

# WL 312.03

## Heat transfer on refrigerant evaporator



### Learning objectives/experiments

- layout of a refrigerant evaporator
- heat exchange at a refrigerant evaporator

### Specification

- [1] accessory component for WL 312
- [2] to be used with WL 312.12, connected via quick-release couplings
- [3] finned tube evaporator with expansion valve
- [4] expansion valve with capillary tube
- [5] 2 thermometers
- [6] insulated housing, with viewing window
- [7] mounted in WL 312 with quick-release fasteners

### Technical data

Evaporator: 315x210x70mm

Measuring ranges  
temperature: -20...+40°C

LxWxH: 290x290x340mm  
Weight: approx. 10kg

### Scope of delivery

- 1 refrigerant evaporator
- 1 manual

### Description

- accessory component for WL 312 trainer
- investigation of a refrigerant evaporator

This device, known as a direct evaporator, is inserted into the air duct of WL 312 and fixed in place with fasteners. It is connected to a condensing unit via hoses with quick-release couplings.

The refrigerant evaporates in the tubes and extracts heat from the air. The tubes are ribbed to increase the heat transfer surface. Again, the transparent cover provides a view inside the evaporator.

The refrigerant connections on the evaporator are self-sealing so that no refrigerant can escape. The WL 312.12 condensing unit is necessary for the operation of the evaporator. Refrigerant condenser and evaporator together form a complete refrigeration circuit. The temperatures at the evaporator inlet and outlet are measured using thermometers.

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Required accessories

WL 312	Heat transfer in air flow
WL 312.12	Condensing unit