

**Product Name :**  
Computerized Recirculating Air Conditioning Trainer**Product Code :**  
RAC0010**Description :**

Computerized Recirculating Air Conditioning Trainer

**Technical Specification :**

This training unit allow students to investigate air conditioning at a basic level. Students can use P-H charts and psychometric charts for their calculations and discover the enthalpy change. The unit features an air-cooled condenser unit connected to an evaporator located in an air duct. The air duct contains relative humidity and temperature sensors on both sides of the evaporator. A small fan provides airflow down the duct and can be manually adjusted. Sensors record the air temperature and air humidity before and after each stage as well as the pressures and temperatures of the refrigerant. The flow rate of the refrigerant is determined by means of the pressure measurement. The measured values can be read on digital displays. The refrigeration circuit features high and low pressure gauges, a pressure switch, sight glass, filter dryer and TEV valve. The circuit also includes pressure transducers that connect to the instrumentation. At the same time, the measured values can also be transmitted directly to a PC via USB. The data acquisition software is included.

**FEATURES:**

- Determine superheat and sub-cooling
- Determine Coefficient of Performance (COP)
- Determine isentropic and non-isentropic efficiencies of compression stage
- Learn to use Psychometric charts
- Determine enthalpy change in the airflow

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Learn to use a Pressure-Enthalpy chart  
Investigate the effect of air flow rate on COP  
SPECIFICATION:  
Steam humidifier :  
Power consumption: 4kW  
Steam capacity: 5,5kg/h, switchable in three stages  
Fan :  
Power consumption: 167W  
Max. Volumetric flow rate: 1150m<sup>3</sup>/h  
Speed: 1000...2600min<sup>-1</sup>  
Pmax: 460Pa  
Air preheater: 1kW, switchable in two stages  
Air reheater: 2kW, switchable in two stages  
Air duct, WxH: 300x350mm  
Direct evaporator as air cooler: 6kW  
Condensing unit :  
Power consumption: 968W at 5/25°C  
Refrigeration capacity: 2,3kW at 5/25°C  
Refrigerant :  
Refrigerant: R134a/22/etc  
Filling volume: 3,3kg  
CO<sub>2</sub>-equivalent: 2,1t  
Measuring ranges :  
Differential pressure: 0...100Pa  
Temperature: 5x 0...50°C, 4x -100...200°C  
Humidity: 5x 10...90%  
Pressure: -1...15bar, -1...24bar (refrigerant)  
Flow rate: 8...102L/h (refrigerant)  
Required for operation :  
230V, 50Hz, 1 phase  
230V, 60Hz, 1 phase

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