



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

Drop Wise & Film Wise Condensation Apparatus 32395 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.

#### Specifications

- Steam Generator: @ 8 Ltrs in SS 304 vessel & 1.5KW heater
- Pressure Gauge: Bourden type
- Diameter: @ 19mm
- Length: @ 170mm
- Water Flow measurement: Rotameter
- Condensate measurement: Measuring scaled cylinder & stopwatch
- Control Valves: One each for steam, Cooling water & Drainage
- Measuring & Control Panel: Digital temperature controller, Digital temperature indicator, temperature sensors, ON/OFF Switches & protections

#### Experiment Possibilities

- 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.

#### Required Services

- Electricity Supply: 1 Phase, 220 V AC, 5 KW.
- Burning Oil supply

Note: Specifications are subject to change.

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