

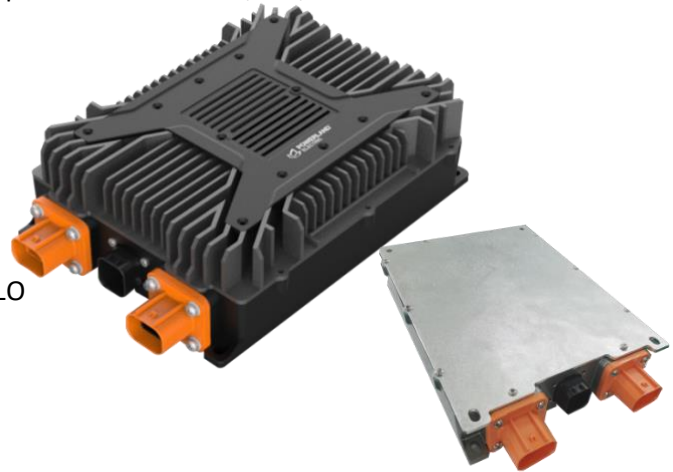
# 3300 Watt Electric Vehicle Li-Ion Charger Data Sheet

## Description:

Green Watt/Powerland's 3.3kW Li-ion battery chargers are designed with ultra-high power density and a metal case enclosure. The excellent power efficiency and thermal management provide the on-board standard chargers high reliability and long lifetime. This series of chargers offer solid and safe power conversion for applications such as e-vehicles, e-bus, e-boat, etc. Options include J1772, fan, and no-fan versions.

## Features:

- Universal AC Input: 85~264Vac
- Output Power: 3.3kW
- High Reliability On-Board Design
- Compatible with Liquid Cooling and Air Cooling
- High Efficiency: Up to 95%
- All-Around Protections: OVP, OCP, SCP, OTP, UVLO
- Low Temperature Start Up @ -40°C
- High Temperature Full Load Operation @ 60°C
- IP67 Ingress Grade
- Communication via CAN Bus
- J1772 option



| Model Number                                    | J1772 | Cooling      | Output Power | Output Voltage | Output Current | Output Current Range |
|---|-------|--------------|--------------|----------------|----------------|----------------------|
| EVC-420-3300-FC<br>(PLD3300-EVCS03-420F)*       | No    | Fan included | 3300W        | 200-420V       | 10A            | 0-10A                |
| EVC-420-3300-L<br>(PLD3300-EVCS03-420L)*        | No    | No Fan       | 3300W        | 200-420V       | 10A            | 0-10A                |
| EVC-420-3300-J1772-FC<br>(PLD3300-EVCS02-420F)* | Yes   | Fan included | 3300W        | 200-420V       | 10A            | 0-10A                |
| EVC-420-3300-J1772-L<br>(PLD3300-EVCS02-420L)*  | Yes   | No Fan       | 3300W        | 200-420V       | 10A            | 0-10A                |

| Input/Output Specifications |                                   |
|-----------------------------|-----------------------------------|
| Input Voltage               | 85-264v                           |
| Input Frequency             | 45-65Hz                           |
| Max. Input Current          | 16A                               |
| Max. Input Power            | 3680W                             |
| Output Voltage              | 200-420V                          |
| Output Current              | 10A                               |
| Current Accuracy            | ±0.3A                             |
| Voltage Accuracy            | ±0.5%                             |
| Output Power                | 3300W                             |
| Efficiency (Up to)          | 95%                               |
| Power Factor (Typical)      | 0.99 (low line); 0.98 (high line) |
| Ingress Protection          | IP67 for enclosure (without fan)  |

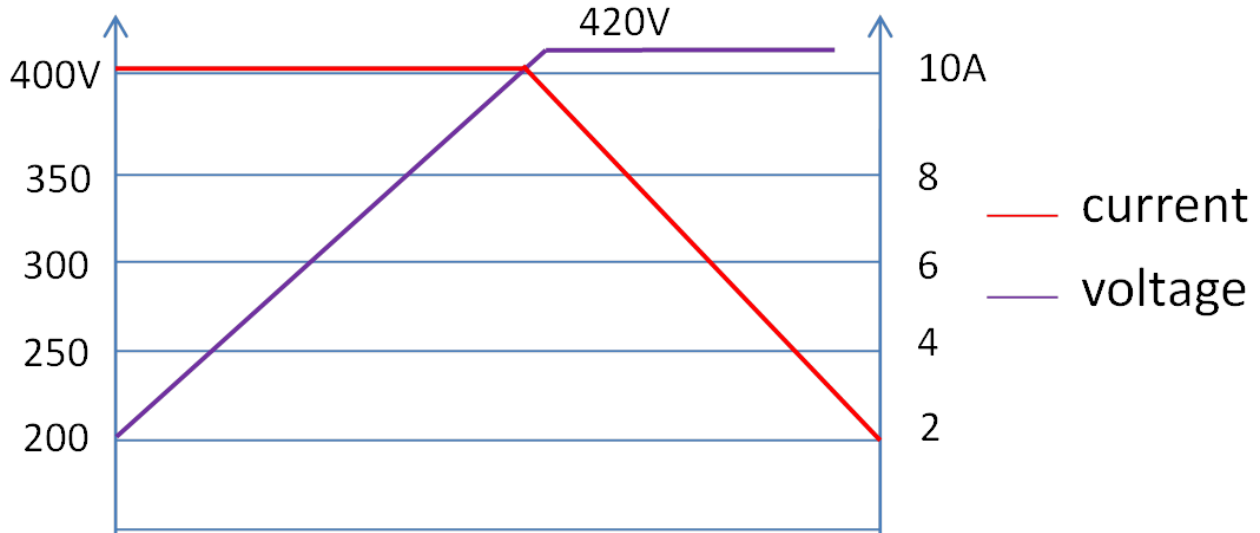
NOTE: Model #'s in parenthesis are factory part numbers

| <b>General Specifications</b>                           |  |     |    |
|---|--|-----|----|
| Short Circuit Protection                                | When output is shorted, power supply will enter hiccup mode, and shall be self-recovery when the fault condition is removed.   |     |    |
| Over Voltage Protection                                 | Over voltage protection shall be triggered if the output voltage goes beyond 440±4V. The PSU shall return to normal operation after the fault condition is removed.  |     |    |
| Over Temperature Protection                             | The power supply shall go into thermal protection as the case temperature over 85±5°C. When the charger enters overheating protection condition, no components should be damaged. The charger shall enter into auto-recovery mode during over temperature protection, and return to normal operation after the fault condition is removed. |     |    |
| Anti-Reverse Polarity Protection                        | When the battery polarity is reversely connected to the charger, the charger will not output.  |     |    |
| Under Voltage Protection                                | Under voltage protection will activate when output voltage goes to 190±4V.   |     |    |
| Communication Fault Protection                          | When there is communication fault between charger and BMS, the charger will not output.  |     |    |
| MTBF: 25°C, 230Vac input, and full load output.         | ≥ 100,000 Hours  |     |    |
| Product Life: 25°C, 230Vac input, and full load output. | ≥ 50,000 Hours   |     |    |
| Temperature – Operating (with power derating)           | MIN  | -40 | °C |
|   | MAX  | +60 |    |
| Temperature - Storage                                   | MIN  | -40 | °C |
|   | MAX  | +85 |    |
| Relative Humidity                                       | 10% to 90%RH (no condensing)   |     |    |
| Case Size   | 250 x 186 x 72 (fan)<br>250 x 186 x 44 (no-fan)  |     |    |
| Unit Weight   | 5.6kg  |     |    |

| <b>Electromagnetic Compatibility EMI/EMC</b> |  |
|--|--|
| <b>EMI, RFI</b>                              | Comply with EN55002 Class B, shall have a minimum of 3dB margin.       |
| <b>Immunity (Designed to meet):</b>          |  |
| EN61000-3-2                                  | Harmonic Current Emission  |
| EN61000-3-3                                  | Voltage Fluctuations and Flicker                                       |
| EN61000-4-2                                  | ESD 8kV Air Discharge, 4kV Contact Discharge                           |
| EN61000-4-3                                  | Radio-Frequency Electromagnetic Field Susceptibility Test-Rs           |
| EN61000-4-4                                  | Electrical Fast Transient/Burst – EFD                                  |
| EN61000-4-5                                  | Surge Immunity Test, AC power line: line to line 2kV, line to each 4kV |
| EN61000-4-6                                  | Conducted Radio Frequency Disturbance Test-Cs                          |
| EN61000-4-8                                  | Power Frequency Magnetic Field Test                                    |
| EN61000-4-11                                 | Voltage Dips   |
| 61000-3-2 Class A                            | Harmonic current emission  |

Notes: Specification is subject to change without notice.

**CHARGE CURVE:**

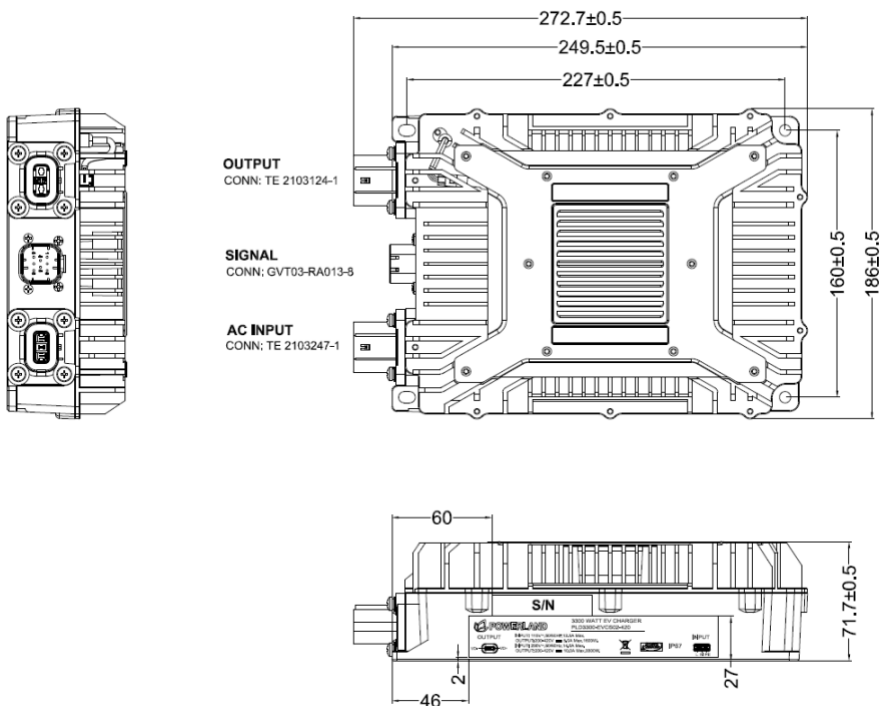


[1] The charging current will be limited to ensure charger power will not exceed 3.3KW. The charge curve is an example under 230Vac input and 25°C ambient temperature. The charge curve will be different if different AC input current. The ambient temperature will also influence the charging process to limit the case temperature not to exceed 85°C.

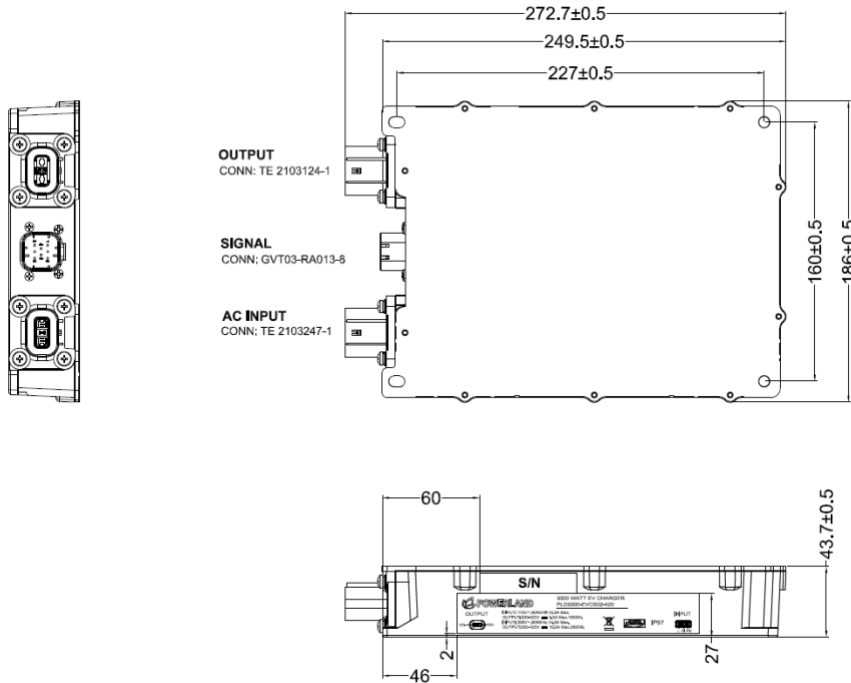
[2] Testing Condition: In parallel with specified X capacitors under 20MHz Bandwidth

[3] Test Condition: When output current is above 2A.

**Mechanical Information: Fan Versions**



## Mechanical Information: No-Fan Versions



## Connector Info: All Connectors:

| Type                           | Output Connector           | Input Connector | Signal Connector             |
|--------------------------------|----------------------------|-----------------|------------------------------|
| Charger Female Connector       | TE 2103124-1               | TE 2103247-1    | GVT03-RA013-8                |
| Cable Male Connector           | TE 2103191-1 (See below *) | TE 2103321-1    | GVT03-RA013-8 (See below **) |
| Cable Male Connector Supplied? | No                         | No              | Yes                          |

TE 2103191-1 (See \*)



TE 2103321-1



GVT03-RA013-8 (See \*\*)



\*[https://www.te.com/commerce/DocumentDelivery/DDEController?Action=showdoc&DocId=Specification+Or+Standard%7F114-13259%7FD%7Fpdf%7FEnglish%7FENG\\_SS\\_114-13259\\_D.pdf%7FN-A](https://www.te.com/commerce/DocumentDelivery/DDEController?Action=showdoc&DocId=Specification+Or+Standard%7F114-13259%7FD%7Fpdf%7FEnglish%7FENG_SS_114-13259_D.pdf%7FN-A)

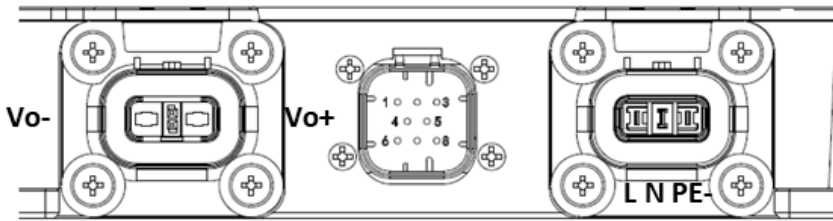
\*\*GV Tong website info: <http://www.gvtong.com/>. Mating connector housing (Plug) is: GE01-P008-8NNB-Y01, Terminal pins: S06-0017P-NA-N, Waterproof terminal plug for unused pins: H13-0002-NA-N

Other connector info:

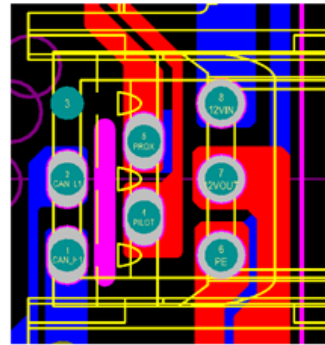
- CNLinko / Linko - <http://www.cnlinkousa.com/where-to-buy.html>
- GV Tong - <http://www.gvtong.com/>
- Jnicon - <http://www.jnicon.com/>

**Pin Info: J1772**

- EVC-420-3300-J1772-FC (PLD3300-EVCS02-420F)\*
- EVC-420-3300-J1772-L (PLD3300-EVCS02-420L)\*



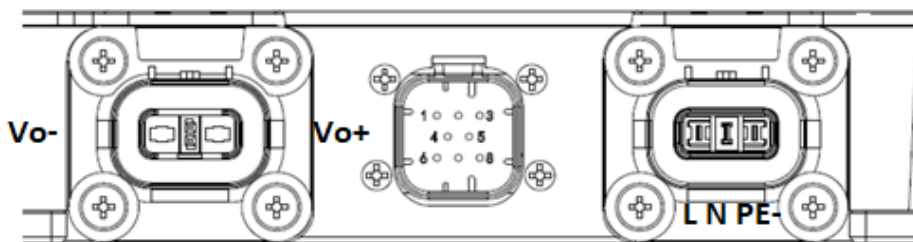
- Pin 1: CANH
- PIN2: CANL
- PIN3: NULL
- PIN4: PILOT
- PIN5: PROXIMITY
- PIN6: Ground for 12Vout and 12Vin
- PIN7: 12Vout
- PIN8: 12VIN



NOTE: A 2mm creepage distance between CAN SIGNALS and other nets referenced to chassis Ground is required by safety. PLS be aware of this on your system board.

**Pin Info: Non-J1772**

- EVC-420-3300-FC (PLD3300-EVCS03-420)\*
- EVC-420-3300 (PLD3300-EVCS03-420)\*



- Pin 1: CANH
- Pin 2: CANL

\* Factory Model Numbers are in parenthesis