



FLAT PLATE SOLAR ENERGY COLLECTOR RE551



Year 1
study

Features

- Allows Thermal Evaluation of a Flat Plate Solar Collector.
- Optional Focussing Solar Collector Allows Direct Comparison of Performance.
- Optional Solar Array Allows Operation Inside Laboratory
- Negligible Operating and Maintenance Costs
- Data Acquisition Upgrade available

Description

A flat plate solar collector similar to those used for heating swimming pools or domestic hot water is mounted on an adjustable frame. The unit is designed for internal or external operation. For internal operation an artificial solar source is available as an optional extra. An instrumentation and water circulating console is attached to the panel under test via flexible hoses and this displays the circulating water flow, flow and return temperatures, ambient temperature and incident solar radiation. The operating temperature of the system is adjusted by a flow of cooling water and this allows investigation of performance over a range of operating conditions. The incident solar energy is measured using a solarimeter and this together with the other measured parameters allows the performance and efficiency of the system to be measured under all operating conditions. A compass and adjustable level indicator are supplied to allow adjustment of the panel on site.

Related Laws/Applications

- Renewable Energy
- Energy Conservation
- Mechanical Engineering
- Physics
- Environmental Engineering
- Plant and Process Engineering
- Building Services
- Engineering Physics
- Marine Engineering

Learning capabilities

- Measuring the efficiency of a flat plate solar collector
- With the optional focussing collector, RE551A comparison of the efficiency with a flat plate collector.
- Analysis of the efficiency and heat losses of the collector in use.
- Study of the variation of incident energy on the collector and collector inclination.
- With the addition of optional computerised data acquisition the daily variation of incident energy and system performance.

Technical Specification

- Extruded Frame
- Lockable castor wheels on two corner
- Protractor with integral level; 1° increments
- Panel: 1500(L) x 1170(W) mm
- Solarimeter Digital Display
- Digital Temperature Indicator
- Thermocouple selector switches

Recommended Ancillaries

- RE551A - Focusing Flat Plate Energy Collector
- REA11 - Solar Simulator

What's in the Box?

- 1 x RE551
- 1 x Transformer (115V only)
- 1 x Instrumentation Console
- 1 x Drain hose
- 1 x Measuring cylinder
- 1 x Inclinator
- 1 x Magnetic compass
- 1 x Solarimeter detector
- Instruction manual
- Packing list
- Test sheet

Weights & Dimensions

- Weight: 89 kg
- Weight: 93 kg (115V version)
- Length: 1270mm
- Width: 1500mm
- Height: 1800mm

Essential Services

- 220-240 Volts, Single Phase, 50Hz (With earth/ground)
- Line current up to 6A at 230v.
- 110-120 Volts, Single Phase, 60Hz (With earth/ground)
- Line current up to 10A at 110V.
- Cooling water: Up to 3 litres/minute at up to 5m head
- Drain: For up to 3 litres/minute

Ordering information

To order this product, please call PA Hilton quoting the following codes:
RE551/230 - Flat Plate Solar Energy Collector
RE551/115 - Flat Plate Solar Energy Collector
RE551/230/RC - Flat Plate Solar Energy Collector Computer Linked Version
RE551/115/RC - Flat Plate Solar Energy Collector Computer Linked Version

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS