

TH 260 BOILING HEAT TRANSFER UNIT



Photograph with optional equipment

GENERAL DESCRIPTION

This is a table top unit for observation of evaporation process in a heated tank.

The unit consists of a transparent tank, enclosed at top and bottom. At the bottom of the tank is a small heating cylinder and a special liquid simulating a fire tube heating water in a boiler. The vapor is condensed by a water cooled condenser at the top of the tank and the condensed liquid returns to the bottom for reboiling.

Instruments are provided for measurement of temperatures, pressure, cooling water flow rate, and input power.

TYPICAL EXPERIMENTS

- Observation of evaporation forms.
- Determination of heat transfer efficient.
- Effect of pressure and temperatures on evaporation.

TECHINCAL DATA

- Tank
 - Boro silicate glass : 130 mm diameter x 300 mm high.
- Heater
 - Power : 270 W. with dimmer switch.
- Condenser : Copper coil.
- Cooling pail : 5 l.
- Safety features
 - Pressure relief valve : 1 ea adjustable.
 - Pressure switch : 1 ea adjustable.
- Boiling liquid : Low boiling point liquid.
- Measuring instruments
 - Pressure : 1 ea pressure gauge.
 - Flow rate (cooling water) : 1 ea rotameter.
 - Input power : Watt meter.
 - Sensors with digital display : 6 ea.
- Power supply : 220 V. 1 ph. 50 Hz.

OPTIONAL EQUIPMENT

TH 260-050 Computer Interface

This include sensors, computer interface unit and software for data display and analysis by computer (separately supplied).

The screenshot displays the following data:

- Flow rate (l/min): 0.67
- Pressure (Pa): 94
- Power (W): 100
- Temperatures (°C):
 - T_w Surface Temp: 30.1
 - T_l Liquid Temp: 28.5
 - T_D Steam Temp: 26.3
 - T₁ Inlet water Temp: 15
 - T₂ Outlet water Temp: 16.1

Flow rate (l/min)	Absolute pressure (kPa)	Power (W)	Temperature (°C)				
			Surface T _w	Liquid T _l	Steam T _D	Inlet water T ₁	Outlet water T ₂
0	1.08	100	34.8	33.1	28.1	0	0
0.67	0.94	100	30.1	28.5	26.3	15	16.1

Net (unpacked) shipping dimensions WxLxH
Net weight

: 47 x 77 x 87 cm
 : Approx. 34 kg

