

## CL 411 | AIR CONDITIONING TRAINER



### **Technical specifications :**

The air conditioning trainer is a miniature semi central air to air type air conditioning installation that includes air ducts and an air conditioned room.

The trainer is comprised of :

A 7.000 BTU / h condenser unit with a condensing element, a compressor, an axial ventilator, a four-way valve, and a condensates gathering tank.

An evaporating unit with an evaporating element, a humidor, a centrifugal ventilator and a condensates gathering tank all permanently mounted inside a chamber that reassures the correct operation of the system and provides the ability of observation through a transparent casing.

An air duct for the air conditioned air circulation with inlets, with the ability to regulate the air flow and with an adjustable venting tamper.

A return air duct with inlets.

A fresh air and recycled air mixing box with the ability of adjustment of the quantity and temperature of the incoming fresh air.

An air conditioned room with the front side covered by a transparent material and with doors in order to make inside measurements. Inside the room there are thermal loads for the simulation of the normal temperature conditions.

An electrical control and commands board, with a safety switch, indicating lights, panic switch etc.

Fitted in instruments at various parts of the trainer for controlling the operation and for taking measurements (pressure gauges , thermometers, a thermostat and a humidity regulator).

Portable measuring instruments (anemometer, humidity meter, sound (noise) level meter).

The air conditioning trainer uses as a means of refrigeration the environmental friendly R410 gas, has dimensions 1.80 X 0.60 X 0.85m and is mounted on a work bench on wheels, while the condenser unit has a transparent casing on the front side.

The air conditioning trainer includes also the experiments manual (student's – instructor's) that covers the following subjects :

- Air speed and volume measurement in the air duct and at the inlets.
- Measurement of the air psychrometric elements.

- Air heating with recycled air, Heating efficiency calculation.
- Air heating with a mixing method (fresh air –recycled air mixture).
- Air heating and humidification.
- Air refrigeration with the recycled air.
- Refrigeration efficiency calculation.
- Air refrigeration with a mixing method (fresh air –recycled air mixture).
- Electrical connections – Control circuits.
- Electrical connection of the thermostat – humidity regulator to the internal and to the external part of the trainer.
- Heat pump operation –Four–way valve control
- Operational control of the trainer.