

WATER COOLING TOWER APPARATUS (EE-1603)

The apparatus consists of a forced draught, counter flow type-cooling tower. A blower supplies cooling air. Air enters the tower at the bottom. Hot water is, obtained from a Water Bath. Hot water is sprayed over the mesh packing through the nozzles and it flows downwards. Operation of cooling of water occurs due to the Heat Transfer between air and water. So, water gets cooled. This student can study the operation of cooling tower and calculate the energy balance.

SCOPE OF EXPERIMENTATIONS:

- To Study the Operation of Cooling Tower.
- To determine the Average Heat Transfer Coefficient on Cooling Tower.
- To examine the effect of various parameters such as feed flow rate, air flow rate, inlet water temperature etc. on the performance of the cooling tower

UTILITIES REQUIRED:

- Water Supply.
- Drain
- Electricity 4400V AC,32 A, Single Phase.
- Space required: 2 x 2 m.



TECHNICAL SPECIFICATIONS:

- **Cooling Tower** : Fabricated of S.S. Sheets, 200 X 200 mm. cross section, 1.2m. Height with Perspex front. Wire mesh packing is provided in the tower.
- **Water Bath** : 3 Kw Heater provided to make hot water.
- **Centrifugal blower** : 1 HP capacity to force air through the tower.
- **Rotameter:** To measure inlet water flow.
- **Temperature Sensors** : RTD PT-100 type
- **Control panel** : Digital Temperature Controller.
: Digital Temperature Indicator: 0-300°C
(With multichannel switch)
On/Off switch, Mains Indicator etc
- **Calibrated orifice and water manometer** to measure airflow
- Arrangement to measure **dry and wet bulb** temperatures at Air Inlet & Outlet
- The whole set-up is well designed and arranged on a good quality painted structure.