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**Product Name :**  
Vapour Compression Refrigerator And Heat Pump  
Apparatus

**Product Code :**  
LBNY-0005-11700048



#### **Description :**

The refrigeration circuitry includes a water cooled condenser complete with isolating valves, manual expansion valve, evaporator, variable area flowmeter for mass flow of refrigerant, filter/drier unit, sight glass and over pressure cut-out for unit protection. The unit is designed to use Tetrafluoroethane as the refrigerant with a twin cylinder reciprocating compressor, belt driven by the variable speed dynamometer.

The evaporator coil is mounted in an electrically stirred water/glycol mixture contained in a thermally insulated, stainless steel tank. The water/ glycol mixture is protected from over temperature conditions by a thermostat should the heater should be left on when the compressor is not circulating refrigerant. Heating of this water/glycol mix is infinitely variable enabling balanced experimental conditions over a wide range of temperatures to be obtained.

#### **Experimental Capabilities:**

Determine the Mechanical, Thermodynamic (Isentropic) and Volumetric efficiencies.

Estimate the rate at which heat is transferred to the system from the surrounding environment.

Determine the energy flows and coefficient of performance for given operating instructions.

Operate the refrigeration unit over a range of conditions.

Estimate the Heat Transfer Coefficient.

Compile an energy balance under light load and full load conditions.

Examine the behaviour refrigerating cycle under variable loads and speeds.

#### **Technical Specification :**

Instrumentation includes pressure gauges selectable multi-point direct reading digital thermometer for all

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temperatures, variable area flowmeters digital ammeter for heater current, digital meter for torque readout and digital tachometer, the instrumentation is integrated into an operator panel printed with a five colour mimic diagram. Vapour Compression Refrigerator and heat pump for with two cylinder reciprocating compressor tapped for optional pressure transducer, dynamometer drive by DC machine with a solid state control unit, water cooled condenser manually controlled expansion valve, evaporator and water-glycol bath with electrical heating.



**Laboratory Instrument India**