



Boiling Heat Transfer Unit (SMT-HT-24)

The SMT-HT-24 experimental unit can be used to demonstrate boiling and evaporation processes in a straightforward manner. The processes take place in a transparent Glass tank. A condenser in the form of a water-cooled tube coil ensures a closed circuit within the tank, whereby the evaporation process takes place at much lower temperatures and a lower heating power. Sensors record the flow rate of the cooling water, the heating power, pressure and temperatures at all relevant points. The measured values can be read on LCD display.

The unit has Touch LCD display for visualization of process and the measurements. The Unit is also connected to Software for computer connectivity and data analysis. The Touch screen and computer software is included in the package.

TECHNICAL SPECIFICATIONS

Specifications:

- Complete stand-alone unit to demonstrate and measurement of Boiling Heat Transfer
- Touch LCD 7" with GUI Interface for better monitoring and accurate measurement of Plant variables.
- DAQ Software for PC Connect and Data measurement and Calculations.
- Visualization of boiling and evaporation in a transparent pressure vessel.
- Evaporation with heating element.
- Condensation with tube coil.
- Safety valve protects against overpressure in the system.
- Pressure switch for additional protection of the pressure vessel, adjustable.
- Sensors for pressure, flow rate and temperature with digital display.



Technical Data:

- Heater:
 - Power: 250W, continuously adjustable.
- Safety valve: 2bar rel.
- Pressure vessel: 2850mL.
- Condenser: coiled tube made of copper.
- Measuring ranges:
 - Tank pressure: 0 to 4bar abs.
 - Power of heater: 0 to 300W.
 - Flow rate (cooling water): 0.05 to 1.8L/min.
 - Temperature: 4x 0 to 100°C.
- Dimensions and weight:
 - LxWxH: 1000x550x800mm.
 - Weight: approx. 65kg.
- Measuring Display
 - 7-inch Touch LCD With GUI (Graphical User Interface)
- Voltage Supply:
 - 230V, 50Hz 1Phase.
- Digital Instrumentation
- Can be used in Research Purposes

Experimental:

- Visualisation of different forms of evaporation:
 - Free convection boiling.
 - Nucleate boiling.
 - Film boiling.
- Heat transfer.
- Effect of temperature and pressure on the evaporation process.