CLIMATIC
ENVIRONMENT
SOLUTIONS
AND EQUIPMENT

# RTS
# Roof Top for Shelter

**Single-flow thermodynamic unit for shelters air conditioning**

MADE IN FRANCE

www.ett-hvac.com

ENERGIE TRANSFERT THERMIQUE

# CONTENTS

# General description

The **ETT** packaged unit is delivered ready to operate. Its full aluminium structure (frame and casing), ensures an excellent corrosion protection (20-year anti- corrosion guarantee).

**Aluminium facilitates the REFURBISHMENT of machines for a second life,** unlike a steel structure.

## Our technical choices have a major impact on the environment

### •DECARBONATION:

ETT is committed to an ambitious approach to reducing greenhouse gas emissions:

- Reducing the energy consumption of our machines
- Fluid refrigerants with low GWP
- Energy monitoring & AI
- Adiabatic cooling
- Development of machine retrofits

### •ALUMINIUM : PERFORMANCE AND DURABILITY!

- Lightweight: 3 times lighter than steel
- Corrosion resistant and long lifespan
- Thermal performance
- 100% recyclable indefinitely
- Facilitates the refurbishment of our machines


### • ECO-DESIGN:

Our technologies are designed with sustainability in mind, reducing their environmental impact throughout their life cycle.

### • LOW-POLLUTION MANUFACTURING PROCESS:

- Selective sorting: 80% recovery rate
- No paint or solvents

### • END OF MACHINE LIFE:

In compliance with regulations, ETT is a member of the Ecologic eco-organisation for the end-of-life processing of machines, which are 98% recyclable.

EcoLogic

### • ETT CERTIFICATIONS

- **CSR assessment**: ECOVADIS Gold Medal for our CSR approach

GOLD | Top 5% ecovadis Sustainability Rating JAN 2025

- **ISO 14001 & ISO 9001 certification** : our Quality and Environmental Management System

ISO 14001 ISO 9001

- **Certificate of competence for handling refrigerants**
- **Membership of the UN Global Compact**
- **Qualiopi certification** for our training centre

Qualiopi processus certifié RÉPUBLIQUE FRANÇAISE
La certification qualité a été délivrée au titre de la catégorie d'action suivante : Actions de formation

**As a positive-impact company, ETT contributes to a more sustainable world through its decarbonising products and services.**

## CE In addition, each unit is delivered with a certificate of conformity to EU standards and complies with the following standards:

- Machinery Directive 2006/42/EC - Operator's safety
- Low Voltage Directive (LVD) 2014/35/EU - Electricity
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Regulation (EU) 2016/426 – Gas appliances
- Standard NF EN 60204 -1- Electrical appliances
- Standard EN 378-2 : 2017 – Safety and environmental requirements
- PED Directive 2014/68/EU (in accordance with Articles 2.10, 2.11, 3.4, 5a and 5d of Annex 1) - Pressure equipment
- EcoDesign regulations ErP UE 2281/2016

20-year guarantee against corrosion frame - casing

ENERGY SAVING

ENVIRONMENTAL ATTITUDE

SERVICE LINK

# Unit description

20-year guarantee against corrosion frame - casing

## Aluminium frame-casing assembly

Optimised tightness and thermal insulation.

Reduced weight, for new and refurbish projects.

Multiple airflow configurations available.

20-year anti-corrosion guarantee.

## Inside fan

Variable speed fan
with flow measurement.

Analogue air flow controller (AFC), communicating, direct transmission, « EC » electronically commutated motor optimum performance and low acoustic level.

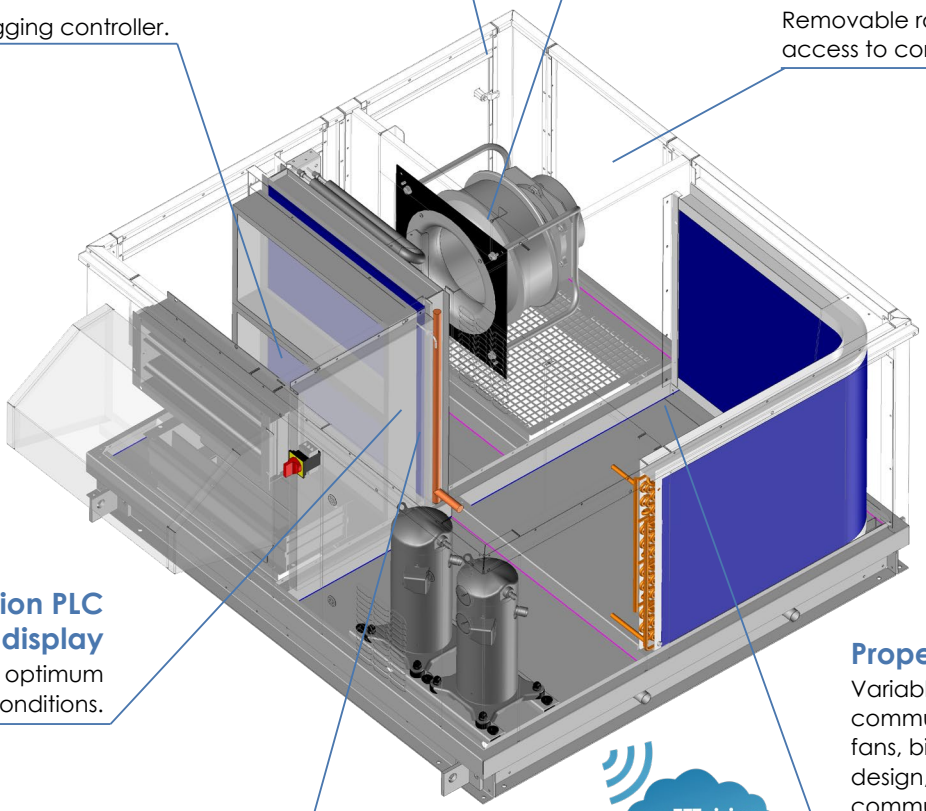
## Eco-design filtration

Low pressure drop.

Analogue clogging controller.

## Roof

Removable roof for easier access to compressors and fan.



## New generation PLC with display

Control enabling optimum operation in all conditions.

## Propeller fan

Variable-speed, communicating axial fans, bionic blade design, electronically commutated « EC », motor, optimum efficiency and low noise levels.

## Thermal heat exchangers

Optimized heat exchanger for improved energy performance.

## Connected components

Optimal unit operation.
Connection to myETTvision communication platform possible

# Unit description

## Energy
### savings

The RTS range is a cost effective and environmentally friendly solution for the air conditioning of the shelters.

The RTS unit is designed to offer **precise control as well as optimum and continuous energy efficiency** during all its operating years.

## PREMIUM PROCESS
### Quality of components

- **Sustainable and recyclable equipment**: **Aluminium frame and** casing, 100% recyclable, 20 year corrosion proof warranty
- Non-polluting process
- Reduced unit size and weight

## Accessibility
### and flexibility

- **Technical compartment** allowing simple and rapid access to the air ducts.
- Free and simplified access to **the filters by removable panels**.
- **Accessible components** for **maintenance.**
- **Numerous airflow arrangements**, meeting integration constraints.
- **Removable roof** for an easier access to the compressors and to the fan.

## Connected components
### New Generation PLC

- allows communication between units
- transfers unit technical data to an external server to enable optimal remote control with myETTvision (optional).

## Indoor
### air quality

- eCo-Design filtration.
- Optimised casing with high performance tightness level.
- **Quick and easy filter replacement.**

## Acoustic
### performance

**MAIN FEATURES**

- **New generation variable-speed propellers and fans**
- **Control system adjusting rotation speed to power stages**

Because respect for the sound environment is essential, we offer **standard** stand-alone units that meet your acoustic constraints.

## ETT goes the extra mile...

### Installation

Outdoor, on the rooftop or at ground level.

### ETT Services

- A team to guide you from commissioning to operational support
- Manufacturer visits and audits
- Installation optimisation and retrofit
- Service contracts
- Staff training.
- Access to the ETT Services hotline.

### myETTvision platform

**myETTvision** allows you to control and optimize your installation remotely.

# Operating principles

**The unit works as a non-reversible heat pump**

> Source: outside air
> Treated fluid: inside air

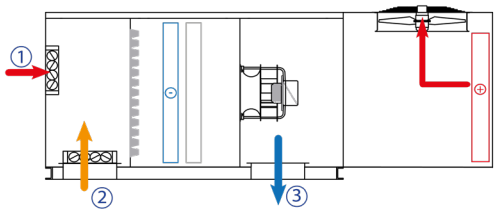
**The following operating modes are available:**

> Air conditioning
> Free Cooling: cooling using outside air, without thermodynamics

**In these modes, the unit can operate:**

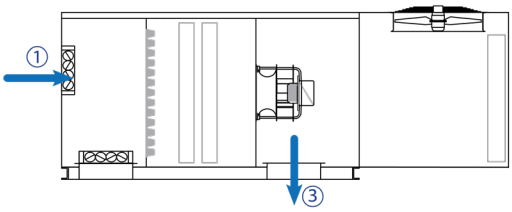
> With all recirculated air
> all fresh air mode
> mixed air mode

## *Air-conditioning Mode*




**Cooling Mode**: The thermodynamic system maintains a comfortable temperature in summer.

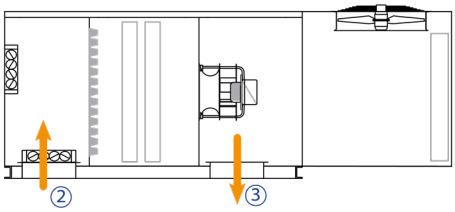
## *Free Cooling Mode*




**Free Cooling Mode**: In mid-season, comfort temperature is maintained using in priority the difference between outside air and inside air to cool the building.

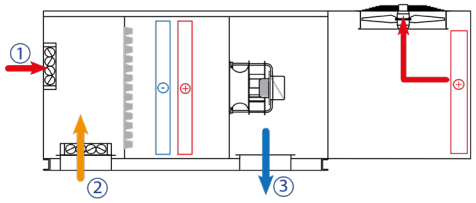
Free Cooling **enables significant savings** delaying the start-up of the thermodynamic system.

## *Recycling Mode*



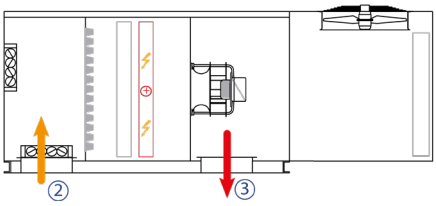

**Recycling Mode**: Destratification of the volume treated by recycling, when the return temperature is much higher than the ambient temperature in winter.

## *DEHU* mode with electric coils




**DEHU mode with electric coils**: Maintains indoor temperature and humidity in all outdoor conditions. Dehumidification using thermodynamics, then reheating if necessary using electric coils.

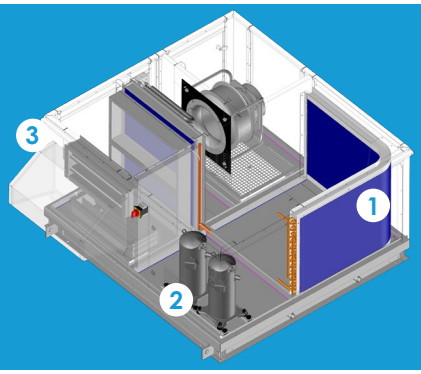
## *Heating Mode*




**Heating mode** : Electric coils maintain temperature in winter. Optional reversible machine.

① Fresh air ② Return air ③ Supply air

# Detailed components of the unit




**The ETT packaged unit comprises 3 different sections:**

1. An external compartment to ensure heat exchange with the environment.
2. A separate technical compartment for refrigeration components, regulation and electrical components.
3. The internal section ensures air change and air treatment.

## Aluminium frame and casing assembly :

- **Fitted with a motorised mixing chamber with 2 dampers with low pressure drop, made of aluminium, with upstream-downstream Class 3 tightness and Class B frame tightness (according to EN1751), RTS enables:**
  - ✓ Free Cooling mode switch to delay thermodynamic circuit operation and allow significant energy savings.
  - ✓ **Perfect weather resistance, 20-year anti corrosion guarantee on casing.**
- **Watertight floor** with drainage outlets around the unit, connected to rubber traps.
- **Aluminium vertical panels and roof, mounted on aluminium frame.**
- A separate **technical compartment** that facilitates maintenance and control of the unit, enables measurements to be taken and settings to be fine-tuned during operation.
- **Access through large** removable panels. Doors tightness is ensured by a flexible gasket under compression, providing ideal sealing day after day.
- **Sound and thermal insulation provided by 80 mm to 100 mm rock wool** (classification M0) in the frame and **by 25 mm glass wool** (classification M0) **in the walls and roof**.
- **Optional rain proof cowl on fresh air** (to be fitted by the installer).

## Aeraulics assembly:

- **Eco-design filtration** , easily removable - efficiency ePM10 50% (M5) in **98 mm** pleated media to increase filter life and reduce pressure drops, fouling controlled by analogue pressure switch.
- **Several filtration levels available** to suit your project needs: EPM10 50% (M5) + ePM1 50% (F7) and ePM10 50% (M5) + ePM1 80% (F9).
- **Replacement filter kit available as an option**
- **High Performance Propeller Fan**

  **Pioneer, ETT has opted for last generation fans:**
  - ✓ Equipped with a variable speed " EC » electronically commuted motor. These fans ensure a precise condensation temperature for greater comfort and energy savings by adapting their rotation speed to the real needs.
  - ✓ To adjust their operation in real time,
- **Last generation internal fans (High Energy Performance):**
  - ✓ **Direct transmission** (reduced maintenance and consumption, increased reliability),
  - ✓ **Fitted with a variable speed "EC" electronically commutated motor** combined with an Analogue Flow Controller - AFC (easier to commission),
  - ✓ Aluminium wheel.
  - ✓ Communicating for real time operation adjustment.
  - ✓ With integrated Soft Starter for reduced starting current and soft start (textile ducting).

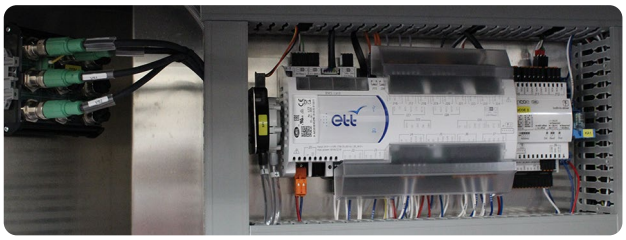
## Energy and thermodynamic assembly:

- **For units with several thermodynamic circuits, only the first circuit is equipped with a tandem.** This allows the thermal power provided to be spread according to the application needs, for less consumption and more comfort.
- **Communicating electronic expansion valves** combining increased optimisation of the exchangers and fast stabilisation of the thermodynamic system.
- Reinforced **heat exchangers** with aluminium fins and grooved copper tubes for improved heat exchange.
- **Refrigeration circuits** compliant with the European directive on pressure equipment (PED 2014/68/EU).
- **Refrigerant** type R410A, R134a or R513A.
- **Tandem circuits,** for staggered power delivery and energy savings during part-load operation.
- **Anti-acid filter drier.**

# Detailed components of the unit

## Electrical assembly:

- **Electrical board** in accordance with NF EN C15-100 and NF EN 60204-01 including:
  - ✓ **An ETT PLC** with optional Touch Screen remote display or by native Modbus BMS.
  - ✓ **A power switch** with lockable external handle for full load cut-off. Connection using standard universal cable. Optional copper/aluminium connection boxes.
  - ✓ **A 400-230-24** volt transformer for control and regulation circuits.
  - ✓ **A fault summary** with a dry contact on stanby at terminal.
  - ✓ **Numbered terminal blocks** with disconnectable terminals for all transfers or remote controls.
  - ✓ **A terminal block** for compressor load shedding.
  - ✓ **Internal wiring** fully numbered at both ends with numbered rings.
  - ✓ An Ik3 **breaking capacity** of 10 kA basic.
  - ✓ Components **protection** using circuit breakers.
  - ✓ **A phase controller.**
  - ✓ **The nominal LV** distribution voltage is governed by the French Interministerial Order of 24 December 2007. This sets the nominal voltage level at 230/400 V. It defines minimum and maximum values that are acceptable at a user's point of delivery (average value over 10 ml), corresponding to a range of -10 % / +10 % around the nominal values. It also defines the maximum allowable value of the voltage drop gradient: 2%. This is the additional voltage drop generated at a network point if 1 Kw single-phase is added at that same point.

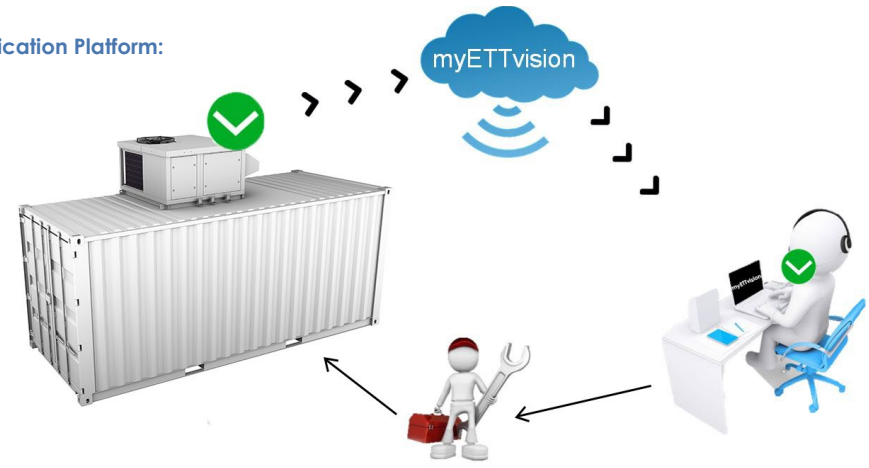


## Advanced control assembly:

- **Temperature regulation with 1 set point: Responsiveness, accuracy and anticipation.**
  Economy or Comfort mode controls available.
- **Filters Fouling Analogue control (FFAC), measures and indicates filter fouling to the PLC**, enabling preventive filter replacement for optimum air quality and reduced consumption.
- **Real-time regulation of the speed of the propeller fans** according to operating mode, outdoor temperature and thermodynamic power, for optimum acoustic performance and energy savings.
- **Optional VDP (variable airflow / power)**, which adapts the indoor airflow according to the thermodynamic power.
- **Analogue Air Flow Controller (AFC)** for measuring and indicating the air flow rate of supply fans on the PLC, with optional auto-adjustment of the air flow rate, to compensate for filter fouling.
- **Free Cooling** function: cooling with outside air, delaying thermodynamic operation for significant energy savings.
- **Optional function to prohibit Free Cooling by specific humidity comparison**, in order to limit latent inputs during Free Cooling phase by comparing indoor and outdoor specific humidity.
- **Indoor relative humidity regulation**, optional, without energy recovery.
- **Optional all-weather kit function**, for air-conditioning operation at outdoor temperatures below 15°C.
- **Metering of electrical energy**, with breakdown of electrical consumption by operating modes.
- **Monitoring, diagnosis and management of fault safety**, with fault history in literal form.
- **myETTvision remote communication platform providing access to parameter setting, operation and energy monitoring, access to faults in your fleet of units**.
- Optional **stand by duty** function, allowing the second unit to operate if the 1st unit is faulty.
- Optional **parallel unit function to** increase the number of control stages.

## myETTvision:

**ETT Remote Communication Platform:**

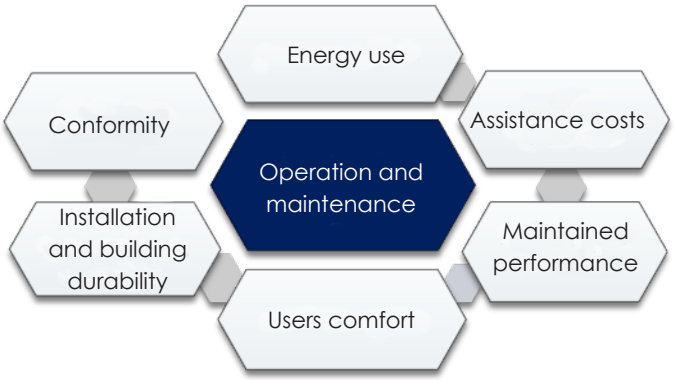


## OPERATION: COSTS, PERFORMANCE AND GUARANTEES

The **quality of the operation** combined with the installation has a major impact on the **overall cost of the units.**

It affects 3 parameters:

- **Total cost**
  - ✓ Purchase and implementation (15%)
  - ✓ Operating costs (85%)
- **Installation efficiency**
  - ✓ Operating **costs**
  - ✓ **Users**' comfort
  - ✓ **Durability**
  - ✓ **Availability**
- **Conformity**
  - ✓ **Regulations**
  - ✓ Manufacturer's **warranty conditions**




**As soon as it is commissioned, the plant must be operated and maintained** in such a way as to guarantee regulatory compliance. Operating instructions aim at optimising unit performance and settings. Also, the validity of the guarantee is conditional upon strict compliance with these instructions.

**ETT recommands periodic checks that should include, at least:**

- **Checking/adjusting technical functions** (safety, ventilation, refrigeration circuits, etc.)
- **Control** adjustment (setpoints, time slots, advanced parameters, etc.)
- **Technical and regulatory** checks:
  - Leakage checking, once or twice a year
  - Initial commissioning inspection and periodic inspections (monitoring of pressure equipment)
  - Filters replacement, 2 to 4 times a year depending on the type of filters and installation environment
  - Checking and replacing sensitive components of the humidity sensors.
- Inspection and maintenance of the environment (distribution networks, irrigation probes, etc.)

ETT's **service solutions** make it possible to achieve **operational performance** and **compliance** objectives while providing **peace of mind** for the user.

# Main options

| | |
|---|---|
| **Frame - Casing** | ▪ Supply air motorised damper<br>▪ AG4 casing<br>▪ Stainless steel casing (316 L)<br>▪ Compression locks<br>▪ Fresh air cowl<br>▪ Radiation-resistant roof (double roof for air blade)<br>▪ Outdoor sand filter (impact filter) |
| **Airflow section** | ▪ Analogue airflow controller (AFC) with auto-adjustment of supply fans airflow rate<br>▪ Pressure gauge for supply air filters<br>▪ ePM10 50% (M5) + ePM1 50% (F7) double filtration<br>▪ ePM10 50% (M5) + ePM1 80% (F9) double filtration<br>▪ Ball siphons |
| **Thermodynamics** | ▪ AFC (digital scroll) compressor<br>▪ Map Monitoring: Required for AFC<br>▪ HP/LP pressure gauge<br>▪ Electrofin internal and external heat exchanger protection<br>▪ Heresite internal and external heat exchanger protection<br>▪ Coil Cu/Cu int. and ext.<br>▪ Electrofin external and Aluminium internal heat exchanger protection<br>▪ Heresite external and Aluminium internal heat exchanger protection<br>▪ Coil Cu/Cu ext and Alu int<br>▪ HP and LP dual valve<br>▪ Unit delivered under nitrogen |
| **Auxiliaries** | ▪ Auxiliary 2-sequential stage electric heaters + Load shedding using dry contact<br>▪ Electric auxiliary with TRIAC on 1 stage |
| **Electrics** | ▪ Totalising electrical energy metering<br>▪ Cable cover for outdoor power supply with ROXTEC cable transit (to be installed by installer)<br>▪ Electrical cabinet |
| **Installation** | ▪ Aluminium feet 200, 400 or 600 mm |
| **Control** | ▪ All-season operation (compressor authorisation for air conditioning with outside temp. < +15°C)<br>▪ Control function in Comfort mode (setpoint temperatures control by PID)<br>▪ Free Cooling banning based on specific humidity comparison<br>▪ FPV operation (Flow / Power Variation)<br>▪ Average room temperature (4 sensors)<br>▪ Standby duty (one unit on standby) with supply air damper<br>▪ Overpressure control by fresh air modulation with max FA with pressure sensor<br>▪ Management of humidity<br>▪ Supply air fan management 0-10V 0-10V |
| **Communication** | ▪ myETTvision<br>▪ Remote display: Control box without cabinet (for installation on customer cabinet)<br>▪ Native RS485 Modbus<br>▪ IP Modbus<br>▪ BacNet IP |
| **ATEX** | ▪ Bespoke unit |

# Technical features

RTS 2.5 - 015

| | DESIGNATION | Unit | R410A | R134a | R513A |
|---|---|---|---|---|---|
| VENTILATION | **FLOW RATES** | | | | |
| | Rated air flow rate | **m³/h** | 2,500 | 2,500 | 2,500 |
| | Minimum air flow rate | **m³/h** | 1,500 | 1,500 | 1,500 |
| | Maximum air flow rate | **m³/h** | 2,500 | 2,500 | 2,500 |
| | **ACOUSTICS** (1) | | | | |
| | Sound power level on supply air | **dB (A)** | 84 | 84 | 84 |
| | Outside sound power level | **dB (A)** | 72 | 71 | 71 |
| | Resulting external sound pressure at 10m ref. $2*10^{-5}$ in free field, direction 2 | **dB (A)** | 41 | 40 | 40 |
| AIR CONDITIONING PERFORMANCES | **RATED PERFORMANCE AT +35°C.** (1) | | | | |
| | Net cooling capacity | **kW** | 13.0 | 12.7 | 12.6 |
| | Net EER | **kW/kW** | 2.53 | 2.53 | 2.53 |
| | **SEASONAL EFFICIENCY** (2) | | | | |
| | Design net cooling capacity | **kW** | 13.0 | 12.7 | 12.6 |
| | SEER | **kW/kW** | 3.76 | 3.71 | 3.60 |
| | ηs,C | **%** | 147 | 145 | 141 |
| GENERAL | **ELECTRICAL DATA** (3) | | | | |
| | Total installed electrical power (4) | **kW** | 11.5 | 11.4 | 11.4 |
| | Total installed electrical intensity (4) | **A** | 51.4 | 68.1 | 68.1 |
| | Starting current | **A** | 18.8 | 28.1 | 28.1 |
| | Maximum absorbed electrical power (4) | **kW** | 11.5 | 11.4 | 11.4 |
| | **REFRIGERATION CIRCUIT(S)** | | | | |
| | Power stages | **-** | 2 | 2 | 2 |
| | **OPERATING LIMITS IN COOLING MODE** | | | | |
| | Maximum outside temperature (5) | **°C** | 45 | 52 | 52 |
| | Minimum outside temperature (5) | **°C** | | 15 | |
| | Minimum indoor coil inlet temperature | **°C** | | 18 | |
| | **WEIGHT** | | | | |
| | Unit weight without options(6) | **kg** | | 400 | |

**(1)** In accordance with EN 14511.
**Cooling mode**: Indoor conditions: +27°C DB/+19°C WB and outside conditions: +35°C DB / 24°C WB
**(2)** According to EN 14825.
**(3)** Three-phase power supply 400V - 50 Hz + earth without neutral.
The values given do not include any options and may change during the design stage. They must be confirmed after the purchase order has been placed.

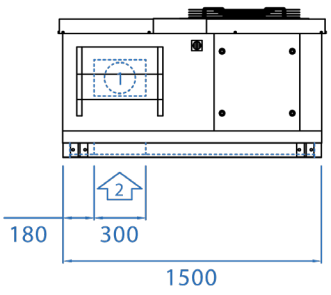
**(4)** Cooling mode: Indoor conditions: +27°C DB /+19°C WB and outside conditions: +35°C DB / 24°C WB. Nominal flow, 400Pa available return air + air supply pressure and ePM10 50% (M5) fouled filters.
**(5)** For indoor conditions: +27°C DB /+19°C WB at nominal air flow.
**(6)** Weight for an available pressure of 400 Pa.

# Dimensions and connections

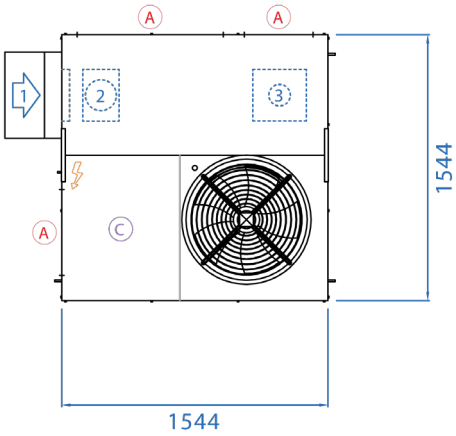
RTS 2.5 - 015
Arrangement 1.1

## SUPPLY AIR *below*

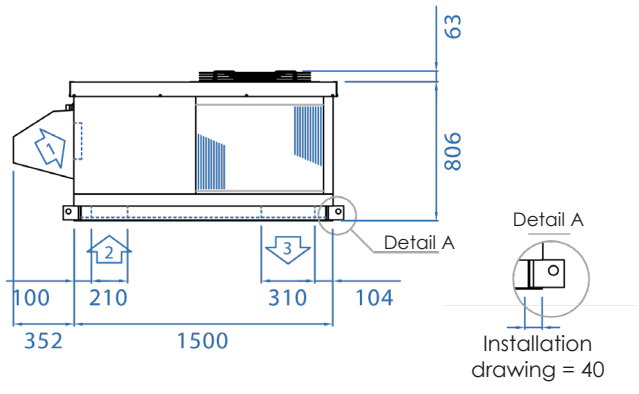
### Side view:



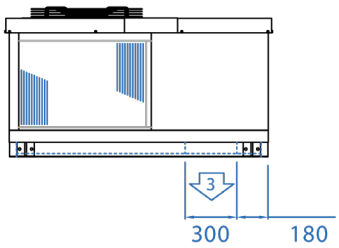

### Top view:




### Return side view:




### Supply air side view :




① Fresh air
② Return air
③ Supply air
⚡ Power supply
Ⓐ Access
Ⓒ Technical section

| | Length | Width (1) | Height |
|---|---|---|---|
| Casing dimensions | 1915 | 1555 | 869 |

(1) Return air on side: +125 mm

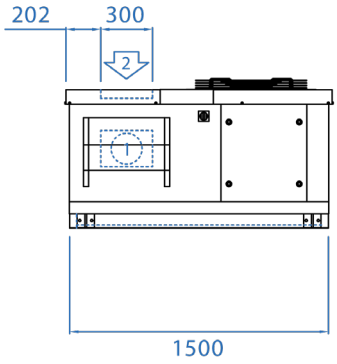
Note: fresh air cowls shall be installed by the installer.

# Dimensions and connections

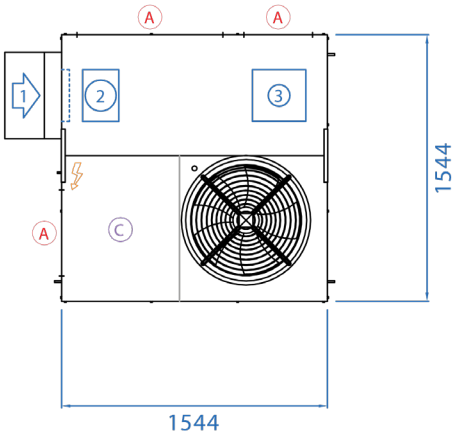
RTS 2.5 - 015
Arrangement 2.3

## SUPPLY AIR *top*

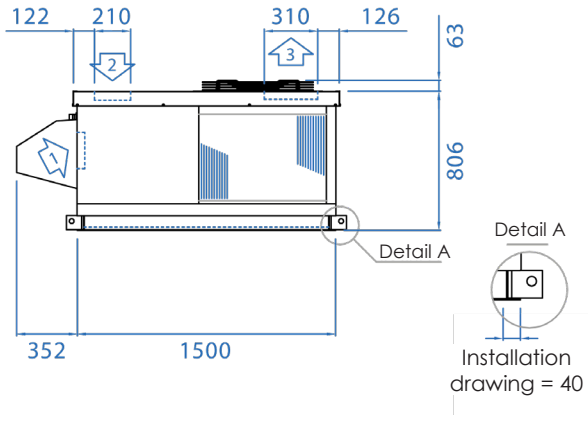
### Side view:



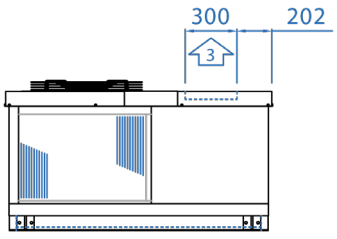

### Top view:




### Return side view:




### Supply air side view :

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| Casing dimensions | 1915 | 1555 | 869 |

(1) Return air on side: +125 mm

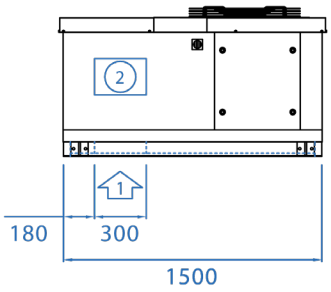
Note: fresh air cowls shall be installed by the installer.

# Dimensions and connections

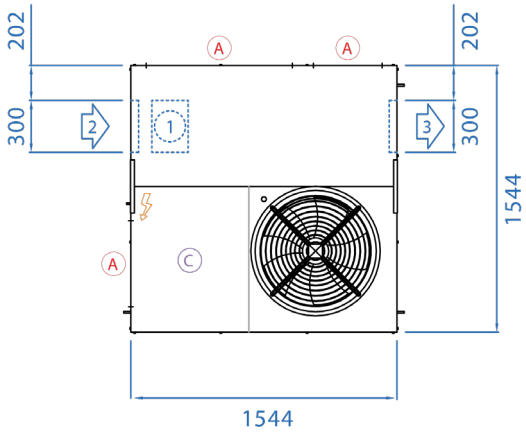
RTS 2.5 - 015
Arrangement 4.6

## SUPPLY AIR *end*

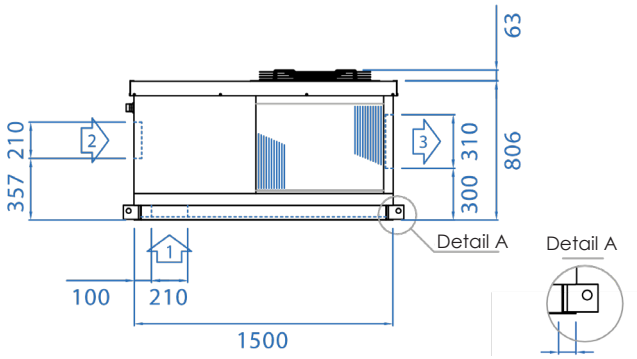
### Side view:



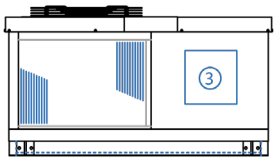

### Top view:




### Return side view:




### Supply air side view :




① Fresh air
② Return air
③ Supply air
⚡ Power supply
Ⓐ Access
Ⓒ Technical section

| | Length | Width (1) | Height |
|---|---|---|---|
| Casing dimensions | 1627 | 1555 | 869 |

(1) Return air on side: +125 mm

Note: fresh air cowls shall be installed by the installer.

# Technical features

RTS 4.0 - 020

| | DESIGNATION | Unit | R410A | R134a | R513A |
|---|---|---|---|---|---|
| VENTILATION | **FLOW RATES** | | | | |
| | Rated air flow rate | **m³/h** | 4,000 | 4,000 | 4,000 |
| | Minimum air flow rate | **m³/h** | 2,000 | 2,000 | 2,000 |
| | Maximum air flow rate | **m³/h** | 4,000 | 4,000 | 4,000 |
| | **ACOUSTICS** (1) | | | | |
| | Sound power level on supply air | **dB (A)** | 84 | 85 | 85 |
| | Outside sound power level | **dB (A)** | 74 | 77 | 77 |
| | Resultingexternal sound pressure at 10m ref. $2*10^{-5}$ in free field, direction 2 | **dB (A)** | 43 | 46 | 46 |
| AIR CONDITIONING PERFORMANCES | **RATED PERFORMANCE AT +35°C.** (1) | | | | |
| | Net cooling capacity | **kW** | 18.5 | 17.8 | 17.7 |
| | Net EER | **kW/kW** | 2.93 | 2.65 | 2.60 |
| | **SEASONAL EFFICIENCY** (2) | | | | |
| | Design net cooling capacity | **kW** | 18.5 | 17.8 | 17.7 |
| | SEER | **kW/kW** | 4.44 | 4.05 | 3.96 |
| | ηs,C | **%** | 175 | 159 | 155 |
| GENERAL | **ELECTRICAL DATA** (3) | | | | |
| | Total installed electrical power (4) | **kW** | 12.6 | 11.7 | 11.7 |
| | Total installed electrical intensity (4) | **A** | 56.5 | 85.1 | 85.1 |
| | Starting current | **A** | 20.3 | 32.3 | 32.3 |
| | Maximum absorbed electrical power (4) | **kW** | 12.6 | 11.7 | 11.7 |
| | **REFRIGERATION CIRCUIT(S)** | | | | |
| | Power stages | **-** | 2 | 2 | 2 |
| | **OPERATING LIMITS IN COOLING MODE** | | | | |
| | Maximum outside temperature (5) | **°C** | 45 | 52 | 52 |
| | Minimum outside temperature (5) | **°C** | | 15 | |
| | Minimum indoor coil inlet temperature | **°C** | | 18 | |
| | **WEIGHT** | | | | |
| | Unit weight without options(6) | **kg** | | 450 | |

**(1)** In accordance with EN 14511.
**Cooling mode**: Indoor conditions: +27°C DB/+19°C WB and outside conditions: +35°C DB / 24°C WB
**(2)** According to EN 14825.
**(3)** Three-phase power supply 400V - 50 Hz + earth without neutral.
The values given do not include any options and may change during the design stage. They must be confirmed after the purchase order has been placed.

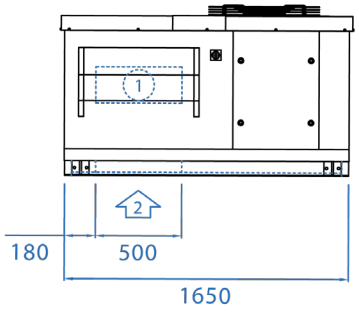
**(4)** Cooling mode: Indoor conditions: +27°C DB /+19°C WB and outside conditions: +35°C DB / 24°C WB. Nominal flow, 400Pa available pressure on return + supply & ISO Coarse 65% filters clogged.
**(5)** For indoor conditions: +27°C DB /+19°C WB at nominal air flow.
**(6)** Weight for an available pressure of 400 Pa.

# Dimensions and connections

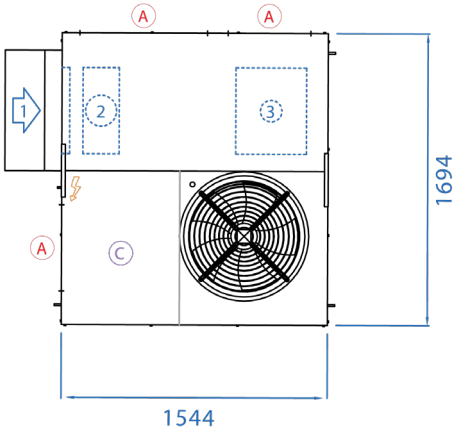
RTS 4.0 - 020
Arrangement 1.1

## SUPPLY AIR *below*

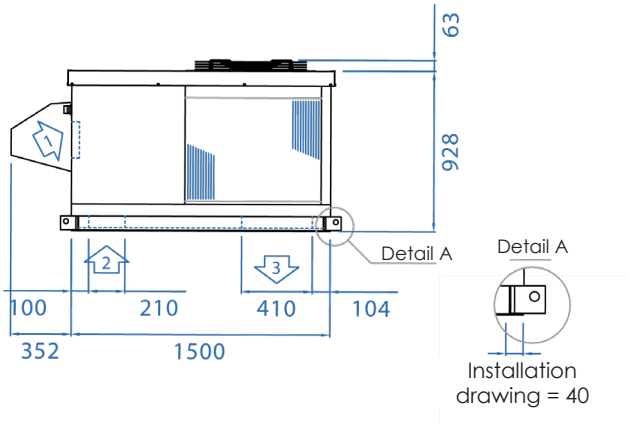
### Side view:



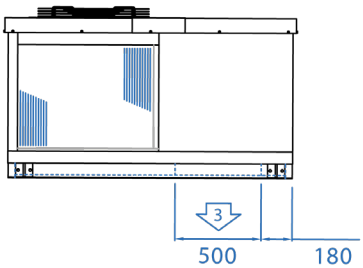

### Top view:




### Return side view:




### Supply air side view :




① Fresh air
② Return air
③ Supply air
⚡ Power supply
Ⓐ Access
Ⓒ Technical section

| | Length | Width [1] | Height |
|---|---|---|---|
| Casing dimensions | 1915 | 1705 | 991 |

(1) Return air on side: +125 mm

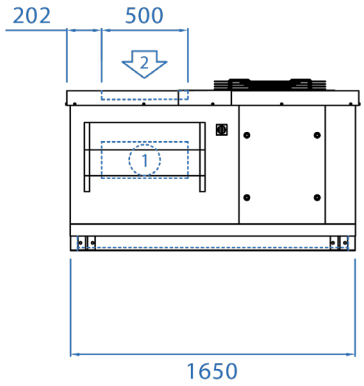
Note: fresh air cowls shall be installed by the installer.

# Dimensions and connections

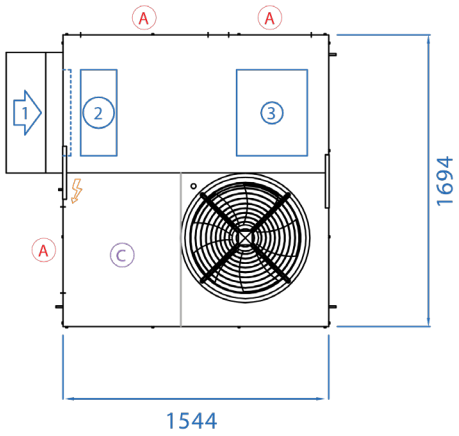
RTS 4.0 - 020
Arrangement 2.3

## SUPPLY AIR *top*

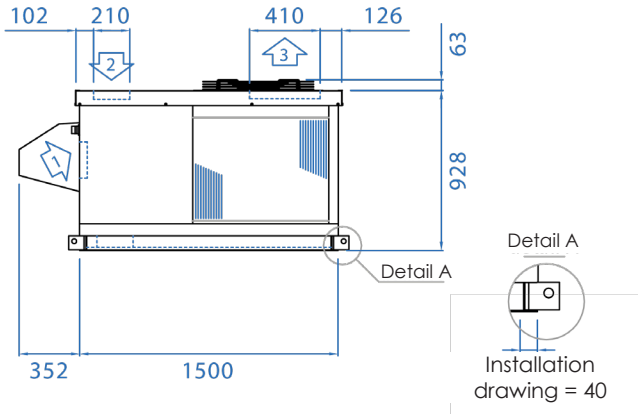
### Side view:



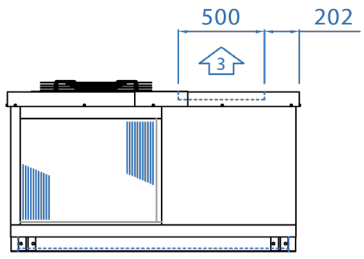

### Top view:




### Return side view:




### Supply air side view :




① Fresh air
② Return air
③ Supply air
⚡ Power supply
Ⓐ Access
Ⓒ Technical section

| | Length | Width (1) | Height |
|---|---|---|---|
| Casing dimensions | 1915 | 1705 | 991 |

(1) Return air on side: +125 mm

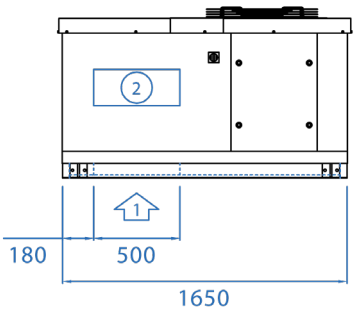
Note: fresh air cowls shall be installed by the installer.

# Dimensions and connections

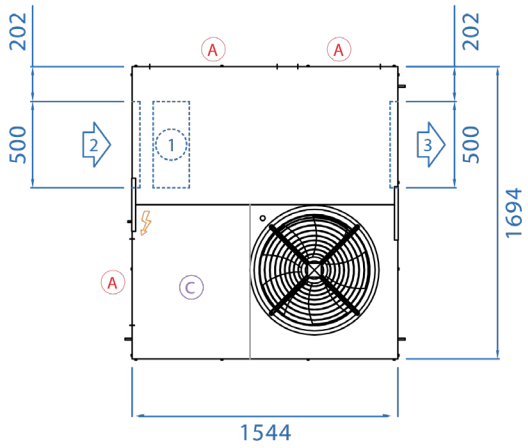
RTS 4.0 - 020
Arrangement 4.6

## SUPPLY AIR *end*

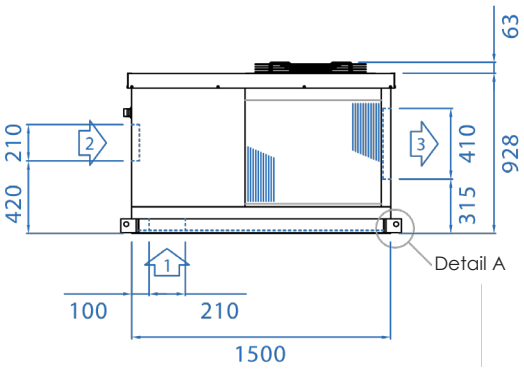
### Side view:



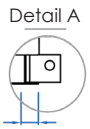

### Top view:




### Return side view:

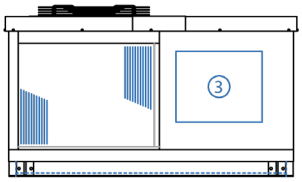



Detail A



Installation drawing = 40

### Supply air side view :




① Fresh air
② Return air
③ Supply air
⚡ Power supply
Ⓐ Access
Ⓒ Technical section

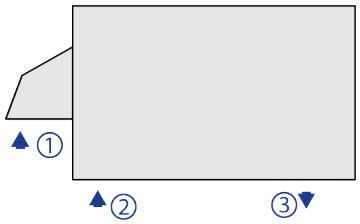
| | Length | Width (1) | Height |
|---|---|---|---|
| Casing dimensions | 1627 | 1705 | 991 |

(1) Return air on side: +125 mm

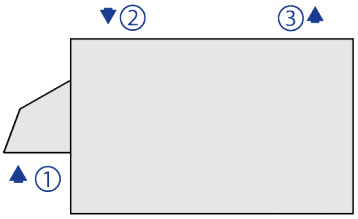
Note: fresh air cowls shall be installed by the installer.

# Aeraulic arrangements

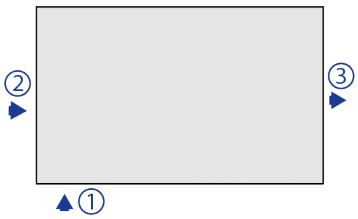
## Arrangement 1.1




## Arrangement 2.3



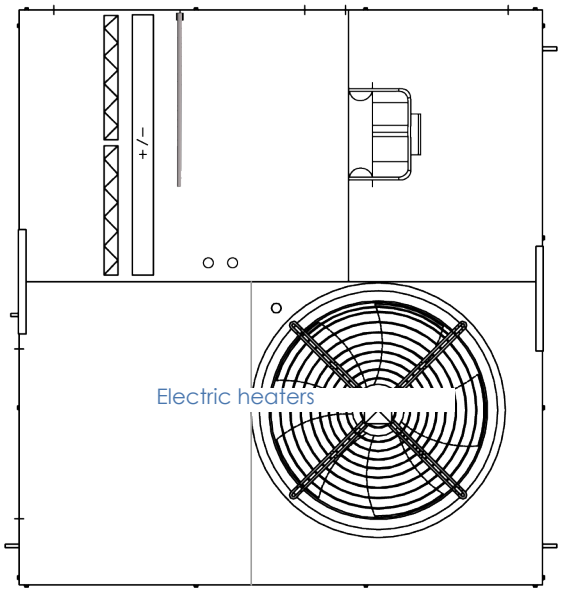

## Arrangement 4.6




① Fresh air ② Return air ③ Supply air

# Auxiliary: Sequential electric coils

## SCHEMATIC DIAGRAM

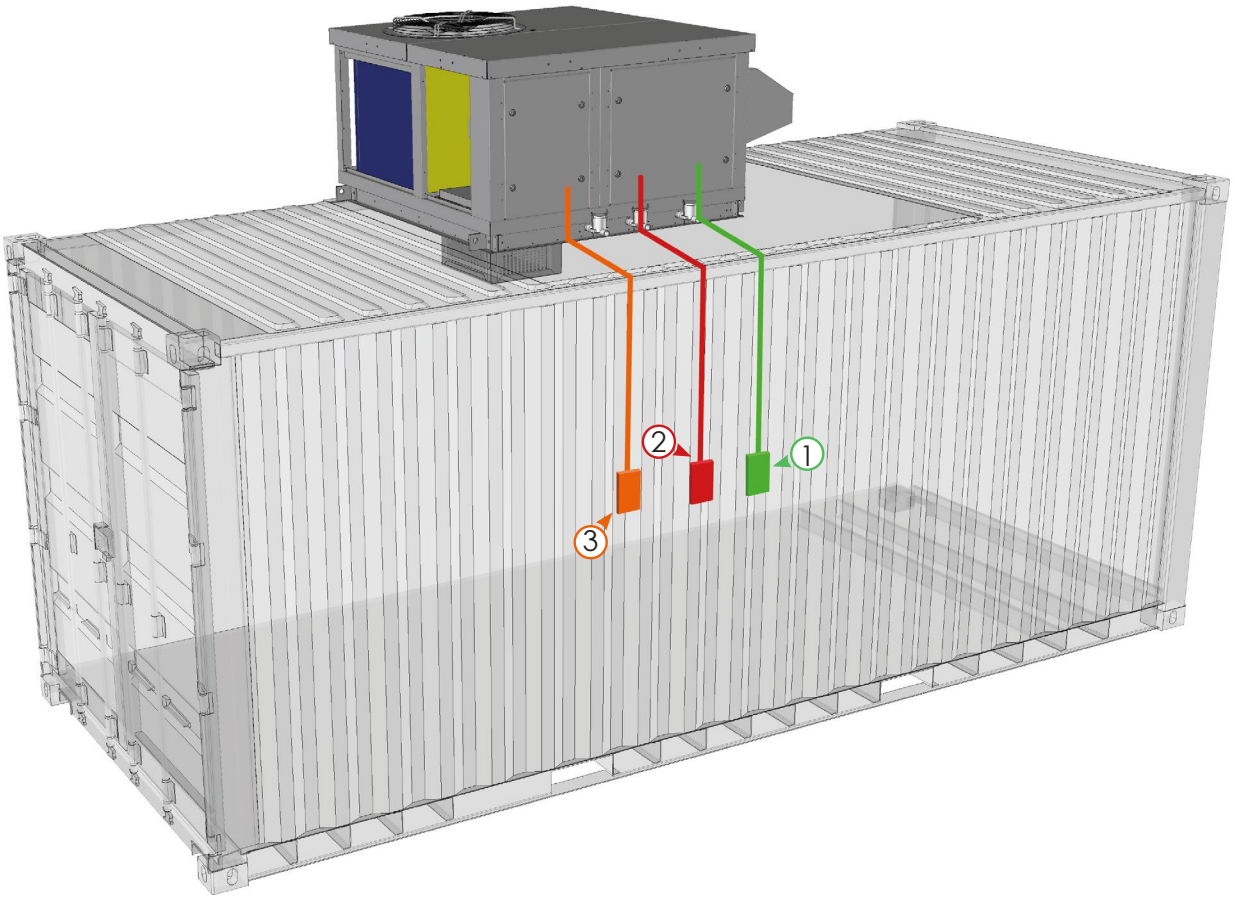



## POWER AVAILABLE (in KW)

| Total power (kW) | Current (A) | 1st stage | 2nd stage | RTS 2.5 | RTS 4.0 | Weight (kg) |
|---|---|---|---|---|---|---|
| 3 | 4.3 | 3 | | • | • | 9.7 |
| 6 | 8.7 | 3 | 3 | • | • | 11.8 |
| 9 | 13 | 3 | 6 | • | • | 12.6 |
| 12 | 17.3 | 3 | 9 | • | • | 13.6 |
| 15 | 21.7 | 5 | 10 | • | • | 14.3 |
| 18 | 26 | 6 | 12 | | • | 15.4 |
| 21 | 30.3 | 7 | 14 | | • | 15.7 |

**Note:** For higher performances, please contact us.

# Sensors connection principle




- ① **Temperature sensor :** shielded twisted pair cable, 2 x 0,75 mm² LIY-CY (max. length 100 lm)
- ② **Pressure sensor:** shielded twisted cable, 3 x 0,75 mm² LIY-CY (max. length. 100 lm)
- ③ **Humidity sensor:** 2-pair shielded cable, 4 x 0,75 mm² LIY-CY (max. length. 100 lm)*(Optional)*

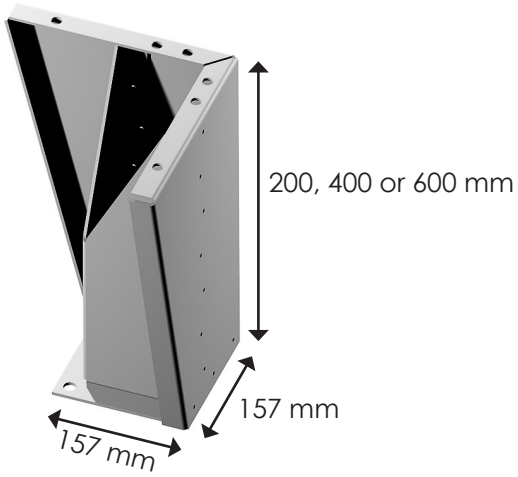
**Note:**

- In order to measure the sensor value that is most representative of the environment, avoid installing them:
  > near a heat source (spotlights, cooking appliances, glass walls, chimney duct);
  > in draughty areas (near storerooms, entrances, openings, etc.);
  > in dead zones (back of shelving, corners of buildings);
  > close to high-traffic areas (checkouts, fitting rooms).
- To avoid disrupting the measurements:
  > the sensors must not be located in the axis of the duct used for their wiring, otherwise they may be disturbed by a parasitic air flow;
  > the routing of control cables must be separate from the routing of power cables (risk of electromagnetic interference).

# Installation accessories

## FEET

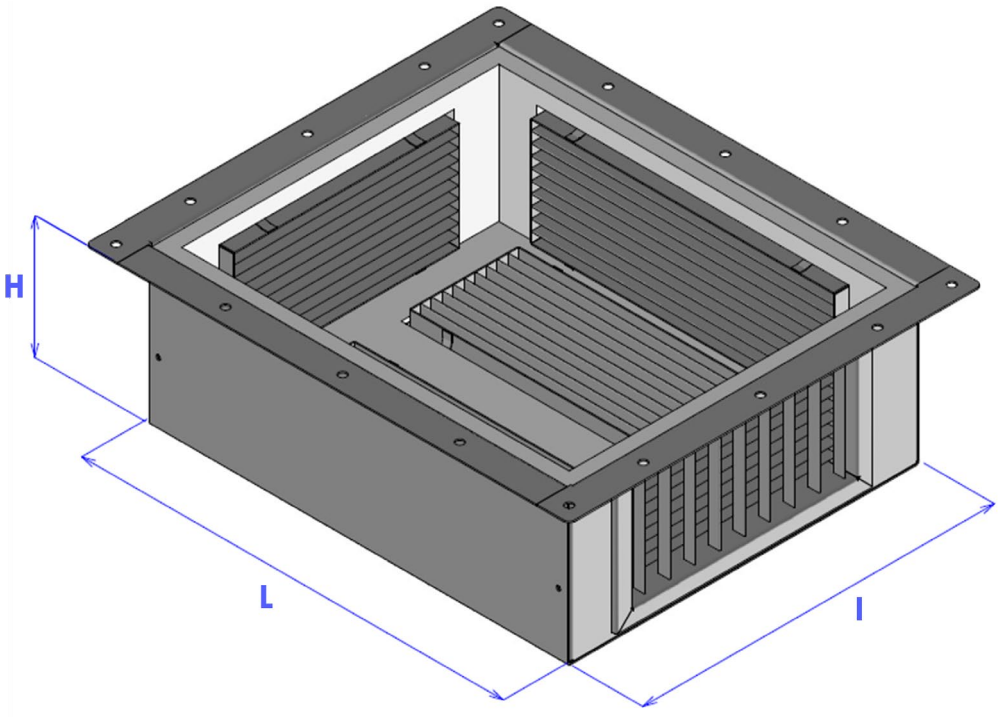
Aluminium fixed foot
Unit weight: 1kg for 400 mm



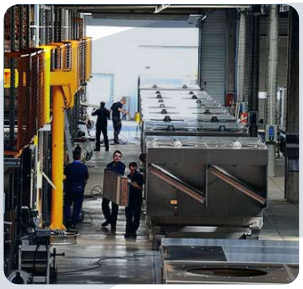

4 feet to be mounted on the corners of the frame.

## AIR DISTRIBUTOR

It ensures good air distribution in the Shelter, avoiding recirculation of supply air to the return.




| Unit | RTS 2.5 | RTS 4.0 |
|---|---|---|
| Lth (mm) | 340 | 540 |
| W (mm) | 350 | 450 |
| H (mm) | 200 | 200 |

Reference: MARK-BRO_53-EN_E

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