

HEAT TRANSFER LAB

Thermal conductivity of insulating powder

Heat transfer through natural convection

Absorption Refrigeration System



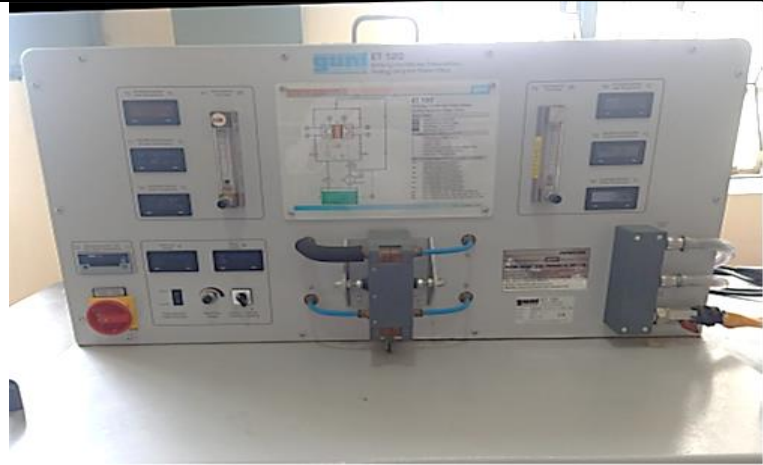
The absorption refrigeration system demonstration model is a fully functional absorption refrigeration system. It is heated with propane gas or electrically and works with an ammonia/water mixture. The demonstrator model is used to demonstrate the fundamental principle of an absorption refrigeration system and to learn about the operating behaviour under load.

Refrigeration circuit with variable load



The Refrigeration circuit with variable load is a fully functional compression refrigeration system. It operates with a water-charged evaporator and air-charged condenser. The evaporator can be subjected to varying loads with the help of the water circuit. The test includes determination of key characteristics variables like Coefficient of performance, Refrigeration capacity, Compressor work and operating behaviour under varying load condition.

Cooling using the Peltier Effect



The test set-up allows to study the properties of a peltier element. In this set-up, the thermal output or refrigeration capacity is conducted away via a flow of water. The water flow and the temperature difference across the heat exchanger can then be used to drive a caloric evaluation . The electrical power flowing via element is determined using a current and voltage measurement.

Heat transfer in forced convection

Heat transfer from a pin-fin (natural convection)

Heat transfer from pin-fin (forced convection)

Emissivity apparatus

Shell and tube heat exchanger

Thermal conductivity of liquid

Multiple effect evaporator

Shell and tube heat exchanger

Dropwise and film wise condensation apparatus

Optical pyrometer

Relative humidity

Thermocouple apparatus