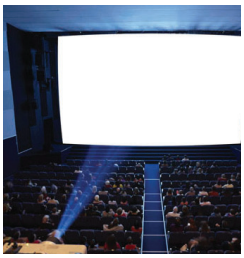
CLIMATIC
ENVIRONMENT
SOLUTIONS
AND EQUIPMENT




Green Line

CINEFFI R32

MADE IN FRANCE

www.ett-hvac.com

CINEFFI R32: ErP Ready 4-damper heat pump

When they adopted the KYOTO protocol, the Member States of the European Union (EU) voted a set of measures known as the "energy-climate package", aiming at:

- ✓ reducing greenhouse gas emissions by 20%;
- ✓ reducing energy consumption by 20%;
- ✓ increasing the proportion of renewable energies to 20% of the final energy consumption.

Directive 2009/125/EC on the ecodesign of ErP (Energy related Products) has been adopted to achieve these objectives.

This directive applies to all products using energy or having an impact on energy consumption. It encompasses a **« package of regulations »** setting performance requirements for each type of product. EU Regulation **2016/2281 covers air heaters, cooling appliances, high-temperature industrial chillers and fan coil units**.

- **1st January 2018**
- **1st January 2021**

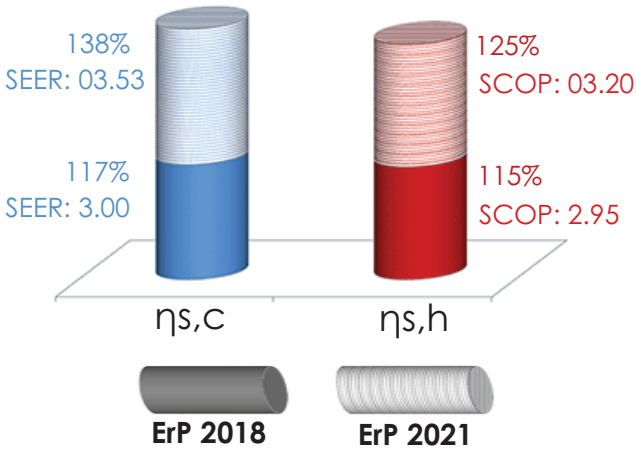
4-Damper heat pumps failing to comply with Regulation (EU) 2281/2016 shall no longer be marketed in Europe

Regulatory impacts since 1 January 2018

The European Parliament compels rooftop manufacturers to comply with Regulation (EU) 2281/2016 on ErPs, in order to give the users the possibility to evaluate their energy consumption.

A new method for assessing the energy efficiency of rooftops has been defined under this regulation, which specifies the minimum eco-design requirements: SEASONAL EFFICIENCY.
This new measure gives a **more realistic indication of the energy efficiency** of a heating or air-conditioning system and its impact on the environment.

Seasonal yields to be achieved according to ErP 2018 or ErP 2021.



A summary sheet stating **rated capacity & seasonal efficiency** is available on request.

SCOP

Seasonal Coefficient of Performance

The SCOP is the ratio between annual heating demand to the reference climate and the annual electricity consumption for heating.

$$\eta s,h = \frac{SCOP}{2.5} - 3\%$$

SEER

Seasonal energy efficiency

The SEER is the ratio between annual cooling demand to the reference climate and the annual electricity consumption for cooling.

$$\eta s,c = \frac{SEER}{2.5} - 3\%$$

2.5: Primary energy conversion coefficient
3 %: Control-related factor

ENERGIE TRANSFERT THERMIQUE

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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). The **ETT** equipment can be installed either on a roof or on the ground.

EcoDesign favors DECONSTRUCTION : **ETT** units are 98% recyclable (Reuse and recycling rates based on an ULTI+ R32 21 unit).

Environmental impact :

The Ultima Green Line is environmentally responsible and uses the R32, a refrigerant with low environmental impact:

- ✓ Zero ozone depletion (ODP)
- ✓ Global Warming Potential (GWP) of 675

Our technical choices have several impacts on the environnement

- **Legal and regulatory framework:**
- Pursuant to the Directive 2008/98/EC on waste, considering clause 26 : "The polluter pays principle is a guiding principle at European and international levels. "The producer and holder of the waste should manage it in such a way as to ensure a high level of protection for the environment and human health". ETT is a member of "Ecologic" in France.
- In accordance with articles 5.3, 5.4 and 11 of Regulation (EC) No 303/2008, ETT holds a certificate of capability to handle refrigerants (no. 637).
- **Aluminium : a good choice for the planet !**
- Aluminium is 100% recyclable indefinitely.
- Recycling provides over 30% of aluminium needs.

- **Consumables: efficient waste management:**
- Filtration: ETT units incorporate "Eco-Design" air filters (frame selective sorting - grid - media)
- **Low polluting ETT manufacturing process:**
- Selective sorting by raw materials, all waste is recovered, 80% of which is recycled.
- No paint on casings, no use of solvent.
- **ETT certifications**
- **ISO 14001** certification: Environmental management system
- **ISO 9001** certification: Our quality organization is the subject of AFAQ certificate n° 1994/2016f. Each unit is inspected and tested in the factory before delivery, and a test certificate is issued.
- **CSR assessment** : Quality of CSR management system - **C**orporate **S**ocial **R**esponsibility

We have placed ease of operation at the heart of our units design:

- The separate **technical section** facilitates unit control and maintenance and allows measurement and adjustment during operation.
- The **BEST PLC**, specially designed for this application, is highly flexible to ensure optimum operation of the **ETT** unit with user-friendly local or remote communication via a remote display, PC or BMS.

Moreover, each unit is delivered with an **EC certificate of conformity** and complies with the standards listed below:

- Machinery Directive 2006/42/EC - Operator's safety
- Low Voltage Directive (LVD) 2014/35/EU
- 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

100% recyclable aluminium

20-year guarantee against corrosion frame - casing

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.

Eco-design filtration

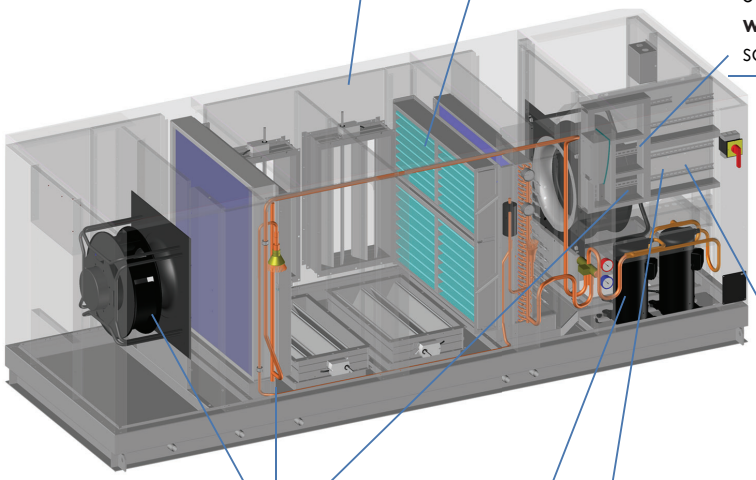
Low pressure drop.

Analogue clogging controller.

Options ISO Coarse 65% (G4) rechargeable, ISO ePM10 50% (M5), ISO Coarse 65% (G4)+ISO ePM1 50% (F7), ISO Coarse 65% (G4)+ISO ePM1 80%(F9), ISO ePM1 50% (F7), ISO ePM1 80%(F9).

Waterproof electrical enclosure

Separate electrical board in a **IP44 waterproof enclosure** for greater safety.



Solution ErP 2021 READY

Connected components

Optimum unit operation.

Connection to myETTvision communication platform possible

myETTvision

Internal fans

Variable-speed fans with air flow rate measurement.

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

Low noise Configuration.

AFC option available with flow rate auto-adjustment.

New generation PLC with display

Control enabling optimum operation in all conditions.

Multi-stage circuit with R32 new generation compressors

Optimum performance whatever the part load.
Electronic expansion valves.

R32

Thermal heat exchangers

Optimized heat exchanger for improved energy performance.

Vinyl coating as an option

Leak detection

Reduces the number of periodic visits.

** Energy related Product (ERP) 2021 Ready: CINEFFI R32 Green Line meets the eco-design regulatory requirements applicable to air heaters and cooling appliances (Regulation 2016/2281).*

Unit description

Energy
savings

The ULTI+R32 RE is an efficient,economical and ecological solution for heating or cooling buildings.

The CINEFFI R32 is designed to provide precise control for optimum energy performance throughout its years of operation.

PREMIUM PROCESS
Quality of components

- **Sustainable and recyclable equipment**: **aluminium frame and** casing, 100% recyclable, 20 year corrosion proof warranty
- Non-polluting process
- **Eco Design approach** to combine **economy** and **optimum performance** (SEER, SCOP)
- 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.**
- **Wide range of power ratings** to suit the needs of each project
- **Numerous airflow configurations**, meeting integration constraints

Connected components
New Generation PLC

- Allows communication between units
- Transfers the technical data from the units to an external server for optimum remote control with myETTvision.

R32 fluid
Low GWP

- New **CINEFFI R32 Green Line** with R32, a low GWP fluid (675).
- **Plays an active role in meeting the CO_2** equivalent tonnage quota a legal obligation imposed on gas producers/importers.
- minimizes the impact on the greenhouse effect.

Indoor
air quality

- Eco-Design filtration.
- VOC or CO_2 sensor controlling the supply of fresh air.
- Free access to filters via removable panels allowing **quick and easy replacement of filters**.

Acoustic
performance

MAIN FEATURES

- **Low Noise selection of fans optimized for low noise operation**
- **Acoustic treatment of technical section and compressors**

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

- Indoors in a technical room.
- 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

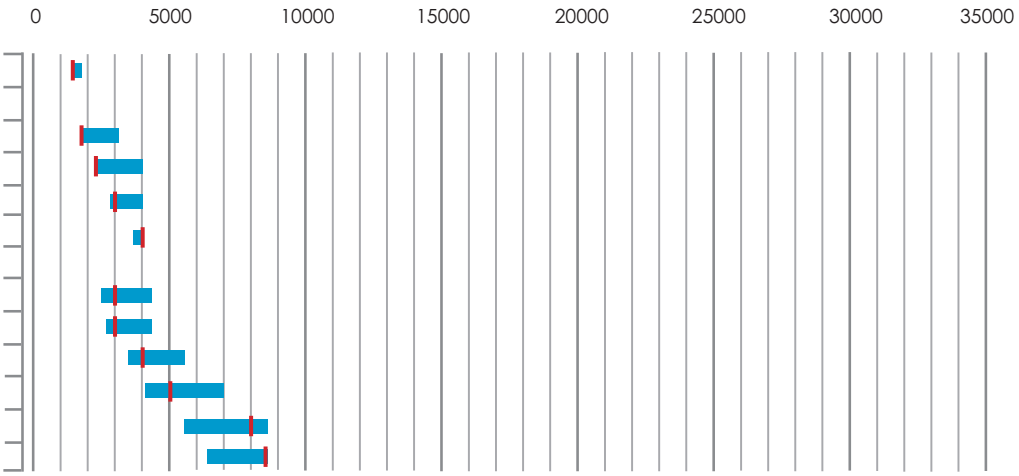
MyETTvision allows you to control and optimize your installation remotely.

Unit description

A WIDE RANGE

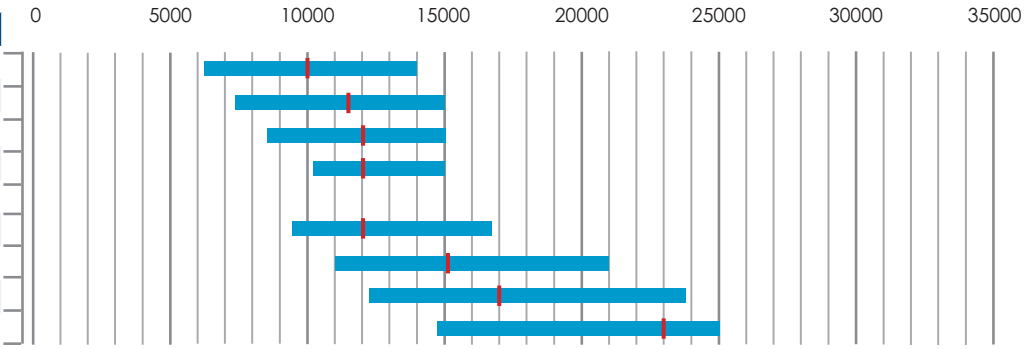
Flow rate range (m^3/h) & rated flow rate (|)

Unit	Capacity
CINEFFI R32 000-010	9.9
CINEFFI R32 00-015	11.5
CINEFFI R32 00-020	14.5
CINEFFI R32 00-025	16.4
CINEFFI R32 00-030	20.0
CINEFFI R32 01-020	16.6
CINEFFI R32 01-025	18.2
CINEFFI R32 01-030	22.8
CINEFFI R32 01-035	29.1
CINEFFI R32 01-045	39.6
CINEFFI R32 01-050	41.8



Flow rate range (m^3/h) & rated flow rate (|)

Unit	Capacity
CINEFFI R32 11-050	46.6
CINEFFI R32 11-055	52.5
CINEFFI R32 11-065	58.9
CINEFFI R32 11-075	63.7
CINEFFI R32 21-080	70.6
CINEFFI R32 21-090	78.2
CINEFFI R32 21-095	85.5
CINEFFI R32 21-110	108.7



Operating principles

The unit operates as a reversible heat pump :

> Source: outside air + inside air (in recovery mode)
> Treated fluid: inside air + hygienic fresh air

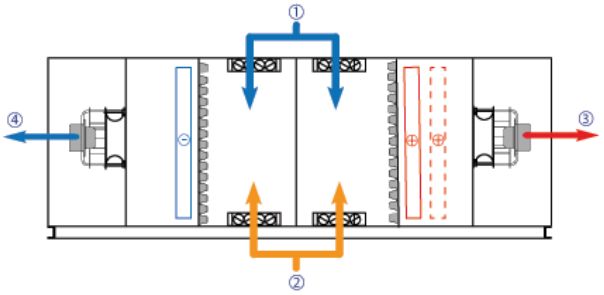
The following operating modes are available:

- Heat pump
- Cooling
- Free Cooling: cooling with outside air, without thermodynamics

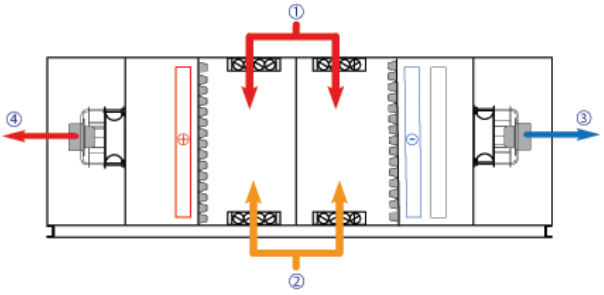
In these modes, the unit can operate:

> With all recirculated air
> With all fresh air/all exhaust air
> With mixed-air
> The unit ensures air extraction and fresh air modulation without indoor pressure change.

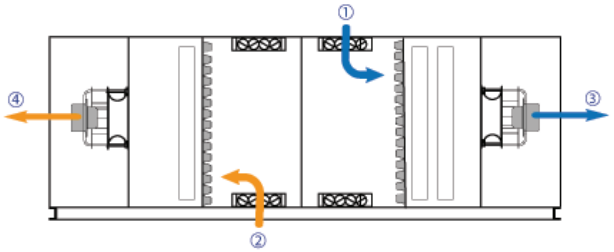
Heating Mode



Cooling mode

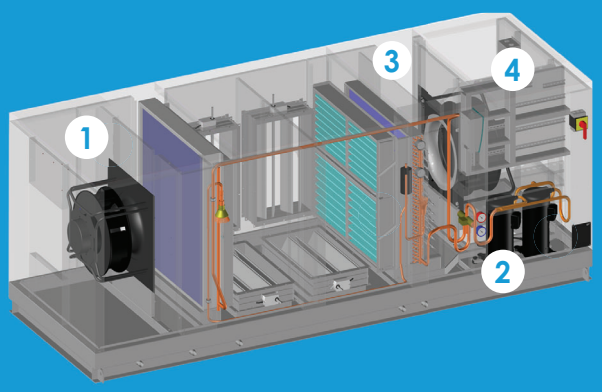


Free Cooling Mode



① Fresh air ② Return air ③ Supply air ④ Exhaust air

Detailed components of the unit



The ETT packaged unit comprises 4 different sections:

1. An extraction compartment for recovering and/or rejecting heat from the extracted air (depending on the operating mode).
2. A separate technical compartment housing the refrigeration components and control units.
3. An internal compartment ensures air change and air treatment.
4. A sealed electrical compartment (IP44).

Aluminium frame and casing assembly :

- **Fitted with an aluminium motorised 4-damper mixing box with class 3 upstream/downstream sealing and class B frame sealing (in accordance with EN1751), the CINEFFI R32 allows:**
  - ✓ Optimized fresh air supply dosage, combined with the CO_2 or VOC sensor.
  - ✓ Free Cooling mode switch to delay thermodynamic circuit operation and allow significant energy savings.
  - ✓ **Perfect weather resistance, 20-year anti corrosion guarantee on casing.**
- **Double-walled watertight floor** with drainage outlets around the unit, connected to rubber traps.
- **Aluminium vertical panels and roof, with double insulation, mounted on aluminium frame.**
- **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** (M0 classification) in the frame and by **50 mm glass wool** (M0 classification in accordance with **ERP** (Public Access Buildings) regulations, article CH36 **in the walls and roof.** (25 mm on 000 and 00 series).
- **Optional rain proof cowl on fresh air** (to be fitted by the installer).

Air assembly:

- **Eco-design filtration,**easy to dismantle - ISO Coarse efficiency 65% (G4) in **98 mm** pleated media on the supply side to increase filter life and reduce pressure drops, fouling controlled by analogue pressure switch.
- **Several levels of filtration available** to suit your project needs: ISO Coarse 65% refillable (G4) 98mm, ISO ePM10 50% (M5) 98mm, ISO Coarse 65% (G4) + ISO ePM1 50% (F7) 48+ 48mm, ISO ePM1 50% (F7) 98mm, ISO Coarse 65% (G4) + ISO ePM1 80% (F9) 48+ 48mm, ISO ePM1 80% (F9) 98mm, ISO Coarse 65% (G4) 48 mm on discharge.
- **Replacement filter kit available as an option**
- **Last generation internal fans (High Energy Performance):**
  - ✓ **Direct transmission** (gains in maintenance, reliability and consumption),
  - ✓ Fitted **with a variable speed "EC" electronically commutated motor** combined with an Analogue Flow Controller - AFC (easier to commission),
  - ✓ With an aluminium wheel design,
  - ✓ Communicating for real time operation adjustment.
  - ✓ Integrated Soft Starter device for reduced starting current and soft start (textile ducting).
- **Low Noise configuration** as standard.
- **AFC option with automatic flow adjustment**, to compensate for filter fouling.

Detailed components of the unit

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 copper tubes with double helical grooves for improved heat exchange. Design of the external exchangers ensuring delayed frost build-up and fast and efficient defrosting.

  Vinyl coating available on request.
- **Refrigeration circuits** compliant with the European directive on pressure equipment (PED 2014/68/EU).
- **Refrigerant** R32.
- **Tandem or variable speed circuits** ,allowing power output to be staggered and energy to be saved during part-load operation. Operation in part load considerably reduces the number of defrost cycles and their duration.
- **The refrigerant circuit is equipped with isolation valves at** the compression unit terminals depending on the model. When working on the compression unit, these isolation valves make it easier to repair and maintain the refrigerant circuit.
- **Anti-acid filter drier.**
- Switchover **valve**.
- **Leak detection**: THE CINEFFI R32 is fitted with leak detection as standard. This detection allows the user to be warned in case of R32 fluid leakage. Leak detection also reduces the need for periodic visits to your equipment, in accordance with the French Order of 29/02/2016 on certain refrigerants and fluorinated greenhouse gases.

Electrical assembly in a sealed compartment (IP44):

- **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.
  - ✓ **A dry contact**: emergency stop included as standard, for customer connection for SSI testing.
  - ✓ Components **protection** using circuit breakers.
  - ✓ **A phase controller.**

The nominal LV voltage rating 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. Consult us if the regulations of the country of installation require other characteristics for the nominal distribution voltage.

Detailed components of the unit

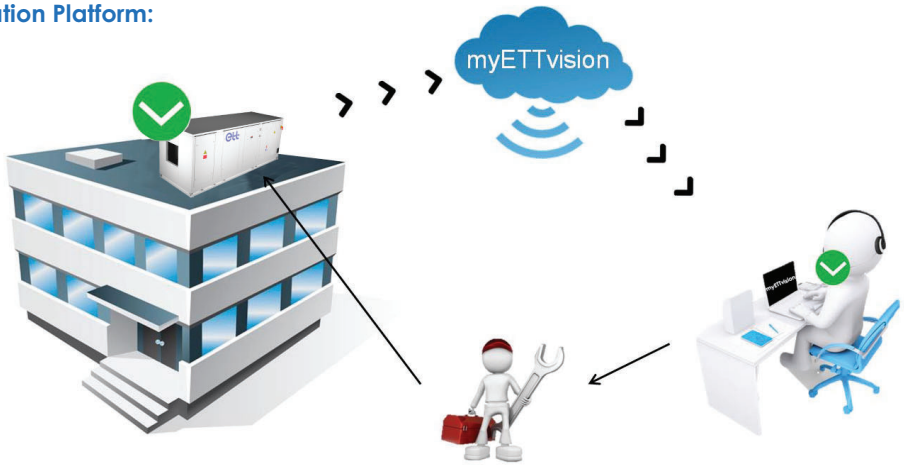
Advanced control assembly:

- **Temperature control with 2 set points for Cooling/Heating mode according to 2002/91/EC Directive: reactivity, accuracy and anticipation.**

  Economy mode 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.
- **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.
- **Air quality control by CO_2 or VOC sensor**, to optimise fresh air dosage and reduce energy consumption.
- **Free Cooling** function: cooling with outside air, delaying thermodynamic operation for significant energy savings.
- **Optional function to prohibit Free Cooling by comparing water weights** , in order to limit latent inputs during Free Cooling phase by comparing indoor and outdoor water weights.
- **Metering of electrical energy**, with breakdown of electrical consumption by operating modes.
- **Monitoring, diagnostic and safety and faults management** (anti-freeze thermostat, smoke detector, fire thermostat, HP switch, compressor MAP monitoring…), with written fault history.
- **Diagnostic help for detecting refrigerant leaks**.
- **MyETTvision remote communication platform providing access to parameter setting, operation and energy monitoring, access to faults in your fleet of units**.
- De-stratification (comparison between ambient and outdoor temperature)

myETTvision:

ETT Remote Communication Platform:



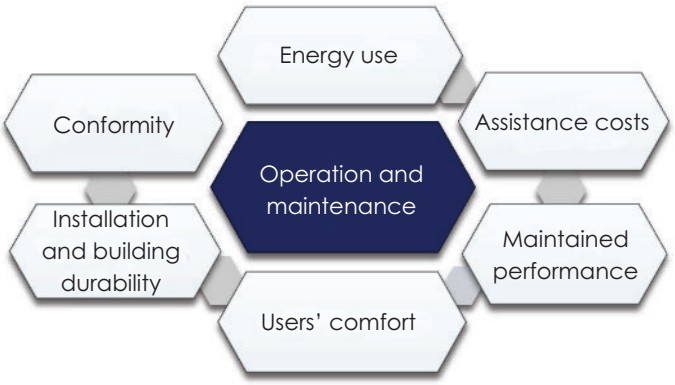
Operating tips for the CINEFFI R32 unit

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 influences 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.

Periodic checks must 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
  - Commissioning, periodic checks and periodic requalification (pressure equipment monitoring)
  - Filters replacement, 2 to 4 times a year depending on the type of filters and installation environment
  - Checking and replacing sensitive parts of humidity sensors CO_2 sensors or smoke detectors
- Related equipment control and maintenance (diffusion networks, sensors condition, 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	▪ Motorised external damper for supply air, except downdraft (CH38 - Directive 2006/42/CE)
Airflow section	▪ Operation with all recirculated air (excluding Public Buildings) ▪ Operation with all fresh air ▪ Actuating smoke detector with battery back-up ▪ Epoxy coating for supply air and exhaust air fans ▪ Analogue air flow controller (AFC) with supply and exhaust air fans flow rate auto-adjustment ▪ Pressure gauge for supply air and exhaust air filters ▪ ISO Coarse 65% (G4) refillable 98mm supply filters with analogue sensor ▪ ISO ePM10 50% (M5) 98mm supply filters with analogue sensor ▪ Double filters ISO Coarse 65% (G4) + ISO ePM1 50% (F7) or ISO ePM1 80% (F9) (48 + 48mm) at supply with analogue sensor ▪ EPM1 50% (F7) 98mm blow-by ISO filters with analogue sensor ▪ EPM1 80% (F9) 98mm blow-by ISO filters with analogue sensor ▪ ISO Coarse 65% (G4) refillable 48mm supply filters with analogue sensor
Thermodynamics	▪ Compressor MAP monitoring ▪ Vinyl coating on thermodynamic coils ▪ Refrigerant leak detection aid ▪ HP and LP pressure gauge
Auxiliaries	▪ Auxiliary hot water coil with analogue frost protection thermostat ▪ Progressive 3-way valve for hot water coil ▪ Stop valve on outlet + TA regulating valve on inlet for hot water coil ▪ Auxiliary 2-sequential stage electric heaters + Load shedding using dry contact ▪ Fresh air preheating through auxiliary 3-stage electric heaters
Electrics	▪ Total electrical energy metering according to 2002/91/EC ▪ Aluminium/ Copper connection terminal blocks (Mandatory for aluminium supply cables) ▪ 230V / 16A single-phase PC socket in the technical room (separate power supply to be provided by the installer) ▪ IT earthing system compatibility ▪ Cable protective cowl for outside power supply (to be mounted by the installer)
Installation	▪ Aluminium adjustable connection roof curb ▪ Aluminium adaptation connection roof curb ▪ Aluminium adjustable ventilated roof curb ▪ Aluminium ventilated adaptation roof curb ▪ 200, 400 or 600mm aluminium feet
Control	▪ Year-round operation (compressor enabled for air conditioning with external temperature < +15°C) ▪ Control function in Comfort mode (setpoint temperatures control by PID) ▪ Free Cooling banning based on specific humidity comparison ▪ Average room temperature (4 sensors) ▪ Minimum fresh air slaving using turret contacts (3 maximum)
Communication	▪ myETTvision ▪ ETT ControlBox remote display ▪ CCAD remote display ▪ Native RS485 Modbus ▪ Modbus IP ▪ BacNet IP
Warranty	▪ Please contact us

Technical features

CINEFFI R32 000

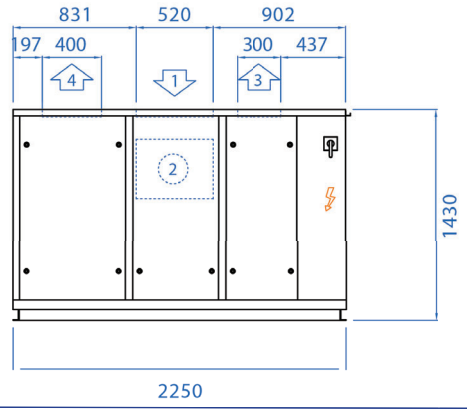
	DESIGNATION	Unit	000
VENTILATION	**FLOW RATES**		
	Rated air flow rate	**m³/h**	1500
	Minimum air flow rate	**m³/h**	1500
	Maximum air flow rate	**m³/h**	1800
	Rated exhaust air flow rate	**m³/h**	2700
	SUPPLY AIR VENTILATION (1)		
	Absorbed electrical power	**kW**	0.3
	ACOUSTICS (1)		
	Sound power level on supply air	**dB(A)**	77
	Outside sound power level	**dB(A)**	65
	Resulting external sound pressure at 10m ref. 10^{-5} in free field	**dB(A)**	34
AIR CONDITIONING PERFORMANCES	**NOMINAL PERFORMANCES AT +35°C** (1)		
	Net cooling capacity	**kW**	11.1
	Net EER	**kW/kW**	3.03
	SEASONAL EFFICIENCY (2)		
	Design net cooling capacity	**kW**	9.9
	SEER	**kW/kW**	3.58
	ηs,C	**%**	140
PERFORMANCES HEATING	**NOMINAL PERFORMANCES AT +7°C** (1)		
	Net heating capacity	**kW**	10.8
	Net COP	**kW/kW**	4.10
	NOMINAL PERFORMANCES AT -7°C (2)		
	Net heating capacity	**kW**	7.0
	Net COP	**kW/kW**	2.88
	SEASONAL EFFICIENCY (2)		
	Net design heat output	**kW**	8.9
	SCOP	**kW/kW**	3.25
	ηs,H	**%**	127
GENERAL	**ELECTRICAL DATA**		
	Total installed electrical power (3)	**kW**	12.9
	Total installed electrical intensity (3)	**A**	20
	Starting current (3)	**A**	31
	Maximum absorbed electrical power (4)	**kW**	15.1
	Recommended electric auxiliary	**kW**	6
	REFRIGERATION CIRCUIT(S)		
	Power stages	**-**	Variable
	OPERATING LIMITS IN COOLING MODE		
	Maximum outside temperature (5)	**°C**	45
	Minimum outside temperature (5)	**°C**	15
	Minimum internal coil inlet temperature	**°C**	18
	OPERATING LIMITS IN HEATING MODE		
	Minimum outside temperature	**°C**	-15
	Minimum internal coil inlet temperature	**°C**	12
	WEIGHT		
	Unit weight without options(6)	**kg**	400

(1) External static pressure: 250 Pa on supply air, 150 Pa on exhaust air
Cooling mode : Indoor conditions: +27°C DB / +19°C WB & External conditions + 35°C DB/24°C WB
Fresh air percentage: 60%
Heating mode: Indoor conditions: +20°C DB */+12°C WB and outside conditions: +7°C DB / +6°C WB
Fresh air percentage: 60%
(2) According to EcoDesign regulations 2016/2281
(3) Power to be used for power cables selection (excluding auxiliary)
400V/ 50HZ 3-phase power supply + earth without neutral

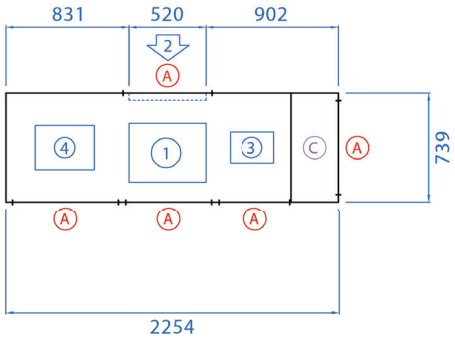
(4) Heating mode: Defrost with auxiliaries recommended
(5) For inside conditions: +27°C DB / +19°C WB at nominal air flow
(6) Weight for a total available pressure of 600 Pa on supply air and 400 Pa on exhaust air

Dimensions and connections

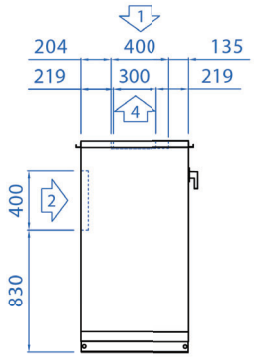
Front view:



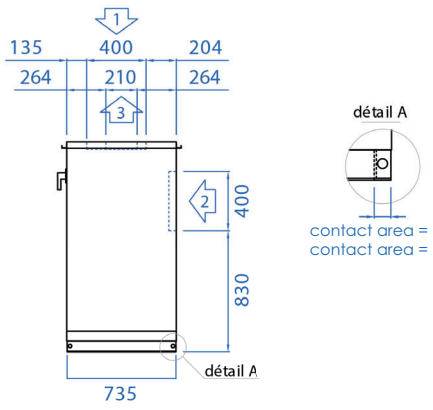
Top view :



Exhaust air side view :



Supply air side view :



① Fresh air
② Return air
③ Supply air
④ Exhaust air
Ⓐ Access
⚡ Power supply
Ⓒ Technical section
▪ Provide a maintenance area of 650 mm on the technical section side and 500 mm on the opposite side.

	Length	Width	Height
Casing dimensions	2254 mm	739 mm	1430 mm
Transport overall dimensions	2287 mm	834 mm	1430 mm

Note: Fresh air cowls shall be installed by the installer. Feet shall be installed by the installer. Duct connections (supply, return, fresh air and exhaust) are made using an insert (supplied by ETT) for fixing ducts to a 40 mm Metu frame.

Technical features

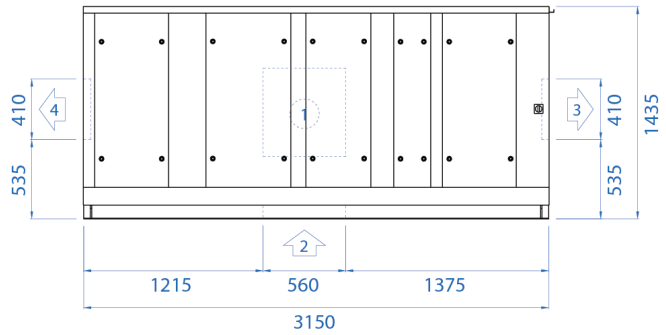
	DESIGNATION	Unit	015	020	025	030
VENTILATION	**FLOW RATES**					
	Rated air flow rate	**m³/h**	1800	2400	3000	4000
	Minimum air flow rate	**m³/h**	1800	2400	2875	3700
	Maximum air flow rate	**m³/h**	3200		4000	
	Rated exhaust air flow rate	**m³/h**	3200	4100	4800	6400
	SUPPLY AIR VENTILATION (1)					
	Absorbed electrical power	**kW**	0.4	0.5	0.6	1
	ACOUSTICS (1)					
	Sound power level on supply air	**dB(A)**	74	76	78	85
	Outside sound power level	**dB(A)**	60	63	65	72
	Resulting external sound pressure at 10m ref. 10^{-5} in free field	**dB(A)**	29	32	34	41
AIR CONDITIONING PERFORMANCES	**NOMINAL PERFORMANCES AT +35°C** (1)					
	Net cooling capacity	**kW**	12.6	16.2	18.2	22.0
	Net EER	**kW/kW**	3.21	3.05	2.90	2.49
	SEASONAL EFFICIENCY (2)					
	Design net cooling capacity	**kW**	11.5	14.5	16.4	20.0
	SEER	**kW/kW**	4.69	4.73	4.36	3.71
	ηs,C	**%**	185	186	171	145
PERFORMANCES HEATING	**NOMINAL PERFORMANCES AT +7°C** (1)					
	Net heating capacity	**kW**	13.3	16.7	19.1	24.3
	Net COP	**kW/kW**	4.17	3.94	3.97	3.67
	NOMINAL PERFORMANCES AT -7°C (2)					
	Net heating capacity	**kW**	8.6	11.4	13.0	16.2
	Net COP	**kW/kW**	3.13	3.09	2.98	2.79
	SEASONAL EFFICIENCY (2)					
	Net design heat output	**kW**	11.6	14.6	16.5	20.1
	SCOP	**kW/kW**	3.94	3.86	3.68	3.20
	ηs,H	**%**	154	152	144	125
GENERAL	**ELECTRICAL DATA**					
	Total installed electrical power (3)	**kW**	14.6	14.6	16.8	16.8
	Total installed electrical intensity (3)	**A**	22	22	25	25
	Starting current (3)	**A**	34	34	32	32
	Maximum absorbed electrical power (4)	**kW**	15.0	18.5	24.2	25.8
	Recommended electric auxiliary	**kW**	6	9	12	12
	REFRIGERATION CIRCUIT(S)					
	Power stages	**-**	Variable			
	OPERATING LIMITS IN COOLING MODE					
	Maximum outside temperature (5)	**°C**	45			
	Minimum outside temperature (5)	**°C**	15			
	Minimum internal coil inlet temperature	**°C**	18			
	OPERATING LIMITS IN HEATING MODE					
	Minimum outside temperature	**°C**	-15			
	Minimum internal coil inlet temperature	**°C**	12			
	WEIGHT					
	Unit weight without options(6)	**kg**	600			

(1) External static pressure: 250 Pa on supply air, 150 Pa on exhaust air
Cooling mode : Indoor conditions: +27°C DB / +19°C WB & External conditions + 35°C DB/24°C WB Fresh air percentage: 60%
Heating mode: Indoor conditions: +20°C DB */+12°C WB and outside conditions: +7°C DB / +6°C WB Fresh air percentage: 60%
(2) According to EcoDesign regulations 2016/2281
(3) Power to be used for power cables selection (excluding auxiliary)
400V/ 50HZ 3-phase power supply + earth without neutral

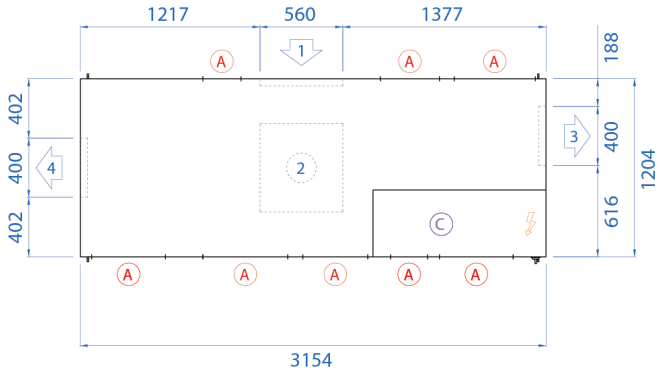
(4) Heating mode: Defrost with auxiliaries recommended
(5) For inside conditions: +27°C DB / +19°C WB at nominal air flow
(6) Weight for a total available pressure of 600 Pa on supply air and 400 Pa on exhaust air

Dimensions and connections

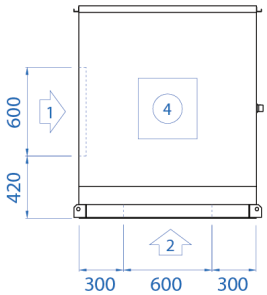
Front view:



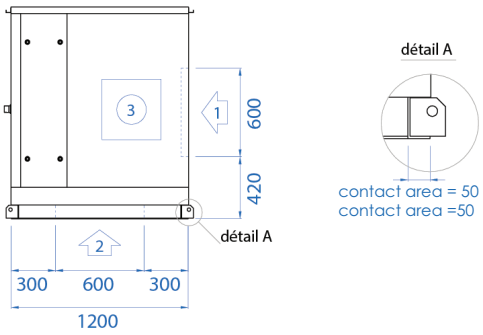
Top view :



Exhaust air side view :



Supply air side view :



① Fresh air
② Return air
③ Supply air
④ Exhaust air
Ⓐ Access
⚡ Power supply
Ⓒ Technical section
▪ Provide a maintenance area of 1000 mm on the technical section side and 500 mm on the opposite side.

	Length	Width	Height
Casing dimensions	3154 mm	1204 mm	1435 mm
Transport overall dimensions	3187 mm	1282 mm	1435 mm

Note: Fresh air cowls shall be installed by the installer. Feet shall be installed by the installer. Duct connections (supply, return, fresh air and exhaust) are made using an insert (supplied by ETT) for fixing ducts to a 40 mm Metu frame.

Technical features

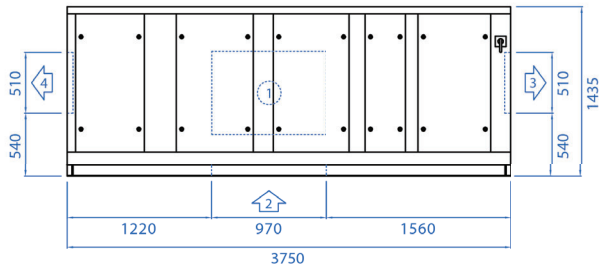
	DESIGNATION	Unit	020	025	030	035	045	050
VENTILATION	**FLOW RATES**							
	Rated air flow rate	m^3/h	3000	3000	4000	5000	8000	8500
	Minimum air flow rate	m^3/h	2500	2900	3700	4300	5700	6200
	Maximum air flow rate	m^3/h	4200	4200	5600	7000	8500	
	Rated exhaust air flow rate	m^3/h	4200	4200	5600	7000	11200	11900
	SUPPLY AIR VENTILATION (1)							
	Absorbed electrical power	kW	0.6	0.6	0.8	1	2.1	2.3
	ACOUSTICS (1)							
	Sound power level on supply air	dB(A)	71	71	73	74	82	83
	Outside sound power level	dB(A)	59	59	64	64	73	75
	Resulting external sound pressure at 10m ref. 10^{-5} in free field	dB(A)	28	28	33	33	42	44
AIR CONDITIONING PERFORMANCES	**NOMINAL PERFORMANCES AT +35°C** (1)							
	Net cooling capacity	kW	18.3	20.2	25.2	31.8	43.7	46.1
	Net EER	kW/kW	3.8	3.55	3.37	3.37	2.86	2.67
	SEASONAL EFFICIENCY (2)							
	Design net cooling capacity	kW	16.6	18.2	22.8	29.1	39.6	41.8
	SEER	kW/kW	5.86	5.80	5.99	6.01	4.39	4.29
	ηs,C	%	232	229	237	238	173	168
PERFORMANCES HEATING	**NOMINAL PERFORMANCES AT +7°C** (1)							
	Net heating capacity	kW	17.6	19.6	24.9	30.6	45.5	48.7
	Net COP	kW/kW	4.75	4.45	4.35	4.55	4.01	3.95
	NOMINAL PERFORMANCES AT -7°C (2)							
	Net heating capacity	kW	11.6	13.0	16.5	20.0	29.6	31.8
	Net COP	kW/kW	3.40	3.27	3.24	3.18	3.06	3.05
	SEASONAL EFFICIENCY (2)							
	Net design heat output	kW	16.7	17.5	21.5	25.4	35.5	37.5
	SCOP	kW/kW	4.67	4.61	4.42	4.04	3.52	3.53
	ηs,H	%	184	181	174	159	138	138
GENERAL	**ELECTRICAL DATA**							
	Total installed electrical power (3)	kW	21.4	21.4	21.4	21.4	27.7	29.1
	Total installed electrical intensity (3)	A	33	33	33	33	49	51
	Starting current (3)	A	40	40	40	40	119	127
	Maximum absorbed electrical power (4)	kW	26.6	29.4	33.1	33.7	49.6	54.9
	Recommended electric auxiliary	kW	15	18	21	21	27	30
	REFRIGERATION CIRCUIT(S)							
	Power stages	-	Variable				2	2
	OPERATING LIMITS IN COOLING MODE							
	Maximum outside temperature (5)	°C	45					
	Minimum outside temperature (5)	°C	15					
	Minimum internal coil inlet temperature	°C	18					
	OPERATING LIMITS IN HEATING MODE							
	Minimum outside temperature	°C	-15					
	Minimum internal coil inlet temperature	°C	12					
	WEIGHT							
	Unit weight without options(6)	kg	755					

(1) External static pressure: 250 Pa on supply air, 150 Pa on exhaust air
Cooling mode : Indoor conditions: +27°C DB / +19°C WB & External conditions + 35°C DB/24°C WB
Fresh air percentage: 60%
Heating mode: Indoor conditions: +20°C DB */+12°C WB and outside conditions: +7°C DB / +6°C WB
Fresh air percentage: 60%
(2) According to EcoDesign regulations 2016/2281
(3) Power to be used for power cables selection (excluding auxiliary)
400V/ 50HZ 3-phase power supply + earth without neutral

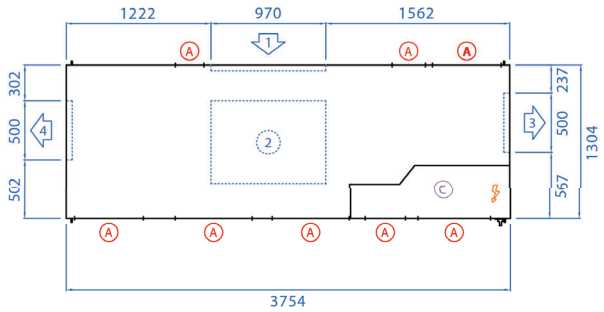
(4) Heating mode: Defrost with auxiliaries recommended
(5) For inside conditions: +27°C DB / +19°C WB at nominal air flow
(6) Weight for a total available pressure of 600 Pa on supply air and 400 Pa on exhaust air

Dimensions and connections

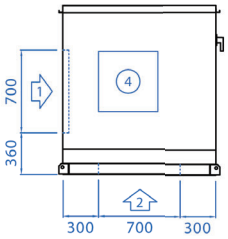
Front view :



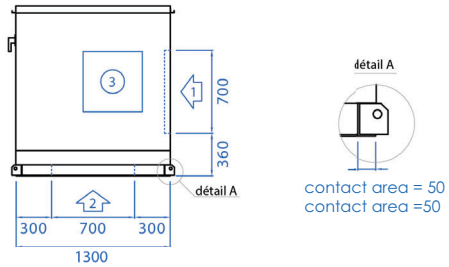
Top view :



Exhaust air side view :



Supply air side view :



① Fresh air
② Return air
③ Supply air
④ Exhaust air
Ⓐ Access
⚡ Power supply
Ⓒ Technical section
- The maintenance area around the machine must be 1200 mm on the technical compartment side and 850 mm on the opposite side.

	Length	Width	Height
Casing dimensions	3754 mm	1304 mm	1435 mm
Transport overall dimensions	3754 mm	1399 mm	1435 mm

Note: Fresh air cowls shall be installed by the installer. Feet shall be installed by the installer. Duct connections (supply, return, fresh air and exhaust) are made using an insert (supplied by ETT) for fixing ducts to a 40 mm Metu frame.

Technical features

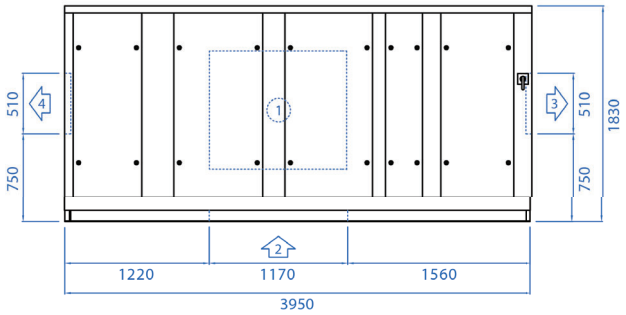
	DESIGNATION	Unit	050	055	065	075
VENTILATION	**FLOW RATES**					
	Rated air flow rate	m³/h	10000	11500	12000	12000
	Minimum air flow rate	m³/h	6200	7300	8500	10100
	Maximum air flow rate	m³/h	14000		15000	
	Rated exhaust air flow rate	m³/h	14000	16100	16800	16800
	SUPPLY AIR VENTILATION (1)					
	Absorbed electrical power	kW	2.2	2.7	2.8	2.8
	ACOUSTICS (1)					
	Sound power level on supply air	dB(A)	78	80	80	80
	Outside sound power level	dB(A)	67	69	70	70
	Resulting external sound pressure at 10m ref. 10^{-5} in free field	dB(A)	36	38	39	39
AIR CONDITIONING PERFORMANCES	**NOMINAL PERFORMANCES AT +35°C** (1)					
	Net cooling capacity	kW	51.6	58.4	65.1	70.5
	Net EER	kW/kW	3.55	3.5	3.28	3.07
	SEASONAL EFFICIENCY (2)					
	Design net cooling capacity	kW	46.6	52.5	58.9	63.7
	SEER	kW/kW	5.53	5.47	5.17	4.63
	ηs,C	%	218	216	204	182
PERFORMANCES HEATING	**NOMINAL PERFORMANCES AT +7°C** (1)					
	Net heating capacity	kW	51.5	58.3	65.2	72.7
	Net COP	kW/kW	4.78	4.72	4.49	4.40
	NOMINAL PERFORMANCES AT -7°C (2)					
	Net heating capacity	kW	34.3	37.7	42.9	47.4
	Net COP	kW/kW	3.49	3.38	3.32	3.28
	SEASONAL EFFICIENCY (2)					
	Net design heat output	kW	42.9	48.0	53.2	57.1
	SCOP	kW/kW	4.34	4.16	3.98	3.93
	ηs,H	%	171	163	156	154
GENERAL	**ELECTRICAL DATA**					
	Total installed electrical power (3)	kW	39.5	41.7	45.1	46.8
	Total installed electrical intensity (3)	A	68	72	79	81
	Starting current (3)	A	144	182	196	195
	Maximum absorbed electrical power (4)	kW	56.4	60.2	64.1	65.8
	Recommended electric auxiliary	kW	33	33	33	33
	REFRIGERATION CIRCUIT(S)					
	Power stages	-	2	2	2	2
	OPERATING LIMITS IN COOLING MODE					
	Maximum outside temperature (5)	°C		45		
	Minimum outside temperature (5)	°C		15		
	Minimum internal coil inlet temperature	°C		18		
	OPERATING LIMITS IN HEATING MODE					
	Minimum outside temperature	°C		-15		
	Minimum internal coil inlet temperature	°C		12		
	WEIGHT					
	Unit weight without options(6)	kg		1188		

(1) External static pressure: 250 Pa on supply air, 150 Pa on exhaust air
Cooling mode : Indoor conditions: +27°C DB / +19°C WB & External conditions + 35°C DB/24°C WB Fresh air percentage: 60%
Heating mode: Indoor conditions: +20°C DB */+12°C WB and outside conditions: +7°C DB / +6°C WB Fresh air percentage: 60%
(2) According to EcoDesign regulations 2016/2281
(3) Power to be used for power cables selection (excluding auxiliary)
400V/ 50HZ 3-phase power supply + earth without neutral

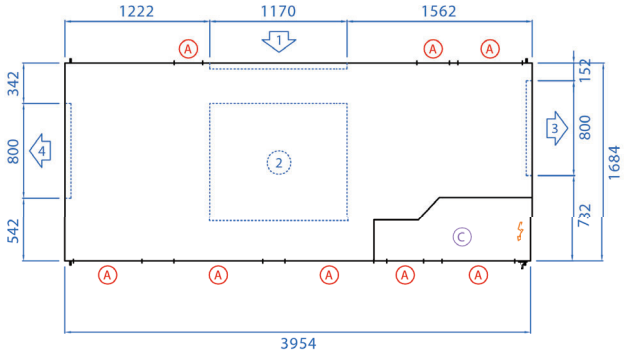
(4) Heating mode: Defrost with auxiliaries recommended
(5) For inside conditions: +27°C DB / +19°C WB at nominal air flow
(6) Weight for a total available pressure of 600 Pa on supply air and 400 Pa on exhaust air

Dimensions and connections

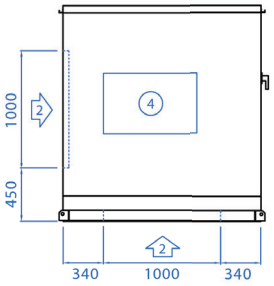
Front view :



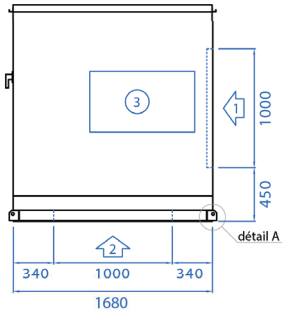
Top view :

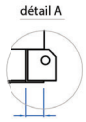


Exhaust air side view :



Supply air side view :





contact area = 50
contact area =50

① Fresh air
② Return air
③ Supply air
④ Exhaust air
Ⓐ Access
⚡ Power supply
Ⓒ Technical section
- Provide a maintenance area of 1550 mm on the technical section side and 850 mm on the opposite side.

	Length	Width	Height
Casing dimensions	3954 mm	1684 mm	1830 mm
Transport overall dimensions	3954 mm	1779 mm	1830 mm

Note: Fresh air cowls shall be installed by the installer. Feet shall be installed by the installer. Duct connections (supply, return, fresh air and exhaust) are made using an insert (supplied by ETT) for fixing ducts to a 40 mm Metu frame.

Technical features

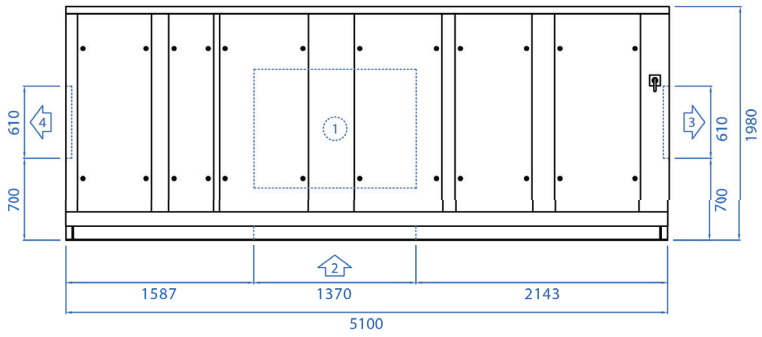
	DESIGNATION	Unit	080	090	095	110
VENTILATION	**FLOW RATES**					
	Rated air flow rate	**m³/h**	12000	15000	17000	23000
	Minimum air flow rate	**m³/h**	9500	11000	12400	14900
	Maximum air flow rate	**m³/h**	16800	21000	23800	25000
	Rated exhaust air flow rate	**m³/h**	16800	21000	23800	32200
	SUPPLY AIR VENTILATION (1)					
	Absorbed electrical power	**kW**	2.5	3.2	3.7	5.7
	ACOUSTICS (1)					
	Sound power level on supply air	**dB(A)**	82	83	85	88
	Outside sound power level	**dB(A)**	67	69	70	76
	Resulting external sound pressure at 10m ref. 10^{-5} in free field	**dB(A)**	36	38	39	45
AIR CONDITIONING PERFORMANCES	**NOMINAL PERFORMANCES AT +35°C** (1)					
	Net cooling capacity	**kW**	78.3	87.0	94.9	119.9
	Net EER	**kW/kW**	3.28	3.44	3.31	3.40
	SEASONAL EFFICIENCY (2)					
	Design net cooling capacity	**kW**	70.6	78.2	85.5	108.7
	SEER	**kW/kW**	3.79	3.84	3.77	3.53
	ηs,C	**%**	149	151	148	138
PERFORMANCES HEATING	**NOMINAL PERFORMANCES AT +7°C** (1)					
	Net heating capacity	**kW**	81.5	88.5	96.4	113
	Net COP	**kW/kW**	4.38	4.85	5.14	4.78
	NOMINAL PERFORMANCES AT -7°C (2)					
	Net heating capacity	**kW**	52.6	57.2	62.9	73.4
	Net COP	**kW/kW**	3.19	3.37	3.46	3.40
	SEASONAL EFFICIENCY (2)					
	Net design heat output	**kW**	66.0	71.8	78.0	86.0
	SCOP	**kW/kW**	3.27	3.33	3.53	3.20
	ηs,H	**%**	128	130	138	125
GENERAL	**ELECTRICAL DATA**					
	Total installed electrical power (3)	**kW**	58.9	60.6	63.7	69.3
	Total installed electrical intensity (3)	**A**	101	107	108	119
	Starting current (3)	**A**	223	217	236	247
	Maximum absorbed electrical power (4)	**kW**	68.9	72.8	80.6	96.2
	Recommended electric auxiliary	**kW**	33	33	36	39
	REFRIGERATION CIRCUIT(S)					
	Power stages	**-**	4	4	4	4
	OPERATING LIMITS IN COOLING MODE					
	Maximum outside temperature (5)	**°C**	45			
	Minimum outside temperature (5)	**°C**	15			
	Minimum internal coil inlet temperature	**°C**	18			
	OPERATING LIMITS IN HEATING MODE					
	Minimum outside temperature	**°C**	-15			
	Minimum internal coil inlet temperature	**°C**	12			
	WEIGHT					
	Unit weight without options(6)	**kg**	1726			

(1) External static pressure: 250 Pa on supply air, 150 Pa on exhaust air
Cooling mode : Indoor conditions: +27°C DB / +19°C WB & External conditions + 35°C DB/24°C WB Fresh air percentage: 60%
Heating mode: Indoor conditions: +20°C DB */+12°C WB and outside conditions: +7°C DB / +6°C WB Fresh air percentage: 60%
(2) According to EcoDesign regulations 2016/2281
(3) Power to be used for power cables selection (excluding auxiliary)
400V/ 50HZ 3-phase power supply + earth without neutral

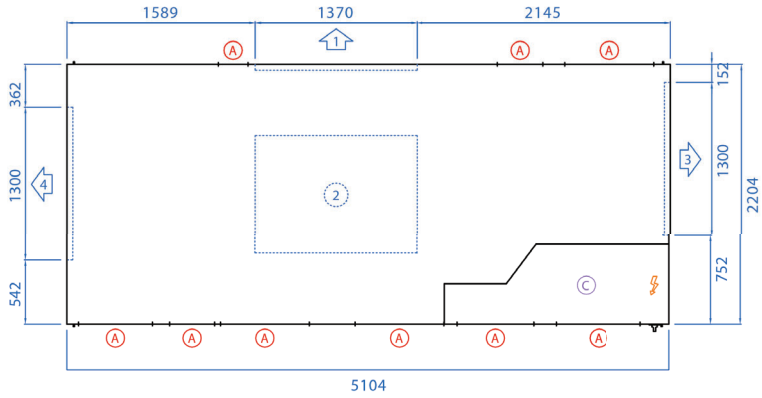
(4) Heating mode: Defrost with auxiliaries recommended
(5) For inside conditions: +27°C DB / +19°C WB at nominal air flow
(6) Weight for a total available pressure of 600 Pa on supply air and 400 Pa on exhaust air

Dimensions and connections

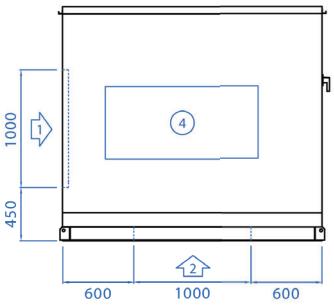
Front view :



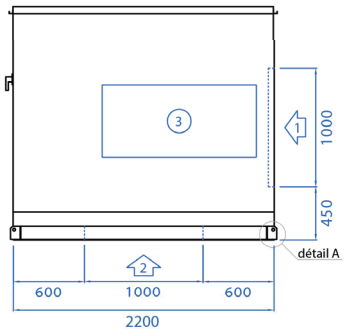
Top view :

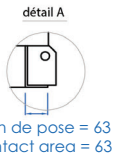


Exhaust air side view :



Supply air side view :





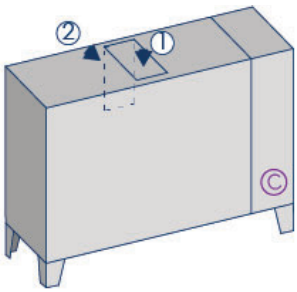
① Fresh air
② Return air
③ Supply air
④ Exhaust air
Ⓐ Access
⚡ Power supply
Ⓒ Technical section
▪ Provide a maintenance area of 1200 mm on the technical section side and 850 mm on the opposite side.

	Length	Width	Height
Casing dimensions	5104 mm	2204 mm	1980 mm
Transport overall dimensions	5104 mm	2298 mm	1980 mm

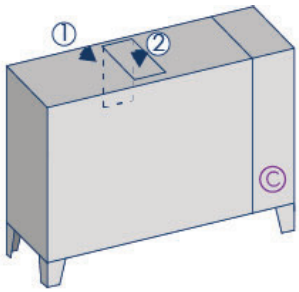
Note: Fresh air cowls shall be installed by the installer. Feet shall be installed by the installer. Duct connections (supply, return, fresh air and exhaust) are made using an insert (supplied by ETT) for fixing ducts to a 40 mm Metu frame.

Return air and fresh air

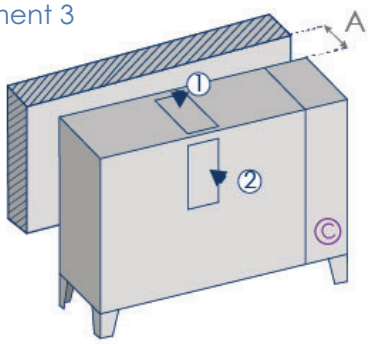
Arrangement 1



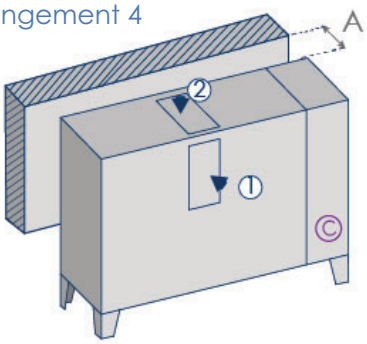
Arrangement 2



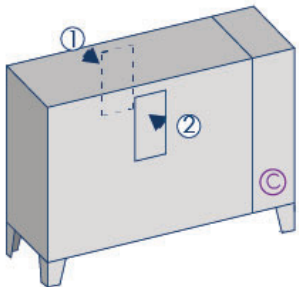
Arrangement 3



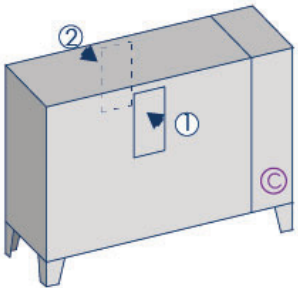
Arrangement 4



Arrangement 5



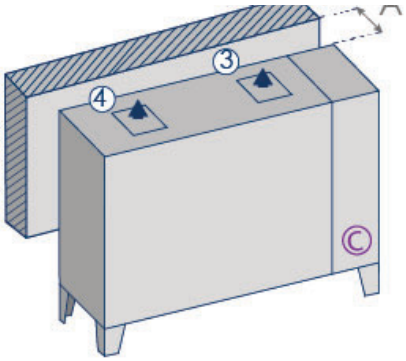
Arrangement 6



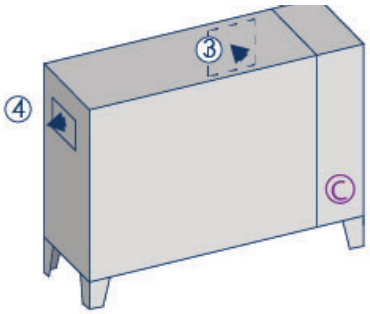
① Fresh air & additional fresh air
② Return air & exhaust air
© Technical compartment
A Recommended maintenance area between the wall and the unit: 500 mm

Supply and exhaust air

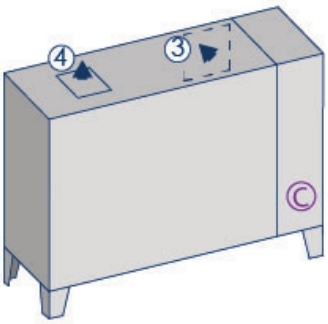
Arrangement A



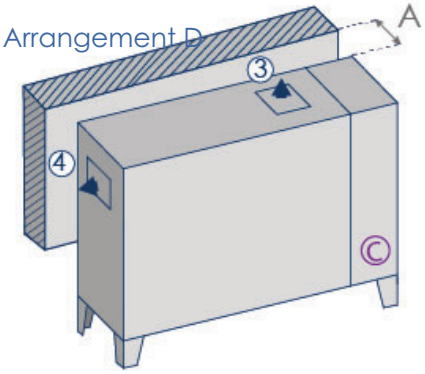
Arrangement B



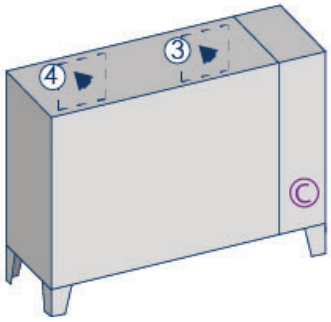
Arrangement C



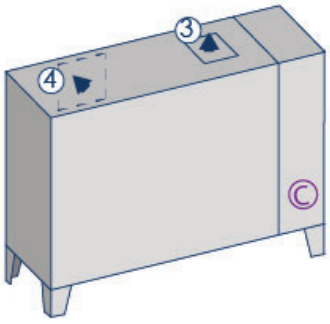
Arrangement D



Arrangement E



Arrangement F

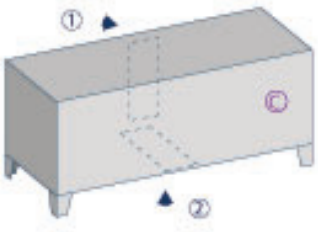


③ Supply air
④ Exhaust air
Ⓒ Technical section
A Recommended maintenance area between the wall and the unit: 500 mm

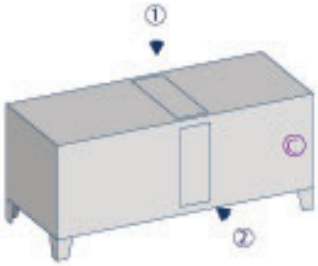
Note: Feet can be supplied as an option. Feet laying shall be made by the user.

Return air and fresh air

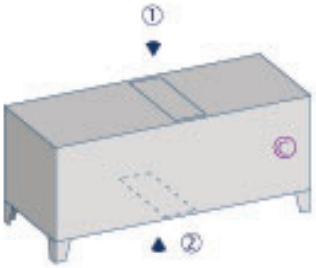
Arrangement 1



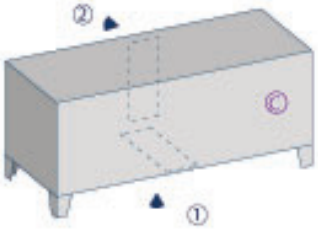
Arrangement 2



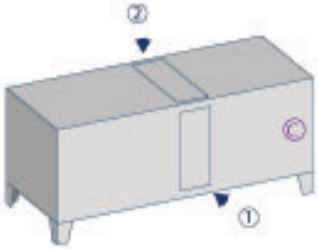
Arrangement 3



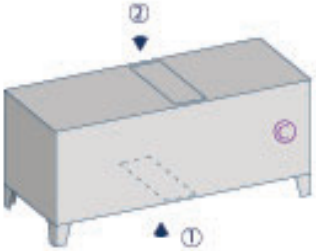
Arrangement 4



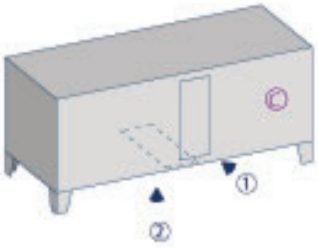
Arrangement 5



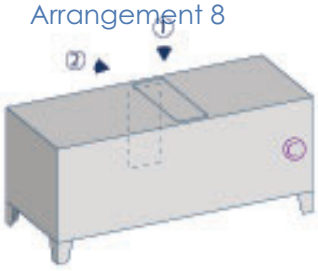
Arrangement 6



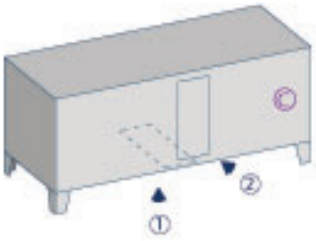
Arrangement 7



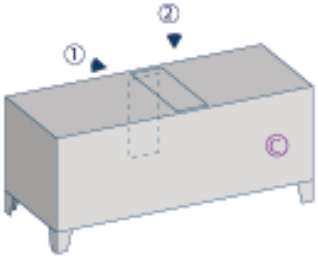
Arrangement 8



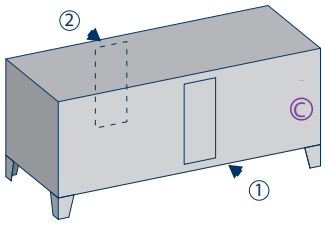
Arrangement 9



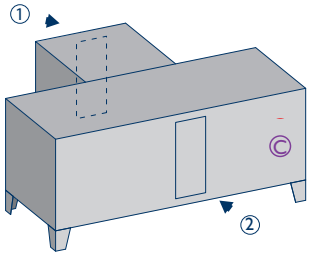
Arrangement 10



Arrangement 11 *



Arrangement 12C *

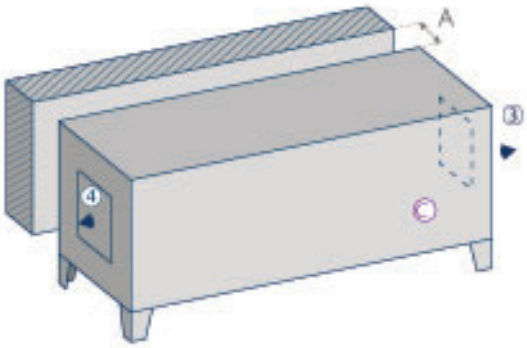


① Fresh air & additional fresh air
② Return air & exhaust air
© Technical compartment
* Access box offered as an option for arrangements 11 and 12 (see arrangement 12) in the case of ducted fresh air.

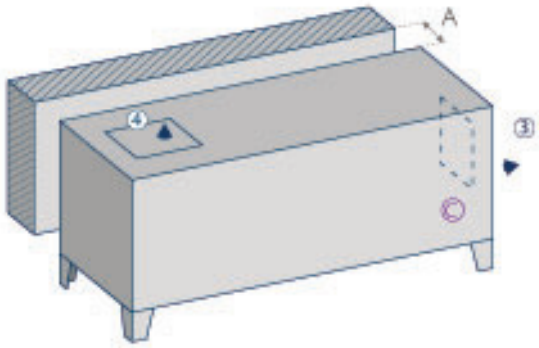
Note: Arrangements 2, 5 and 7 are not recommended for units installed against a wall, since it would block access to the filters. In such case, the optional box on arrangement 11 is mandatory.
For other configurations: please contact us.
Feet can be supplied as an option. Feet laying shall be made by the user.

Supply and exhaust air

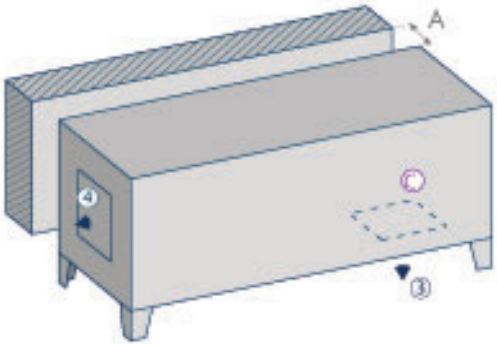
Arrangement A



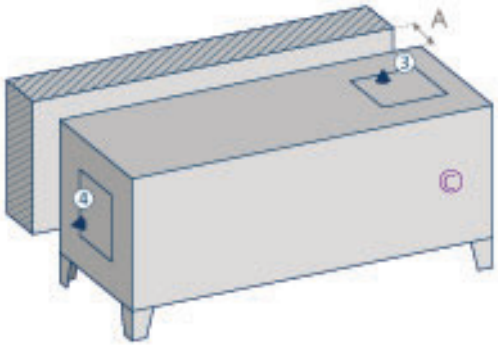
Arrangement B



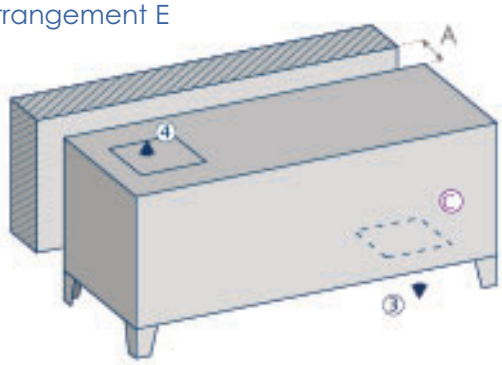
Arrangement C



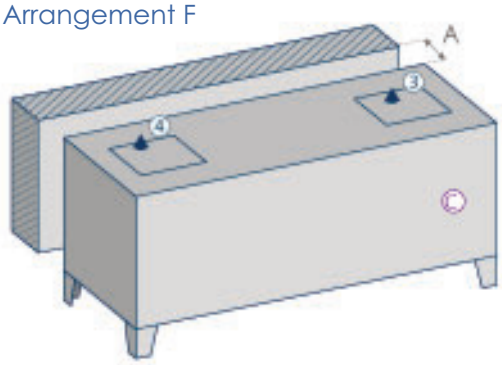
Arrangement D



Arrangement E



Arrangement F

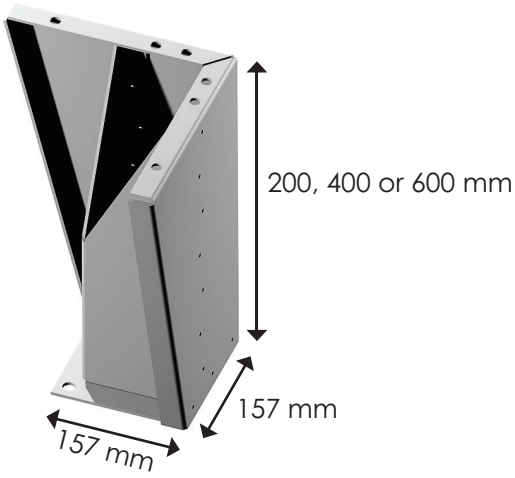


③ Supply air
④ Exhaust air
© Technical section
A Minimum maintenance area between the wall and the unit: 850 mm

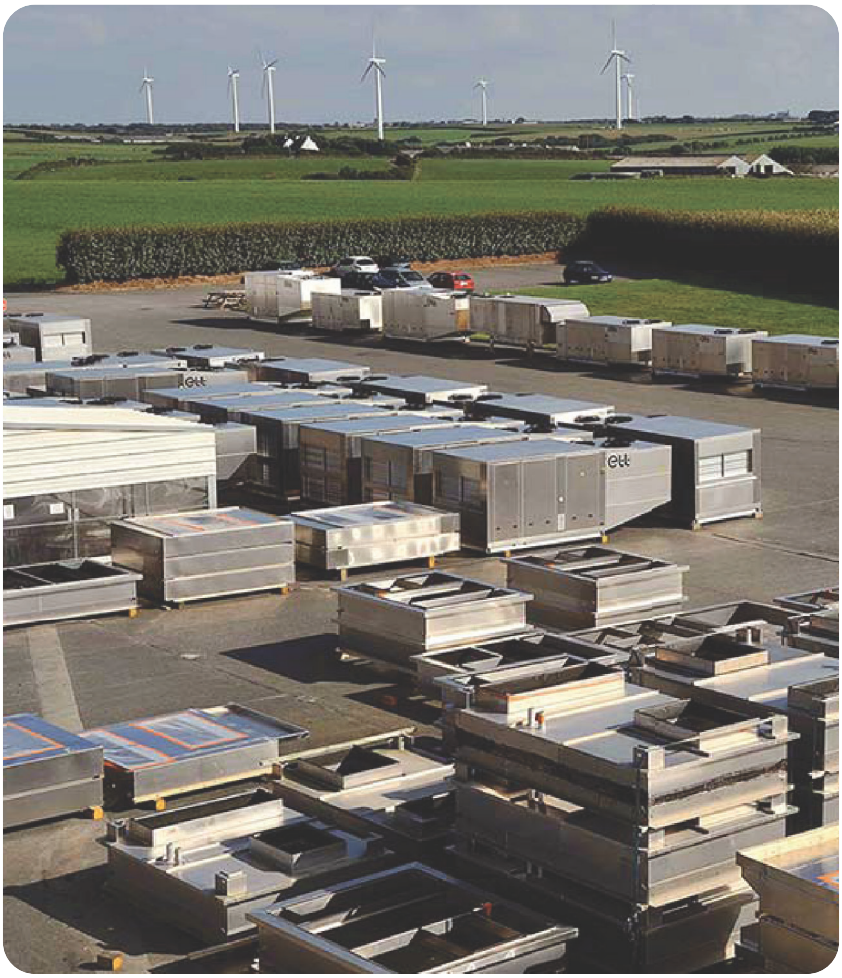
Note: Feet can be supplied as an option. Feet laying shall be made by the user.

Installation accessories: Feet

Aluminium fixed foot
Unit weight: 1 kg



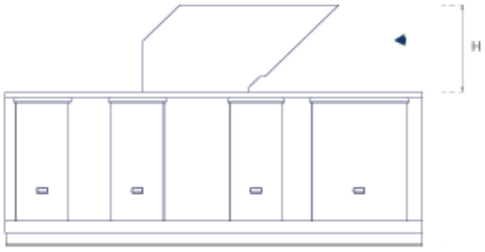
Serial number	000	00	01	11	21
No. of feet	4	4	4	4	6



Installation accessories: Fresh air and exhaust air cowls (*)

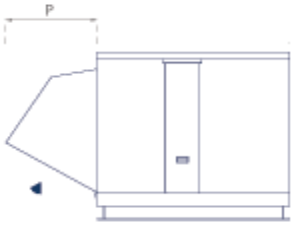
Fresh air cowl

Inlet on top (optional)



	Serial No	000	00				01						11				21			
	Unit	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
H	mm	Unknown	600				550						750				800			

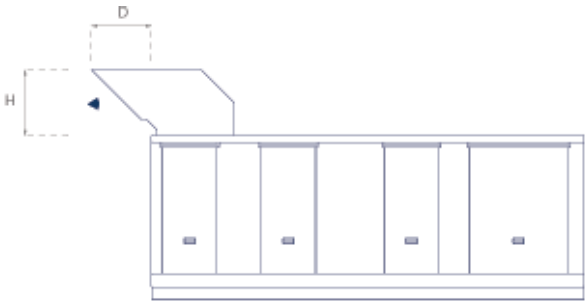
Inlet on side



	Serial No	000	00				01						11				21			
	Unit	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
H	mm	Unknown	635				550						700				880			

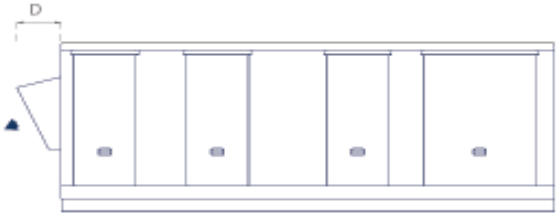
Exhaust air cowl

On top (optional)



	Serial No	000	00				01						11				21			
	Unit	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
H	mm	Unknown	500				45						600				600			
D	mm	Unknown	400				365						510				480			

At the end

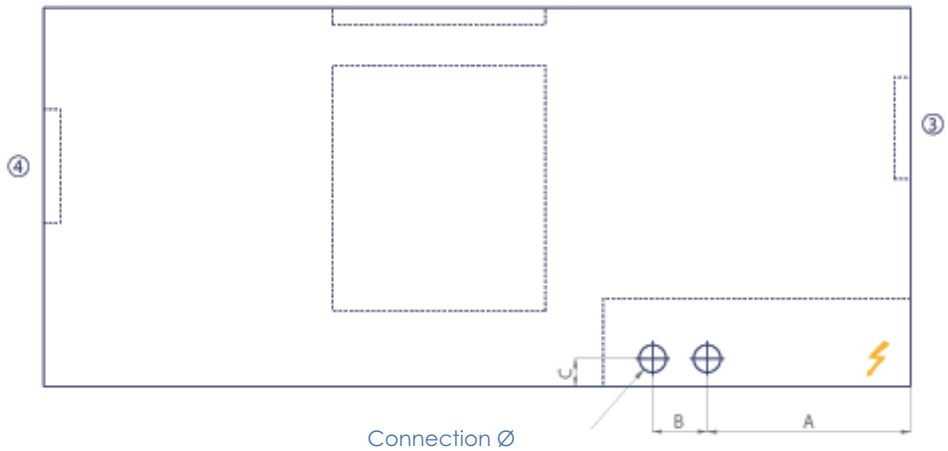


	Serial No	000	00				01						11				21			
	Unit	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
D	mm	Unknown	265				365						365				410			

Auxiliaries: Hot water coils(*)

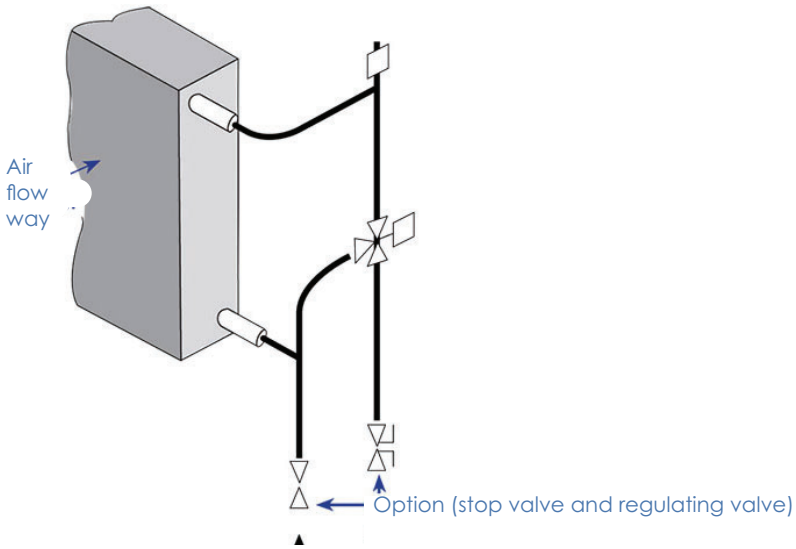
Schematic diagram

Top view



③ Supply air ④ Exhaust © Technical compartment ⚡ Power supply

Installation principle



(*) Not available on CINEFFI R32 000 unit

Auxiliaries: Hot water coils (*)

Dimensions

	Serial No	000	00				01						11				21			
	Unit	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
A	mm	Unknown	950				873						972				1300			
B	mm		82				163						183				200			
C	mm		120				98						98				134			
Customer connection diameter	mm		33*42				40*49						40*49				50*60			
Weight of coil + 3WV with water	kg		15				23						37				63			

Capacity

For coils air inlet temperature of +10°C

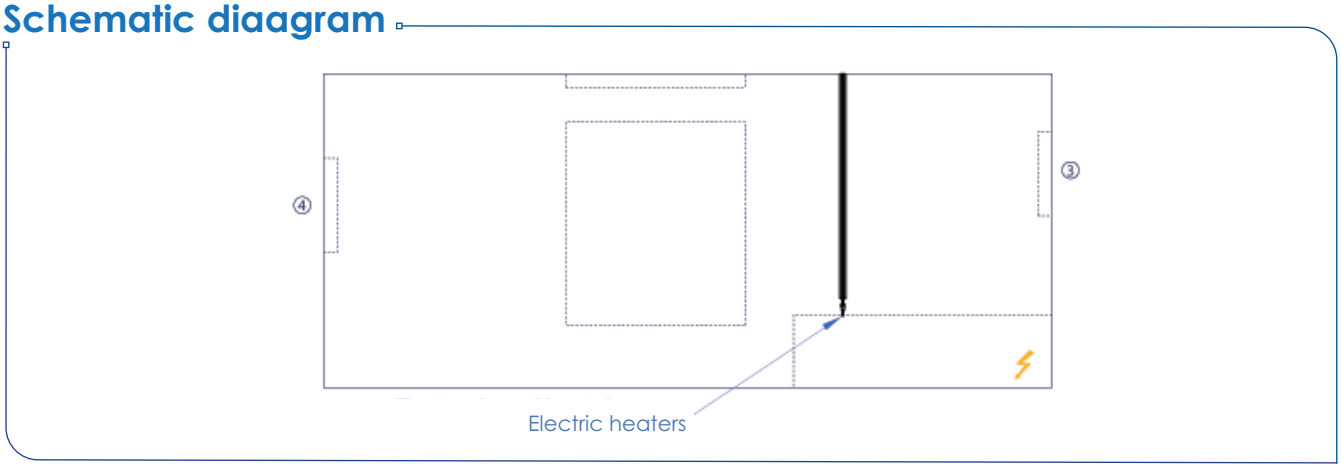
		Serial No	000	00				01						11				21			
		Unit	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
90/70 °C water regime	Max. power	kW	Unknown	30	36	42	51	58	58	71	83	111	116	162	177	182	182	216	252	274	332
	Max. flow rate	m³/h		1.3	1.6	1.9	2.3	2.6	2.6	3.1	3.7	4.9	5.1	7.2	7.8	8	8	9.5	11.1	12.1	14.6
	3WV + coil pressure drop	mWC		3.2	4.9	6.1	9.6	1.0	1.0	1.2	1.5	2.3	2.6	3.9	4.3	4.7	4.7	2.2	2.3	3.2	4.1
	Stop and TA valves pressure drop (opened by 3 turns)	mWC		0.3	0.4	0.5	0.7	0.5	0.5	0.7	0.9	1.6	1.7	3.3	3.8	4	4	2	2.6	3.2	4.6
Water regime 80/60°C	Max. power	kW		25	31	36	43	49	49	60	70	94	97	138	150	155	155	183	213	231	279
	Max. flow rate	m³/h		1.1	1.4	1.6	1.9	2.2	2.2	2.7	3.1	4.1	4.3	6	6.6	6.8	6.8	8	9.4	10.2	12.3
	3WV + coil pressure drop	mWC		2.6	3.8	4.9	6.2	0.7	0.7	0.9	1.2	1.8	1.9	2.8	3.3	3.4	3.4	1.5	2.1	2.3	3.4
	Stop and TA valves pressure drop (opened by 3 turns)	mWC		0.2	0.3	0.4	0.5	0.4	0.4	0.5	0.7	1.1	1.2	2.3	2.8	2.9	2.9	1.4	2	2.3	3.3

(*) Not available on CINEFFI R32 000 unit

Optional: stop valve on outlet and TA regulating valve on inlet

Auxiliaries: Electric heaters

Schematic diaagram



③ Supply air ④ Exhaust air ⚡ Electrical power

Available capacities (in kW)

				000	00				01						11				21			
Total capacity (kW)	Current (A)	1st stage	2nd stage	010	015	020	025	030	020	025	030	035	045	050	050	055	065	075	080	090	095	110
6	8.7	3	3	•	•	•	•	•														
9	13.0	3	6		•	•	•	•	•	•	•	•	•	•								
12	17.3	4.5	7.5		•	•	•	•	•	•	•	•	•	•								
12	17.3	3	9												•	•	•	•				
15	21.7	6	9						•	•	•	•	•	•	•	•	•	•				
18	26.0	9	9						•	•	•	•	•	•								
18	26.0	6	12												•	•	•	•	•	•	•	•
21	30.3	6	15												•	•	•	•				
21	30.3	9	12						•	•	•	•	•	•					•	•	•	•
24	34.6	9	15						•	•	•	•	•	•	•	•	•	•	•	•	•	•
27	39.0	9	18						•	•	•	•	•	•								
27	39.0	12	15												•	•	•	•	•	•	•	•
30	43.3	12	18						•	•	•	•	•	•	•	•	•	•	•	•	•	•
33	47.6	9	24												•	•	•	•				
33	47.6	15	18																•	•	•	•
36	52.0	12	24																•	•	•	•
39	56.3	15	24																•	•	•	•
42	60.6	18	24																•	•	•	•
45	65.0	15	30																•	•	•	•
48	69.3	18	30																•	•	•	•
54	77.9	18	36																•	•	•	•
60	86.6	24	36																•	•	•	•

Note: An additional coil can be mounted in the supply air duct or on the fresh air inlet for higher performances. Please consult us.

Fan sound* level at supply air and exhaust air

On supply air side

Available pressure: 250 Pa at supply air and 150 Pa at exhaust

		FREQUENCY BAND Hz ►		63	125	250	500	1000	2000	4000	8000	Lw general level (dB(A))
		Supply air flow rate (m³/h) ▼	Exhaust air flow rate (m³/h) ▼									
000	010	1500	2700	49	51	60	67	72	72	68	59	77
00	015	1800	3200	39	58	58	66	71	68	63	56	74
	020	2400	4100	38	53	60	67	73	70	66	58	76
	025	3000	4800	38	49	63	70	75	72	69	61	78
	030	4000	6400	41	50	67	74	79	82	73	67	85
01	020	3000	4200	55	61	61	65	66	64	59	56	71
	025	3000	4200	56	61	61	65	66	64	59	56	71
	030	4000	5600	50	67	62	66	67	66	62	60	73
	035	5000	7000	45	62	63	68	68	68	64	61	74
	045	8000	11200	44	66	70	76	76	75	72	67	82
	050	8500	11900	45	67	72	77	78	76	73	69	83
11	050	10000	14000	49	67	67	72	72	72	68	65	78
	055	11500	16100	47	66	68	73	74	74	70	66	80
	065	12000	16800	47	66	69	74	75	74	71	67	80
	075	12000	16800	47	66	69	74	75	74	71	67	80
21	080	12000	16800	57	67	68	75	78	75	69	62	82
	090	15000	21000	53	66	69	76	79	77	71	65	83
	095	17000	23800	51	66	69	78	81	79	73	67	85
	110	23000	32200	47	67	72	81	84	83	79	72	88

On exhaust air side

Available pressure: 250 Pa at supply air and 150 Pa at exhaust

		FREQUENCY BAND Hz ►		63	125	250	500	1000	2000	4000	8000	Lw general level (dB(A))
		Supply air flow rate (m³/h) ▼	Exhaust air flow rate (m³/h) ▼									
000	010	1500	2700	45	51	65	74	80	79	76	68	84
00	015	1800	3200	42	52	61	69	74	71	66	57	77
	020	2400	4100	42	53	66	73	78	76	70	64	81
	025	3000	4800	43	54	68	76	81	79	74	68	84
	030	4000	6400	47	57	74	81	87	86	82	75	91
01	020	3000	4200	41	53	58	63	64	63	59	54	69
	025	3000	4200	41	54	59	63	64	63	59	54	69
	030	4000	5600	40	60	65	68	68	67	64	59	74
	035	5000	7000	42	64	69	73	73	71	68	63	79
	045	8000	11200	51	69	81	86	87	85	80	77	92
	050	8500	11900	52	67	84	88	88	87	83	79	94
11	050	10000	14000	45	67	72	76	76	74	71	66	82
	055	11500	16100	47	70	75	80	80	78	74	70	85
	065	12000	16800	48	70	76	81	81	79	75	71	86
	075	12000	16800	48	70	76	81	81	79	75	71	87
21	080	12000	16800	44	62	65	74	78	76	72	64	82
	090	15000	21000	44	65	68	77	80	79	76	69	85
	095	17000	23800	46	65	70	80	82	82	79	71	87
	110	23000	32200	51	67	79	86	91	89	84	83	95

*Lw: sound power level (dB(A))

Fan sound* level at fresh air intake/return

At unit fresh air intake

Available pressure: 250 Pa at supply air and 150 Pa at exhaust

		FREQUENCY BAND Hz ▶		63	125	250	500	1000	2000	4000	8000	Lw general level (dB(A))
		Supply air flow rate (m³/h) ▼	Exhaust air flow rate (m³/h) ▼									
000	010	1500	2700	43	53	64	70	72	71	68	61	77
00	015	1800	3200	42	56	60	65	66	65	61	51	71
	020	2400	4100	41	54	64	68	69	69	64	58	75
	025	3000	4800	42	53	66	71	72	72	67	62	77
	030	4000	6400	44	56	72	76	77	79	74	69	84
01	020	3000	4200	55	57	58	58	59	59	55	49	66
	025	3000	4200	55	57	58	58	59	59	55	49	66
	030	4000	5600	50	61	63	61	62	62	59	53	70
	035	5000	7000	45	62	66	66	66	66	63	56	73
	045	8000	11200	49	65	77	79	77	78	73	70	85
	050	8500	11900	49	65	79	81	79	80	75	73	87
11	050	10000	14000	49	65	69	69	69	69	66	60	76
	055	11500	16100	48	67	72	72	72	72	69	63	79
	065	12000	16800	48	67	73	74	73	73	70	64	80
	075	12000	16800	48	67	73	74	73	73	70	64	80
21	080	12000	16800	55	63	67	68	73	73	69	59	78
	090	15000	21000	51	62	68	70	75	76	72	63	80
	095	17000	23800	50	62	70	72	76	77	75	66	82
	110	23000	32200	50	65	77	77	81	84	79	78	88

On return air side

Available pressure: 250 Pa at supply air and 150 Pa at exhaust

		FREQUENCY BAND Hz ▶		63	125	250	500	1000	2000	4000	8000	Lw general level (dB(A))
		Supply air flow rate (m³/h) ▼	Exhaust air flow rate (m³/h) ▼									
000	010	1500	2700	43	53	64	70	72	71	68	61	77
00	015	1800	3200	42	56	60	65	66	65	61	51	71
	020	2400	4100	41	54	64	68	69	69	64	58	75
	025	3000	4800	42	53	66	71	72	72	67	62	77
	030	4000	6400	44	56	72	76	77	79	74	69	84
01	020	3000	4200	55	57	58	58	59	59	55	49	66
	025	3000	4200	55	57	58	58	59	59	55	49	66
	030	4000	5600	50	61	63	61	62	62	59	53	70
	035	5000	7000	45	62	66	66	66	66	63	56	73
	045	8000	11200	49	65	77	79	77	78	73	70	85
	050	8500	11900	49	65	79	81	79	80	75	73	87
11	050	10000	14000	49	65	69	69	69	69	66	60	76
	055	11500	16100	48	67	72	72	72	72	69	63	79
	065	12000	16800	48	67	73	74	73	73	70	64	80
	075	12000	16800	48	67	73	74	73	73	70	64	80
21	080	12000	16800	55	63	67	68	73	73	69	59	78
	090	15000	21000	51	62	68	70	75	76	72	63	80
	095	17000	23800	50	62	70	72	76	77	75	66	82
	110	23000	32200	50	65	77	77	81	84	79	78	88

*Lw: sound power level (dB(A))

Sensors connection principle

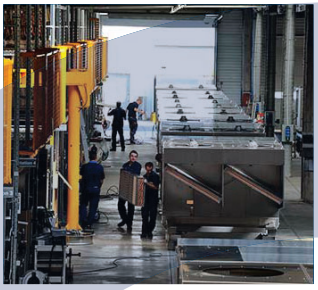
- ① **Room sensor:** 1 pair shielded cable, 2 x 0,75 mm² LIY-CY (max.length 100 lm)
- ② **CO_2/VOC sensor:** 2-pair shielded cable, 4 x 0,75 mm² LIY-CY (max. length 100 lm)
- ③ **Humidity sensor :** 2-pair shielded cable, 4 x 0,75 mm² LIY-CY (max. length 100 lm) *(optional)*

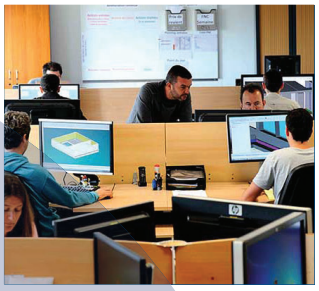
Note: Please note that the value indicated can vary depending on sensor location. For more representative results, do not install them:

> Close to heat sources (spotlight, cooking appliances, glass wall, flues)
> In draft zones (close to entrance, stockrooms, openings)
> In dead zones (behind shelves, in a corner)
> Close to crowded areas (checkout, fitting rooms)

For accurate measurements:

> Do not install the sensors in the axis of the duct used for their wiring to avoid false air flow.
> Do not install control cables and power cables in the same duct (risk of electromagnetic interference).





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