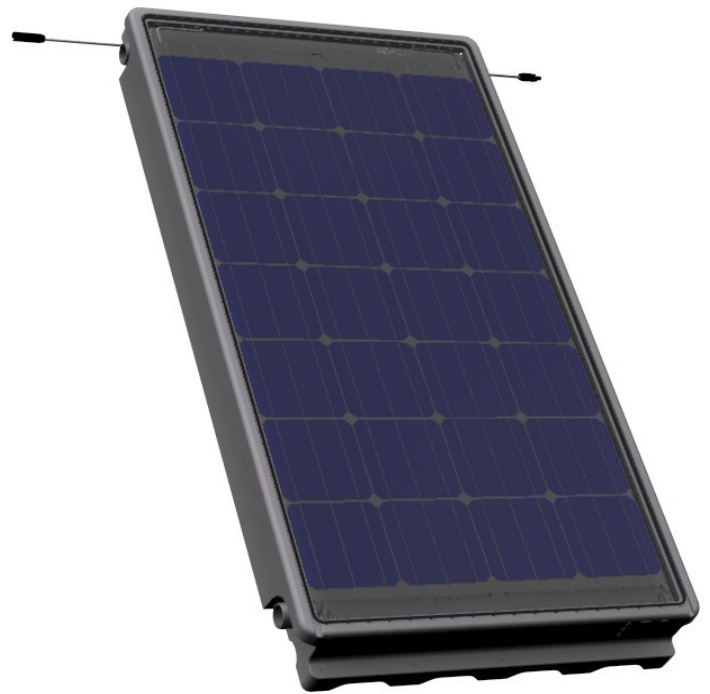


# POWER PANEL

PVT1  
PN:10143.01



## Collector Specifications

PVT- Glazed, Flat Plate, Unpressurized, Drainback  
 Flow Rate: 0.0406 kg/(s m<sup>2</sup>)  
 Fluid Capacity: 2.0 liters (0.5 gallons)  
 Gross Area: 0.985 m<sup>2</sup> (10.60 ft<sup>2</sup>)  
 Working Fluid: Water

## Thermal Data

| Collector Thermal Performance              |         |         |         |
|--|---------|---------|---------|
| Kilowatt Hours (thermal) Per Panel Per Day |         |         |         |
| Per m <sup>2</sup> . day                   | 6.3 kWh | 4.7 kWh | 3.1 kWh |
| A (-5 deg C)                               | 4.4     | 3.3     | 2.3     |
| B (5 deg C)                                | 4.1     | 3       | 1.9     |
| C (20 deg C)                               | 3.5     | 2.4     | 1.4     |
| D (50 deg C)                               | 2.2     | 1.2     | 0.3     |
| E (80 deg C)                               | 0.9     | 0.2     | 0       |

## PVT1 Qualifications

Intertek/ETL: 4010192  
 Conforms to UL 1703 and UL 1279  
 Certified to ULC/ORD C1703  
 FSEC Reg. - PV: PD14-NT90-0101  
 FSEC Reg. - Thermal: 100569  
 SRCC Registration Number: 2012015A  
 Y Intercept : 0.751  
 Slope = -3.570 Watts/m<sup>2</sup> deg K

**25 Year PV Performance Warranty**

**United States Patent # 8,476,522**

**Made in USA**

## Electrical Data

### Standard Test Conditions

|                                 |             |
|---------------------------------|-------------|
| Nominal Maximum Power (Pmax)    | 115 W       |
| Optimum Operating Voltage (Vmp) | 14.2V       |
| Optimum Operating Current (Imp) | 8.075A      |
| Open Circuit Voltage (Voc)      | 17.6V       |
| Short Circuit (Isc)             | 8.64A       |
| Cell Efficiency                 | 17.19%      |
| Module Efficiency               | 11.73%      |
| Operating Temperature           | -40°C~+85°C |
| Maximum System Voltage          | 600V (UL)   |
| Maximum Series Fuse Rating      | 15A         |
| Application Classification      | Class A     |
| Power Tolerance                 | 0~+5W       |

## Construction

|              |  |
|--------------|--|
| Cell Type    | Monocrystalline, 156mm, 3 Busbar,                                  |
| No. of cells | 28 (7 cell array x 4 strands)                                      |
| Dimensions   | 1383.5mm x 717.9mm x 111.1mm<br>(54.47 in. x 28.26 in. x 4.37 in.) |
| Weight       | 16.8 Kg (37 lbs.)  |
| Top Glass    | Low-Iron, Clear, Tempered, 3.2mm<br>(.125 in.) thickness           |
| Enclosure    | Molded Plastic and Engineered Foam                                 |
| Cable        | 12 AWG, 19 Strand, Tinned Copper PV Wire                           |
| Connectors   | Tyco SolarLok  |

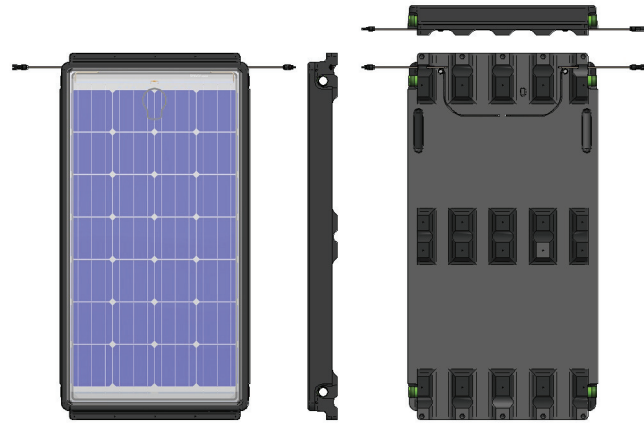
Info@powerpanel.com powerpanel.com

# Product View

**Height: 1383.5mm**  
**Width: 717.9mm**  
**Thickness: 111.1mm**

**Rack Mounting - 50mm Dia**  
**3 Locations, 632mm spacing**

**Fluid Connection: 38mm Hose Barbs**



# Performance Benchmark

## Comparison Data

Power Panel PVT1 Thermal Performance  
 Compared with other PVT Collectors, Unglazed and Flat Plate Glazed Collectors  
 Other PVT Collectors : Echo First, Sun Drum, Solarzentrum and Wiosun  
 Notes: All collectors are registered with the Solar Rating Certification Corporation  
[www.solar-ratings.org](http://www.solar-ratings.org)

Collector performance data is recorded as output per square meter  
 A- Pool Heating (Warm Climate) B- Pool Heating (Cool Climate)  
 C- Water Heating (Warm Climate) D- Space & Water Heating (Cool Climate)  
 E- Commercial Hot Water & Cooling  
 Ti = Collector fluid inlet temperature Ta = Ambient Air temperature

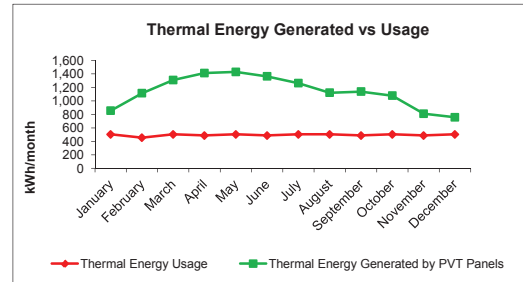
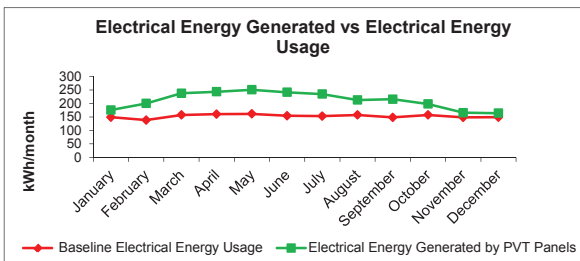
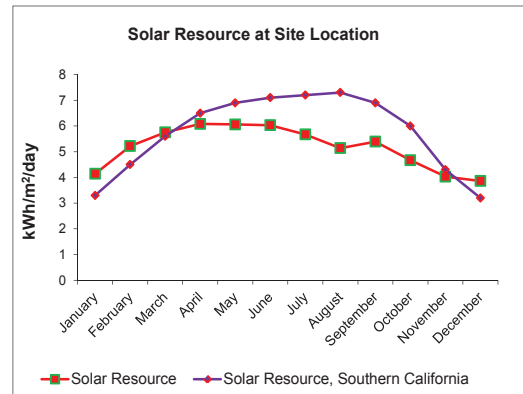
High Radiation  
 (6.3 kWh/m<sup>2</sup>.day)  
 Output (Kilowatt-hours per Square Meter Per Day)

|                            | MFG          | Power Panel | Echo First | Sun Drum | Solarzentrum | Wiosun   | Aquatherm   | Flat Plate Glazed |
|----------------------------|--------------|-------------|------------|----------|--------------|----------|-------------|-------------------|
|                            | Gross Area   | 1           | 34.495     | 1.57     | 1.307        | 1.308    | 4.34        | 1.997             |
|                            | SRCC #       | 2012015A    | 2008046A   | 2007044A | 2010029A     | 2012040A | 1002009005B | 2002002A          |
| Climate Category (Ti - Ta) | A (-5 deg C) | 4.4         | 1.7        | 2.5      | 5.4          | 4.0      | 5.1         | 4.1               |
|                            | B (5 deg C)  | 4.1         | 1.1        | 1.5      | 2.9          | 2.2      | 4.0         | 3.8               |
|                            | C (20 deg C) | 3.5         | 0.5        | 0.3      | 0.4          | 0.5      | 2.1         | 3.2               |
|                            | D (50 deg C) | 2.2         | 0.0        | 0.0      | 0.0          | 0.0      | 0.0         | 1.9               |
|                            | E (80 deg C) | 0.9         |            |          |              |          |             | 0.8               |

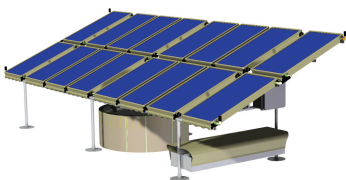
# Typical Application

**Application** Off-grid: new housing development  
**Location** Philippine Islands  
**Number of Occupants** 5 to 6 people  
**Base Electrical Usage** 3.56 kWh/day  
**Thermal Energy Usage** 16.3 kWh/day  
**Solar Resource (AVG)** 5.17 kWh/m<sup>2</sup>/day  
**Specification** Solar renewable with two days Electrical and Thermal Energy storage capacity  
**Solution** 16 PVT1 Power Panel  
 740 Liter Thermal Storage Tank  
 AGM Battery Storage for 2-day autonomy

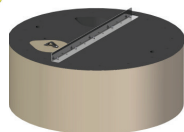
With a fast growing world trend for construction of off-grid and community grid housing, Power Panel is the ideal solution to provide all energy needs. With the use of energy efficient appliances and LED lighting the base electrical consumption is reduced to under 4 kWh per day. For the hot summer months there is sufficient PV electrical generation to air condition a family room in the house. Typical hot water heating demand of under 100 gallons per day requires over 16kWh of energy. The Power Panel PVT1 system easily provides these needs in a small rooftop footprint of 16 m<sup>2</sup> (172 ft<sup>2</sup>).



# Products



Systems



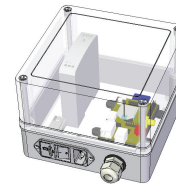
Thermal Storage



Racking



Plumbing



Controls



Balance of System