



United Technologies

## PRODUCT SELECTION DATA



- A packaged system, all in one
- Superior reliability
- Save energy and money
- Easy maintenance

Packaged Rooftop Cooling Only Units,  
Heat Pumps and Gas Heating Units

# 48/50UA/UH 135 - 205



# 48/50 UA/UH

**Nominal cooling capacity 131 - 193 kW**

**Nominal heating capacity 142 - 211 kW**

The packaged rooftop units are flexible and efficient air conditioners, designed for outdoor installations. The units are self-contained and can be installed in commercial and industrial applications.

- 50UA/UH units are packaged rooftop cooling units/reversible heat pumps, available with additional heating options (hot-water coil or electric heaters).

48 UA/UH units are packaged rooftop cooling units or reversible heat pumps which have been mounted multi-phased gas heaters on.

## Environmentally sound refrigerant choice

- R410A refrigerant is
  - a chlorine-free refrigerant of the HFC group with a zero ozone depletion potential,
  - a high-density refrigerant, therefore less refrigerant is required,
  - very efficient: it gives an increased energy efficiency ratio (EER, COP and part load efficiencies).

## Features

These new rooftop units integrate the latest technological innovations:

- state-of-the-art scroll compressor technology,
- low-noise fans made of composite material,
- auto-adaptive Touch Pilot microprocessor control with Touch Pilot display
- Variable air volume supply fan optimizing energy consumption at full load and part load
- High efficiency energy recovery wheel with small and large alternatives for each sizes
- 60 mm double skin indoor section for less leakage and low thermal losses.

## Superior reliability, efficiency and safety

- State-of-the-art concept
  - Reduced size and weight make these units ideal for today's lightweight building structures.
  - Rugged design of critical components. e.g. motor supports, suction/discharge piping etc.
  - Powder-painted sheet metal, especially suitable for outdoor use (light-grey colour RAL 7035).
- Exceptional endurance tests
  - Corrosion resistance tests for polyester powder painted galvanized sheet metal parts in salt mist.
  - Accelerated ageing test on components that are submitted to continuous operation: compressor piping, fan supports.
  - Low vibration design.
  - Transport simulation tested in real conditions.
  - Each model has two independent refrigerant circuits with 2 compressors each which gives good partial load performances and continuous operation in case of failure.
- Leak-tight refrigerant circuit
  - Using the latest refrigerant circuit technology for Carrier Aquasnap chillers:
    - Brazed refrigerant connections for increased leak tightness.
    - Reduction of leaks due to reduced vibration levels and elimination of capillary tubes.
    - Access to pressure transducers and temperature sensors without losing refrigerant charge.
- Compressors
  - Excellent full and part-load efficiencies achieved with multiple scroll compressors and indoor coils with dual refrigerant circuits. The refrigerant circuits are both electrically and mechanically independent, to provide

standby capability should one circuit require service. Totally enclosed outdoor fan motors are designed for many years of trouble-free operation.

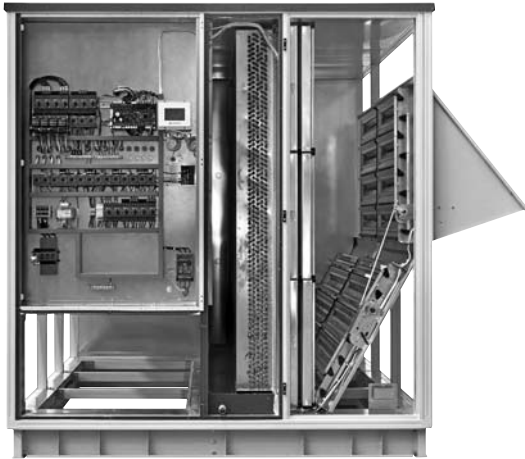
- Increased energy efficiency at part load, around 99% of the operating time. Only compressors that are absolutely necessary operate. At these conditions the compressors operating are more energy-efficient, as they use the total condenser and evaporator capacity.
- Better reliability, superheat control, refrigerant management and efficiency with electronic expansion valve on refrigerant circuits.
- Low-noise scroll compressors with low vibration levels.
- The compressor assembly is installed on an independent chassis and supported by anti-vibration mountings.
- Dynamic suction minimizing vibration transmission.
- Crankcase heaters are standard for all units.

## Compressor



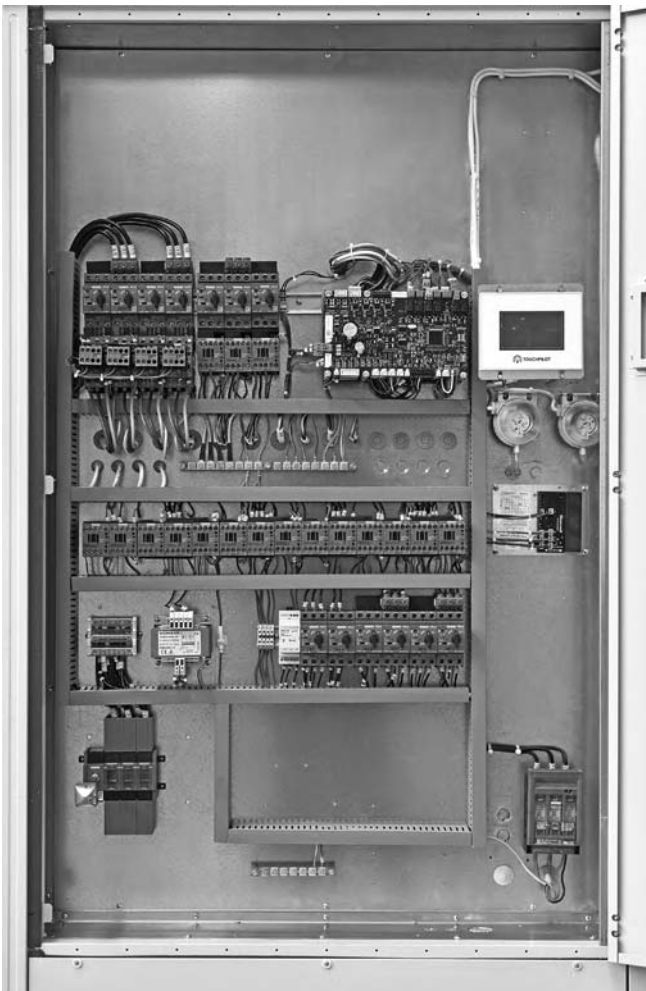
- Outside condenser/evaporator coil section
  - Vertical outside coils made of high-quality staggered copper tubing, mechanically bonded in pre-coated corrugated aluminium fins, with high-level protection against corrosion and UV.
  - Latest generation low-noise Flying Bird IV fans, made of a composite material (Carrier patent) - now even quieter and generating intrusive low-frequency noise.
  - At part load or low outdoor temperatures the fan automatically switches to the low speed. The two-speed fan motor allows adjustment of the fan speed for optimized efficiency.
  - Defrost is optimized by the auto-adaptive algorithm. This and the new coil design reduce the defrost cycle duration by an average of 50%. For increased safety an electric heater prevents accumulation of ice on the air heat exchanger base.
  - All pipes and refrigeration components are welded. Pressure sensors are mounted directly on the pipes.
  - Double-inlet indoor fans have forward-curved blades.
  - Intertwined circuiting indoor coils enable better coil efficiency and dependability.

## Indoor section



- Simplified wiring
  - Electrical connections are simplified and standard equipment includes a main disconnect switch and a single entry point of the three-phase without neutral power supply to the whole unit.
  - The units are fully wired in accordance with EN standards and include thermo-magnetic circuit breakers and a main disconnect switch.
  - Transformer for safe 24 V control circuit supply included.
  - Easy sensor connections through separate terminal
  - Special relay to check phase sequence
  - 4,3" Touch Pilot user interface into panel
  - Thermic magnetic relays for compressors.

## Simplified electrical connections



## Touch Pilot user interface

Touch Pilot is an advanced numeric control system that combines complex intelligence with great operating simplicity. Touch Pilot constantly monitors all machine parameters, optimizing the operation of compressors, fans and reversing valve for optimum energy efficiency.

## Touch Pilot display



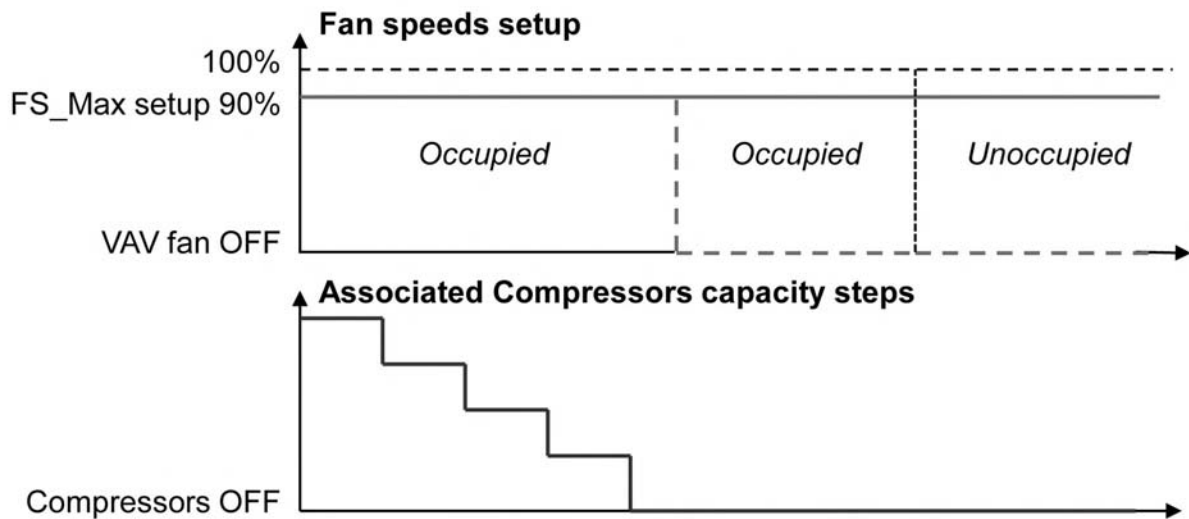
- A powerful control system
  - Touch Pilot control is auto-adaptive and guarantees total compressor protection. The system permanently checks the operating parameters and responds simultaneously to avoid excessive cycling and maintain the ideal operating range for the compressor (temperatures and pressures out of range, etc.). By taking corrective action before the fault occurs, the auto-adaptive control frequently prevents a shutdown due to a fault.
  - Touch Pilot control allows communication via JBus and LonWorks - if the necessary hardware is provided.
- Energy management
  - Internal seven-day time schedule clock permits unit on/off control.
  - To optimize power consumption, Touch Pilot automatically resets the space temperature setpoint in accordance with the outdoor air temperature or uses a second setpoint (example: occupied/unoccupied mode).
  - Master/slave control of up to six units operating in parallel (a serial RS485 communication port) fault. The zone heat/cool state is determined by the master unit. If a slave unit is in a heat/cool mode which differs from the master then it is forced in fan only mode (accessory).
  - Automatic changeover based on the outside air temperature
- Integrated features
  - Night mode: capacity and fan speed limitation for reduced noise levels.
- Ease-of-use
  - Easy access to the controller box with inclined touch screen mounting to ensure legibility under any lighting conditions.
  - The information is displayed clearly in English, French, German, Italian or Spanish (for other languages please contact Carrier).
  - Unit control with microprocessor with non-volatile memory, picture guided unit/operator interface, the LOCAL/OFF/REMOTE/CCN selector and a 4,3 inches coloured touch-screen display with multiple language capability.
- Carrier Comfort Network (CCN) operating mode
  - A simple two-wire communication bus between the RS485 port of the rooftop unit and the Carrier Comfort Network offers multiple remote control, monitoring and diagnostic possibilities. Carrier offers a vast choice of control products, specially designed to control, manage and supervise the operation of an air conditioning system. Please consult your Carrier representative for more information on these products.

- Remote operating mode with volt-free contacts (standard)
  - Start/stop: opening of this contact will shut down the unit.
  - Dual setpoint: closing of this contact activates a second setpoint (example: unoccupied mode).
  - Additional frost protection setpoint is available to protect the building at low temperature.
  - Alarm indication: this volt-free contact indicates and identifies major faults that may lead to the shutdown of one or two refrigerant circuits.
  - Demand limit can be used to reduce the maximum unit capacity to pre-defined values, using volt-free contacts.
  - User safety: this contact can be used for any customer safety loop. Closing the contact generates a specific alarm.
- Remote management (standard)
  - Units with Touch Pilot control can be easily accessed from the internet, using a PC with an Ethernet connection. This makes remote control quick and easy and offers significant advantages for service operations.

### Variable Air Volume supply fan option

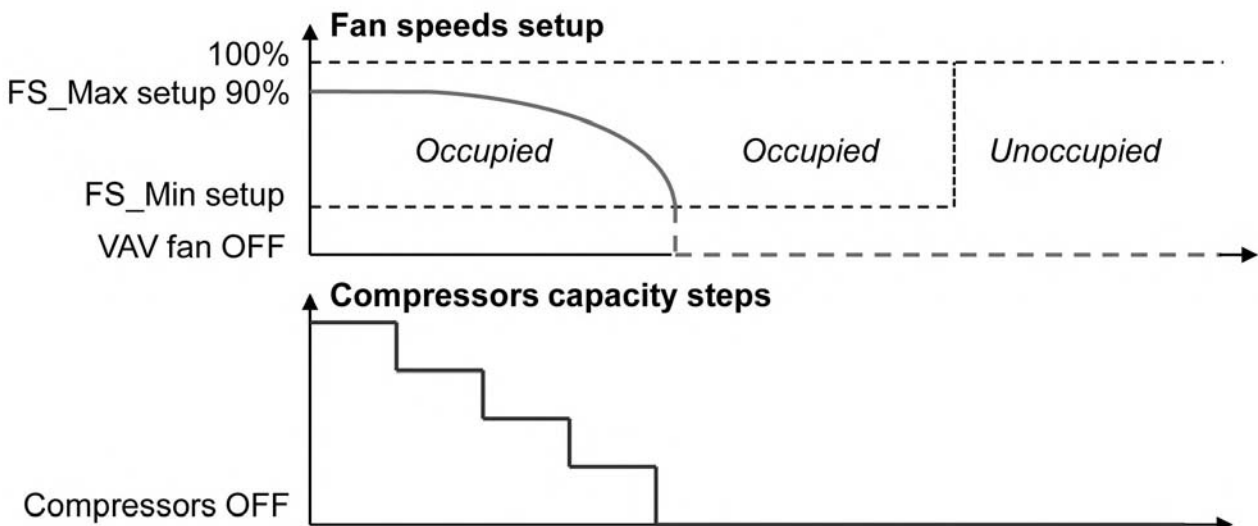
An optional Variable Air Volume supply fan can be selected. This belt driven high static centrifugal fan is driven by a Variable Frequency Drive on motor. The VAV supply fan option is specially designed to ensure economical operation during part load and occupied/unoccupied periods to meet current and future requirements for high-energy efficiency buildings.

- Energy Savings solution  
VAV Supply fan option allows fan absorbed power large reduction, improving unit part load efficiencies in cooling and heating modes.
- Constant Volume Operating mode:
  - By choosing Constant Volume mode on ProDialog+ interface the user can optimize the supply fan speed (FS max) to adapt perfectly airflow rates (from 70-100% of unit nominal airflow rate) to airduct pressure drop, therefore reducing fan power consumption.
  - The indoor fan management function lets user cycling the supply fan during occupied or unoccupied periods, the supply fan is always On as default.



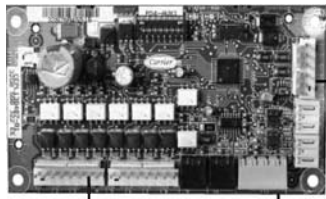
- The user can choose to stop the supply fan during occupied or unoccupied periods when the unit is in standby mode (no compressor) optimizing the Energy savings (dotted lines).
- Constant Volume mode also offers pressure compensation feature: VAV option will compensate airflow drop when the filters get fouled up.

- Variable Air Volume Operating mode:
  - The unit will operate in the variable speed features in cooling & heat pump mode: the unit is automatically determining the minimum airflow needed to provide a satisfying room air temperature, and maximize energy efficiency.





**SIOB board**



Len bus – Serial link

AI-01

DO-06



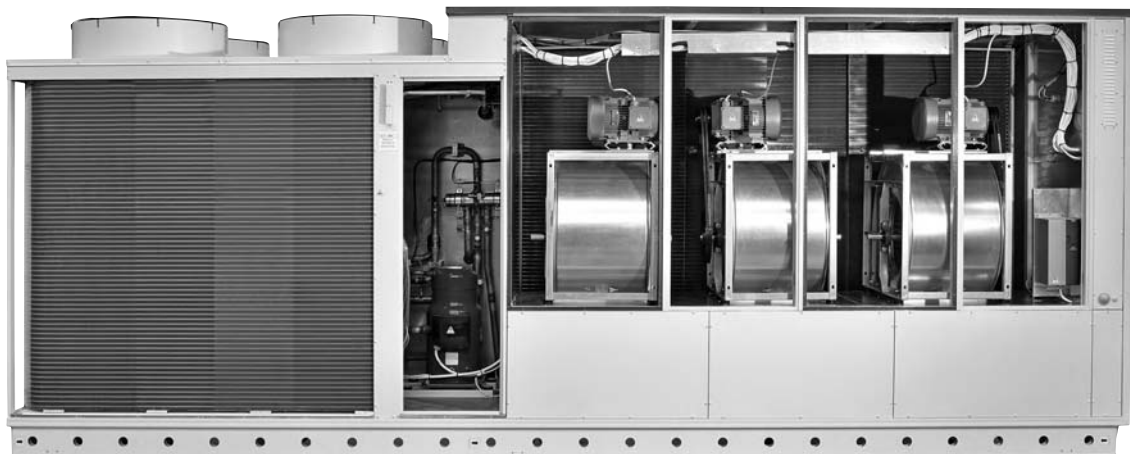
**Return air temperature sensor**



**HVAC Drive  
(same as ERM)**



**Belt driven High Static Fan drive with fixed motor pulleys**



## IAQ options and economizer

- Fresh air sliding panel
- Manual outdoor air damper
- Economizer
  - An optional integrated economizer permits cooling utilizing an outdoor air sensor.
  - The economizer operates in conjunction with mechanical cooling, when required, and is factory-installed for either vertical or horizontal operation. The factory-supplied and field-installed rain hood/filter assembly is designed to prevent moisture or objects from entering the unit.
  - Touch Pilot control has been designed to support the requirements of indoor air quality control, using outside air. Units can be equipped with a fully modulating economizer. The control includes a logic for a minimum ventilation position.

### Economizer

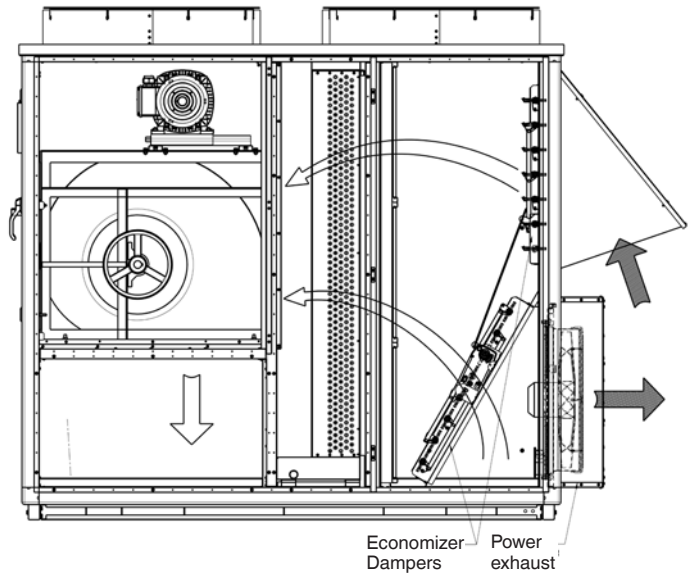


- Thermostatic and enthalpy control with the economizer (option). Two types of control are available:
  - dry-bulb temperature differential,
  - enthalpy differential.Normally the units provided with an economizer are factory-fitted with an outdoor air and space temperature sensor. For outdoor enthalpy control the economizer is provided with an enthalpy controller and sensors for optimum temperature and humidity control.
- Fresh Air management with Economizer and VAV supply fan options: VAV option will guarantee minimum fresh air quantity setting (%) by opening the economizer damper accordingly to the calibration data, regardless the fan speed value.  
The calibration task will use the following formula to calculate the fresh air rate:  
$$\% \text{ of Fresh Air} = (\text{Return Air Temperature} - \text{Supply Air Temperature}) / (\text{Return Air Temperature} - \text{Outdoor Air Temperature})$$

## Power exhaust option

- This option prevents space pressurization problems. When operating with outside air economizers, large amounts of air can be introduced into the building and a means for building pressure relief must be provided. The 50 UA/UH series control supports the following three building pressure control types:
  - Barometric relief damper: can be used on low return duct static applications.
  - Centrifugal exhaust fan for exhaust air, running when the fresh air inlet reaches 50% of the fresh air requirement (factory-fitted to the unit).
  - Minimized over-pressure in the building when fresh air is introduced, allows additional exhaust air pressure for medium return ductwork pressure drop.

### Power exhaust option



## CO<sub>2</sub> sensors

- The indoor air quality (IAQ) function provides a demand-based control for ventilation air quantity, by using a modulating outside air damper position that is proportional to the space CO<sub>2</sub> level. The ventilation damper position is varied between a minimum ventilation level (based on internal sources of contaminants and CO<sub>2</sub> levels other than the effect of people) and the maximum design ventilation level (determined at maximum occupancy of the building).

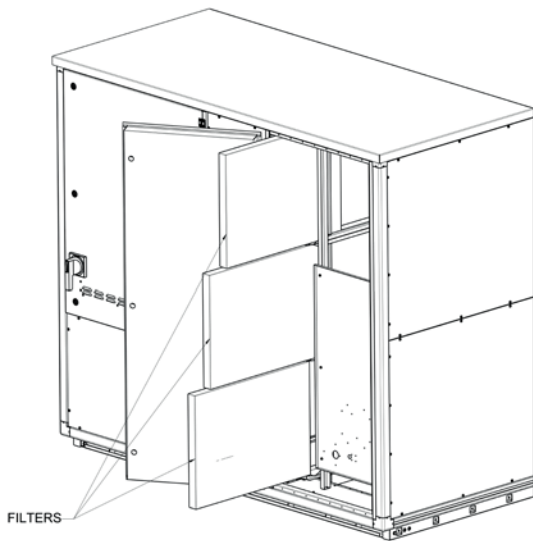
**Filtration solutions**

- The units can use either standard G4 filters or an optional two-stage pre-filter and G4 + F7 or M6 + F7 high-efficiency filters (all fire class M1). They can also have an optional filter pressure drop switch to warn if the filter is dirty.

**Filter section**



**Filter section**



Outdoor air quality	IDA3 (better)	IDA4 (good)
ODA1 (good)	F7	F5
ODA2	F5/F7	F5/M6
ODA3	F5/F7	F5/M6
ODA4 (poor)	M6/F7	F4/M6

The outdoor air is categorized in four levels (ODA1 to ODA4) depending on air pollution through particles and gases.

The indoor air is categorized in four levels. For rooftop applications the most common ones are:

- IDA3 (commercial buildings, cinemas, theatres, restaurants, bars, sport halls)
- IDA4 (industrial buildings and warehouses).

If units are installed in an environment where filters need to be replaced more frequently, it is recommended to use two-stage particle filtration for hygiene reasons.

**Fire and smoke control option**

- The unit can be equipped with an optional return air smoke detector. The smoke detector is wired to stop the unit and send a message to a remote alarm system if a fault condition is detected. If the control expansion module is added, the control will support smoke control modes including evacuation, smoke purge and pressurization.

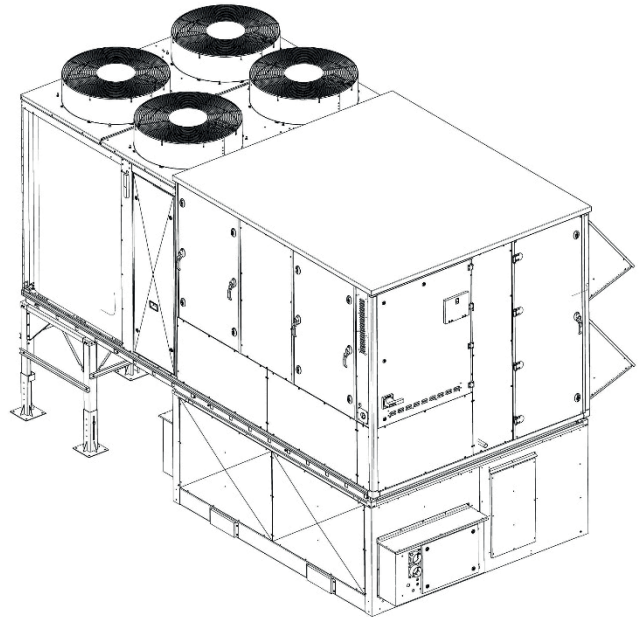
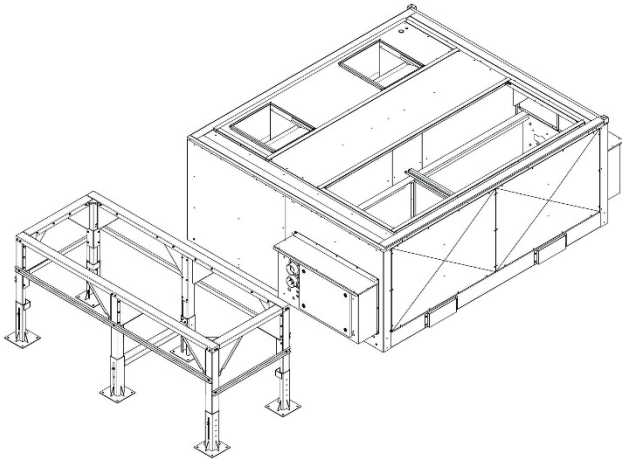
**Gas heating solutions (only 48 UA/UH)**

- Rooftop units are equipped with condensing and low NOx emission gas heaters confirming Eco Design criteria. Gas heaters provide comfortable and efficient heating low outdoor temperatures as low as - 20 °C. Gas heater modules, delivered inside a roofcurb installed at the factory, can be easily installed under the unit at site.
- They can be selected as an alternative heating source for both cooling only (UA series) and heat pump (UH series) units.
- Carbon monoxide emission of premix burner is zero (CO=0), and NOx emission is very low (NOx < 30 ppm-Class 5). Burning efficiency up to 109%, condensing technology and proportional control provides both sensitive comfort and efficiency.
- Consumes low LNG providing heating demand in the range of 22/23-100 % with 0 – 10 V capacity control.
- With its combustion chamber, heat exchanger, premix burner where air and gas gets mixed, gas heater is provided as a package with CE certificate from the manufacturer. (2009/142/CE, 2006/42/CE, 2006/95/CE, 2004/108/CE)
- Combustion chamber and complete heat exchanger is made of AISI 441 stainless steel, providing long service life and reliability.
- Gas heaters are equipped with a manual reset safety thermostat for safety reasons.
- Some of other safety and control devices are; ignition and flame detection electrodes, electronic ignition device for the burner and flame ionisation control device. Microprocessor based electronic board regulates heat output and controls fan and gas valve for air/gas mixture.

**Gas heater module**



## Gas heater inside roofcurb



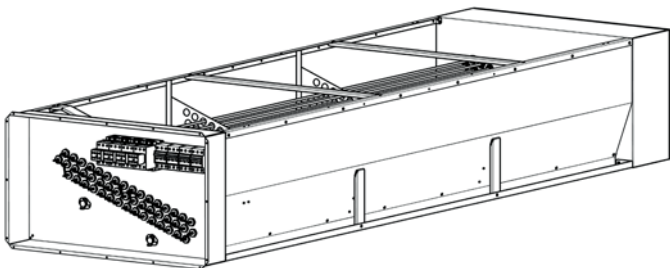
### Electric heater option

- The electric heater is located after the main thermodynamic coil and guarantees constant and comfortable supply air temperature in winter. This option also enhances comfort when the heat pump is operating in the defrost cycle.
- Each 50 UA/UH rooftop unit can be fitted with a choice of three electric heater options offering two control stages.
- Shielded electric resistance heaters are fully factory-wired and tested. Each stage is protected against overloads by two thermal protectors. The low-limit protector with automatic reset is located above the resistance heaters while the high-limit protector with manual reset is located in the heater control box. This high-temperature limit control offers overload protection and is set to 90°C. It is located less than 150 mm after electric heaters.

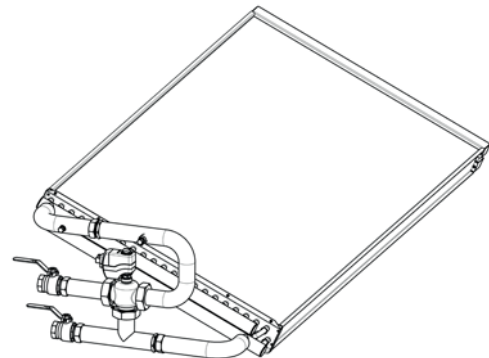
### Hot-water coil with three-way valve option

- The hot-water coil is located after the main thermodynamic coil and guarantees constant and comfortable supply air temperature in winter. It allows fully modulated heating capacity, using a three-way valve, protected by a frost protection sensor. This option allows high-capacity heating.
- The hot-water coils offer a fully modulating proportional three-way valve as standard, with supply air temperature-based control. They also include two isolating shut-off valves and are factory-fitted, wired and fully factory-tested. Frost protection is provided by a low-temperature sensor and the coils are equipped with a purge system.

### Electric heater



### Hot-water coil





## Return air fan option

- Allows additional return air pressure for the return air ductwork, minimizing overpressure in the building when fresh air is introduced. Also permits manual or automatic system air pressure balancing in the building.
- This option assists the supply fan to overcome the return-side pressure drop while running in series with the supply fan. It is fitted with a damper to exhaust excessive air due to fresh air usage. The exhaust air damper can be manually or automatically adjusted, based on the fresh air options. The return air fan is shipped loose, but separately functionally tested before leaving the factory.
- The associated supporting frames, ductwork, cables for mechanical and electrical connection needs to be field-supplied. The drive is factory-set in accordance with the return air fan performance tables. When indoor pressure and air flow requirements differ from the nominal ratings, the motor pulley can be adjusted for different available static pressure values.
- The return fan option can also be supplied with a frequency inverter.

## Return fan inside roofcurb



## Energy recovery module (ERM)



There are two types of ERM's per each rooftop size; Small & Large ERM. Small ERM permits fresh air up to 50% and Large ERM up to 100%. The ERM is an individual dual-flow unit, equipped with a high-efficiency Eurovent-certified air-to-air heat recovery wheel with 63% to 88% efficiency, an integrated variable-air-volume plug fan and a control system for plug-and-play installation. The modules are specially designed to ensure economical indoor air extraction and to take in fresh air to meet current and future requirements for high-energy-efficiency buildings.

- The unit cabinet is made of galvanized and powder-painted sheet metal, specially suitable for outdoor use, for corrosion protection (light-grey colour RAL 7035).
- The ERM is fitted with G4 filters on the fresh-air side as standard to protect the heat recovery wheel against dust.
- Power and control wiring between the ERM and the rooftop unit is supplied by the factory.
- All ERM's are directly connected to the rooftop unit without any duct.
- Energy savings
  - The heat exchanger reclaims up to 88% of the heat from the extract air and transfers it to the supply air, considerably reducing the thermal load on the heating and air conditioning equipment.
  - High-efficiency plug fans for exhaust air. The direct-drive fans do not suffer any belt and pulley drive losses. They are more energy-efficient and require less maintenance. The exhaust air fan speed is independently controlled by frequency inverters directly connected to the Pro-Dialog+ controller inside the rooftop unit.
  - When outside conditions permit, the control system continuously adjusts the fan speed to minimize power consumption.

## High-efficiency heat recovery wheel



■ Energy recovery benefits

Quick and easy plug-and-play installation:

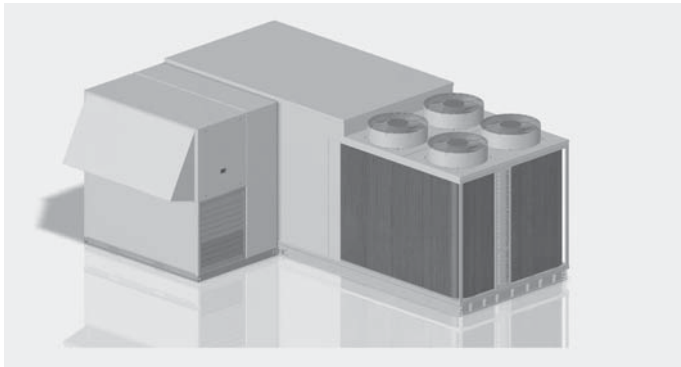
- The ERM option is delivered as a single piece for fast installation, separate from the rooftop units.
- To facilitate installation, the ERM is factory-fitted with a terminal block for the power and control wiring for easy connection to the rooftop units (wiring to be supplied by the installer). The control box and the sensors are factory-installed and tested for fast and trouble-free start-up.

Control and safety devices

- An integrated motion detector ensures that the ERM control generates an alarm signal if the heat recovery wheel stops.
- The plug fan pressure differential sensor transmits an alarm signal if the fan stops.
- A barometric exhaust air damper prevents air and water infiltration when the exhaust fan is switched off.

■ VAV supply fan option & Energy Recovery Module:

- When the ERM status is Heat or Cool recovery modes, in order to maintain minimum fresh air requirement with variable air volume, mixed air temperature method is used for minimum fresh air quantity setting (%), using calibration task method.
- During 100% free cooling ERM mode, in order to balance with increased pressure drop of rotary wheel (reducing supply flow), VAV option mode will be automatically switched to Constant Volume mode during free cooling allowing pressure drop compensation.



Wheel material for heat recovery can be selected as condensation or sorption type. Sorption type wheels are effective for more heat recovery by drawing from the latent heat of outside air, especially in areas with high humidity.

**Serviceability**

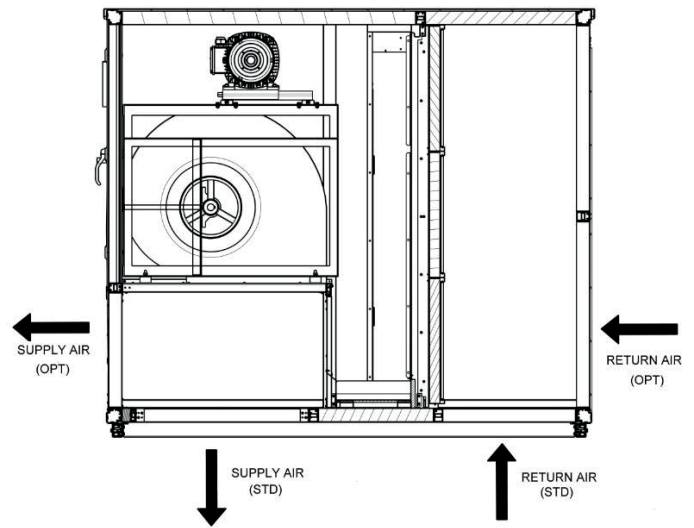


■ Installation, serviceability and fast commissioning

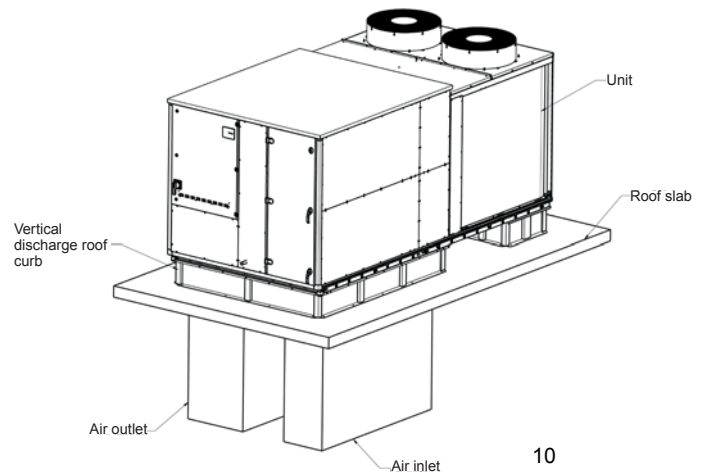
- The 50/48 UA/UH unit design facilitates fast field-conversion. Single-point electrical connections are standard on all units. Service access to the electrical components can be through the roof curb or unit side.
- Systematic factory run test before shipment
- Quick-test function for step-by-step verification of instruments, electrical components and motors.
- All units are equipped with the Touch Pilot control system as standard, with information displayed clearly in English, French, German, Italian and Spanish. Touch Pilot menu allows quick access to all main operating parameters including: number of compressors on, suction/relief pressure, compressor operating time, set-points, air temperature, entering/leaving water temperature.
- The controls are compatible with either a room sensor or a conventional thermostat with no need to install an accessory interface. No special tools are required to run the unit through its operational steps.
- The unit can be run-tested before an installation is complete to ensure smooth start-up. Hinged access panels offer easy maintenance access to all standard serviceable components. No fasteners need to be removed; this reduces service time and helps prevent roof leaks caused by discarded screws. Colour-coded wiring permits easy tracing and diagnostics.

**Roofcurb**

The 50 UA/UH units leave the factory with the air discharge and return in the lower unit section. The unit can be shipped also as bottom supply/side return, side supply/bottom return or side supply/side return according to selected options.



**Fixed vertical roof curb**



# Options

Option	No	Description	Advantage	Use
<b>Electric Heaters</b>				
Electric heater 9+9+9+18 kW	174	Electric heater coil is an auxiliary heating solution on cooling only and reversible units for low mixed air temperature (high fresh air rate in winter).	Electric heater located after the main thermodynamic coil, guarantees constant and comfortable supply air temperature in winter. This option is also improving comfort while heat pump is operating in defrost cycle.	50UA-UH 135, 160
Electric heater 18+18+18+18 kW	175			50UA-UH 135, 160
Electric heater 27+27+27+27 kW	176			50UA-UH 135, 160
Electric heater 9+9+18+18 kW	177			50UA-UH 180, 205
Electric heater 18+18+27+27 kW	178			50UA-UH 180, 205
Electric heater 36+36+36+36 kW	179		50UA-UH 180, 205	
<b>Hot Water Coils</b>				
Hot water coil low with 3 way valves	180	Hot water coil is an auxiliary heating solution on cooling only and reversible units for low mixed air temperature (high fresh air rate in winter).	Hot water coil located after the main thermodynamic coil, guarantees constant and comfortable supply air temperature in winter. It allows full modulating heating capacity throughout the use of 3 way valve, secured by frost protection sensor.	50UA-UH 135, 160
Hot water coil high with 3 way valves	181			50UA-UH 135, 160
Hot water coil low with 3 way valves	182			50UA-UH 180, 205
Hot water coil high with 3 way valves	183			50UA-UH 180, 205
<b>Gas modules</b>				
Natural Gas 160 kW in vertical roofcurb - Modulating	210	Gas burner is an auxiliary heating solution on cooling only and reversible units for low mixed air temperature (high fresh air rate in winter). On heatpump unit, modulated type gas heater can be used as primary heater(default) or backup heater.	Gas burners are located after the main thermodynamic coil, guarantees constant and comfortable supply air temperature in winter. It allows modulating heating capacity from 22-23% to 100%. This option allow high capacity heating solution.	48UA-UH 135, 160
Natural Gas 194 kW in vertical roofcurb - Modulating	211			48UA-UH 180, 205
<b>Coil Protection Options</b>				
Outdoor Precoated / Indoor Standard	154	Coils fins made of UV resistant polyurethane protection pretreated aluminium.	Improved corrosion resistance, extending the coil life time.	ALL
Outdoor Precoated / Indoor Precoated	153			
<b>Fresh Air &amp; Economizer Outdoor Air Options</b>				
Manual outdoor air damper	40	Manual adjustable setting of permanent amount of fresh air up to 40 %. Fresh air hood also supplied.	Fresh air supply in the building with constant adjustable rate.	ALL
Economizer, thermostatic control	35	Direct link driven low leakage blades to control fresh air percentage up to 100 % Vs return air. Indoor & Outdoor air temperature sensors are supplied. Fresh air hood also supplied.	Fresh air supply in the building with variable rate, depending on outside air temperature. Allow free cooling operation for energy saving based on temperature differential control.	
Economizer, enthalpy control	36	Direct link driven low leakage blades to control fresh air percentage up to 100 % Vs return air. Indoor & Outdoor Air enthalpy sensors are supplied. Fresh air hood also supplied.	Fresh air supply in the building with variable rate, depending on outside air enthalpy (temperature & humidity level). Allow intelligent free cooling operation for energy saving based on enthalpy differential control.	
Economizer, thermostatic + CO <sub>2</sub> sensor control	156	Direct link driven low leakage blades to control fresh air up to 100 % vs return air. Indoor & Outdoor air temperature sensor supplied. Indoor Air Quality CO <sub>2</sub> sensor supplied. Fresh air hood also supplied.	Fresh air supply in the building with variable rate, depending on outside air temperature. Allow free cooling operation for energy saving based on temperature differential control. Manage CO <sub>2</sub> concentration levels in the building.	
Economizer, enthalpy + CO <sub>2</sub> sensor control	157	Direct gear driven low leakage blades to control fresh air percentage Vs return air. Indoor & Outdoor Air Temperature & Humidity sensors supplied. IAQ CO <sub>2</sub> sensor supplied. Fresh air hood also supplied.	Fresh air supply in the building with variable rate, depending on outside air temperature & humidity level. Allow intelligent free cooling operation for energy saving based on enthalpy differential control. Manage CO <sub>2</sub> concentration levels in the building.	
<b>Supply fan options</b>				
High static pressure 1 (CAV)	150	Oversized fan and motors configuration	Various fan motor kits allow large choice of airflow rates & External static pressures running points.	ALL
High static pressure 2 (CAV)	151			
Standard with soft starter (CAV)	165	Gradual supply fan motor starting.	Progressive supply fan start to reduce noise and starting current.	
High static pressure 1 with soft starter (CAV)	166	Oversized fan and motors configuration + gradual supply fan motor starting time.		
High static pressure 2 with soft starter (CAV)	167			
Variable Air Volume with VFD drive (VAV)	169	Fan and motor assembly with Variable Frequency Drive offering Variable Air Volume management.	VFD fan motor offers energy saving in part load operations with variable airflow rates, External Static Pressures adjustment, and multiple operating modes.	
<b>Filter Options</b>				
Standard G4 filter (not classified)		G4 filters synthetic media 50 mm cartridge frame with 90 % gravimetric efficiency and high filtration area.	High efficiency filtration for return air and fresh air with low pressure drop. No fire classification.	ALL
G4 Filter M1 fire class	145	G4 filters synthetic media 50 mm metallic frame with 90 % gravimetric efficiency and high filtration area.	High efficiency filtration for return air and fresh air with low pressure drop with fire classification M1.	
F7 Filter M1 fire class	147	F7 filters synthetic media 50mm metallic frame with 90% opacimetric efficiency and high filtration area.	High efficiency filtration for return air and fresh air with low pressure drop with fire classification M1.	
G4 + F7 Filter M1 fire class	158	Two-stage particle filtration G4 & F7	Two stage high efficiency filtration for return air and fresh air with medium pressure drop with fire classification M1. Replaceable media G4.	
M6 + F7 Filter M1 fire class	159	Two-stage particle filtration M6 & F7	Two stage very high efficiency filtration for return air and fresh air with medium pressure drop with fire classification M1. Replaceable media M6.	



Option	No	Description	Advantage	Use
<b>Drain pan options</b>				
Standard		Painted galvanised steel sloped drain pan with connection to a drain pipe.	Standard easy draining of condensation water.	ALL
Stainless steel pan	72	Stainless steel sloped drain pan with connection to a drain pipe.	Easy cleaning drain pan for hygienic purpose & easy draining of condensation water.	
<b>Energy Recovery options</b>				
Energy recovery module_Condensation-Large (supplied separately)	160	The large ERM that permits fresh air upto 100%, is an individual dual-flow unit, equipped with a high-efficiency air-to-air EUROVENT certified heat recovery condensation wheel efficiency 63% to 88%, with integrated variable exhaust air volume plug fan and a control system for a plug & play installation and connection to the roof top electrical box.	Energy saving solution when units operates with fresh air rate in extreme outdoor temperature (winter or summer) allowing energy recovery from exhaust air and transfer to fresh-air side. Reduced installed cooling or heating unit capacity. Allows 100% free cooling solution.	ALL
Energy recovery module_Condensation-Small (supplied separately)	173	The small ERM that permits fresh air upto 100%, is an individual dual-flow unit, equipped with a high-efficiency air-to-air EUROVENT certified heat recovery condensation wheel efficiency 63% to 88%, with integrated variable exhaust air volume plug fan and a control system for a plug & play installation and connection to the roof top electrical box.	Energy saving solution when units operates with fresh air rate in extreme outdoor temperature (winter or summer) allowing energy recovery from exhaust air and transfer to fresh-air side. Reduced installed cooling or heating unit capacity. Allows 50% free cooling solution.	
Energy recovery module_Sorption-Large (supplied separately)	200	The large ERM that permits fresh air upto 100%, is an individual dual-flow unit, equipped with a high-efficiency air-to-air EUROVENT certified heat recovery sorption wheel efficiency 63% to 88%, with integrated variable exhaust air volume plug fan and a control system for a plug & play installation and connection to the roof top electrical box.	Energy saving solution when units operates with fresh air rate in extreme outdoor temperature (winter or summer) allowing energy recovery from exhaust air and transfer to fresh-air side. Reduced installed cooling or heating unit capacity. Allows 100% free cooling solution.	ALL
Energy recovery module_Sorption-Small (supplied separately)	201	The small ERM that permits fresh air upto 100%, is an individual dual-flow unit, equipped with a high-efficiency air-to-air EUROVENT certified heat recovery sorption wheel efficiency 63% to 88%, with integrated variable exhaust air volume plug fan and a control system for a plug & play installation and connection to the roof top electrical box.	Energy saving solution when units operates with fresh air rate in extreme outdoor temperature (winter or summer) allowing energy recovery from exhaust air and transfer to fresh-air side. Reduced installed cooling or heating unit capacity. Allows 50% free cooling solution.	
<b>Return/Exhaust Air Options</b>				
Barometric exhaust	71	Aluminium blades closing by gravity protecting exhaust from rain.	Allow pressure relief when fresh air is introduced in a building with good air tightness.	ALL
Power exhaust 2x1,5 HP air flow 12.000 m <sup>3</sup> /h, 200Pa	184	Exhaust axial fan working in parallel to provide medium exhaust air pressure, running while fresh air inlet higher than 50 % open.	Minimised overpressure in the building when fresh air is introduced. Allows additional exhaust air pressure for return ductwork medium pressure drop.	48/50UA-UH 135, 160
Power exhaust 3x1,5 HP air flow 18.000 m <sup>3</sup> /h, 200 Pa	185	Fixed air flow, factory mounted on the unit. Including Barometric exhaust option 71.		48/50UA-UH 180, 205
Return fan with manual exh. damper in vertical roofcurb (shipped loose)	196	Return centrifugal fan to provide high return air pressure, adjustable air flow rate with variable pulley.	Allow additional return air pressure for return ductwork. Minimised overpressure in the building when fresh air is introduced. Allow manual system air pressure balancing in the building	48/50UA-UH 135, 160
Return fan with manual exh. damper in vertical roofcurb (shipped loose)	197	Adjustable exhaust damper with low leakage blades to adjust exhaust air flow rate. Available only with Options 40 or 118.		48/50UA-UH 180, 205
Return fan with motorized exh. damper in vertical roofcurb (shipped loose)	198	Return centrifugal fan to provide high return air pressure, adjustable air flow rate with variable pulley.	Allow additional return air pressure for return ductwork. Minimized overpressure in the building when fresh air is introduced. Allow automatic system air pressure balancing in the building	48/50UA-UH 135, 160
Return fan with motorized exh. damper in vertical roofcurb (shipped loose)	199	Motorized exhaust damper with low leakage blades to adjust exhaust air flow rate. Available only with Options 35, 36, 156, 157.		48/50UA-UH 180, 205
Return fan with motorized exh. damper in vertical roofcurb;VAV;(shipped loose)	205	Return centrifugal fan to provide high return air pressure, adjustable air flow rate with VFD drive in parallel with supply fan..	Allow additional return air pressure for return ductwork. Minimized overpressure in the building when fresh air is introduced. Allow automatic system air pressure balancing in the building with energy saving	48/50UA-UH 135, 160
Return fan with motorized exh. damper in vertical roofcurb;VAV;(shipped loose)	206	Motorized exhaust damper with low leakage blades to adjust exhaust air flow rate. Available only with Option 169 and Options 35, 36, 156, 157.		48/50UA-UH 180, 205



# Options

Option	No	Description	Advantage	Use
<b>Temperature sensors options</b>				
Standard, space sensor T55		T55 sensor to monitor room temperature	Supply air temperature control based on room temperature.	ALL
Space sensor with override & setpoint adjustment T56	19	T56 sensor to monitor room temperature and provide a temperature offset of 3 K maximum.	Room air temperature control with override and setpoint adjustment.	ALL
Space sensor with display, override, on/off and setpoint adjustment.	24	Room temperature sensor with occupied period extension (up to 4 hours), setpoint adjustment and on/off functions.	Room air temperature control with override, setpoint adjustment and display.	ALL
Two space sensor T55 + T56	57	Twin sensors T55 & T56 supplied		ALL
Two space sensor T55 + OPT24	59	Twin sensors T55 & OPT24 supplied		ALL
Duct temperature sensor	18	Duct sensor to monitor air return temperature	Allows direct temperature control on return air duct.	ALL
<b>Communication Options</b>				
CCN/Jbus Gateway	26	Two-directional communications board, complies with Jbus communication protocol	Easy connection by communication bus to a Building Management System	ALL
CCN/Lon Gateway	27	Two-directional communications board, complies with LonTalk communication protocol	Easy connection by communication bus to a Building Management System	ALL
CCN/BACnet Gateway	161	Two-directional communications board, complies with BACnet communication protocol	Easy connection by communication bus to a Building Management System	ALL
<b>Air Flow Safeties</b>				
Dirty filter detection (pressure switch)	96	Alarm reported by adjustable differential pressure switch connected to Touch Pilot controller.	Easy filter maintenance by checking the filter pollution level, improving energy efficiency	ALL
Supply air flow detection (pressure switch)	99	Alarm reported by adjustable differential pressure switch connected to Touch Pilot controller.	Fan checking is "On"	ALL
Dirty filter alarm and Supply air flow detection	162	Combination of options 96 and 99	Filter pollution level and fan checking is "On"	ALL
<b>Smoke Detection</b>				
Smoke detector	97	Generates general unit default of the unit when smoke is detected, economizer return air damper is closed, supply fan is stopped, electric heaters/hot water/gas burners are switched off. Only available with Economiser options.	Building fire security based on smoke detection.	ALL
Smoke detector + DAD (French ERP regulation)	110	Generates general unit default of the unit when smoke is detected, economizer return air damper is closed, supply fan is stopped, electric heaters/hot water/gas burners are switched off. DAD additional functions. Only available with Economizer options.	Building fire security based on smoke detection DAD security device.	ALL
Fire thermostat	121	Generates general default of the unit when thermostats detect return air temperature above adjustable temperature (factory set to 70 °C) Manual reset thermostat placed in return air duct.	Building fire security based on temperature rise detection.	ALL
Smoke detector + Fire thermostat	207	Combination of OPT 97 & 121	Combination of OPT 97 & 121	ALL
<b>Duct Connection</b>				
Fixation frame	163	Metalic rigid frame on air return & supply sides	Easy air duct installation	ALL
Bottom supply + Side return	186	Supply duct connection from bottom and return duct connection from side	Provide an easy and cost effective rooftop installation and easy connection to the different return and supply duct configurations	ALL
Side supply + Bottom return	187	Supply duct connection from side and return duct connection from bottom		
Side supply + Side return	188	Supply duct connection from side and return duct connection from side		
<b>Packaging</b>				
Pallet + coil protection + plastic wrap (Standard)	128	Packaging with pallet + coil protection + plastic wrap	Unit protection for transport	ALL
70 % open crate + coil protection + plastic wrap		Packaging with 70 % open crate + coil protection + plastic wrap	Unit protection for long distance transport	ALL
<b>Accessory</b>				
<b>Roofcurb</b>				
Roofcurb	57350017810 57350024210	Galvanised steel 2 mm thick frame for vertical supply & vertical return air.	Provide an easy and cost effective weatherproof sealed rooftop installation and easy connection to the air duct.	50UA-UH 135-160 50UA-UH 180-205
<b>Room Thermostats</b>				
Programmable Room Thermostat	57260040001	Wall-mounted, low-voltage thermostat maintains room temperature by controlling the rooftop operation	User friendly remote control of rooftop units with schedule programming	50UA-UH135-205
Non-Programmable Room Thermostat	57260040002	Wall-mounted, low-voltage thermostat maintains room temperature by controlling the rooftop operation	User friendly remote control of rooftop units	50UA-UH135-205
<b>Compressor Insulation</b>				
Compressor Blanket	57340010014 57340010015 57340010016	Compressor insulation	Avoid insufficient oil temperature at compressor sump due to the cold weather	48/50UA-UH 135-160 48/50UA-UH 180 48/50UA-UH 205

# Physical data

48/50 UA		135	160	180	205
<b>Eurovent Performances at EN14511-2018</b>					
Nominal cooling capacity*	kW	132,0	151,9	171,3	196,6
Nominal power input	kW	43,9	52,7	59,5	65,3
EER*	kW/kW	3,01	2,88	2,88	3,01
Eurovent Energy Class Cooling		A	B	B	A
48/50 UH		135	160	180	205
<b>Eurovent Performances at EN14511-2018</b>					
<b>Cooling</b>					
Nominal cooling capacity*	kW	125,4	152,9	171,9	194,7
Nominal power input	kW	44,5	50,8	57,1	64,7
EER*	kW/kW	2,82	3,01	3,01	3,01
Eurovent Energy Class Cooling		B	A	A	A
<b>Heating</b>					
Nominal heating capacity**	kW	135,9	168,1	185,0	207,7
Nominal power input	kW	38,7	51,1	53,8	60,2
COP**	kW/kW	3,51	3,29	3,44	3,45
Eurovent Energy Class Heating		A	B	A	A
50UA-UH		135	160	180	205
<b>Electric Heaters (only 50 series)</b>					
Type		OPT 175	OPT 176	OPT 178	OPT 179
Heating capacity	kW	72	108	90	144
Capacity steps		18+18+18+18	27+27+27+27	18+18+27+27	36+36+36+36
Rated Amps	A	104	156	130	208
48UA-UH		135	160	180	205
<b>Gas Heaters</b>					
Type		OPT 210	OPT 210	OPT 211	OPT 211
Net Heat Input ( Min / Max )	kW	32.8 / 164	32.8 / 164	42 / 200	42 / 200
Heat Output ( Min / Max )	kW	35.6 / 160	35.6 / 160	45.6 / 194.4	45.6 / 194.4
Efficiency	%	108 / 98	108 / 98	108 / 97	108 / 97
Natural Gas ( G20 ) rate***	l/s	0.97 / 4.82	0.97 / 4.82	1.06 / 5.88	1.06 / 5.88
	m <sup>3</sup> /h	3.48 / 17.36	3.48 / 17.36	3.80 / 21.16	3.80 / 21.16
Capacity steps		Modulating	Modulating	Modulating	Modulating
Weight****	kg	196	196	236	236
Power input ( 230 V-1 ph-50 Hz )****	kW	0,25	0,25	0,26	0,26
Gas connection	GAS	UNI/ISO 228/1-G 3/4"	UNI/ISO 228/1-G 3/4"	UNI/ISO 228/1-G 3/4"	UNI/ISO 228/1-G 3/4"
<b>Control</b>					
		Touch Pilot			
<b>Refrigeration System</b>					
Type		Scroll			
Refrigerant		R410A			
Nb of circuits - Nb of compressors		2 / 4	2 / 4	2 / 4	2 / 4
50UH charge circuit A - circuit B	kg	21.5 / 21.5	24 / 24	31 / 31	34 / 34
50UA charge circuit A - circuit B	kg	23 / 23	25.5 / 25.5	32.5 / 32.5	35.5 / 35.5
Oil circuit A - circuit B (POE 160SZ)	kg	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2	13.4 / 13.4
<b>Indoor Coil</b>					
Material		Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type		3/8" RTPF	3/8" RTPF	3/8" RTPF	3/8" RTPF
Rows / FPI		5 / 15	5 / 15	5 / 16	5 / 16
Condensate drain conn. size	mm	34	34	34	34
<b>Outdoor Coil</b>					
Material		Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type		3/8" RTPF	3/8" RTPF	3/8" RTPF	3/8" RTPF
Rows / FPI		4 / 16	4 / 16	4 / 16	4 / 16

\* Nominal Eurovent conditions: outdoor air dry bulb temperature of 35 °C, indoor air wet bulb temperature of 19 °C.

\*\* Nominal Eurovent conditions: outdoor air wet bulb temperature of 6 °C, indoor air dry bulb temperature of 20 °C.

\*\*\* Natural gas G20 net calorific value 34.02 MJ/m<sup>3</sup> @ 15°C, 1013.25 mbar

\*\*\*\* Weight and power input values are valid for the heating modules

# Physical data

48/50UA-UH		135	160	180	205
<b>Outdoor fan / motor</b>					
Type				Axial	
Motor drive type				Direct	
Quantity		2	4	4	4
Motor power input (each)	kW	1,76	1,76	1,76	1,76
RPM high/low		970 / 485	970 / 485	970 / 485	970 / 485
Total air flow	m <sup>3</sup> /h	36400	59200	66700	68200
	l/s	10100	16440	18520	18940
Fan diameter	mm	775	775	775	775
<b>Sound Levels</b>					
Sound power level 10 <sup>-12</sup> W*	dB(A)	92	93,5	93,8	94
Sound pressure level at 10 m**	dB(A)	60	61	61	62
<b>Indoor fan / motor</b>					
<b>Standard Static</b>					
Motor quantity		2	2	3	3
Drive type				Variable pulley - belt	
Fan quantity		2	2	3	3
Type				Centrifugal	
Fan Diameter	mm	508	508	508	508
Nominal air flow	m <sup>3</sup> /h	24550	25800	32700	33000
RPM range min & max		662 - 816	662 - 816	662 - 816	662 - 816
motor frame size	kW	5,5	5,5	5,5	5,5
Static pressure available ***	Pa	245	245	245	280
Maximum static pressure available ***	Pa	455	455	455	455
<b>High Static 1</b>					
Motor quantity		2	2	3	3
Drive type				Variable pulley - belt	
Fan quantity		2	2	3	3
Type				Centrifugal	
Fan Diameter	mm	508	508	508	508
Nominal Air flow	m <sup>3</sup> /h	24550	25800	32700	33000
RPM range min & max		828 - 1021	306 - 1021	306 - 1021	306 - 1021
motor frame size	kW	7,5	7,5	7,5	7,5
Static pressure available ***	Pa	530	530	530	530
Maximum static pressure available ***	Pa	770	770	770	830
<b>High Static 2</b>					
Motor quantity		2	2	3	3
Drive type				Variable pulley - belt	
Fan quantity		2	2	3	3
Type				Centrifugal	
Fan Diameter	mm	508	508	508	508
Nominal Air flow	m <sup>3</sup> /h	24550	25800	32700	33000
RPM range min & max		974 - 1135	974 - 1135	1026 - 1195	1026 - 1195
motor frame size	kW	7,5	7,5	7,5	7,5
Static pressure available ***	Pa	770	770	830	890
Maximum static pressure available ***	Pa	1030	1030	1130	1160
<b>VAV</b>					
Motor quantity		2	2	3	3
Drive type				Variable pulley - belt	
Fan quantity		2	2	3	3
Type				Centrifugal	
Fan Diameter	mm	508	508	508	508
Nominal Air flow	m <sup>3</sup> /h	24550	25800	32700	33000
RPM range min & max		272 - 1135	272 - 1135	287 - 1195	287 - 1195
motor frame size	kW	7,5	7,5	7,5	7,5
Static pressure available ***	Pa	140	140	140	140
Maximum static pressure available ***	Pa	1030	1030	1130	1160
<b>Filters</b>					
Quantity		9	9	12	12
Filter # / size	mm	750x 560 x 50	750x 560 x 50	750x 560 x 50	750x 665 x 50
<b>Operating weight</b>					
50UH weight (without options )	kg	2190	2265	2890	3280
48UH weight (without options )	kg	2880	2955	3690	4080
50UA weight (without options )	kg	2175	2250	2870	3260
48UA weight (without options )	kg	2865	2940	3670	4060
<b>General Main Dimensions</b>					
Length	mm	4435	4435	5910	5910
Width	mm	2180	2180	2180	2180
Height	mm	2075	2075	2105	2340

\* In accordance with ISO 9614-1 and certified by Eurovent. The values have been rounded and are for information only

\*\* For information, calculated from the sound power level Lw(A)

\*\*\* For std unit at nominal air flow without options

# Electrical data

48/50 UA†	135	160	180	205
<b>Power circuit</b>				
Nominal power supply	V-ph-Hz	400-3-50		
Voltage range	V	360-440		
<b>Control circuit supply</b>				
		24 V, via internal transformer		
<b>Maximum start-up current*</b>	A	246	273	336
<b>Unit power factor at maximum capacity**</b>		0.82	0.84	0.82
<b>Maximum unit power input**</b>	kW	69.14	80.74	94.95
<b>Nominal unit current draw***</b>	A	82.12	93.50	106.49
<b>Maximum unit current draw****</b>	A	121.40	138.50	167.00
<b>Customer-side unit power reserve</b>	kW	Customer reserve at the 24 V control power circuit		

48/50 UH†	135	160	180	205
<b>Power circuit</b>				
Nominal power supply	V-ph-Hz	400-3-50		
Voltage range	V	360-440		
<b>Control circuit supply</b>				
		24 V, via internal transformer		
<b>Maximum start-up current*</b>	A	246	273	336
<b>Unit power factor at maximum capacity**</b>		0.82	0.84	0.82
<b>Maximum unit power input**</b>	kW	69.14	80.74	94.95
<b>Nominal unit current draw***</b>	A	82.53	92.03	105.68
<b>Maximum unit current draw****</b>	A	121.40	138.50	167.00
<b>Customer-side unit power reserve</b>	kW	Customer reserve at the 24 V control power circuit		

\* Maximum instantaneous start-up current at operating limit values (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

\*\* Power input, compressors and fans, at the their operating limits and nominal voltage of 400 V (data given on the unit nameplate).

\*\*\* Standardised Eurovent conditions: indoor air wet bulb 19 °C, outside air temperature 35 °C with standard fan performance

\*\*\*\* Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

† Standard unit (without any options and accessories)

## Electrical data notes and operating conditions

- 48/50 UA/UH 135 - 205 units have a single power connection point located at the main switch.
- **The control box includes the following standard features:**
  - a main disconnect switch,
  - starter and motor protection devices for each compressor, fans and electric heater option,
  - the control devices.
- **Field connections:**
  - All connections to the system and the electrical installations must be in full accordance with all applicable local codes.
  - The Carrier 48/50 UA/UH 135 - 205 units are designed and built to ensure conformance with these codes. The recommendations of European standard EN 60204-1 (machine safety - electrical machine components, part 1: general regulations - corresponds to IEC 6020461) are specifically taken into account, when designing the electrical equipment.

### Notes:

- Generally the recommendations of IEC 60364 are accepted as compliance with the requirements of the installation directives. Conformance with EN 60204 is the best means of ensuring compliance with the Machines Directive §1.5.1.
- Annex B of EN 60204-1 describes the electrical characteristics used for the operation of the machines.

1. The operating environment is specified below:

- Environment\* - Environment as classified in EN 60721 (corresponds to IEC 60721):
    - outdoor installation (IP43),
    - ambient temperature range: -20 °C to +52 °C,
    - altitude: ≤ 2000 m,
  - Competence of personnel, class BA4 (trained personnel - IEC 60364)
- Power supply frequency variation: ± 2 Hz.
  - The neutral (N) conductor must not be connected directly to the unit (if necessary use a transformer).
  - Overcurrent protection of the power supply conductors is not provided with the unit.
  - The factory-installed disconnect switch(es)/circuit breaker(s) is(are) of a type suitable for power interruption in accordance with EN 60947.
  - The units are designed for connection to TN networks (IEC 60364). For IT networks the earth connection must not be at the network earth. Provide a local earth, consult competent local organisations to complete the electrical installation.

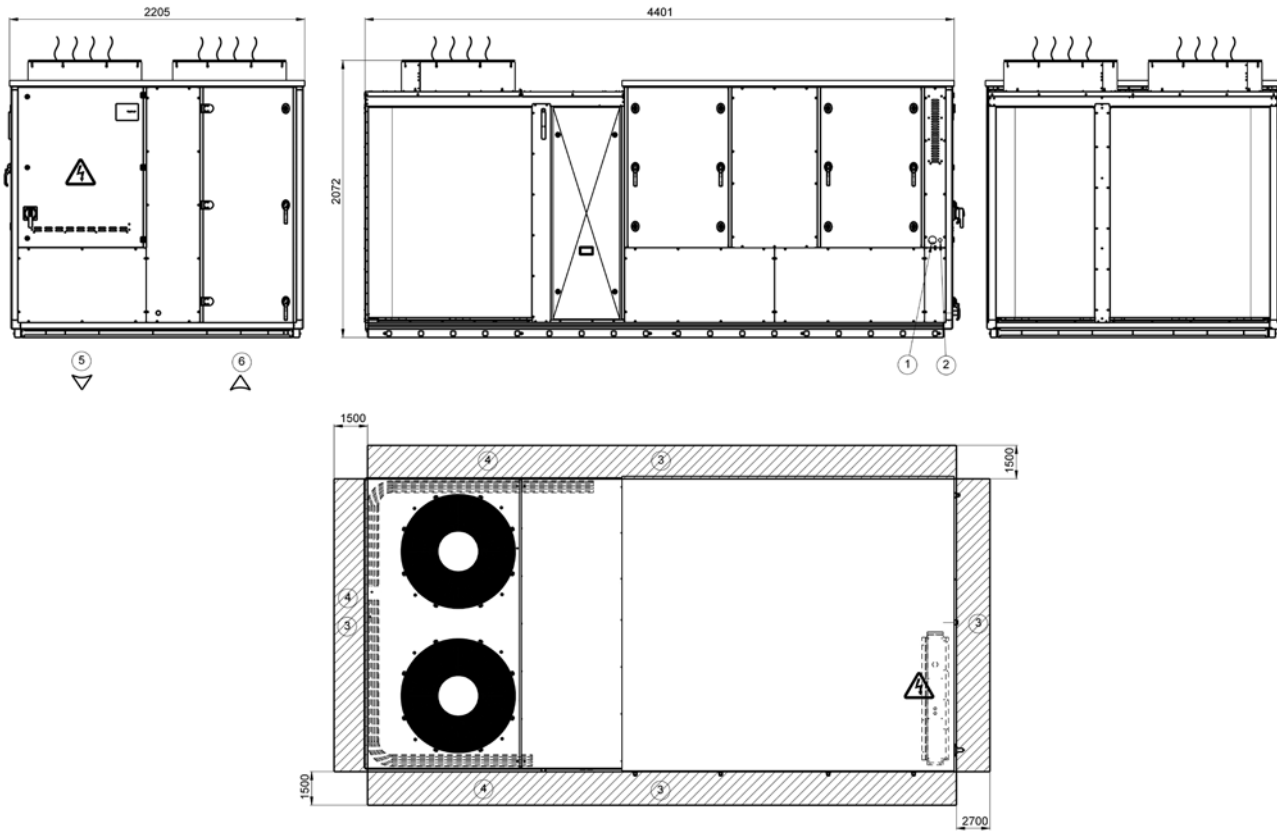
### CAUTION:

**If particular aspects of an actual installation do not conform to the conditions described above, or if there are other conditions which should be considered, always contact your local Carrier representative.**

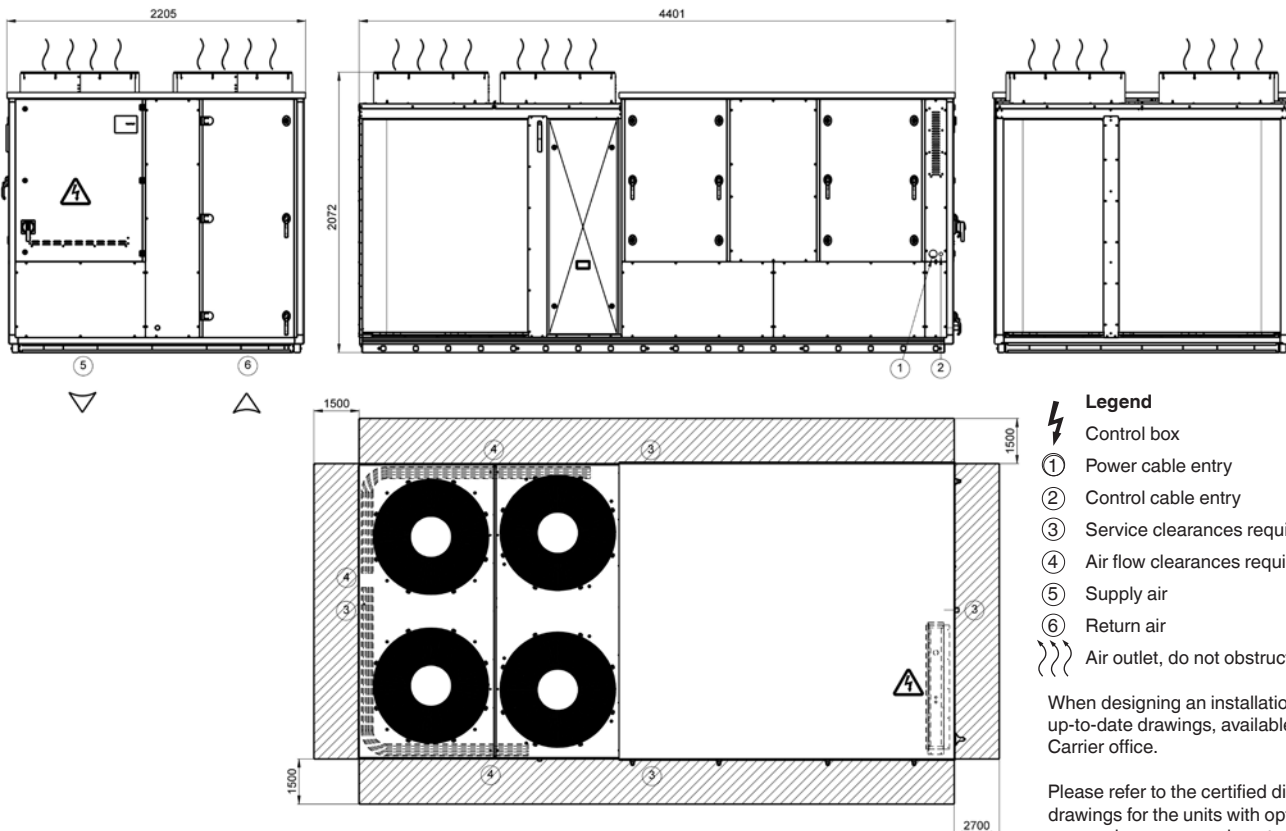




# Dimensions, mm

## 50UA-UH 135



## 50UA-UH 160



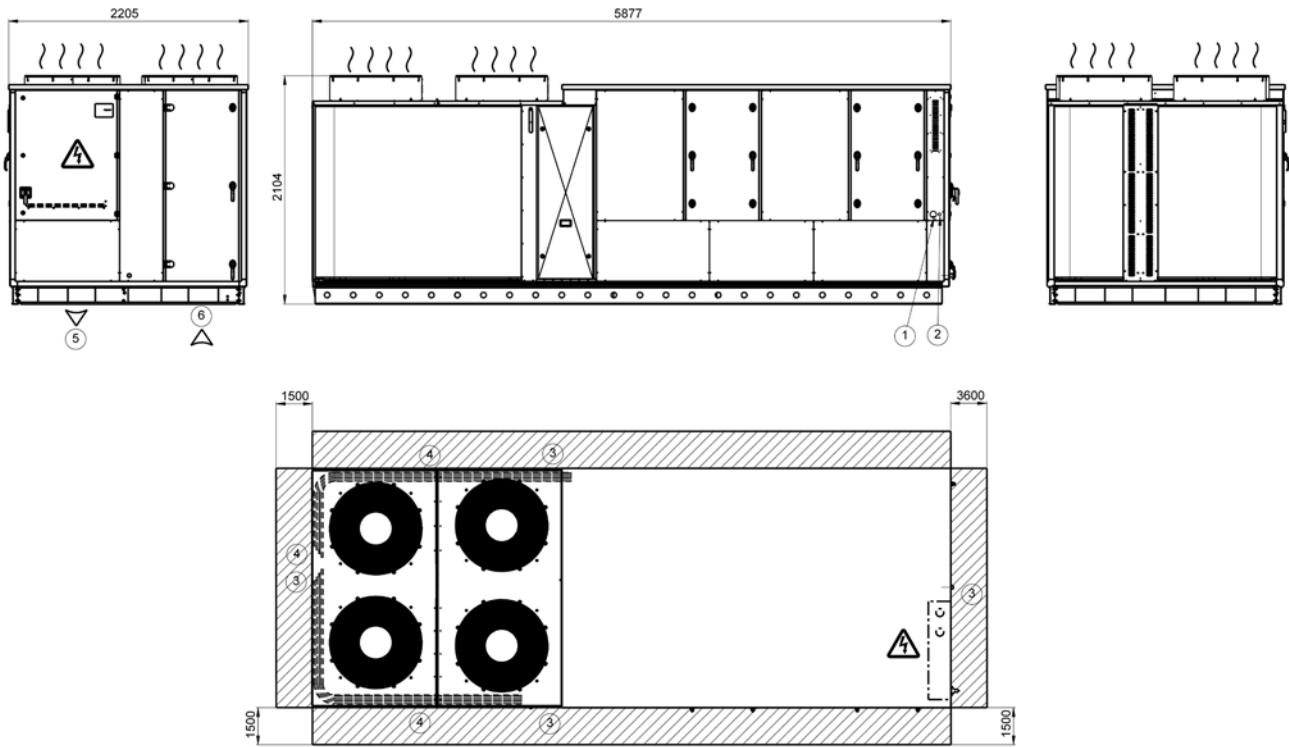
- Legend**
-  Control box
  - ① Power cable entry
  - ② Control cable entry
  - ③ Service clearances required
  - ④ Air flow clearances required
  - ⑤ Supply air
  - ⑥ Return air
  -  Air outlet, do not obstruct

When designing an installation, always use up-to-date drawings, available from your local Carrier office.

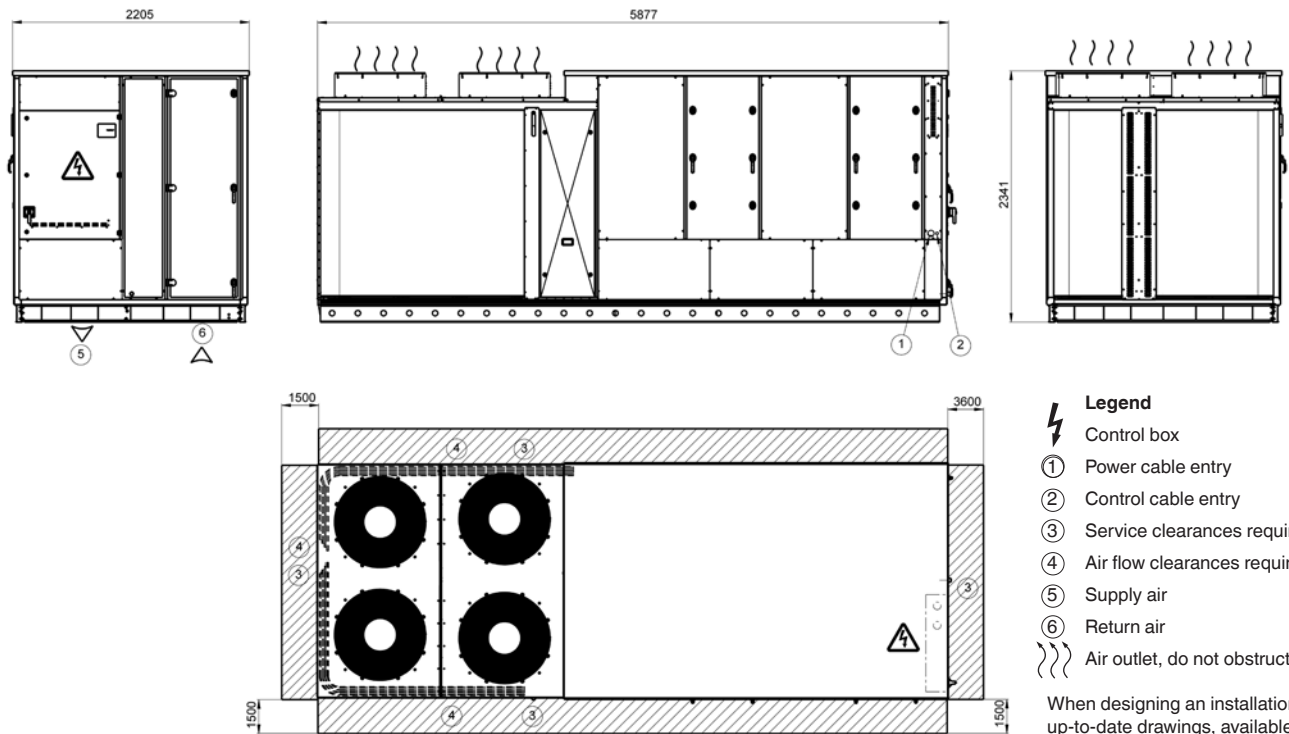
Please refer to the certified dimensional drawings for the units with options such as economizer, power exhaust, air return fan, etc.

# Dimensions, mm

## 50UA-UH 180



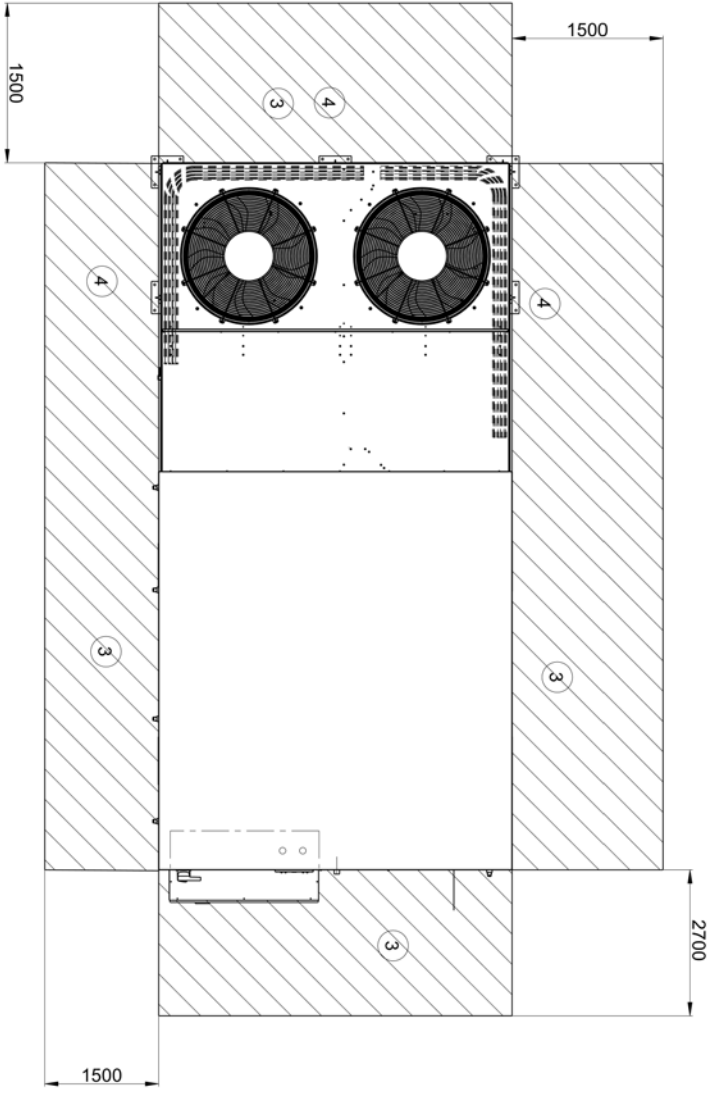
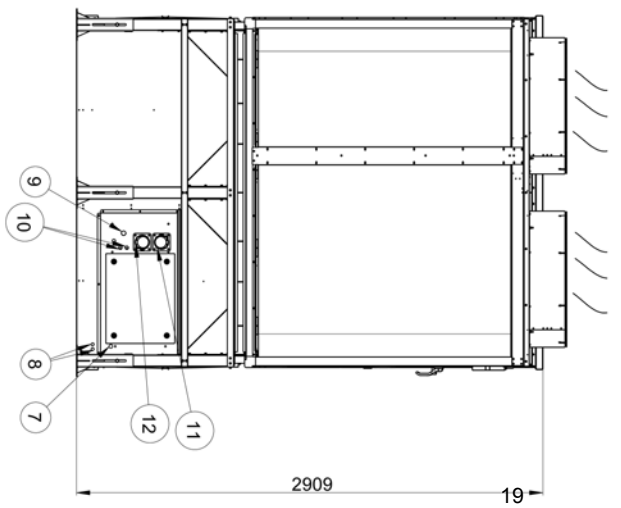
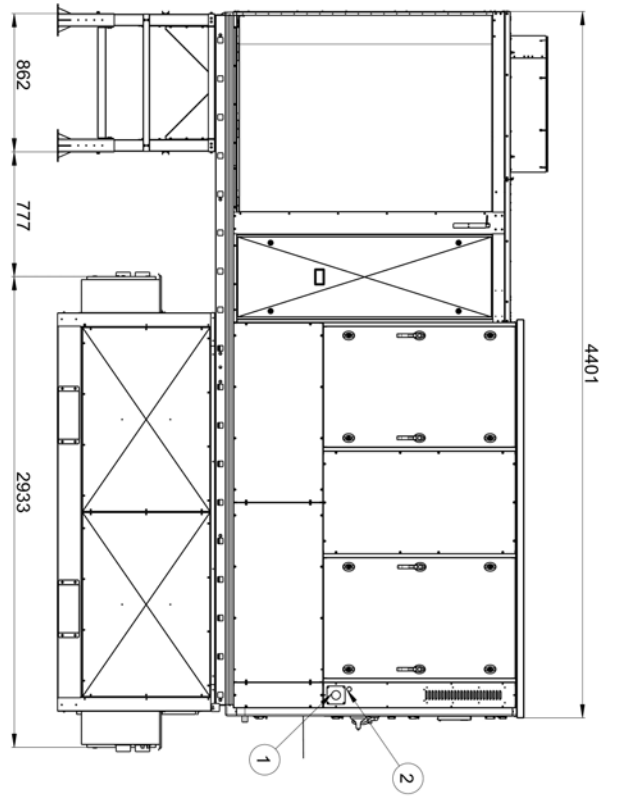
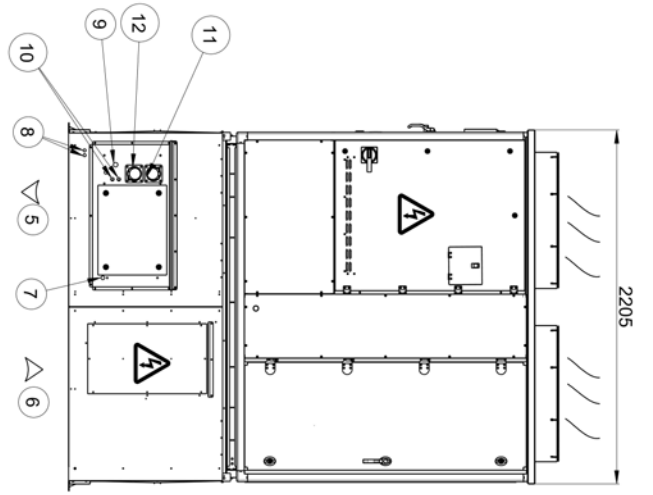
## 50UA-UH 205



- Legend**
- Control box
  - ① Power cable entry
  - ② Control cable entry
  - ③ Service clearances required
  - ④ Air flow clearances required
  - ⑤ Supply air
  - ⑥ Return air
  - Air outlet, do not obstruct

When designing an installation, always use up-to-date drawings, available from your local Carrier office.

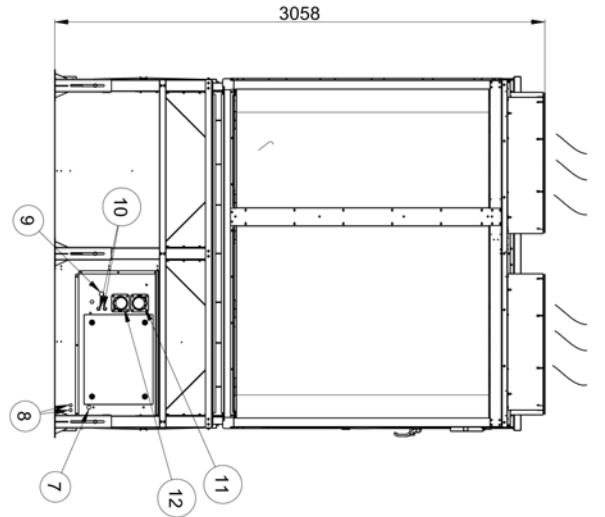
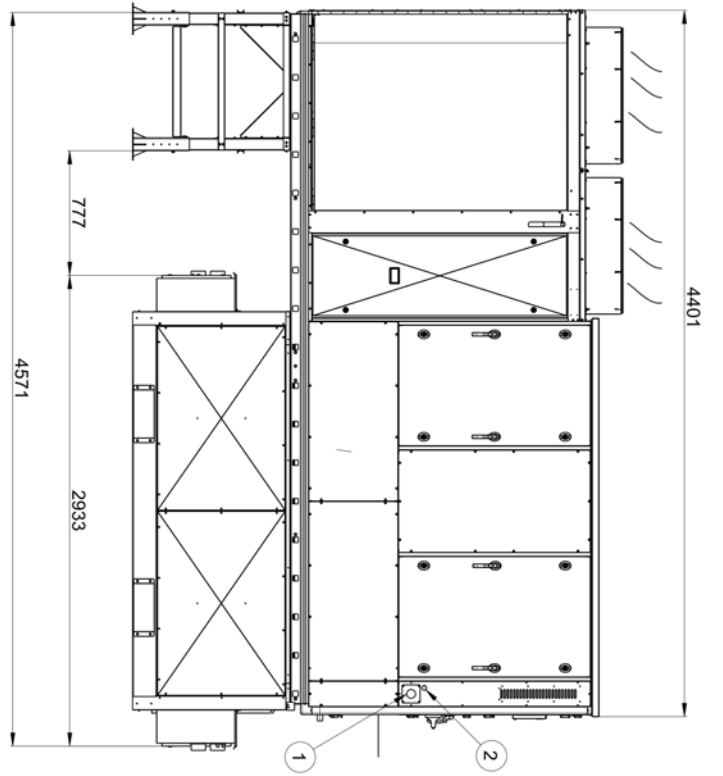
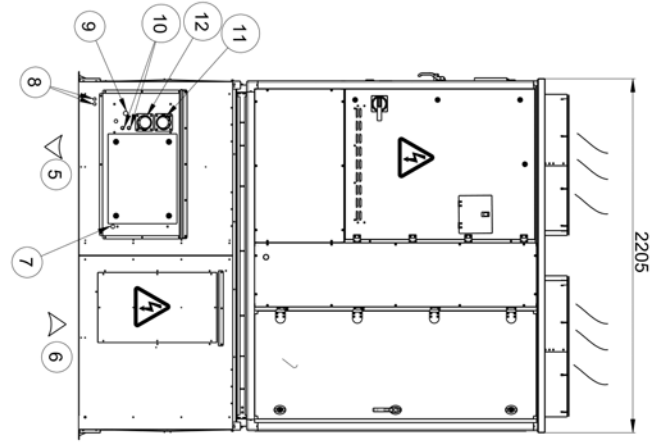
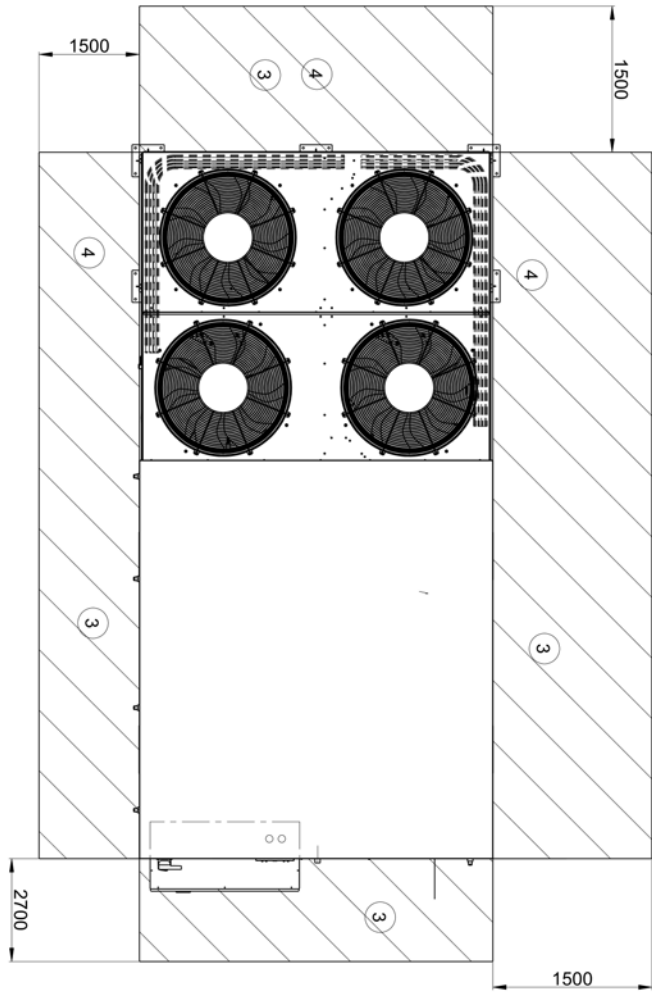
Please refer to the certified dimensional drawings for the units with options such as economizer, power exhaust, air return fan, etc.



- Legend
- ▲ Control box
  - 1 Power cable entry
  - 2 Control cable entry
  - 3 Service clearances required
  - 4 Air flow clearances required
  - 5 Supply air
  - 6 Return air
  - 7 Condensate drain
  - 8 Cable passage fitting hole
  - 9 Gas connection
  - 10 Electrical connections
  - 11 Furnes Exhaust Ø80
  - 12 Air Intake Ø80

/// Air outlet, do not obstruct

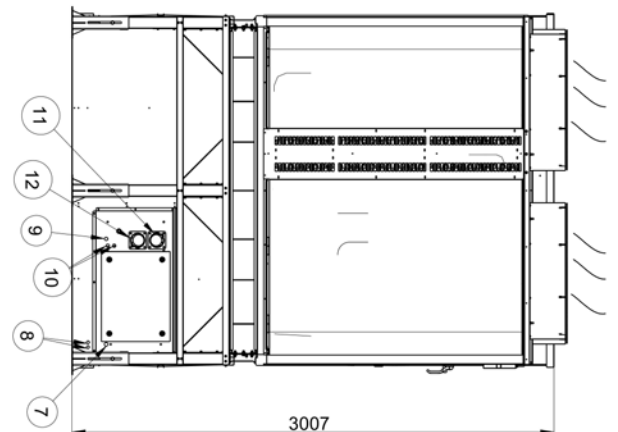
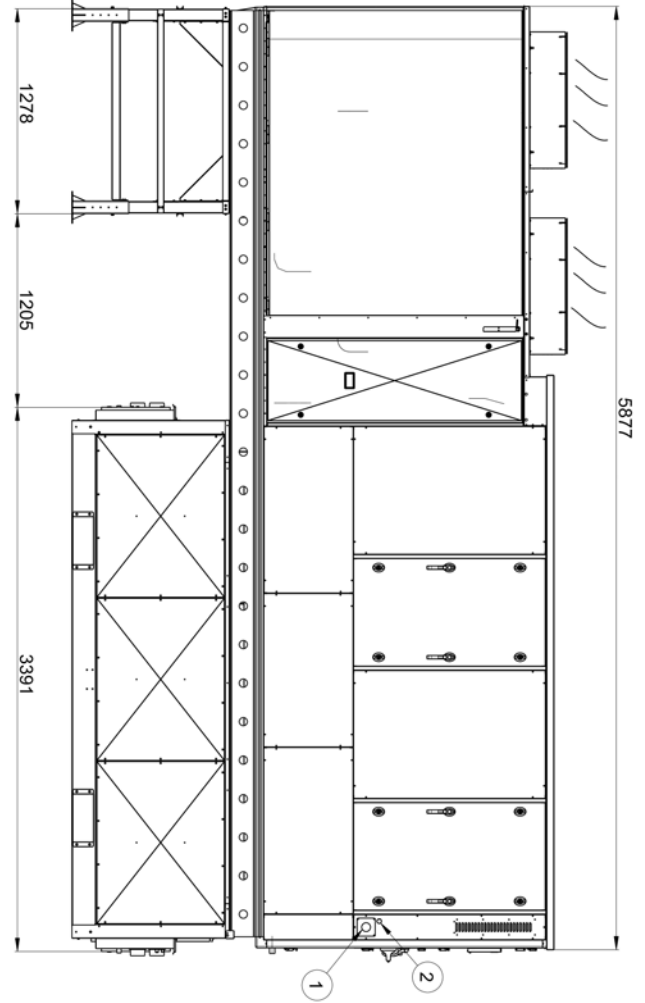
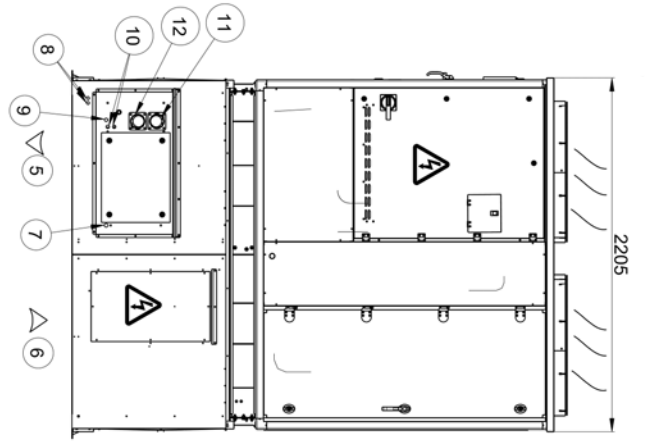
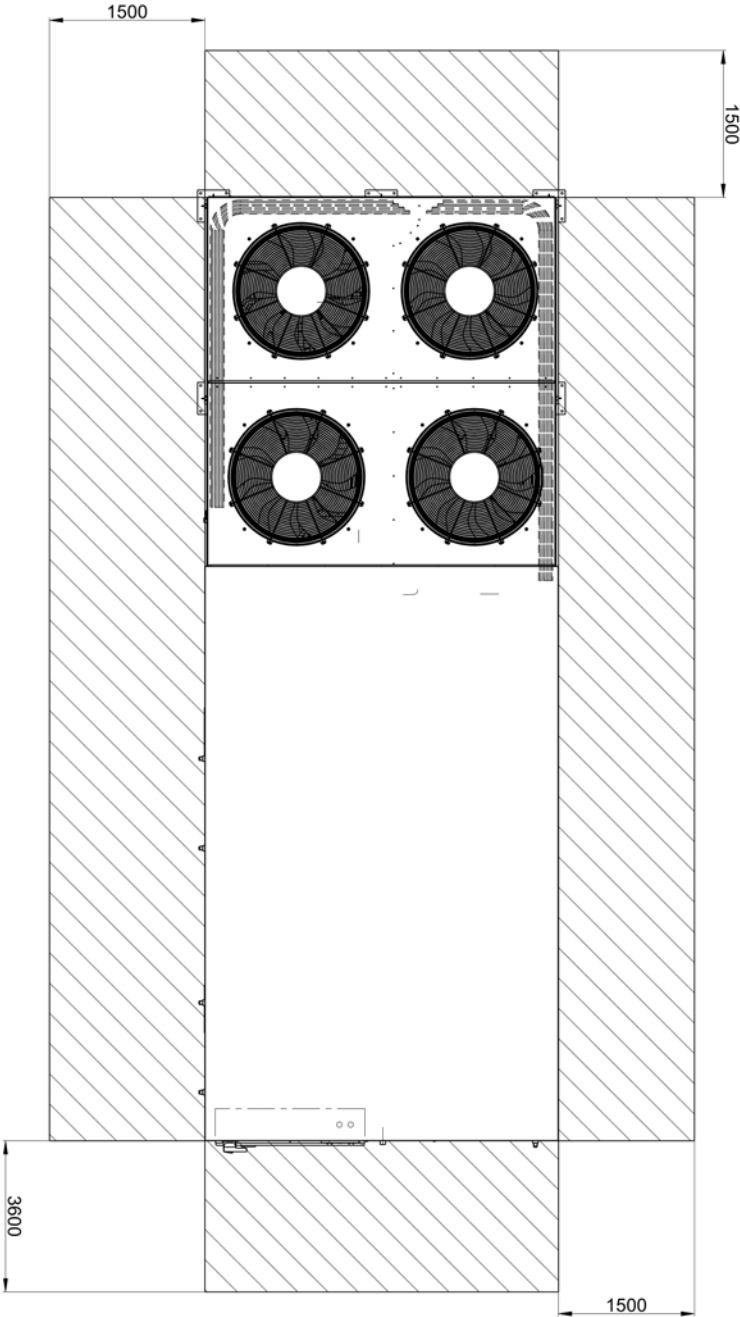
When designing an installation, always use up-to-date drawings, available from your local Carrier office. Please refer to the certified dimensional drawings for the units with options such as economizer, power exhaust, air return fan, etc.



- Legend**
- ▲ Control box
  - 1 Power cable entry
  - 2 Control cable entry
  - 3 Service clearances required
  - 4 Air flow clearances required
  - 5 Supply air
  - 6 Return air
  - 7 Condensate drain
  - 8 Cable passage fitting hole
  - 9 Gas connection
  - 10 Electrical connections
  - 11 Furnes Exhaust Ø80
  - 12 Air Intake Ø80
- /// Air outlet do not obstruct

When designing an installation, always use up-to-date drawings, available from your local Carrier office. Please refer to the certified dimensional drawings for the units with options such as economizer, power exhaust, air return fan, etc.

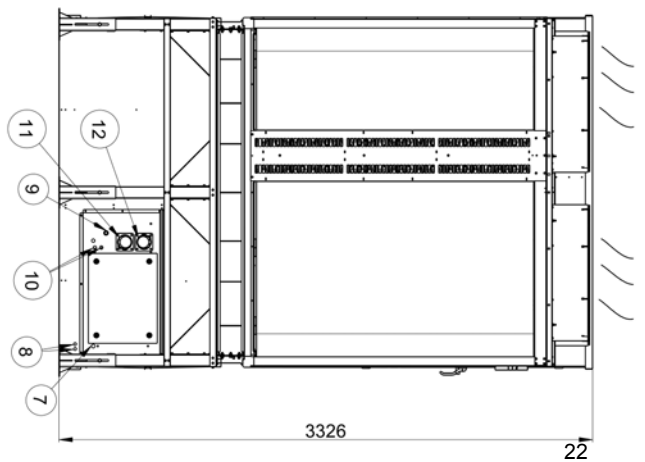
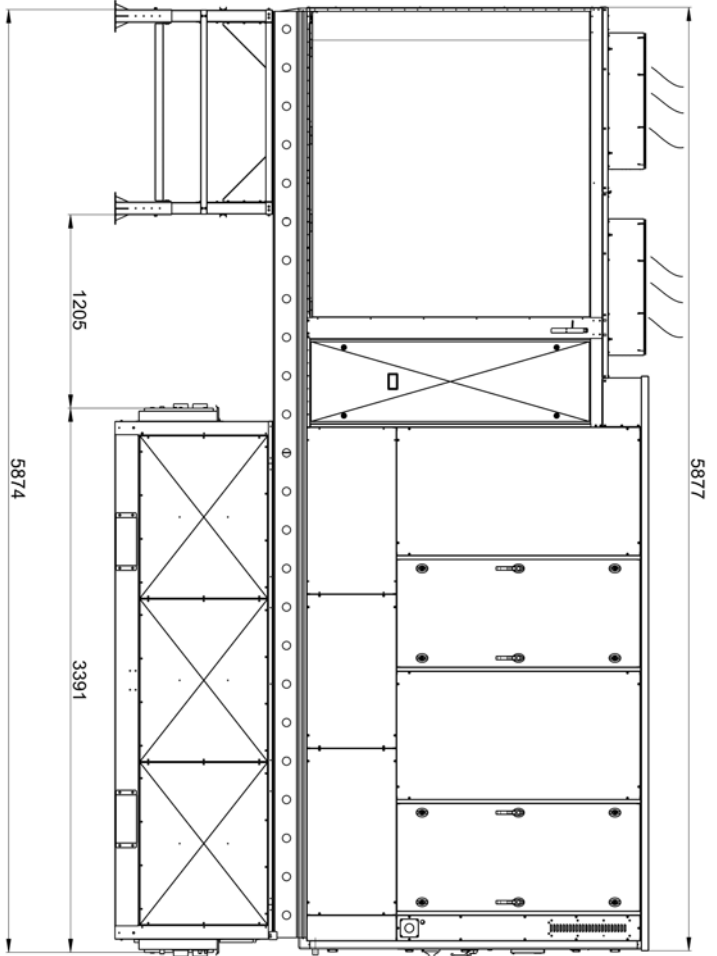
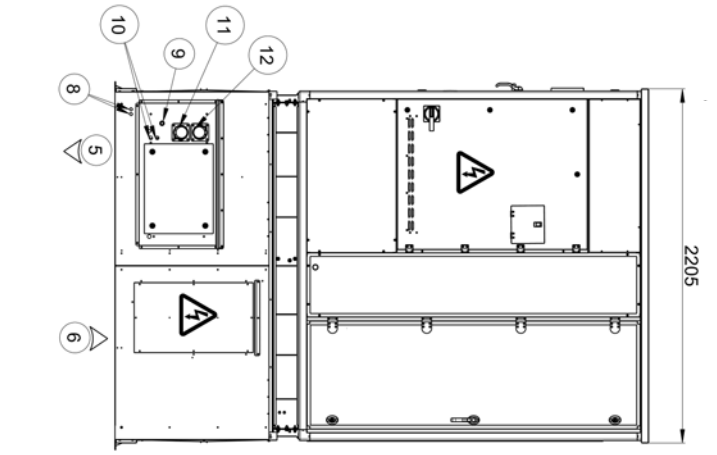
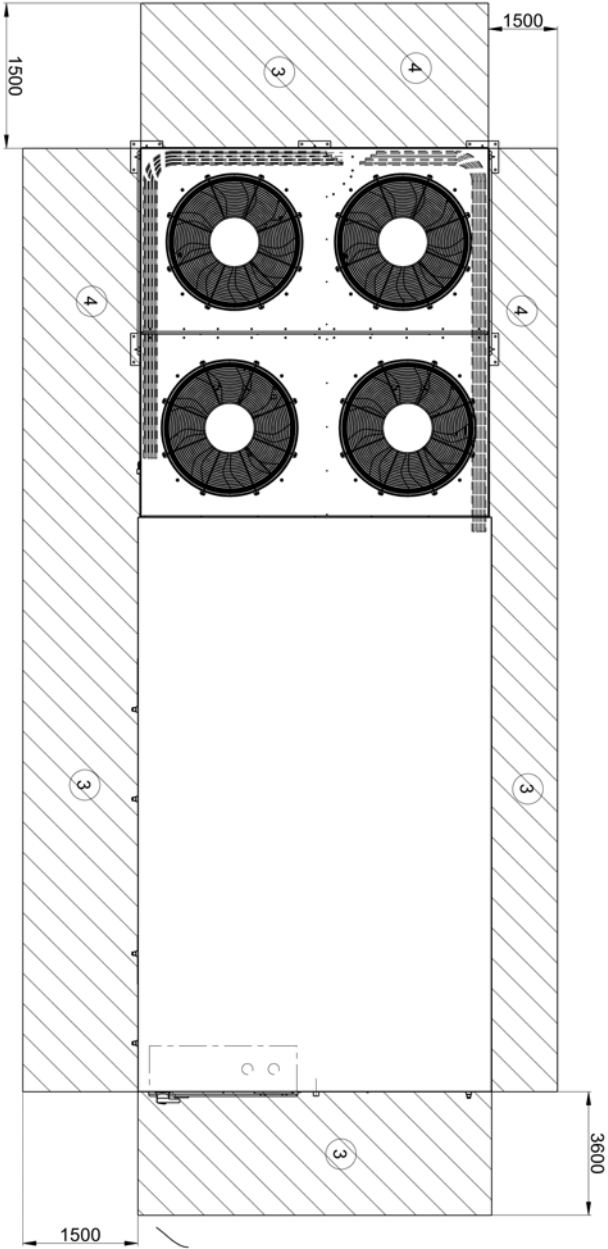




/// Air outlet, do not obstruct

- Legend**
- ▲ Control box
  - 1 Power cable entry
  - 2 Control cable entry
  - 3 Service clearances required
  - 4 Air flow clearances required
  - 5 Supply air
  - 6 Return air
  - 7 Condensate drain
  - 8 Cable passage fitting hole
  - 9 Gas connection
  - 10 Electrical connections
  - 11 Fumes Exhaust Ø80
  - 12 Air Intake Ø80

When designing an installation always use up-to-date drawings, available from your local Carrier office. Please refer to the certified dimensional drawings for the units with options such as economizer, power exhaust/air return fan, etc.



- Legend**
- Control box
  - 1 Power cable entry
  - 2 Control cable entry
  - 3 Service clearances required
  - 4 Air flow clearances required
  - 5 Supply air
  - 6 Return air
  - 7 Condensate drain
  - 8 Cable passage fitting hole
  - 9 Gas connection
  - 10 Electrical connections
  - 11 Air intake Ø80
  - 12 Fumes Exhaust Ø80
- /// Air outlet, do not obstruct

When designing an installation, always use up-to-date drawings, available from your local Carrier office. Please refer to the certified dimensional drawings for the units with options such as economizer, power exhaust, air return fan, etc.



# Cooling capacities

48/50UA 160

50UA 160 - Standard unit - cooling mode		6,453													7,170													7,887													8,604																																																																																		
		Evaporator Air Flow Rate - l/s													Air Entering Evaporator - Ewb (°C)													Air Entering Evaporator - Ewb (°C)													Air Entering Evaporator - Ewb (°C)																																																																																		
Air Entering Condenser - Edb (°C)	Air Entering Evaporator - Ewb (°C)	23	21	19	17	15	13	13	15	17	19	21	23	23	21	19	17	15	13	13	15	17	19	21	23	23	21	19	17	15	13	13	15	17	19	21	23	23	21	19	17	15	13	13	15	17	19	21	23																																																																										
		10	TC	206.72	195.05	183.98	173.55	165.27	161.33	209.86	198.39	187.31	177.21	169.85	167.16	212.48	201.04	189.86	180.21	174.39	172.17	214.69	203.40	191.99	183.02	177.78	176.61	224.09	205.22	194.06	185.69	180.57	180.52	89.05	104.34	119.42	134.09	147.78	152.56	92.18	108.94	125.57	141.59	155.41	158.06	95.18	113.37	131.45	148.77	160.53	162.81	98.10	117.76	137.13	155.36	165.08	167.00	103.33	122.03	142.62	161.63	170.49	170.70	33.58	32.43	31.37	30.38	29.63	29.28	33.91	32.77	31.70	30.75	30.06	29.83	34.19	33.05	31.97	31.05	30.51	30.31	34.43	33.30	32.19	31.34	30.85	30.74	30.91	33.51	32.41	31.61	31.13	31.13	0.000	0.112	0.098	0.082	0.094	0.188	0.170	0.110	0.092	0.091	0.116	0.226	0.152	0.144	0.113	0.102	0.111	0.096	0.099	0.151	0.259	0.144	0.113	0.102	0.180	0.288	0.148	0.115	0.108	0.123
15	TC	198.25	187.19	176.62	166.69	158.80	156.15	201.14	190.27	179.64	170.13	163.77	161.63	203.55	192.73	181.96	172.84	168.62	166.43	205.61	194.78	183.99	175.67	171.75	170.59	215.12	196.53	186.01	178.14	174.30	174.20	86.27	101.42	116.43	130.98	144.06	147.65	89.35	106.00	122.54	138.45	150.76	152.84	92.32	110.44	128.38	145.42	154.64	157.38	95.24	114.78	133.97	151.87	159.23	161.31	100.53	119.07	139.47	158.05	164.58	164.73	36.79	35.61	34.51	33.50	32.71	32.46	37.12	35.96	34.84	33.87	33.23	33.03	37.40	36.24	35.10	34.16	33.74	33.53	37.64	36.48	35.34	34.48	34.09	33.98	33.89	36.68	35.57	34.76	34.37	34.37	0.185	0.105	0.085	0.081	0.098	0.203	0.150	0.105	0.089	0.090	0.128	0.241	0.140	0.140	0.106	0.094	0.100	0.100	0.113	0.273	0.136	0.109	0.101	0.113	0.199	0.301	0.142	0.108	0.125	0.215	0.326	
25	TC	180.21	170.47	161.00	152.32	146.55	144.96	182.69	172.95	163.26	155.03	151.16	149.81	184.69	174.98	165.36	157.74	155.16	153.97	186.37	176.61	167.26	159.97	157.52	157.54	195.62	178.00	168.91	162.34	160.64	160.69	80.34	95.31	110.21	124.52	135.39	137.07	83.39	99.84	116.14	131.63	139.20	141.66	86.33	104.25	121.82	138.15	143.45	145.60	89.22	108.56	127.37	144.26	148.98	148.97	94.48	112.83	132.81	148.95	151.90	151.94	43.76	42.57	41.42	40.38	39.70	39.53	44.09	42.89	41.71	40.73	40.27	40.13	44.36	43.16	41.99	41.08	40.79	40.65	44.59	43.39	42.25	41.38	41.09	41.10	40.47	43.58	42.48	41.69	41.50	41.50	0.133	0.093	0.079	0.080	0.121	0.237	0.124	0.095	0.084	0.090	0.170	0.273	0.122	0.122	0.099	0.092	0.105	0.205	0.319	0.118	0.104	0.100	0.123	0.228	0.337	0.125	0.107	0.107	0.137	0.246	0.351	
30	TC	183.75	172.90	157.77	149.05	140.47	139.01	186.66	175.73	165.11	151.92	147.04	147.00	188.98	178.03	167.44	154.58	151.14	151.13	190.95	179.98	169.54	156.96	154.85	154.74	192.66	181.58	171.37	164.02	162.06	162.09	81.50	96.20	108.94	123.05	129.54	131.45	84.67	100.83	116.87	130.14	138.86	139.01	87.69	105.31	122.65	136.61	142.81	142.91	90.65	109.71	128.26	142.39	146.32	146.32	93.57	114.04	133.76	150.16	153.24	153.27	38.98	38.26	41.36	40.55	43.58	43.42	39.19	38.46	37.76	40.84	40.41	40.41	39.35	38.62	37.92	41.11	40.82	40.82	39.50	38.77	38.08	41.36	41.18	41.17	39.62	38.89	38.21	37.73	37.61	37.61	0.140	0.084	0.078	0.080	0.145	0.255	0.118	0.092	0.084	0.093	0.168	0.289	0.117	0.117	0.096	0.092	0.108	0.205	0.319	0.118	0.100	0.100	0.126	0.238	0.344	0.119	0.104	0.107	0.155	0.266	0.366	
35	TC	173.99	163.77	153.96	145.25	140.59	139.05	176.55	166.32	156.23	148.27	143.89	143.84	178.66	168.33	158.49	150.87	147.92	147.93	180.37	170.02	160.41	153.17	151.50	151.51	181.85	171.47	161.98	156.10	154.68	154.69	78.32	92.91	107.44	121.36	129.63	131.49	81.43	97.52	113.36	128.38	135.88	136.02	84.44	101.97	119.11	134.81	139.87	139.88	87.37	106.34	124.72	140.31	143.26	143.27	90.27	110.66	130.13	144.20	146.26	146.28	46.73	42.01	41.32	40.70	40.38	40.28	42.92	42.20	41.48	40.93	40.63	40.63	43.09	42.36	41.66	41.13	40.93	40.93	43.22	42.49	41.81	41.31	41.20	41.20	43.34	42.60	41.94	41.53	41.43	41.44	0.123	0.089	0.077	0.080	0.145	0.255	0.118	0.092	0.084	0.093	0.168	0.289	0.117	0.117	0.096	0.092	0.108	0.205	0.319	0.118	0.100	0.100	0.126	0.238	0.344	0.119	0.104	0.107	0.155	0.266	0.366	
40	TC	163.71	154.21	144.87	137.06	134.22	132.61	165.95	156.37	147.19	139.88	136.95	136.96	167.74	158.16	149.16	142.22	140.66	140.69	169.26	159.58	150.82	145.02	143.93	143.96	170.52	160.68	152.08	147.03	146.80	146.82	74.98	89.50	103.87	117.57	123.14	125.39	78.06	94.06	109.77	124.32	129.50	129.51	81.03	98.50	115.46	130.28	133.01	133.04	83.94	102.83	120.99	134.25	136.10	136.12	86.82	107.08	126.22	137.66	138.84	138.84	46.73	46.01	45.29	44.93	44.99	44.75	48.75	48.75	48.75	48.75	48.75	48.75	47.06	46.34	45.65	45.13	45.02	45.02	47.19	46.46	45.80	45.37	45.29	45.29	47.30	46.56	45.91	45.52	45.52	45.52	0.110	0.084	0.074	0.081	0.175	0.275	0.109	0.088	0.083	0.097	0.191	0.308	0.110	0.110	0.093	0.092	0.115	0.228	0.337	0.112	0.097	0.100	0.146	0.260	0.361	0.114	0.101	0.108	0.173	0.288	0.383	
45	TC	152.88	144.07	135.52	128.66	125.63	125.65	154.80	145.94	137.60	131.03	129.56	129.58	156.33	147.42	139.33	133.99	132.94	132.96	157.58	148.50	140.58	136.39	135.87	135.89	158.66	149.41	142.03	139.14	138.42	138.45	71.51	85.94	100.15	113.57	118.80	118.81	74.55	90.47	106.01	119.91	122.51	122.53	77.49	94.88	111.65	124.17	125.71	125.73	80.37	99.14	116.96	127.38	128.48	128.50	83.24	103.26	121.81	129.68	130.89	130.92	50.93	50.22	49.53	48.99	48.75	48.75	51.10	50.39	49.72	49.20	49.09	49.09	51.23	50.52	49.88	49.45	49.38	49.38	51.34	50.62	49.99	49.66	49.63	49.63	51.44	50.71	49.90	49.85	49.85	0.100	0.079	0.074	0.085	0.176	0.296	0.101	0.084	0.083	0.102	0.218	0.329	0.103	0.103	0.089	0.092	0.136	0.253	0.356	0.106	0.094	0.101	0.169	0.284	0.380	0.109	0.100	0.113	0.204	0.310	0.400		
48	TC	146.14	137.76	129.54	123.38	121.22	121.25	147.85	139.42	131.44	125.92	124.92	124.93	149.21	140.77	133.08	128.27	128.07	128.09	150.35	141.65	134.49	134.06	134.06	151.30	142.59	135.81	133.17	133.14	133.16	69.36	83.75	97.79	110.98	114.62	114.65	72.38	88.26	103.62	116.44	118.12	118.14	75.31	92.65	109.21	120.70	121.10	121.12	78.18	96.83	114.34	126.66	126.66	126.68	81.04	100.89	119.02	125.71	125.90	125.92	53.52	52.83	52.14	51.63	51.46	51.46	53.68	52.98	52.31	51.87	51.79	51.79	53.80	53.11	52.48	52.09	52.07	52.07	53.91	53.20	52.62	54.69	52.32	52.32	54.00	53.29	52.74	52.53	52.53	0.094	0.077	0.073	0.088	0.193	0.310	0.096	0.082	0.083	0.114	0.234	0.341	0.099	0.099	0.087	0.092	0.144	0.269	0.368	0.103	0.093	0.104	0.190	0.299	0.391	0.106	0.100	0.117	0.214	0.325	0.411			
52	TC	141.07	133.01	125.04	119.42	117.90	117.94	142.62	134.52	126.80	122.08	121.43	121.44	143.86	135.78	128.39	123.97	124.40	124.42	144.91	136.50	129.90	129.90	129.90	145.77	137.46	131.14	128.68	129.17	129.19	67.75	82.10	96.02	109.03	111.48	111.52	70.74	86.59	101.82	113.83	114.83	114.83	73.67	90.97	107.37	118.08	117.63	117.65	76.54	95.09	112.37	126.94	126.94	126.97	79.38	99.10	116.92	122.73	122.14	122.16	54.47	54.79	54.09	53.62	53.49	53.49	55.62	54.93	54.27	53.88	53.82	53.82	55.74	55.06	54.44	54.10	54.10	54.10	55.84	55.13	54.59	58.47	54.34	54.34	55.92	55.23	54.71	54.52	54.52	0.090	0.075	0.073	0.090	0.206	0.320	0.093	0.080	0.082	0.123	0.247	0.351	0.097	0.097	0.086	0.092	0.151	0.281	0.377	0.101	0.092	0.106	0.203	0.310	0.400	0.104	0.100	0.120	0.222	0.336	0.420			

**Legend**  
 Entering dry bulb temperature, °C  
 Entering wet bulb temperature, °C  
 Total gross cooling capacity, kW  
 Sensible gross cooling capacity, kW  
 Compressor power input, kW  
 Bypass factor



# Cooling capacities

48/50UA 180

50UA 180 - Standard unit - cooling mode		9,080												9,988												10,896											
		Evaporator Air Flow Rate - l/s				8,172				9,080				9,988				10,896																			
Air Entering Condenser - Edb (°C)	Air Entering Evaporator - Ewb (°C)	23	21	19	17	15	13	23	21	19	17	15	13	23	21	19	17	15	13	23	21	19	17	15	13												
		10 TC	230.91	217.88	205.51	193.86	184.62	180.22	234.42	221.60	209.23	197.95	189.73	186.72	237.35	224.57	212.08	201.30	194.80	192.33	239.81	227.20	214.46	204.44	198.58	197.28	250.31	229.24	216.77	207.43	201.70	201.65					
10 SC	103.22	120.93	138.42	155.42	171.29	176.83	106.85	126.27	145.54	164.12	180.14	183.21	110.32	131.40	152.36	172.44	186.08	188.71	113.71	136.50	158.95	180.08	191.34	193.57	119.77	141.45	165.31	187.34	197.61	197.86							
10 KW	37.90	36.60	35.40	34.29	33.44	33.05	38.27	36.99	35.78	34.70	33.93	33.67	38.59	37.31	36.08	35.04	34.44	34.22	38.86	37.58	36.33	35.37	34.82	34.70	34.89	37.82	36.58	35.68	35.14	35.14							
10 BF	0.000	0.132	0.104	0.096	0.111	0.221	0.200	0.129	0.108	0.107	0.136	0.266	0.178	0.130	0.113	0.117	0.178	0.305	0.169	0.133	0.119	0.130	0.212	0.338	0.173	0.135	0.127	0.144	0.233	0.367							
15 TC	221.45	209.10	197.29	186.20	177.38	174.42	224.68	212.54	200.66	190.04	182.93	180.55	227.37	215.29	203.25	193.07	188.35	185.91	229.68	217.58	205.53	196.23	191.85	190.56	240.30	219.53	207.79	198.99	194.70	194.59							
15 SC	99.99	117.56	134.96	151.82	166.98	171.14	103.56	122.87	142.03	160.48	174.74	177.15	107.01	128.01	148.81	168.55	179.24	182.42	110.39	133.04	155.28	176.03	184.56	186.97	116.52	138.02	161.66	183.19	190.76	190.94							
15 KW	41.52	40.20	38.95	37.81	36.92	36.63	41.89	40.58	39.33	38.23	37.51	37.28	42.21	40.90	39.62	38.56	38.08	37.81	42.48	41.17	39.88	38.92	38.35	38.25	41.41	40.15	39.24	38.79	38.79	38.79							
15 BF	0.217	0.123	0.100	0.095	0.115	0.239	0.177	0.123	0.105	0.106	0.151	0.283	0.164	0.120	0.111	0.117	0.203	0.321	0.159	0.128	0.118	0.132	0.234	0.354	0.165	0.132	0.127	0.147	0.252	0.383							
25 TC	201.30	190.42	179.84	170.15	163.70	161.93	204.07	193.19	182.37	173.17	168.85	167.34	206.31	195.46	184.71	176.20	173.32	171.99	208.18	197.28	186.83	178.70	175.95	175.98	218.52	198.83	188.68	181.34	179.44	179.49							
25 SC	93.13	110.48	127.74	144.33	156.93	158.88	96.66	115.72	134.62	152.57	161.35	164.19	100.07	120.83	141.20	160.13	166.27	168.76	103.41	125.83	147.63	167.21	172.64	172.67	109.51	130.78	153.94	172.65	176.07	176.12							
25 KW	49.39	48.04	46.75	45.58	44.81	44.62	49.76	48.41	47.08	45.97	45.46	45.29	50.06	48.72	47.39	46.37	46.03	45.88	50.32	48.97	47.69	46.71	46.38	46.39	45.68	49.19	47.94	47.06	46.84	46.84							
25 BF	0.157	0.109	0.093	0.094	0.142	0.279	0.146	0.112	0.099	0.106	0.200	0.321	0.143	0.116	0.108	0.123	0.241	0.357	0.143	0.120	0.118	0.140	0.259	0.388	0.149	0.125	0.126	0.165	0.294	0.416							
30 TC	205.26	193.14	176.24	166.49	156.92	155.28	208.51	196.30	184.43	169.70	164.25	164.21	211.09	198.87	187.04	172.68	168.83	168.81	213.30	201.04	189.39	175.33	172.98	172.85	215.20	202.84	191.43	183.22	181.03	181.06							
30 SC	94.47	111.50	126.27	142.63	150.14	152.37	98.14	116.87	135.46	150.84	160.95	161.12	101.64	122.07	142.16	158.34	165.54	165.64	105.07	127.16	148.67	165.04	169.73	169.60	108.46	132.18	155.05	174.06	177.62	177.66							
30 KW	44.00	43.18	46.68	45.76	49.19	49.01	44.23	43.41	42.61	46.10	45.61	45.61	44.42	43.59	42.80	46.40	46.07	46.07	44.58	43.76	42.98	46.68	46.48	46.47	44.72	43.89	43.13	42.59	42.45	42.45							
30 BF	0.164	0.111	0.092	0.094	0.171	0.300	0.151	0.113	0.100	0.108	0.184	0.330	0.147	0.117	0.109	0.125	0.229	0.365	0.146	0.122	0.118	0.145	0.268	0.396	0.140	0.122	0.126	0.161	0.289	0.412							
35 TC	194.36	182.94	171.98	162.25	157.05	155.33	197.21	185.78	174.67	164.41	156.25	152.97	199.57	188.03	177.04	168.53	165.23	165.24	201.48	189.91	179.19	171.10	169.23	169.25	203.13	191.54	180.94	174.37	172.78	172.80							
35 SHC	90.78	107.69	124.53	140.67	150.25	152.41	94.38	113.03	131.39	148.80	157.50	157.66	97.88	118.20	138.06	156.25	162.12	162.14	101.27	123.26	144.56	162.64	166.05	166.07	104.63	128.27	150.83	167.14	169.53	169.55							
35 KW	48.23	47.41	46.63	45.94	45.58	45.47	48.45	47.63	46.82	46.20	45.86	45.86	48.63	47.81	47.02	46.42	46.20	46.20	48.78	47.96	47.19	46.63	46.50	46.50	48.92	48.09	47.34	46.87	46.77	46.77							
35 BF	0.145	0.104	0.090	0.094	0.171	0.300	0.138	0.108	0.098	0.109	0.197	0.340	0.137	0.113	0.108	0.127	0.241	0.375	0.138	0.118	0.117	0.149	0.279	0.404	0.140	0.122	0.126	0.162	0.313	0.430							
40 TC	182.87	172.26	161.82	153.10	149.93	148.13	185.37	174.67	164.41	156.25	152.97	152.99	187.37	176.67	166.62	158.87	157.13	157.16	189.07	178.26	168.47	162.05	160.77	160.80	190.48	179.49	169.87	164.24	163.99	164.01							
40 SC	86.91	103.74	120.40	136.28	142.73	145.34	90.47	109.02	127.23	144.10	150.10	150.11	93.92	114.17	133.83	151.01	154.17	154.20	101.27	123.26	144.56	162.64	166.05	166.07	100.63	124.12	146.30	159.57	160.90	160.93							
40 KW	52.74	51.93	51.12	50.46	50.22	50.09	52.95	52.13	51.34	50.72	50.48	50.48	53.12	52.30	51.53	50.94	50.82	50.82	53.27	52.44	51.69	51.20	51.11	51.12	53.39	52.55	51.82	51.38	51.38	51.38							
40 BF	0.130	0.099	0.087	0.100	0.205	0.323	0.128	0.103	0.098	0.114	0.225	0.362	0.129	0.109	0.108	0.135	0.268	0.396	0.131	0.114	0.117	0.171	0.305	0.425	0.134	0.119	0.127	0.203	0.338	0.450							
45 TC	170.78	160.93	151.38	143.72	140.34	140.35	172.92	163.02	153.71	146.37	144.72	144.75	174.62	164.67	155.63	149.67	148.50	148.52	176.02	165.88	157.03	152.36	151.77	151.80	177.23	166.89	158.65	155.43	154.62	154.65							
45 SC	82.88	99.62	116.09	131.64	137.70	137.71	86.41	104.87	122.88	138.99	142.00	142.03	89.82	109.97	129.42	143.92	145.71	145.73	93.16	114.91	135.56	147.65	148.92	148.95	96.48	119.69	141.18	150.31	151.72	151.74							
45 KW	57.48	56.69	55.90	55.29	55.02	55.03	57.67	56.87	56.12	55.53	55.40	55.40	57.82	57.02	56.30	55.82	55.73	55.73	57.95	57.14	56.43	56.05	56.01	56.02	58.06	57.23	56.58	56.32	56.26	56.27							
45 BF	0.117	0.093	0.087	0.100	0.206	0.348	0.118	0.099	0.097	0.120	0.256	0.386	0.121	0.105	0.108	0.159	0.298	0.418	0.125	0.111	0.119	0.199	0.334	0.446	0.128	0.117	0.133	0.240	0.365	0.471							
48 TC	163.24	153.88	144.70	137.82	135.41	135.44	165.15	155.74	146.82	140.66	139.54	139.56	166.68	157.25	148.66	143.28	143.05	143.08	167.94	158.23	150.23	146.08	146.11	146.11	169.01	159.28	151.71	148.75	148.72	148.75							
48 SC	80.40	97.07	113.35	128.63	132.86	132.89	83.89	102.30	120.11	134.96	136.92	136.93	87.29	107.38	126.58	139.90	140.37	140.39	90.62	112.23	132.53	146.85	143.34	143.36	93.93	116.94	137.96	145.71	145.93	145.95							
48 KW	60.41	59.63	58.84	58.28	58.08	58.08	60.58	59.80	59.05	58.54	58.45	58.45	60.73	59.94	59.23	58.79	58.77	58.78	60.85	60.04	59.39	61.73	59.05	59.05	60.95	60.15	59.53	59.29	59.29	59.29							
48 BF	0.111	0.090	0.086	0.103	0.227	0.364	0.113	0.096	0.097	0.134	0.275	0.401	0.117	0.103	0.108	0.170	0.316	0.433	0.121	0.109	0.122	0.166	0.351	0.460	0.125	0.118	0.138	0.252	0.382	0.484							
52 TC	157.58	148.58	139.67	133.39	131.70	131.74	159.32	150.26	141.64	136.36	135.65	135.65	160.70	151.67	143.42	138.47	138.96	138.98	161.87	152.47	145.11	138.92	141.80	141.83	162.83	153.55	146.49	143.74	144.29	144.31							
52 SC	78.52	95.16	111.29	126.37	129.22	129.27	82.00	100.37	118.02	131.93	133.10	133.10	85.39	105.44	124.45	136.87	136.35	136.37	88.71	110.22	130.25	148.80	139.14	139.16	92.01	114.87	135.53	142.26	141.58	141.60							
52 KW	62.61	61.84	61.05	60.52	60.37	60.38	62.78	62.00	61.25	60.81	60.75	60.75	62.91	62.14	61.44	61.03	61.06	61.07	63.02	62.23	61.61	66.00	61.33	61.33	63.12	62.34	61.75	61.53	61.56	61.57							
52 BF	0.106	0.088	0.086	0.106	0.243	0.376	0.109	0.094	0.097	0.144	0.290	0.413	0.114	0.101	0.109	0.177	0.330	0.444	0.118	0.108	0.124	0.037	0.365	0.470	0.123	0.118	0.141	0.260	0.395	0							

# Cooling capacities

48/50UA 205

SUA 205 - Standard unit - cooling mode		10,087													11,004																
		8,253													9,170																
Evaporator Air Flow Rate - l/s		7,336													8,253																
Air Entering Evaporator - Ewb (°C)		7,336													8,253																
Air Entering Condenser - Edb (°C)		7,336													8,253																
10	TC	258.63	244.03	230.18	217.13	206.78	201.85	262.56	248.20	234.35	221.71	212.50	209.13	265.84	251.53	237.54	225.46	218.18	215.41	268.60	254.48	240.20	228.98	222.42	220.96	280.36	256.75	242.79	232.33	225.91	225.86
	SC	110.07	128.96	147.60	165.73	182.65	188.56	113.94	134.64	155.20	175.00	192.09	195.37	117.64	140.12	162.47	183.88	198.42	201.23	121.25	145.55	169.50	192.03	204.03	206.41	127.71	150.83	176.28	199.77	210.72	210.99
	KW	44.79	43.26	41.84	40.53	39.52	39.05	45.23	43.72	42.29	41.01	40.10	39.79	45.93	44.49	42.64	41.41	40.70	40.44	45.93	44.42	42.93	41.80	41.15	41.01	41.23	44.69	43.23	42.17	41.53	41.53
15	TC	0.000	0.129	0.102	0.095	0.108	0.216	0.196	0.127	0.106	0.105	0.133	0.261	0.175	0.128	0.111	0.114	0.174	0.298	0.166	0.130	0.117	0.128	0.208	0.331	0.170	0.133	0.125	0.114	0.228	0.360
	SC	248.04	234.20	220.98	208.55	198.68	195.36	251.65	238.05	224.75	212.85	204.89	202.22	254.66	241.13	227.65	216.24	210.96	208.23	257.25	243.70	230.20	219.78	214.88	213.43	269.15	245.88	232.73	222.87	218.07	217.95
	KW	49.07	47.50	46.04	44.68	43.64	43.30	49.51	47.96	46.48	45.18	44.33	44.05	49.88	48.34	46.82	45.57	45.01	44.73	50.21	48.66	47.13	46.00	45.47	45.32	45.21	48.93	47.45	46.37	45.85	45.94
25	TC	0.213	0.121	0.098	0.093	0.113	0.234	0.173	0.121	0.103	0.104	0.148	0.278	0.161	0.123	0.108	0.115	0.199	0.315	0.156	0.126	0.116	0.130	0.229	0.347	0.161	0.129	0.124	0.144	0.247	0.375
	SC	225.47	213.28	201.43	190.57	183.35	181.36	228.56	216.38	204.26	193.96	189.11	187.43	231.07	218.92	206.88	197.35	194.12	192.64	233.17	220.96	209.26	200.15	197.07	197.10	244.75	222.70	211.33	203.10	200.98	201.04
	KW	58.37	56.78	55.25	53.87	52.96	52.73	58.81	57.21	55.64	54.33	53.72	53.53	59.17	57.58	56.01	54.80	54.40	54.22	59.47	57.87	56.36	55.20	54.82	54.82	53.99	58.13	56.66	55.61	55.36	55.36
30	TC	0.153	0.107	0.091	0.092	0.139	0.273	0.143	0.110	0.097	0.104	0.196	0.315	0.140	0.114	0.106	0.121	0.236	0.350	0.140	0.118	0.115	0.142	0.262	0.388	0.146	0.122	0.124	0.162	0.288	0.407
	SC	229.89	216.32	197.40	186.48	175.75	173.92	233.54	219.86	206.57	190.07	183.97	183.92	236.43	222.74	209.49	193.40	189.09	189.08	238.91	225.17	212.12	196.38	193.74	193.60	241.04	227.18	214.40	205.21	202.75	202.80
	KW	100.74	118.90	134.65	152.09	160.11	162.47	104.65	124.82	144.45	160.85	171.63	171.81	108.39	130.16	151.59	168.85	176.52	176.63	112.04	135.60	158.53	175.99	180.99	180.85	115.66	140.95	165.33	185.60	189.41	189.45
35	TC	52.00	51.04	55.17	54.08	58.13	57.92	52.27	51.30	50.36	54.48	53.91	53.90	52.49	51.52	50.58	54.84	54.44	54.44	52.69	51.71	50.79	55.17	54.93	54.92	52.85	51.87	50.93	50.17	50.17	50.17
	SC	0.161	0.109	0.090	0.092	0.168	0.294	0.148	0.111	0.098	0.106	0.181	0.323	0.144	0.115	0.106	0.123	0.225	0.358	0.143	0.119	0.115	0.142	0.262	0.388	0.144	0.123	0.124	0.158	0.284	0.404
	KW	217.69	204.90	192.63	181.73	175.90	173.97	220.88	208.08	195.47	185.50	180.02	179.96	223.53	210.60	198.29	188.75	185.06	185.08	225.67	212.71	200.69	191.64	189.54	189.56	227.52	214.53	202.66	195.31	193.52	193.54
40	TC	96.80	114.84	132.80	150.00	160.22	162.52	100.65	120.53	140.11	158.67	167.95	168.12	104.37	126.04	147.22	166.62	172.88	172.89	107.99	131.44	154.15	173.43	177.06	177.08	111.57	136.78	160.84	178.23	180.78	180.80
	SC	62.38	61.37	60.41	59.63	59.35	59.20	62.58	61.61	60.67	59.94	59.66	59.66	62.78	61.81	60.90	60.20	60.05	60.06	62.95	61.97	61.09	60.51	60.41	60.41	63.10	62.10	61.24	60.72	60.72	60.72
	KW	0.127	0.097	0.086	0.094	0.201	0.317	0.125	0.101	0.096	0.112	0.220	0.355	0.126	0.107	0.106	0.132	0.263	0.388	0.129	0.112	0.115	0.168	0.299	0.416	0.131	0.117	0.125	0.199	0.331	0.441
45	TC	191.28	180.25	169.55	160.97	157.18	157.20	193.68	182.59	172.16	163.94	162.09	162.12	195.58	184.44	174.31	167.63	166.35	166.35	197.15	185.79	175.88	170.65	169.99	170.02	198.50	186.92	177.69	174.08	173.21	173.21
	SC	88.38	106.22	123.79	140.37	146.84	146.85	92.14	111.83	131.03	148.21	151.42	151.45	95.78	117.27	138.00	153.47	155.37	155.40	99.34	122.53	144.56	157.44	158.80	158.83	102.88	127.63	150.55	160.28	161.78	161.81
	KW	67.93	66.99	66.07	65.34	65.03	65.03	68.16	67.21	66.32	65.62	65.47	65.48	68.34	67.39	66.53	65.97	65.86	65.86	68.49	67.52	66.69	66.25	66.20	66.20	68.62	67.64	66.87	66.56	66.49	66.50
48	TC	0.115	0.091	0.085	0.098	0.202	0.341	0.116	0.097	0.095	0.118	0.251	0.379	0.119	0.103	0.106	0.156	0.292	0.410	0.122	0.108	0.116	0.195	0.327	0.437	0.126	0.115	0.131	0.236	0.358	0.461
	SC	182.84	172.35	162.07	154.37	151.66	151.69	184.98	174.43	164.45	157.54	156.29	156.31	186.68	176.12	166.50	160.48	160.23	160.25	188.10	177.22	168.26	162.74	163.62	163.64	189.29	178.39	169.92	166.61	166.58	166.60
	KW	85.73	103.51	120.87	137.17	141.68	141.71	89.46	109.08	128.07	143.92	146.00	146.02	93.08	114.51	134.98	149.18	149.68	149.70	96.64	119.68	141.32	160.06	162.84	162.87	100.16	124.70	147.11	155.38	155.61	155.64
52	TC	71.39	70.47	69.54	68.87	68.64	68.64	71.60	70.67	69.78	69.19	69.08	69.08	71.77	70.84	70.00	69.48	69.46	69.46	71.91	70.96	70.18	72.95	72.95	72.95	72.03	71.08	70.36	70.07	70.07	70.07
	SC	0.109	0.089	0.085	0.101	0.223	0.357	0.111	0.094	0.095	0.131	0.270	0.393	0.115	0.101	0.106	0.166	0.310	0.424	0.119	0.107	0.119	0.104	0.344	0.451	0.123	0.115	0.135	0.247	0.374	0.474
	KW	176.49	166.41	156.44	149.40	147.50	147.55	178.44	168.30	158.65	152.73	151.93	151.94	179.99	169.87	160.63	155.10	155.64	155.67	181.30	170.77	162.53	209.36	158.85	158.85	182.37	171.98	164.07	160.99	161.61	161.63
BF	TC	83.73	101.47	118.68	134.76	137.79	137.84	87.44	107.02	125.85	140.69	141.94	141.94	91.05	112.44	132.71	145.95	145.40	145.42	94.60	117.53	138.89	197.06	148.37	148.39	98.12	122.49	144.52	151.69	150.97	150.99
	SC	73.99	73.08	72.15	71.53	71.35	71.35	74.19	73.28	72.38	71.87	71.79	71.79	74.35	73.44	72.61	72.13	72.17	72.17	74.48	73.54	72.81	78.00	72.48	72.48	74.60	73.67	72.98	72.72	72.76	72.76
	KW	0.104	0.086	0.084	0.104	0.238	0.369	0.107	0.092	0.095	0.141	0.284	0.404	0.111	0.099	0.107	0.174	0.324	0.435	0.116	0.106	0.122	0.036	0.358	0.461	0.120	0.115	0.138	0.255	0.387	0.484

Legend  
 Entering dry bulb temperature, °C  
 Entering wet bulb temperature, °C  
 Total gross cooling capacity, kW  
 Sensible gross cooling capacity, kW  
 Compressor power input, kW  
 Bypass factor

# Cooling capacities

48/50UH 135

50UH 135 - Standard unit - cooling mode		6,138										6,820										7,502										8,184									
		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)		Air Entering Evaporator - Ewb (°C)							
Condenser	Air Flow Rate - l/s	23	21	19	17	15	13	23	21	19	17	15	13	23	21	19	17	15	13	23	21	19	17	15	13	23	21	19	17	15	13	23	21	19	17	15	13				
10	TC	171.97	162.26	153.06	144.38	137.49	134.22	174.59	165.04	155.82	147.42	141.30	139.06	176.76	167.25	157.95	149.92	145.07	143.23	178.60	169.21	159.72	152.26	147.89	146.92	186.42	170.72	161.44	154.48	150.22	150.18										
	SC	77.05	90.27	103.32	116.01	127.85	131.99	79.75	94.25	108.64	122.50	134.46	136.75	82.34	98.08	113.72	128.71	138.89	140.86	84.87	101.88	118.64	134.42	142.82	144.48	89.39	105.58	123.39	139.84	147.50	147.69										
	KW	31.03	29.97	28.99	28.08	27.38	27.06	31.34	30.29	29.30	28.42	27.78	27.57	31.60	30.55	29.54	28.69	28.20	28.02	31.82	30.77	29.75	28.96	28.51	28.41	28.57	30.96	29.95	29.22	28.77	28.77										
	BF	0.000	0.136	0.108	0.100	0.115	0.229	0.207	0.134	0.112	0.110	0.141	0.275	0.184	0.135	0.117	0.121	0.184	0.315	0.175	0.137	0.124	0.135	0.220	0.350	0.180	0.140	0.132	0.149	0.241	0.380										
15	TC	164.93	155.73	146.94	138.67	132.11	129.90	167.33	158.29	149.44	141.53	136.24	134.46	169.33	160.34	151.37	143.79	140.28	138.46	171.05	162.04	153.07	146.14	142.88	141.92	178.96	163.49	154.75	148.19	145.00	144.92										
	SC	74.64	87.74	100.74	113.32	124.64	127.74	77.30	91.71	106.02	119.79	130.43	132.23	79.87	95.55	111.07	125.81	133.79	136.16	82.40	99.30	115.90	131.39	137.76	139.56	86.97	103.02	120.66	136.74	142.39	142.52										
	KW	34.00	32.91	31.90	30.96	30.23	30.00	34.30	33.23	32.20	31.30	30.71	30.52	34.56	33.49	32.44	31.57	31.18	30.99	34.78	33.71	32.65	31.87	31.51	31.40	31.32	33.90	32.87	32.13	31.76	31.76										
	BF	0.225	0.128	0.103	0.099	0.119	0.248	0.183	0.127	0.109	0.109	0.156	0.293	0.170	0.130	0.115	0.121	0.210	0.332	0.165	0.133	0.123	0.137	0.242	0.366	0.171	0.136	0.131	0.152	0.261	0.396										
25	TC	149.92	141.82	133.94	126.72	121.91	120.59	151.98	143.88	135.82	128.97	125.75	124.63	153.65	145.57	137.56	131.22	129.08	128.09	155.04	146.92	139.14	133.09	131.04	131.06	162.74	148.08	140.52	135.05	133.64	133.68										
	SC	69.51	82.46	95.35	107.73	117.13	118.59	72.14	86.38	100.48	113.88	120.43	122.56	74.69	90.19	105.39	119.52	124.10	125.96	77.19	93.92	110.20	124.81	128.86	128.88	81.74	97.61	114.90	128.86	131.42	131.46										
	KW	40.44	39.34	38.28	37.32	36.69	36.53	40.74	39.64	38.55	37.64	37.22	37.08	40.99	39.89	38.80	37.97	37.69	37.56	41.21	40.10	39.05	38.24	37.98	37.98	37.40	40.28	39.26	38.53	38.35	38.36										
	BF	0.162	0.113	0.096	0.097	0.147	0.289	0.151	0.116	0.103	0.110	0.207	0.332	0.148	0.122	0.112	0.128	0.249	0.370	0.148	0.126	0.122	0.145	0.268	0.402	0.155	0.129	0.131	0.171	0.304	0.430										
30	TC	152.86	143.84	131.25	123.99	116.86	115.65	155.29	146.19	137.36	126.39	122.33	122.29	157.21	148.11	139.30	128.60	125.73	125.72	158.86	149.72	141.04	130.58	128.83	128.73	160.27	151.06	142.56	136.45	134.82	134.85										
	SC	70.52	83.23	94.25	106.46	112.07	113.73	73.25	87.23	101.11	112.59	120.14	120.26	75.87	91.11	106.11	118.19	123.56	123.64	78.43	94.92	110.97	123.19	126.69	126.59	80.96	98.66	115.73	129.92	132.58	132.61										
	KW	36.02	35.36	34.22	33.47	32.82	32.69	36.21	35.54	34.89	34.12	33.62	33.46	36.37	35.69	35.05	34.36	34.01	33.83	37.83	39.94	39.27	38.64	38.18	38.07	38.07	40.05	39.37	38.76	38.38	38.29										
	BF	0.170	0.115	0.095	0.097	0.177	0.311	0.157	0.117	0.103	0.112	0.207	0.332	0.152	0.122	0.112	0.129	0.238	0.378	0.151	0.126	0.122	0.150	0.277	0.410	0.152	0.130	0.131	0.167	0.300	0.427										
35	TC	144.75	136.25	128.08	120.84	116.96	115.68	146.87	138.36	129.97	123.34	119.70	119.66	148.63	140.04	131.85	125.51	123.05	123.06	150.05	141.44	133.45	127.43	126.03	126.05	151.28	142.65	134.75	129.87	128.68	128.69										
	SHC	67.76	80.38	92.95	105.00	112.15	113.76	70.45	84.37	98.07	111.07	117.56	117.68	73.06	88.22	103.05	116.63	121.01	121.02	75.59	92.00	107.90	121.40	123.94	123.95	78.10	95.74	112.58	124.76	126.54	126.55										
	KW	39.49	38.82	38.18	37.62	37.32	37.23	39.67	39.00	38.34	37.83	37.55	37.55	39.82	39.14	38.50	38.01	37.83	37.83	39.94	39.27	38.64	38.18	38.07	38.07	40.05	39.37	38.76	38.38	38.29											
	BF	0.150	0.108	0.093	0.097	0.177	0.311	0.143	0.112	0.102	0.113	0.204	0.352	0.142	0.117	0.112	0.131	0.249	0.388	0.143	0.122	0.121	0.154	0.289	0.419	0.145	0.127	0.131	0.188	0.324	0.446										
40	TC	136.19	128.29	120.52	114.02	111.66	110.32	138.05	130.09	122.45	116.37	113.93	113.94	139.55	131.57	124.09	118.32	117.02	117.04	140.81	132.76	125.47	120.69	119.74	119.76	141.86	133.68	126.51	122.32	122.13	122.15										
	SC	64.87	77.44	89.87	101.72	106.54	108.49	67.53	81.37	94.97	107.56	112.04	112.04	70.10	85.22	99.90	112.72	115.08	115.10	72.62	88.97	104.68	116.15	117.75	117.77	75.11	92.64	109.20	119.10	120.10	120.12										
	KW	43.19	42.52	41.86	41.31	41.12	41.01	43.36	42.68	42.04	41.53	41.33	41.33	43.49	42.82	42.19	41.71	41.61	41.61	43.61	42.94	42.32	41.93	41.85	41.85	43.71	43.03	42.43	42.07	42.07											
	BF	0.134	0.102	0.091	0.099	0.213	0.335	0.132	0.107	0.101	0.118	0.233	0.375	0.133	0.113	0.112	0.139	0.278	0.410	0.136	0.118	0.122	0.177	0.316	0.440	0.139	0.123	0.132	0.210	0.350	0.466										
45	TC	127.19	119.86	112.74	107.03	104.52	104.53	128.78	121.41	114.47	109.01	107.78	107.80	130.05	122.64	115.91	111.46	110.59	110.61	131.09	123.54	116.95	113.47	113.03	113.05	131.99	124.29	118.15	115.75	115.16	115.18										
	SC	61.87	74.35	86.65	98.26	102.78	102.79	64.50	78.27	91.72	103.74	105.99	106.01	67.04	82.08	96.60	107.43	108.78	108.78	69.54	85.77	101.19	110.20	111.16	111.17	72.02	89.34	105.38	112.19	113.24	113.26										
	KW	47.07	46.41	45.77	45.27	45.05	45.05	47.22	46.57	45.95	45.47	45.36	45.36	47.35	46.69	46.09	45.70	45.63	45.63	47.45	46.78	46.20	45.90	45.86	45.87	47.54	46.86	46.33	46.11	46.07	46.07										
	BF	0.115	0.097	0.090	0.103	0.214	0.361	0.122	0.102	0.101	0.125	0.265	0.400	0.125	0.108	0.112	0.165	0.308	0.433	0.129	0.115	0.123	0.206	0.345	0.462	0.133	0.122	0.138	0.249	0.378	0.487										
48	TC	121.58	114.60	107.76	102.64	100.84	100.87	123.00	115.99	109.35	104.75	103.92	103.93	124.13	117.11	110.71	106.71	106.54	106.56	125.08	117.84	111.88	108.16	108.79	108.81	125.87	118.62	112.98	110.79	110.76	110.78										
	SC	60.01	72.46	84.61	96.01	99.17	99.19	62.62	76.36	89.65	100.74	102.20	102.21	65.15	80.15	94.48	104.42	104.77	104.79	67.64	83.77	98.92	126.03	106.99	107.01	70.11	87.28	102.97	108.76	108.92	108.94										
	KW	49.46	48.82	48.18	47.72	47.55	47.56	49.61	48.96	48.35	47.94	47.86	47.86	49.72	49.08	48.50	48.14	48.12	48.12	49.82	49.16	48.62	48.54	48.35	48.35	49.90	49.25	48.74	48.55	48.55											
	BF	0.115	0.094	0.089	0.107	0.235	0.377	0.117	0.100	0.101	0.139	0.285	0.416	0.121	0.106	0.112	0.176	0.327	0.448	0.125	0.113	0.126	0.210	0.364	0.476	0.130	0.122	0.143	0.261	0.396	0.501										
52	TC	117.36	110.65	104.02	99.34	98.08	98.11	118.65	111.91	105.49	101.56	101.02	101.03	119.68	112.95	106.81	103.13	103.49	103.51	120.55	113.55	108.07	104.21	105.61	105.63	121.27	114.36	109.10	107.05	107.46	107.48										
	SC	58.61	71.03	83.07	94.33	96.45	96.49	61.21	74.91	88.09	98.48	99.34	99.35	63.73	78.70	92.89	102.16	101.77	101.79	66.22	82.27	97.22	137.94	103.85	103.87	68.68	85.74	101.16	106.18	105.67	105.69										
	KW	51.26	50.63	49.99	49.56	49.43	49.44	51.40	50.77	50.15	49.79	49.74	49.74	51.51	50.88	50.31	49.97	50.00	50.00	51.60	50.95																				

# Cooling capacities

48/50UH 160

50UH 160 - Standard unit - cooling mode		7,887															8,604																											
		6,453															7,170																											
Evaporator Air Flow Rate - l/s		5,736															6,453																											
Air Entering Evaporator - Ewb (°C)		6,453															7,170																											
Air Entering Condenser - Edb (°C)		6,453															7,170																											
		23	21	19	17	15	13	11	9	7	5	3	1	0	-1	-2	23	21	19	17	15	13	11	9	7	5	3	1	0	-1	23	21	19	17	15	13	11	9	7	5	3	1	0	-1
10	TC	203.38	191.90	181.01	170.75	162.60	158.73	206.47	195.18	184.28	174.35	167.11	164.46	209.05	197.79	186.80	177.30	171.57	169.39	211.22	200.11	188.89	180.07	174.91	173.75	220.47	201.90	190.92	182.69	177.65	177.61													
	SC	87.89	102.98	117.86	132.34	145.85	150.57	90.98	107.52	123.93	139.75	153.39	156.01	93.94	111.89	129.73	146.83	158.45	160.69	96.82	116.23	135.35	153.34	162.93	164.83	101.98	120.44	140.76	159.52	168.27	168.48													
	KW	32.95	31.82	30.78	29.82	29.07	28.73	33.28	32.16	31.11	30.17	29.50	29.27	33.55	32.43	31.37	30.47	29.94	29.75	33.79	32.68	31.58	30.75	30.27	30.17	30.33	32.88	31.80	31.02	30.55	30.55													
	BF	0.000	0.114	0.090	0.084	0.096	0.192	0.174	0.112	0.094	0.093	0.118	0.231	0.155	0.113	0.098	0.101	0.154	0.265	0.147	0.115	0.104	0.113	0.184	0.294	0.101	0.118	0.111	0.125	0.202	0.319													
15	TC	195.05	184.17	173.77	164.00	156.23	153.62	197.89	187.19	176.74	167.38	161.12	159.02	200.26	189.62	179.02	170.05	165.89	163.74	202.29	191.64	181.02	172.83	168.98	167.84	211.65	193.35	183.01	175.26	171.48	171.39													
	SC	85.14	100.10	114.92	129.28	142.18	145.73	88.18	104.62	120.94	136.65	148.79	150.85	91.12	109.00	126.71	143.53	152.62	155.33	94.00	113.29	132.22	149.90	157.16	159.21	99.22	117.52	137.65	155.99	162.43	162.58													
	KW	36.10	34.95	33.87	32.87	32.10	31.85	36.42	35.28	34.19	33.23	32.61	32.41	36.70	35.56	34.44	33.52	33.11	32.90	36.93	35.79	34.67	33.84	33.45	33.94	33.26	36.00	34.91	34.11	33.73	33.72													
	BF	0.189	0.107	0.087	0.083	0.100	0.208	0.154	0.107	0.091	0.092	0.131	0.246	0.163	0.109	0.096	0.102	0.179	0.279	0.139	0.111	0.103	0.115	0.203	0.308	0.143	0.114	0.110	0.127	0.219	0.333													
25	TC	177.30	167.72	158.40	149.86	144.18	142.62	179.73	170.15	160.62	152.52	148.71	147.39	181.71	172.15	162.68	155.19	152.65	151.48	183.36	173.75	164.56	157.39	154.97	154.99	192.46	175.12	166.18	159.72	158.05	158.09													
	SC	79.30	94.07	108.77	122.90	133.62	135.29	82.30	98.54	114.63	129.92	137.39	139.81	85.21	102.89	120.23	136.35	141.58	143.70	88.06	107.14	125.71	142.38	147.01	147.03	93.25	111.36	131.08	147.01	149.93	149.97													
	KW	42.94	41.77	40.64	39.63	38.96	38.79	43.26	42.09	40.93	39.97	39.52	39.38	43.53	42.36	41.20	40.32	40.02	39.89	43.75	42.58	41.46	40.61	40.33	40.33	39.72	42.77	41.68	40.91	40.72	40.73													
	BF	0.136	0.095	0.081	0.081	0.123	0.242	0.127	0.097	0.086	0.092	0.174	0.279	0.124	0.101	0.094	0.109	0.199	0.318	0.127	0.106	0.102	0.126	0.233	0.344	0.128	0.109	0.110	0.144	0.255	0.361													
30	TC	180.78	170.11	155.23	146.64	138.21	136.77	183.65	172.89	162.44	149.47	144.63	144.63	185.92	175.16	164.74	152.09	148.70	148.69	187.87	177.07	166.80	154.42	152.35	152.24	189.54	178.65	168.60	161.37	159.44	159.47													
	SC	80.44	94.94	107.52	121.45	127.85	129.74	83.57	99.51	115.34	128.44	137.05	137.20	86.55	103.94	121.05	134.83	140.96	141.05	89.47	108.28	126.59	140.53	144.53	144.42	92.36	112.55	132.02	148.21	151.25	151.28													
	KW	38.25	37.54	36.59	35.79	35.27	35.27	38.45	37.74	37.05	36.08	35.66	35.66	38.62	37.90	37.21	36.34	36.05	35.92	38.76	38.04	37.36	36.60	36.40	36.40	38.88	38.16	37.50	37.03	36.91	36.91													
	BF	0.143	0.096	0.080	0.081	0.149	0.281	0.131	0.099	0.087	0.094	0.160	0.287	0.119	0.098	0.094	0.110	0.209	0.326	0.120	0.102	0.102	0.129	0.243	0.352	0.122	0.106	0.110	0.140	0.252	0.358													
35	TC	171.18	161.13	151.48	142.91	138.32	136.81	173.70	163.63	153.71	145.87	141.56	141.52	175.77	165.61	155.93	148.43	145.53	145.54	177.46	167.27	157.82	150.70	149.05	149.07	178.91	168.70	159.36	153.58	152.18	152.19													
	SC	77.30	91.70	106.04	119.78	127.94	129.78	80.37	96.25	111.88	126.71	134.11	134.25	83.35	100.65	117.56	133.05	138.05	138.06	86.23	104.96	123.10	138.49	141.39	141.41	89.09	109.22	128.44	142.32	144.36	144.37													
	KW	41.93	41.22	40.54	39.94	39.63	39.53	42.12	41.41	40.71	40.16	39.87	39.87	42.28	41.56	40.88	40.36	40.16	40.17	42.41	41.69	41.03	40.54	40.43	40.43	42.53	41.81	41.15	40.75	40.66	40.66													
	BF	0.126	0.091	0.078	0.081	0.148	0.281	0.120	0.094	0.085	0.095	0.172	0.296	0.119	0.098	0.094	0.110	0.209	0.326	0.120	0.102	0.102	0.129	0.243	0.352	0.122	0.106	0.110	0.158	0.272	0.374													
40	TC	161.07	151.72	142.53	134.85	132.06	130.47	163.27	153.85	144.81	137.62	134.73	134.74	165.03	155.60	146.75	139.93	138.39	138.42	166.53	157.01	148.38	142.73	141.60	141.63	167.77	158.09	149.62	144.66	144.43	144.45													
	SC	74.01	88.34	102.52	116.04	121.54	123.76	77.04	92.83	108.34	122.70	127.81	127.82	79.97	97.22	113.96	128.59	131.28	131.31	82.85	101.49	119.42	132.50	134.33	134.35	85.69	105.69	124.57	135.87	137.01	137.03													
	KW	45.86	45.15	44.44	43.87	43.66	43.55	46.04	45.32	44.63	44.10	43.89	43.89	46.18	45.47	44.80	44.29	44.18	44.18	46.31	45.59	44.94	44.52	44.44	44.44	46.42	45.69	45.05	44.67	44.67	44.67													
	BF	0.113	0.086	0.076	0.083	0.178	0.281	0.111	0.090	0.085	0.099	0.195	0.315	0.112	0.095	0.094	0.117	0.233	0.344	0.114	0.099	0.102	0.149	0.266	0.369	0.117	0.103	0.111	0.177	0.294	0.391													
45	TC	150.42	141.74	133.33	126.58	123.61	123.62	152.30	143.58	135.38	128.91	127.46	127.49	153.80	145.04	137.08	131.82	130.79	130.82	155.03	146.10	138.31	134.19	133.68	133.70	156.09	146.99	139.73	136.89	136.19	136.21													
	SC	70.58	84.82	98.85	112.09	117.25	117.26	73.58	89.30	104.63	118.35	120.92	120.94	76.49	93.64	110.20	122.55	124.07	124.09	79.33	97.85	115.43	125.72	126.81	126.83	82.16	101.92	120.22	127.99	129.19	129.21													
	KW	49.98	49.28	48.60	48.07	47.84	47.84	50.14	49.44	48.79	48.28	48.17	48.17	50.27	49.58	48.94	48.53	48.45	48.45	50.38	49.67	49.06	48.73	48.70	48.70	50.48	49.76	49.19	48.96	48.92	48.92													
	BF	0.102	0.081	0.075	0.087	0.179	0.303	0.103	0.086	0.085	0.105	0.222	0.336	0.105	0.091	0.094	0.139	0.259	0.364	0.108	0.096	0.103	0.173	0.290	0.388	0.112	0.102	0.116	0.209	0.317	0.409													
48	TC	143.78	135.53	127.44	121.39	119.26	119.29	145.46	137.17	129.32	123.89	122.90	122.92	146.80	138.50	130.93	126.19	126.00	126.02	147.92	139.36	132.31	131.57	128.66	128.69	148.86	140.28	133.62	131.02	130.99	131.01													
	SC	68.46	82.66	96.52	109.55	113.13	113.16	71.43	87.11	102.27	114.92	116.59	116.60	74.33	91.44	107.78	119.13	119.52	119.54	77.17	95.57	112.85	124.78	122.05	122.07	79.98	99.57	117.47	124.08	124.26	124.28													
	KW	52.52	51.84	51.16	50.67	50.49	50.50	52.67	51.99	51.34	50.90	50.82	50.82	52.80	52.12	51.50	51.11	51.10	51.10	52.90	52.20	51.63	53.67	51.34	51.34	52.99	52.29	51.76	51.55	51.55	51.55													
	BF	0.096	0.079	0.075	0.090	0.197	0.316	0.098	0.084	0.084	0.116	0.239	0.349	0.102	0.089	0.094	0.147	0.275	0.376	0.105	0.095	0.106	0.166	0.292	0.400	0.109	0.102	0.120	0.219	0.332	0.420													
52	TC	136.79	130.86	123.02	117.49	115.99	116.03	140.32	132.35	124.76	120.10	119.47	119.48	141.54	133.58	126.32	121.96	122.39	122.41	142.57	134.29	127.81	124.89	124.92	124.92	143.41	135.24	129.02	126.60	127.08	127.10													
	SC	66.86	81.03	94.77	107.61	110.03	110.07	69.82	85.46	100.50	112.34	113.33	113.34	72.71	89.78	105.97	116.55	116.10	116.12	75.54	93.85	110.91	124.81	118.50	118.50	79.35	97.81	115.40	121.13	120.55	120.57													
	KW	54.43	53.76	53.08	52.62	52.49	52.49	54.58	53.91	53.25	52.81	52.81	52.81	54.69	54.03	53.42	53.06	53.09	53.09	54.79	54.10	53.56	57.38	53.32	53.32	54.88	54.20	53.69	53.50	53.52	53.53													
	BF	0.092	0.077	0.075	0.092	0.211</																																						



# Cooling capacities

48/50UH 180

50UH 180 - Standard unit - cooling mode		9,080															9,988															10,896														
		Evaporator Air Flow Rate - l/s					8,172					9,080					9,988					10,896																								
Air Entering Condenser - Edb (°C)	Air Entering Evaporator - Ewb (°C)	23	21	19	17	15	23	21	19	17	15	23	21	19	17	15	23	21	19	17	15	23	21	19	17	15	23	21	19	17	15															
		10 TC	228.51	215.61	203.38	191.85	182.70	178.34	231.99	219.30	207.06	195.89	187.76	184.78	234.88	222.24	209.88	199.21	192.77	190.33	237.32	224.84	212.23	202.32	196.52	195.23	247.71	226.85	214.52	205.27	199.60	199.56														
10 SC	103.79	121.60	139.18	156.28	172.23	177.80	107.44	126.96	146.34	165.02	181.13	184.22	110.93	132.13	153.20	173.39	187.10	189.75	114.33	137.25	159.82	181.07	192.39	194.63	120.42	142.23	166.22	188.37	198.70	198.95																
10 KW	37.50	36.22	35.04	33.94	33.09	32.70	37.87	36.61	35.41	34.34	33.58	33.32	38.19	36.92	35.70	34.68	34.08	33.86	38.46	37.19	35.95	35.00	34.46	34.34	34.52	37.42	36.20	35.31	34.77	34.77																
10 BF	0.000	0.123	0.097	0.090	0.103	0.206	0.187	0.121	0.101	0.100	0.127	0.248	0.166	0.122	0.106	0.109	0.166	0.284	0.158	0.124	0.111	0.121	0.198	0.316	0.162	0.126	0.119	0.135	0.217	0.343																
15 TC	219.15	206.93	195.24	184.27	175.54	172.61	222.35	210.33	198.58	188.06	181.03	178.67	225.01	213.05	201.14	191.06	186.40	183.98	227.29	215.32	203.39	194.19	189.86	188.58	237.81	217.25	205.63	196.92	192.67	192.57																
15 SC	100.54	118.20	135.70	152.65	167.90	172.08	104.13	123.54	142.82	161.36	175.70	178.13	107.60	128.71	149.62	169.48	180.22	183.42	111.00	133.77	156.14	177.00	185.58	188.00	117.16	138.78	162.55	184.20	191.81	191.99																
15 KW	41.09	39.78	38.55	37.41	36.54	36.25	41.46	40.16	38.92	37.83	37.12	36.89	41.77	40.47	39.21	38.16	37.69	37.45	42.04	40.74	39.47	38.51	38.08	37.95	42.04	40.74	39.47	38.51	38.39	38.38																
15 BF	0.203	0.115	0.093	0.089	0.108	0.223	0.165	0.115	0.098	0.099	0.141	0.265	0.153	0.117	0.103	0.109	0.189	0.300	0.149	0.120	0.111	0.124	0.218	0.330	0.154	0.123	0.118	0.137	0.236	0.357																
25 TC	199.21	188.44	177.98	168.38	162.00	160.24	201.95	191.18	180.47	171.37	167.09	165.60	204.16	193.43	182.79	174.37	171.52	170.21	206.02	195.23	184.89	176.84	174.12	174.15	216.25	196.76	186.72	179.45	177.58	177.63																
25 SC	93.64	111.09	128.44	145.13	157.79	159.76	97.19	116.36	135.36	153.41	162.23	165.10	100.62	121.50	141.98	161.01	167.18	169.69	103.98	126.52	148.45	168.13	173.59	173.62	110.11	131.50	154.78	173.60	177.04	177.09																
25 KW	48.87	47.52	46.26	45.10	44.35	44.15	49.24	47.90	46.59	45.49	44.98	44.82	49.54	48.21	46.90	45.89	45.55	45.40	49.80	48.46	47.19	46.22	45.90	45.90	45.21	48.68	47.44	46.57	46.35	46.36																
25 BF	0.146	0.102	0.087	0.087	0.132	0.260	0.136	0.105	0.093	0.099	0.187	0.300	0.133	0.108	0.101	0.115	0.225	0.333	0.133	0.103	0.110	0.130	0.241	0.363	0.139	0.116	0.118	0.154	0.275	0.388																
30 TC	203.12	191.13	174.41	164.76	155.29	153.67	206.34	194.26	182.52	167.94	162.54	162.50	208.90	196.80	185.10	170.88	167.06	167.06	211.09	198.95	187.42	173.51	171.18	171.05	212.97	200.73	189.44	181.32	179.15	179.18																
30 SC	94.99	112.11	126.96	143.42	150.97	153.20	98.68	117.51	136.20	151.67	161.84	162.01	102.20	122.74	142.94	159.21	166.45	166.55	105.65	127.86	149.49	165.95	170.66	170.53	109.06	132.91	155.90	175.01	178.60	178.64																
30 KW	43.54	42.73	46.20	45.29	48.68	48.49	43.77	42.96	42.17	45.62	45.14	45.13	43.95	43.14	42.35	45.92	45.59	45.59	44.11	43.30	42.53	46.19	45.99	45.99	44.26	43.43	42.68	42.15	42.01	42.01																
30 BF	0.153	0.103	0.086	0.087	0.160	0.280	0.141	0.106	0.093	0.101	0.172	0.308	0.137	0.110	0.101	0.117	0.214	0.341	0.137	0.114	0.110	0.135	0.250	0.370	0.137	0.117	0.118	0.151	0.270	0.385																
35 TC	192.34	181.04	170.19	160.57	155.41	153.72	195.16	183.85	172.71	163.90	159.06	159.01	197.50	186.08	175.20	166.78	163.51	163.53	199.39	187.94	177.32	169.32	167.47	167.49	201.02	189.55	179.06	172.56	170.98	171.00																
35 SHC	91.28	108.29	125.22	141.44	151.08	153.25	94.90	113.66	132.11	149.62	158.36	158.53	98.42	118.85	138.82	157.11	163.01	163.03	101.82	123.94	145.36	163.53	166.96	166.98	105.20	128.98	151.66	168.06	170.46	170.48																
35 KW	47.72	46.92	46.15	45.46	45.10	44.99	47.94	47.13	46.33	45.71	45.38	45.38	48.12	47.31	46.53	45.94	45.72	45.72	48.28	47.46	46.70	46.14	46.01	46.01	48.41	47.59	46.84	46.38	46.28	46.28																
35 BF	0.135	0.097	0.084	0.089	0.159	0.280	0.129	0.101	0.092	0.102	0.184	0.318	0.128	0.105	0.101	0.118	0.225	0.350	0.129	0.103	0.110	0.130	0.261	0.378	0.131	0.114	0.118	0.170	0.292	0.402																
40 TC	180.97	170.47	160.14	151.51	148.38	146.59	183.44	172.86	162.71	154.63	151.39	151.40	185.43	174.83	164.89	157.22	155.49	155.52	187.10	176.41	166.72	160.37	159.10	159.13	188.50	177.63	168.11	162.53	162.28	162.31																
40 SC	87.39	104.31	121.06	137.03	143.52	146.14	90.97	109.62	127.93	144.89	150.93	150.94	94.44	114.80	134.57	151.84	155.02	155.05	97.83	119.85	141.01	156.47	158.62	158.65	101.18	124.80	147.10	160.44	161.79	161.81																
40 KW	52.19	51.39	50.59	49.93	49.69	49.57	52.40	51.59	50.80	50.19	49.95	49.95	52.57	51.75	50.99	50.41	50.28	50.29	52.71	51.89	51.15	50.67	50.58	50.58	52.83	52.00	51.28	50.85	50.84	50.84																
40 BF	0.121	0.087	0.081	0.089	0.192	0.302	0.119	0.097	0.091	0.106	0.210	0.338	0.120	0.102	0.101	0.126	0.250	0.370	0.123	0.107	0.110	0.160	0.285	0.397	0.125	0.111	0.119	0.190	0.316	0.420																
45 TC	169.00	159.26	149.81	142.23	138.88	138.89	171.12	161.33	152.11	144.85	143.22	143.24	172.81	162.96	154.02	148.11	146.96	146.98	174.19	164.16	155.40	150.78	150.19	150.22	175.38	165.16	157.00	153.81	153.02	153.04																
45 SC	83.34	100.16	116.72	132.36	138.46	138.47	86.88	105.44	123.55	139.76	142.78	142.81	90.32	110.57	130.13	144.72	146.51	146.54	93.67	115.54	136.31	148.46	149.74	149.77	97.01	120.35	141.96	151.14	152.55	152.58																
45 KW	56.88	56.09	55.32	54.71	54.45	54.45	57.07	56.28	55.53	54.95	54.82	54.83	57.22	56.43	55.71	55.23	55.15	55.15	57.35	56.54	55.84	55.47	55.43	55.43	57.46	56.64	55.99	55.73	55.68	55.68																
45 BF	0.110	0.087	0.081	0.093	0.212	0.340	0.110	0.092	0.091	0.112	0.239	0.361	0.113	0.098	0.101	0.149	0.278	0.391	0.117	0.103	0.111	0.186	0.312	0.417	0.120	0.110	0.124	0.224	0.341	0.439																
48 TC	161.55	152.28	143.19	136.39	134.00	134.03	163.44	154.12	145.30	139.20	138.09	138.11	164.94	155.61	147.12	141.79	141.57	141.59	166.20	156.58	148.67	144.56	144.59	144.59	167.25	157.62	150.13	147.21	147.18	147.20																
48 SC	80.84	97.61	113.97	129.34	133.59	133.62	84.35	102.86	120.77	135.71	137.67	137.69	87.77	107.98	127.28	140.67	141.14	141.16	91.12	112.85	133.26	148.78	144.12	144.15	94.45	117.58	138.71	146.51	146.73	146.76																
48 KW	59.78	59.00	58.23	57.67	57.47	57.47	59.95	59.18	58.43	57.93	57.84	57.84	60.09	59.32	58.61	58.18	58.16	58.16	60.21	59.41	58.77	61.09	58.43	58.44	60.31	59.52	58.91	58.67	58.67	58.67																
48 BF	0.104	0.084	0.081	0.096	0.212	0.340	0.106	0.090	0.091	0.125	0.257	0.375	0.109	0.096	0.101	0.158	0.295	0.404	0.113	0.102	0.114	0.199	0.328	0.430	0.117	0.110	0.129	0.235	0.357	0.452																
52 TC	155.94	147.03	138.22	132.01	130.33	130.37	157.66	148.70	140.17	134.95	134.24	134.24	159.03	150.09	141.93	137.04	137.52	137.54	160.19	150.89	143.60	140.98	140.33	140.35	161.14	151.96	144.97	142.25	142.79	142.81																
52 SC	78.96	95.68	111.91	127.07	129.93	129.98	82.45	100.92	118.67	132.66	133.83	133.84	85.86	106.02	125.13	137.62	137.10	137.12	89.20	110.83	130.97	148.82	143.90	143.93	92.52	115.50	136.27	143.04	142.36	142.38																
52 KW	61.96	61.19	60.42	59.89	59.74	59.75	62.12	61.36	60.61	60.18	60.11	60.11	62.25	61.49	60.80	60.39	60.43	60.43	62.37	61.58	60.97	65.31	60.69	60.69	62.46	61.69	61.10	60.89	60.92	60.92																
52 BF	0.099	0.082	0.080	0.099	0.227	0.351	0.102	0.088	0.091	0.135	0.271	0.385	0.106	0.094	0.102	0.165	0.308	0.414	0.111	0.101	0.116	0.204	0.341	0.439	0.1																					



# Cooling capacities

48/50UH 205

Air Entering Condenser - Edb (°C)		Standard unit - cooling mode																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		Evaporator Air Flow Rate - l/s										Air Entering Evaporator - Ewb (°C)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		7.336					8.253					9.170					10.087					11.004																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	430	435	440	445	450	455	460	465	470	475	480	485	490	495	500	505	510	515	520	525	530	535	540	545	550	555	560	565	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645	650	655	660	665	670	675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755	760	765	770	775	780	785	790	795	800	805	810	815	820	825	830	835	840	845	850	855	860	865	870	875	880	885	890	895	900	905	910	915	920	925	930	935	940	945	950	955	960	965	970	975	980	985	990	995	1000	1005	1010	1015	1020	1025	1030	1035	1040	1045	1050	1055	1060	1065	1070	1075	1080	1085	1090	1095	1100	1105	1110	1115	1120	1125	1130	1135	1140	1145	1150	1155	1160	1165	1170	1175	1180	1185	1190	1195	1200	1205	1210	1215	1220	1225	1230	1235	1240	1245	1250	1255	1260	1265	1270	1275	1280	1285	1290	1295	1300	1305	1310	1315	1320	1325	1330	1335	1340	1345	1350	1355	1360	1365	1370	1375	1380	1385	1390	1395	1400	1405	1410	1415	1420	1425	1430	1435	1440	1445	1450	1455	1460	1465	1470	1475	1480	1485	1490	1495	1500	1505	1510	1515	1520	1525	1530	1535	1540	1545	1550	1555	1560	1565	1570	1575	1580	1585	1590	1595	1600	1605	1610	1615	1620	1625	1630	1635	1640	1645	1650	1655	1660	1665	1670	1675	1680	1685	1690	1695	1700	1705	1710	1715	1720	1725	1730	1735	1740	1745	1750	1755	1760	1765	1770	1775	1780	1785	1790	1795	1800	1805	1810	1815	1820	1825	1830	1835	1840	1845	1850	1855	1860	1865	1870	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070	2075	2080	2085	2090	2095	2100	2105	2110	2115	2120	2125	2130	2135	2140	2145	2150	2155	2160	2165	2170	2175	2180	2185	2190	2195	2200	2205	2210	2215	2220	2225	2230	2235	2240	2245	2250	2255	2260	2265	2270	2275	2280	2285	2290	2295	2300	2305	2310	2315	2320	2325	2330	2335	2340	2345	2350	2355	2360	2365	2370	2375	2380	2385	2390	2395	2400	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480	2485	2490	2495	2500	2505	2510	2515	2520	2525	2530	2535	2540	2545	2550	2555	2560	2565	2570	2575	2580	2585	2590	2595	2600	2605	2610	2615	2620	2625	2630	2635	2640	2645	2650	2655	2660	2665	2670	2675	2680	2685	2690	2695	2700	2705	2710	2715	2720	2725	2730	2735	2740	2745	2750	2755	2760	2765	2770	2775	2780	2785	2790	2795	2800	2805	2810	2815	2820	2825	2830	2835	2840	2845	2850	2855	2860	2865	2870	2875	2880	2885	2890	2895	2900	2905	2910	2915	2920	2925	2930	2935	2940	2945	2950	2955	2960	2965	2970	2975	2980	2985	2990	2995	3000	3005	3010	3015	3020	3025	3030	3035	3040	3045	3050	3055	3060	3065	3070	3075	3080	3085	3090	3095	3100	3105	3110	3115	3120	3125	3130	3135	3140	3145	3150	3155	3160	3165	3170	3175	3180	3185	3190	3195	3200	3205	3210	3215	3220	3225	3230	3235	3240	3245	3250	3255	3260	3265	3270	3275	3280	3285	3290	3295	3300	3305	3310	3315	3320	3325	3330	3335	3340	3345	3350	3355	3360	3365	3370	3375	3380	3385	3390	3395	3400	3405	3410	3415	3420	3425	3430	3435	3440	3445	3450	3455	3460	3465	3470	3475	3480	3485	3490	3495	3500	3505	3510	3515	3520	3525	3530	3535	3540	3545	3550	3555	3560	3565	3570	3575	3580	3585	3590	3595	3600	3605	3610	3615	3620	3625	3630	3635	3640	3645	3650	3655	3660	3665	3670	3675	3680	3685	3690	3695	3700	3705	3710	3715	3720	3725	3730	3735	3740	3745	3750	3755	3760	3765	3770	3775	3780	3785	3790	3795	3800	3805	3810	3815	3820	3825	3830	3835	3840	3845	3850	3855	3860	3865	3870	3875	3880	3885	3890	3895	3900	3905	3910	3915	3920	3925	3930	3935	3940	3945	3950	3955	3960	3965	3970	3975	3980	3985	3990	3995	4000	4005	4010	4015	4020	4025	4030	4035	4040	4045	4050	4055	4060	4065	4070	4075	4080	4085	4090	4095	4100	4105	4110	4115	4120	4125	4130	4135	4140	4145	4150	4155	4160	4165	4170	4175	4180	4185	4190	4195	4200	4205	4210	4215	4220	4225	4230	4235	4240	4245	4250	4255	4260	4265	4270	4275	4280	4285	4290	4295	4300	4305	4310	4315	4320	4325	4330	4335	4340	4345	4350	4355	4360	4365	4370	4375	4380	4385	4390	4395	4400	4405	4410	4415	4420	4425	4430	4435	4440	4445	4450	4455	4460	4465	4470	4475	4480	4485	4490	4495	4500	4505	4510	4515	4520	4525	4530	4535	4540	4545	4550	4555	4560	4565	4570	4575	4580	4585	4590	4595	4600	4605	4610	4615	4620	4625	4630	4635	4640	4645	4650	4655	4660	4665	4670	4675	4680	4685	4690	4695	4700	4705	4710	4715	4720	4725	4730	4735	4740	4745	4750	4755	4760	4765	4770	4775	4780	4785	4790	4795	4800	4805	4810	4815	4820	4825	4830	4835	4840	4845	4850	4855	4860	4865	4870	4875	4880	4885	4890	4895	4900	4905	4910	4915	4920	4925	4930	4935	4940	4945	4950	4955	4960	4965	4970	4975	4980	4985	4990	4995	5000	5005	5010	5015	5020	5025	5030	5035	5040	5045	5050	5055	5060	5065	5070	5075	5080	5085	5090	5095	5100	5105	5110	5115	5120	5125	5130	5135	5140	5145	5150	5155	5160	5165	5170	5175	5180	5185	5190	5195	5200	5205	5210	5215	5220	5225	5230	5235	5240	5245	5250	5255	5260	5265	5270	5275	5280	5285	5290	5295	5300	5305	5310	5315	5320	5325	5330	5335	5340	5345	5350	5355	5360	5365	5370	5375	5380	5385	5390	5395	5400	5405	5410	5415	5420	5425	5430	5435	5440	5445	5450	5455	5460	5465	5470	5475	5480	5485	5490	5495	5500	5505	5510	5515	5520	5525	5530	5535	5540	5545	5550	5555	5560	5565	5570	5575	5580	5585	5590	5595	5600	5605	5610	5615	5620	5625	5630	5635	5640	5645	5650	5655	5660	5665	5670	5675	5680	5685	5690	5695	5700	5705	5710	5715	5720	5725	5730	5735	5740	5745	5750	5755	5760	5765	5770	5775	5780	5785	5790	5795	5800	5805	5810	5815	5820	5825	5830	5835	5840	5845	5850	5855	5860	5865	5870	5875	5880	5885	5890	5895	5900	5905	5910	5915	5920	5925	5930	5935	5940	5945	5950	5955	5960	5965	5970	5975	5980	5985	5990	5995	6000	6005	6010	6015	6020	6025	6030	6035	6040	6045	6050	6055	6060	6065	6070	6075	6080	6085	6090	6095	6100	6105	6110	6115	6120	6125	6130	6135	6140	6145	6150	6155	6160	6165	6170	6175	6180	6185	6190	6195	6200	6205	6210	6215	6220	6225	6230	6235	6240	6245	6250	6255	6260	6265	6270	6275	6280	6285	6290	6295	6300	6305	6310	6315	6320	6325	6330	6335	6340	6345	6350	6355	6360	6365	6370	6375	6380	6385	6390	6395	6400	6405	6410	6415	6420	6425	6430	6435	6440	6445	6450	6455	6460	6465	6470	6475	6480	6485	6490	6495	6500	6505	6510	6515	6520	6525	6530	6535	6540	6545	6550	6555	6560	6565	6570	6575	6580	6585	6590	6595	6600	6605	6610	6615	6620	6625	6630	6635	6640	6645	6650	6655	6660	6665	6670	6675	6680	6685	6690	6695	6700	6705	6710	6715	6720	6725	6730	6735	6740	6745	6750	6755	6760	6765	6770	6775	6780	6785	6790	6795	6800	6805	6810	6815	6820	6825	6830	6835	

# Heating capacities

## 48/50UH 135

50UH 135 - Standard unit - heating mode											
Return Air (°C db)	Air Flow Rate (l/s)		Temperature Air Entering Outdoor Coil (°C wb)								
			-11	-6	-3	0	3	6	9	13	18
10	5,456	CAP	87.17	102.14	111.81	122.18	132.68	143.74	155.67	172.40	193.56
		IC	72.77	82.77	89.16	97.44	117.54	143.74	155.67	172.40	193.56
		kW	22.97	24.57	25.64	26.76	27.92	29.24	30.63	32.67	35.53
	6,820	CAP	86.61	101.53	111.15	121.53	132.13	143.17	155.29	172.52	194.69
		IC	72.78	82.92	89.41	97.76	117.76	143.17	155.29	172.52	194.69
		kW	21.60	22.89	23.73	24.61	25.52	26.53	27.59	29.19	31.49
	8,184	CAP	86.22	101.05	110.72	121.10	131.76	142.80	155.05	172.63	195.36
		IC	72.78	82.96	89.57	97.97	117.91	142.80	155.05	172.63	195.36
		kW	20.72	21.81	22.53	23.26	24.01	24.83	25.70	27.06	28.97
20	5,456	CAP	84.49	98.66	107.87	117.70	127.49	138.28	149.75	165.80	185.82
		IC	68.54	77.64	83.50	91.37	110.99	138.28	149.75	165.80	185.82
		kW	28.59	30.43	31.62	32.89	34.18	35.60	37.18	39.43	42.34
	6,820	CAP	83.71	97.85	107.02	116.82	126.68	137.50	149.13	165.56	186.36
		IC	68.37	77.62	83.58	91.49	110.96	137.50	149.13	165.56	186.36
		kW	27.05	28.53	29.47	30.49	31.51	32.62	33.84	35.59	37.93
	8,184	CAP	83.25	97.31	106.45	116.24	126.14	136.98	148.72	165.43	186.67
		IC	68.29	77.60	83.62	91.56	110.93	136.98	148.72	165.43	186.67
		kW	26.03	27.29	28.09	28.95	29.80	30.72	31.73	33.17	35.11
27	5,456	CAP	82.92	96.44	105.30	114.68	123.82	134.53	145.46	160.71	179.60
		IC	65.88	74.29	79.78	87.31	106.46	134.53	145.46	160.71	179.60
		kW	33.13	35.09	36.40	37.74	39.13	40.59	42.16	44.34	47.20
	6,820	CAP	82.04	95.50	104.29	113.65	122.83	133.56	144.64	160.46	180.26
		IC	65.63	74.17	79.73	87.29	106.26	133.56	144.64	160.46	180.26
		kW	31.45	33.03	34.09	35.15	36.24	37.41	38.66	40.53	42.82
	8,184	CAP	81.50	94.87	103.62	112.97	122.16	132.89	144.08	160.16	180.63
		IC	65.50	74.08	79.69	87.28	106.11	132.89	144.08	160.16	180.63
		kW	30.33	31.69	32.59	33.48	34.39	35.37	36.42	37.98	39.99

## 48/50UH 160

50UH 160 - Standard unit - heating mode											
Return Air (°C db)	Air Flow Rate (l/s)		Temperature Air Entering Outdoor Coil (°C wb)								
			-11	-6	-3	0	3	6	9	13	18
10	5,736	CAP	104.93	122.95	134.58	147.07	159.71	173.02	187.38	207.52	232.99
		IC	87.60	99.63	107.32	117.29	141.49	173.02	187.38	207.52	232.99
		kW	27.88	29.82	31.12	32.48	33.89	35.49	37.17	39.65	43.12
	7,170	CAP	104.25	122.21	133.79	146.29	159.04	172.34	186.93	207.66	234.35
		IC	87.61	99.81	107.62	117.67	141.75	172.34	186.93	207.66	234.35
		kW	26.22	27.78	28.81	29.87	30.97	32.20	33.48	35.42	38.21
	8,604	CAP	103.78	121.63	133.27	145.77	158.60	171.89	186.63	207.80	235.16
		IC	87.60	99.86	107.82	117.93	141.93	171.89	186.63	207.80	235.16
		kW	25.14	26.47	27.34	28.23	29.15	30.13	31.19	32.84	35.16
20	5,736	CAP	101.70	118.76	129.84	141.67	153.46	166.44	180.26	199.58	223.67
		IC	82.50	93.45	100.52	109.98	133.60	166.44	180.26	199.58	223.67
		kW	34.69	36.93	38.37	39.92	41.48	43.21	45.13	47.85	51.39
	7,170	CAP	100.76	117.78	128.82	140.62	152.49	165.51	179.51	199.29	224.32
		IC	82.29	93.43	100.61	110.12	133.57	165.51	179.51	199.29	224.32
		kW	32.82	34.62	35.77	37.00	38.24	39.59	41.07	43.19	46.03
	8,604	CAP	100.21	117.13	128.13	139.92	151.83	164.88	179.02	199.13	224.70
		IC	82.21	93.41	100.66	110.21	133.53	164.88	179.02	199.13	224.70
		kW	31.59	33.12	34.09	35.13	36.16	37.28	38.51	40.26	42.61
27	5,736	CAP	99.82	116.09	126.75	138.05	149.04	161.93	175.09	193.45	216.19
		IC	79.30	89.42	96.03	105.09	128.14	161.93	175.09	193.45	216.19
		kW	40.21	42.58	44.17	45.80	47.49	49.27	51.17	53.82	57.28
	7,170	CAP	98.75	114.95	125.54	136.80	147.85	160.76	174.11	193.15	216.98
		IC	79.00	89.28	95.97	105.08	127.90	160.76	174.11	193.15	216.98
		kW	38.17	40.09	41.38	42.66	43.98	45.40	46.93	49.19	51.97
	8,604	CAP	98.10	114.19	124.72	135.98	147.05	159.96	173.43	192.79	217.42
		IC	78.85	89.17	95.92	105.06	127.72	159.96	173.43	192.79	217.42
		kW	36.82	38.47	39.56	40.63	41.74	42.92	44.20	46.10	48.53

**Legend**  
**CAP** Gross instantaneous heating capacity, kW  
**IC** Gross integrated heating capacity, kW  
**kW** Compressor power input, kW

# Heating capacities

## 48/50UH 180

50UH 180 - Standard unit - heating mode											
Return Air (°C db)	Air Flow Rate (l/s)		Temperature Air Entering Outdoor Coil (°C wb)								
			-11	-6	-3	0	3	6	9	13	18
10	7,264	CAP	115.41	135.24	148.03	161.77	175.67	190.31	206.11	228.26	256.28
		IC	96.35	109.59	118.04	129.01	155.63	190.31	206.11	228.26	256.28
		kW	30.03	32.13	33.52	34.99	36.51	38.23	40.04	42.71	46.45
	9,080	CAP	114.67	134.42	147.16	160.91	174.93	189.56	205.61	228.41	257.77
		IC	96.36	109.78	118.37	129.43	155.91	189.56	205.61	228.41	257.77
		kW	28.24	29.92	31.03	32.18	33.37	34.69	36.07	38.16	41.17
	10,896	CAP	114.16	133.79	146.59	160.34	174.45	189.07	205.28	228.57	258.66
		IC	96.36	109.84	118.59	129.72	156.11	189.07	205.28	228.57	258.66
		kW	27.09	28.51	29.45	30.41	31.40	32.46	33.60	35.38	37.87
20	7,264	CAP	111.87	130.63	142.82	155.83	168.79	183.08	198.27	219.52	246.02
		IC	90.74	102.79	110.56	120.97	146.95	183.08	198.27	219.52	246.02
		kW	37.38	39.79	41.34	43.01	44.69	46.55	48.62	51.55	55.36
	9,080	CAP	110.83	129.55	141.70	154.68	167.73	182.05	197.45	219.21	246.74
		IC	90.52	102.77	110.67	121.13	146.91	182.05	197.45	219.21	246.74
		kW	35.36	37.30	38.53	39.86	41.20	42.65	44.24	46.53	49.59
	10,896	CAP	110.22	128.84	140.93	153.91	167.01	181.36	196.91	219.03	247.15
		IC	90.42	102.74	110.71	121.22	146.87	181.36	196.91	219.03	247.15
		kW	34.03	35.68	36.73	37.85	38.96	40.16	41.48	43.37	45.90
27	7,264	CAP	109.79	127.69	139.41	151.84	163.93	178.11	192.58	212.78	237.79
		IC	87.22	98.36	105.62	115.60	140.95	178.11	192.58	212.78	237.79
		kW	43.32	45.88	47.59	49.34	51.16	53.07	55.13	57.98	61.71
	9,080	CAP	108.62	126.44	138.08	150.47	162.62	176.83	191.51	212.45	238.67
		IC	86.90	98.20	105.57	115.58	140.68	176.83	191.51	212.45	238.67
		kW	41.12	43.19	44.57	45.96	47.38	48.91	50.55	52.99	55.99
	10,896	CAP	107.91	125.61	137.19	149.57	161.74	175.94	190.76	212.06	239.15
		IC	86.72	98.09	105.51	115.56	140.49	175.94	190.76	212.06	239.15
		kW	39.66	41.44	42.61	43.77	44.96	46.24	47.61	49.66	52.28

## 48/50UH 205

50UH 205 - Standard unit - heating mode											
Return Air (°C db)	Air Flow Rate (l/s)		Temperature Air Entering Outdoor Coil (°C wb)								
			-11	-6	-3	0	3	6	9	13	18
10	7,336	CAP	130.18	152.55	166.98	182.48	198.15	214.66	232.49	257.47	289.08
		IC	108.68	123.61	133.15	145.52	175.54	214.66	232.49	257.47	289.08
		kW	35.13	37.57	39.21	40.93	42.70	44.71	46.83	49.95	54.33
	9,170	CAP	129.34	151.62	166.00	181.50	197.32	213.82	231.92	257.64	290.76
		IC	108.70	123.84	133.52	146.00	175.87	213.82	231.92	257.64	290.76
		kW	33.03	35.00	36.29	37.63	39.02	40.57	42.19	44.63	48.15
	11,004	CAP	128.77	150.91	165.35	180.86	196.77	213.27	231.56	257.82	291.76
		IC	108.69	123.90	133.77	146.32	176.09	213.27	231.56	257.82	291.76
		kW	31.68	33.35	34.44	35.57	36.72	37.96	39.30	41.37	44.29
20	7,336	CAP	126.18	147.35	161.10	175.78	190.40	206.51	223.65	247.62	277.51
		IC	102.36	115.95	124.71	136.45	165.76	206.51	223.65	247.62	277.51
		kW	43.71	46.53	48.34	50.30	52.27	54.44	56.86	60.29	64.75
	9,170	CAP	125.02	146.13	159.83	174.47	189.19	205.35	222.72	247.26	278.32
		IC	102.10	115.92	124.83	136.63	165.72	205.35	222.72	247.26	278.32
		kW	41.36	43.62	45.07	46.62	48.18	49.88	51.74	54.42	57.99
	11,004	CAP	124.33	145.33	158.97	173.61	188.38	204.57	222.11	247.06	278.79
		IC	101.99	115.89	124.88	136.74	165.67	204.57	222.11	247.06	278.79
		kW	39.80	41.73	42.95	44.27	45.56	46.97	48.51	50.73	53.68
27	7,336	CAP	123.84	144.03	157.26	171.28	184.91	200.91	217.23	240.01	268.23
		IC	98.39	110.95	119.14	130.39	158.99	200.91	217.23	240.01	268.23
		kW	50.66	53.65	55.66	57.70	59.83	62.07	64.47	67.81	72.17
	9,170	CAP	122.52	142.62	155.75	169.73	183.44	199.46	216.02	239.64	269.21
		IC	98.02	110.77	119.08	130.37	158.69	199.46	216.02	239.64	269.21
		kW	48.09	50.51	52.13	53.75	55.41	57.20	59.12	61.97	65.48
	11,004	CAP	121.72	141.68	154.75	168.72	182.44	198.46	215.18	239.20	269.76
		IC	97.82	110.64	119.01	130.35	158.47	198.46	215.18	239.20	269.76
		kW	46.38	48.46	49.84	51.19	52.59	54.08	55.68	58.08	61.15

**Legend**  
**CAP** Gross instantaneous heating capacity, kW  
**IC** Gross integrated heating capacity, kW  
**kW** Compressor power input, kW

# Fan performances

## 48/50 UA/UH 135 unit with standard static pressure

l/s	Unit External Static Pressure (Pa)									
	140		175		210		245		280	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	504	2,557	535	2,826	565	3,104	595	3,393	624	3,690
5.400	524	3,029	553	3,310	582	3,603	610	3,902	638	4,214
5.800	544	3,551	572	3,846	599	4,150	626	4,464	652	4,788
6.200	566	4,155	592	4,462	618	4,781	643	5,109	668	5,446
6.600	589	4,828	614	5,149	638	5,479	662	5,822	686	6,171
7.000	613	5,583	636	5,916	659	6,261	682	6,615	704	6,979
7.400	636	6,414	658	6,761	680	7,120	702	7,486	724	7,864
7.800	661	7,337	682	7,699	702	8,072	723	8,452	744	8,839
8.200	685	8,348	705	8,723	725	9,108	745	9,500	764	9,904
8.600	710	9,457	729	9,847	748	10,246	767	10,652	786	11,068
9.000	735	10,662	754	11,065	772	11,478	790	11,899	808	12,326
9.400	761	11,974	778	12,394	796	12,819	813	13,254	831	13,695

l/s	Unit External Static Pressure (Pa)									
	315		350		385		420		455	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	660	4,082	680	4,306	706	4,623	732	4,948	758	5,276
5.400	665	4,533	691	4,859	717	5,191	742	5,529	767	5,874
5.800	678	5,121	703	5,461	728	5,805	752	6,159	776	6,518
6.200	693	6,004	717	6,143	741	6,504	765	6,870	788	7,243
6.600	709	6,528	732	6,894	755	7,267	778	7,647	800	8,034
7.000	727	7,349	749	7,727	771	8,114	793	8,508	814	8,907
7.400	745	8,246	766	8,638	787	9,037	808	9,443	829	9,856
7.800	764	9,238	785	9,642	805	10,055	825	10,473	845	10,900
8.200	784	10,312	804	10,730	823	11,155	842	11,587	861	12,026
8.600	805	11,490	824	11,920	842	12,359	861	12,805	879	13,256
9.000	826	12,763	844	13,206	862	13,657	879	14,115	897	14,580
9.400	848	14,146	865	14,602	882	15,067	899	15,537	916	16,016

## 48/50 UA/UH 135 unit with high static pressure H1

l/s	Unit External Static Pressure (Pa)									
	350		410		470		530		590	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	680	4,241	725	4,780	769	5,338	810	5,910	850	6,496
5.400	691	4,785	735	5,350	777	5,933	818	6,531	857	7,142
5.800	703	5,378	745	5,966	786	6,573	826	7,196	864	7,833
6.200	717	6,050	758	6,661	797	7,293	836	7,940	873	8,602
6.600	732	6,789	771	7,424	809	8,077	846	8,749	883	9,437
7.000	749	7,610	786	7,751	823	8,944	859	9,637	894	10,348
7.400	766	8,507	802	9,186	837	9,883	872	10,602	906	11,334
7.800	785	9,495	819	10,195	853	10,916	886	11,655	919	12,411
8.200	804	10,567	837	11,290	869	12,032	901	12,792	933	13,571
8.600	824	11,739	855	12,483	887	13,248	918	14,029	948	14,831
9.000	844	13,006	874	13,771	905	14,557	935	15,361	964	16,182
9.400	865	14,380	894	15,168	924	15,975	952	16,800	981	17,644

l/s	Unit External Static Pressure (Pa)									
	650		710		770		830		890	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	888	7,093	925	7,703	961	8,321	996	8,951	1029	9,590
5.400	895	7,768	931	8,405	966	9,053	1000	9,711	1033	10,381
5.800	901	8,486	936	9,149	971	9,825	1005	10,511	1038	11,209
6.200	909	9,281	944	9,972	978	10,674	1011	11,388	1043	12,111
6.600	918	10,139	952	10,853	985	11,583	1018	12,322	1049	13,073
7.000	928	11,076	961	11,815	994	12,569	1026	13,334	1057	14,112
7.400	939	12,085	971	12,848	1003	13,627	1034	14,417	1065	15,219
7.800	951	13,182	983	13,971	1014	14,773	1044	15,589	1074	16,414
8.200	964	14,366	995	15,175	1025	16,000	1055	16,840	1084	17,691
8.600	978	15,647	1008	16,479	1037	17,328	1066	18,188	1095	19,065
9.000	993	17,021	1022	17,877	1051	18,746	1079	19,630	1106	20,527
9.400	1009	18,504	1037	19,381	1065	20,274	1092	21,180	1119	22,101

# Fan performances

## 48/50 UA/UH 135 unit with high static pressure H2

l/s	Unit External Static Pressure (Pa)									
	650		710		770		830		890	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	888	7,093	925	7,703	961	8,321	996	8,951	1029	9,590
5.400	895	7,768	931	8,405	966	9,053	1000	9,711	1033	10,381
5.800	901	8,486	936	9,149	971	9,825	1005	10,511	1038	11,209
6.200	909	9,281	944	9,972	978	10,674	1011	11,388	1043	12,111
6.600	918	10,139	952	10,853	985	11,583	1018	12,322	1049	13,073
7.000	928	11,076	961	11,815	994	12,569	1026	13,334	1057	14,112
7.400	939	12,085	971	12,848	1003	13,627	1034	14,417	1065	15,219
7.800	951	13,182	983	13,971	1014	14,773	1044	15,589	1074	16,414
8.200	964	14,366	995	15,175	1025	16,000	1055	16,840	1084	17,691
8.600	978	15,647	1008	16,479	1037	17,328	1066	18,188	1095	19,065
9.000	993	17,021	1022	17,877	1051	18,746	1079	19,630	1106	20,527
9.400	1009	18,504	1037	19,381	1065	20,274	1092	21,180	1119	22,101

l/s	Unit External Static Pressure (Pa)									
	925		960		995		1030		1065	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	1048	9,967	1067	10,348	1085	10,732	1103	11,118	1121	11,506
5.400	1052	10,774	1071	11,171	1089	11,574	1107	11,976	1125	12,383
5.800	1056	11,618	1075	12,032	1093	12,450	1111	12,871	1128	13,294
6.200	1062	12,538	1080	12,969	1098	13,403	1115	13,840	1133	14,280
6.600	1068	13,517	1085	13,964	1103	14,412	1121	14,866	1138	15,321
7.000	1075	14,570	1092	15,033	1110	15,498	1127	15,968	1144	16,440
7.400	1082	15,693	1100	16,170	1117	16,651	1133	17,135	1150	17,623
7.800	1091	16,902	1108	17,395	1125	17,891	1141	18,390	1158	18,893
8.200	1100	18,193	1117	18,700	1133	19,209	1150	19,723	1166	20,241
8.600	1111	19,581	1127	20,099	1143	20,625	1159	21,152	1175	21,685
9.000	1122	21,057	1138	21,590	1154	22,129	1169	22,671	1185	23,217
9.400	1135	22,643	1150	23,189	1165	23,740	1181	24,296	1196	24,856

## 48/50 UA/UH 135 unit with VAV option

l/s	Unit External Static Pressure (Pa)											
	140		175		210		245		315		410	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	504	2,596	535	2,869	565	3,152	595	3,444	660	4,144	725	4,928
5.400	524	3,075	553	3,360	582	3,658	610	3,962	665	4,602	735	5,515
5.800	544	3,605	572	3,904	599	4,214	626	4,532	678	5,199	745	6,150
6.200	566	4,218	592	4,530	618	4,854	643	5,187	693	6,095	758	6,867
6.600	589	4,902	614	5,228	638	5,563	662	5,911	709	6,627	771	7,653
7.000	613	5,669	636	6,007	659	6,356	682	6,716	727	7,461	786	7,991
7.400	636	6,512	658	6,865	680	7,229	702	7,600	745	8,372	802	9,470
7.800	661	7,449	682	7,816	702	8,195	723	8,581	764	9,379	819	10,510
8.200	685	8,475	705	8,856	725	9,247	745	9,645	784	10,469	837	11,639
8.600	710	9,602	729	9,997	748	10,402	767	10,815	805	11,666	855	12,869
9.000	735	10,824	754	11,234	772	11,654	790	12,080	826	12,957	874	14,197
9.400	761	12,157	778	12,584	796	13,015	813	13,456	848	14,362	894	15,637

l/s	Unit External Static Pressure (Pa)											
	530		650		770		925		995		1065	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	810	6,093	888	7,313	961	8,578	1048	10,275	1085	11,064	1121	11,862
5.400	818	6,733	895	8,008	966	9,333	1052	11,107	1089	11,932	1125	12,766
5.800	826	7,418	901	8,749	971	10,129	1056	11,977	1093	12,835	1128	13,705
6.200	836	8,185	909	9,568	978	11,004	1062	12,926	1098	13,818	1133	14,722
6.600	846	9,019	918	10,453	985	11,941	1068	13,935	1103	14,858	1138	15,795
7.000	859	9,935	928	11,419	994	12,957	1075	15,021	1110	15,977	1144	16,948
7.400	872	10,930	939	12,459	1003	14,048	1082	16,179	1117	17,166	1150	18,168
7.800	886	12,015	951	13,590	1014	15,230	1091	17,425	1125	18,444	1158	19,477
8.200	901	13,188	964	14,810	1025	16,495	1100	18,755	1133	19,803	1166	20,867
8.600	918	14,463	978	16,131	1037	17,864	1111	20,186	1143	21,263	1175	22,356
9.000	935	15,836	993	17,547	1051	19,326	1122	21,708	1154	22,813	1185	23,935
9.400	952	17,320	1009	19,077	1065	20,901	1135	23,343	1165	24,474	1196	25,625

Out of fan scope



# Fan performances

## 48/50 UA/UH 160 unit with standard static pressure

l/s	Unit External Static Pressure (Pa)									
	140		175		210		245		280	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	504	2,557	535	2,826	565	3,104	595	3,393	624	3,690
5.400	524	3,029	553	3,310	582	3,603	610	3,902	638	4,214
5.800	544	3,551	572	3,846	599	4,150	626	4,464	652	4,788
6.200	566	4,155	592	4,462	618	4,781	643	5,109	668	5,446
6.600	589	4,828	614	5,149	638	5,479	662	5,822	686	6,171
7.000	613	5,583	636	5,916	659	6,261	682	6,615	704	6,979
7.400	636	6,414	658	6,761	680	7,120	702	7,486	724	7,864
7.800	661	7,337	682	7,699	702	8,072	723	8,452	744	8,839
8.200	685	8,348	705	8,723	725	9,108	745	9,500	764	9,904
8.600	710	9,457	729	9,847	748	10,246	767	10,652	786	11,068
9.000	735	10,662	754	11,065	772	11,478	790	11,899	808	12,326
9.400	761	11,974	778	12,394	796	12,819	813	13,254	831	13,695

l/s	Unit External Static Pressure (Pa)									
	315		350		385		420		455	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	660	4,082	680	4,306	706	4,623	732	4,948	758	5,276
5.400	665	4,533	691	4,859	717	5,191	742	5,529	767	5,874
5.800	678	5,121	703	5,461	728	5,805	752	6,159	776	6,518
6.200	693	6,004	717	6,143	741	6,504	765	6,870	788	7,243
6.600	709	6,528	732	6,894	755	7,267	778	7,647	800	8,034
7.000	727	7,349	749	7,727	771	8,114	793	8,508	814	8,907
7.400	745	8,246	766	8,638	787	9,037	808	9,443	829	9,856
7.800	764	9,238	785	9,642	805	10,055	825	10,473	845	10,900
8.200	784	10,312	804	10,730	823	11,155	842	11,587	861	12,026
8.600	805	11,490	824	11,920	842	12,359	861	12,805	879	13,256
9.000	826	12,763	844	13,206	862	13,657	879	14,115	897	14,580
9.400	848	14,146	865	14,602	882	15,067	899	15,537	916	16,016

## 48/50 UA/UH 160 unit with high static pressure H1

l/s	Unit External Static Pressure (Pa)									
	350		410		470		530		590	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	680	4,241	725	4,780	769	5,338	810	5,910	850	6,496
5.400	691	4,785	735	5,350	777	5,933	818	6,531	857	7,142
5.800	703	5,378	745	5,966	786	6,573	826	7,196	864	7,833
6.200	717	6,050	758	6,661	797	7,293	836	7,940	873	8,602
6.600	732	6,789	771	7,424	809	8,077	846	8,749	883	9,437
7.000	749	7,610	786	7,751	823	8,944	859	9,637	894	10,348
7.400	766	8,507	802	9,186	837	9,883	872	10,602	906	11,334
7.800	785	9,495	819	10,195	853	10,916	886	11,655	919	12,411
8.200	804	10,567	837	11,290	869	12,032	901	12,792	933	13,571
8.600	824	11,739	855	12,483	887	13,248	918	14,029	948	14,831
9.000	844	13,006	874	13,771	905	14,557	935	15,361	964	16,182
9.400	865	14,380	894	15,168	924	15,975	952	16,800	981	17,644

l/s	Unit External Static Pressure (Pa)									
	650		710		770		830		890	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	888	7,093	925	7,703	961	8,321	996	8,951	1029	9,590
5.400	895	7,768	931	8,405	966	9,053	1000	9,711	1033	10,381
5.800	901	8,486	936	9,149	971	9,825	1005	10,511	1038	11,209
6.200	909	9,281	944	9,972	978	10,674	1011	11,388	1043	12,111
6.600	918	10,139	952	10,853	985	11,583	1018	12,322	1049	13,073
7.000	928	11,076	961	11,815	994	12,569	1026	13,334	1057	14,112
7.400	939	12,085	971	12,848	1003	13,627	1034	14,417	1065	15,219
7.800	951	13,182	983	13,971	1014	14,773	1044	15,589	1074	16,414
8.200	964	14,366	995	15,175	1025	16,000	1055	16,840	1084	17,691
8.600	978	15,647	1008	16,479	1037	17,328	1066	18,188	1095	19,065
9.000	993	17,021	1022	17,877	1051	18,746	1079	19,630	1106	20,527
9.400	1009	18,504	1037	19,381	1065	20,274	1092	21,180	1119	22,101

# Fan performances

## 48/50 UA/UH 160 unit with high static pressure H2

l/s	Unit External Static Pressure (Pa)									
	650		710		770		830		890	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	888	7,093	925	7,703	961	8,321	996	8,951	1029	9,590
5.400	895	7,768	931	8,405	966	9,053	1000	9,711	1033	10,381
5.800	901	8,486	936	9,149	971	9,825	1005	10,511	1038	11,209
6.200	909	9,281	944	9,972	978	10,674	1011	11,388	1043	12,111
6.600	918	10,139	952	10,853	985	11,583	1018	12,322	1049	13,073
7.000	928	11,076	961	11,815	994	12,569	1026	13,334	1057	14,112
7.400	939	12,085	971	12,848	1003	13,627	1034	14,417	1065	15,219
7.800	951	13,182	983	13,971	1014	14,773	1044	15,589	1074	16,414
8.200	964	14,366	995	15,175	1025	16,000	1055	16,840	1084	17,691
8.600	978	15,647	1008	16,479	1037	17,328	1066	18,188	1095	19,065
9.000	993	17,021	1022	17,877	1051	18,746	1079	19,630	1106	20,527
9.400	1009	18,504	1037	19,381	1065	20,274	1092	21,180	1119	22,101

l/s	Unit External Static Pressure (Pa)									
	925		960		995		1030		1065	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	1048	9,967	1067	10,348	1085	10,732	1103	11,118	1121	11,506
5.400	1052	10,774	1071	11,171	1089	11,574	1107	11,976	1125	12,383
5.800	1056	11,618	1075	12,032	1093	12,450	1111	12,871	1128	13,294
6.200	1062	12,538	1080	12,969	1098	13,403	1115	13,840	1133	14,280
6.600	1068	13,517	1085	13,964	1103	14,412	1121	14,866	1138	15,321
7.000	1075	14,570	1092	15,033	1110	15,498	1127	15,968	1144	16,440
7.400	1082	15,693	1100	16,170	1117	16,651	1133	17,135	1150	17,623
7.800	1091	16,902	1108	17,395	1125	17,891	1141	18,390	1158	18,893
8.200	1100	18,193	1117	18,700	1133	19,209	1150	19,723	1166	20,241
8.600	1111	19,581	1127	20,099	1143	20,625	1159	21,152	1175	21,685
9.000	1122	21,057	1138	21,590	1154	22,129	1169	22,671	1185	23,217
9.400	1135	22,643	1150	23,189	1165	23,740	1181	24,296	1196	24,856

## 48/50 UA/UH 160 unit with VAV option

l/s	Unit External Static Pressure (Pa)											
	140		175		210		245		315		410	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	504	2,596	535	2,869	565	3,152	595	3,444	660	4,144	725	4,928
5.400	524	3,075	553	3,360	582	3,658	610	3,962	665	4,602	735	5,515
5.800	544	3,605	572	3,904	599	4,214	626	4,532	678	5,199	745	6,150
6.200	566	4,218	592	4,530	618	4,854	643	5,187	693	6,095	758	6,867
6.600	589	4,902	614	5,228	638	5,563	662	5,911	709	6,627	771	7,653
7.000	613	5,669	636	6,007	659	6,356	682	6,716	727	7,461	786	8,511
7.400	636	6,512	658	6,865	680	7,229	702	7,600	745	8,372	802	9,470
7.800	661	7,449	682	7,816	702	8,195	723	8,581	764	9,379	819	10,510
8.200	685	8,475	705	8,856	725	9,247	745	9,645	784	10,469	837	11,639
8.600	710	9,602	729	9,997	748	10,402	767	10,815	805	11,666	855	12,869
9.000	735	10,824	754	11,234	772	11,654	790	12,080	826	12,957	874	14,197
9.400	761	12,157	778	12,584	796	13,015	813	13,456	848	14,362	894	15,637

l/s	Unit External Static Pressure (Pa)											
	530		650		770		925		995		1065	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5.000	810	6,093	888	7,313	961	8,578	1048	10,275	1085	11,064	1121	11,862
5.400	818	6,733	895	8,008	966	9,333	1052	11,107	1089	11,932	1125	12,766
5.800	826	7,418	901	8,749	971	10,129	1056	11,977	1093	12,835	1128	13,705
6.200	836	8,185	909	9,568	978	11,004	1062	12,926	1098	13,818	1133	14,722
6.600	846	9,019	918	10,453	985	11,941	1068	13,935	1103	14,858	1138	15,795
7.000	859	9,935	928	11,419	994	12,957	1075	15,021	1110	15,977	1144	16,948
7.400	872	10,930	939	12,459	1003	14,048	1082	16,179	1117	17,166	1150	18,168
7.800	886	12,015	951	13,590	1014	15,230	1091	17,425	1125	18,444	1158	19,477
8.200	901	13,188	964	14,810	1025	16,495	1100	18,755	1133	19,803	1166	20,867
8.600	918	14,463	978	16,131	1037	17,864	1111	20,186	1143	21,263	1175	22,356
9.000	935	15,836	993	17,547	1051	19,326	1122	21,708	1154	22,813	1185	23,935
9.400	952	17,320	1009	19,077	1065	20,901	1135	23,343	1165	24,474	1196	25,625

# Fan performances

## 48/50 UA/UH 180 unit with standard static pressure

l/s	Unit External Static Pressure (Pa)									
	140		175		210		245		280	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	519	3,822	551	4,237	582	4,668	613	5,113	642	5,569
7.400	534	4,325	565	4,759	595	5,205	624	5,664	652	6,139
7.800	549	4,844	579	5,289	607	5,753	636	6,227	663	6,716
8.200	564	5,399	592	5,863	620	6,341	647	6,830	674	7,334
8.600	580	6,050	607	6,529	634	7,022	662	7,529	686	8,048
9.000	596	6,713	622	7,209	648	7,717	674	8,235	698	8,769
9.400	612	7,422	637	7,930	662	8,452	687	8,989	711	9,537
9.800	630	8,257	654	8,783	678	9,320	702	9,872	725	10,438
10.200	646	9,085	670	9,626	693	10,181	716	10,747	739	11,325
10.600	663	9,982	686	10,538	709	11,108	731	11,689	753	12,281
11.000	681	10,994	703	11,564	725	12,149	746	12,748	768	13,359
11.400	699	12,024	720	12,612	741	13,212	762	13,822	783	14,448

l/s	Unit External Static Pressure (Pa)									
	315		350		385		420		455	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	670	6,036	698	6,510	725	6,992	751	7,485	776	7,985
7.400	680	6,621	707	7,113	733	7,614	758	8,125	783	8,644
7.800	690	7,213	716	7,724	742	8,243	766	8,769	791	9,302
8.200	700	7,845	726	8,371	751	8,905	775	9,449	799	10,001
8.600	712	8,577	736	9,118	761	9,670	784	10,229	808	10,799
9.000	723	9,317	747	9,872	771	10,438	794	11,012	816	11,597
9.400	735	10,100	758	10,670	781	11,251	804	11,840	826	12,439
9.800	748	11,016	771	11,601	793	12,200	816	12,807	837	13,421
10.200	761	11,917	783	12,517	805	13,131	827	13,752	848	14,385
10.600	775	12,888	796	13,506	816	14,131	838	14,768	859	15,415
11.000	789	13,977	810	14,609	830	15,253	851	15,908	871	16,570
11.400	803	15,084	824	15,731	844	16,390	863	17,055	883	17,736

## 48/50 UA/UH 180 unit with high static pressure H1

l/s	Unit External Static Pressure (Pa)									
	350		410		470		530		590	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	698	6,411	743	7,234	786	8,078	828	8,947	867	9,831
7.400	707	7,005	751	7,857	794	8,733	834	9,631	873	10,548
7.800	716	7,607	759	8,487	801	9,389	841	10,316	880	11,261
8.200	726	8,244	768	9,150	809	10,102	848	11,037	886	12,011
8.600	736	8,979	778	9,918	817	10,878	856	11,863	893	12,866
9.000	747	9,722	787	10,682	826	11,671	864	12,681	901	13,714
9.400	758	10,508	797	11,493	836	12,507	873	13,547	909	14,605
9.800	771	11,424	809	12,439	846	13,482	883	14,547	918	15,637
10.200	783	12,326	820	13,366	857	14,435	892	15,528	927	16,644
10.600	796	13,301	832	14,366	868	15,456	902	16,575	936	17,716
11.000	810	14,387	845	15,481	879	16,601	913	17,745	946	18,912
11.400	824	15,492	858	16,608	892	17,752	925	18,922	957	20,118

l/s	Unit External Static Pressure (Pa)									
	650		710		770		830		890	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	905	10,736	942	11,656	977	12,591	1011	13,540	1045	14,507
7.400	911	11,486	947	12,439	982	13,406	1016	14,391	1049	15,387
7.800	917	12,229	953	13,210	987	14,210	1021	15,224	1053	16,253
8.200	923	13,007	958	14,018	992	15,047	1026	16,090	1058	17,151
8.600	929	13,891	964	14,934	998	15,996	1031	17,071	1063	18,162
9.000	936	14,768	971	15,840	1004	16,927	1037	18,035	1069	19,154
9.400	943	15,688	977	16,785	1011	17,905	1043	19,038	1074	20,187
9.800	952	16,745	986	17,876	1018	19,024	1050	20,190	1081	21,371
10.200	960	17,778	993	18,937	1025	20,111	1057	21,302	1087	22,512
10.600	969	18,879	1002	20,063	1033	21,266	1064	22,487	1094	23,725
11.000	979	20,103	1010	21,317	1042	22,548	1072	23,798	1102	25,066
11.400	989	21,335	1019	22,574	1050	23,831	1080	25,109	1110	26,402

Out of fan scope

# Fan performances

48/50 UA/UH 180 unit with high static pressure H2

l/s	Unit External Static Pressure (Pa)											
	770		830		890		950		1005		1030	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	977	12,591	1011	13,540	1045	14,507	1077	15,503	1105	16,412	1118	16,832
7.400	982	13,406	1016	14,391	1049	15,387	1081	16,383	1109	17,321	1122	17,752
7.800	987	14,210	1021	15,224	1053	16,253	1085	17,296	1113	18,263	1126	18,709
8.200	992	15,047	1026	16,090	1058	17,151	1090	18,245	1118	19,241	1130	19,698
8.600	998	15,996	1031	17,071	1063	18,162	1094	19,248	1122	20,274	1135	20,741
9.000	1004	16,927	1037	18,035	1069	19,154	1100	20,288	1127	21,342	1140	21,827
9.400	1011	17,905	1043	19,038	1074	20,187	1105	21,375	1132	22,454	1144	22,950
9.800	1018	19,024	1050	20,190	1081	21,371	1111	22,541	1138	23,653	1150	24,160
10.200	1025	20,111	1057	21,302	1087	22,512	1117	23,736	1144	24,874	1156	25,395
10.600	1033	21,266	1064	22,487	1094	23,725	1124	25,004	1150	26,167	1162	26,699
11.000	1042	22,548	1072	23,798	1102	25,066	1131	26,323	1157	27,511	1169	28,054
11.400	1050	23,831	1080	25,109	1110	26,402	1138	27,714	1164	28,931	1176	29,485

l/s	Unit External Static Pressure (Pa)											
	1055		1080		1105		1130		1155		1180	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	1131	17,253	1143	17,673	1156	18,097	1168	18,524	1180	18,951	1192	19,382
7.400	1135	18,187	1147	18,622	1159	19,060	1172	19,498	1184	19,940	1196	20,382
7.800	1139	19,154	1151	19,603	1163	20,053	1175	20,505	1187	20,962	1199	21,418
8.200	1143	20,158	1155	20,618	1167	21,081	1179	21,549	1191	22,016	1203	22,487
8.600	1147	21,215	1159	21,690	1172	22,164	1184	22,642	1195	23,124	1207	23,610
9.000	1152	22,309	1164	22,798	1176	23,287	1188	23,780	1200	24,272	1211	24,769
9.400	1157	23,447	1169	23,950	1181	24,450	1192	24,957	1204	25,461	1216	25,971
9.800	1163	24,671	1174	25,182	1186	25,696	1198	26,214	1210	26,736	1221	27,257
10.200	1168	25,917	1180	26,442	1192	26,971	1203	27,500	1215	28,032	1226	28,568
10.600	1174	27,235	1186	27,771	1198	28,311	1209	28,855	1220	29,398	1232	28,847
11.000	1181	28,601	1192	29,152	1204	29,706	1215	30,260	1226	30,818	1238	31,376
11.400	1188	30,046	1199	30,608	1210	31,173	1222	31,738	1233	32,310	1244	32,879

 Out of fan scope



# Fan performances

48/50 UA/UH 180 unit with VAV option

l/s	Unit External Static Pressure (Pa)									
	140		245		315		410		470	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	519	3,880	613	5,191	670	6,128	743	7,457	786	8,327
7.400	534	4,391	624	5,751	680	6,722	751	8,100	794	9,003
7.800	549	4,918	636	6,322	690	7,323	759	8,749	801	9,679
8.200	564	5,482	647	6,934	700	7,965	768	9,433	809	10,415
8.600	580	6,143	662	7,644	712	8,708	778	10,224	817	11,214
9.000	596	6,815	674	8,361	723	9,459	787	11,012	826	12,032
9.400	612	7,536	687	9,126	735	10,254	797	11,849	836	12,894
9.800	630	8,383	702	10,023	748	11,184	809	12,823	846	13,899
10.200	646	9,224	716	10,911	761	12,099	820	13,779	857	14,881
10.600	663	10,135	731	11,867	775	13,085	832	14,810	868	15,934
11.000	681	11,162	746	12,943	789	14,190	845	15,960	879	17,114
11.400	699	12,207	762	14,033	803	15,314	858	17,121	892	18,302

l/s	Unit External Static Pressure (Pa)									
	530		590		650		770		830	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	828	9,224	867	10,135	905	11,068	977	12,980	1011	13,959
7.400	834	9,929	873	10,874	911	11,841	982	13,820	1016	14,836
7.800	841	10,635	880	11,610	917	12,607	987	14,649	1021	15,695
8.200	848	11,378	886	12,383	923	13,410	992	15,512	1026	16,587
8.600	856	12,230	893	13,264	929	14,321	998	16,490	1031	17,599
9.000	864	13,074	901	14,138	936	15,224	1004	17,450	1037	18,593
9.400	873	13,966	909	15,056	943	16,173	1011	18,458	1043	19,627
9.800	883	14,997	918	16,121	952	17,263	1018	19,612	1050	20,815
10.200	892	16,009	927	17,159	960	18,328	1025	20,732	1057	21,961
10.600	902	17,088	936	18,264	969	19,463	1033	21,924	1064	23,182
11.000	913	18,294	946	19,496	979	20,725	1042	23,246	1072	24,534
11.400	925	19,508	957	20,740	989	21,995	1050	24,568	1.080	25,886

l/s	Unit External Static Pressure (Pa)							
	950		1055		1105		1180	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	1077	15,983	1.131	17,786	1.156	18,656	1.192	19,982
7.400	1081	16,890	1.135	18,750	1.159	19,650	1.196	21,013
7.800	1085	17,831	1.139	19,747	1.163	20,673	1.199	22,081
8.200	1090	18,809	1.143	20,781	1.167	21,733	1.203	23,182
8.600	1094	19,844	1.147	21,871	1.172	22,850	1.207	24,340
9.000	1100	20,915	1.152	22,999	1.176	24,007	1.211	25,535
9.400	1105	22,036	1.157	24,172	1.181	25,206	1.216	26,774
9.800	1111	23,238	1.163	25,434	1.186	26,491	1.221	28,100
10.200	1117	24,470	1.168	26,718	1.192	27,805	1.226	29,452
10.600	1.124	25,777	1.174	28,078	1.198	29,187	1.232	29,739
11.000	1.131	27,137	1.181	29,486	1.204	30,624	1.238	32,346
11.400	1.138	28,571	1.188	30,976	1.210	32,137	1.244	33,896

# Fan performances

## 48/50 UA/UH 205 unit with standard static pressure

l/s	Unit External Static Pressure (Pa)									
	140		175		210		245		280	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	497	3,546	529	3,950	561	4,373	592	4,807	622	5,256
7.400	510	4,002	541	4,425	572	4,859	602	5,311	631	5,771
7.800	523	4,473	553	4,907	583	5,355	611	5,819	640	6,297
8.200	537	4,980	566	5,425	594	5,889	622	6,367	649	6,860
8.600	552	5,576	579	6,039	607	6,518	633	7,010	660	7,514
9.000	566	6,183	593	6,657	619	7,150	645	7,658	671	8,176
9.400	581	6,834	607	7,323	632	7,827	657	8,349	682	8,883
9.800	597	7,592	622	8,096	646	8,618	671	9,151	694	9,699
10.200	613	8,357	637	8,875	660	9,409	684	9,957	707	10,519
10.600	629	9,170	652	9,703	674	10,251	697	10,814	719	11,387
11.000	646	10,111	668	10,659	690	11,222	712	11,799	733	12,388
11.400	662	11,034	683	11,597	704	12,175	725	12,763	746	13,366

l/s	Unit External Static Pressure (Pa)									
	315		350		385		420		455	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	651	5,712	679	6,183	706	6,661	733	7,147	759	7,643
7.400	659	6,245	686	6,731	713	7,227	739	7,731	764	8,243
7.800	667	6,786	694	7,286	720	7,798	745	8,316	770	8,842
8.200	676	7,364	702	7,875	727	8,401	752	8,934	776	9,478
8.600	686	8,033	711	8,563	736	9,103	760	9,655	784	10,214
9.000	696	8,710	720	9,254	744	9,806	768	10,372	791	10,946
9.400	706	9,427	730	9,986	754	10,552	777	11,134	799	11,722
9.800	718	10,258	741	10,832	764	11,417	786	12,009	809	12,616
10.200	730	11,093	752	11,678	774	12,278	796	12,884	818	13,502
10.600	742	11,976	763	12,575	785	13,186	806	13,808	828	14,440
11.000	755	12,991	776	13,605	797	14,231	818	14,867	838	15,514
11.400	767	13,984	788	14,609	808	15,249	829	15,900	849	16,559

## 48/50 UA/UH 205 unit with high static pressure H1

l/s	Unit External Static Pressure (Pa)									
	350		410		470		530		590	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	679	6,089	725	6,900	769	7,737	811	8,596	852	9,476
7.400	686	6,629	731	7,473	775	8,338	816	9,226	856	10,135
7.800	694	7,176	738	8,041	780	8,936	821	9,852	860	10,787
8.200	702	7,755	745	8,650	787	9,566	828	10,512	865	11,475
8.600	711	8,433	753	9,353	794	10,298	833	11,269	871	12,261
9.000	720	9,113	761	10,055	801	11,026	840	12,022	877	13,040
9.400	730	9,834	770	10,801	809	11,794	847	12,815	883	13,862
9.800	741	10,667	780	11,660	818	12,681	855	13,728	891	14,800
10.200	752	11,501	790	12,515	828	13,562	863	14,634	899	15,731
10.600	763	12,384	800	13,424	837	14,489	872	15,586	906	16,706
11.000	776	13,399	812	14,460	847	15,554	882	16,673	915	17,821
11.400	788	14,387	823	15,474	857	16,590	891	17,734	924	18,904

l/s	Unit External Static Pressure (Pa)									
	650		710		770		830		890	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	890	10,370	927	11,283	963	12,214	998	13,159	1.031	14,119
7.400	894	11,062	931	12,008	967	12,968	1.001	13,946	1.034	14,938
7.800	898	11,743	935	12,718	970	13,706	1.004	14,713	1.037	15,735
8.200	903	12,457	939	13,460	974	14,478	1.007	15,514	1.040	16,564
8.600	908	13,275	943	14,308	978	15,355	1.012	16,423	1.044	17,506
9.000	913	14,080	948	15,141	983	16,217	1.016	17,314	1.048	18,423
9.400	919	14,927	954	16,014	987	17,119	1.019	18,241	1.052	19,379
9.800	926	15,894	960	17,010	993	18,144	1.026	19,296	1.057	20,462
10.200	933	16,851	966	17,992	999	19,151	1.031	20,328	1.062	21,523
10.600	940	17,850	973	19,017	1.005	20,205	1.037	21,407	1.068	22,632
11.000	949	18,991	981	20,183	1.013	21,396	1.044	22,632	1.074	23,881
11.400	956	20,100	988	21,317	1.019	22,552	1.050	23,812	1.080	25,087

Out of fan scope

# Fan performances

## 48/50 UA/UH 205 unit with high static pressure H2

l/s	Unit External Static Pressure (Pa)									
	830		890		920		960		1000	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	998	13,159	1.031	14,119	1.048	14,619	1.069	15,275	1090	15,934
7.400	1001	13,946	1034	14,938	1051	15,423	1072	16,093	1093	16,774
7.800	1004	14,713	1037	15,735	1053	16,253	1075	16,948	1096	17,647
8.200	1007	15,514	1040	16,564	1056	17,115	1078	17,829	1098	18,549
8.600	1012	16,423	1044	17,506	1060	18,031	1081	18,767	1102	19,506
9.000	1016	17,314	1048	18,423	1064	18,984	1085	19,737	1105	20,498
9.400	1019	18,241	1052	19,379	1068	19,976	1089	20,752	1109	21,530
9.800	1026	19,296	1057	20,462	1073	21,031	1093	21,824	1113	22,624
10.200	1031	20,328	1062	21,523	1078	22,128	1098	22,939	1118	23,758
10.600	1037	21,407	1068	22,632	1083	23,273	1103	24,102	1122	24,939
11.000	1044	22,632	1074	23,881	1089	24,486	1.109	25,337	1.128	26,192
11.400	1050	23,812	1080	25,087	1095	25,732	1.114	26,598	1.133	27,471

l/s	Unit External Static Pressure (Pa)									
	1040		1080		1120		1160		1200	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	1111	16,597	1131	17,267	1.151	17,944	1.171	18,625	1.190	19,314
7.400	1113	17,459	1134	18,151	1.154	18,850	1.173	19,549	1.192	20,259
7.800	1116	18,354	1136	19,064	1.156	19,781	1.175	20,505	1.195	21,233
8.200	1119	19,277	1.139	20,009	1.158	20,748	1.178	21,491	1.197	22,240
8.600	1122	20,252	1142	21,005	1.161	21,766	1.181	22,530	1.200	23,298
9.000	1125	21,266	1145	22,038	1.164	22,816	1.184	23,602	1.203	24,392
9.400	1129	22,316	1148	23,110	1.168	23,907	1.187	24,714	1.206	25,522
9.800	1133	23,428	1152	24,240	1.172	25,058	1.191	25,884	1.209	26,714
10.200	1137	24,584	1.157	25,417	1.176	26,254	1.194	27,098	1.213	27,945
10.600	1.142	25,783	1.161	26,634	1.180	27,493	1.198	28,355	1.217	29,224
11.000	1.147	27,054	1.166	27,924	1.185	28,800	1.203	29,684	1.221	30,571
11.400	1.152	28,355	1.171	29,242	1.189	30,137	1.208	29,948	1.226	31,944

## 48/50 UA/UH 205 unit with VAV option

l/s	Unit External Static Pressure (Pa)											
	140		175		245		315		410		530	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	497	3,600	529	4,011	592	4,881	651	5,799	725	7,114	811	8,861
7.400	510	4,063	541	4,492	602	5,392	659	6,341	731	7,704	816	9,511
7.800	523	4,541	553	4,981	611	5,908	667	6,890	738	8,290	821	10,157
8.200	537	5,056	566	5,508	622	6,464	676	7,476	745	8,917	828	10,837
8.600	552	5,661	579	6,132	633	7,117	686	8,156	753	9,642	833	11,617
9.000	566	6,277	593	6,759	645	7,775	696	8,843	761	10,366	840	12,394
9.400	581	6,938	607	7,435	657	8,477	706	9,571	770	11,136	847	13,212
9.800	597	7,707	622	8,219	671	9,291	718	10,415	780	12,021	855	14,153
10.200	613	8,484	637	9,011	684	10,109	730	11,262	790	12,902	863	15,086
10.600	629	9,309	652	9,851	697	10,979	742	12,159	800	13,839	872	16,068
11.000	646	10,265	668	10,822	712	11,979	755	13,189	812	14,907	882	17,189
11.400	662	11,203	683	11,774	725	12,958	767	14,198	823	15,953	891	18,283

l/s	Unit External Static Pressure (Pa)											
	650		770		890		1040		1120		1200	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7.000	890	10,691	963	12,592	1031	14,556	1111	17,110	1151	18,499	1190	19,911
7.400	894	11,404	967	13,369	1034	15,400	1113	17,999	1154	19,433	1192	20,886
7.800	898	12,106	970	14,130	1037	16,222	1116	18,921	1156	20,393	1195	21,890
8.200	903	12,842	974	14,926	1040	17,077	1119	19,874	1158	21,390	1.197	22,928
8.600	908	13,686	978	15,829	1044	18,048	1122	20,878	1161	22,439	1.200	24,019
9.000	913	14,515	983	16,718	1048	18,992	1125	21,924	1164	23,522	1.203	25,146
9.400	919	15,389	987	17,648	1052	19,978	1129	23,007	1.168	24,646	1.206	26,311
9.800	926	16,386	993	18,705	1057	21,095	1133	24,153	1.172	25,833	1.209	27,540
10.200	933	17,372	999	19,743	1062	22,189	1.137	25,344	1.176	27,066	1.213	28,810
10.600	940	18,402	1005	20,830	1068	23,332	1.142	26,580	1.180	28,343	1.217	30,128
11.000	949	19,579	1013	22,058	1074	24,620	1.147	27,891	1.185	29,691	1.221	31,517
11.400	956	20,721	1019	23,249	1.080	25,863	1.152	29,232	1.189	31,069	1.226	32,932

Out of fan scope

# Fan performances

## Return air fan performances

### Return Fan - Opt 196 & Opt 198 - High pressure - 135-160

l/s	Unit External Static Pressure (Pa)									
	320		365		410		455		500	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5200	713	4,385	748	4,732	783	5,087	816	5,448	849	5,814
5500	725	4,882	759	5,243	792	5,611	825	5,984	857	6,366
5800	738	5,424	771	5,797	803	6,179	835	6,569	866	6,962
6100	753	6,016	784	6,403	815	6,799	846	7,200	876	7,608
6400	768	6,659	798	7,060	828	7,468	858	7,883	887	8,304
6700	784	7,356	813	7,771	842	8,193	871	8,621	899	9,055
7000	801	8,109	829	8,538	857	8,973	884	9,414	912	9,863
7300	818	8,920	845	9,362	872	9,812	899	10,266	925	10,728
7600	836	9,793	862	10,248	888	10,711	914	11,180	940	11,655
7900	854	10,730	880	11,198	905	11,674	930	12,158	955	12,645
8200	873	11,732	898	12,214	922	12,706	946	13,200	971	13,703
8500	893	12,804	916	13,300	940	13,804	964	14,314	987	14,829
8800	912	13,946	935	14,456	958	14,973	981	15,498	1004	16,026

l/s	Unit External Static Pressure (Pa)									
	545		590		635		680		725	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5200	882	6,189	913	6,566	944	6,951	974	7,340	1004	7,736
5500	888	6,753	919	7,144	949	7,543	979	7,946	1008	8,356
5800	896	7,363	926	7,769	956	8,181	985	8,598	1.013	9,020
6100	906	8,023	935	8,442	963	8,868	991	9,297	1.019	9,733
6400	916	8,733	944	9,167	972	9,605	999	10,050	1.026	10,499
6700	927	9,498	954	9,943	981	10,397	1008	10,854	1.034	11,317
7000	939	10,318	965	10,777	992	11,243	1.018	11,716	1.043	12,191
7300	952	11,196	977	11,669	1003	12,149	1.028	12,634	1.053	13,125
7600	965	12,138	990	12,625	1.015	13,116	1.040	13,615	1.064	14,118
7900	979	13,142	1.004	13,643	1.028	14,148	1.052	14,659	1.076	15,176
8200	994	14,211	1.018	14,726	1.042	15,246	1.065	15,770	1.088	16,301
8500	1.010	15,351	1.033	15,880	1.056	16,413	1.079	16,952	1.101	17,494
8800	1026	16,562	1049	17,103	1071	17,651	1093	18,203	1115	18,760

### Return Fan - Opt 197 & Opt 199 - High pressure - 180-205

l/s	Unit External Static Pressure (Pa)									
	420		455		490		525		560	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7100	778	6,648	805	7,046	832	7,448	858	7,857	884	8,270
7500	784	7,259	811	7,668	837	8,088	863	8,511	888	8,937
7900	792	7,920	818	8,343	844	8,776	869	9,213	894	9,654
8300	801	8,630	826	9,070	851	9,517	875	9,968	900	10,423
8700	810	9,398	835	9,853	859	10,311	883	10,776	907	11,247
9100	821	10,223	845	10,692	868	11,164	891	11,642	914	12,128
9500	832	11,108	855	11,590	878	12,079	901	12,572	923	13,068
9900	844	12,058	866	12,555	889	13,054	910	13,561	932	14,075
10300	856	13,072	878	13,582	900	14,096	921	14,617	942	15,145
10700	870	14,155	891	14,680	912	15,207	933	15,742	953	16,284
11100	883	15,309	904	15,847	924	16,389	944	16,938	965	17,493

l/s	Unit External Static Pressure (Pa)									
	595		630		665		700		735	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7100	909	8,689	934	9,112	658	9,542	982	9,972	1006	10,409
7500	913	9,371	937	9,811	961	10,251	985	10,699	1008	11,150
7900	918	10,101	942	10,552	965	11,010	988	11,471	1.011	11,936
8300	923	10,884	947	11,349	970	11,821	992	12,296	1.015	12,778
8700	930	11,723	952	12,202	975	12,687	997	13,177	1.019	13,673
9100	937	12,618	959	13,110	981	13,610	1003	14,117	1.024	14,624
9500	945	13,572	967	14,082	988	14,596	1009	15,113	1.030	15,637
9900	954	14,592	975	15,113	996	15,641	1.017	16,176	1.037	16,710
10300	963	15,676	984	16,214	1005	16,752	1.025	17,301	1.045	17,850
10700	973	16,829	994	17,378	1.014	17,934	1.034	18,496	1.053	19,059
11100	984	18,052	1004	18,615	1024	19,185	1043	19,762	1062	20,338



# Fan performances

## Return Fan - Opt 205 - VAV - 135-160

l/s	Unit External Static Pressure (Pa)													
	140		185		230		275		320		365		410	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5200	564	3,173	602	3,495	640	3,829	677	4,170	713	4,521	748	4,879	783	5,244
5500	583	3,630	619	3,966	655	4,312	690	4,667	725	5,033	759	5,405	792	5,784
5800	602	4,134	637	4,485	671	4,845	705	5,215	738	5,592	771	5,977	803	6,371
6100	622	4,687	656	5,052	688	5,427	721	5,811	753	6,202	784	6,601	815	7,010
6400	643	5,294	675	5,674	706	6,063	737	6,459	768	6,865	798	7,279	828	7,699
6700	664	5,955	694	6,349	725	6,753	754	7,163	784	7,584	813	8,011	842	8,446
7000	685	6,673	715	7,082	743	7,500	772	7,925	801	8,360	829	8,802	857	9,251
7300	707	7,454	735	7,877	763	8,309	791	8,749	818	9,196	845	9,652	872	10,116
7600	729	8,295	756	8,732	783	9,179	810	9,635	836	10,096	862	10,565	888	11,043
7900	751	9,200	777	9,654	803	10,116	829	10,584	854	11,062	880	11,545	905	12,035
8200	774	10,176	799	10,644	824	11,120	849	11,605	873	12,095	898	12,592	922	13,099
8500	797	11,221	821	11,706	845	12,196	869	12,693	893	13,200	916	13,712	940	14,230
8800	819	12,340	843	12,837	866	13,344	889	13,856	912	14,377	935	14,903	958	15,436

l/s	Unit External Static Pressure (Pa)													
	455		500		545		590		635		680		725	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
5200	816	5,616	849	5,993	882	6,380	913	6,769	944	7,166	974	7,567	1004	7,975
5500	825	6,169	857	6,563	888	6,961	919	7,365	949	7,776	979	8,191	1008	8,614
5800	835	6,772	866	7,178	896	7,591	926	8,009	956	8,434	985	8,864	1.013	9,299
6100	846	7,423	876	7,843	906	8,271	935	8,703	963	9,143	991	9,585	1.019	10,034
6400	858	8,127	887	8,561	916	9,003	944	9,450	972	9,902	999	10,361	1.026	10,824
6700	871	8,888	899	9,335	927	9,791	954	10,250	981	10,718	1008	11,189	1.034	11,667
7000	884	9,705	912	10,168	939	10,637	965	11,110	992	11,590	1.018	12,078	1.043	12,568
7300	899	10,584	925	11,060	952	11,542	977	12,030	1003	12,525	1.028	13,025	1.053	13,531
7600	914	11,526	940	12,016	965	12,513	990	13,015	1.015	13,522	1.040	14,036	1.064	14,555
7900	930	12,535	955	13,037	979	13,548	1.004	14,065	1.028	14,586	1.052	15,112	1.076	15,645
8200	946	13,608	971	14,127	994	14,651	1.018	15,182	1.042	15,717	1.065	16,258	1.088	16,806
8500	964	14,757	987	15,287	1.010	15,826	1.033	16,371	1.056	16,921	1.079	17,476	1.101	18,036
8800	981	15,977	1004	16,522	1026	17,075	1049	17,632	1071	18,196	1093	18,766	1115	19,340

## Return Fan - Opt 206 - VAV - 180-205

l/s	Unit External Static Pressure (Pa)													
	140		210		280		350		420		455		490	
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7100	536	3,827	600	4,537	662	5,279	721	6,053	778	6,853	805	7,264	832	7,679
7500	551	4,342	613	5,077	672	5,852	729	6,652	784	7,484	811	7,906	837	8,338
7900	568	4,908	626	5,672	684	6,471	739	7,304	792	8,165	818	8,601	844	9,048
8300	585	5,524	641	6,320	696	7,149	749	8,010	801	8,896	826	9,350	851	9,812
8700	602	6,201	656	7,026	709	7,884	760	8,774	810	9,689	835	10,158	859	10,630
9100	620	6,936	672	7,790	723	8,677	772	9,595	821	10,540	845	11,022	868	11,509
9500	638	7,733	688	8,615	737	9,531	785	10,478	832	11,451	855	11,948	878	12,453
9900	657	8,594	705	9,505	752	10,453	741	9,033	844	12,431	866	12,943	889	13,458
10300	676	9,520	722	10,464	767	11,440	812	12,446	856	13,476	878	14,002	900	14,532
10700	695	10,518	739	11,494	783	12,500	827	13,534	870	14,593	891	15,134	912	15,678
11100	714	11,588	757	12,593	800	13,631	842	14,694	883	15,782	904	16,337	924	16,896

l/s	Unit External Static Pressure (Pa)													
	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
7100	858	8,100	884	8,525	909	8,958	934	9,394	958	9,837	982	10,280	1006	10,730
7500	863	8,774	888	9,214	913	9,660	937	10,114	961	10,568	985	11,030	1008	11,494
7900	869	9,498	894	9,952	918	10,413	942	10,878	965	11,350	988	11,826	1.011	12,305
8300	875	10,276	900	10,745	923	11,221	947	11,700	970	12,186	992	12,676	1.015	13,174
8700	883	11,109	907	11,595	930	12,085	952	12,579	975	13,080	997	13,584	1.019	14,096
9100	891	12,002	914	12,503	937	13,008	959	13,516	981	14,031	1003	14,554	1.024	15,076
9500	901	12,961	923	13,473	945	13,991	967	14,518	988	15,047	1009	15,580	1.030	16,121
9900	910	13,981	932	14,510	954	15,044	975	15,580	996	16,125	1.017	16,676	1.037	17,227
10300	921	15,069	942	15,613	963	16,161	984	16,716	1005	17,270	1.025	17,836	1.045	18,402
10700	933	16,229	953	16,788	973	17,350	994	17,915	1.014	18,488	1.034	19,068	1.053	19,649
11100	944	17,461	965	18,034	984	18,611	1004	19,191	1024	19,778	1043	20,373	1062	20,967

# Pressure Drops, Options (Pa)

## 48/50 UA/UH 135 and 160

Unit Air flow rate	l/s m <sup>3</sup> /h	5.400 19.440	5.800 20.880	6.200 22.320	6.600 23.760	7.000 25.200	7.400 26.640	7.800 28.080	8.200 29.520	8.600 30.960	9.000 32.400
Opt 174 - Electric heater	73	79	85	90	96	102	108	113	119	125	125
Opt 175 - Electric heater	73	79	85	90	96	102	108	113	119	125	125
Opt 176 - Electric heater	73	79	85	90	96	102	108	113	119	125	125
Opt 180 - Hot water coil	40	45	51	56	63	69	76	83	90	98	98
Opt 181 - Hot water coil	68	77	86	95	105	115	126	137	148	160	160
Opt 210- Natural gas	70	79	85	96	108	117	130	143	152	163	163
Opt 40 - Manual damper	31	36	41	46	53	60	68	77	87	97	97
Opt 35,36,156,157 - Economizer	31	36	41	46	53	60	68	77	87	97	97
Opt 145 - G4 filter M1	0	0	0	0	0	0	0	0	0	0	0
Opt 147 - F7 filter M1	39	42	46	49	53	56	59	62	65	68	68
Opt 158 - G4+F7 filter M1	85	93	101	109	118	127	136	145	155	164	164
Opt 159 - M6+F7 filter M1	121	132	143	154	166	177	189	201	212	224	224
<b>ERM Fresh Air Flow Rate</b>	<b>l/s m<sup>3</sup>/h</b>	<b>500 1.800</b>	<b>1.100 3.960</b>	<b>1.700 6.120</b>	<b>2.300 8.280</b>	<b>2.900 10.440</b>	<b>3.500 12.600</b>	<b>4.100 14.760</b>	<b>4.700 16.920</b>	<b>5.300 19.080</b>	<b>5.900 21.240</b>
Opt 173 - Fresh air filter in ERM 13 C/S	8	18	30	43	59	78	-	-	-	-	-
Opt 160 - Fresh air filter in ERM 20 C/S	6	15	24	35	47	61	76	94	115	139	139
Opt 173 - Heat wheel in ERM 13 C	21	47	75	104	134	166	199	-	-	-	-
Opt 160 - Heat wheel in ERM 20 C	14	32	50	69	89	109	130	151	174	196	196
Opt 173 - Heat wheel in ERM 13 S	23	51	81	112	145	179	214	-	-	-	-
Opt 160 - Heat wheel in ERM 20 S	15	34	54	75	96	117	140	163	187	211	211
Total Opt 173 - ERM 13 C	29	65	105	147	193	244	-	-	-	-	-
Total Opt 160 - ERM 20 C	20	47	74	104	136	170	206	245	289	335	335
Total Opt 173 - ERM 13 S	31	69	111	155	204	257	-	-	-	-	-
Total Opt 160 - ERM 20 S	21	49	78	110	143	178	216	257	302	350	350

## 48/50 UA/UH 180

Unit Air flow rate	l/s m <sup>3</sup> /h	7.200 25.920	7.650 27.540	8.100 29.160	8.550 30.780	9.000 32.400	9.450 34.020	9.900 35.640	10.350 37.260	10.800 38.880	11.250 40.500
Opt 177 - Electric heater	71	76	80	85	90	94	99	104	108	113	113
Opt 178 - Electric heater	71	76	80	85	90	94	99	104	108	113	113
Opt 179 - Electric heater	71	76	80	85	90	94	99	104	108	113	113
Opt 182 - Hot water coil	37	41	46	50	55	60	65	70	75	81	81
Opt 183 - Hot water coil	70	78	85	93	101	110	118	126	135	143	143
Opt 211- Natural gas	84	93	102	110	123	132	144	153	166	174	174
Opt 40 - Manual damper	34	38	42	47	52	58	65	72	80	88	88
Opt 35,36,156,157 - Economizer	34	38	42	47	52	58	65	72	80	88	88
Opt 145 - G4 filter M1	0	0	0	0	0	0	0	0	0	0	0
Opt 147 - F7 filter M1	39	42	45	48	50	53	56	59	61	64	64
Opt 158 - G4+F7 filter M1	85	91	98	105	113	120	127	135	143	151	151
Opt 159 - M6+F7 filter M1	121	131	140	149	159	168	178	188	198	208	208
<b>ERM Fresh Air Flow Rate</b>	<b>l/s m<sup>3</sup>/h</b>	<b>500 1.800</b>	<b>1.300 4.680</b>	<b>2.100 7.560</b>	<b>2.900 10.440</b>	<b>3.700 13.320</b>	<b>4.500 16.200</b>	<b>5.300 19.080</b>	<b>6.100 21.960</b>	<b>6.900 24.840</b>	<b>7.700 27.720</b>
Opt 173 - Fresh air filter in ERM 18 C/S	6	18	31	47	66	88	115	-	-	-	-
Opt 160 - Fresh air filter in ERM 26 C/S	4	11	19	28	38	49	61	75	91	109	109
Opt 173 - Heat wheel in ERM 18 C	14	38	63	89	116	144	174	-	-	-	-
Opt 160 - Heat wheel in ERM 26 C	-	28	46	65	84	104	124	145	167	189	189
Opt 173 - Heat wheel in ERM 18 S	15	41	68	96	125	155	187	-	-	-	-
Opt 160 - Heat wheel in ERM 26 S	-	30	50	70	90	112	134	156	180	204	204
Total Opt 173 - ERM 18 C	20	56	94	136	182	232	289	-	-	-	-
Total Opt 160 - ERM 26 C	-	39	65	93	122	153	185	220	258	298	298
Total Opt 173 - ERM 18 S	21	59	99	143	191	243	302	-	-	-	-
Total Opt 160 - ERM 26 S	-	41	69	98	128	161	195	231	271	313	313

## 48/50 UA/UH 205

Unit Air flow rate	l/s m <sup>3</sup> /h	7.200 25.920	7.650 27.540	8.100 29.160	8.550 30.780	9.000 32.400	9.450 34.020	9.900 35.640	10.350 37.260	10.800 38.880	11.250 40.500
Opt 177 - Electric heater	71	76	80	85	90	94	99	104	108	113	113
Opt 178 - Electric heater	71	76	80	85	90	94	99	104	108	113	113
Opt 179 - Electric heater	71	76	80	85	90	94	99	104	108	113	113
Opt 182 - Hot water coil	37	41	46	50	55	60	65	70	75	81	81
Opt 183 - Hot water coil	70	78	85	93	101	110	118	126	135	143	143
Opt 211- Natural gas	84	93	102	110	123	132	144	153	166	174	174
Opt 40 - Manual damper	34	38	42	47	52	58	65	72	80	88	88
Opt 35,36,156,157 - Economizer	34	38	42	47	52	58	65	72	80	88	88
Opt 145 - G4 filter M1	0	0	0	0	0	0	0	0	0	0	0
Opt 147 - F7 filter M1	31	34	36	39	41	44	46	49	51	53	53
Opt 158 - G4+F7 filter M1	68	74	79	85	90	96	102	108	114	120	120
Opt 159 - M6+F7 filter M1	99	106	114	121	129	137	145	153	161	169	169
<b>ERM Fresh Air Flow Rate</b>	<b>l/s m<sup>3</sup>/h</b>	<b>500 1.800</b>	<b>1.300 4.680</b>	<b>2.100 7.560</b>	<b>2.900 10.440</b>	<b>3.700 13.320</b>	<b>4.500 16.200</b>	<b>5.300 19.080</b>	<b>6.100 21.960</b>	<b>6.900 24.840</b>	<b>7.700 27.720</b>
Opt 173 - Fresh air filter in ERM 18 C/S	6	18	31	47	66	88	115	-	-	-	-
Opt 160 - Fresh air filter in ERM 26 C/S	4	11	19	28	38	49	61	75	91	109	109
Opt 173 - Heat wheel in ERM 18 C	14	38	63	89	116	144	174	-	-	-	-
Opt 160 - Heat wheel in ERM 26 C	-	28	46	65	84	104	124	145	167	189	189
Opt 173 - Heat wheel in ERM 18 S	15	41	68	96	125	155	187	-	-	-	-
Opt 160 - Heat wheel in ERM 26 S	-	30	50	70	90	112	134	156	180	204	204
Total Opt 173 - ERM 18 C	20	56	94	136	182	232	289	-	-	-	-
Total Opt 160 - ERM 26 C	-	39	65	93	122	153	185	220	258	298	298
Total Opt 173 - ERM 18 S	21	59	99	143	191	243	302	-	-	-	-
Total Opt 160 - ERM 26 S	-	41	69	98	128	161	195	231	271	313	313

## Electric heaters, 48/50 UA/UH

Nominal Power Supply, V-Ph-Hz	Electric Heater	Nominal Heat Output, kW	Min./Max. Heat Output, kW	Rated Current, A	Nb. of Steps
400-3-50	Opt 174	45.0	9.0 / 45.0	65.0	4
	Opt 175	72.0	18.0 / 72.0	103.9	4
	Opt 176	108.0	27.0 / 108.0	155.8	4
400-3-50	Opt 174	45.0	9.0 / 45.0	65.0	4
	Opt 175	72.0	18.0 / 72.0	103.9	4
	Opt 176	108.0	27.0 / 108.0	155.8	4
400-3-50	Opt 177	54.0	9.0 / 54.0	77.9	4
	Opt 178	90.0	18.0 / 90.0	130.0	4
	Opt 179	144.0	36.0 / 144.0	207.8	4
400-3-50	Opt 177	54.0	9.0 / 54.0	77.9	4
	Opt 178	90.0	18.0 / 90.0	130.0	4
	Opt 179	144.0	36.0 / 144.0	207.8	4

## Gas heaters, 48UA/UH

48UA/UH	Gas heater	Gas type	Net heat input (min./max.), kW	Output (min./max.), kW	No. of steps
135	Opt 210	Natural gas	32.8 / 164	35.6 / 160	Modulating
160	Opt 210	Natural gas	32.8 / 164	35.6 / 160	Modulating
180	Opt 211	Natural gas	42 / 200	45.6 / 194.4	Modulating
205	Opt 211	Natural gas	42 / 200	45.6 / 194.4	Modulating

Heating modules		PCH080+PCH080	PCH105+PCH105
Natural Gas Heating		Opt 210	Opt 211
Net Heat Input ( Min / Max )	kW	32.8 / 164	42 / 200
Heat Output ( Min / Max )	kW	35.6 / 160	45.6 / 194.4
Natural Gas ( G20 ) rate*	l/s	0.97 / 4.82	1.06 / 5.88
	m <sup>3</sup> /h	3.48 / 17.36	3.80 / 21.16
Pilot nozzle			
Quantity		1	1
Size	mm	0,7	0,7
Weight**	kg	196	236
Power input ( 230 V-1 ph-50 Hz )**	kW	0,25	0,26
Gas connection	GAS	UNI/ISO 228/1-G 3/4"	UNI/ISO 228/1-G 3/4"

\*Natural gas G20 net calorific value 34.02 MJ/m<sup>3</sup> @ 15°C, 1013.25 mbar

\*\*Weight and power input values are valid for the heating modules

# Hot-water coil - capacity vs EWT and temperature rise

## 50UA/UH 135 and 160

Low Capacity							
Air flow rate		Capacity	Leaving dry-bulb temp.	Air pressure drop	Water flow rate		Water pressure drop
l/s	m <sup>3</sup> /h	kW	°C	Pa	l/s	m <sup>3</sup> /h	kPa
5,400	19,440	134.5	33.67	40	1.606	5.783	28
5,590	20,124	136.8	33.31	42	1.634	5.881	29
5,780	20,808	139.0	32.96	45	1.660	5.977	30
5,970	21,492	141.2	32.63	47	1.686	6.071	31
6,160	22,176	143.3	32.31	50	1.712	6.163	31
6,350	22,860	145.4	32.00	53	1.737	6.252	32
6,540	23,544	147.4	31.71	56	1.761	6.339	33
6,730	24,228	149.4	31.43	58	1.785	6.424	34
6,920	24,912	151.3	31.15	61	1.808	6.507	35
7,110	25,596	153.2	30.88	64	1.830	6.588	35
7,300	26,280	155.0	30.63	67	1.852	6.666	36
7,490	26,964	156.8	30.38	71	1.873	6.743	37
7,680	27,648	158.5	30.13	74	1.894	6.817	38
7,870	28,332	160.2	29.90	77	1.914	6.889	39
8,060	29,016	161.8	29.67	80	1.933	6.959	39
8,250	29,700	163.4	29.44	84	1.952	7.027	40
8,440	30,384	164.9	29.22	87	1.970	7.092	41
8,630	31,068	166.4	29.00	91	1.988	7.155	41
8,820	31,752	167.8	28.79	94	2.005	7.216	42

High Capacity							
Air flow rate		Capacity	Leaving dry-bulb temp.	Air pressure drop	Water flow rate		Water pressure drop
l/s	m <sup>3</sup> /h	kW	°C	Pa	l/s	m <sup>3</sup> /h	kPa
5,400	19,440	197.5	43.36	68	2.359	8.492	26
5,590	20,124	201.1	42.87	72	2.403	8.649	27
5,780	20,808	204.7	42.40	76	2.445	8.803	28
5,970	21,492	208.2	41.95	80	2.487	8.955	29
6,160	22,176	211.7	41.52	85	2.529	9.103	30
6,350	22,860	215.1	41.11	89	2.569	9.249	31
6,540	23,544	218.4	40.72	94	2.609	9.392	32
6,730	24,228	221.7	40.34	98	2.648	9.532	33
6,920	24,912	224.9	39.97	103	2.686	9.669	33
7,110	25,596	228.0	39.62	108	2.723	9.804	34
7,300	26,280	231.1	39.27	113	2.760	9.936	35
7,490	26,964	234.1	38.94	118	2.796	10.065	36
7,680	27,648	237.0	38.61	123	2.831	10.191	37
7,870	28,332	239.9	38.30	128	2.865	10.314	38
8,060	29,016	242.7	37.99	133	2.899	10.435	39
8,250	29,700	245.4	37.69	138	2.931	10.553	39
8,440	30,384	248.1	37.40	144	2.963	10.668	40
8,630	31,068	250.7	37.11	149	2.994	10.780	41
8,820	31,752	253.2	36.83	155	3.025	10.890	42

EWT Entering water temperature

Note: Based on 90 °C entering water , 20 °C water drop temperature, 13 °C entering air

# Hot-water coil - capacity vs EWT and temperature rise

## 50UA/UH 180 and 205

Low Capacity								
Air flow rate		Capacity	Leaving dry-bulb temp.	Air pressure drop	Water flow rate		Water pressure drop	
l/s	m <sup>3</sup> /h	kW	°C	Pa	l/s	m <sup>3</sup> /h	kPa	
7,200	25,920	185.0	34.33	37	2.210	7.956	47	
7,420	26,712	188.0	34.03	39	2.246	8.086	48	
7,640	27,504	191.0	33.75	41	2.281	8.212	49	
7,860	28,296	193.8	33.47	43	2.315	8.335	51	
8,080	29,088	196.6	33.20	45	2.348	8.455	52	
8,300	29,880	199.3	32.93	48	2.381	8.571	53	
8,520	30,672	201.9	32.67	50	2.412	8.684	55	
8,740	31,464	204.5	32.42	52	2.443	8.794	56	
8,960	32,256	207.0	32.17	54	2.472	8.900	57	
9,180	33,048	209.4	31.93	57	2.501	9.003	59	
9,400	33,840	211.7	31.69	59	2.528	9.103	60	
9,620	34,632	213.9	31.46	62	2.555	9.199	61	
9,840	35,424	216.1	31.23	64	2.581	9.292	62	
10,060	36,216	218.2	31.00	66	2.606	9.382	63	
10,280	37,008	220.2	30.78	69	2.630	9.468	64	
10,500	37,800	222.1	30.56	72	2.653	9.551	65	
10,720	38,592	224.0	30.34	74	2.675	9.631	66	
10,940	39,384	225.7	30.13	77	2.696	9.707	67	
11,160	40,176	227.4	29.92	80	2.717	9.780	68	

High Capacity								
Air flow rate		Capacity	Leaving dry-bulb temp.	Air pressure drop	Water flow rate		Water pressure drop	
l/s	m <sup>3</sup> /h	kW	°C	Pa	l/s	m <sup>3</sup> /h	kPa	
7,200	25,920	262.1	43.21	70	3.131	11.270	39	
7,420	26,712	266.3	42.79	74	3.181	11.451	40	
7,640	27,504	270.5	42.38	77	3.230	11.630	41	
7,860	28,296	274.5	41.99	81	3.279	11.805	42	
8,080	29,088	278.6	41.61	85	3.327	11.978	43	
8,300	29,880	282.5	41.25	89	3.374	12.148	45	
8,520	30,672	286.4	40.90	93	3.421	12.315	46	
8,740	31,464	290.2	40.56	97	3.466	12.479	47	
8,960	32,256	294.0	40.23	101	3.511	12.641	48	
9,180	33,048	297.7	39.91	105	3.555	12.799	49	
9,400	33,840	301.3	39.60	109	3.599	12.955	50	
9,620	34,632	304.8	39.30	113	3.641	13.108	51	
9,840	35,424	308.3	39.01	117	3.683	13.258	52	
10,060	36,216	311.7	38.72	121	3.724	13.405	54	
10,280	37,008	315.1	38.44	125	3.764	13.550	55	
10,500	37,800	318.4	38.17	129	3.803	13.691	56	
10,720	38,592	321.6	37.90	133	3.842	13.830	57	
10,940	39,384	324.8	37.64	137	3.879	13.966	58	
11,160	40,176	327.9	37.39	142	3.916	14.099	59	

**EWT** Entering water temperature

**Note:** Based on 90 °C entering water , 20 °C water drop temperature, 13 °C entering air



# Correction factors

## 50UA/UH 135 and 160

Low Capacity							
Water Temp. Drop (°C)	Ent. Water Temp. (°C)	Entering Air Temperature (°C)					
		0	5	10	15	20	25
10	50	0.674	0.585	0.505	0.425	0.339	0.257
	60	0.837	0.758	0.674	0.596	0.512	0.430
	70	1.008	0.933	0.847	0.764	0.685	0.603
	80	1.186	1.095	1.012	0.935	0.858	0.771
	90	1.353	1.276	1.194	1.108	1.019	0.937
20	50	0.510	0.430	0.344	0.264	0.182	-
	60	0.687	0.607	0.523	0.441	0.359	-
	70	0.866	0.784	0.702	0.617	0.536	0.452
	80	1.043	0.961	0.877	0.795	0.714	0.631
	90	1.220	1.140	1.054	0.972	0.888	0.807

High Capacity							
Water Temp. Drop (°C)	Ent. Water Temp. (°C)	Entering Air Temperature (°C)					
		0	5	10	15	20	25
10	50	0.674	0.585	0.505	0.425	0.339	0.257
	60	0.837	0.758	0.674	0.596	0.512	0.430
	70	1.008	0.933	0.847	0.764	0.685	0.603
	80	1.186	1.095	1.012	0.935	0.858	0.771
	90	1.353	1.276	1.194	1.108	1.019	0.937
20	50	0.510	0.430	0.344	0.264	0.182	-
	60	0.687	0.607	0.523	0.441	0.359	-
	70	0.869	0.791	0.711	0.631	0.570	0.469
	80	1.037	0.957	0.879	0.798	0.719	0.638
	90	1.203	1.122	1.043	0.965	0.876	0.806

## 50UA/UH 180 and 205

Low Capacity							
Water Temp. Drop (°C)	Ent. Water Temp. (°C)	Entering Air Temperature (°C)					
		0	5	10	15	20	25
10	50	0.662	0.589	0.509	0.428	0.345	0.264
	60	0.840	0.757	0.676	0.593	0.512	0.430
	70	1.004	0.923	0.843	0.763	0.676	0.601
	80	1.166	1.088	1.010	0.929	0.845	0.767
	90	1.327	1.259	1.185	1.098	1.015	0.933
20	50	0.522	0.439	0.363	0.279	-	-
	60	0.700	0.616	0.536	0.455	0.374	0.290
	70	0.872	0.789	0.707	0.627	0.547	0.463
	80	1.045	0.963	0.879	0.801	0.719	0.635
	90	1.213	1.132	1.051	0.970	0.889	0.805

High Capacity							
Water Temp. Drop (°C)	Ent. Water Temp. (°C)	Entering Air Temperature (°C)					
		0	5	10	15	20	25
10	50	0.662	0.589	0.509	0.428	0.345	0.264
	60	0.840	0.757	0.676	0.593	0.512	0.430
	70	1.004	0.923	0.843	0.763	0.676	0.601
	80	1.166	1.088	1.010	0.929	0.845	0.767
	90	1.327	1.259	1.185	1.098	1.015	0.933
20	50	0.522	0.439	0.363	0.279	-	-
	60	0.700	0.616	0.536	0.455	0.374	0.290
	70	0.873	0.797	0.718	0.637	0.558	0.477
	80	1.040	0.962	0.883	0.805	0.725	0.645
	90	1.204	1.128	1.049	0.968	0.889	0.811

Ethylene glycol derating factors		
Percentage	Capacity derating factor	WPD derating factor
10	0.990	1.019
20	0.978	1.039
30	0.962	1.061
35	0.952	1.073

Propylene glycol derating factors		
Percentage	Capacity derating factor	WPD derating factor
10	0.980	1.032
20	0.954	1.070
30	0.924	1.112
35	0.908	1.134

WPD Water pressure drop

# Operating limits

Cooling mode		
Zone	Air temperature, °C	
	Dry bulb	Wet bulb
<b>Indoor</b>		
Minimum	+18	+13
Maximum	+35	+23
<b>Outdoor</b>		
Minimum	+10	-
Maximum	+52	-

Heat pump mode		
Zone	Air temperature, °C	
	Dry bulb	Wet bulb
<b>Indoor</b>		
Minimum	+10	-
Maximum	+27	-
<b>Outdoor</b>		
Minimum	-10	-11
Maximum	+22	+18

## Min. & Max. Air Flow Rates

Model	Minimum		Maximum	
	l/s	m³/h	l/s	m³/h
48/50 UA/UH 135	5,456	19,642	8,184	29,462
48/50 UA/UH 160	5,736	20,650	8,604	30,974
48/50 UA/UH 180	7,264	26,150	10,896	39,226
48/50 UA/UH 205	7,336	26,410	11,004	39,614

No compressor running & Free Cooling mode.	Minimum outdoor air temperature	-20°C
No compressor running & electric heaters only mode.	Minimum outdoor air temperature	-20°C
No compressor running Hot water coil only mode.	Minimum outdoor air temperature	-20°C
No compressor running & Gas burner only mode	Minimum outside air temperature	-20°C
Storage		between -20°C and +52 °C

# Sound rating data

Model	Outdoor Sound (dB) @ 50Hz						
	A-Weighted	125	250	500	1,000	2,000	4,000
48/50 UA/UH 135	92.0	92.6	94.8	86.7	87.4	82.8	78.3
48/50 UA/UH 160	93.5	94.2	96.3	88.2	89.1	84.2	79.9
48/50 UA/UH 180	93.8	94.2	96.3	88.3	89.5	84.7	80.6
48/50 UA/UH 205	94.0	94.2	96.3	88.3	89.8	85.1	80.9

Model	Indoor Sound Supply Side (dB) @ 50Hz						
	A-Weighted	125	250	500	1,000	2,000	4,000
48/50 UA/UH 135	86.7	91.4	86.4	84.1	79.8	79.0	76.3
48/50 UA/UH 160	87.7	92.1	87.1	85.2	81.0	79.8	77.2
48/50 UA/UH 180	88.3	94.1	87.8	85.3	81.3	80.5	78.0
48/50 UA/UH 205	88.3	94.1	87.9	85.4	81.4	80.5	78.1

Model	Indoor Sound Return Side (dB) @ 50Hz						
	A-Weighted	125	250	500	1,000	2,000	4,000
48/50 UA/UH 135	85.2	87.8	83.7	82.8	79.0	77.5	74.9
48/50 UA/UH 160	86.1	88.4	84.4	83.7	80.0	78.4	75.7
48/50 UA/UH 180	86.5	90.4	85.1	83.8	80.1	78.8	76.4
48/50 UA/UH 205	86.6	90.4	85.2	83.9	80.2	78.9	76.4

## Physical data, energy recovery module (ERM)

<b>ERM</b>		<b>ERM 13C/13S</b>	<b>ERM 18C/18S</b>	<b>ERM 20C/20S</b>	<b>ERM 26C/26S</b>
<b>Weight</b>					
<b>C</b>	kg	430	580	620	760
<b>S</b>	kg	441	591	636	781
<b>Air flow _ C/S</b>					
Maximum	l/s - m <sup>3</sup> /h	3,361 - 12,100	4,833 - 17,400	5,694 - 20,500	7,361 - 26,500
Minimum	l/s - m <sup>3</sup> /h	1,008 - 3,630	1,500 - 5,400	1,500 - 5,400	1,819 - 6,548
<b>Unit thermal efficiency** for C</b>					
At maximum air flow	%	63,5	63,7	60,8	61,5
At minimum air flow	%	80,9	80,7	80,7	79,5
<b>Unit thermal/humidity efficiency** for S</b>					
At maximum air flow	%	65.3 / 67.6	65.5 / 68.0	62.8 / 63.7	63.5 / 64.8
At minimum air flow	%	81.6 / 92.3	81.4 / 91.9	81.4 / 91.9	80.3 / 90.4
<b>Rooftop size compatibility</b>					
135-160		direct	-	direct	-
180-205		-	direct	-	direct
<b>Energy Recovery Heat Exchanger</b>					
<b>C</b>		Condensation heat recovery wheel, performance Eurovent certified			
<b>S</b>		Sorption heat recovery wheel, performance Eurovent certified			
Heat Exchanger Performance Certification	-	Eurovent Certified			
Wheel Diameter	mm	1450	1750	1750	2030
Speed		Constant			
<b>C</b>	rpm	10			
<b>S</b>	rpm	20			
Pressure loss, exhaust					
<b>C</b>	Pa	159	156	188	180
<b>S</b>	Pa	171	168	203	194
IP level for motor	-	IP54			
Motor Power					
<b>C</b>	W	180	180	180	180
<b>S</b>	W	180	180	180	370
<b>Exhaust Air Fan</b>					
Fan diameter	mm	500	630	630	710
Drive		Frequency inverter			
Number of Fans	pieces	1	1	1	1
Motor Power	kW	3	4	5,5	7,5
Motor insulation class		F	F	F	F
<b>Filters</b>					
Filter Class (EN 779)	-	G4			
Number of filters	pieces	4	4	4	6
Filter size (thicknessxlengthxheight)	mm x mm x mm	48x750x560	48x750x665	48x750x665	48x750x665
<b>Control</b> Touch Pilot					
<b>Operating limits</b>					
Maximum outdoor temperature		52			
Minimum outdoor temperature		-20			
<b>Dimensions</b>					
width	mm	1.644	1.959	1.959	2.264
length (with fresh air hood)	mm	1,306 (1,653)	1,521 (1,947)	1,521 (1,947)	1,596 (2,084)
height	mm	1.687	2.021	2.021	2.307

\*\* Thermal efficiency of supply air , outside air -10C , extract air 21C/50%.

## Electrical data, energy recovery module (ERM)

<b>Energy Recovery Module</b>		<b>ERM 13C/13S</b>	<b>ERM 18C/18S</b>	<b>ERM 20C/20S</b>	<b>ERM 26C/26S</b>
<b>Power circuit</b>					
Nominal power supply	V-ph-Hz	400-3-50			
Voltage Range	V	360 - 440			
<b>Control circuit supply</b> V 24					
Maximum unit power input	kW	3,70	4,80	8,60	8,60
FLA	A	5,80	7,50	13,50	13,50
Maximum supply cable size	mm <sup>2</sup>	4,00	4,00	4,00	4,00
Main switch	A	Same as rooftop's main switch			

# Exhaust fan performances, energy recovery module (ERM)

## ERM 13 C/S Exhaust Fan - 135 & 160

l/s	m <sup>3</sup> /h	External Static Pressure at return(Pa)															
				150		200		250		300		350		450			
		rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW		
1,008	3,630	678	0.23	761	0.31	836	0.40	905	0.49	972	0.58	1,034	0.69	1,094	0.79	1,207	0.98
1,378	4,960	847	0.37	908	0.48	971	0.58	1,030	0.70	1,086	0.82	1,140	0.93	1,192	1.04	1,293	1.25
2,067	7,440	1,182	0.87	1,223	0.98	1,264	1.09	1,306	1.22	1,349	1.36	1,391	1.49	1,432	1.64	1,473	1.73
2,756	9,920	1,526	1.64	1,556	1.78	1,586	1.93	1,617	2.09	1,649	2.28	1,682	2.46	1,716	2.62	1,783	2.94
3,361	12,100	1,832	2.57	1,852	2.70	1,872	2.76	-	-	-	-	-	-	-	-	-	-

## ERM 18 C/S Exhaust Fan - 180 & 205

l/s	m <sup>3</sup> /h	External Static Pressure at return(Pa)															
		50		100		150		200		250		300		350		450	
		rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
1,500	5,400	536	0.34	602	0.44	663	0.57	723	0.71	777	0.86	829	1.00	877	1.15	969	1.47
2,222	8,000	706	0.64	753	0.81	801	0.93	847	1.12	891	1.29	933	1.47	975	1.68	1,117	2.20
3,333	12,000	990	1.49	1,020	1.72	1,051	1.86	1,083	2.08	1,115	2.31	1,148	2.57	1,181	2.76	1,246	3.26
4,444	16,000	1,279	2.90	1,302	3.11	1,324	3.37	1,347	3.62	1,370	3.88	1,394	4.15	1,418	4.29	1,442	4.44
4,833	17,400	1,380	3.54	1,402	3.81	1,424	3.93	-	-	-	-	-	-	-	-	-	-

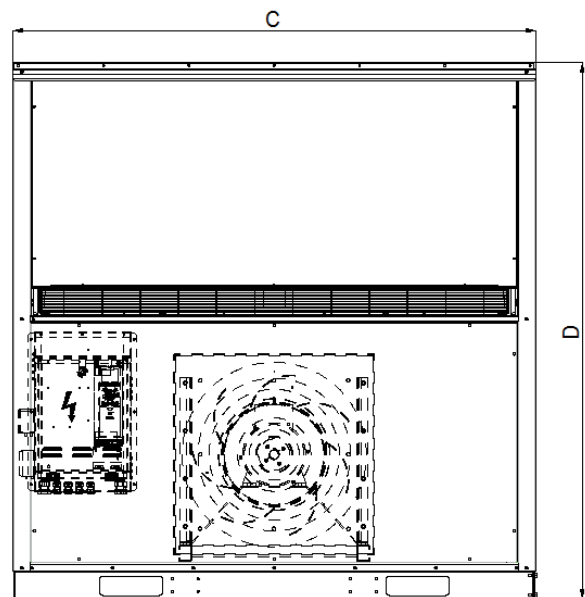
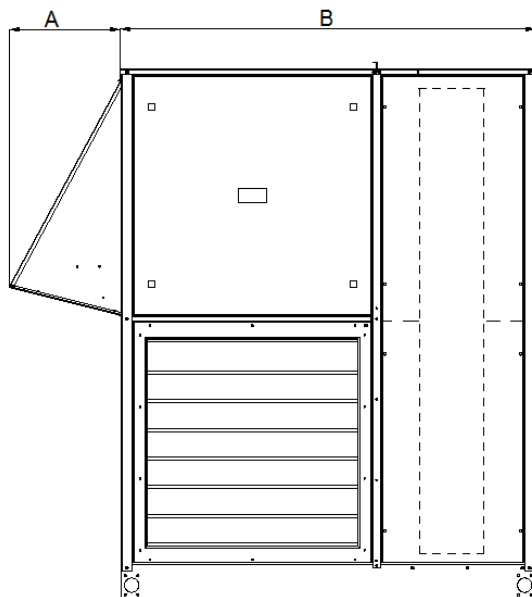
## ERM 20 C/S Exhaust Fan - 135 & 160

l/s	m <sup>3</sup> /h	External Static Pressure at return(Pa)															
		50		100		150		200		250		300		350		450	
		rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
1,500	5,400	535	0.37	601	0.48	663	0.60	721	0.74	777	0.87	828	1.00	877	1.14	969	1.43
2,222	8,000	706	0.67	753	0.83	801	0.96	847	1.11	891	1.26	933	1.42	975	1.60	1,056	1.97
3,333	12,000	990	1.45	1,020	1.64	1,051	1.84	1,083	2.04	1,116	2.25	1,148	2.46	1,181	2.68	1,246	3.15
4,444	16,000	1,279	2.83	1,302	3.06	1,324	3.20	1,347	3.55	1,370	3.81	1,394	4.08	1,417	4.35	1,467	4.92
5,000	18,000	1,424	3.79	1,445	4.04	1,466	4.31	1,487	4.57	1,508	4.84	1,528	5.12	1,549	5.42	1,593	6.04
5,694	20,500	1,609	5.22	1,629	5.54	1,648	5.86	1,666	6.18	1,684	6.49	1,701	6.81	1,719	7.14	-	-

## ERM 26 C/S Exhaust Fan -180 & 205

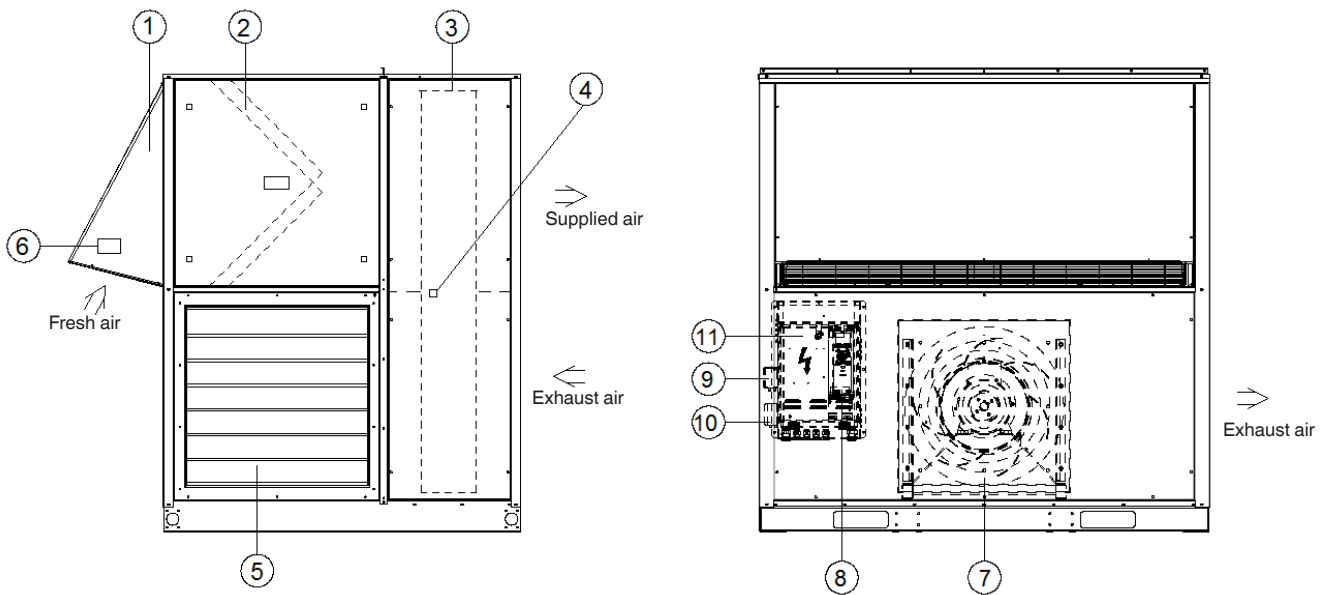
l/s	m <sup>3</sup> /h	External Static Pressure at return(Pa)															
		50		100		150		200		250		300		350		450	
		rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
1,819	6,550	-	-	517	0.54	570	0.73	626	0.90	679	1.07	727	1.23	771	1.39	853	1.72
3,472	12,500	737	1.23	770	1.43	805	1.64	839	1.86	873	2.08	905	2.30	937	2.53	1,002	3.03
4,722	17,000	960	2.26	985	2.52	1,009	2.79	1,034	3.07	1,059	3.37	1,086	3.67	1,113	3.98	1,164	4.61
5,972	21,500	1,186	4.04	1,206	4.35	1,225	4.67	1,245	4.98	1,263	5.31	1,282	5.64	1,303	6.02	1,345	6.79
7,361	26,500	1,420	6.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# Dimensions, energy recovery module (ERM), mm



Unit size	A	B	C	D
ERM 13C/S	mm 347	1,306	1,644	1,687
ERM 18C/S	mm 426	1,521	1,959	2,021
ERM 20C/S	mm 426	1,521	1,959	2,021
ERM 26C/S	mm 488	1,596	2,264	2,307





# Schematic diagram, energy recovery module with control



**Legend**

- |  |   |
|--|---|
| 1 Fresh air inlet hood                 | 7 Exhaust air fan                           |
| 2 Filter                               | 8 Inverter                                  |
| 3 Heat recovery wheel                  | 9 Air pressure sensor                       |
| 4 Motion sensor                        | 10 Dirty-filter switch (options 96 and 162) |
| 5 Barometric exhaust                   | 11 Control box                              |
| 6 Enthalpy sensor (options 36 and 157) |   |

# Connection to Rooftop, energy recovery module (ERM)

UA/UH Models	ERM 13C/13S	ERM 18C/18S	ERM 20C/20S	ERM 26C/26S
135	 Opt 173 & Opt 201 Direct connection		 Opt 160 & Opt 200 Direct connection	
160				
180		 Opt 173 & Opt 201 Direct connection		 Opt 160 & Opt 200 Direct connection
205				

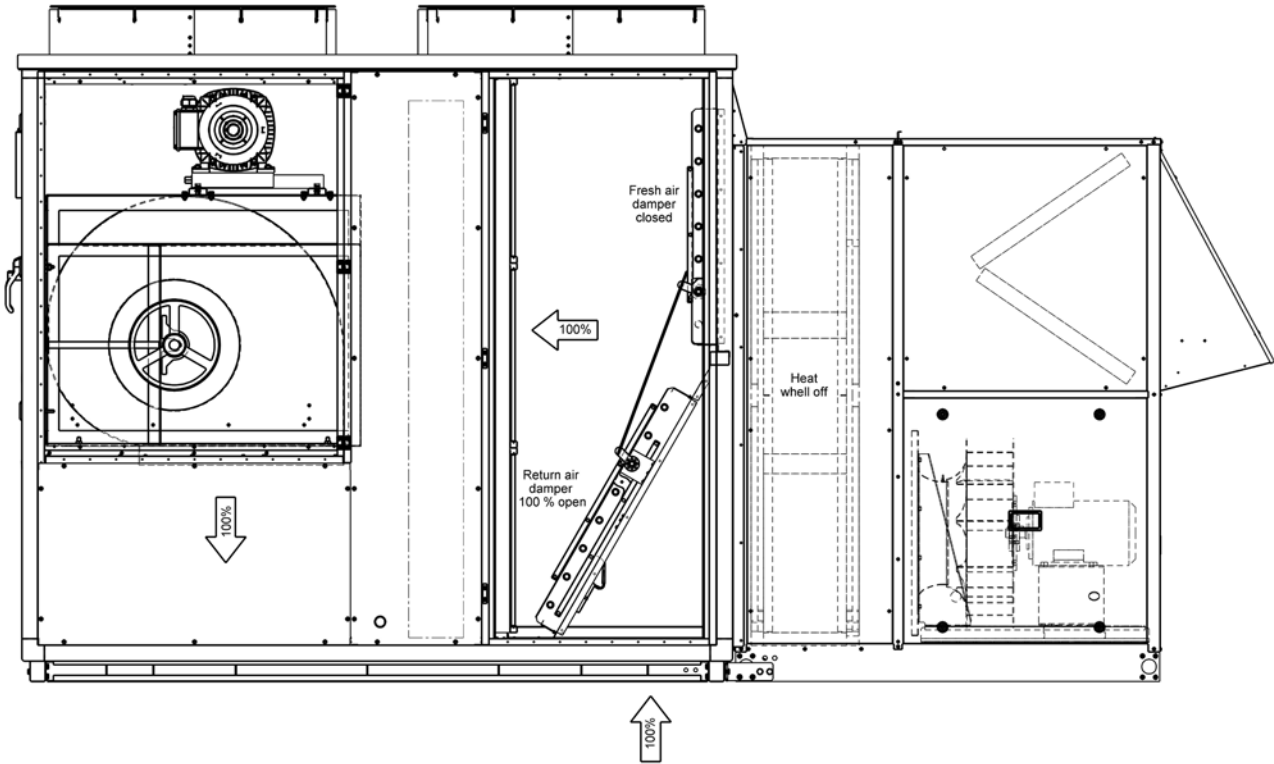


# Operating mode, energy recovery module (ERM)

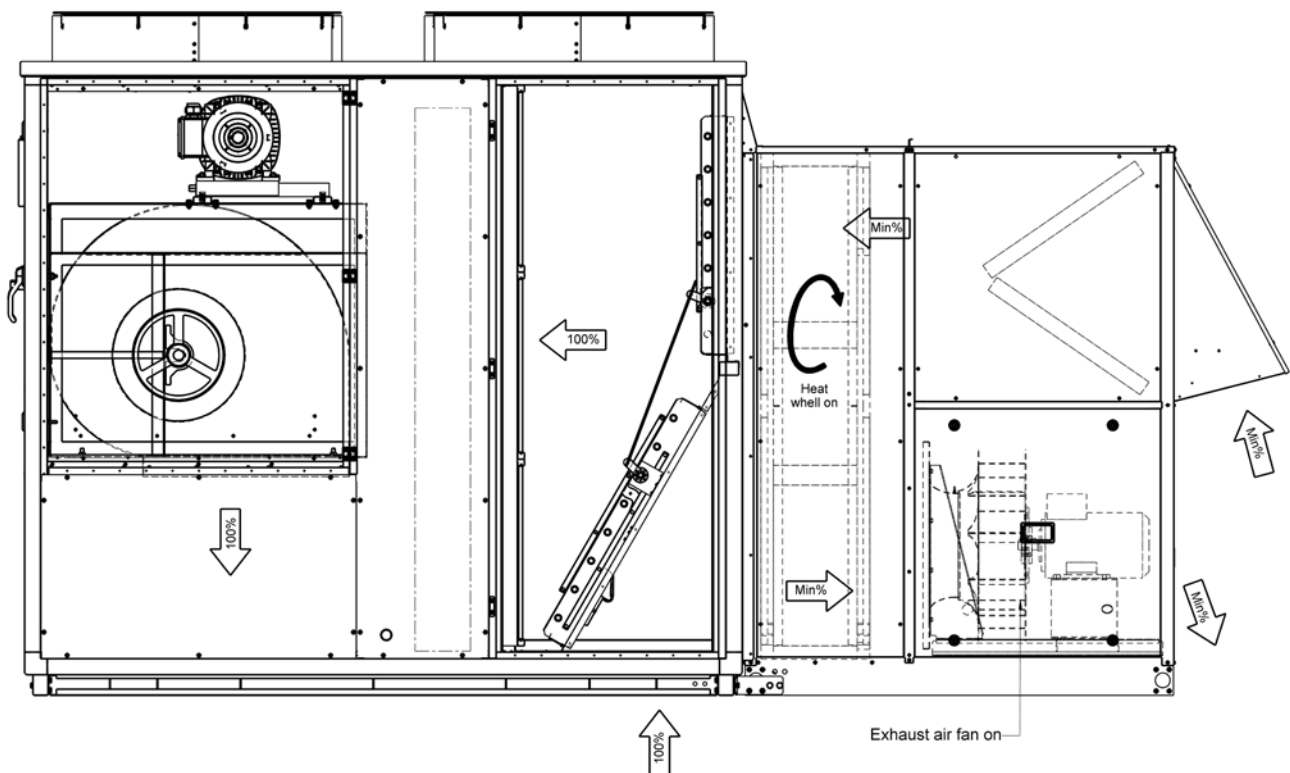
In the following table the component status is given according to the operating mode.

Mode	Roof top unit indoor fan	ERM exhaust fan	Heat recovery wheel	Economizer
1 - Recirculation	On	Off	Off	100% closed
2 - Recovery	On	On (min.)	On	Minimum
3 - Free cooling	On	On (max.)	Off	100% open

## Step 1: recirculation mode

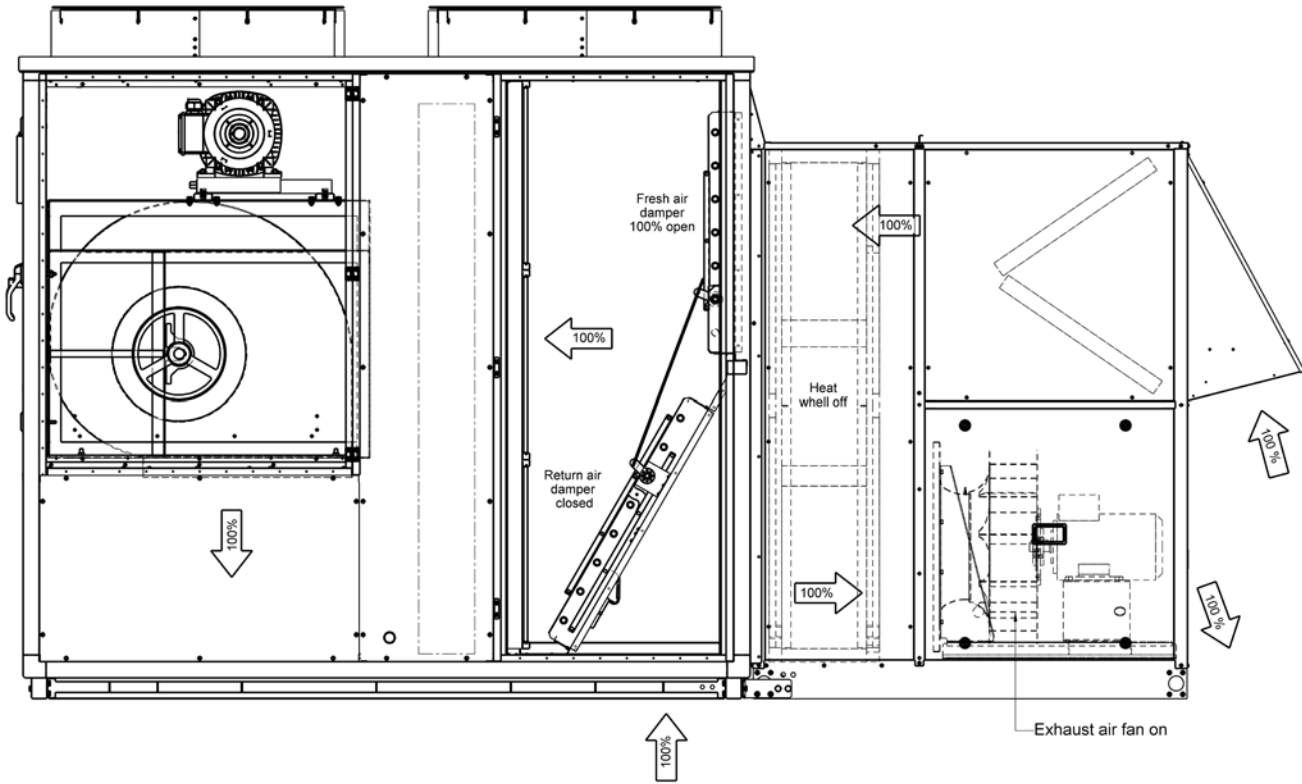


## Step 2: Energy recovery mode



# Operating mode, energy recovery module (ERM) (continued)

## Step 3: Free-cooling mode



# Cooling and Heating capacities

## Cooling capacities

ERM 13C Air flow (m³/h)	25/40			30/40			35/40			40/40			43/40			46/40															
	ODDB/ IDDB	Out DB	Out RH	temp eff %	humid eff %	cc kW	Out DB	Out RH	temp eff %	humid eff %	cc kW	Out DB	Out RH	temp eff %	humid eff %	cc kW	Out DB	Out RH	temp eff %	humid eff %	cc kW										
3.630	18	19.3	56.5	81.2	0.0	7.0	20.3	71.5	81.2	0.0	12.0	21.2	89.1	81.1	0.4	17.1	23.8	95.0	73.5	7.8	22.9	25.8	95.0	68.8	12.6	27.3	27.7	95.0	65.3	17.2	32.8
	21	21.7	48.7	81.3	0.0	4.0	22.7	61.6	81.3	0.0	9.0	23.6	77.1	81.2	0.0	14.0	24.6	95.0	81.0	0.8	19.3	26.7	95.0	74.2	6.3	23.0	28.7	95.0	69.2	10.8	27.4
	24	24.2	42.0	81.4	0.0	1.0	25.1	53.2	81.3	0.0	6.0	26.1	66.7	81.3	0.0	11.0	27.0	82.7	81.2	0.0	16.1	27.6	93.4	81.1	0.6	19.4	29.5	95.0	75.1	4.9	23.0
	27	26.6	36.3	81.5	0.0	-2.0	27.6	46.1	81.5	0.0	3.0	28.5	57.8	81.4	0.0	8.0	29.4	71.9	81.3	0.0	13.1	30.0	81.4	81.2	0.0	16.1	30.6	91.7	81.1	0.5	19.4
4.960	18	19.6	56.6	77.4	0.0	9.1	20.7	69.5	77.4	0.0	15.6	21.8	85.8	77.4	0.3	22.3	24.4	95.0	72.5	5.7	29.9	26.1	95.0	67.8	10.7	35.6	28.0	95.0	64.3	15.2	42.8
	21	21.9	48.2	77.5	0.0	5.2	23.0	60.3	77.5	0.0	11.7	24.2	74.7	77.5	0.0	18.3	25.3	91.2	77.4	0.7	25.2	26.9	95.0	73.3	4.4	30.0	28.9	95.0	68.3	9.0	36.8
	24	24.2	41.9	77.6	0.0	1.3	25.3	52.5	77.6	0.0	7.8	26.5	65.1	77.6	0.0	14.4	27.6	80.0	77.6	0.0	21.0	28.3	89.7	77.5	0.6	25.3	29.7	95.0	74.3	3.3	30.1
	27	26.6	36.5	77.7	0.0	-2.6	27.7	45.8	77.7	0.0	3.9	28.8	56.9	77.7	0.0	10.5	29.9	69.9	77.7	0.0	17.1	30.6	78.8	77.6	0.0	21.1	31.3	88.2	77.6	0.5	25.3
7.440	18	20.0	54.3	72.0	0.0	12.7	21.4	66.8	72.1	0.0	21.8	22.7	81.2	72.1	0.3	31.1	24.4	95.0	71.0	2.8	41.7	26.4	95.0	66.4	7.8	49.7	28.4	95.0	62.9	12.4	58.8
	21	22.1	47.6	72.1	0.0	7.3	23.5	58.6	72.2	0.0	16.4	24.9	71.5	72.2	0.0	25.5	26.3	86.0	72.2	0.6	35.2	27.2	95.0	72.0	1.8	41.9	29.2	95.0	67.0	6.5	50.0
	24	24.3	41.8	72.3	0.0	1.8	25.7	51.5	72.3	0.0	10.9	27.0	62.9	72.3	0.0	20.1	28.4	76.1	72.3	0.0	29.3	29.3	84.7	72.2	0.5	35.3	30.1	93.6	72.2	1.5	42.0
	27	26.4	36.7	72.4	0.0	-3.6	27.8	45.4	72.4	0.0	5.5	29.2	55.5	72.4	0.0	14.6	30.6	67.2	72.4	0.0	23.9	31.4	75.1	72.3	0.0	29.4	32.3	83.4	72.3	0.4	35.4
9.920	18	20.3	53.3	67.6	0.0	15.9	21.9	64.7	67.6	0.0	27.3	23.5	77.6	67.6	0.3	38.9	25.1	91.4	67.6	1.9	52.2	26.7	95.0	65.2	5.4	62.2	28.7	95.0	61.7	10.0	74.8
	21	22.3	47.1	67.7	0.0	9.1	23.9	57.2	67.7	0.0	20.5	25.5	68.9	67.7	0.0	31.9	27.1	81.8	67.7	0.6	44.0	28.1	89.9	67.7	1.6	52.4	29.5	95.0	66.0	4.3	62.5
	24	24.3	41.7	67.8	0.0	2.3	25.9	50.7	67.8	0.0	13.7	27.5	61.1	67.8	0.0	25.1	29.1	73.0	67.8	0.0	36.7	30.1	80.7	67.8	0.5	44.2	31.1	88.6	67.7	1.4	52.6
	27	26.4	36.9	67.9	0.0	-4.6	28.0	45.0	68.0	0.0	6.8	29.6	54.4	68.0	0.0	18.3	31.2	65.1	67.9	0.0	29.9	32.1	72.1	67.9	0.0	36.8	33.1	79.6	67.9	0.4	44.4
12.100	18	20.5	52.5	64.2	0.0	18.4	22.3	63.1	64.2	0.0	31.6	24.1	74.9	64.2	0.3	45.1	25.9	87.5	64.2	1.8	60.5	26.9	94.8	64.2	3.6	72.1	29.0	95.0	60.9	8.2	86.6
	21	22.4	46.7	64.3	0.0	10.5	24.2	56.2	64.3	0.0	23.7	26.0	67.0	64.4	0.0	37.0	27.8	78.8	64.3	0.6	51.1	28.9	86.2	64.3	1.5	60.7	29.9	93.4	64.3	3.2	72.5
	24	24.4	41.6	64.4	0.0	2.6	26.1	50.1	64.5	0.0	15.8	27.9	59.8	64.5	0.0	29.1	29.7	70.8	64.5	0.0	42.5	30.8	77.8	64.4	0.5	51.2	31.8	85.0	64.4	1.3	61.0
	27	26.3	37.1	64.5	0.0	-5.3	28.1	44.7	64.6	0.0	7.9	29.8	53.5	64.6	0.0	21.2	31.6	63.5	64.6	0.0	34.6	32.7	70.0	64.6	0.0	42.7	33.7	76.8	64.5	0.4	51.4

## Heating capacities

ERM 13C Air flow (m³/h)	-10			0			5			10			15																		
	ODDB/ IDDB	Out DB	Out RH	temp eff %	humid eff %	ht kW	Out DB	Out RH	temp eff %	humid eff %	ht kW	Out DB	Out RH	temp eff %	humid eff %	ht kW	Out DB	Out RH	temp eff %	humid eff %	ht kW										
3.630	18	12.6	46.4	80.8	61.7	38.4	13.6	41.7	80.9	55.9	31.8	14.6	29.0	81.0	30.0	22.3	15.5	20.6	81.1	2.0	13.1	16.5	26.2	81.1	0.0	7.9	17.4	34.2	81.2	0.0	3.0
	21	15.1	48.1	80.9	63.0	44.2	16.1	44.3	81.0	59.5	38.0	17.0	34.2	81.1	41.7	28.7	18.0	20.1	81.2	7.4	17.1	18.9	22.5	81.2	0.2	10.9	19.9	29.4	81.2	0.0	6.0
	24	17.6	49.6	81.0	63.9	50.5	18.5	46.2	81.1	61.7	44.4	19.5	38.1	81.2	49.3	35.5	20.4	22.2	81.2	16.0	22.4	21.4	19.8	81.3	1.3	14.2	22.3	25.3	81.3	0.0	9.0
	27	20.0	51.0	81.1	64.6	57.4	21.0	47.9	81.2	63.0	51.3	21.9	41.0	81.3	54.0	42.7	22.9	25.8	81.4	25.5	28.9	23.8	18.5	81.4	4.3	18.0	24.8	21.9	81.4	0.3	12.0
4.960	18	11.5	47.9	76.8	58.6	49.9	12.7	42.6	76.9	53.2	41.4	13.9	29.7	77.0	28.5	26.9	15.0	21.2	77.1	1.9	17.1	16.2	26.7	77.2	0.0	10.3	17.3	34.5	77.3	0.0	3.9
	21	13.8	49.9	76.9	59.9	57.4	15.0	45.5	77.0	56.6	49.3	16.2	34.9	77.1	39.7	37.3	17.4	20.8	77.2	7.0	22.2	18.5	23.1	77.3	0.2	14.2	19.6	29.8	77.4	0.0	7.8
	24	16.2	51.7	77.0	60.8	65.6	17.4	47.7	77.1	58.6	57.7	18.5	39.0	77.2	46.9	46.2	19.7	22.9	77.3	15.2	29.1	20.8	20.4	77.4	1.2	18.4	22.0	25.8	77.5	0.0	11.7
	27	18.5	53.4	77.2	61.4	74.6	19.7	49.6	77.3	60.0	66.7	20.9	42.1	77.4	51.4	55.6	22.0	26.5	77.5	24.3	37.6	23.2	19.2	77.6	4.1	23.4	24.3	22.5	77.6	0.3	15.6
7.440	18	10.0	49.8	71.3	54.4	69.5	11.4	43.9	71.5	49.4	57.7	12.9	30.6	71.6	26.5	40.3	14.3	22.1	71.7	1.8	23.8	15.7	27.5	71.8	0.0	14.4	17.2	34.9	71.9	0.0	5.4
	21	12.1	52.3	71.5	55.6	80.0	13.6	47.0	71.6	52.6	68.5	15.1	35.9	71.7	36.9	51.9	16.5	21.7	71.8	6.5	31.0	17.9	24.0	71.9	0.2	19.9	19.3	30.4	72.0	0.0	10.8
	24	14.3	54.6	71.6	56.4	91.4	15.8	49.7	71.7	54.5	80.3	17.2	40.3	71.8	43.6	64.4	18.7	23.8	71.9	14.2	40.5	20.1	21.4	72.0	1.1	26.7	21.5	26.6	72.1	0.0	16.3
	27	16.5	56.9	71.7	57.0	103.9	18.0	52.0	71.8	55.7	93.0	19.4	43.7	71.9	47.8	77.5	20.9	27.5	72.1	22.6	52.4	22.3	20.1	72.2	3.8	32.7	23.7	23.4	72.3	0.3	21.8
9.920	18	8.7	51.4	66.8	50.9	86.7	10.4	44.9	66.9	46.3	72.0	12.1	31.3	67.1	24.8	50.3	13.7	23.0	67.2	1.7	29.7	15.4	28.1	67.3	0.0	18.0	17.0	35.2	67.4	0.0	6.8
	21	10.7	54.3	66.9	52.1	99.9	12.4	48.3	67.1	49.3	85.6	14.1	36.8	67.2	34.5	64.9	15.8	22.6	67.3	6.1	38.8	17.4	24.7	67.4	0.2	24.8	19.1	30.9	67.5	0.0	13.5
	24	12.8	57.0	67.0	52.9	114.1	14.5	51.3	67.2	51.1	100.3	16.2	41.3	67.3	40.8	80.3	17.8	24.6	67.4	13.3	50.7	19.5	22.2	67.5	1.1	32.1	21.1	27.3	67.6	0.0	20.3
	27	14.8	59.7	67.2	53.4	129.7	16.5	53.9	67.3	52.2	116.1	18.2	44.9	67.4	44.8	96.8	19.9	28.3	67.5	21.2	65.5	21.5	21.0	67.7	3.6	40.8	23.1	24.2	67.8	0.2	27.3
12.100	18	7.7	52.6	63.4	48.3	100.2	9.6	45.6	63.5	43.9	83.4	11.5	31.9	63.7	23.6	59.3	13.3	23.6	63.8	1.6	34.4	15.1	28.6	63.9	0.0	20.8	16.9	35.4	64.0	0.0	7.8
	21	9.7	55.8	63.5	49.4	115.5	11.5	49.2	63.6	46.8	99.1	13.4	37.4	63.8	32.8	75.1	15.2	23.2	63.9	5.8	44.9	17.0	25.3	64.0	0.2	28.7	18.8	31.3	64.1	0.0	15.7
	24	11.6	58.9	63.6	50.2	132.0	13.5	52.4	63.7	48.5	115.9	15.3	42.0	63.9	38.8	93.0	17.2	25.3	64.0	12.6	58.7	19.0	22.9	64.1	1.0	37.2	20.8	27.8	64.2	0.0	23.6
	27	13.6	61.9	63.7	50.7	150.0	15.4	55.4	63.9	49.6	134.4	17.3	45.8	64.0	42.5	111.8	19.1	29.0	64.1	20.1	75.9	20.9	21.6	64.3	3.4	47.3	22.7	24.8	64.4	0.2	31.6

cc: Cooling Capacity (kW)

ht: Heating Capacity (kW)

temp eff: Energy recovery modul temperature efficiency (%)

humid eff:

# Cooling and Heating capacities

Cooling capacities																																
ERM 13S			30/40			35/40			40/40			43/40			46/40																	
Air flow (m <sup>3</sup> /h)	ODDB/ ODRH	IDDB	Out		humid cc eff %	Out		humid ht eff %	Out		humid cc eff %	Out		humid ht eff %	Out		temp humid cc eff %	Out		temp humid ht eff %												
			DB	RH		DB	RH		DB	RH		DB	RH		DB	RH		DB	RH		DB	RH	DB	RH								
3.630	18	19.3	48.7	81.9	76.1	10.5	20.2	49.4	81.8	79.6	22.3	21.1	49.3	81.8	83.7	36.9	22.0	49.0	81.7	87.7	55.0	22.6	46.9	81.6	89.8	67.9	23.2	45.5	81.5	91.6	82.4	
	21	21.7	48.1	81.9	74.0	4.4	22.6	49.1	81.9	76.9	15.8	23.5	49.6	81.9	80.7	29.9	24.5	49.0	81.7	84.9	47.5	25.0	48.2	81.6	87.3	60.2	25.6	47.0	81.6	89.6	74.6	
	24	24.2	47.6	82.0	75.1	-2.3	25.1	48.5	82.0	74.7	9.0	26.0	49.5	82.0	77.8	22.6	26.9	49.7	81.9	81.8	39.6	27.5	49.2	81.8	84.4	51.9	28.0	48.3	81.7	87.0	66.0	
	27	26.6	47.7	82.1	77.2	-9.7	27.5	47.8	82.1	73.7	1.8	28.4	49.0	82.1	75.4	15.0	29.4	49.7	81.4	78.2	31.0	29.9	49.8	81.9	81.3	43.1	30.5	49.4	81.8	83.9	56.8	
4.960	18	19.5	48.6	78.3	70.1	13.5	20.6	49.8	78.3	73.7	28.7	21.7	50.2	78.3	77.9	47.5	22.8	49.8	78.2	82.0	71.0	23.5	49.3	78.1	84.2	87.6	24.1	48.6	78.1	86.1	106.5	
	21	21.9	47.7	78.4	67.9	5.7	22.9	49.1	78.4	70.9	20.3	24.0	50.2	78.4	74.8	38.4	25.1	50.3	78.3	78.3	79.1	61.2	25.8	49.9	78.3	81.6	77.6	26.5	49.3	78.2	84.0	96.3
	24	24.2	47.1	78.5	69.1	-2.8	25.3	48.3	78.5	68.6	11.6	26.4	49.7	78.5	71.8	29.0	27.5	50.4	78.4	78.6	66.9	50.9	28.1	50.4	78.4	78.6	66.7	28.8	50.0	78.3	81.3	85.0
	27	26.6	47.0	78.6	71.3	-12.4	27.6	47.4	78.6	67.5	2.4	28.7	48.9	78.6	69.3	19.2	29.9	50.1	77.9	72.3	39.8	30.4	50.6	78.5	75.4	55.3	31.1	50.6	78.4	78.1	72.9	
7.440	18	19.9	48.5	73.3	60.7	18.5	21.2	50.4	73.3	64.6	39.1	22.5	51.7	73.3	69.1	64.9	23.9	52.5	73.2	73.4	97.1	49.7	25.7	52.5	73.2	75.7	120.0	25.5	52.6	73.2	77.7	146.0
	21	22.1	47.2	73.4	58.4	7.9	23.4	49.3	73.4	61.5	27.7	24.9	50.1	73.4	65.7	52.3	26.1	52.1	73.4	70.3	83.4	62.9	26.9	52.3	73.3	73.0	105.8	27.7	52.4	73.3	75.4	131.5
	24	24.3	46.2	73.5	59.7	-3.5	25.6	48.0	73.5	59.0	15.9	26.9	51.1	73.5	62.4	39.3	28.2	51.7	73.5	66.8	68.9	83.4	28.9	52.7	73.4	69.6	90.6	29.9	52.4	73.4	72.4	115.6
	27	26.5	45.9	73.6	62.0	-16.4	27.8	46.8	73.6	57.9	3.6	29.1	48.9	73.6	59.7	26.0	30.5	50.8	73.1	62.9	53.7	31.2	51.8	73.6	66.1	74.6	32.0	52.3	73.5	69.0	98.6	
9.920	18	20.2	48.4	69.1	52.6	22.7	21.7	50.9	69.2	56.7	47.7	23.2	52.8	69.2	61.5	79.2	24.8	54.1	69.2	66.1	118.9	66.1	25.7	54.7	69.1	68.5	147.2	26.7	55.4	69.1	70.6	179.2
	21	22.2	46.8	69.2	50.1	9.9	23.8	49.5	69.3	53.3	33.7	25.3	51.8	69.3	57.7	63.5	26.8	53.5	69.3	62.6	101.5	101.5	27.8	54.1	69.2	65.5	129.2	28.7	54.7	69.2	68.1	160.8
	24	24.3	45.5	69.4	51.5	-3.8	25.8	47.9	69.4	50.6	19.5	27.4	50.5	69.4	54.2	47.6	28.9	52.7	69.4	56.9	83.4	83.4	29.8	53.6	69.4	61.9	109.9	30.8	54.2	69.3	64.8	140.6
	27	26.4	44.9	69.5	53.9	-19.4	27.9	46.3	69.5	49.5	4.8	29.4	48.9	69.5	51.2	31.5	31.0	51.4	69.0	54.7	64.6	64.6	31.9	52.8	69.5	58.0	90.0	32.8	53.7	69.4	61.1	119.2
12.100	18	20.4	48.4	66.0	46.1	25.8	22.1	51.3	66.1	50.4	54.0	23.8	53.6	66.1	55.5	89.7	25.5	55.3	66.1	60.4	135.0	135.0	26.5	56.2	66.0	62.9	167.5	27.5	57.2	66.0	62.1	204.2
	21	22.4	46.5	66.1	43.4	11.5	24.0	49.6	66.2	46.9	38.1	25.7	52.4	66.2	51.5	71.6	27.4	54.4	66.2	56.7	114.8	114.8	28.4	55.4	66.1	59.7	146.3	29.5	56.2	66.1	62.4	182.6
	24	24.3	44.9	66.2	45.0	-3.8	26.0	47.8	66.3	43.9	22.1	27.7	50.9	66.3	47.7	53.4	29.4	53.4	66.3	52.6	93.8	93.8	30.4	54.6	66.3	55.8	123.8	31.4	55.4	66.2	58.9	158.8
	27	26.3	44.1	66.4	47.5	-21.2	28.0	45.8	66.4	42.7	5.8	29.7	49.0	66.4	44.5	35.4	31.4	51.9	65.9	48.2	72.2	72.2	32.4	53.5	66.4	51.6	100.7	33.4	54.7	66.3	54.9	133.7

Heating capacities																															
ERM 13S			-5			0			5			10			15																
Air flow (m <sup>3</sup> /h)	ODDB/ ODRH	IDDB	Out		humid ht eff %	Out		humid ht eff %	Out		humid ht eff %	Out		temp humid ht eff %	Out		temp humid ht eff %														
			DB	RH		DB	RH		DB	RH		DB	RH		DB	RH															
3.630	18	12.8	64.8	81.5	92.1	43.8	13.8	60.9	81.6	91.6	37.9	14.7	57.2	81.7	90.3	31.3	15.6	53.5	81.7	87.9	24.3	16.5	50.2	81.8	84.0	16.6	17.5	48.1	81.8	79.3	8.3
	21	15.3	66.5	81.6	92.3	50.6	16.2	62.7	81.7	92.0	44.6	17.2	59.0	81.8	91.2	38.1	18.1	55.4	81.8	89.4	31.1	19.0	51.9	81.9	86.2	23.3	19.9	49.1	81.9	81.7	14.8
	24	17.8	68.2	81.7	92.5	58.0	18.7	64.4	81.8	92.3	52.1	19.6	60.8	81.9	91.8	45.6	20.6	57.2	81.9	90.5	38.7	21.5	53.6	82.0	88.1	30.8	22.4	50.4	82.0	84.1	22.1
	27	20.3	69.8	81.8	92.6	66.2	21.2	66.0	81.9	92.5	60.4	22.1	62.5	82.0	92.2	53.9	23.0	59.9	82.0	91.4	47.0	24.0	55.4	82.1	89.6	39.2	24.9	52.0	82.1	86.3	30.3
4.960	18	11.8	65.8	77.7	86.5	56.8	12.9	61.3	77.8	86.0	49.0	14.0	57.0	77.9	84.8	40.6	15.1	53.0	78.0	82.3	31.4	16.2	49.5	78.1	78.3	21.4	17.3	47.4	78.2	73.4	10.6
	21	14.1	67.9	77.8	86.8	65.5	15.3	63.4	77.9	86.5	57.8	16.4	59.1	78.0	85.7	49.4	17.5	55.0	78.1	83.8	40.3	18.6	51.2	78.2	80.5	30.1	19.7	48.3	78.3	75.9	19.0
	24	16.5	70.0	77.9	87.0	75.2	17.6	65.4	78.0	86.8	67.5	18.8	61.1	78.1	86.3	59.1	19.9	57.0	78.2	85.0	50.0	21.0	53.1	78.3	82.5	39.8	22.1	49.7	78.4	78.4	28.4
	27	18.9	72.0	78.0	87.1	85.8	20.0	67.4	78.2	87.1	78.2	21.1	63.1	78.3	86.7	69.9	22.2	59.0	78.3	85.9	60.8	23.3	55.1	78.4	84.1	50.6	24.4	51.4	78.5	80.7	39.1
7.440	18	10.3	66.7	72.6	78.8	78.8	11.7	61.3	72.7	78.2	68.0	13.1	56.4	72.8	76.9	56.2	14.5	51.9	72.9	74.2	43.3	15.8	48.3	73.0	69.8	29.3	17.2	46.3	73.1	64.5	14.3
	21	12.5	69.3	72.7	79.0	91.0	13.9	63.8	72.8	78.7	80.2	15.3	58.8	72.9	77.8	68.4	16.7	54.2	73.1	75.8	55.6	18.0	50.0	73.2	72.2	41.3	19.4	47.1	73.2	67.2	25.8
	24	14.8	71.9	72.8	79.2	104.3	16.2	66.2	72.9	79.0	93.6	17.5	61.2	73.1	78.5	81.9	18.9	56.4	73.2	77.1	69.1	20.3	52.1	73.3	74.3	54.8	21.6	48.4	73.4	69.9	38.8
	27	17.0	74.4	72.9	79.3	119.1	18.4	68.7	73.1	79.3	108.4	19.8	63.5	73.2	78.9	96.8	21.1	58.9	73.3	78.0	84.1	22.5	54.2	73.4	76.0	69.8	23.8	50.2	73.5	72.3	53.5
9.920	18	9.1	67.0	68.4	72.3	98.1	10.8	60.9	68.5	71.7	84.6	12.4	55.7	68.6	70.2	69.7	13.9	50.8	68.8	67.3	53.6	15.5	47.1	68.9	62.5	35.9	17.1	45.3	69.0	56.8	17.2
	21	11.2	70.0	68.5	72.5	113.2	12.8	63.7	68.6	72.2	99.7	14.4	58.3	68.7	71.2	84.9	16.0	53.2	68.9	69.1	68.8	17.6	48.9	69.0	65.1	50.8	19.1	45.9	69.1	59.7	31.3
	24	13.3	73.0	68.6	72.7	129.7	14.9	66.5	68.7	72.5	116.3	16.5	60.9	68.9	71.9	101.6	18.1	55.7	69.0	70.4	85.6	19.7	51.0	69.1	67.4	67.5	21.2	47.2	69.2	62.5	47.3
	27	15.4	76.0	68.7	72.8	148.0	17.0	69.3	68.9	72.8	134.7	18.6	63.5	69.0	72.4	120.1	20.2	58.2	69.1	71.4	104.1	21.8	53.3	69.2	67.2	86.1	23.3	49.0	69.3	65.2	69.5
12.100	18	8.3	67.0	65.2	67.4	113.3	10.0	60.5	65.4	66.7	97.6	11.8	54.9	65.5	65.2	80.2	13.5	49.9	65.6	62.0	61.4	15.3	46.1	65.7	56.9	40.9	17.0	44.4	65.8	50.7	19.3
	21	10.3	70.3	65.3	67.6	130.6	12.0	63.5	65.5	67.2	115.0	13.8	57.6	65.6	66.2	97.7	15.5	52.3	65.7	63.9	78.9	17.2	47.8	65.9	59.7	58.0	19.0	44.9	66.0	53.8	35.3
	24	12.3	73.6	65.4	67.8	149.6	14.0	66.5	65.6	67.6	134.1	15.8	60.4	65.7	66.9	117.0	17.5	54.9	65.9	65.3	98.3	19.2	50.0	66.0	62.1	77.1	20.9	46.2	66.1	56.8	53.6
	27	14.3	76.9	65.6	67.9	170.6	16.0	69.6	65.7	67.8	155.2	1																			

# Cooling and Heating capacities

Cooling capacities																															
ERM 18C				35/40				40/40				43/40				46/40															
Air flow (m <sup>3</sup> /h)		ODDB/ IDDB		25/40		30/40		35/40		40/40		43/40		46/40		43/40		46/40													
Out DB	Out RH	Out temp RH	humid eff %	cc kW	Out DB	Out RH	Out temp RH	humid eff %	cc kW	Out DB	Out RH	Out temp RH	humid eff %	cc kW	Out DB	Out RH	Out temp RH	humid eff %	cc kW												
5.400	18	19.3	56.5	80.9	0.0	10.3	20.3	71.3	80.9	0.0	17.8	21.3	88.9	80.9	0.4	25.3	23.8	95.0	68.7	12.5	40.4	27.7	95.0	65.2	17.0	48.6					
	21	21.8	48.6	81.0	0.0	5.9	22.7	61.5	81.0	0.0	13.3	23.7	76.9	81.0	0.0	20.8	24.6	94.8	80.9	0.7	28.6	26.7	95.0	74.2	6.1	34.0	28.7	95.0	69.1	10.7	40.6
	24	24.2	42.0	81.1	0.0	1.5	25.1	53.2	81.1	0.0	8.9	26.1	66.6	81.0	0.0	16.4	27.0	82.5	81.0	0.0	23.8	27.6	93.1	80.9	0.6	28.7	29.5	95.0	75.0	4.8	34.1
	27	26.6	36.3	81.2	0.0	-3.0	27.6	46.1	81.2	0.0	4.5	28.5	57.8	81.1	0.0	11.9	29.5	71.7	81.1	0.0	19.4	30.6	81.3	81.0	0.0	23.9	30.6	91.5	80.9	0.5	28.8
8.000	18	19.7	55.3	76.2	0.0	14.4	20.9	68.9	76.2	0.0	24.8	22.1	84.7	76.2	0.3	35.4	24.1	95.0	72.1	5.0	47.4	26.1	95.0	67.4	10.0	56.5	28.1	95.0	64.0	14.6	67.9
	21	21.9	48.1	76.3	0.0	8.2	23.1	59.9	76.3	0.0	18.6	24.3	74.0	76.3	0.0	29.0	25.5	90.3	73.0	3.8	47.6	26.9	95.0	73.0	3.8	47.6	29.0	95.0	68.0	8.4	56.8
	24	24.2	41.9	76.4	0.0	2.1	25.4	52.3	76.4	0.0	12.4	26.6	64.6	76.4	0.0	22.8	27.8	79.1	76.3	0.0	33.3	28.5	88.5	76.3	0.6	40.1	29.7	95.0	74.0	2.8	47.7
	27	26.5	36.5	76.5	0.0	-4.1	27.7	45.7	76.5	0.0	6.2	28.9	56.5	76.5	0.0	16.6	30.1	69.3	76.5	0.0	27.1	30.5	77.9	76.4	0.0	33.4	31.5	87.1	76.3	0.5	40.2
12.000	18	20.1	54.0	70.5	0.0	20.0	21.5	66.1	70.5	0.0	34.4	23.0	79.9	70.5	0.3	49.1	24.5	94.9	70.5	1.9	65.9	26.8	95.0	66.0	7.0	78.5	28.5	95.0	62.5	11.6	94.4
	21	22.2	47.4	70.6	0.0	11.5	23.6	58.1	70.7	0.0	25.8	25.1	70.6	70.7	0.0	40.3	26.6	84.5	70.6	0.6	55.6	27.5	93.3	70.6	1.7	66.1	29.3	95.0	66.7	5.7	78.9
	24	24.3	41.7	70.7	0.0	2.9	25.8	51.2	70.8	0.0	17.3	27.2	62.3	70.8	0.0	31.7	28.7	75.0	70.8	0.0	46.3	29.6	83.3	70.7	0.5	55.8	30.5	91.8	70.7	1.4	66.4
	27	26.4	36.8	70.9	0.0	-5.7	27.9	45.2	70.9	0.0	8.6	29.3	55.1	70.9	0.0	23.1	30.8	66.5	70.9	0.0	37.7	31.7	74.1	70.8	0.0	46.5	32.6	82.1	70.8	0.4	56.0
16.000	18	20.4	52.9	65.9	0.0	24.9	22.1	63.9	65.9	0.0	42.8	23.8	76.2	65.9	0.3	61.2	25.5	89.4	65.9	1.8	82.1	26.8	95.0	64.7	4.5	97.8	28.8	95.0	61.3	9.1	117.6
	21	22.4	46.9	66.0	0.0	14.3	24.1	56.7	66.0	0.0	32.2	25.8	67.9	66.0	0.0	50.2	27.5	80.3	66.0	0.6	69.3	28.5	88.0	66.0	1.6	82.4	29.6	95.0	65.6	3.5	98.3
	24	24.3	41.6	66.1	0.0	3.6	26.0	50.4	66.1	0.0	21.5	27.7	60.5	66.1	0.0	39.5	29.4	71.9	66.1	0.0	57.7	30.4	79.2	66.1	0.5	69.5	31.5	86.7	66.1	1.4	82.7
	27	26.3	37.0	66.2	0.0	-7.2	28.0	44.9	66.2	0.0	10.8	29.7	53.9	66.3	0.0	28.8	31.4	64.2	66.3	0.0	47.0	32.4	71.0	66.2	0.0	57.9	33.4	78.1	66.2	0.4	69.8
17.400	18	20.5	52.6	64.4	0.0	26.5	22.3	63.2	64.4	0.0	45.6	24.0	75.1	64.5	0.3	65.1	25.8	87.7	64.5	1.8	87.3	26.9	95.0	64.4	3.7	104.0	28.9	95.0	60.9	8.3	125.0
	21	22.4	46.7	64.5	0.0	15.2	24.2	56.2	64.6	0.0	34.2	26.0	67.1	64.6	0.0	53.4	27.7	79.0	64.6	0.6	73.7	28.8	86.4	64.5	1.5	87.6	29.9	93.7	64.5	3.2	104.6
	24	24.4	41.6	64.6	0.0	3.8	26.1	50.1	64.7	0.0	22.9	27.9	59.9	64.7	0.0	42.1	29.7	71.0	64.7	0.0	61.4	30.7	78.0	64.7	0.5	73.9	31.8	85.2	64.6	1.3	88.0
	27	26.3	37.0	64.7	0.0	-7.6	28.1	44.8	64.8	0.0	11.5	29.8	53.6	64.8	0.0	30.6	31.6	63.6	64.8	0.0	50.0	32.6	70.1	64.8	0.0	61.6	33.7	77.0	64.7	0.4	74.2

Heating capacities																																		
ERM 18C				-5				0				5				10				15														
Air flow (m <sup>3</sup> /h)		ODDB/ IDDB		-10		-5		0		5		10		15		10		15		15		15		15		15		15						
Out DB	Out RH	Out temp RH	humid eff %	ht kW	Out DB	Out RH	Out temp RH	humid eff %	ht kW	Out DB	Out RH	Out temp RH	humid eff %	ht kW	Out DB	Out RH	Out temp RH	humid eff %	ht kW	Out DB	Out RH	Out temp RH	humid eff %	ht kW	Out DB	Out RH	Out temp RH	humid eff %	ht kW	Out DB	Out RH	Out temp RH	humid eff %	ht kW
5.400	18	12.6	46.5	80.6	61.5	57.0	13.6	41.8	80.7	55.8	47.2	14.5	29.1	80.7	29.9	33.0	15.5	20.6	80.8	2.0	19.5	16.5	26.2	80.9	0.0	11.8	17.4	34.3	80.9	0.0	4.4			
	21	15.0	48.2	80.7	62.8	65.6	16.0	44.3	80.8	59.3	56.3	17.0	34.2	80.8	41.6	42.6	17.9	20.2	80.9	7.3	25.4	18.9	22.6	80.9	0.2	16.2	19.9	29.4	81.0	0.0	8.8			
	24	17.5	49.8	80.8	63.7	74.9	18.4	46.3	80.9	61.5	65.8	19.4	38.2	80.9	49.1	62.7	20.4	22.3	81.0	16.0	33.1	21.3	19.8	81.0	1.3	21.0	22.3	25.3	81.1	0.0	13.3			
	27	19.9	51.2	80.9	64.4	85.1	20.9	48.0	81.0	62.8	76.1	21.9	41.1	81.0	53.8	83.4	22.8	25.8	81.1	25.4	42.8	23.8	18.6	81.1	4.3	26.7	24.7	22.0	81.2	0.3	17.8			
8.000	18	11.2	48.3	75.5	57.6	79.1	12.4	42.9	75.7	52.3	65.6	13.6	29.9	75.8	28.1	45.9	14.9	21.4	75.9	1.9	27.1	16.1	26.9	76.0	0.0	16.4	17.3	34.6	76.0	0.0	6.1			
	21	13.5	50.5	75.7	58.9	91.1	14.7	45.8	75.8	55.7	78.0	15.9	35.2	75.9	39.0	59.2	17.2	21.0	76.0	6.9	35.3	18.4	23.3	76.1	0.2	22.6	19.6	30.0	76.2	0.0	12.3			
	24	15.8	52.4	75.8	59.8	104.1	17.0	48.1	75.9	57.7	91.5	18.2	39.3	76.0	46.1	73.3	19.5	23.1	76.1	15.0	46.1	20.7	20.7	76.2	1.2	29.2	21.9	26.0	76.3	0.0	18.5			
	27	18.1	54.2	75.9	60.4	118.3	19.3	50.1	76.0	59.0	105.8	20.6	42.5	76.1	50.5	88.2	21.8	26.7	76.2	23.9	59.6	23.0	19.4	76.3	4.0	37.1	24.2	22.7	76.4	0.3	24.8			
12.000	18	9.5	50.4	69.8	53.2	105.6	11.1	44.2	69.9	48.3	91.0	12.6	30.8	70.0	25.9	63.6	14.1	22.4	70.2	1.8	37.6	15.6	27.7	70.3	0.0	22.7	17.1	35.0	70.4	0.0	8.5			
	21	11.7	53.0	69.9	54.4	126.2	13.2	47.5	70.0	51.5	108.1	14.7	36.2	70.2	36.1	81.9	16.2	22.0	70.3	6.4	49.0	17.7	24.2	70.4	0.2	31.3	19.2	30.6	70.5	0.0	17.1			
	24	13.8	55.5	70.0	55.2	144.2	15.3	50.2	70.2	53.3	126.8	16.9	40.6	70.3	42.6	101.4	18.4	24.1	70.4	13.9	64.0	19.9	21.7	70.5	1.1	40.6	21.4	26.8	70.6	0.0	25.7			
	27	16.0	57.8	70.1	55.8	163.9	17.5	52.7	70.3	54.5	146.7	19.0	44.1	70.4	46.7	122.3	20.5	27.8	70.5	22.1	82.8	22.0	20.4	70.6	3.7	51.6	23.5	23.7	70.7	0.2	34.5			
16.000	18	8.2	52.0	65.1	49.6	136.0	10.0	45.2	65.2	45.1	113.2	11.8	31.6	65.3	24.2	79.1	13.5	23.3	65.5	1.6	46.7	15.2	26.3	65.6	0.0	28.3	17.0	35.3	65.7	0.0	10.6			
	21	10.2	55.1	65.2	50.7	156.9	12.0	48.8	65.3	48.0	134.5	13.7	37.1	65.5	33.7	102.0	15.5	22.9	65.6	6.0	60.9	17.2	25.9	65.7	0.2	39.0	18.9	31.1	65.8	0.0	21.3			
	24	12.2	58.0	65.3	51.5	179.3	14.0	51.8	65.4	49.7	157.3	15.7	41.7	65.6	39.8	126.2	17.5	25.0	65.7	12.9	79.6	19.2	22.5	65.8	1.0	50.5	20.9	27.5	65.9	0.0	32.0			
	27	14.2	60.8	65.4	52.1	203.7	16.0	54.7	65.6	50.9	182.4	17.7	45.4	65.7	43.6	151.7	19.5	28.6	65.8	20.7	103.0	21.2	21.3	65.9	3.5	64.2	22.9	24.5	66.0	0.2	42.9			
17.400	18	7.8	52.5	63.6	48.5	144.6	9.7	45.5	63.8	44.1	120.3	11.5	31.8	63.9	23.7	84.1	13.3	23.5	64.0	1.6	49.7	15.1	26.6	64.1	0.0	30.0	16.9	35.4	64.2	0.0	11.3			
	21	9.8	55.7	63.7	49.6	166.8	11.6	49.2	63.9	46.9	143.0	13.4	37.3	64.0	32.9	108.4	15.3	23.2	64.1	5.8	64.8	17.1	25.3	64.2	0.2	41.5	18.9	31.3	64.3	0.0	22.6			
	24	11.7	58.7	63.8	50.3	190.5	13.6	52.3	64.0	48.6	167.2	15.2	42.0	64.1	38.9	134.2	17.2	25.2	64.2	12.7	84.7	19.0	22.8	64.4	1.0	53.7	20.8	27.8	64.5	0.0	34.0			
	27	13.7	61.7	64.0	50.9	216.5	15.5	55.3	64.1	49.7	193.9	17.3	45.8	64.2	42.6	161.4	19.2	28.9	64.4	20.2	109.5	21.0	21.6	64.5	3									



# Cooling and Heating capacities

Cooling capacities		25/40				30/40				35/40				40/40				43/40				46/40									
		Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %						
5.400	18	19.3	48.7	81.6	75.7	15.5	20.2	49.4	81.6	79.3	33.0	21.1	49.3	81.5	83.3	54.7	22.1	48.2	81.4	87.3	81.6	22.7	47.0	81.4	89.4	100.6	23.2	45.7	81.3	91.2	122.2
	21	21.7	48.0	81.7	73.7	6.5	22.6	49.1	81.7	76.5	23.4	23.6	49.6	81.6	80.3	44.3	24.5	49.1	81.5	84.5	70.5	25.1	48.3	81.5	87.0	89.2	25.7	47.1	81.4	89.2	110.6
	24	24.2	47.6	81.8	74.7	-3.3	25.1	48.5	81.8	74.3	13.4	26.0	49.5	81.7	77.4	33.5	26.9	49.7	81.6	81.4	58.7	27.5	49.3	81.5	84.0	76.9	28.1	48.5	81.5	86.6	97.9
	27	26.6	47.7	81.9	76.8	-14.4	27.5	47.8	81.9	73.3	2.7	28.5	49.0	81.8	75.0	22.2	29.5	49.0	81.7	77.8	46.0	29.9	49.8	81.7	80.9	63.9	30.5	49.5	81.6	83.6	84.1
8.000	18	19.6	48.5	77.1	67.9	21.3	20.7	49.9	77.1	71.6	45.3	21.9	50.6	77.1	75.9	75.1	23.0	50.4	77.1	80.1	112.2	23.7	50.1	77.0	82.2	138.5	24.5	49.6	76.9	84.1	168.4
	21	21.9	47.6	77.2	65.8	9.0	23.0	49.2	77.2	68.8	32.1	24.2	50.4	77.2	72.7	60.7	25.3	50.7	77.2	77.1	96.6	26.0	50.5	77.1	79.7	122.5	26.7	50.1	77.0	82.0	152.1
	24	24.2	46.9	77.3	67.0	-4.3	25.4	48.2	77.3	66.4	18.4	26.5	49.8	77.3	69.7	45.8	27.6	50.7	77.3	73.9	80.2	28.3	50.9	77.2	76.6	105.3	29.0	50.6	77.2	79.2	134.2
	27	26.5	46.8	77.4	69.2	-19.4	27.7	47.3	77.5	65.4	3.9	28.8	48.9	77.5	65.4	3.9	28.8	48.9	77.5	65.4	3.9	30.0	50.3	76.8	70.1	62.7	31.3	51.0	77.3	76.0	115.0
12.000	18	20.0	48.5	71.8	58.0	29.0	21.4	50.6	71.9	61.9	61.3	22.8	52.1	71.9	66.5	101.6	24.2	52.9	71.9	71.0	152.3	25.0	53.3	71.8	73.3	188.3	25.9	53.6	71.8	75.3	229.1
	21	22.1	47.1	72.0	55.6	12.5	23.5	49.4	72.0	58.8	43.4	24.9	51.3	72.0	63.0	81.8	26.3	52.6	72.0	67.7	130.5	27.2	53.0	71.9	70.4	165.8	28.0	53.2	71.9	72.9	206.2
	24	24.3	46.0	72.1	57.0	-5.2	25.7	48.0	72.1	56.2	25.0	27.1	50.3	72.1	59.7	61.4	28.5	52.0	72.1	64.1	107.7	29.3	52.7	72.0	67.0	141.6	30.2	53.0	72.0	69.9	181.0
	27	26.4	45.6	72.2	59.3	-25.4	27.8	46.6	72.2	55.1	5.8	29.2	48.9	72.2	56.8	40.7	30.7	51.0	71.7	60.2	83.7	31.5	52.1	72.2	63.4	116.5	32.3	52.8	72.1	66.3	154.1
16.000	18	20.3	48.4	67.5	49.3	35.4	21.9	51.1	67.6	53.5	74.2	23.5	53.2	67.6	58.5	123.2	25.1	54.7	67.6	63.2	185.1	26.1	55.5	67.6	65.7	229.4	27.1	56.3	67.5	67.8	279.5
	21	22.3	46.7	67.7	46.8	15.6	23.9	49.6	67.7	50.1	52.4	25.5	52.1	67.7	54.6	98.5	27.1	54.0	67.7	59.7	157.7	28.1	54.8	67.7	62.6	200.9	29.1	55.4	67.6	65.2	250.3
	24	24.3	45.2	67.8	48.3	-5.6	25.9	47.8	67.8	47.3	30.3	27.5	50.7	67.8	51.0	73.7	29.1	53.0	67.8	56.7	129.3	30.1	54.1	67.8	58.8	170.4	31.1	54.8	67.7	61.9	218.4
	27	26.4	44.5	67.9	50.7	-29.7	28.0	46.0	67.9	46.1	7.7	29.6	49.0	68.0	47.9	48.8	31.2	51.7	67.4	51.5	99.9	32.1	53.1	67.9	54.8	139.1	33.1	54.2	67.9	58.0	184.5
17.400	18	20.4	48.4	66.2	46.5	37.3	22.0	51.3	66.3	50.8	78.1	23.7	53.6	66.3	55.9	129.7	25.4	56.2	66.3	60.8	195.2	26.4	56.1	66.2	63.3	242.0	27.5	57.0	66.2	65.4	295.0
	21	22.3	46.5	66.3	43.9	16.6	24.0	49.6	66.4	47.3	55.1	25.7	52.4	66.4	51.9	103.5	27.4	54.4	66.4	57.1	165.9	28.4	55.3	66.4	60.1	211.5	29.4	56.1	66.3	62.8	263.8
	24	24.3	45.0	66.4	45.5	-5.5	26.0	47.8	66.5	44.4	32.0	27.7	50.8	66.5	48.1	77.3	29.4	53.4	66.5	53.0	135.6	30.4	54.5	66.5	56.2	179.0	31.4	55.4	66.4	59.3	229.6
	27	26.3	44.2	66.6	48.0	-30.8	28.0	45.9	66.6	43.2	8.3	29.7	49.0	66.6	44.9	51.1	31.4	51.9	66.1	48.7	104.5	32.3	53.5	66.6	52.1	145.6	33.4	54.6	66.6	55.3	193.4

Heating capacities		-10				-5				0				5				10				15									
		Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %						
5.400	18	12.8	64.8	81.3	91.7	65.0	13.7	60.9	81.4	91.2	56.1	14.7	57.2	81.4	90.0	46.4	15.6	53.5	81.5	87.5	36.0	16.5	50.2	81.5	83.6	24.6	17.4	48.1	81.6	79.0	12.3
	21	15.2	66.6	81.4	91.9	75.0	16.2	62.7	81.5	91.6	66.2	17.1	59.0	81.5	90.8	56.5	18.1	55.3	81.6	89.0	46.1	19.0	51.8	81.6	85.8	34.6	19.9	49.0	81.7	81.3	21.9
	24	17.7	68.3	81.5	92.1	86.0	18.6	64.5	81.6	91.9	77.3	19.6	60.8	81.6	91.4	67.7	20.5	57.2	81.7	90.2	57.3	21.4	53.6	81.7	87.7	45.7	22.4	50.4	81.8	83.7	32.7
	27	20.2	70.0	81.6	92.3	98.2	21.1	66.1	81.7	92.2	89.5	22.1	62.5	81.7	91.8	80.0	23.0	59.0	81.8	91.0	69.7	23.9	55.4	81.8	89.2	58.1	24.8	52.0	81.9	86.0	44.9
8.000	18	11.4	66.0	76.5	84.7	90.0	12.6	61.3	76.6	84.2	77.7	13.8	56.9	76.7	83.0	64.3	15.0	52.8	76.8	80.4	49.7	16.2	49.3	76.9	76.3	33.8	17.3	47.2	77.0	71.4	16.7
	21	13.8	68.3	76.6	85.0	103.9	15.0	63.5	76.7	84.7	91.7	16.1	59.1	76.8	83.8	78.3	17.3	54.8	76.9	82.0	63.7	18.5	51.0	77.0	78.6	47.6	19.6	48.0	77.1	73.9	29.9
	24	16.1	70.5	76.7	85.2	119.1	17.3	65.6	76.8	85.0	107.0	18.5	61.2	77.0	84.5	93.7	19.6	56.9	77.1	83.2	79.2	20.8	52.9	77.1	80.6	63.0	22.0	49.4	77.2	76.5	44.8
	27	18.4	72.6	76.9	85.3	136.0	19.6	67.7	77.0	85.3	124.0	20.8	63.2	77.1	84.9	110.7	22.0	59.0	77.2	84.1	96.4	23.1	54.9	77.3	82.2	80.2	24.3	51.1	77.3	78.8	61.7
12.000	18	9.9	66.8	71.1	76.6	124.3	11.4	61.2	71.3	76.0	107.2	12.9	56.2	71.4	74.6	88.4	14.3	51.6	71.5	71.8	66.2	15.7	47.9	71.6	67.3	46.0	17.2	46.0	71.7	61.9	22.3
	21	12.1	69.6	71.3	76.8	143.4	13.6	63.8	71.4	76.5	126.4	15.0	58.7	71.5	75.6	107.7	16.5	53.9	71.6	73.5	87.5	17.9	49.7	71.7	69.8	64.9	19.3	46.7	71.8	64.6	40.3
	24	14.3	72.3	71.4	77.0	164.4	15.7	66.4	71.5	76.8	147.5	17.2	61.1	71.6	79.2	128.9	18.6	56.2	71.7	74.8	108.8	20.1	51.7	71.8	72.0	86.1	21.5	48.0	71.9	67.4	60.7
	27	16.5	75.0	71.5	77.1	187.6	17.9	68.9	71.6	77.0	170.8	19.4	63.5	71.7	76.7	152.4	20.8	58.6	71.9	75.8	132.4	22.2	53.9	72.0	73.7	109.7	23.6	49.8	72.1	69.9	83.9
16.000	18	8.7	67.0	66.8	69.8	154.0	10.4	60.7	66.9	69.2	132.7	12.1	55.3	67.0	67.7	109.2	13.7	50.4	67.2	64.6	83.8	15.4	46.6	67.3	58.7	56.0	17.0	44.9	67.4	53.8	26.7
	21	10.7	70.2	66.9	70.1	177.6	12.4	63.6	67.0	69.7	156.4	14.1	58.0	67.2	66.4	107.6	15.8	52.8	67.3	66.4	107.6	17.4	48.4	67.4	62.4	79.3	19.1	45.4	67.5	56.7	48.6
	24	12.8	73.3	67.0	70.2	203.5	14.5	66.6	67.1	70.0	182.4	16.1	60.7	67.3	69.4	159.2	17.8	55.3	67.4	67.8	133.9	19.5	50.5	67.5	64.7	105.4	21.1	46.7	67.6	59.7	73.6
	27	14.8	76.5	67.1	70.3	232.1	16.5	69.5	67.3	70.3	211.1	18.2	63.4	67.4	69.9	188.1	19.9	57.9	67.5	68.8	163.1	21.5	52.8	67.6	66.6	134.5	2				

# Cooling and Heating capacities

Cooling capacities		25/40				30/40				35/40				40/40				43/40				46/40									
ERM 20C	ODDB/ODRH	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %						
5.400	18	19.3	55.5	80.9	0.0	10.3	20.3	71.3	80.9	0.0	17.8	21.3	88.9	80.9	0.4	25.3	23.8	95.0	73.5	76	33.9	25.8	95.0	68.7	12.5	40.4	27.7	95.0	65.2	17.0	48.6
	21	21.8	48.6	81.0	0.0	5.9	22.7	61.5	81.0	0.0	13.3	23.7	76.9	81.0	0.0	20.8	24.6	94.8	80.9	0.7	28.6	26.7	95.0	74.2	6.1	34.0	28.7	95.0	69.1	10.7	40.6
	24	24.2	42.0	81.1	0.0	1.5	25.1	53.2	81.1	0.0	8.9	26.1	66.6	81.0	0.0	16.4	27.0	82.5	81.0	0.0	23.8	27.6	93.1	80.9	0.6	28.7	29.5	95.0	75.0	4.8	34.1
	27	26.6	36.3	81.2	0.0	-3.0	27.6	46.1	81.2	0.0	4.5	28.5	57.8	81.1	0.0	11.9	29.5	71.7	81.1	0.0	29.4	30.6	81.3	81.0	0.0	23.9	30.6	91.5	80.9	0.5	28.8
6.150	18	19.4	56.1	79.3	0.0	11.5	20.5	70.5	79.3	0.0	19.8	21.5	87.4	79.2	0.4	28.3	23.9	95.0	73.0	6.7	37.9	25.9	95.0	68.3	11.6	45.1	27.9	95.0	64.8	16.2	54.3
	21	21.8	48.4	79.4	0.0	6.6	22.9	61.0	79.4	0.0	14.9	23.9	75.9	79.3	0.0	23.2	24.9	93.1	79.3	0.7	32.0	26.8	95.0	73.8	5.3	38.0	28.8	95.0	68.7	9.9	45.3
	24	24.2	41.9	79.5	0.0	1.7	25.2	52.9	79.5	0.0	9.9	26.3	65.9	79.4	0.0	18.3	27.3	81.3	79.4	0.0	26.6	27.9	91.5	79.3	0.6	32.0	29.6	95.0	74.7	4.1	38.1
	27	26.6	36.4	79.6	0.0	-3.3	27.6	45.9	79.6	0.0	5.0	28.6	57.4	79.5	0.0	13.3	29.7	70.9	79.5	0.0	21.7	30.3	80.1	79.4	0.0	26.7	30.9	85.9	79.3	0.5	32.1
8.000	18	19.7	55.3	76.2	0.0	14.4	20.9	68.9	76.2	0.0	24.8	22.1	84.7	76.2	0.3	35.4	24.1	95.0	72.1	5.0	47.4	26.1	95.0	67.4	10.0	56.5	28.1	95.0	64.0	14.6	67.9
	21	21.9	48.1	76.3	0.0	8.2	23.1	59.9	76.3	0.0	18.6	24.3	74.0	76.3	0.0	29.0	25.5	90.0	76.2	0.7	40.0	26.9	95.0	73.0	3.8	47.6	29.0	95.0	68.0	8.4	56.8
	24	24.2	41.9	76.4	0.0	2.1	25.4	52.3	76.4	0.0	12.4	26.6	64.6	76.4	0.0	22.8	27.8	79.1	76.3	0.0	33.3	28.5	88.5	76.3	0.6	40.1	29.7	95.0	74.0	2.8	47.7
	27	26.5	36.5	76.5	0.0	-4.1	27.7	45.7	76.5	0.0	6.2	28.9	56.5	76.5	0.0	16.6	30.1	69.3	76.5	0.0	27.1	30.8	77.9	76.4	0.0	33.4	31.5	87.1	76.3	0.5	40.2
12.000	18	20.1	54.0	70.5	0.0	20.0	21.5	66.1	70.5	0.0	34.4	23.0	79.9	70.6	0.3	49.1	24.5	94.9	70.5	1.9	65.9	26.5	95.0	66.0	7.0	78.5	28.5	95.0	62.5	11.6	94.4
	21	22.2	47.4	70.6	0.0	11.5	23.6	58.1	70.7	0.0	25.8	25.1	70.6	70.7	0.0	40.3	26.6	84.5	70.6	0.6	55.6	27.5	93.3	70.6	1.7	66.1	29.3	95.0	66.7	5.7	78.9
	24	24.3	41.7	70.7	0.0	2.9	25.8	51.2	70.8	0.0	17.3	27.2	62.3	70.8	0.0	31.7	28.7	75.0	70.8	0.0	46.3	29.6	83.3	70.7	0.5	55.8	30.5	91.8	70.7	1.4	66.4
	27	26.4	36.8	70.9	0.0	-5.7	27.9	45.2	70.9	0.0	8.6	29.3	55.1	70.9	0.0	23.1	30.8	66.5	70.9	0.0	37.7	31.7	74.1	70.8	0.0	46.5	32.6	82.1	70.8	0.4	56.0
16.000	18	20.4	52.9	65.9	0.0	24.9	22.1	63.9	65.9	0.0	42.8	23.8	76.2	65.9	0.3	61.2	25.5	89.4	65.9	1.8	82.1	26.8	95.0	64.7	4.5	97.8	28.8	95.0	61.3	9.1	117.6
	21	22.4	46.9	66.0	0.0	14.3	24.1	56.7	66.0	0.0	32.2	25.8	67.9	66.0	0.0	50.2	27.5	80.3	66.0	0.6	69.3	28.5	88.0	66.0	1.6	82.4	29.6	95.0	65.6	3.5	98.3
	24	24.3	41.6	66.1	0.0	3.6	26.0	50.4	66.1	0.0	21.5	27.7	60.5	66.1	0.0	39.5	29.4	71.9	66.1	0.0	57.7	30.4	79.2	66.1	0.5	69.5	31.5	86.7	66.1	1.4	82.7
	27	26.3	37.0	66.2	0.0	-7.2	28.0	44.9	66.2	0.0	10.8	29.7	53.9	66.3	0.0	28.8	31.4	64.2	66.3	0.0	47.0	32.4	71.0	66.2	0.0	57.9	33.4	78.1	66.2	0.4	69.8
17.400	18	20.5	52.6	64.4	0.0	26.5	22.3	63.2	64.4	0.0	45.6	24.0	75.1	64.5	0.3	65.1	25.8	87.7	64.5	1.8	87.3	26.9	95.0	64.4	3.7	104.0	28.9	95.0	60.9	8.3	125.0
	21	22.4	46.7	64.5	0.0	15.2	24.2	56.2	64.6	0.0	34.2	26.0	67.1	64.6	0.0	53.4	27.7	79.0	64.6	0.6	73.7	28.8	86.4	64.5	1.5	87.6	29.9	93.7	64.5	3.2	104.6
	24	24.4	41.6	64.6	0.0	3.8	26.1	50.1	64.7	0.0	22.9	27.9	59.9	64.7	0.0	42.1	29.7	71.0	64.7	0.0	61.4	30.7	78.0	64.7	0.5	73.9	31.8	85.2	64.6	1.3	88.0
	27	26.3	37.0	64.7	0.0	-7.6	28.1	44.8	64.8	0.0	11.5	29.8	53.6	64.8	0.0	30.6	31.6	63.6	64.8	0.0	50.0	32.6	70.1	64.8	0.0	61.6	33.7	77.0	64.7	0.4	74.2
20.500	18	20.7	51.9	61.4	0.0	29.8	22.6	61.8	61.5	0.0	51.2	24.5	72.9	61.5	0.3	73.2	26.5	84.5	61.5	1.7	98.1	27.6	91.2	61.5	3.5	117.0	29.2	95.0	60.2	6.7	140.6
	21	22.5	46.4	61.6	0.0	17.1	24.5	55.4	61.6	0.0	38.5	26.4	65.5	61.6	0.0	60.1	28.3	76.5	61.6	0.5	82.8	29.4	83.3	61.6	1.5	98.5	30.6	89.9	61.6	3.1	117.6
	24	24.4	41.5	61.7	0.0	4.3	26.3	49.6	61.7	0.0	25.7	28.2	58.8	61.8	0.0	47.3	30.1	69.1	61.7	0.0	69.0	31.3	75.6	61.7	0.5	83.2	32.4	82.2	61.7	1.3	98.9
	27	26.2	37.2	61.8	0.0	-8.6	28.1	44.5	61.8	0.0	12.9	30.1	52.9	61.9	0.0	34.5	32.0	62.2	61.9	0.0	56.2	33.1	68.3	61.8	0.0	69.3	34.3	74.6	61.8	0.4	83.5

cc: Cooling Capacity (kW)

ht: Heating Capacity (kW)

temp eff: Energy recovery modul temperature efficiency (%)

humid eff: Energy recovery modul humidity efficiency (%)

ODDB: Outdoor air dry bulb temperature (°C)

ODRH: Outdoor air relative humidity (%)

IDDB: Indoor air dry bulb temperature (°C)

Out DB: ERM outlet air dry-bulb temperature (°C) - before rooftop inlet -

Out RH: ERM outlet air relative humidity (°C) - before rooftop inlet -

# Cooling and Heating capacities

Heating capacities		-10			-5			0			5			10			15														
		Out DB	Out RH	Humid ht eff %	Out DB	Out RH	Humid ht eff %	Out DB	Out RH	Humid ht eff %	Out DB	Out RH	Humid ht eff %	Out DB	Out RH	Humid ht eff %	Out DB	Out RH	Humid ht eff %												
5.400	18	12.6	46.5	80.6	61.5	57.0	13.6	41.8	80.7	55.8	47.2	14.5	29.1	80.7	29.9	33.0	15.5	20.6	80.8	2.0	19.5	16.5	26.2	80.9	0.0	11.8	17.4	34.3	80.9	0.0	4.4
	21	15.0	48.2	80.7	62.8	65.6	16.0	44.3	80.8	59.3	56.3	17.0	34.2	80.8	4.16	42.6	17.9	20.2	80.9	7.3	25.4	18.9	22.6	80.9	0.2	16.2	19.9	29.4	81.0	0.0	8.8
	24	17.5	49.8	80.8	63.7	74.9	18.4	46.3	80.9	61.5	66.8	19.4	38.2	80.9	49.1	52.7	20.4	22.3	81.0	16.0	33.1	21.3	19.8	81.0	1.3	21.0	22.3	25.3	81.1	0.0	13.3
	27	19.9	51.2	80.9	64.4	85.1	20.9	48.0	81.0	62.8	76.1	21.9	41.1	81.0	53.8	63.4	22.8	25.8	81.1	25.4	42.8	23.8	18.6	81.1	4.3	26.7	24.7	22.0	81.2	0.3	17.8
6.150	18	12.1	47.1	78.9	60.2	63.6	13.2	42.2	79.0	54.6	52.7	14.2	29.4	79.1	29.3	36.8	15.3	20.9	79.2	2.0	21.7	16.3	26.4	79.2	0.0	13.1	17.4	34.4	79.3	0.0	4.9
	21	14.5	49.0	79.0	61.5	73.2	15.6	44.8	79.1	58.1	62.8	16.6	34.5	79.2	40.7	47.5	17.7	20.5	79.2	7.2	28.3	18.7	22.8	79.3	0.2	18.1	19.8	29.6	79.4	0.0	9.9
	24	16.9	50.6	79.1	62.4	83.6	18.0	46.9	79.2	60.2	73.4	19.0	38.6	79.3	48.1	58.8	20.1	22.5	79.3	15.6	37.0	21.1	20.1	79.4	1.3	23.4	22.2	25.6	79.5	0.0	14.8
	27	19.3	52.2	79.2	63.0	94.9	20.4	48.7	79.3	61.5	84.9	21.4	41.6	79.4	52.7	70.7	22.5	26.1	79.5	24.9	47.8	23.5	18.8	79.5	4.2	29.7	24.5	22.2	79.6	0.3	19.9
8.000	18	11.2	48.3	75.5	57.6	79.1	12.4	42.9	75.7	52.3	65.6	13.6	29.9	75.8	28.1	45.9	14.9	21.4	75.9	1.9	27.1	16.1	26.9	76.0	0.0	16.4	17.3	34.6	76.0	0.0	6.1
	21	13.5	50.5	75.7	58.9	91.1	14.7	45.8	75.8	55.7	78.0	15.9	35.2	75.9	39.0	59.2	17.2	21.0	76.0	6.9	35.3	18.4	23.3	76.1	0.2	22.6	19.6	30.0	76.2	0.0	12.3
	24	15.8	52.4	75.8	59.8	104.1	17.0	48.1	75.9	57.7	91.5	18.2	39.3	76.0	46.1	73.3	19.5	23.1	76.1	15.0	46.1	20.7	20.7	76.2	1.2	29.2	21.9	26.0	76.3	0.0	18.5
	27	18.1	54.2	75.9	60.4	118.3	19.3	50.1	76.0	59.0	105.8	20.6	42.5	76.1	50.5	88.2	21.8	26.7	76.2	23.9	59.6	23.0	19.4	76.3	4.0	37.1	24.2	22.7	76.4	0.3	24.8
12.000	18	9.5	50.4	69.8	53.2	109.6	11.1	44.2	69.9	48.3	91.0	12.6	30.8	70.0	25.9	63.6	14.1	22.4	70.2	1.8	37.6	15.6	27.7	70.3	0.0	22.7	17.1	35.0	70.4	0.0	8.5
	21	11.7	53.0	69.9	54.4	126.2	13.2	47.5	70.0	51.5	108.1	14.7	36.2	70.2	36.1	81.9	16.2	22.0	70.3	6.4	49.0	17.7	24.2	70.4	0.2	31.3	19.2	30.6	70.5	0.0	17.1
	24	13.8	55.5	70.0	55.2	144.2	15.3	50.2	70.2	53.3	126.8	16.9	40.6	70.3	42.6	101.4	18.4	24.1	70.4	13.9	64.0	19.9	21.7	70.5	1.1	40.6	21.4	28.8	70.6	0.0	25.7
	27	16.0	57.8	70.1	55.8	163.9	17.5	52.7	70.3	54.5	146.7	19.0	44.1	70.4	46.7	122.3	20.5	27.8	70.5	22.1	82.8	22.0	20.4	70.6	3.7	51.6	23.5	23.7	70.7	0.2	34.5
16.000	18	8.2	52.0	65.1	49.6	136.0	10.0	45.2	65.2	45.1	113.2	11.8	31.6	65.3	24.2	79.1	13.5	23.3	65.5	1.6	46.7	15.2	28.3	65.6	0.0	28.3	17.0	35.3	65.7	0.0	10.6
	21	10.2	55.1	65.2	50.7	156.9	12.0	48.8	65.3	48.0	134.5	13.7	37.1	65.5	33.7	102.0	15.5	22.9	65.6	6.0	60.9	17.2	25.0	65.7	0.2	39.0	18.9	31.1	65.8	0.0	21.3
	24	12.2	58.0	65.3	51.5	179.3	14.0	51.8	65.4	49.7	157.3	15.7	41.7	65.6	39.8	126.2	17.5	25.0	65.7	12.9	79.6	19.2	22.5	65.8	1.0	50.5	20.9	27.5	65.9	0.0	32.0
	27	14.2	60.8	65.4	52.1	203.7	16.0	54.7	65.6	50.9	182.4	17.7	45.4	65.7	43.6	151.7	19.5	28.6	65.8	20.7	103.0	21.2	21.3	65.9	3.5	64.2	22.9	24.5	66.0	0.2	42.9
17.400	18	7.8	52.5	63.6	48.5	144.6	9.7	45.5	63.8	44.1	120.3	11.5	31.8	63.9	23.7	84.1	13.3	23.5	64.0	1.6	49.7	15.1	28.6	64.1	0.0	30.0	16.9	35.4	64.2	0.0	11.3
	21	9.8	55.7	63.7	49.6	166.8	11.6	49.2	63.9	46.9	143.0	13.4	37.3	64.0	32.9	108.4	15.3	23.2	64.1	5.8	64.8	17.1	25.3	64.2	0.2	41.5	18.9	31.3	64.3	0.0	22.6
	24	11.7	58.7	63.8	50.3	190.5	13.6	52.3	64.0	48.6	167.2	15.4	42.0	64.1	38.9	134.2	17.2	25.2	64.2	12.7	84.7	19.0	22.8	64.4	1.0	53.7	20.8	27.8	64.5	0.0	34.0
	27	13.7	61.7	64.0	50.9	216.5	15.5	55.3	64.1	49.7	193.9	17.3	45.8	64.2	42.6	161.4	19.2	28.9	64.4	20.2	109.5	21.0	21.6	64.5	3.4	68.2	22.8	24.7	64.6	0.2	45.7
20.500	18	7.0	53.5	60.6	46.2	162.4	9.0	46.1	60.8	42.0	135.2	11.0	32.3	60.9	22.6	94.5	12.9	24.1	61.0	1.5	55.8	14.9	29.0	61.2	0.0	33.8	16.8	35.6	61.3	0.0	12.7
	21	8.8	56.9	60.8	47.3	187.3	10.8	49.9	60.9	44.7	160.7	12.8	37.9	61.0	31.4	121.8	14.8	23.7	61.2	5.5	72.8	16.7	25.8	61.3	0.1	46.6	18.7	31.7	61.4	0.0	25.4
	24	10.7	60.3	60.9	48.0	214.0	12.7	53.3	61.0	46.4	187.9	14.7	42.6	61.1	37.1	150.8	16.6	25.8	61.3	12.1	95.1	18.6	23.4	61.4	1.0	60.4	20.5	28.2	61.5	0.0	38.2
	27	12.6	63.6	61.0	48.5	243.2	14.6	56.5	61.1	47.4	217.8	16.5	46.6	61.3	40.7	181.4	18.5	29.5	61.4	19.3	123.0	20.5	22.2	61.5	3.3	76.7	22.4	25.3	61.6	0.2	51.3

cc: Cooling Capacity (kW)

ht: Heating Capacity (kW)

temp eff: Energy recovery modul temperature efficiency (%)

humid eff: Energy recovery modul humidity efficiency (%)

ODDB: Outdoor air dry bulb temperature (°C)

ODRH: Outdoor air relative humidity (%)

IDDB: Indoor air dry bulb temperature (°C)

Out DB: ERM outlet air dry-bulb temperature (°C) - before rooftop inlet -

Out RH: ERM outlet air relative humidity (°C) - before rooftop inlet -

# Cooling and Heating capacities

Cooling capacities		25/40				30/40				35/40				40/40				43/40				46/40										
ERM 20S	ODDB/ODRH	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %							
5.400	18	19.3	48.7	81.6	75.7	15.5	20.2	49.4	81.6	79.3	33.0	21.1	49.3	81.5	83.3	54.7	22.1	48.2	81.4	87.3	81.6	22.7	47.0	81.4	89.4	100.6	23.2	45.7	81.3	91.2	122.2	
	21	21.7	48.0	81.7	73.7	6.5	22.6	49.1	81.7	76.5	23.4	23.6	49.6	81.6	80.3	44.3	24.5	49.1	81.5	84.5	70.5	25.1	48.3	81.5	87.0	89.2	25.7	47.1	81.4	89.2	110.6	
	24	24.2	47.6	81.8	74.7	-3.3	25.1	48.5	81.8	74.3	13.4	26.0	49.5	81.7	77.4	33.5	26.9	49.7	81.6	81.4	58.7	27.5	49.3	81.5	84.0	76.9	28.1	48.5	81.5	86.6	97.9	
	27	26.6	47.7	81.9	76.8	-14.4	27.5	47.8	81.9	73.3	2.7	28.5	49.0	81.8	75.0	22.2	29.5	49.7	81.1	77.8	46.0	29.9	49.8	81.7	80.9	63.9	30.5	49.5	81.6	83.6	84.1	
6.150	18	19.4	48.6	80.1	73.2	17.2	20.4	49.6	80.1	76.8	36.7	21.4	49.7	80.0	80.0	60.7	22.4	48.9	79.9	84.9	90.6	23.0	48.1	79.8	87.0	111.9	23.7	47.0	79.8	88.9	135.9	
	21	21.8	47.9	80.2	71.1	7.2	22.8	49.1	80.1	74.0	26.0	23.8	49.8	80.1	77.8	49.2	24.8	49.6	80.0	82.1	78.2	25.4	49.0	79.9	84.5	99.1	26.0	48.1	79.8	86.8	122.9	
	24	24.2	47.3	80.3	72.2	-3.6	25.2	48.4	80.2	71.7	14.9	26.2	49.5	80.2	74.9	37.2	27.2	50.0	80.1	79.0	65.1	27.8	49.8	80.0	81.6	85.4	28.4	49.2	79.9	84.2	108.7	
	27	26.6	47.4	80.4	74.4	-15.9	27.6	47.6	80.3	70.7	3.0	28.6	48.9	80.3	72.4	24.6	29.7	49.9	79.6	75.3	51.0	30.2	50.1	80.1	80.1	78.4	70.8	30.8	49.9	80.1	81.1	93.4
8.000	18	19.6	48.5	77.1	67.9	21.3	20.7	49.9	77.1	71.6	45.3	21.9	50.6	77.1	75.9	75.1	23.0	50.4	77.1	80.1	112.2	23.7	50.1	77.0	82.2	138.5	24.5	49.6	76.9	84.1	168.4	
	21	21.9	47.6	77.2	66.8	9.0	23.0	49.2	77.2	68.8	32.1	24.2	50.4	77.2	72.7	60.7	25.3	50.7	77.2	77.1	96.6	26.0	50.5	77.1	79.7	122.5	26.7	50.1	77.0	82.0	152.1	
	24	24.2	46.9	77.3	67.0	-4.3	25.4	48.2	77.3	66.4	18.4	26.5	49.8	77.3	69.7	45.8	27.6	50.7	77.3	73.9	80.2	28.3	50.9	77.2	76.6	105.3	29.0	50.6	77.2	79.2	134.2	
	27	26.5	46.8	77.4	69.2	-19.4	27.7	47.3	77.5	65.4	3.9	28.8	48.9	77.5	67.1	30.3	30.0	50.3	76.8	70.1	62.7	30.6	50.8	77.3	73.3	87.1	31.3	51.0	77.3	76.0	115.0	
12.000	18	20.0	48.5	71.8	58.0	29.0	21.4	50.6	71.9	61.3	61.3	22.8	52.1	71.9	66.5	101.6	24.2	52.9	71.9	71.0	152.3	25.0	53.3	71.8	73.3	188.3	25.9	53.6	71.8	75.3	228.1	
	21	22.1	47.1	72.0	55.6	12.5	23.5	49.4	72.0	58.8	43.4	24.9	51.3	72.0	63.0	81.8	26.3	52.6	72.0	67.7	130.5	27.2	53.0	71.9	70.4	165.8	28.0	53.2	71.9	72.9	206.2	
	24	24.3	46.0	72.1	57.0	-5.2	25.7	48.0	72.1	56.2	25.0	27.1	50.3	72.1	59.7	61.4	28.5	52.0	72.1	64.1	107.7	29.3	52.7	72.0	67.0	141.6	30.2	53.0	72.0	69.9	181.0	
	27	27.8	46.6	72.2	59.3	-25.4	27.8	46.6	72.2	55.1	5.8	29.2	48.9	72.2	56.8	40.7	30.7	51.0	71.7	60.2	83.7	31.5	52.1	72.2	63.4	116.5	32.3	52.8	72.1	66.3	154.1	
16.000	18	20.3	48.4	67.5	49.3	35.4	21.9	51.1	67.6	53.5	74.2	23.5	53.2	67.6	58.5	123.2	25.1	54.7	67.6	63.2	185.1	26.1	55.5	67.6	65.7	229.4	27.1	56.3	67.5	67.8	279.5	
	21	22.3	46.7	67.7	46.8	15.6	23.9	49.6	67.7	50.1	52.4	25.5	52.1	67.7	54.6	98.5	27.1	54.0	67.7	59.7	157.7	28.1	54.8	67.7	62.6	200.9	29.1	55.4	67.6	65.2	250.3	
	24	24.3	45.2	67.8	48.3	-5.6	25.9	47.8	67.8	47.3	30.3	27.5	50.7	67.8	51.0	73.7	29.1	53.0	67.8	55.7	129.3	30.1	54.1	67.8	58.8	170.4	31.1	54.8	67.7	61.9	218.4	
	27	26.4	44.5	67.9	50.7	-29.7	28.0	46.0	67.9	46.1	7.7	29.6	49.0	68.0	47.9	48.8	31.2	51.7	67.4	51.5	99.9	32.1	53.1	67.9	54.8	139.1	33.1	54.2	67.9	58.0	184.5	
17.400	18	20.4	48.4	66.2	46.5	37.3	22.0	51.3	66.3	50.8	78.1	23.7	53.6	66.3	55.9	129.7	25.4	55.2	66.3	60.8	195.2	26.4	56.1	66.2	63.3	242.0	27.5	57.0	66.2	65.4	295.0	
	21	22.3	46.5	66.3	43.9	16.6	24.0	49.6	66.4	47.3	55.1	25.7	52.4	66.4	51.9	103.5	27.4	54.4	66.4	57.1	165.9	28.4	55.3	66.4	60.1	211.5	29.4	56.1	66.3	62.8	263.8	
	24	24.3	45.0	66.4	45.5	-5.5	26.0	47.8	66.5	44.4	32.0	27.7	50.8	66.5	48.1	77.3	29.4	53.4	66.5	53.0	135.6	30.4	54.5	66.5	56.2	179.0	31.4	55.4	66.4	59.3	229.6	
	27	26.3	44.2	66.6	48.0	-30.8	28.0	45.9	66.6	43.2	8.3	29.7	49.0	66.6	44.9	51.1	31.4	51.9	66.1	48.7	104.5	32.3	53.5	66.6	52.1	145.6	33.4	54.6	66.6	55.3	193.4	
20.500	18	20.6	48.4	63.5	40.7	41.2	22.4	51.7	63.6	45.2	85.7	24.2	54.3	63.6	50.6	142.5	26.0	56.2	63.6	55.7	215.1	27.1	57.3	63.6	58.4	267.2	28.2	58.4	63.5	60.6	326.2	
	21	22.5	46.3	63.6	37.9	18.6	24.3	49.8	63.7	41.4	60.3	26.1	52.9	63.7	46.3	113.1	27.9	55.2	63.7	51.8	181.9	29.0	56.3	63.7	54.9	232.4	30.1	57.3	63.6	57.8	290.5	
	24	24.4	44.5	63.8	39.6	-5.3	26.2	47.7	63.8	38.3	35.2	28.0	51.1	63.8	42.3	84.1	29.8	54.0	63.8	47.4	147.7	30.9	55.3	63.8	50.8	195.4	32.0	56.4	63.8	54.0	251.4	
	27	26.3	43.5	63.9	42.2	-32.7	28.1	45.5	63.9	37.0	9.8	29.9	49.1	64.0	38.8	55.6	31.7	52.3	63.5	42.8	113.1	32.8	54.1	63.9	46.3	157.9	33.9	55.5	63.9	49.7	210.3	

cc: Cooling Capacity (kW)  
 ht: Heating Capacity (kW)  
 temp eff: Energy recovery modul temperature efficiency (%)  
 humid eff: Energy recovery modul humidity efficiency (%)  
 ODDB: Outdoor air dry bulb temperature (°C)  
 ODRH: Outdoor air relative humidity (%)  
 IDDB: Indoor air dry bulb temperature (°C)  
 Out DB: ERM outlet air dry-bulb temperature (°C) - before rooftop inlet -  
 Out RH: ERM outlet air relative humidity (°C) - before rooftop inlet -

# Cooling and Heating capacities

Heating capacities		-10					0					5					10					15									
		ERM 20S	ODDRH	IDDB	Out DB	Out RH	temp eff %	humid ht eff %	ht kW	Out DB	Out RH	temp eff %	humid ht eff %	ht kW	Out DB	Out RH	temp eff %	humid ht eff %	ht kW	Out DB	Out RH	temp eff %	humid ht eff %	ht kW	Out DB	Out RH	temp eff %	humid ht eff %	ht kW		
5.400	18	12.8	64.8	81.3	91.7	65.0	13.7	60.9	81.4	91.2	56.1	14.7	57.2	81.4	90.0	46.4	15.6	53.5	81.5	87.5	36.0	16.5	50.2	81.5	83.6	24.6	17.4	48.1	81.6	79.0	12.3
	21	15.2	66.6	81.4	91.9	75.0	16.2	62.7	81.5	91.6	66.2	17.1	59.0	81.5	90.8	56.5	18.1	55.3	81.6	89.0	46.1	19.0	51.8	81.6	85.8	34.6	19.9	49.0	81.7	81.3	21.9
	24	17.7	68.3	81.5	92.1	86.0	18.6	64.5	81.6	91.4	77.3	19.6	60.8	81.6	91.4	67.7	20.5	57.2	81.7	87.7	45.7	21.4	53.6	81.7	87.7	45.7	22.4	50.4	81.8	83.7	32.7
	27	20.2	70.0	81.6	92.3	98.2	21.1	66.1	81.7	92.2	89.5	22.1	62.5	81.7	91.8	80.0	23.0	59.0	81.8	91.0	69.7	23.9	55.4	81.8	89.2	58.1	24.8	52.0	81.9	86.0	44.9
6.150	18	12.3	65.3	79.7	89.4	72.4	13.3	61.1	79.8	88.9	62.5	14.4	57.1	79.9	87.7	51.7	15.4	53.3	79.9	85.2	40.1	16.4	49.9	80.0	81.2	27.4	17.4	47.8	80.0	76.5	13.6
	21	14.7	67.2	79.8	89.7	83.6	15.8	63.1	79.9	89.4	73.7	16.8	59.1	79.9	88.5	63.0	17.8	55.2	80.0	86.7	51.4	18.8	51.6	80.1	83.5	38.5	19.8	48.7	80.1	78.9	24.3
	24	17.2	69.1	79.9	89.8	95.9	18.2	64.9	80.0	89.7	86.1	19.2	61.0	80.0	89.1	75.4	20.2	57.2	80.1	87.9	63.8	21.2	53.4	80.2	85.4	50.8	22.2	50.1	80.2	81.4	36.3
	27	19.6	70.9	80.0	90.0	109.5	20.6	66.7	80.1	89.9	99.7	21.6	62.8	80.2	89.6	89.1	22.6	59.0	80.2	88.7	71.6	23.6	55.3	80.3	86.9	64.6	24.6	51.7	80.3	83.6	49.9
8.000	18	11.4	66.0	76.5	84.7	90.0	12.6	61.3	76.6	84.2	77.7	13.8	56.9	76.7	83.0	64.3	15.0	52.8	76.8	80.4	49.7	16.2	49.3	76.9	76.3	33.8	17.3	47.2	77.0	71.4	16.7
	21	13.8	68.3	76.6	85.0	103.9	15.0	63.5	76.7	84.7	91.7	16.1	59.1	76.8	83.8	78.3	17.3	54.8	76.9	82.0	63.7	18.5	51.0	77.0	78.6	47.6	19.6	48.0	77.1	73.9	29.9
	24	16.1	70.5	76.7	85.2	119.1	17.3	65.6	76.8	85.0	107.0	18.5	61.2	77.0	84.5	93.7	19.6	56.9	77.1	83.2	79.2	20.8	52.9	77.1	80.6	63.0	22.0	49.4	77.2	76.5	44.8
	27	18.4	72.6	76.9	85.3	136.0	19.6	67.7	77.0	85.3	124.0	20.8	63.2	77.1	84.9	110.7	22.0	59.0	77.2	84.1	96.4	23.1	54.9	77.3	82.2	80.2	24.3	51.1	77.3	78.8	61.7
12.000	18	9.9	66.8	71.1	76.6	124.3	11.4	61.2	71.3	76.0	107.2	12.9	56.2	71.4	74.6	88.4	14.3	51.6	71.5	71.8	68.2	15.7	47.9	71.6	67.3	46.0	17.2	46.0	71.7	61.9	22.3
	21	12.1	69.6	71.3	76.8	143.4	13.6	63.8	71.4	76.5	126.4	15.0	58.7	71.5	75.6	107.7	16.5	53.9	71.6	73.5	87.5	17.9	49.7	71.7	69.8	64.9	19.3	46.7	71.8	64.6	40.3
	24	14.3	72.3	71.4	77.0	164.4	15.7	66.4	71.5	76.8	147.5	17.2	61.1	71.6	76.2	128.9	18.6	56.2	71.7	74.8	108.8	20.1	51.7	71.8	72.0	86.1	21.5	48.0	71.9	67.4	60.7
	27	16.5	75.0	71.5	77.1	187.6	17.9	68.9	71.6	77.0	170.8	19.4	63.5	71.7	76.7	152.4	20.8	58.6	71.9	75.8	132.4	22.2	53.9	72.0	73.7	109.7	23.6	49.8	72.1	69.9	83.9
16.000	18	8.7	67.0	66.8	69.8	154.0	10.4	60.7	66.9	69.2	132.7	12.1	55.3	67.0	67.7	109.2	13.7	50.4	67.2	64.6	83.8	15.4	46.6	67.3	59.7	56.0	17.0	44.9	67.4	53.8	26.7
	21	10.7	70.2	66.9	70.1	177.6	12.4	63.6	67.0	69.7	156.4	14.1	58.0	67.2	68.7	133.0	15.8	52.8	67.3	66.4	107.6	17.4	48.4	67.4	62.4	79.3	19.1	45.4	67.5	56.7	48.6
	24	12.8	73.3	67.0	70.2	203.5	14.5	66.6	67.1	70.0	182.4	16.1	60.7	67.3	69.4	159.2	17.8	55.3	67.4	67.8	133.9	19.5	50.5	67.5	64.7	105.4	21.1	46.7	67.6	59.7	73.6
	27	14.8	76.5	67.1	70.3	232.1	16.5	69.5	67.3	70.3	211.1	18.2	63.4	67.4	69.9	188.1	19.9	57.9	67.5	68.8	163.1	21.5	52.8	67.6	66.6	134.5	23.1	48.5	67.7	62.4	102.0
17.400	18	8.3	67.0	65.4	67.7	163.6	10.1	60.5	65.6	67.1	140.8	11.8	54.9	65.7	65.5	115.9	13.6	50.0	65.8	62.3	88.7	15.3	46.2	65.9	57.2	59.0	17.0	44.5	66.1	51.2	27.9
	21	10.3	70.3	65.5	68.0	188.6	12.1	63.5	65.7	67.6	166.0	13.8	57.7	65.8	66.5	141.1	15.6	52.4	65.9	64.2	114.0	17.3	47.9	66.1	60.0	83.7	19.0	45.0	66.2	54.2	51.1
	24	12.3	73.6	65.7	68.1	216.0	14.1	66.5	65.8	67.9	193.6	15.8	60.5	65.9	67.3	168.9	17.6	54.9	66.1	65.6	141.9	19.3	50.1	66.2	62.4	111.4	21.0	46.2	66.3	57.2	77.5
	27	14.3	76.9	65.8	68.2	246.3	16.1	69.6	65.9	68.2	224.0	17.8	63.3	66.1	67.8	199.5	19.6	57.6	66.2	66.7	172.8	21.3	52.4	66.3	64.3	142.3	23.0	48.0	66.4	60.0	107.6
20.500	18	7.6	66.8	62.7	63.5	183.3	9.5	59.9	62.9	62.8	157.7	11.3	54.2	63.0	61.1	129.4	13.2	49.0	63.1	57.7	96.7	15.1	45.2	63.2	52.2	65.2	16.9	43.7	63.4	45.7	30.3
	21	9.5	70.3	62.8	63.7	211.3	11.4	63.1	63.0	63.3	185.8	13.3	57.0	63.1	62.2	157.7	15.1	51.5	63.2	59.7	127.0	17.0	46.9	63.4	55.2	92.7	18.8	44.1	63.5	48.9	55.9
	24	11.4	73.8	62.9	63.9	241.9	13.3	66.3	63.1	63.6	216.6	15.2	59.9	63.2	62.9	188.7	17.0	54.1	63.4	61.2	158.2	18.9	49.1	63.5	57.7	123.6	20.7	45.2	63.6	52.1	85.2
	27	13.3	77.4	63.1	64.0	275.7	15.2	69.5	63.2	63.9	250.5	17.1	62.9	63.3	63.4	222.9	19.0	56.9	63.5	59.7	192.7	20.8	51.5	63.6	59.7	156.1	22.6	47.0	63.7	55.1	118.7

cc: Cooling Capacity (kW)  
ht: Heating Capacity (kW)  
temp eff: Energy recovery modul temperature efficiency (%)  
humid eff: Energy recovery modul humidity efficiency (%)  
ODDB: Outdoor air dry bulb temperature (°C)  
ODRH: Outdoor air relative humidity (%)  
IDDB: Indoor air dry bulb temperature (°C)  
Out DB: ERM outlet air dry-bulb temperature (°C) - before rooftop inlet -  
Out RH: ERM outlet air relative humidity (°C) - before rooftop inlet -



# Cooling and Heating capacities

Cooling capacities ERM 26C ODDb/ODRH		30/40				35/40				40/40				43/40				46/40													
		Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %	Out DB	Out RH	temp eff %	humid cc eff %										
7.950	18	19.4	56.2	79.8	0.0	15.0	20.4	70.7	79.8	0.4	36.8	21.4	87.9	79.8	0.4	36.8	23.9	95.0	73.1	7.0	49.3	25.9	95.0	68.4	11.9	58.7	27.8	95.0	64.9	16.4	70.6
21	21	21.8	48.5	79.9	0.0	8.6	22.8	61.1	79.9	0.0	19.4	23.8	76.2	79.8	0.0	30.2	24.8	93.7	79.8	0.7	41.6	26.7	95.0	73.9	5.6	49.4	28.8	95.0	68.8	10.1	59.0
24	24	24.2	42.0	80.0	0.0	2.1	25.2	53.0	80.0	0.0	12.9	26.2	66.1	79.9	0.0	23.7	27.2	81.7	79.9	0.0	34.6	27.8	92.0	79.8	0.6	41.7	29.5	95.0	74.8	4.3	49.6
27	27	26.6	36.4	80.1	0.0	-4.3	27.6	46.0	80.1	0.0	6.5	28.6	57.5	80.1	0.0	17.3	29.6	71.1	80.0	0.0	28.2	30.2	80.5	79.9	0.0	34.7	30.8	90.4	79.8	0.5	41.8
12.500	18	19.8	54.9	74.2	0.0	21.9	21.1	67.9	74.2	0.0	37.7	22.4	83.0	74.2	0.3	53.8	24.2	95.0	71.6	4.0	72.2	26.3	95.0	66.9	9.0	86.0	28.2	95.0	63.5	13.5	103.4
21	21	22.0	47.9	74.3	0.0	12.6	23.3	59.3	74.3	0.0	28.3	24.6	72.8	74.3	0.0	44.2	25.9	88.1	74.3	0.7	60.9	27.0	95.0	72.6	2.9	72.4	29.1	95.0	67.5	7.5	86.4
24	24	24.3	41.8	74.4	0.0	3.1	25.5	51.9	74.5	0.0	18.9	26.8	63.8	74.5	0.0	34.8	28.1	77.6	74.4	0.0	50.7	28.9	86.7	74.4	0.5	61.1	29.8	95.0	73.6	1.9	72.7
27	27	26.5	36.6	74.6	0.0	-6.3	27.8	45.5	74.6	0.0	9.5	29.0	56.0	74.6	0.0	25.3	30.3	68.3	74.5	0.0	41.3	31.1	76.6	74.5	0.0	50.9	31.9	85.3	74.4	0.5	61.3
17.000	18	20.1	53.8	69.7	0.0	28.0	21.6	65.7	69.8	0.0	48.2	23.1	79.3	69.8	0.3	68.8	24.7	93.9	68.7	1.9	92.3	26.6	95.0	65.7	6.6	110.0	28.6	95.0	62.3	11.2	132.2
21	21	22.2	46.9	66.0	0.0	16.0	23.7	57.9	69.9	0.0	36.2	25.2	70.1	69.9	0.0	56.5	26.7	83.8	69.9	0.6	77.9	27.6	92.4	69.8	1.7	92.6	29.4	95.0	66.5	5.4	110.5
24	24	24.3	41.7	69.9	0.0	4.0	25.8	51.1	70.0	0.0	24.2	27.3	62.0	70.0	0.0	44.5	28.8	74.5	70.0	0.0	64.9	29.7	82.6	69.9	0.5	78.1	30.6	90.9	69.9	1.4	93.0
27	27	26.4	36.8	70.1	0.0	-8.0	27.9	45.2	70.1	0.0	12.1	29.4	54.9	70.1	0.0	32.4	30.9	66.1	70.1	0.0	52.8	31.8	73.6	70.1	0.0	65.1	32.7	81.4	70.0	0.4	78.4
21.500	18	20.4	52.9	65.9	0.0	33.5	22.1	63.9	65.9	0.0	57.6	23.8	76.2	65.9	0.3	82.3	25.5	89.4	65.9	1.8	110.3	26.8	95.0	64.7	4.5	131.4	28.8	95.0	61.3	9.1	158.0
21	21	22.4	46.9	66.0	0.0	19.2	24.1	56.7	66.0	0.0	43.3	25.8	67.9	66.1	0.0	67.5	27.5	80.3	66.0	0.6	93.1	28.5	88.1	66.0	1.6	110.7	29.6	95.0	66.6	3.5	132.2
24	24	24.3	41.6	66.1	0.0	4.8	26.0	50.4	66.2	0.0	28.9	27.7	60.5	66.2	0.0	53.1	29.4	71.9	66.2	0.0	77.6	30.4	79.2	66.1	0.5	93.4	31.5	86.7	66.1	1.4	111.2
27	27	26.3	37.0	66.2	0.0	-9.6	28.0	44.9	66.3	0.0	14.5	29.7	53.9	66.3	0.0	38.7	31.4	64.3	66.3	0.0	63.1	32.4	71.1	66.2	0.0	77.9	33.4	78.2	66.2	0.4	93.8
26.500	18	20.6	52.1	62.2	0.0	39.0	22.5	62.2	62.2	0.0	67.0	24.4	73.4	62.3	0.3	95.7	26.3	85.3	62.3	1.7	128.4	27.4	92.2	62.2	3.5	155.0	29.1	95.0	60.4	7.1	183.9
21	21	22.5	46.5	62.3	0.0	22.3	24.4	55.6	62.3	0.0	50.4	26.3	65.9	62.4	0.0	78.6	28.2	77.1	62.4	0.5	108.4	29.3	84.1	62.3	1.5	128.9	30.4	90.9	62.3	3.1	153.9
24	24	24.4	41.5	62.4	0.0	5.6	26.3	49.8	62.5	0.0	33.6	28.1	59.1	62.5	0.0	61.9	30.0	69.5	62.5	0.0	90.3	31.1	76.2	62.5	0.5	108.8	32.3	82.9	62.4	1.3	129.4
27	27	26.3	37.1	62.5	0.0	-11.2	28.1	44.6	62.6	0.0	16.8	30.0	53.0	62.6	0.0	45.1	31.9	62.5	62.6	0.0	73.5	33.0	68.8	62.6	0.0	90.7	34.1	75.2	62.5	0.4	109.2

Heating capacities ERM 26C ODDb/ODRH		-5				0				5				10				15													
		Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %	Out DB	Out RH	temp eff %	humid ht eff %										
7.950	18	12.2	46.9	79.4	60.6	82.7	13.3	42.0	79.5	55.0	68.5	14.3	29.3	79.6	29.5	47.9	15.4	20.8	79.7	2.0	28.3	16.4	26.4	79.7	0.0	17.1	17.4	34.3	79.8	0.0	6.4
21	21	14.7	48.7	79.5	61.9	95.2	15.7	44.7	79.6	58.5	81.7	16.7	34.4	79.7	41.0	61.8	17.8	20.4	79.8	7.2	36.8	18.8	22.7	79.8	0.2	23.6	19.8	29.5	79.9	0.0	12.8
24	24	17.1	50.4	79.6	62.8	108.8	18.1	46.7	79.7	60.6	95.5	19.2	38.4	79.8	48.4	76.5	20.2	22.5	79.9	15.7	48.1	21.2	20.0	79.9	1.3	30.5	22.2	25.5	80.0	0.0	19.3
27	27	19.5	51.9	79.7	63.5	123.5	20.5	48.5	79.8	62.0	110.5	21.6	41.4	79.9	53.0	92.0	22.6	26.0	80.0	25.1	62.2	23.6	18.8	80.0	4.2	38.7	24.6	22.1	80.1	0.3	25.9
12.500	18	10.6	49.0	73.6	56.1	120.4	11.9	43.4	73.7	50.9	99.9	13.3	30.2	73.8	27.3	69.9	14.6	21.8	73.9	1.9	41.2	15.9	27.2	74.0	0.0	24.9	17.2	34.7	74.1	0.0	9.4
21	21	12.8	51.3	73.7	57.3	138.6	14.2	46.4	73.8	54.2	118.6	15.5	35.5	73.9	38.0	90.1	16.8	21.4	74.0	6.7	53.7	18.2	23.6	74.1	0.2	34.4	19.5	30.2	74.2	0.0	18.7
24	24	15.1	53.5	73.8	58.2	158.3	16.4	48.9	73.9	56.2	139.2	17.8	39.8	74.0	44.9	111.5	19.1	23.4	74.1	14.6	70.2	20.4	21.0	74.2	1.2	44.5	21.7	26.3	74.3	0.0	28.2
27	27	17.3	55.5	73.9	58.8	179.9	18.7	51.0	74.0	57.5	161.0	20.0	43.1	74.1	49.2	134.2	21.3	27.1	74.2	23.3	90.8	22.6	19.7	74.3	3.9	56.5	23.9	23.0	74.4	0.3	37.8
17.000	18	9.3	50.7	69.0	52.6	153.5	10.9	44.4	69.1	47.8	127.4	12.5	31.0	69.2	25.6	89.0	14.0	22.6	69.4	1.7	62.8	15.6	27.8	69.5	0.0	31.8	17.1	35.0	69.6	0.0	12.0
21	21	11.4	53.4	69.1	53.8	176.7	13.0	47.7	69.2	50.9	151.4	14.6	36.4	69.4	35.7	114.8	16.1	22.2	69.5	6.3	68.6	17.7	24.4	69.6	0.2	43.9	19.2	30.7	69.7	0.0	23.9
24	24	13.5	55.9	69.2	54.6	201.9	15.1	50.5	69.3	52.7	177.5	16.7	40.8	69.5	42.2	142.0	18.2	24.2	69.6	13.7	89.6	19.8	21.8	69.7	1.1	56.8	21.3	27.0	69.8	0.0	36.0
27	27	15.7	58.3	69.3	55.2	229.5	17.2	53.0	69.5	53.9	205.4	18.8	44.3	69.6	46.2	171.2	20.3	27.9	69.7	21.9	115.9	21.9	20.6	69.8	3.7	72.2	23.4	23.8	69.9	0.2	48.3
21.500	18	8.2	52.0	65.1	49.6	182.8	10.0	45.2	65.2	45.1	152.1	11.8	31.6	65.4	24.2	106.3	13.5	23.3	65.5	1.6	138.4	15.2	28.3	65.6	0.0	38.0	17.0	35.3	65.7	0.0	14.3
21	21	10.2	55.0	65.2	50.8	210.9	12.0	48.8	65.3	48.0	180.8	13.8	37.1	65.5	33.7	137.1	15.5	22.9	65.6	6.0	81.9	17.2	25.0	65.7	0.2	52.4	18.9	31.1	65.8	0.0	28.6
24	24	12.2	58.0	65.3	51.5	241.0	14.0	51.8	65.5	49.8	211.4	15.7	41.6	65.6	39.8	169.6	17.5	24.9	65.7	13.0	107.0	19.2	22.5	65.8	1.0	67.9	20.9	27.5	65.9	0.0	43.0
27	27	14.2	60.8	65.4	52.1	273.8	16.0	54.7	65.6	50.9	245.2	17.7	45.4	65.7	43.6	204.0	19.3	28.0	65.8	20.7	138.4	21.2	21.3	66.0	3.5	86.3	22.9	24.5	66.1	0.2	57.7
26.500	18	7.2	53.3	61.4	46.8	212.5	9.2	46.0	61.5	42.5	146.9																				

# Cooling and Heating capacities

Cooling capacities																															
ERM 26S Air flow (m <sup>3</sup> /h)	25/40			30/40			35/40			40/40			43/40			46/40															
	ODDB/ODRH	Out DB	Out RH	temp eff %	humid cc eff %	kW	Out DB	Out RH	temp eff %	humid cc eff %	kW	Out DB	Out RH	temp eff %	humid cc eff %	kW	Out DB	Out RH	temp eff %	humid cc eff %	kW										
7.950	18	19.4	48.6	80.6	74.0	22.5	20.3	49.5	80.5	77.6	47.8	21.3	49.6	80.5	81.7	79.2	22.3	48.7	80.4	85.7	118.1	22.9	47.7	80.3	87.8	145.7	23.5	46.6	80.2	89.6	177.0
	21	21.8	47.9	80.6	71.9	9.4	22.7	49.1	80.6	74.8	33.9	23.7	49.8	80.6	78.6	64.1	24.7	49.5	80.5	82.9	102.0	25.3	48.8	80.4	85.3	129.1	25.9	47.8	80.3	87.6	160.1
	24	24.2	47.4	80.7	73.0	-4.8	25.2	48.4	80.7	72.5	19.4	26.1	49.5	80.7	75.7	48.4	27.1	49.9	80.6	79.7	84.9	27.7	49.6	80.5	82.4	111.2	28.3	48.9	80.4	84.9	141.6
	27	26.6	47.5	80.8	75.1	-20.8	27.6	47.7	80.8	71.5	3.9	28.5	48.9	80.8	73.2	32.1	29.6	49.8	80.1	76.1	66.5	30.1	50.0	80.6	79.2	92.9	30.7	49.8	80.5	81.9	121.7
12.500	18	19.7	48.5	75.3	64.6	32.3	21.0	50.1	75.3	68.3	68.4	22.2	51.1	75.3	72.7	113.4	23.4	51.3	75.3	76.9	169.5	24.2	51.2	75.2	79.2	209.5	25.0	51.1	75.2	81.1	254.7
	21	22.0	47.4	75.4	62.3	13.7	23.2	49.2	75.4	65.4	48.5	24.4	50.7	75.4	69.4	91.5	26.7	51.4	75.4	73.9	145.8	26.4	51.4	75.3	76.5	185.0	27.2	51.2	75.3	78.9	229.8
	24	24.2	46.6	75.5	63.6	-6.3	25.5	48.1	75.5	62.9	27.8	26.7	49.9	75.5	66.3	68.9	27.9	51.2	75.5	70.6	120.9	28.7	51.5	75.4	73.3	158.7	29.4	51.5	75.4	76.0	202.4
	27	26.5	46.4	75.6	65.8	-29.0	27.7	47.0	75.7	61.9	6.1	28.9	48.9	75.7	63.6	45.7	30.2	50.5	75.0	66.8	94.3	30.9	51.3	75.6	69.9	131.1	31.7	51.6	75.5	72.7	173.1
17.000	18	20.0	48.4	71.1	56.5	40.5	21.5	50.6	71.1	60.5	85.5	22.9	52.3	71.2	65.2	141.8	24.4	53.2	71.1	69.7	212.5	25.2	53.7	71.1	72.0	262.9	26.1	54.1	71.0	74.0	319.9
	21	22.2	47.0	71.2	54.2	17.5	23.6	49.4	71.3	57.3	60.5	25.0	51.5	71.3	61.6	113.9	26.5	52.8	71.2	66.4	182.0	27.3	53.3	71.2	69.1	231.2	28.2	53.6	71.1	71.6	287.7
	24	24.3	45.9	71.3	55.5	-7.2	25.7	48.0	71.4	54.7	34.9	27.1	50.3	71.4	58.2	85.5	28.6	52.2	71.4	62.7	150.0	29.4	52.9	71.3	65.7	197.4	30.3	53.4	71.3	68.5	252.3
	27	26.4	45.4	71.5	57.9	-35.3	27.9	46.5	71.5	53.6	8.2	29.3	48.9	71.5	55.3	56.7	30.8	51.1	70.9	58.7	116.5	31.6	52.1	71.4	61.9	162.1	32.4	53.0	71.4	64.9	214.5
21.500	18	20.3	48.4	67.6	49.4	47.6	21.9	51.1	67.6	53.6	99.8	23.5	53.2	67.6	58.5	165.6	25.1	54.7	67.6	63.3	248.8	26.1	55.5	67.6	65.7	308.3	27.1	56.3	67.5	67.8	375.7
	21	22.3	46.7	67.7	46.8	20.9	23.9	49.6	67.7	50.1	70.4	25.5	52.1	67.7	54.6	132.4	27.1	54.0	67.7	59.7	212.0	28.1	54.7	67.7	62.6	270.0	29.1	55.4	67.6	65.3	336.6
	24	24.3	45.2	67.8	48.3	-7.5	25.9	47.8	67.8	47.3	40.8	27.5	50.7	67.9	51.0	99.0	29.1	53.0	67.8	55.8	173.8	30.1	54.1	67.8	58.9	229.1	31.1	54.8	67.8	61.9	293.6
	27	26.4	44.6	67.9	50.8	-39.9	28.0	46.1	68.0	46.1	10.3	29.6	49.0	68.0	47.9	85.6	31.2	51.7	67.5	51.5	134.3	32.1	53.1	67.9	54.9	187.0	33.0	54.2	67.9	58.0	248.1
26.500	18	20.5	48.4	64.2	42.2	54.1	22.3	51.6	64.2	46.6	112.8	24.1	54.1	64.3	51.9	187.6	25.9	56.0	64.3	57.0	282.9	26.9	57.0	64.2	59.6	351.2	28.0	58.1	64.2	61.8	428.6
	21	22.4	46.4	64.3	39.4	24.3	24.2	49.8	64.4	42.9	79.5	26.0	52.8	64.4	47.7	149.1	27.8	55.0	64.4	53.1	239.5	28.8	56.0	64.3	56.2	305.8	29.9	57.0	64.3	59.0	382.1
	24	24.4	44.6	64.4	41.1	-7.2	26.1	47.7	64.5	39.9	46.3	27.9	51.1	64.5	43.7	110.9	29.7	53.9	64.5	48.8	194.9	30.8	55.1	64.5	52.1	257.6	31.8	56.1	64.4	55.4	331.2
	27	26.3	43.7	64.5	43.7	-43.4	28.1	45.6	64.6	38.6	12.7	29.8	49.1	64.6	40.4	73.4	31.7	52.2	64.1	44.3	149.5	32.7	54.0	64.6	47.8	208.5	33.7	55.3	64.5	51.1	277.5

Heating capacities																															
ERM 26S Air flow (m <sup>3</sup> /h)	-10			-5			0			5			10			15															
	ODDB/ODRH	Out DB	Out RH	temp eff %	humid ht eff %	kW	Out DB	Out RH	temp eff %	humid ht eff %	kW	Out DB	Out RH	temp eff %	humid ht eff %	kW	Out DB	Out RH	temp eff %	humid ht eff %	kW										
7.950	18	12.5	65.1	80.2	90.2	94.2	13.5	61.1	80.3	89.6	81.4	14.5	57.1	80.4	88.4	67.4	15.5	53.3	80.4	85.9	52.2	16.4	50.0	80.5	82.0	35.6	17.4	47.9	80.5	77.3	17.7
	21	14.9	67.0	80.3	90.4	108.8	15.9	63.0	80.4	90.1	96.0	16.9	59.1	80.4	89.2	82.0	17.9	55.3	80.5	87.5	66.9	18.9	51.7	80.6	84.2	50.1	19.8	48.8	80.6	79.7	31.6
	24	17.3	68.9	80.4	90.6	124.8	18.3	64.8	80.5	90.4	112.1	19.3	60.9	80.5	89.9	98.1	20.3	57.2	80.6	86.6	83.1	21.3	53.5	80.7	86.1	66.2	22.3	50.2	80.7	82.1	47.3
	27	19.8	70.6	80.5	90.7	142.5	20.8	66.5	80.6	90.6	129.8	21.8	62.7	80.6	90.3	116.0	22.8	59.0	80.7	89.4	101.0	23.7	55.3	80.8	87.6	84.2	24.7	51.8	80.8	84.3	65.0
12.500	18	10.9	66.4	74.8	81.9	136.8	12.2	61.3	74.8	81.4	118.1	13.5	56.7	74.9	80.1	97.5	14.7	52.4	75.0	77.5	75.4	16.0	48.8	75.1	73.2	51.1	17.3	46.8	75.2	68.2	25.1
	21	13.2	68.8	74.8	82.2	157.8	14.5	63.7	74.9	81.8	139.2	15.7	59.0	75.0	81.0	118.8	17.0	54.5	75.1	79.1	96.7	18.3	50.5	75.2	75.6	72.0	19.5	47.6	75.3	70.8	45.1
	24	15.5	71.2	74.9	82.3	181.0	16.7	65.9	75.0	82.2	162.5	18.0	61.2	75.1	81.6	142.2	19.3	56.7	75.2	80.3	120.2	20.5	52.5	75.3	77.6	95.4	21.8	49.0	75.4	73.4	67.7
	27	17.7	73.5	75.0	82.5	206.6	19.0	68.2	75.1	82.4	188.2	20.3	63.4	75.2	82.1	168.1	21.6	58.9	75.3	81.2	146.2	22.8	54.6	75.4	79.3	121.4	24.1	50.7	75.5	75.8	93.3
17.000	18	9.7	66.9	70.4	75.4	173.9	11.2	61.1	70.5	74.8	150.0	12.7	56.1	70.6	73.4	123.7	14.2	51.4	70.8	70.6	95.3	15.7	47.7	70.9	66.0	64.2	17.1	45.8	71.0	60.6	31.1
	21	11.9	69.7	70.5	75.6	200.7	13.4	63.8	70.6	75.3	176.9	14.9	58.6	70.8	74.4	150.7	16.3	53.7	70.9	72.3	123.3	17.8	49.4	71.0	68.6	90.6	19.3	46.5	71.1	63.3	56.2
	24	14.0	72.5	70.6	75.8	230.0	15.5	66.4	70.8	75.6	206.4	17.0	61.1	70.9	75.1	180.4	18.5	56.1	71.0	73.6	152.1	20.0	51.5	71.1	70.7	120.2	21.4	47.8	71.2	66.1	84.7
	27	16.2	75.3	70.7	76.0	262.5	17.7	69.1	70.9	75.9	238.9	19.2	63.5	71.0	75.5	213.1	20.6	58.5	71.1	74.8	185.1	22.1	53.8	71.2	72.5	153.3	23.6	49.6	71.3	68.7	117.0
21.500	18	8.7	67.0	66.8	69.9	207.1	10.4	60.7	66.9	69.2	178.4	12.1	55.3	67.1	67.7	146.8	13.7	50.4	67.2	64.6	112.6	15.4	46.6	67.3	59.7	75.2	17.0	44.9	67.4	53.8	35.9
	21	10.7	70.2	66.9	70.1	238.7	12.4	63.6	67.0	69.7	210.2	14.1	58.0	67.2	68.7	178.8	15.8	52.8	67.3	66.5	144.7	17.4	48.4	67.4	62.4	106.6	19.1	45.4	67.5	56.7	65.4
	24	12.8	73.3	67.0	70.3	273.6	14.5	66.6	67.2	70.1	245.2	16.2	60.7	67.3	69.4	214.1	17.8	55.3	67.4	67.9	180.1	19.5	50.5	67.5	64.7	141.7	21.1	46.7	67.6	59.7	99.0
	27	14.8	76.5	67.1	70.4	312.0	16.5	69.5	67.3	70.3	283.8	18.2	63.4	67.4	69.9	252.9	19.9	57.9	67.5	68.9	219.2	21.5	52.8	67.7	66.6	180.9	23.1	48.5	67.8	62.5	137.2
26.500	18	7.7	66.8	63.4	64.5	240.0	9.6	60.1	63.5	63.8	206.5	11.5	54.4	63.7	62.2	169.5	13.3	49.3	63.8	59.9	129.4	15.1	45.5	63.9	53.5	85.7	16.9	43.9	64.0	47.1	40.0
	21	9.7	70.3	63.5	64.8	276.6	11.5	63.2	63.6	64.3	243.3	13.4	57.2	63.8	63.2	206.6	15.2	51.7	63.9	60.8	166.5	17.0	47.2	64.0	56.4	121.8	18.8	44.3	64.1	50.2	73.7
	24	11.6	73.8	63.6	64.9	316.8	13.5	66.4	63.8	64.7	283.7	15.3	60.1	63.9	64.0	267.2	17.2	54.4	64.0	62.3	207.4	19.0	49.4	64.1	58.9	162.3	20.8	45.5	64.3	53.4	112.1
	27	13.6	77.3	63.7	65.0	361.0	15.4	69.6	63.9	64.9	328.2	17.3	63.0	64.0	64.5	292.0	19.1	57.1	64.1	63.4	252.6	20.9	51.8	64.3	60.9	207.5	22.7</				



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