

Product Name :
Drop Wise and Film Wise Condensation Apparatus**Product Code :**
ALABS-A143-023**Description :**

Drop Wise and Film Wise Condensation Apparatus

Technical Specification :

Drop Wise and Film Wise Condensation Apparatus

Condensation is a phase change heat transfer process occurring in many industrial applications, such as in steam power plants, refrigeration plants etc.

Thus this is one of the important heat transfer process as present in mechanical and chemical engineering applications.

The condensation of vapour on a surface is of two types: 1. Drop wise Condensation, 2. Film wise Condensation.

This setup is designed for determining heat transfer co-efficient of two types of condensation and for visualization of these processes.

It consists of a vertical frame. Condensation tubes are fitted inside compact glass cylinder.

Steam generator is fitted at the backside of the cylinder. Steam comes directly from generator to the cylinder.

Two valves are fitted to control flow rate of water in individual tubes

Digital Temperature Indicator monitors the temperatures.

Pressure gauge and Rotameter can observe steam pressure and cold water flow rates respectively

A Digital temperature Controller is provided for controlling the temperature of Steam

Water level indicator is provided in steam generator

Condensate is measured by a measuring cylinder

Experimentation:

To study the Film wise & Drop wise condensation of steam on a vertical surface.

Visualization of condensation process in drop wise as well as film wise condition.

Utilities Required:

Water supply 5 lit/min (approx.)

Electricity Supply : 1 Phase, 220 V AC, 1.5 kW.

Table for set-up support.

Technical Specifications:

Steam Generator: 8 Ltrs. (Approx.) made of Stainless steel with 1.5 kW heater. Insulated with ceramic wool and cladded by aluminum foil

Pressure Gauge: Bourdon type

Copper tubes (2 Nos.): One with natural finish and other nickel polished

Diameter: 19 mm (Approx.)

Length: 170 mm (Approx.)

Water Flow measurement: Rotameter

Condensate Measurement: Measuring Cylinder & Stopwatch

Control valves: one each for Steam, Cooling water & Drain

Digital Temp. Controller: 0-199.90C (For Steam Generator)

Digital Temp. Indicator: 0-199.90C, with multi-channel switch

Temperature Sensors: RTD PT-100 type

Instruction Manual: An ENGLISH instruction manual will be provided along with the Apparatus

The whole set-up is well designed and arranged on a Powder Coated structure



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