

50W Constant Current LED Driver LEDWC-050 series

FEATURES

- High Efficiency (Up to 89%)
- Active Power Factor Correction (Typical 0.92)
- Constant Output Current
- Lightning Protection
- Waterproof (IP67)
- Dimming Control
- All-Round Protection: OVP, SCP, OLP
- UL8750 & EN61347 Safety Regulations

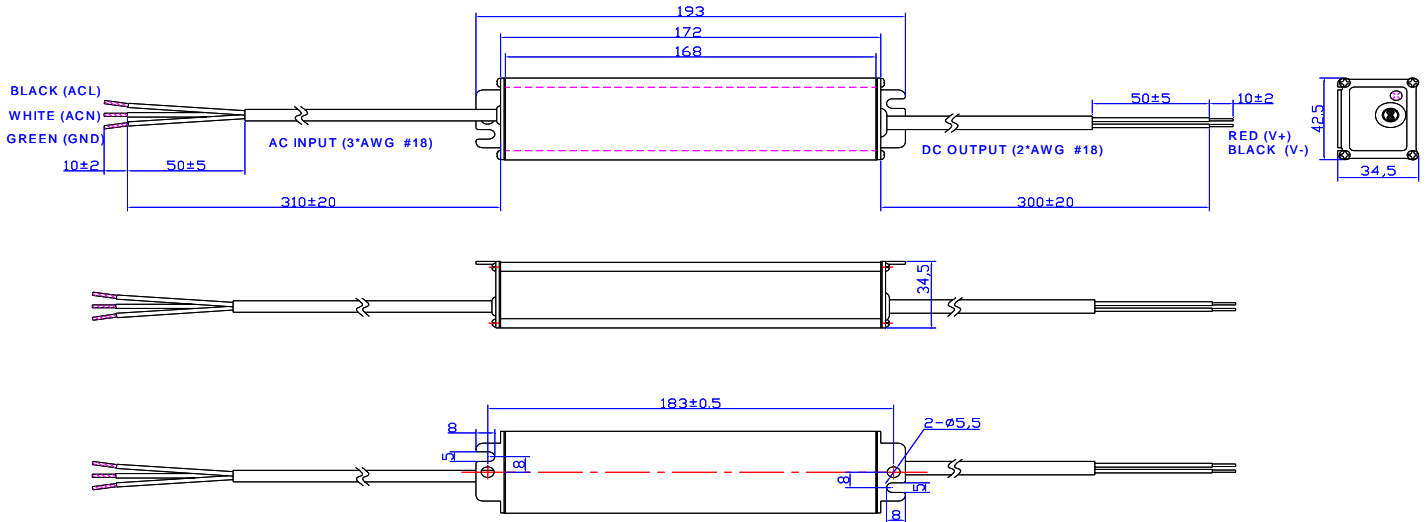


SPECIFICATION

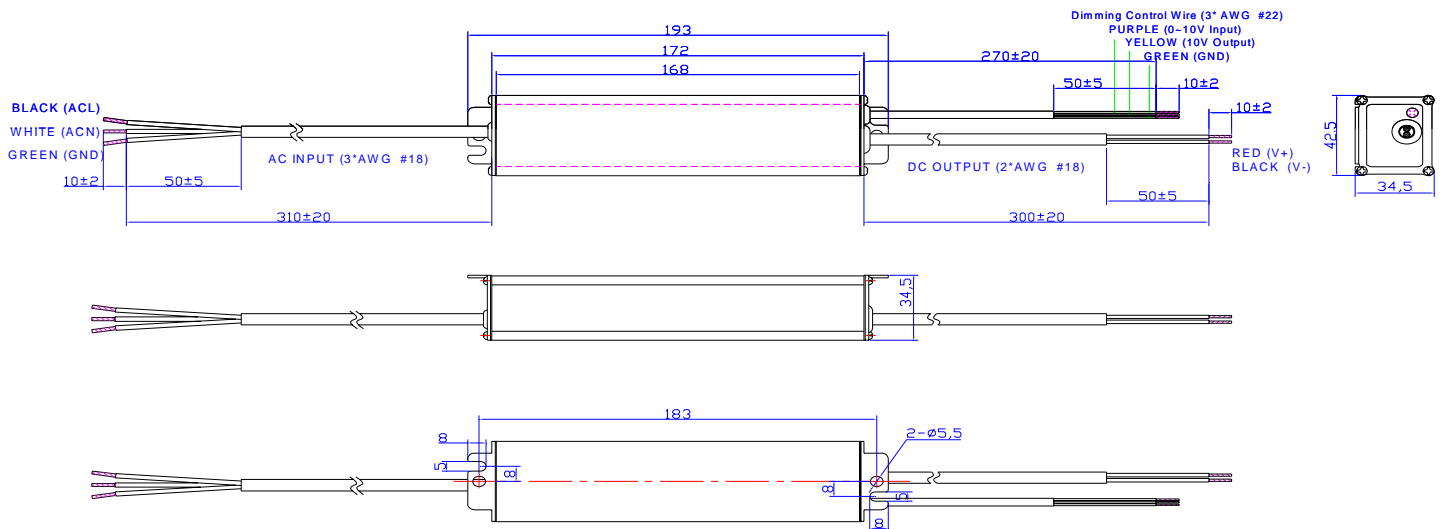
| Model | | LEDWC() 050S420ST (7) | LEDWC() 050S333ST (7) | LEDWC() 050S280ST (7) | LEDWC() 050S210ST (7) | LEDWC() 050S175ST (7) | LEDWC() 050S140ST (7) | LEDWC() 050S110ST (8) | LEDWC() 050S070ST (9) | LEDWC() 050S045ST (9) | LEDWC() 050S035ST (9) | |
|-------------------------|-----------------------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----|
| Output | Rated Current | 4200 mA | 3300 mA | 2800 mA | 2100 mA | 1750 mA | 1400 mA | 1100 mA | 700 mA | 450 mA | 350 mA | |
| | Current Range (Min - Max) mA | 3990 - 4410 | 3164 - 3497 | 2660 - 2940 | 1995 - 2205 | 1663 - 1838 | 1330 - 1470 | 998 - 1155 | 665 - 735 | 428 - 473 | 333 - 368 | |
| | Rated Power | 50W | 50W | 50W | 50W | 50W | 50W | 50W | 50W | 50W | 50W | |
| | Ripple & Noise (max.) (2) | 5V | 5V | 5V | 5V | 5V | 5V | 5V | 5V | 7V | 11V | 14V |
| | Max. Voltage | 12 Vdc | 15 Vdc | 18 Vdc | 24 Vdc | 29 Vdc | 36 Vdc | 48 Vdc | 72 Vdc | 110 Vdc | 142 Vdc | |
| | Voltage Range (Min - Max) | 4V -12V | 5V - 15V | 6V - 18V | 8V - 24V | 9V - 29V | 12V - 36V | 16V - 48V | 24V - 72V | 36V - 110V | 47V - 142V | |
| | No Load Output Voltage | 17 V | 20 V | 24 V | 30 V | 35 V | 41 V | 53 V | 77 V | 122 V | 154 V | |
| | Line Regulation | 2% | | | | | | | | | | |
| Load Regulation | 5% | | | | | | | | | | | |
| Setup, Rise Time (Typ.) | 2.5S (110 VAC) and 1.5S (220 VAC) | | | | | | | | | | | |
| Input | Voltage Range | 90V ~ 305VAC | | | | | | | | | | |
| | Frequency Range | 47Hz / 63Hz | | | | | | | | | | |
| | Power Factor Correction | 98% @ 110 VAC 92% @ 220 VAC | | | | | | | | | | |
| | Efficiency (Typ.) (1) | 83% | 83% | 84% | 85% | 86% | 87% | 87% | 88% | 88% | 88% | |
| | Inrush Current | 60A @ 230VAC Input and 25°C | | | | | | | | | | |
| | Leakage current | Max. 0.5 mA At 277Vac 50Hz input | | | | | | | | | | |
| AC Current (Typ.) | 0.7 A / 100VAC 0.35A / 220VAC | | | | | | | | | | | |
| Protections | Short Circuit Protection | Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | | | | | | | |
| | Over Load Protection | 1.25 V max Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | | | | | | | |
| | Over Voltage (Typ.) | 16V | 20V | 24V | 32V | 38V | 47V | 63V | 94V | 143V | 185V | |
| Environmental | Temperature Range | Operational | - 35°C ~ 55°C | | | | | | | | | |
| | | Storage | - 40 ~ +85°C | | | | | | | | | |
| | Humidity | Operational | 10 ~ 100% RH | | | | | | | | | |
| | | Storage | 5 ~ 100% R.H | | | | | | | | | |
| Safety & EMC | Safety Standards | UL8750 Compliance to UL1310 Class2 UL1012 UL935, CAN/CSA-C22.2 No. 0, CSA-C22.2 No. 107.1, CSA-C22.2 No. 250.0 | | | | | | | | | | |
| | No load Power Dissipation | ≤6.0W | | | | | | | | | | |
| | EMI Conduction & Radiation | EN55015 with 6db margin | | | | | | | | | | |
| | Harmonic Current | EN61000-3-2 , EN61000-3-3 | | | | | | | | | | |
| | EMS Immunity | EN61000-4-2, EN61000-4-3, EN61000-4-4, EN 61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN 61547 | | | | | | | | | | |
| Others | MTBF (3) | 487K HRS Compliance: MIL-HDBK-217F @ 25°C ambient temp. | | | | | | | | | | |
| | Life Time (4) | 66,000 hours @ 25°C ambient temp. | | | | | | | | | | |
| | Dimension (L*W*H) | 172*34.5*42.5 (mm) - 6.77*1.36*1.67 (inch) | | | | | | | | | | |
| | Weight | 480 g - 1.06Lb | | | | | | | | | | |

Mechanical Specification

LEDWC-050SXXXST



LEDWCD050SXXXST



Efficiency

| Model | LEDWC() 050S420ST | LEDWC() 050S333ST | LEDWC() 050S280ST | LEDWC() 050S210ST | LEDWC() 050S175ST | LEDWC() 050S140ST | LEDWC() 050S110ST | LEDWC() 050S070ST | LEDWC() 050S045ST | LEDWC() 050S035ST |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Efficiency @ Full Load and 115VAC (min) | 79.0% | 80.0% | 81.0% | 83.0% | 84.0% | 85.0% | 85.0% | 85.0% | 86.0% | 87.0% |
| Efficiency @ Full Load and 115VAC (typ) | 80.0% | 81.0% | 82.0% | 84.0% | 85.0% | 86.0% | 86.0% | 86.0% | 87.0% | 88.0% |
| Efficiency @ Full Load and 230VAC (min) | 82.0% | 83.0% | 83.0% | 85.0% | 86.0% | 86.0% | 86.0% | 86.0% | 87.0% | 88.0% |
| Efficiency @ Full Load and 230VAC (typ) | 83.0% | 84.0% | 84.0% | 86.0% | 87.0% | 87.0% | 87.0% | 87.0% | 88.0% | 89.0% |

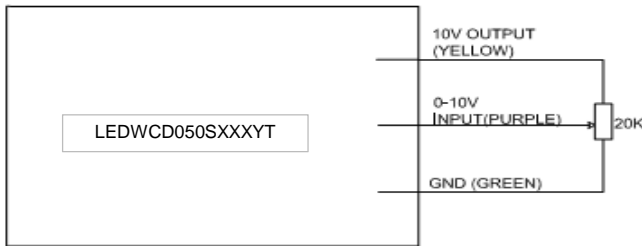
NOTES:

1. Measured at full load, 220VAC input.
2. Ripple & noise are measured at 20MHz of bandwidth oscilloscope and the output paralleled a 0.1uf ceramic capacitor & 10 uf electrolytic capacitor.
3. For 4200mA output model, measured at 110VAC input, 80%load and 25°C of ambient temperature.
4. For 4200mA output model, measured at 110VAC input, 80%load and 45°C of ambient temperature.
5. All parameters NOT specially mentioned are measured at 220VAC input, rated load and 25°C of ambient temperature.
6. A suffix -XXXX may be added to denote variation or modifications to the base product, were X can be any alphanumeric character or blank
7. Class 2 output (USR & CNR).
8. Class 2 output (USR), Non-Class 2 output (CNR).
9. None Class 2 output (USR & CNR).
10. Specifications are subject to change without notice. AUTEK can't be held liable for errors or omissions or the consequences thereof.

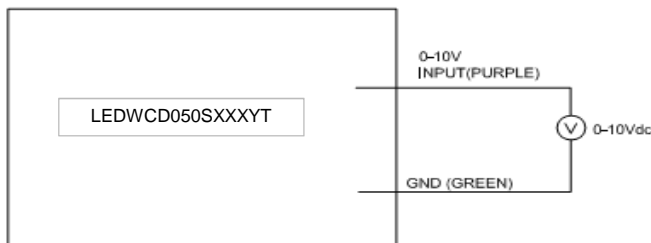
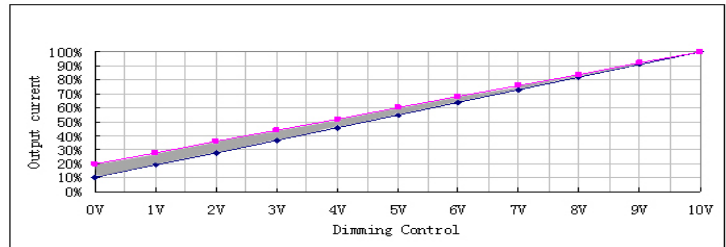
Dimming Control (On secondary side)

| Parameter | Min. | Typ. | Max. |
|---------------------------------------|--------|------|-------|
| 10V output voltage | 9.8V | 10V | 10.2V |
| 10V output source current | -10 mA | - | 2 mA |
| Absolute maximum voltage on the 0-10V | -2V | - | 15V |
| Source current on 0-10V input pin | 0 mA | - | 1 mA |

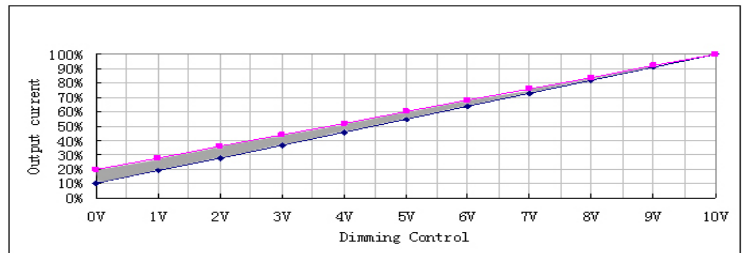
The dimmer control may be operated from either a potentiometer or from an input signal of 0 – 10 Vdc. Two recommended implementations are provided below.



Implementation 1: Potentiometer control

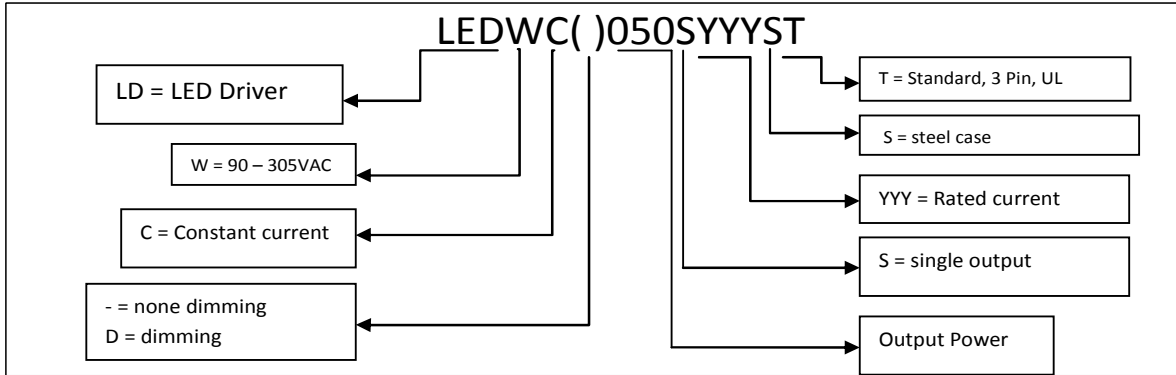


Implementation 2: DC input



Notes:
 For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 33% of the max. output voltage for any given model).
 If the Dimming voltage is varied from 10V down to 0V, the output current can be varied from 100%Io down to 10%~20%Io.

Part Number Scheme



Derating Curve

