

## ■ Description

- √ Constant Current LED Driver
- √ Wide Input Voltage:90~305Vac
- √ High Efficiency up to 88.5%
- √ 0-10v Dimming
- √ APFC (Active Power Factor Correction): 0.99Typical
- √ All-Around Protection: OVP/OTP/SHORT
- √ Lightning Protection
- √ Waterproof: IP67
- √ 100% Full Load Aging Test for 4 Hours @Ta=45°C
- √ Safety Design Compliant to UL8750/IEC61347
- √ Thermal Optimized Aluminum Case with Potting



## ■ Application

**Outdoor Applications: Street Light, Tunnel Light, Landscape Light, Garden Light and others**

**Indoor Applications: Bay Light, Explosion-proof Light and others**

## ■ Model Selection

| Model Number    | Input Voltage Range | Output Power | Output Voltage Range | Output Current | Typical Eff. | Certification  |
|-----------------|---------------------|--------------|----------------------|----------------|--------------|----------------|
| LZWCD052S035SC  | 90 ~ 305Vac         | 52W          | 89-149Vdc            | 350mA          | 88.5 %       | CE CCC CB ENEC |
| LZWCD052S035ST  | 90 ~ 305Vac         | 52W          | 89-149Vdc            | 350mA          | 88.5%        | CE FCC UL      |
| LZWCD052S070SC  | 90 ~ 305Vac         | 51.8W        | 44-74Vdc             | 700mA          | 88%          | CE CCC CB ENEC |
| LZWCD052S070ST  | 90 ~ 305Vac         | 51.8W        | 44-74Vdc             | 700mA          | 88%          | CE FCC UL      |
| LZWCD052S0105SC | 90 ~ 305Vac         | 52.5W        | 30-50Vdc             | 1050mA         | 88%          | CE CCC CB ENEC |
| LZWCD052S105ST  | 90 ~ 305Vac         | 52.5W        | 30-50Vdc             | 1050mA         | 88%          | CE FCC UL      |
| LZWCD052S140SC  | 90 ~ 305Vac         | 51.8W        | 22-37Vdc             | 1400mA         | 87%          | CE CCC CB ENEC |
| LZWCD052S140ST  | 90 ~ 305Vac         | 51.8W        | 22-37Vdc             | 1400mA         | 87%          | CE FCC UL      |

**Note: XX=ND means non-dimming model; XX=DM means 0-10V dimmable**

## ■ Specifications

| Items                   |                               | Specification  |                 |
|-------------------------|-------------------------------|--|-----------------|
| Input                   | Input Voltage                 | 90~305Vac  |                 |
|                         | Input Frequency               | 47~63Hz  |                 |
|                         | Power Factor                  | >0.9@80-100%load, refer to PF vs. Load curve.  |                 |
|                         | THD                           | <15%@80-100%load, refer to THD vs. Load curve.   |                 |
|                         | Input Current                 | 0.65Amax@100Vac& full load; 0.3Amax@230Vac& full load  |                 |
|                         | Inrush Current                | 65A peak, 1.2ms duration@230Vac 25°C<br>70A peak, 1.3ms duration@277Vac 25°C<br><5.0A <sup>2</sup> s@230Vac, 25°C Cold Start |                 |
|                         | Leakage Current               | 1mAmax @277Vac 60Hz, UL8750<br>0.75mAmax @240Vac 50Hz, IEC61347-1  |                 |
| Output                  | Current Accuracy              | ±5%lo  |                 |
|                         | Ripple Current <sup>[2]</sup> | 50%lo, peak to peak value  |                 |
|                         | Setup Time                    | 1.5s max   |                 |
|                         | Output Overshoot              | 10%lo  |                 |
| Protection              | Output Over Voltage           | 120%Vomax  |                 |
|                         | Input Under Voltage           | Shut Down When Vmains ≤ 85 ± 5Vac; Auto Recovery When Vmains ≥ 90 ± 5Vac   |                 |
|                         | Over Temperature              | Decrease output current until over temperature state is removed  |                 |
|                         | Short Circuit                 | Auto recovery. The output recovers when short is removed.  |                 |
| Environmental Condition | Operating Temperature         | -40°C ~ +70°C; 10%RH ~ 100%RH(See Derating Curve for more details <sup>[3]</sup> )   |                 |
|                         | Storage Temperature           | -40°C ~ +85°C; 5%RH ~ 100%RH   |                 |
| Others                  | MTBF                          | ≥320,000 hours, measured at 230Vac input, 80% load and 25 °C ambient temperature(MIL-HDBK-217F)                              |                 |
|                         | Lifetime                      | ≥50,000 hours, measured at 230Vac input, 80% load and 75 °C Case temperature <sup>[4]</sup>                                  |                 |
|                         | Case Temperature              | 90°C max <sup>[5]</sup>  |                 |
|                         | Dimensions                    | Inch(L x W x H)  | 7.59x1.67x1.34  |
|                         |                               | Millimeter(L x W x H)  | 172.0x42.5x34.0 |
| Net Weight              |                               | 480g   |                 |

Notes:

[1] Unless specified, all the test results are measured in the 25DegC room temperature.

[2] The result differs according to different LED load characteristic.

[3] Please confirm working conditions according to the derating curve of output power vs. input voltage and temperature. Beyond the safety work condition will not be recommended.

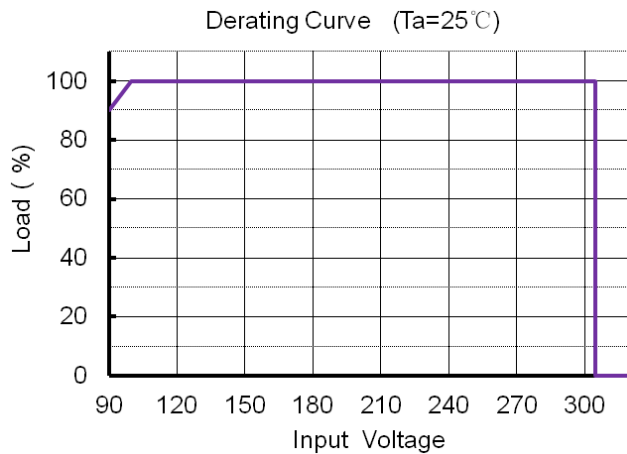
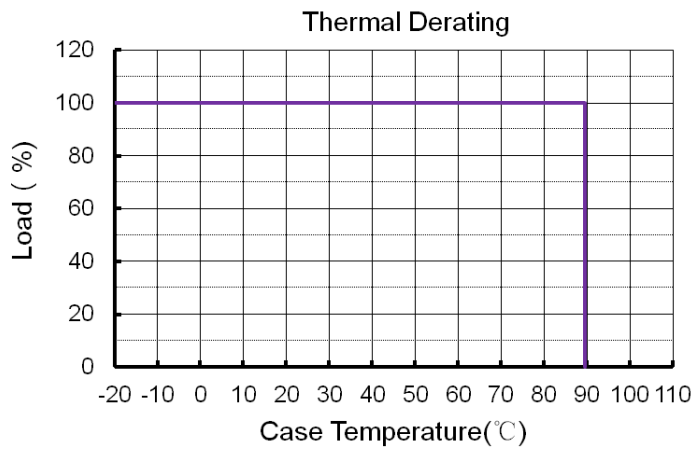
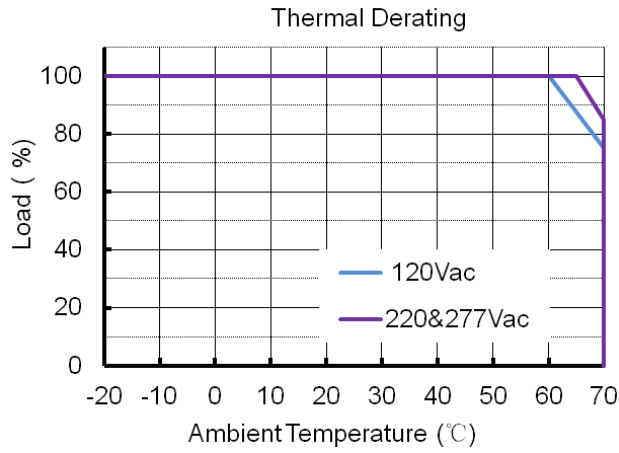
[4] refer to Lifetime vs. Tc curve .

[5] Tc point is marked on the product label. The label is also listed in the specification for approval.

## ■ Safety & EMC Compliance

| Safety Category | Standard  |
|-----------------|---|
| UL8750          | Light Emitting Diode(LED) Equipment for Use in Lighting Products  |
| UL1012          | Power Unit Other Than Class 2   |
| UL1310          | Class 2 Power Units   |
| IEC 61347-1     | Lamp Controlgear Part 1: General and Safety Requirements  |
| IEC 61347-2-13  | Lamp Controlgear Part 2-13: Particular Requirement for d.c. or a.c. Supplied Electronic Controlgear for LED Modules |
| EMI Standards   | Notes   |
| IEC 55015       | Conducted emission test & Radiated emission test  |
| IEC 61000-3-2   | Harmonic current emissions; Class C ( $\geq 75\%$ load)   |
| IEC 61000-3-3   | Voltage fluctuations & flicker  |
| FCC Part 15     | Class B   |
| IEC 61000-4-2   | Electrostatic discharge (ESD)   |
| EMS Standards   | Notes   |
| 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 L-N:2kV; LN-PE:4kV  |
| 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   |

■ **Derating Curve (Typical)**

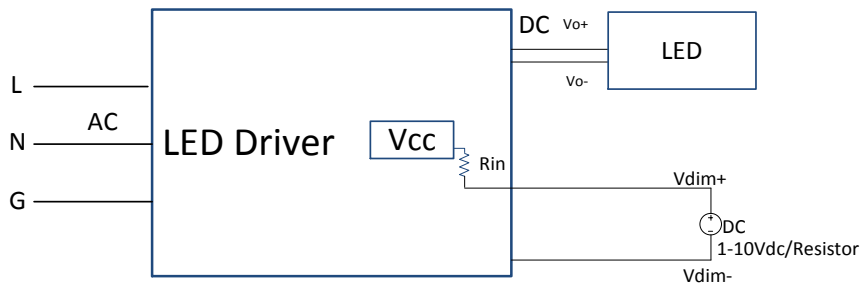


## ■ Dimming Section

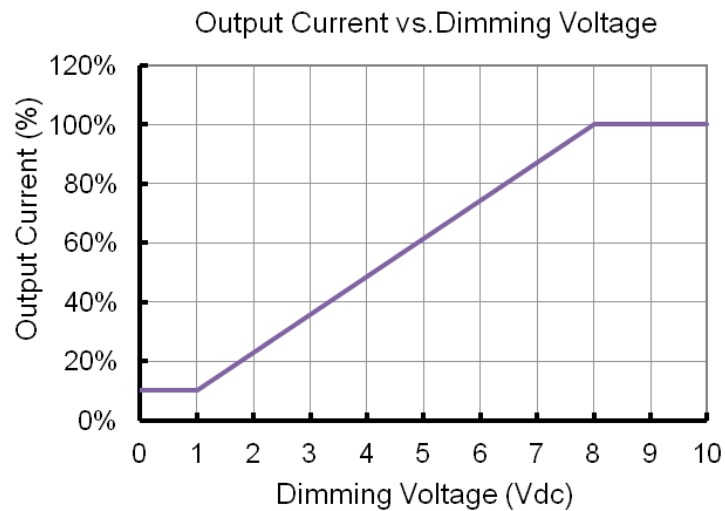
| Parameter   | Min. | Typ.    | Max. | Notes |
|---|------|---------|------|-------|
| Vcc   | -    | 12.5V   | -    |       |
| Rin   | -    | 51 kOhm | -    |       |
| Absolute maximum voltage range on the 0-10V input pin | -20V | -       | 20 V |       |
| Dimming range   | 10%  | -       | 100% |       |

The dimmer control is operated from an input signal of 0 – 10Vdc. Recommended implementations are provided below.

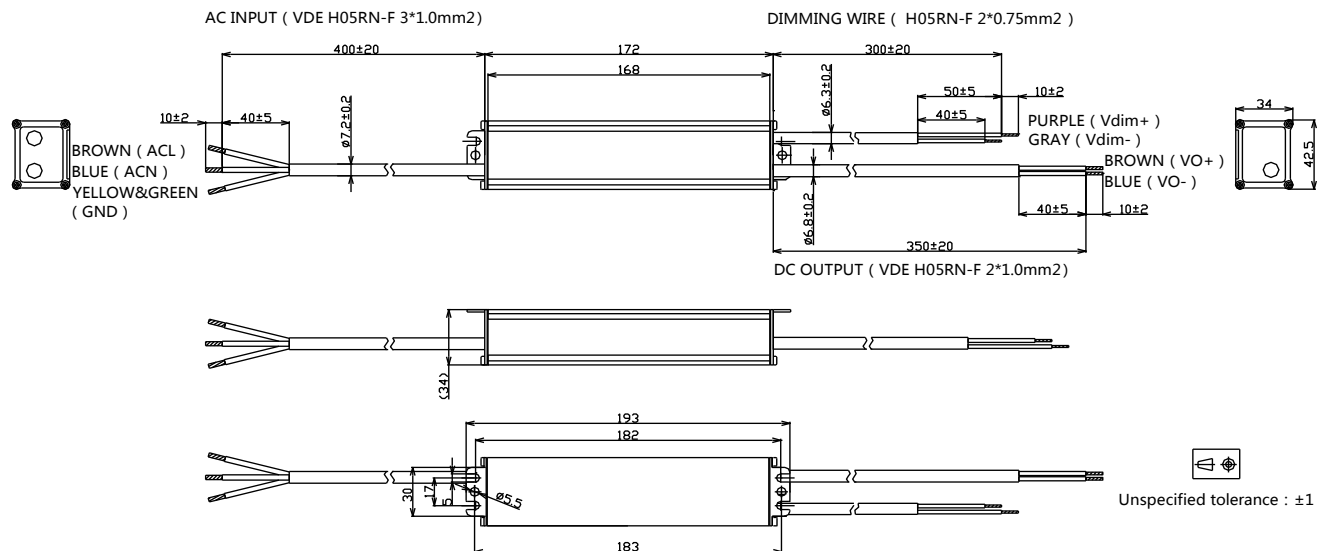
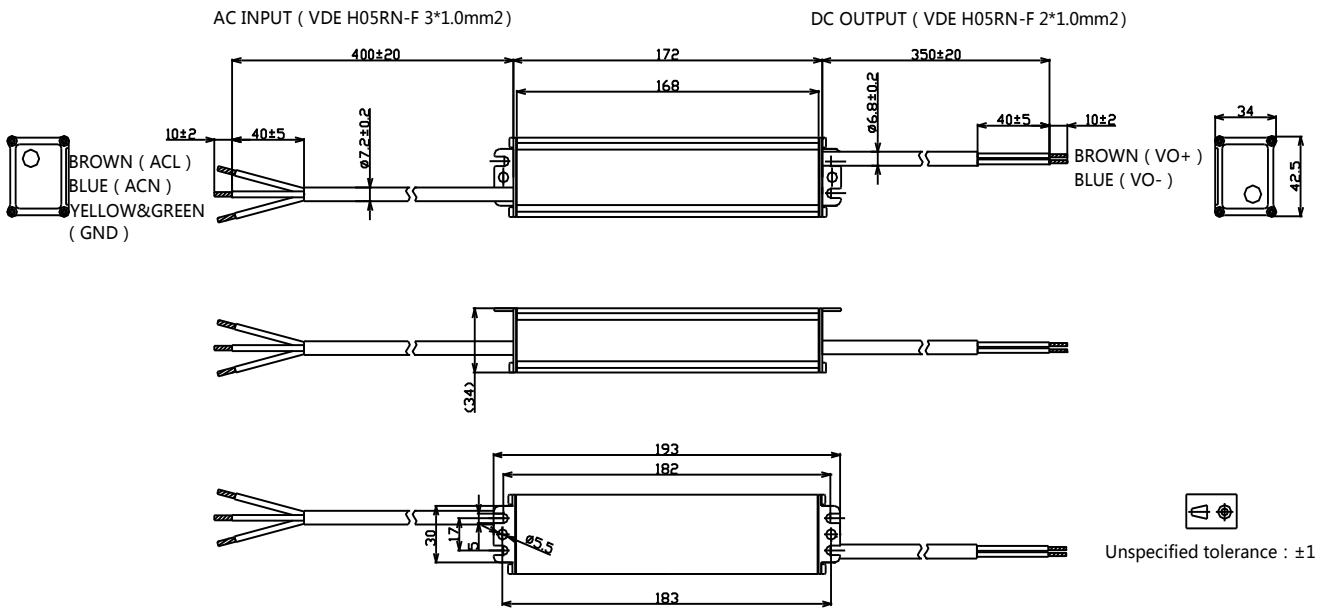
## Diagram



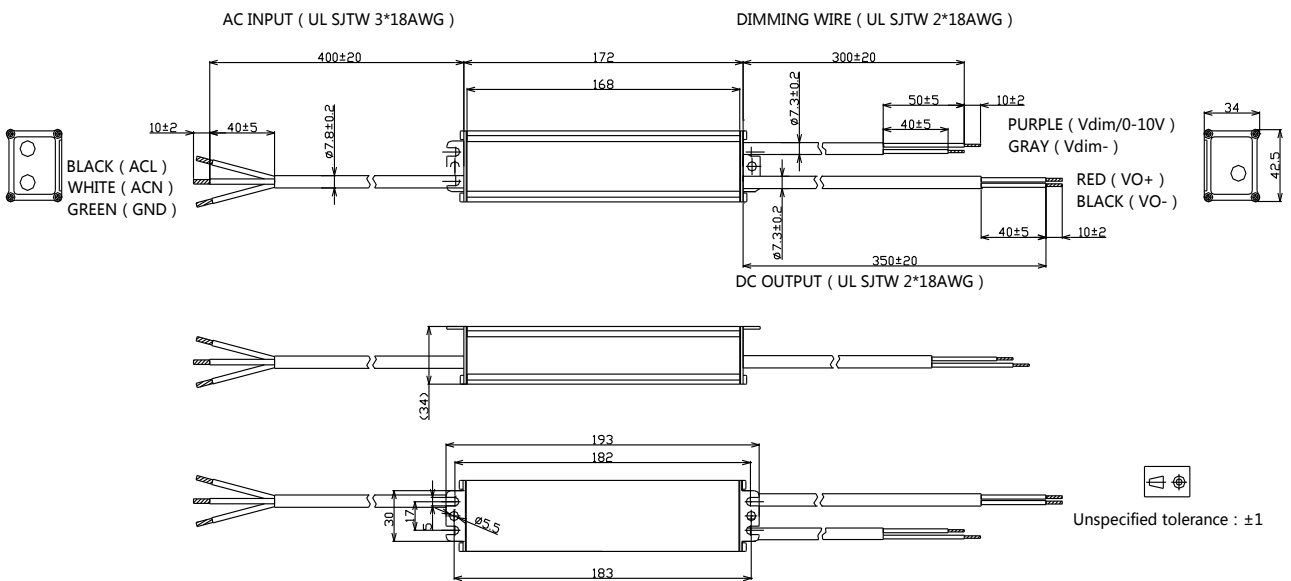
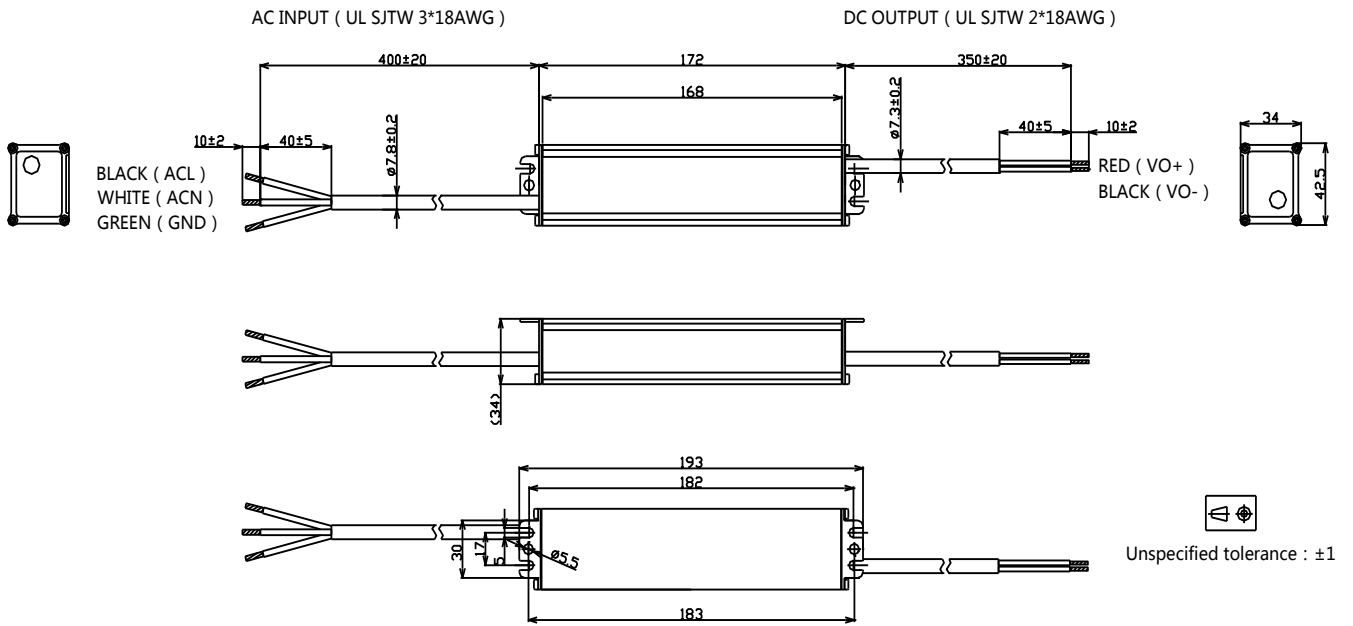
## Dimming Curve



## ■ Mechanical Outline (Unit: mm)



Note: Please make sure the output cable does not connect to dimming cable or the cables of other drivers until 20 seconds after being tested because of the remained voltage in the output capacitor.



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