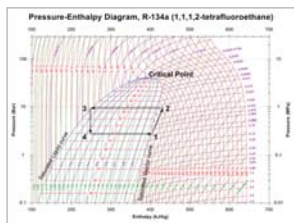
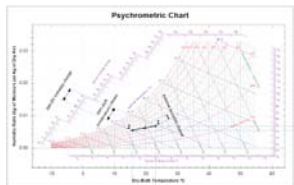
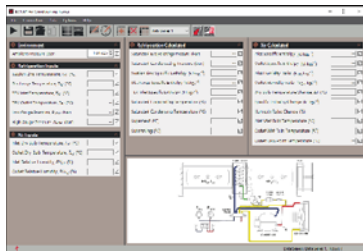


AIR CONDITIONING TRAINER



Benchtop apparatus that allows students to investigate the fundamental principles of air conditioning, including enthalpy change in the air flow.



SCREENSHOTS OF THE VDAS® SOFTWARE



KEY FEATURES

- Pressure and temperature measurements taken around the refrigeration circuit
- Relative humidity and temperature measured upstream and downstream of the evaporator
- LCD display of all measured parameters
- VDAS® connectivity included featuring data acquisition via USB
- VDAS® software allows students to visualise experimental parameters using psychrometric and pressure-enthalpy charts
- Refrigeration circuit colour-coded to international standards

LEARNING OUTCOMES

- Learn to use psychrometric charts
- Determine enthalpy change in the air flow
- Learn to use a pressure-enthalpy chart
- Determine superheat and sub-cooling
- Determine Coefficient of Performance (CoP)
- Determine isentropic and non-isentropic efficiencies of compression stage
- Investigate the effect of air flow rate on CoP

≡ AIR CONDITIONING TRAINER



EC1501V

DESCRIPTION

This training unit allows students to investigate air conditioning at a basic level. Students can use pressure-enthalpy and psychrometric 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 air flow down the duct and air flow rate can be manually adjusted.

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.

Four thermocouples placed around the refrigeration circuit allow observation of temperatures, these can be used for the calculation of potential super heating and sub-cooling.

EC1501V features VDAS® Onboard for data acquisition via USB cable (supplied) to a computer (not supplied).

STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Made in accordance with the latest European Union directives
- ISO9001 certified manufacturer

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory

STORAGE TEMPERATURE RANGE:

-25°C to +55°C (when packed for transport)

OPERATING TEMPERATURE RANGE:

+5°C to +30°C

OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 30°C

SOUND LEVELS

Within 20 cm of the fan 75 dB

40 cm away from the fan, less than 70 dB(A)

ESSENTIAL SERVICES

BENCH SPACE NEEDED:

1020 mm (wide) x 600 mm (deep)

ELECTRICAL SUPPLY:

Single phase

Single phase, 220 - 240 VAC, 50 Hz, 2 A

OR

Single phase, 110 - 120 VAC, 60 Hz, 4 A

OR

Single phase, 208 - 220 VAC, 60 Hz, 2 A

(Specified on order)

VDAS® SOFTWARE

PC (not supplied), please see VDAS® spreadsheet for specification

SPECIFICATIONS

TecEquipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

APPROX NETT DIMENSIONS AND WEIGHT:

1020 mm wide x 600 mm front to back x 905 mm high and mass approx 70 kg

