

## Educational Lab Equipments





Product Code . EL-EELE-11282

# Vapour Compression Refrigeration Unit

## Description

### Vapour Compression Refrigeration Unit

Fully instrumented to enable complete analysis of the processes involved and calculation of the changes in performance with operating conditions. Computer controlled system with automatic recording of process variables using an integral USB interface. Complete refrigeration system enabling demonstration of the vapour compression refrigeration cycle. Energy transferred to the evaporator and from the condenser measured independently on the service side of the process.Hermetically sealed rotary compressor driven by DC motor with three phase BLDC variable speed drive.Compressor speed under computer control with a wide range of operation from 2000 to 4400 RPM. Real time display of superheat calculations. Real time display of Coefficient of Performance.

### Features:-

- Computer controlled with automatic recording of measured and calculated variables using a PC.
- Hermetically sealed rotary compressor with wide speed range can be varied by the operator.
- Complete system enabling demonstration of the vapour compression refrigeration cycle.

• Condenser and evaporator both use plate heat exchangers with water as the heat transfer medium enabling a full energy balance to be carried out while varying the operating conditions on both sides of the compressor.

• Overall performance of the system is calculated and displayed continuously enabling the effect of changes in the system to be evaluated.

• Instrumented with electronic sensors measuring temperatures throughout the process, pressure on both sides of the compressor and independent water flowrates through the condenser and evaporator.

• Bourdon type gauges indicate the pressure and corresponding refrigerant saturation temperature on both sides of the compressor independent from the electronic systems.

• Variable speed pumps supply water at stable temperature and pressure from a large reservoir to the condenser and evaporator eliminating random fluctuations.

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Educational Lab Equipments, #449, HSIIDC, Industrial Area, Saha, Haryana Direct Contact Details 491-98173-19615 Sales@educational-equipments.com uww.educational-equipments.com