



PV Solar Boiler™

Sensible, Ecological, Economical, Reliable

Photovoltaic (PV) Solar Water Heater!!

Introducing the **NEXT GENERATION** of solar water heating!!! Thermo Dynamics Ltd. (TDL) has researched and developed a solar water heater powered by PV modules.

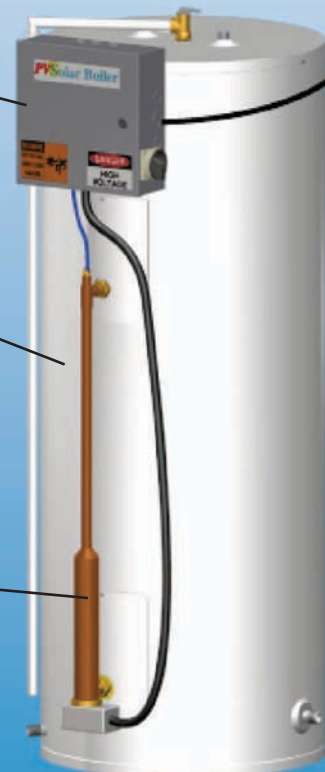
PV modules
Roof, wall or
ground mounted



TDL DC controller

TDL Solar storage tank
150 - 500 liters

TDL PV powered heater



"Since 1981"

TDL knows how to provide hot water using the Sun's energy. Since 1981 we have been researching, developing, manufacturing and installing solar water heaters using our solar thermal collectors. Since 1991 we have been using the TDL solar powered pumps for the TDL Solar Boiler™ solar water heater. The TDL Solar Pump™ is powered by a small PV module. We know how to tap the energy of the Sun using PV modules.

Now— with reductions in the cost of PV modules, and the development of high-efficiency power electronics - we are pleased to offer the PV Solar Boiler™. **100% powered by solar electricity.**

Our DC controller regulates the voltage of the PV modules to enable maximum solar energy collection. At full power, the DC controller has an **efficiency of 96 - 97%**. One of the many benefits of the PV Solar Boiler system is that there will never be any unused energy.

When the solar storage tank has reached the desired temperature, the electrical power can be diverted into the electrical grid, or employed to charge a bank of batteries for back-up power in your home.



Consider all the advantages:

- 100% solar powered
- integrated high temperature shut off
- no charging pump required
- no pumps consuming electric power
- no heat transfer fluid
- no collector stagnation / over-heating
- no heat transfer fluid dump zone
- uses standard water heater tank
- life expectancy of over twenty years
- ten-year limited warranty



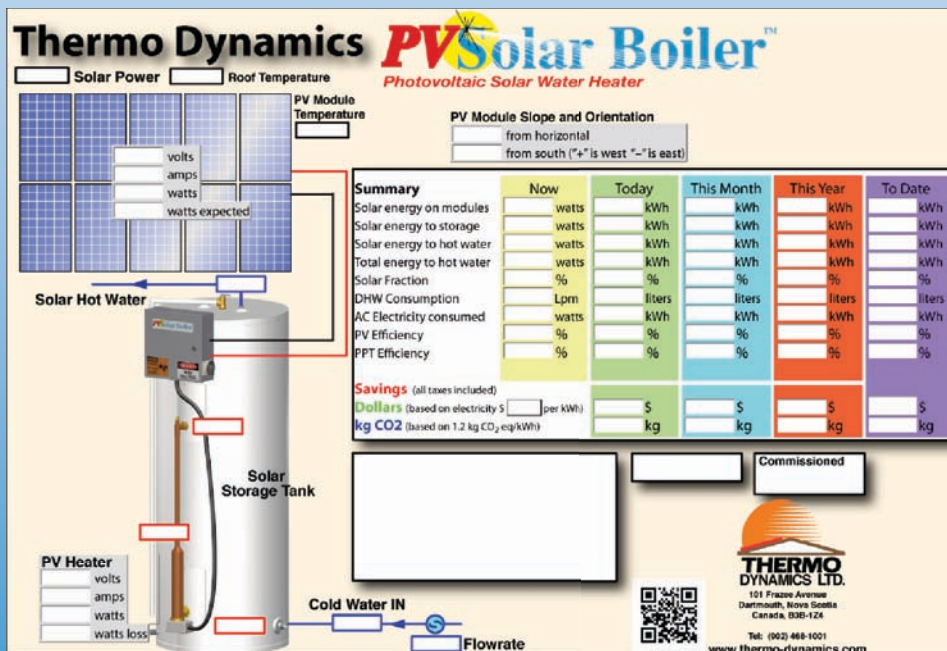
High Efficiency TDL DC Controller

System Specifications:

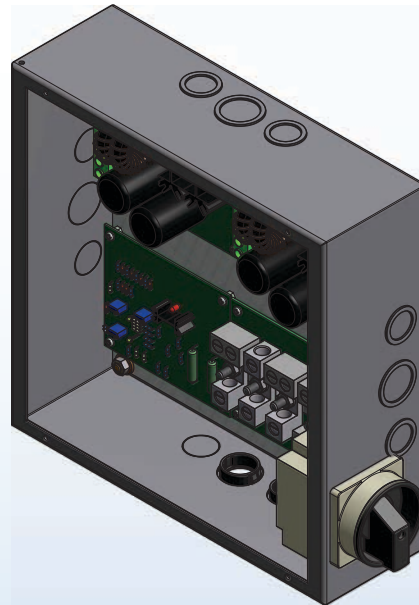
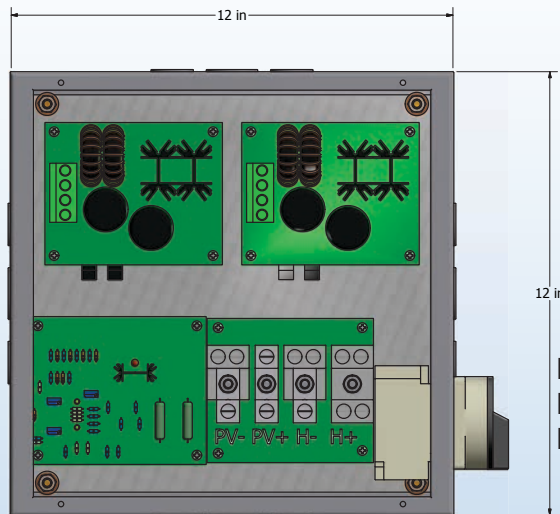
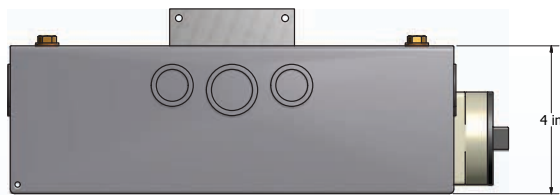
- Choice of a one or two power board systems rated for PV inputs of 1250 and 2500 watts.
- TDL DC Control Board regulates and maximizes power to the heater element.
- Labelled Input/Output board complete with mechanical lugs for quick and easy installation.
- 25 amp, two pole, rapid DC shut off switch
- Custom element sizing to match PV array with element and to maximize heater output
- Optional web based monitoring available (see below)



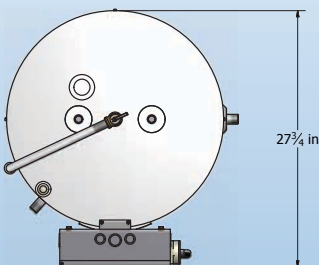
**High Efficiency
PV Heater**



Web Based Monitoring



Maximum PV open circuit voltage is 180 VDC.
Maximum PV current is 20 amperes.
Maximum PV array wattage (rated) is 3000 watts.



This device is for use between an array of PV modules and an electrical resistance water heating element.

It is intended for use in a protected interior environment. It must not be exposed to water.

Use 10 AWG, stranded (7 or 19 strands) copper cable between this device and the PV modules.

The PV operating voltage is adjustable between 55 VDC and 150 VDC, depending on the number and arrangement of the PV modules. This must be adjusted by a qualified technician according to instructions provided by Thermo Dynamics Ltd.

The water heating element connected to this device must be sized (wattage and resistance) according to instructions provided by Thermo Dynamics Ltd.

