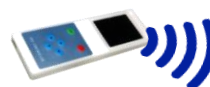


## ■ Features

- Power Rating: 680W
- Input Voltage: 277-480Vac
- Constant current and constant voltage hybrid output
- Output current (700mA-14200mA)
- Output current programmable with Near Field Communication controller
- Efficiency to 95%
- Compatible with 0-10V, PWM, Timer, Dim-to-off option, 12V/400mA AUX
- UL/Class P, Type HL
- Lightning, OVP, SCP, OTP, & Over Current Protection
- Tc = 90°C
- IP67
- 5-year warranty
- Surge Protection: Diff: 6kV, Common: 10kV



\*Near Field Communication controller

**RoHS**  
Compliant



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

## ■ Application

- Horticultural grow applications
- Indoor and outdoor applications

## ■ Model List\*(See part number scheme for model number details)

| Model Number        | Input Voltage Range | Output Power | Output Voltage | Output Current Min. | Output Current Max. | Efficiency | Certification |
|---------------------|---------------------|--------------|----------------|---------------------|---------------------|------------|---------------|
| L2HCP680S1420ST-XYZ | 277-480Vac          | 680W         | 25-48V         | 6630mA              | 14200mA             | 95%        | UL/cUL        |
| L2HCP680S1417ST-XYZ | 277-480Vac          | 680W         | 28-56V         | 5670mA              | 14170mA             | 95%        | UL/cUL        |
| L2HCP680S1000ST-XYZ | 277-480Vac          | 680W         | 38-80V         | 4000mA              | 10000mA             | 95%        | UL/cUL        |
| L2HCP680S571ST-XYZ  | 277-480Vac          | 680W         | 67-140V        | 2290mA              | 5710mA              | 95%        | UL/cUL        |
| L2HCP680S444ST-XYZ  | 277-480Vac          | 680W         | 84-180V        | 1780mA              | 4440mA              | 95%        | UL/cUL        |
| L2HCP680S333ST-XYZ  | 277-480Vac          | 680W         | 115-240V       | 1330mA              | 3330mA              | 95%        | UL/cUL        |
| L2HCP680S267ST-XYZ  | 277-480Vac          | 680W         | 144-300V       | 1070mA              | 2670mA              | 95%        | UL/cUL        |
| L2HCP680S213ST-XYZ  | 277-480Vac          | 680W         | 180-375V       | 850mA               | 2130mA              | 95%        | UL/cUL        |
| L2HCP680S174ST-XYZ  | 277-480Vac          | 680W         | 225-460V       | 700mA               | 1740mA              | 95%        | UL/cUL        |

Add -EU for VDE Cable

### Ordering options

| XY= Programmable                                | Z=Dimming      |
|-------------------------------------------------|----------------|
| FC=Near Field Communication                     | D=DALI Dimming |
|                                                 | B=BLE Dimming  |
| For example L2HCP680SXXXST-XYZ-EU For VDE Cable |                |

## ■ Technical Data

|                     |                              |
|---------------------|------------------------------|
| Input voltage range | 249-528Vac, 277-480Vac(typ.) |
| Frequency           | 47-63Hz                      |

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■ **Technical Data(cont.)**

|                                              |                                                                                                                     |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Output voltage                               | 25-460V                                                                                                             |
| Output power                                 | 680W                                                                                                                |
| Max input current                            | 1.7A @480Vac, 2.8A@277Vac full load condition                                                                       |
| Leakage Current                              | 0.75mA @277Vac/60Hz input grounding effectively                                                                     |
| Inrush Current                               | 65A @277Vac cold start +25°C                                                                                        |
| Power Factor                                 | 0.9@277-480Vac 60%-100% Load                                                                                        |
| Efficiency                                   | 95%                                                                                                                 |
| THD                                          | <20% @277-480Vac 60%-100% Load                                                                                      |
| Output Current Tolerance                     | ±5%lo set @full load condition                                                                                      |
| Output Current Ripple (pk-pk)                | 10%lo max @full load condition, 20 MHz BW                                                                           |
| Startup Overshoot Current                    | 20%lo max @ full load condition                                                                                     |
| No Load Output Voltage                       | 57V                                                                                                                 |
| Line Regulation                              | ±1%                                                                                                                 |
| Load Regulation                              | ±1%                                                                                                                 |
| Turn-on Delay Time                           | 0.8 s(typ.), 1.5 s(max.), Measured at 277Vac input.                                                                 |
| Temperature Coefficient of Isolet            | ±0.03%/°C Case temperature = 0°C ~Tc max                                                                            |
| 12V Auxiliary Output Voltage                 | 11V(min.), 12V(typ.), 15V(max.)                                                                                     |
| 12V Auxiliary Output Source Current          | 0mA-200mA; Return terminal is "Dim--"                                                                               |
| OTP Tc                                       | 85°C(min.), 90°C(typ.), 100°C(max.) Output current will drop to 50%                                                 |
| SCP                                          | Hiccup mode, Auto recover                                                                                           |
| Standby power                                | 1W, Measured at 277Vac/50Hz; Dimming off                                                                            |
| MTBF                                         | 234,000 Hours Measured at 277Vac input, 80% Load and 25°C ambient temperature (MIL-HDBK- 217F)                      |
| Lifetime                                     | 97,000 Hours Measured at 480Vac input, 80%Load and 60°C case temperature; See lifetime vs. Tc curve for the details |
| Operating Case Temperature Tc                | -40°C to 90°C                                                                                                       |
| Operating Ambient Temperature                | -40°C to 50°C                                                                                                       |
| Storage Temperature                          | -40°C to +85°C Humidity: 5%RH to 100%RH                                                                             |
| Dimensions                                   | 306x98.8x 46.1mm, 12.05x3.89x1.81in                                                                                 |
| Net Weight                                   | 2.4kg                                                                                                               |
| Absolute Maximum Voltage on the Vdim (+) Pin | -1V(min.), 15V(max.)                                                                                                |
| Source Current on Vdim (+)Pin                | 90uA(min.), 100uA(typ.), 110uA(max.)                                                                                |
| Dimming Output Range                         | 10%lo set 80%lo max ≤ lo set ≤ 100%lo max<br>8%lo max lo set < 80%lo max                                            |
| Recommended Dimming Input Range              | 0-10 V                                                                                                              |

**■ Technical Data(cont.)**

|                        |                                    |
|------------------------|------------------------------------|
| Dim off Voltage        | 0.3V(min.), 0.5V(typ.), 0.8V(max.) |
| Dim on Voltage         | 0.5V(min.), 0.7V(typ.), 1V(max.)   |
| Hysteresis             | 0.2V                               |
| PWM_in High Level      | 9.8V(min.), 10V(typ.), 10.2V(max.) |
| PWM_in Low Level       | -0.3 V-0.6 V                       |
| PWM_in Frequency Range | 200Hz-3KHz                         |
| PWM_in Duty Cycle      | 1%-100%                            |
| PWM Dimming off        | 3%(min.), 5%(typ.), 7%(max.)       |
| PWM Dimming on         | 5%(min.), 7%(typ.), 9%(max.)       |

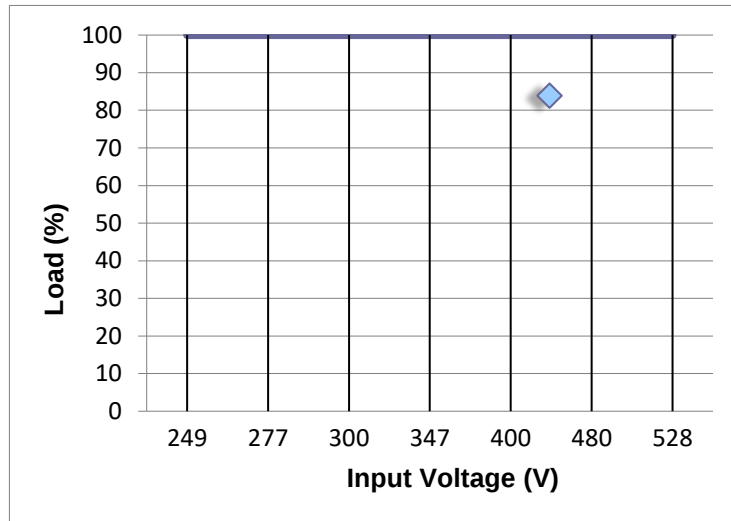
**■ Safety Compliance**

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety Standards | UL/CUL UL8750, CAN/CSA-C22.2 No. 250.13-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| EMI Standards    | FCC Part 15 ANSI C63.4:2009 Class B<br>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired Operation.                                                                                                                                                                                                                                                |
| EMS Standards    | EN 61000-4-2 Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge<br>EN 61000-4-3 Radio-Frequency Electromagnetic Field Susceptibility Test-RS<br>EN 61000-4-4 Electrical Fast Transient / Burst-EFT: level 3, criteria A<br>EN 61000-4-5 Surge Immunity Test: AC Power Line: line to line 4 kV, line to earth 6 kV<br>EN 61000-4-6 Conducted Radio Frequency Disturbances Test-CS<br>EN 61000-4-8 Power Frequency Magnetic Field Test<br>EN 61000-4-11 Voltage Dips<br>EN 61547 Electromagnetic Immunity Requirements Applies To Lighting Equipment |

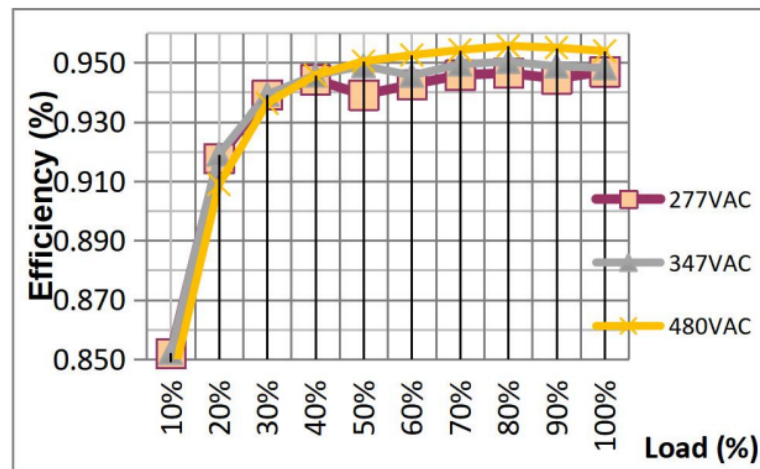
**Disclaimer:**

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.

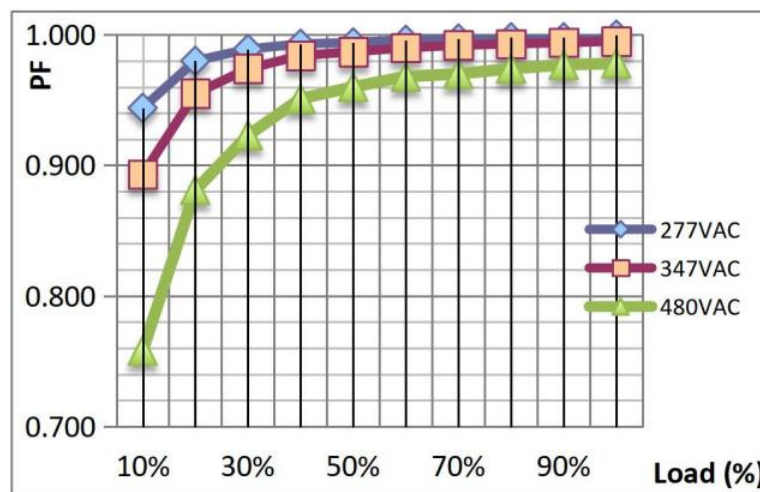
■ **Input Voltage Derating Curve**



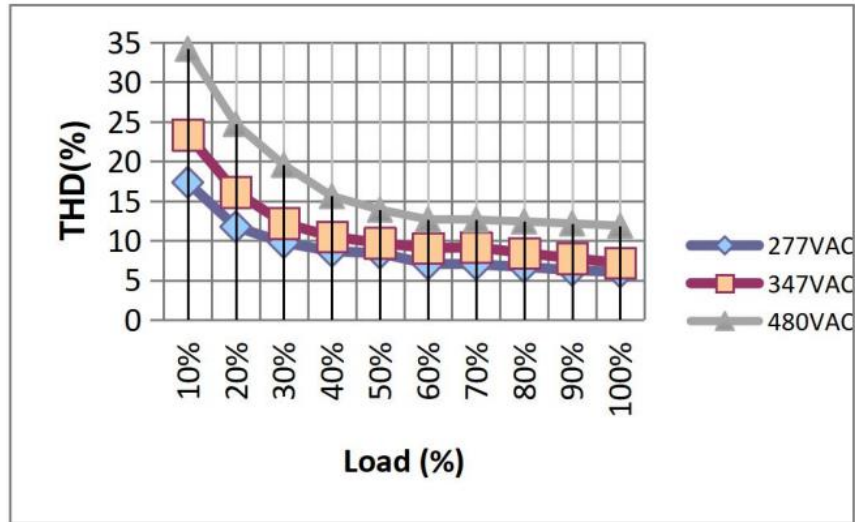
■ **Efficiency vs Output**



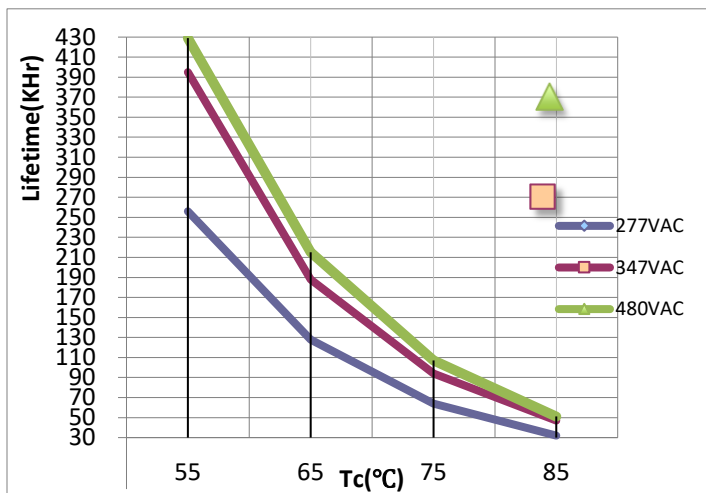
■ **Power Factor vs Output**



■ **THD vs Output**

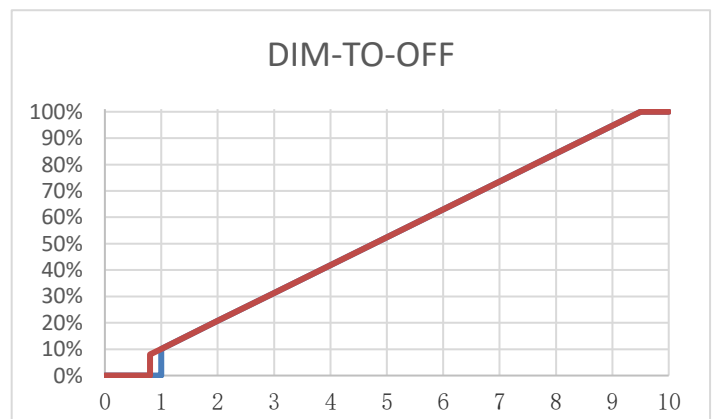
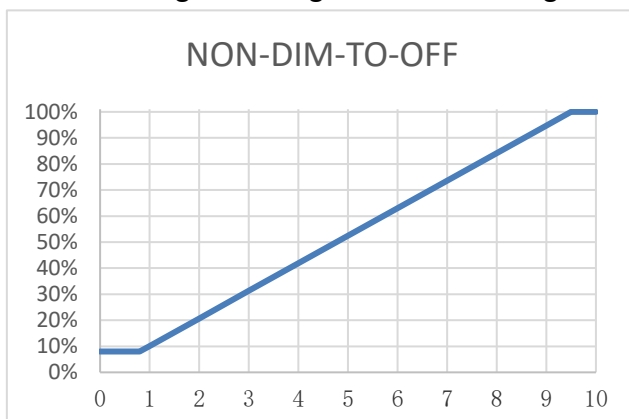


■ **Lifetime vs Case Temp.**



■ **Dimming**

**0-10V Analog Dimming & PWM Dimming**



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|                           |           |
|---------------------------|-----------|
| GND                       | Grey      |
| Dimming wire<br>0-10V&PWM | Purple    |
| 12V AUX                   | Yellow    |
| Input Dimming Voltage     | 0-10V     |
| DIM+ Source Current       | 0.5mA     |
| PWM Frequency Range       | 0.4-10KHZ |
| PWM high level            | >2.3V     |
| PWM low level             | <0.8V     |
| 12V Aux output voltage    | 10-15V    |
| 12V AUX Source Current    | 400mA     |

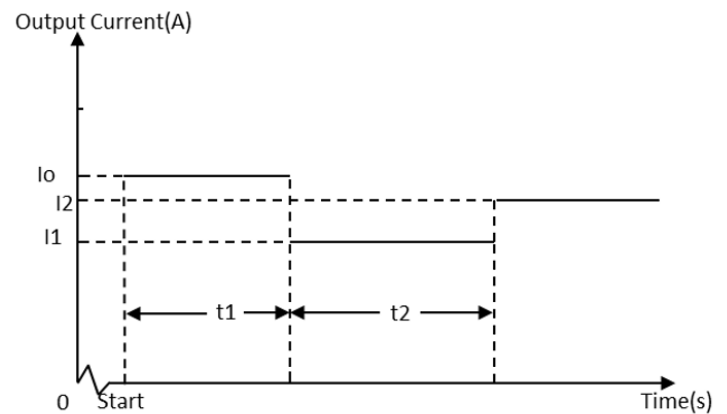
**NOTE:**

1.  $I_o$  is actual output current and  $I_r$  is rated current without dimming control.
2. For the driver to operate properly, the load voltage must be in the working voltage range.
3. We have DIM-TO-OFF option, which can be programmed by the programmer.
4. Maximum input voltage for the dimming wire is 12V.
5. AUX wire is only for source, can't connect to other voltage source

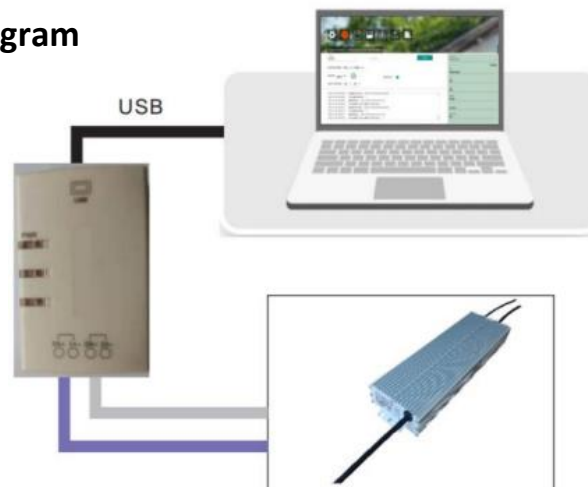
## ■ TIMER Dimming

**NOTE:**

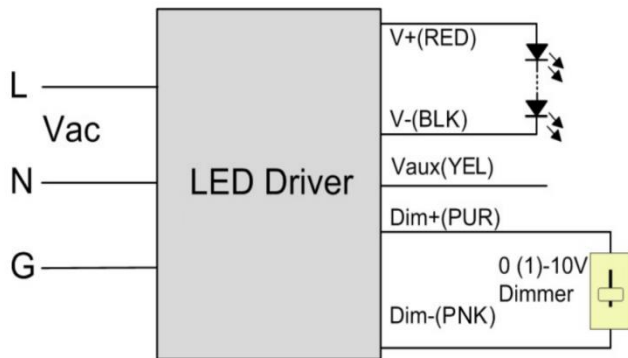
1. The dimming time can be programmed by the programmer.
2. The time of  $t_1$  and  $t_2$  can be set by the programmer.(0.5h step)
3. The value of  $I_1$  and  $I_2$  can be set by the programmer.
4. Changing the current from  $I_1$  to  $I_2$  may take a few min.



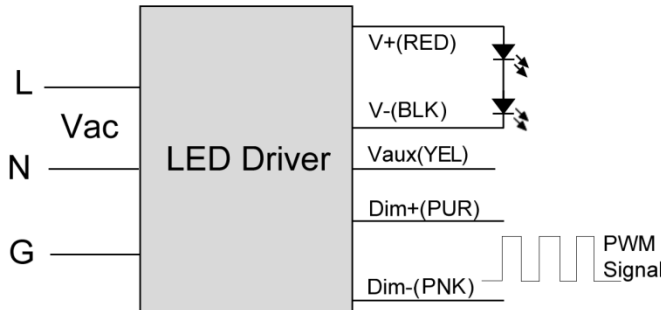
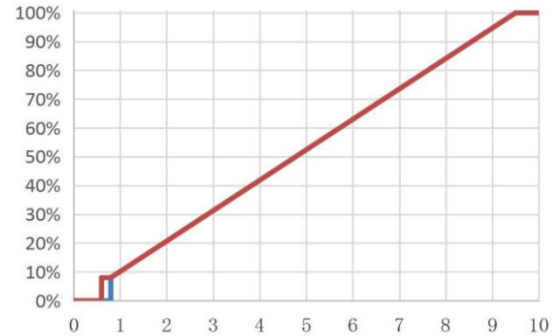
## ■ Programming Wiring Diagram



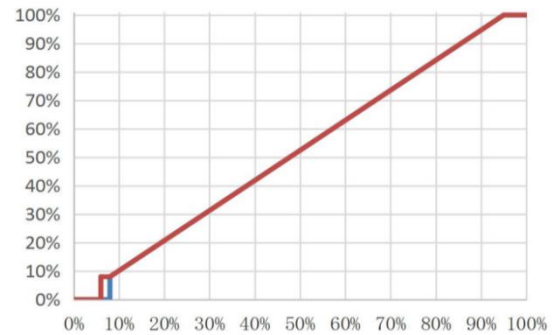
## ■ Wiring Diagram



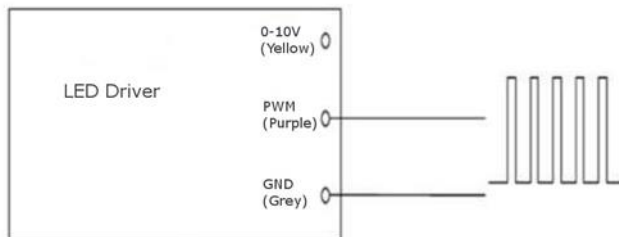
0-10V



PWM



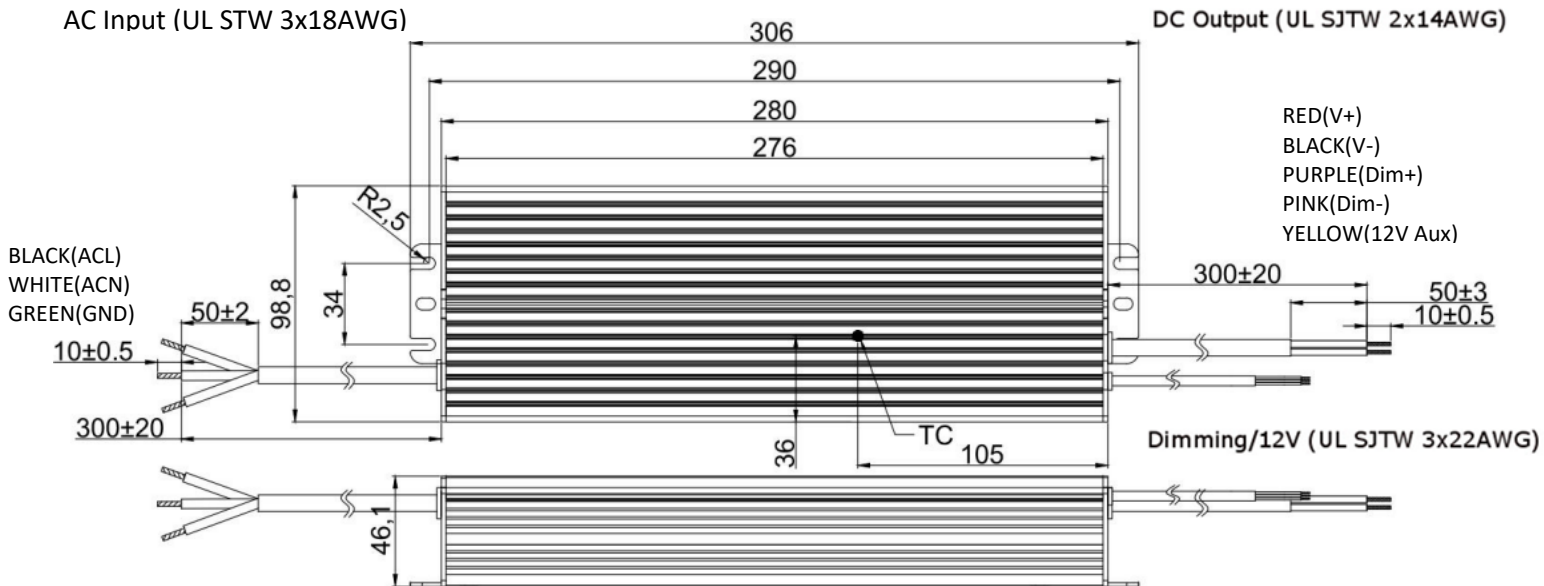
## ■ PWM Dimming Graph



**Io/Ir vs PWM Duty**



■ **Mechanical Design**



**Part Number Scheme**

**L2 H C P 680 S XXXX S T -XYZ**

L2=LED Driver Series

H=Input Voltage 277-480Vac

C=Constant Power

P=Programmable

680=Output Power(Watts)

S=Single Output

-XYZ=Programming and dimming options.  
\*See ordering options table on page 1.

T=Class I, 3 Wire In

S=Metal case

XXXX=Rated Current  
Ex.) 1420=14200mA  
174=1740mA

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

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

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