac | 96 W | 36V | 0 | 2.67A | UL/cUL |
| LWA096-V048-XYZ | 120-277 Vac | 96 W | 48V | 0 | 2A | UL/cUL |

| Ordering Options | XY= | Dimming Method | Programmable | 12Vaux | Dim-off |
|----------------------|-----------|--|--------------|--------|---------|
| | NN | - | - | - | - |
| | DN | 0-10V | - | - | <1.5W |
| | EN | 0-10V | - | √ | <0.5W |
| | AN | DALI | - | - | <1.5W |
| | MX | DMX | Set Address | - | <1.5W |
| Cable Options | Z= | K=UL cable with ground wire (green), S=VDE cable/Class I, D=VDE cable/Class II | | | |

DMX Notes: Works with DMX-512 Presently. DMX Dimming range 10-100% (1% DMX command will be treated as 10% Dimming). Recommended number of LED drivers per DMX channel is ~32, and ~40 meter (132 ft) drop length. You may need a DMX signal amplifier for quantities above 32 drivers per channel, with a maximum allowed of 150 drivers per single channel.

Note: Dimmable Constant Voltage Drivers Do NOT Support Switching DC-DC Regulator as Load

■ Technical Data

| | |
|-----------------------|---|
| Input Voltage | 120-277Vac or 127V-420Vdc, 380Vac for 2 hours |
| 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 | 0.95Amax@120Vac & Full-Load, 0.48Amax@220Vac & Full-Load |
| Inrush Current | 32A peak, 1.2ms duration, <0.12A2s@120Vac, Cold Start 70A peak, 1.3ms duration, <0.5A2s@277Vac, Cold Start |
| Leakage Current | 1mA max @277Vac 60Hz, UL8750, 0.75mAmax @220Vac 50Hz, IEC61347-1 |
| Input Under Voltage | Shut down@80Vac and auto-restart@90Vac |
| Input Over Voltage | *Optional: Shutdown @320Vac |
| Surge Protection | Line to line 6kV, line to ground 10kV, IEC 61000-4-5 |
| R&N | 1% |
| 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 +/- 10°C (relates to internal component temperature / optional settings are possible, contact Autec sales) |
| Operating Temperature | $T_c = -40^\circ\text{C} \sim +90^\circ\text{C}$; 10%RH~100%RH (See Derating Curve for more details) |
| Storage Temperature | $-40^\circ\text{C} \sim +85^\circ\text{C}$; 5%RH~100%RH |
| MTBF | ≥320,000 hours, 75°C case temperature (MIL-HDBK-217F) |
| Lifetime | ≥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 | 6.34x2.66x1.32 by inch (body), 7.40x2.66x1.32 by inch (endcaps included) 161.0x67.5x33.5 by mm (body), 188.0x67.5x33.5 by mm (endcaps included) |
| Net Weight | 800g |
| Packing | 25pcs/Carton/21kg, 490x370x230mm |

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

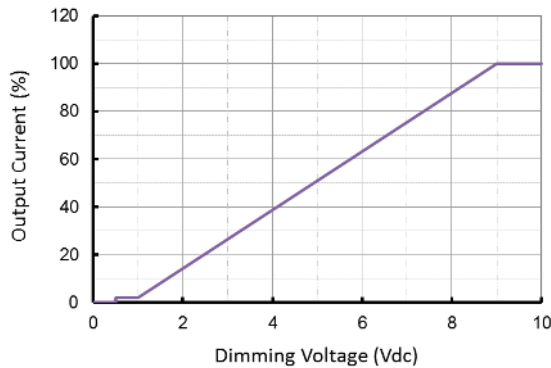
* Marked items are optional. Please contact Autec Sales to specify the required functions.

■ Dimming

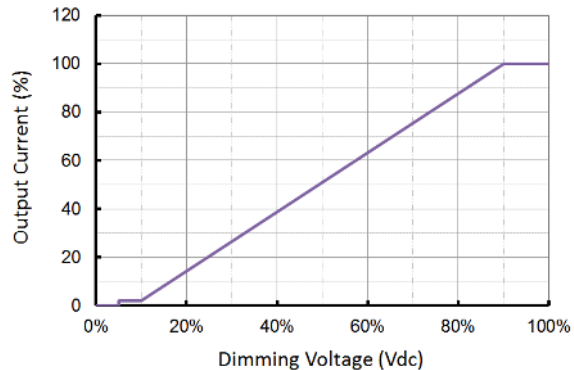
| Parameter | Min. | Typ. | Max. |
|--|---------------|------------|---------------------|
| Vdim Sourcing Current | 200uA | 300uA | 450uA |
| Vdim Allowed Input Voltage | -20 V | | 20 V |
| 0-10V Dimming Range | 2% (Vdim=1V) | Linear | 100% (Vdim=9~10V) |
| PWM Dimming Range | 2% (Duty=10%) | Linear | 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 | 3.8V | | 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

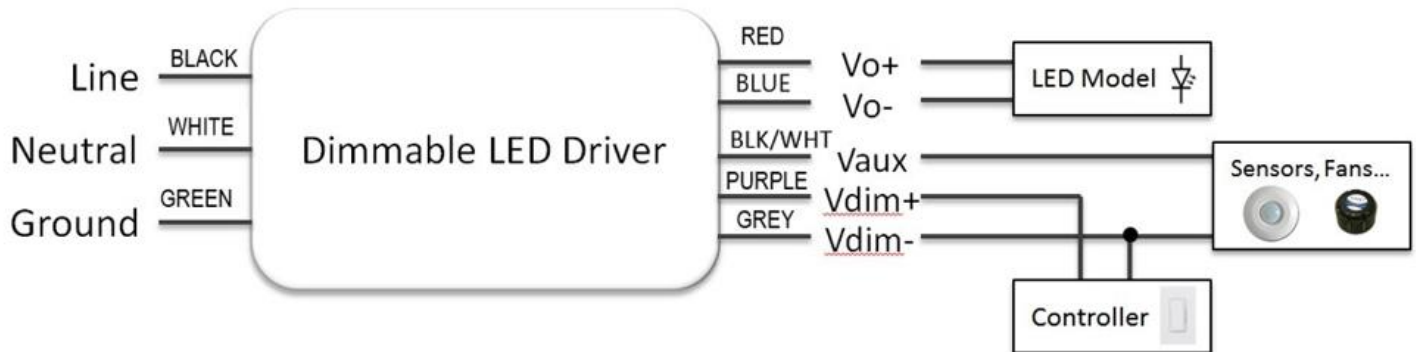
0-10V Dimming Curve



PWM Dimming Curve



■ Wiring Diagram



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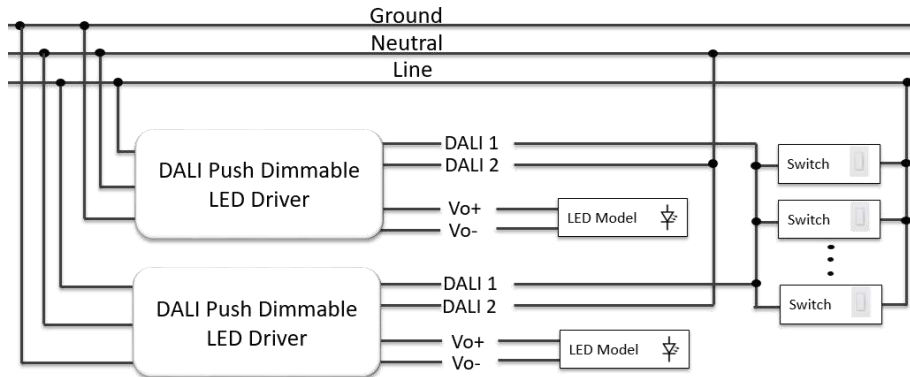
■ **Push (Switch) Dim**

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 for 15s to synchronize.



■ **Safety/EMC Compliance**

| Safety Standards | Description |
|------------------|---|
| UL8750 | Light emitting diode(LED) equipment for use in lighting products |
| UL1310 | Class 2 power units |
| 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 |

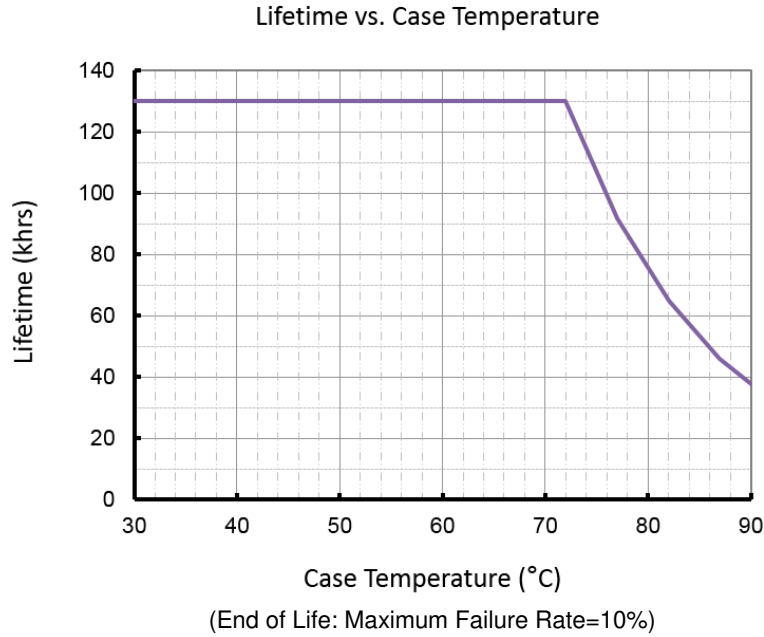
Disclaimer:

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.

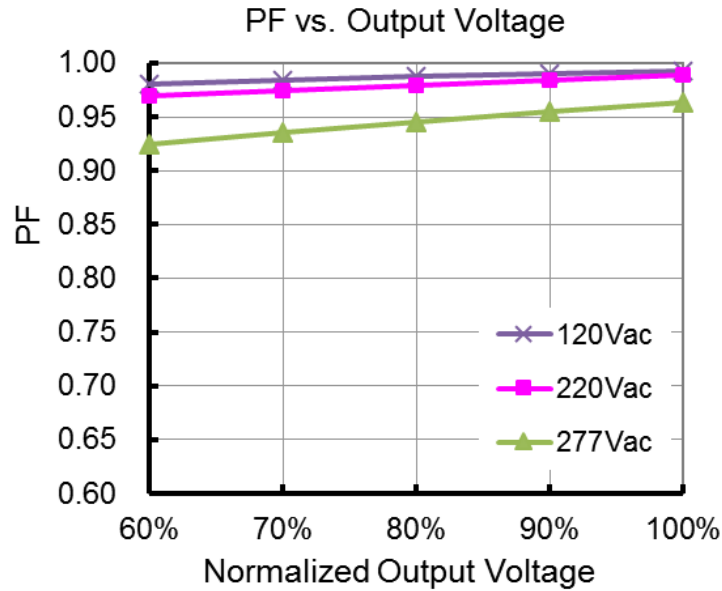
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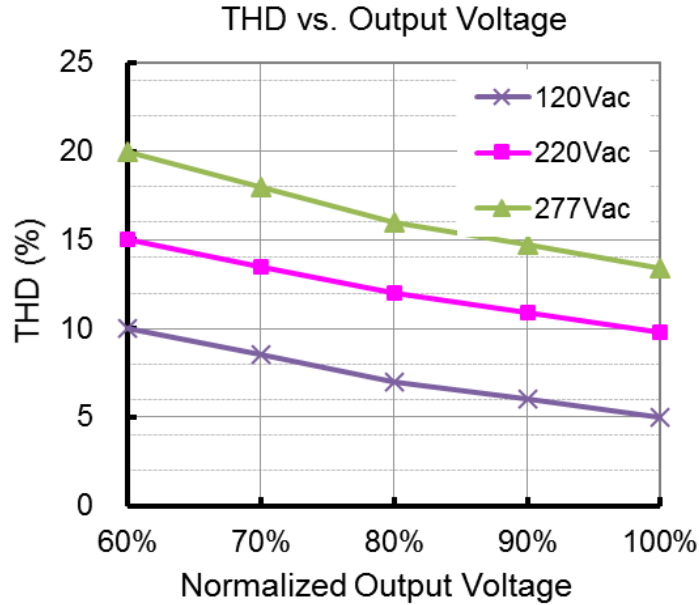
■ **Lifetime vs. Case Temperature**



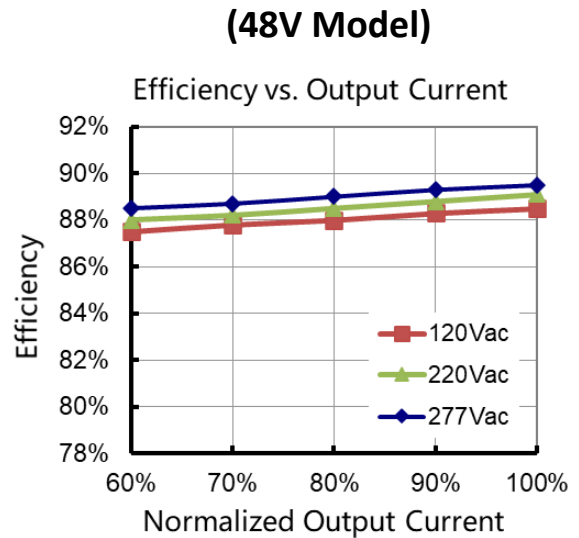
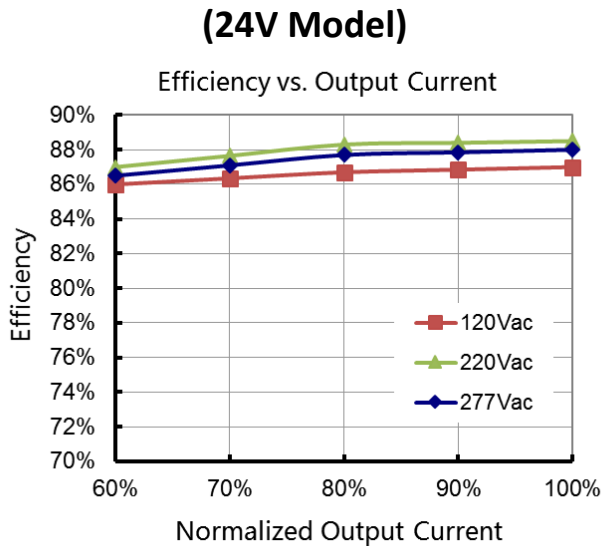
■ **Power Factor vs. Load**



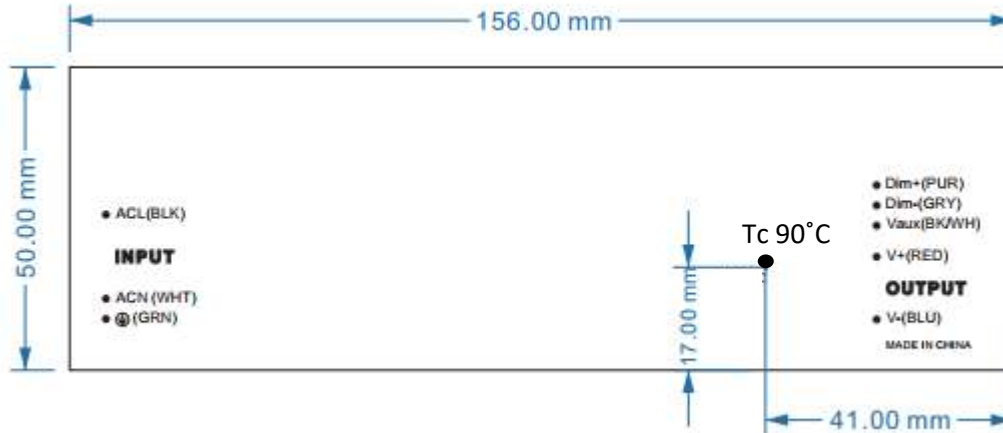
■ THD vs. Load



■ Efficiency vs. Load

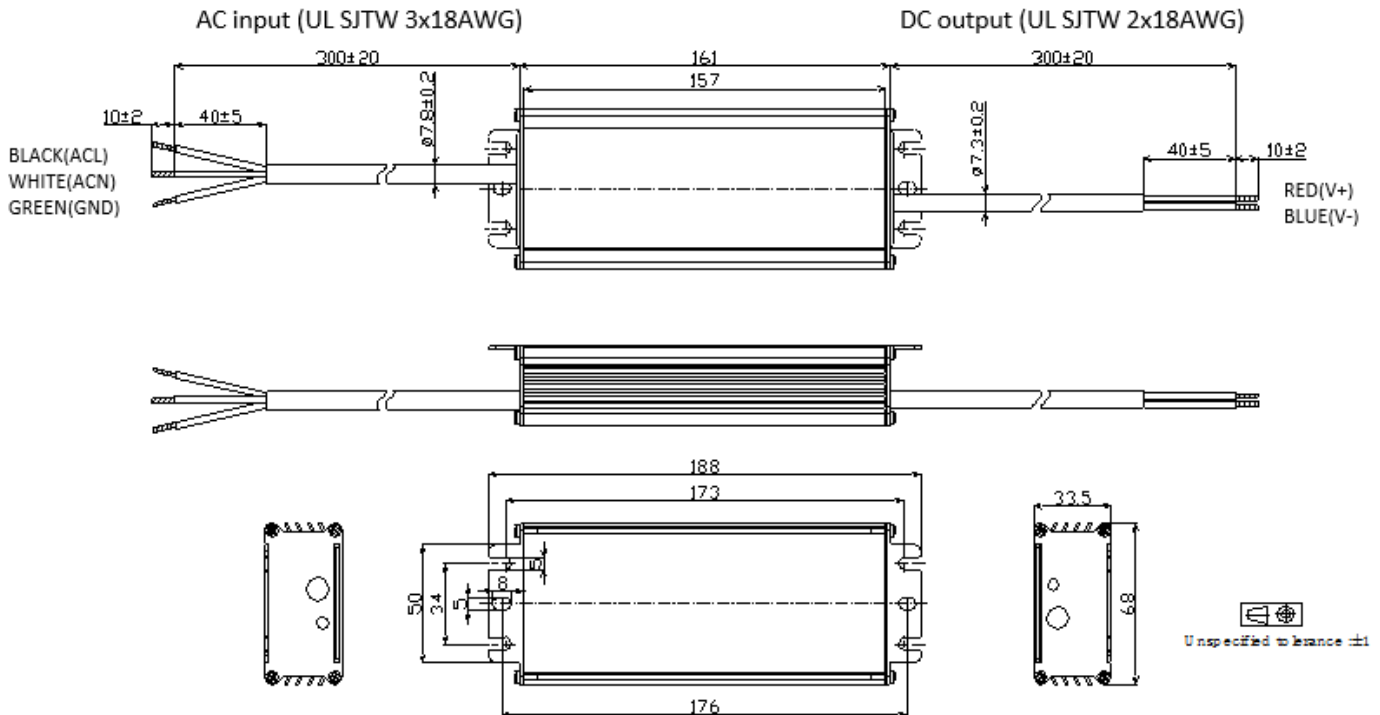


■ Tc Location(LED Driver Label)

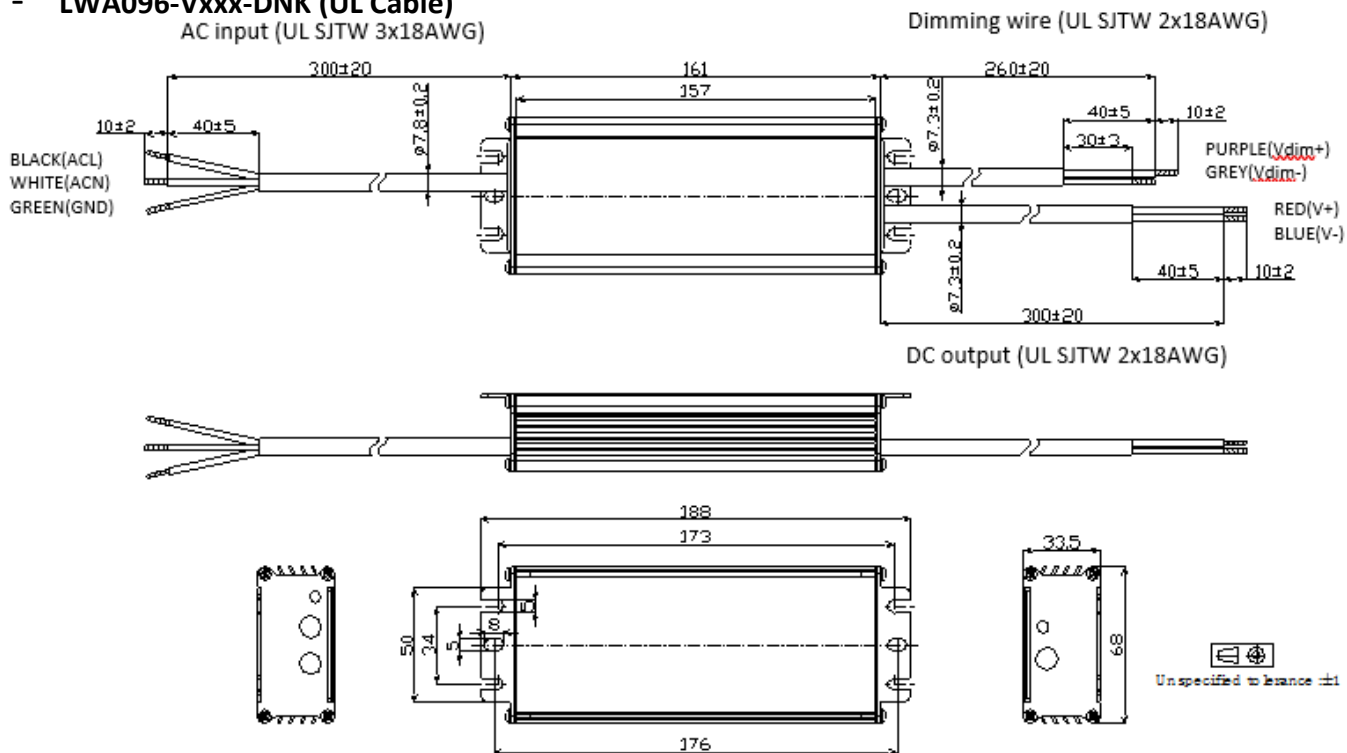


■ Mechanical Design

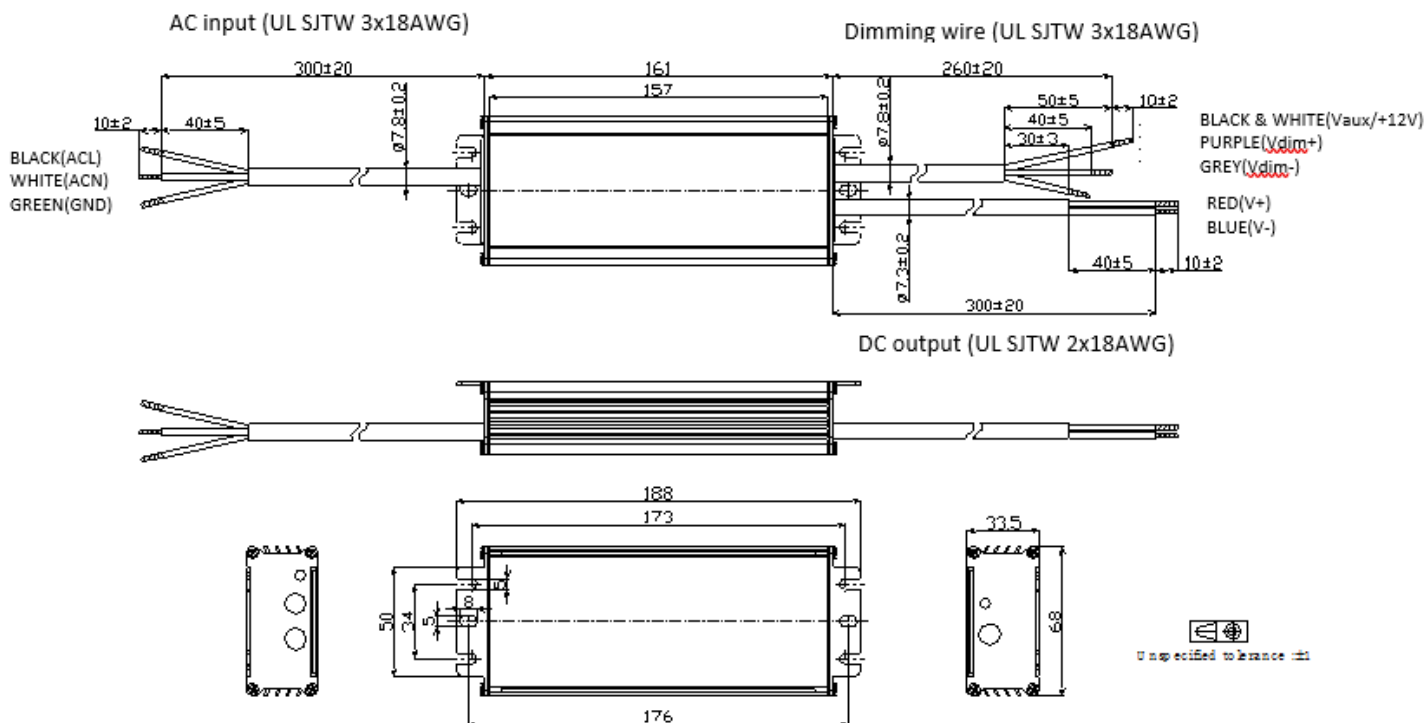
- LWA096-Vxxx-NNK (UL Cable)



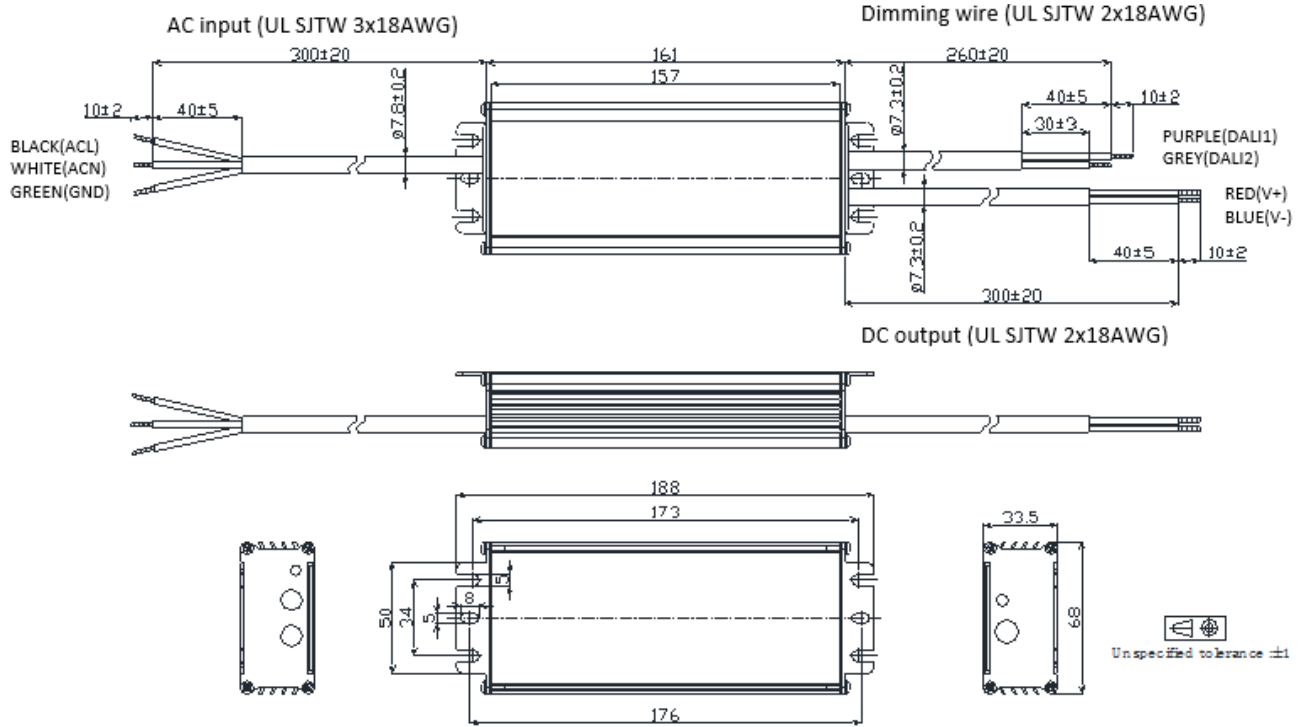
- LWA096-Vxxx-DNK (UL Cable)



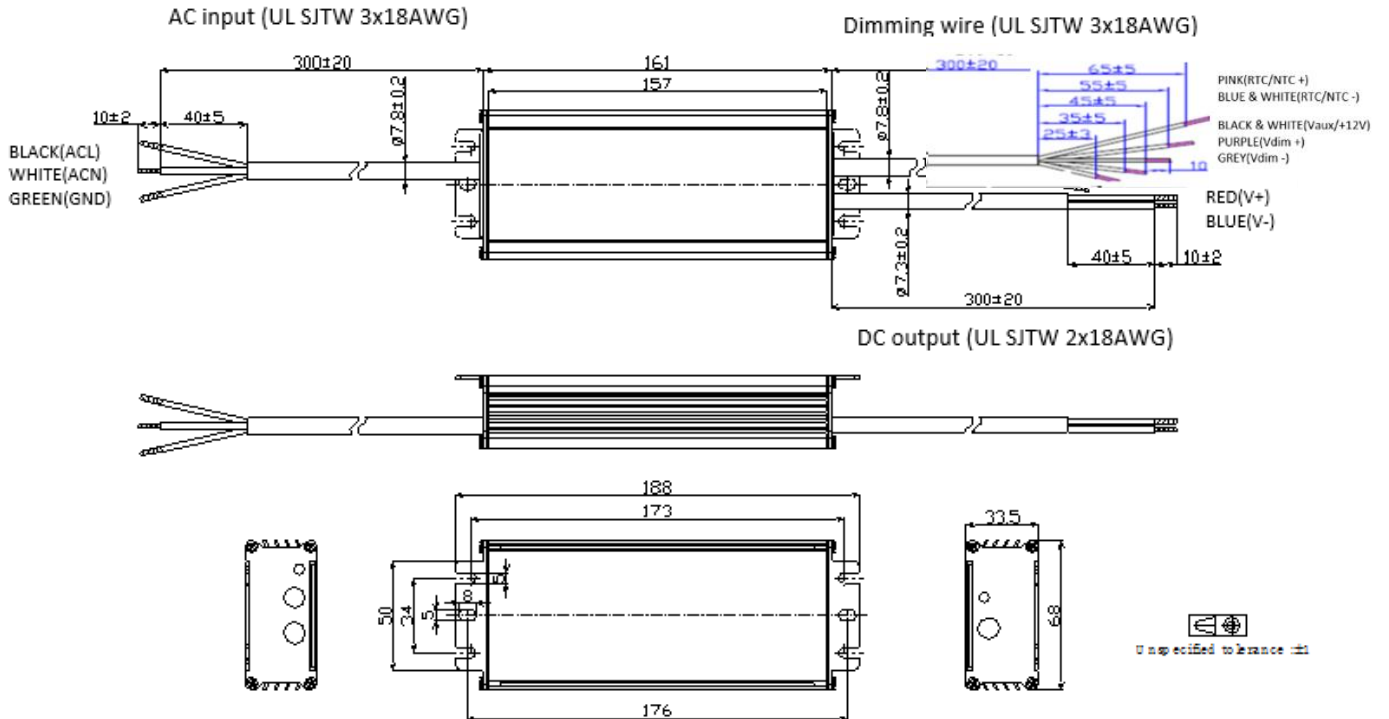
- LWA096-Vxxx-ENK (UL Cable)



- **LWA096-Vxxx-ANK (UL Cable)**



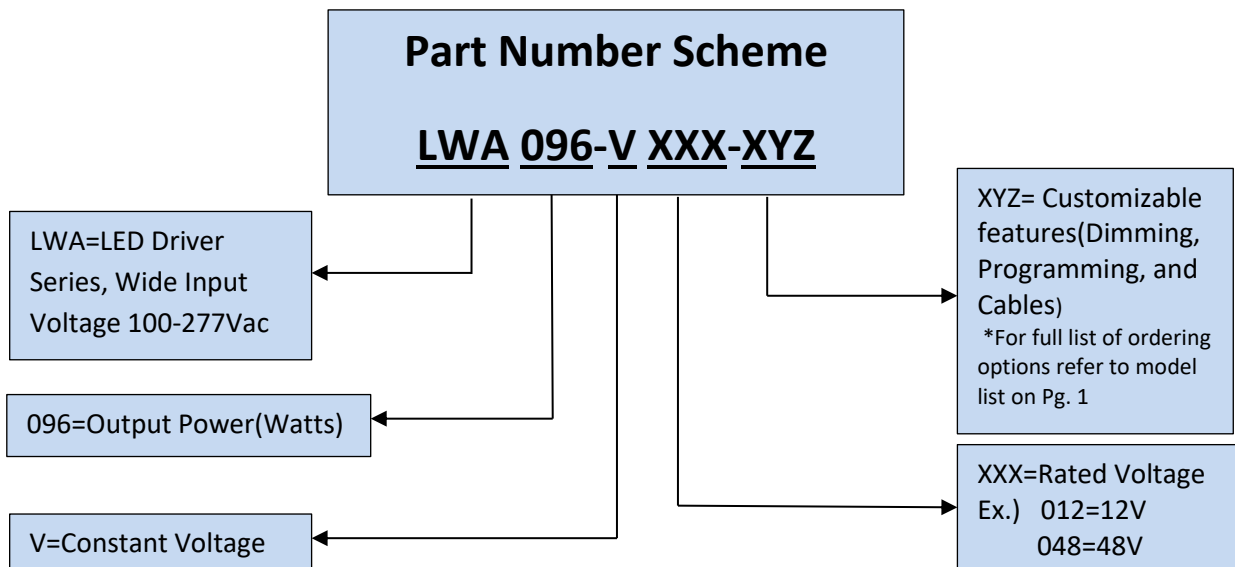
- **LWA096-Vxxx-ENK-THR (UL Cable)**



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

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*Specifications are subject to change without notice. Autec is not responsible for issues arising from errors or omissions.