

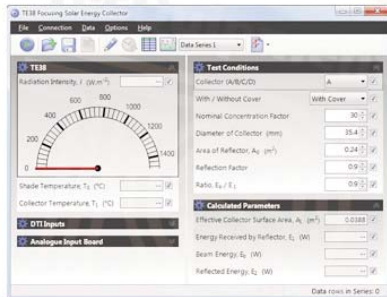
Renewable Energy

TE38

Focusing Solar Energy Collector

Shows how a focusing solar energy collector works and allows students to study its performance

Works with
VDAS®



Screenshot of the optional VDAS® software



- Mobile, self-contained focusing solar energy collector specially designed for educational use
- Shows the principles, advantages and limitations of focusing solar energy collectors
- One of several TecEquipment products that show the use of renewable, environment-friendly solar energy
- Can connect to TecEquipment's optional Versatile Data Acquisition System (VDAS®) for automatic data acquisition
- Includes four different sizes of collector for studies of different energy concentration ratios
- Removable transparent cover allows students to compare the properties of shielded and unshielded collectors

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- An ISO 9001 certified company
- VDAS is a registered trademark of TecEquipment Ltd

TE38

Focusing Solar Energy Collector

Description

A focusing solar energy collector on a mobile frame. Specially designed for educational use, the apparatus shows the principles, advantages and limits of this method of capturing solar energy.

It is a highly-polished stainless steel parabolic reflector, supported on trunnion bearings on a turntable. By adjusting the horizontal and vertical position of the reflector, students focus solar energy onto an energy collector. The energy collector is a copper cylinder with an embedded thermocouple that measures the cylinder temperature.

To enable students to compare different concentration ratios, TecEquipment supply four different sizes of energy collector. Also supplied is a removable transparent cover for the collector, so students can study the properties of shielded and unshielded collectors.

Attached to the reflector carrier is a solarimeter (pyranometer) that measures the incident solar radiation. An extra thermocouple measures ambient temperature for reference.

The cylinder thermocouple, the solarimeter and the ambient temperature thermocouple connect to a Display Unit. The Instrumentation Unit shows ambient temperature, collector temperature and solar intensity from the solarimeter. It also has a socket for connection to TecEquipment's optional VDAS®.

The equipment works with TecEquipment's Versatile Data Acquisition System (VDAS-B, not included). TecEquipment's Versatile Data Acquisition System allows accurate real-time data capture, monitoring, display, calculation and charting of all the important readings on a computer (computer not supplied).

Standard Features

- Supplied with a comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives

Recommended Ancillaries

- Versatile Data Acquisition System (VDAS-B) – a bench-mounted version of TecEquipment's Versatile Data Acquisition System
- Stopwatch (SW1)

Experiments

- Demonstrations of the performance, advantages and limitations of a focusing solar energy collector
- Understanding the effective use of the direct component of solar radiation
- Measurement of the efficiency of the collector with and without a transparent cover
- Measurement of the maximum possible energy collector temperature.

Essential Services

Electrical supply:

110 VAC to 230 VAC, 50 Hz to 60 Hz

Operating Conditions

Operating environment:

Dry, outdoor conditions

Storage temperature range:

–25°C to +55°C (when packed for transport)

Operating temperature range:

+5°C to +40°C

Operating relative humidity range:

30% to 95% (non-condensing)

Specifications

Nett dimensions and weight:

Main Part: 1100 mm wide x 1530 mm high x 850 mm front to back and 80 kg

Instrumentation Unit: 400 mm wide x 180 mm high x 350 mm front to back and 7 kg

Total Packed dimensions and weight:

Approximately 2.2 m³ and 100 kg.

Parabolic reflector:

Highly polished stainless steel

Reflector-to-collector concentration ratios:

15, 20, 25 and 30

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infoWERK is a leading expert in the development of eLearning courseware, learning system solutions, teaching and AV equipment.

Furthermore infoWERK is the representative and system integrator of "TecQuipment".

TecQuipment is one of the global leaders in technical teaching equipment for engineering. If you are interested in one of TecQuipment's products feel free to contact us at:



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