



Features

- Visual demonstrations of convective, nucleate and film boiling.
- Includes series of safety devices for operator safety.
- Data Acquisition System with sensors & software included.

Tesca Pool Boiling Heat Transfer Unit has been designed for students demonstrations on convective, nucleate and film boiling. The unit mainly consists of a thick walled glass cylinder fitted internally with a heating element and a coil type condenser. Instrumentations are provided for the measurement of temperature, pressure, flow rate and power. The unit helps students to understand better the heat transfer processes from a hot region to a colder one in countless industrial applications, e.g. thermal and nuclear power generation in steam plants, refrigeration, heat transmission, etc. locally warmed liquid expands and convection currents carry it to the liquid-vapour interface where evaporation takes place and thermal equilibrium is restored. Thus, in this mode, evaporation takes place at small temperature differences and with no bubble formation. Detailed Operation & Maintenance Manual is provided along with the trainer.

Note: Specifications are subject to change.

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Specifications

- Steam Chamber Glass cylinder with flanged ends and covers Diameter: 75mm, Height: 300mm
- Chamber: Thick walled glass cylinder with stainless steel end plates. The chamber houses the heating element and the condenser. Size: 75 mm (dia.) x 300 mm (L)
- Heating Element: 300 W "high watt density" cartridge heater swaged into a thick walled copper sleeve to give a uniform surface temperature.
- Condenser: Coiler tube condenser
- Heater Controller: To give infinitely variable heat input to the heating element
- Voltage & Current Meter: To measure electrical input to the heating element.
- Temperature Sensors – 4 Nos.
- Digital Temperature Indicator with selector switch.
- Water flow-meter
- Pressure transmitter

Experiment Capabilities

- Visual observation of film-wise and drop-wise condensation, as well as nucleate boiling.
- To determine overall heat transfer coefficient
- To demonstrate of Dalton law of partial pressure

Required Services

- Electric Supply 230 V AC, 16 A, Single Phase,