



BOILING HEAT TRANSFER MODULE H112S



Year 1
study

Description

A bench top accessory designed to allow students to experimentally investigate convective, nucleate and film boiling. The unit consists of a high strength clear glass cylinder with instrumented electric heater element immersed in a volatile solvent that boils at low pressure. An integral water cooled condenser coil allows the chamber pressure to be controlled over a wide range of negative and positive pressures depending upon the local water supply. A digital wattmeter allows students to determine the heat transfer from the heated element and this together with instrumentation on the H112 enables all relevant parameters to be recorded. An integral control console provides heater power control and high temperature/pressure safety cut outs. The chamber is also fitted with a safety valve.

Related Laws/Applications

- Mechanical Engineering
- Nuclear Engineering
- Chemical Engineering
- Control and Instrumentation
- Plant and Process Engineering
- Building Services
- Engineering Physics
- Refrigeration
- Marine Engineering

Learning capabilities

- Visual demonstration of convective, nucleate and film boiling.
- Determination of heat flux and surface heat transfer coefficient up to and beyond the critical condition at constant pressure.
- Investigation of the effect of pressure on critical heat flux.
- Demonstration of filmwise condensation and measurement of overall heat transfer coefficient.
- Demonstration of the cause of liquid carry over or priming in boilers.
- Determination of the pressure temperature relationship of a pure substance.
- Investigation of the effect of air in a condenser.
- Demonstration of the law of partial pressures.

Technical Specification

- Heating Surface: 42mm effective length x Ø12.7mm
- Maximum permitted surface temperature: 220°C
- Heater cut out temperature: 160°C
- Glass chamber: Ø80 internal x 300mm (L)

Essential Ancillaries

- H112

What's in the Box?

- 1 x H112S
- 1 x Console
- 3m Reinforced hose
- 1 x Charging Line
- 1 x Charging Valve
- 2 year spares
- Instruction manual
- Packing List
- Test Sheet

You might also like

- H112S/115

Weights & Dimensions

- Weight: 25 kg
- Length: 350mm
- Width: 300mm
- Height: 700mm

Essential Services

- H112

Ordering information

To order this product, please call PA Hilton quoting the following codes:

- H112S/230 - Boiling Heat Transfer
- H112S/230/HC - Boiling Heat Transfer Computer Linked
- H112S/115 - Boiling Heat Transfer
- H112S/115/HC - Boiling Heat Transfer Computer Linked

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS