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**Product Name :**  
Forced Convection Heat Transfer

**Product Code :**  
LBNY-0005-1120004



#### **Description :**

Forced Convection Heat Transfer apparatus allows students to examine the theory and associated formulae related to forced convection in pipes. It is a frame holding a motor-driven fan, piping and instrumentation panel. A basic knowledge of forced convection heat transfer theory is valuable in many engineering fields, especially heat-exchanger design. It also has a large work surface for student convenience. The fan runs at a constant speed and draws air through a control valve. A larger manometer on the instrument panel measures the fan pressure drop. The u-shaped pipe connects to a smaller diameter insulated and electrically heated copper test pipe. The air then moves into a u-shaped pipe. An orifice plate in the pipe connects to a manometer on the instrumentation panel to measure the airflow rate. The test pipe discharges to atmosphere. Pressure tapings each end of the test pipe connect to a manometer on the instrument panel to measure test length pressure drop. Students control the power input to the test pipe heater using a variable transformer while noting the power using instrumentation on the panel. Further thermocouples measure temperature at various points within the test pipe insulation. Students use a digital indicator on the instrumentation panel to display thermocouple temperature readings. A thermometer measures the air temperature at the inlet to the test pipe. Thermocouples measure the temperature at various points along the test pipe wall.

#### **Technical Specification :**

Nett dimensions and weight: 3500 mm x 850 mm x 2020 mm and 344 kg  
Test pipe diameter: 32.6 mm  
Packed dimensions and weight: 3.55 m<sup>3</sup> and 522 kg  
Test pipe length: Approximately 1.75 m.



**Laboratory Instrument India**