CASA Climate CCF

Active comfort module, developed for homes

QUICK FACTS

- Comfort module for ventilation, cooling and heating
- Part of the CASA Climate system
- Waterborne product adapted for homes
- Air conditioning takes place along the floor or ceiling
- Adjustable air direction with ADC (Anti Draught Control)
- A hidden comfort module designed for installation in cabinet bases, on top of tall cabinets or built into walls, where the product is placed above the adjacent room's false ceiling
- Low installation height

KEY FIGURES			
Airflow: l/s	Pressure range: Pa	Cooling capacity: W	Heating capacity: W
5-15	40-120	300	500

Module	SIZE		
	Length (mm)	Depth (mm)	Height (mm)
600	562	476	166 & 196

Contents

Waterborne cooling/ heating

Advantages

Comfort

- Heating and comfort cooling are achieved at low temperatures in the winter and high temperatures in the summer.
- An even stratification, draught-free heat distribution guarantees comfortable temperature conditions.

Energy efficiency

- The circulating hot water maintains a low temperature, resulting in reduced heat losses thanks to more efficient heat distribution.
- When producing heating and cooling, optimum efficiency is achieved with low temperature systems

Technical advantages

- Functional and user-friendly
- Waterborne room heating is ideal for most types of buildings. Installing comfort cooling in the home guarantees an optimum indoor climate. Passive cooling can be obtained from bore holes, surface soil or the sea. This solutions entails minimal operating costs for cooling in the summer, where the only requirement is electricity for a circulation pump. Obtaining both heating and cooling from a bore hole is beneficial as the bore hole is recharged with heat during the summer ahead of the winter season, which means that the ground source heat pump can operate with a better COP. The cooling can also be provided from an active chiller or district cooling
- Temperature control for each zone
- Condensation-free cooling, no condensate drain is required
- Healthy indoor climate with cooling increases the attractiveness
- Comfortable indoor climate all year round with CASA Climate
- Utilises unused space, cabinet bases and above tall cabinets

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

www.eurovent-certification.com
www.certiflash.com

Technical Description

CASA Climate CCF in brief

- Low noise level
- Draught-free indoor climate
- Several different installation options
- Dry system without condensation
- Low energy consumption
- Requires little space.
- Can be ordered with grilles in different heights and different colours
- Compact unit

The CASA Climate CCF comfort module

The product, which can be used for heating, cooling and ventilation, has been developed to create a comfortable and healthy indoor climate in homes all year round.

During the development work, the focus has been on maximum comfort, high efficiency and low operating costs. Meanwhile, there has been close contact with the construction industry.

The product is driven either by a central air handling unit or a decentralised air handling unit that is installed in the same apartment as it is supplying air to. Consequently the product has no integrated fan. CCF heats or cools using the built-in, liquid-borne coil heat exchanger (see more under the section “Basic function diagram”).

By using the same grille for both the distribution of supplied air and the recirculation of room air, the product can be installed in several different ways. The product can be installed in the room it is supplying, for example in a base or on top of a tall cabinet. It can also be installed above a false ceiling in an adjacent room, in which case it is only necessary to cut an opening in the wall.

CCF can be installed so it is concealed, e.g. above the false ceiling on a bathroom module. From a centrally located bathroom module with integrated CCFs, it is possible, in certain cases, to climatize an entire apartment.

The product is equipped with air deflectors (ADC) for simple adjustment of the air direction. These make it easier to find a good placement for the product during the planning and when a suitable location has to be determined that entails a draught-free environment and adequate air-conditioning of all the home’s occupied areas.

Design and variants

The product measures 600 mm in length and is available with two different grille heights, 166 mm and 196 mm.

Optional sleeve connection on side 2, 5 or 6. If the product is to be ceiling mounted, a leakage indicator is available as an accessory for additional protection against water damage.

All variants are available with both waterborne heating and/or waterborne cooling. Ventilation is always part of the product's function.

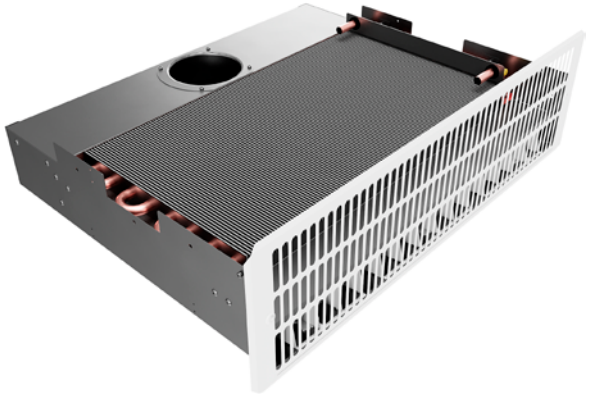


Figure 1. CASA Climate CCF with sleeve connection side 6 (top in case of floor mounting).

Figure 2. CASA Climate CCF with sleeve connection side 5 (bottom in case of floor mounting).

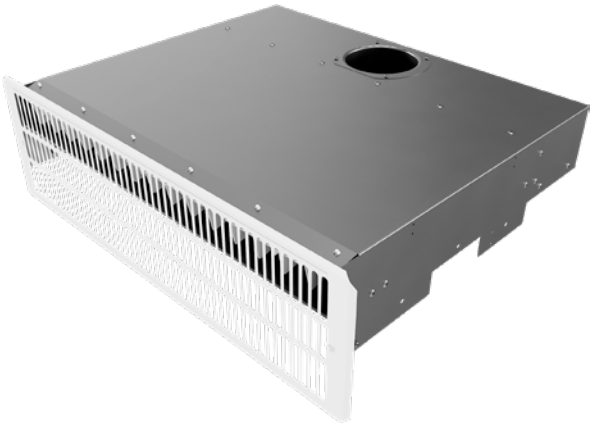


Figure 3. CASA Climate CCF with sleeve connection side 5 (top in case of ceiling mounting).

Figure 4. CASA Climate CCF with sleeve connection side 2 (rear).

Basic function diagram

CCF is an active comfort module which uses the principle of induction of room air.

Primary air is supplied via a duct connection in the rear of the unit and this builds up positive pressure inside the unit. The positive pressure distributes the primary air via small nozzles, causing the primary air to achieve a high velocity. This velocity creates negative pressure in the immediate vicinity, which generates induction of the room air. Up to 3 times as much room air as primary air, in normal operation.

The room air is induced into the unit through the same grille that is used for distributing air into the room. After the room air has been induced through the grille, it is led on to the heat exchanger in the product, where it is cooled, heated or passes untreated. After it passes the heat exchanger, it is mixed with the primary air, and a mix of primary air and room air is then distributed through the grille. Figure 5 presents a cross-section of the product, which shows the induced air's route through the product in the case of cooling. Figure 6 presents a cross-section of the product, which shows the induced air's route through the product in the case of heating.

The direction of the air being distributed from the grille can be adjusted horizontally.

The air deflectors are split into three, which means that the air can be distributed in the following different ways (see figures 7 to 10).

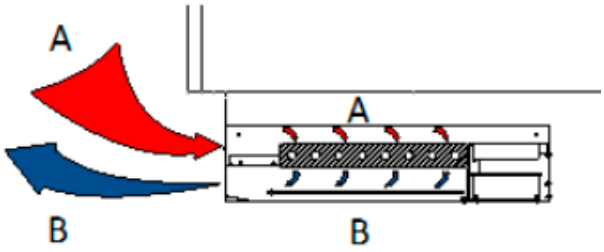


Figure 5. The induced air's route in the case of cooling.

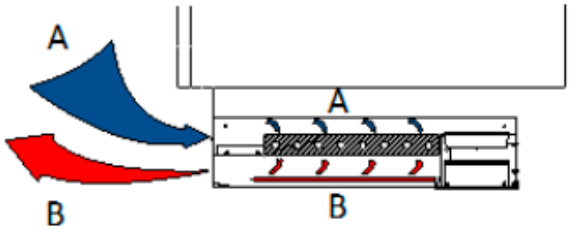


Figure 6. The induced air's route in the case of heating.

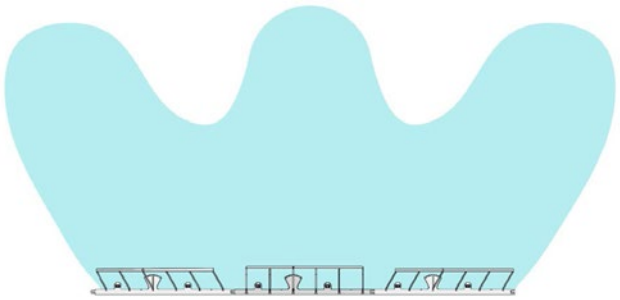


Figure 7. Setting options ADC, Fan-shape.

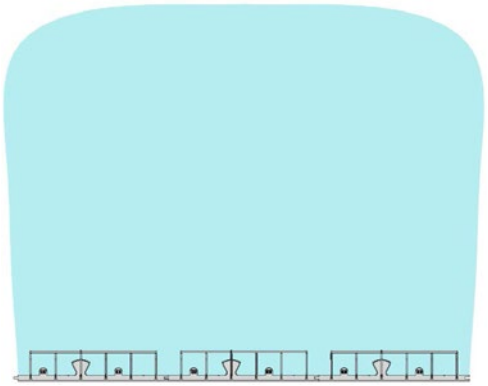


Figure 8. Setting options ADC, Straight.

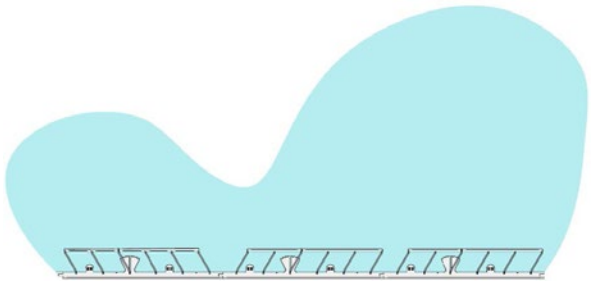


Figure 9. Setting options ADC, L-Shape.

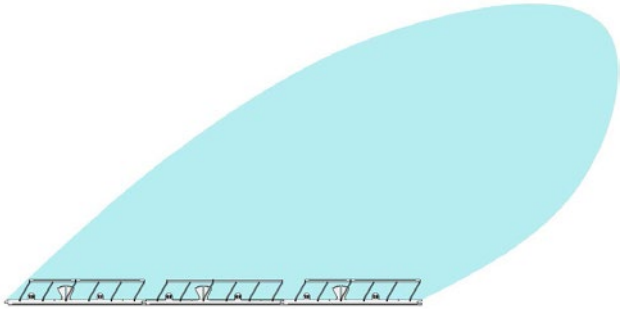


Figure 10. Setting options ADC, Right/Left.

Regulation of air and temperature

Airflow

CCF is a constant air volume product (CAV), and is available with three different nozzle settings, depending on need:

- 100% open
- 75% open
- 50% open

If apartment-located CASA ventilation units are included as part of the system, the units are automatically controlled by the CASA Genius control system. The airflow can be manually forced in the event of an increased ventilation requirement from the Genius control panel, or when cooking via activation from the cooker hood, if such is connected to the system.

Temperature

In combination with the LUNAd RE room controller, the temperature in the room can be controlled (not air quality). This unit has the following functions:

- Built-in temperature sensor and the possibility to connect an external temperature sensor.
- Built-in communication port for connection to a communication bus (Modbus RTU over RS485), for reading the values as well as computer control.
- Inputs for condensation sensor, strap-on sensor or occupancy detector.
- Four outputs to control heating and cooling actuators.
- One room controller per temperature zone.

There is an indicator light on the LUNAd RE room controller, this can light up in three different ways:

The lamp lights up blue = Indication of cooling demand → the valve opens, if there is hot water in the system, the valve will not open, (2-pipe system)

The lamp lights up red = Indication of heat demand → the valve opens, if there is cold water in the system, the valve will not open, (2-pipe system)

The lamp flashes blue = Condensation has occurred on the battery and the condensation sensor has detected this → Room controller sends a signal to the actuator to close completely so that cold water does not continue to flow through the products.

For more information, see the separate product sheet and manual for LUNAd RE.

Info regarding indoor temperature during warm and moisty weather

In humid climates the dew point inreases. The water temperature on the supply line should be dew point regulated, which means an automatic increase in the temperature of the supply line when the dew point is raised. This is to avoid the risk of condensation on the CASA Climate CCF, which can lead to major damage to the building. In humid conditions, the cooling effect from the CASA CCF is reduced.

Technical data

Airflow	5-15 l/s 18-54 m^3/h
Pressure range	40-120 Pa
Dimensions: Size 600	L=562 mm W=476 mm H=166 or 196 mm

Heating

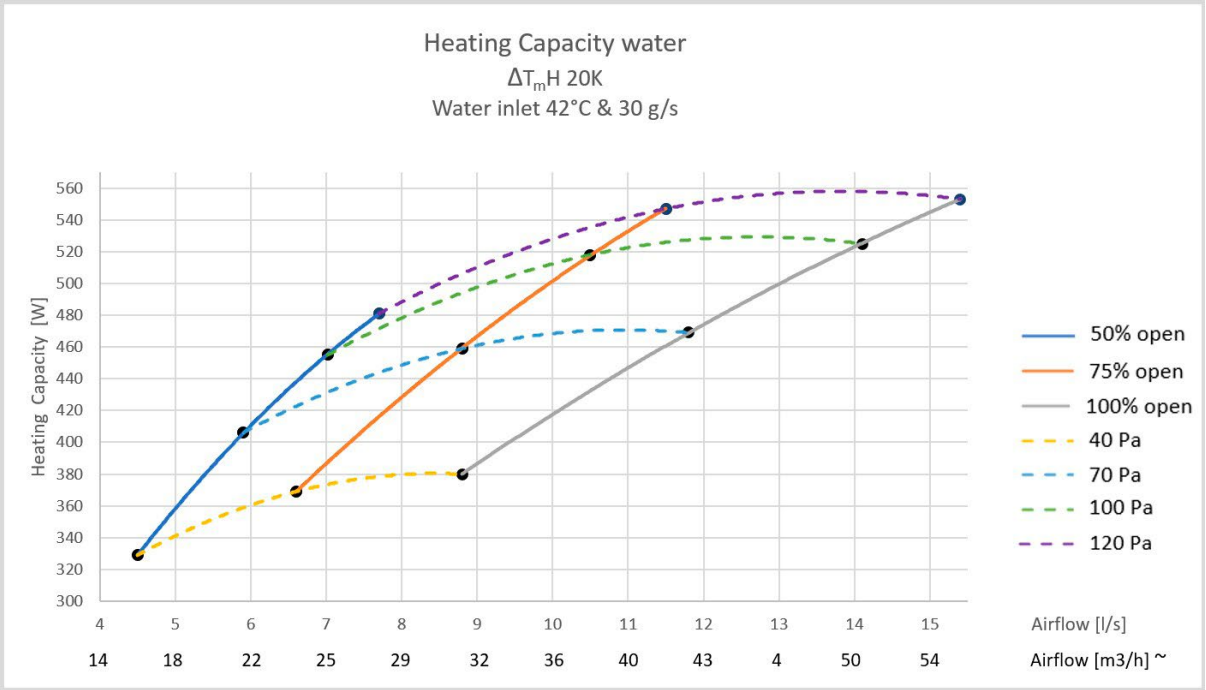


Figure 11. Achieved heating capacity with CASA Climate CCF depending on nozzle setting and nozzle pressure.

Table 1. Data – heating, at normal operation, nozzle pressure 80 Pa with CASA Climate CCF

Nozzle setting	Airflow	k-factor	Noise level	Capacity air (heating)	Capacity water (heating)	Capacity total (heating)
	l/s		*	W**	W**	W**
50% open	6.3	0.70	<20	-15	431	416
75% open	9.4	1.05	<20	-23	484	461
100% open	12.6	1.40	25	-30	491	461

** The specified sound level is applicable to connection without damper or with fully open damper. In other cases where the airflow is demand-controlled with motor-driven dampers, the required data can be read from Swegon's SPC sizing program. Room attenuation = 4 dB*

*** The specified capacity is calculated at a room temperature of 25°C for cooling and 20°C for heating. The primary air temperature is 20°C for cooling and 18°C for heating. Water temperature 15°C in and flow 0.03 l/s for cooling. Water temperature 42°C in and flow 0.03 l/s for heating.*

Cooling

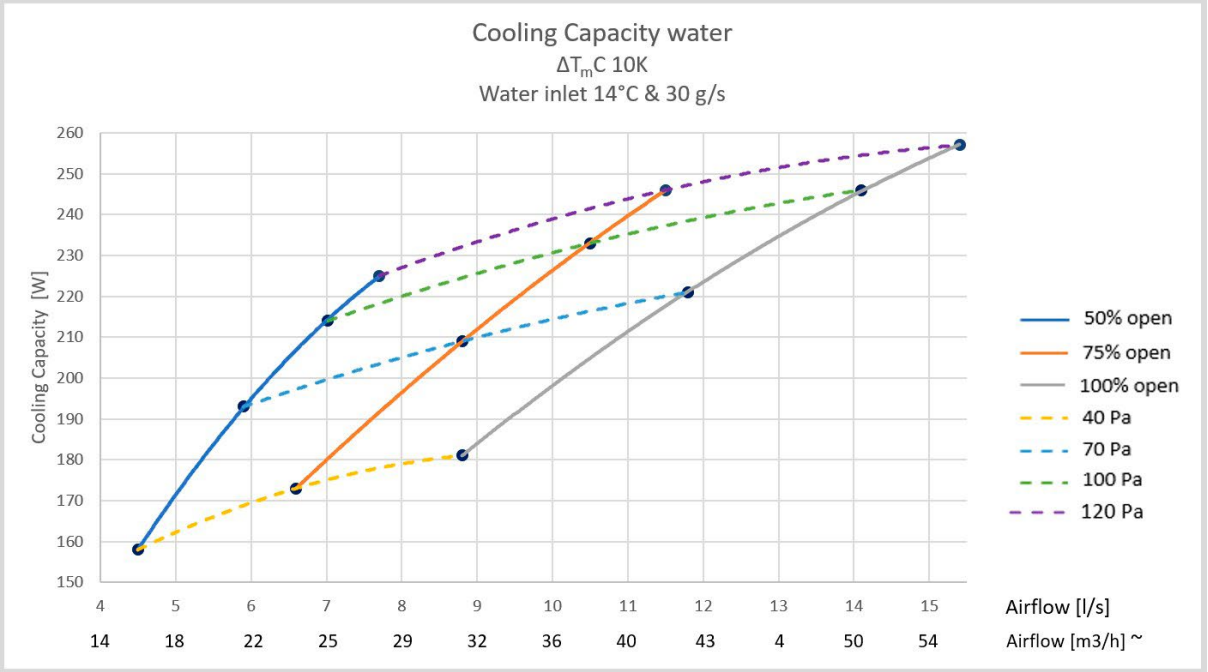


Figure 12. Achieved cooling capacity with CASA Climate CCF depending on nozzle setting and nozzle pressure.

Table 2. Data – cooling, at normal operation, nozzle pressure 80 Pa with CASA Climate CCF

Nozzle setting	Airflow	k-factor	Noise level	Capacity air (cooling)	Capacity water (cooling)	Capacity total (cooling)
	l/s		*	W**	W**	W**
50% open	6.3	0.70	<20	38	186	224
75% open	9.4	1.05	<20	57	202	259
100% open	12.6	1.40	25	76	212	288

** The specified sound level is applicable to connection without damper or with fully open damper. In other cases where the airflow is demand-controlled with motor-driven dampers, the required data can be read from Swegon's SPC sizing program. Room attenuation = 4 dB*

*** The specified capacity is calculated at a room temperature of 25°C for cooling and 20°C for heating. The primary air temperature is 20°C for cooling and 18°C for heating. Water temperature 15°C in and flow 0.03 l/s for cooling. Water temperature 42°C in and flow 0.03 l/s for heating.*

Recommended limit values, water

Max. recommended operating pressure (over coil only):	1600 kPa *
Max. recommended test pressure (over coil only):	2400 kPa *
** Applies without valves or other extra equipment mounted on coil*	
Lowest permissible supply flow temperature:	Must always be sized to enable the system to operate without condensation forming.
Max. permissible supply flow temperature:	60 °C
Min. water flow, heating:	0.015 l/s
Max. water flow, heating:	0.045 l/s
Min. water flow, cooling:	0.020 l/s
Max. water flow, cooling:	0.045 l/s

Designations

P: Capacity (W, kW)

v: Velocity (m/s)

q: Flow (l/s)

p: Pressure, (Pa, kPa)

t_r: Room temperature (°C)

ΔT_m: Temperature difference [t_r–t_m] (K)

ΔT: Temperature difference, between inlet and return (K)

ΔT_l: Temperature difference, between room and supply air (K)

Δp: Pressure drop (Pa, kPa)

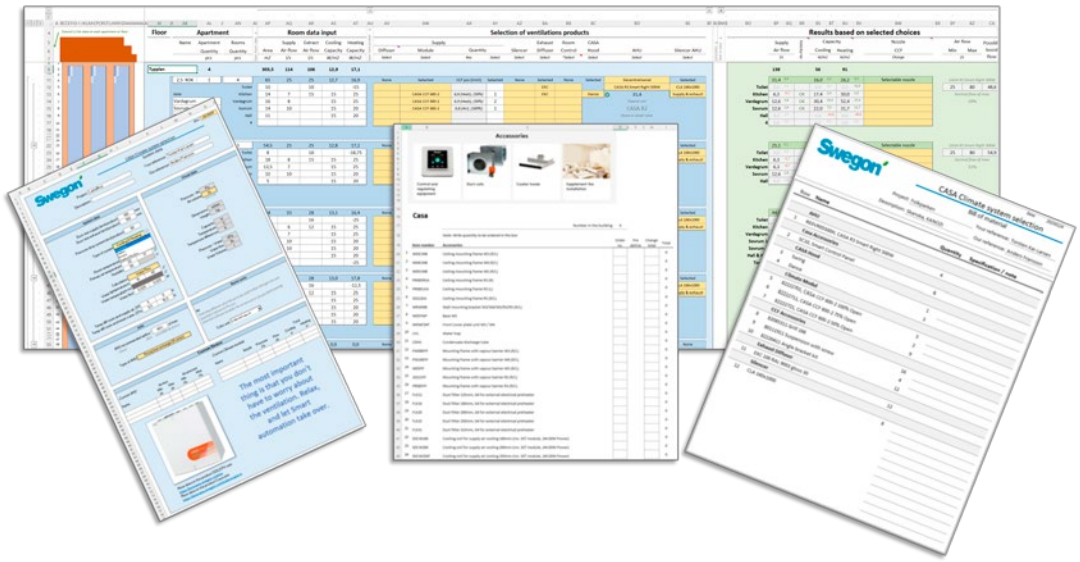
k_p: Pressure drop constant

Supplementary index:
k = cooling, l = air, v = heating, i = commissioning

Software

ProCLIMATE

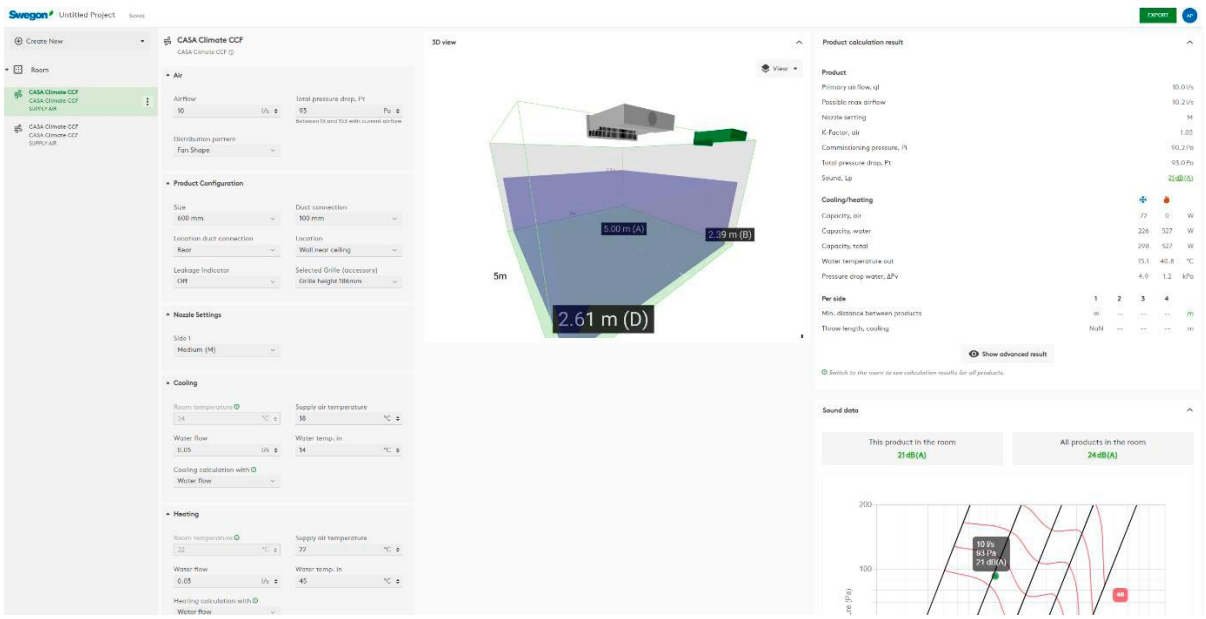
The program that helps you to easily create a complete climate system with Swegon products for apartment buildings.



SPC & RUD

Single Product Calculator (“SPC”) is a basic quick calculator for room products. Capacities, sound, flows, isovels, etc., can be calculated, and printouts can also be exported. If the dimensioning of multiple products in an adapted room is required, the program Room Unit Design (“RUD”) is available instead.

SPC is accessible from our product pages at www.swegon.se where there is a "Calculate" button. Within SPC, there is a shortcut button at the top right of the screen that takes you to RUD. No login or software download needed, incredibly quick and easy!



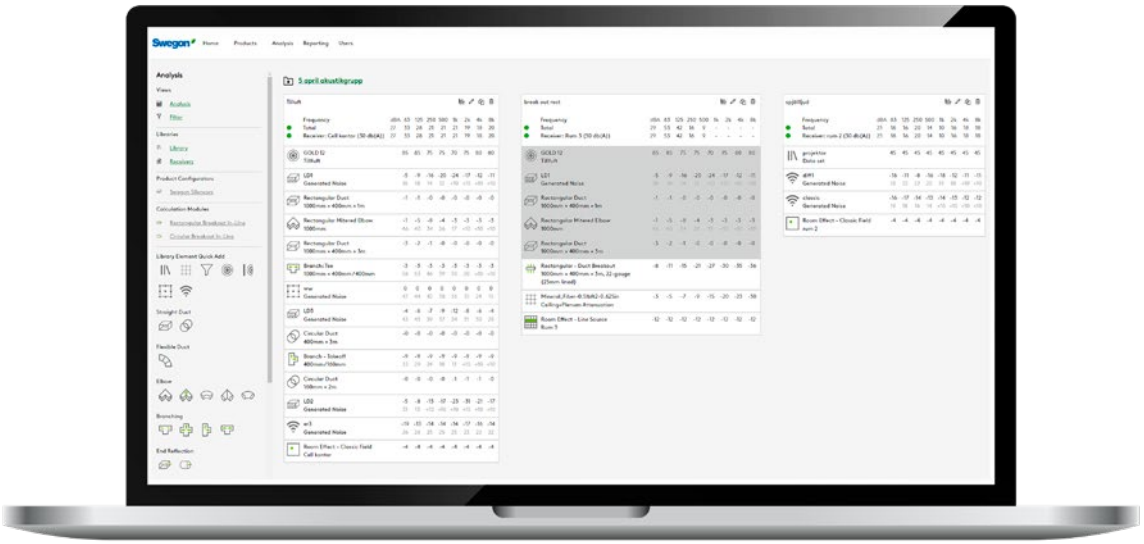
 06/09/2023

MagiCloud

MagiCloud contains different variants of the product to download for use in project planning. A preview of the product in 3D can also be seen on the website magicad.cloud/products.

Acoustic Design

Acoustic Design is a software for calculating and estimating sound levels/noise, as well as configuring and selecting acoustic products



K-factor tuning

If the product's factory-set k-factor needs to be changed, the number of nozzles can be adjusted, for example to maintain good induction and throw length. This can be performed on site by a technician, using a plugging tool. To do this, the grille must be unscrewed in order to be able to remove or add plugs in the nozzles with the plugging tool, through the front of the product.

To add plugs

Slide the plug onto the tapered side of the tool. Push the plug into the nozzle to be plugged, then remove the tool while simultaneously turning it counterclockwise.

To remove plugs

Use the side of the tool where there is a screw. Puncture and screw through the plug in the nozzle that needs to be removed and then pull out the tool with the plug attached to the screw.

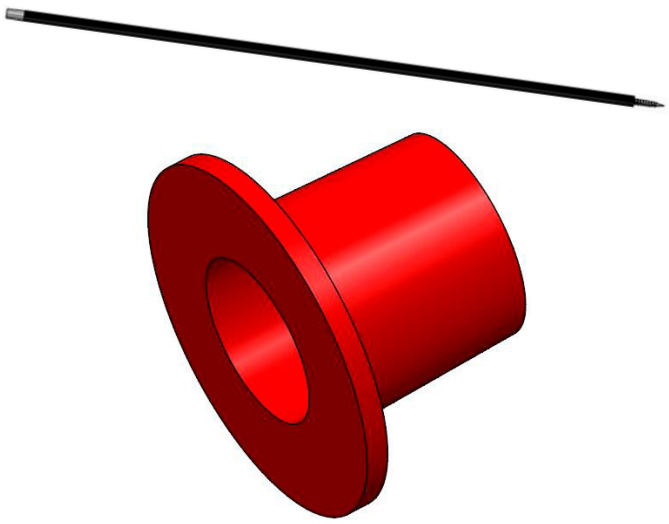


Figure 14. Nozzle plug and plugging tool for changing the product's k-factor.

Calculation of airflow

Achieved airflow exiting the product can be calculated with the formula in figure 15. The pressure pi is the gauge pressure inside the product's box, also known as commissioning pressure. To measure the pressure, a measuring tube of approximately 400 mm is required. The measuring tube is inserted through the front of the product into a nozzle, and the gauge pressure could be read with a manometer. Each open nozzle has a k-factor of 0.039. For example, with 15 open nozzles and a pressure of 80 Pa: 15*0.039*√80=5 l/s.

$$p_i = \left(\frac{q}{k}\right)^2 \ [Pa]$$

$$q = k \cdot \sqrt{p_i} \ [l/s]$$

$$\frac{q}{\sqrt{p_i}} = k$$

p_{in} [Pa]
q [l/s]
k = k-factor

Figure 15. Formulae to calculate the commissioning pressure, airflow or k-factor.

Achieved airflow with 75 Pa at 100 % open, 75 % open and 50 % is shown in table 4.

The upper view in figure 13 shows a product with 75 % open nozzles, while the lower view shows a product that is 50 % open.

Table 3. K-factors for the three variants

Product length	Open nozzles	k-factor	Flow at 75 Pa
mm	%		(l/s)
600	100	1.40	12
600	75	1.05	9
600	50	0.70	6

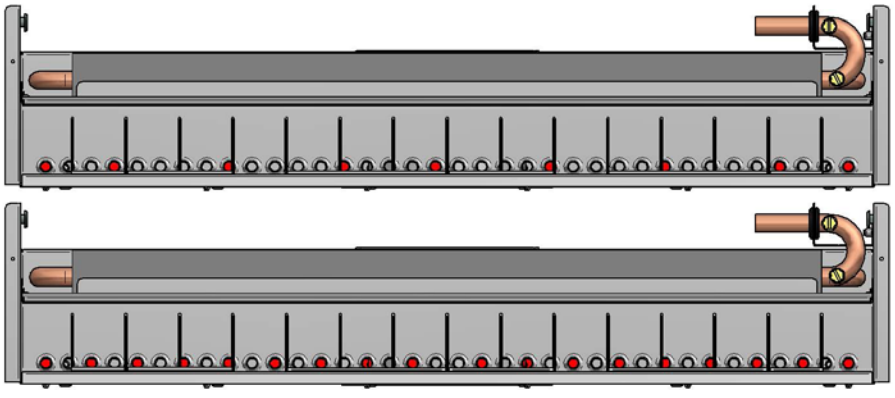


Figure 13. Plugging version at 75% open and 50% open.

Installation

Mounting

Size of the opening

Size of opening for product when leakage indicator is used, shown in Figure 16. If a leakage indicator (see Figure 17) is not used, the height measurement of 172 mm can be reduced to 166 mm, if desired.

There are a number of options for installing the product:

Anchoring - ceiling

CCF has pre-punched holes on the sides, which have been made for a suspension package, "SYST SB-KIT". These brackets are screwed into the ceiling directly above the product, see figure 17. There are a number of holes on the bracket, making it possible to select how close to the ceiling the product is to lie.

Anchoring - wall

Another solutions is to screw the product into the wall through which it is pressed. There is an "Angle Bracket-KIT" for this. This contains a pair of angle brackets. The product has no pre-punched holes for these, as the thickness of the wall can vary. The brackets are screwed into place so that their upper edge is level with the upper edge of the product, see Figure 18. If the product is not pressed all the way forward to the inner side of the wall, an air limitation plate is required to avoid short-circuiting the primary air in the product.

Mounting on top of tall cabinet

For mounting on top of a tall cabinet, see Figure 19. If the brackets are used to screw the product into the ceiling, they are turned to face inwards. The pre-punched 2 mm holes in the product are used to screw the brackets into place.

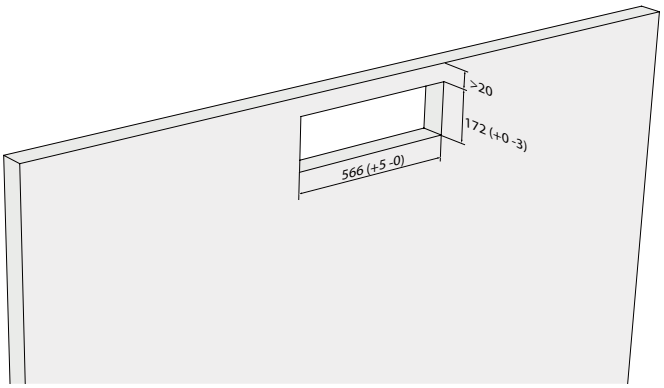


Figure 16. Hole pattern with cut-out dimensions when the product has been supplemented with a leakage indicator.

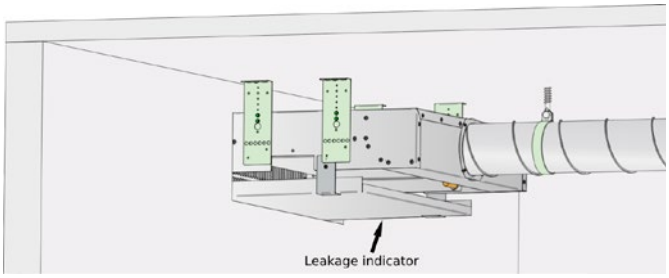


Figure 17. Mounting the product in the overlying ceiling.

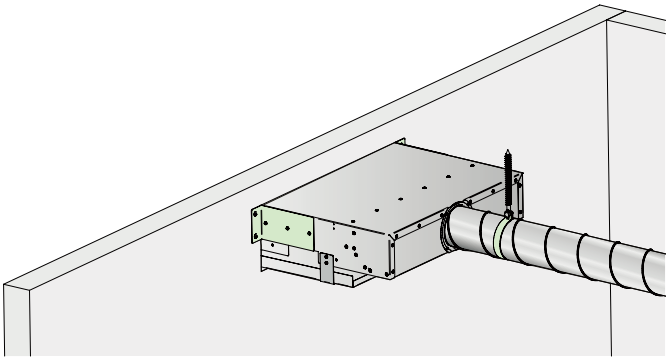


Figure 18. Anchoring in the wall, mounted with bracket's on the sides and pushed through the opening.

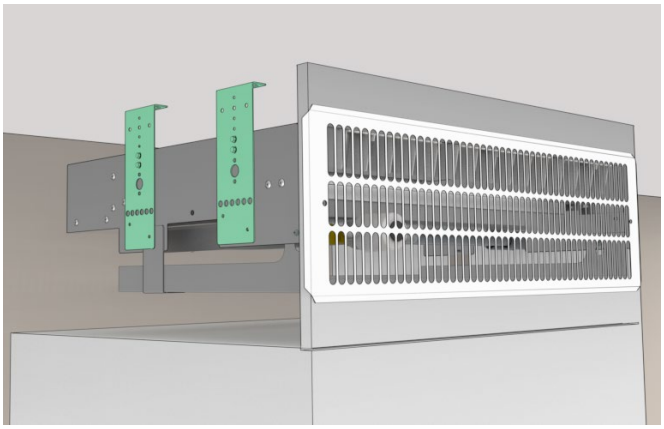


Figure 19. Mounting the product on top of a tall cabinet.

Floor mounting

In the case of floor mounting, the product can be placed in the cabinet base. A double bottom can be installed, where the upper panel can be removed for basic cleaning. In the case of floor mounting, it is particular important to consider the draught problems that might arise. ADC can be used to direct the air away from seating areas. See Figures 20-22.

Figure 20. Installed product in cabinet base, where the lower bottom panel has been cut out for good cleaning access.

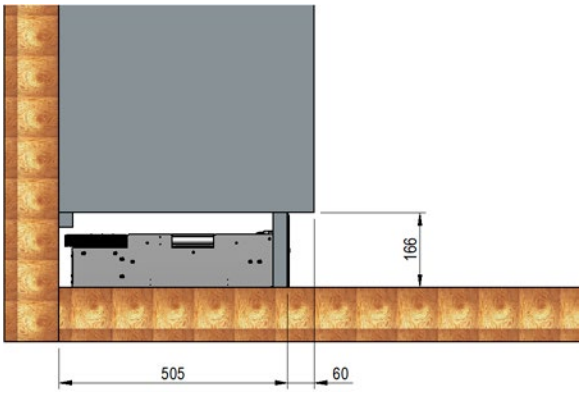


Figure 21. Dimensions - view from the side with CCF mounted in base of 600 cabinet.

Figure 22. Example of installation of product in tall cabinet.

Cross-talk

When the installation of CCF is complete, the work with cladding can begin. When the product is installed in a wall, the hole that has been made can lead to unwanted cross-talk between rooms. It can therefore be important to clad the product with acoustic insulation in the case of such solutions.

Connection – Air

All variants have air connection Ø 100, and it can be delivered as rear-, top or bottom connetion. The is a sleeve connection and requires that the connecting ventilation pipe has a nipple connection.

Note that the ventilation duct must not be suspended from the product's connecting sleeve, rather it must be suspended with its own mounting points. The duct must also be in level with the sleeve on the product, to ensure there are no ruptures in the sleeve that can give rise to leaks and noise.

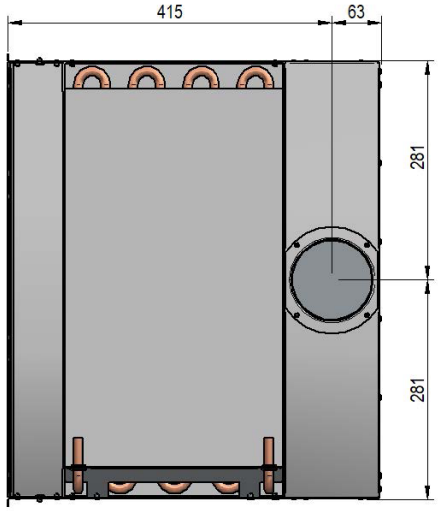


Figure 23. Dimensions CASA Climate CCF, air connection side 6.

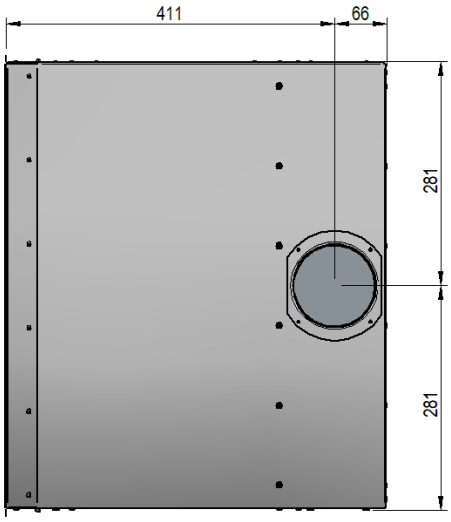


Figure 24. Dimensions CASA Climate CCF, air connection side 5.

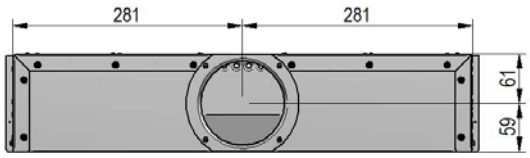


Figure 25. Dimensions CASA Climate CCF, air connection side 2.

Connection – Water

The product is supplied without any factory-fitted valves or water connections.

The product's connection pipe: Plain pipe ends (Cu) Ø 12 x 1.0 mm

Connect the water pipes using push-on couplings, compression couplings or press couplings. Do not use solder couplings to connect the water pipes. High temperatures can damage the unit's existing soldered joints.

Note that compression couplings require support sockets inside the pipes.

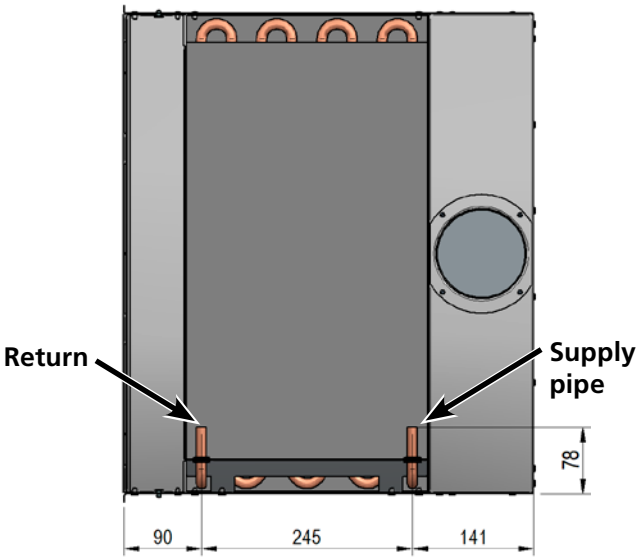


Figure 26. Dimensions CASA Climate CCF, water connection.

Pipes must not apply a load on the product's connection pipe. Consequently, pipes must be suspended from their own anchoring points, as otherwise there is a risk of water leaks. In accordance with AMA VVS & Kyla 19, Table AMA PN/2 and PN/4, the following distances between anchoring points must be maintained:

Table 4. Distance between anchoring points depending on type of pipe.

Type of pipe	Horizontal pipe	Vertical pipe
	(m)	(m)
Steel pipes up to and including DN20	1.25	2.0
Plastic pipes up to and including DN20	0.5	0.5
Copper pipes and thin-walled steel pipes up to and including DN12	0.6	0.8

Pipes in pipes

When routing with flexible connecting hoses (pipes in pipes), cut off the outer pipe just barely inside the product to avoid the risk of leaks outside the product. The product's output is maximised when only the inner pipe remains at the heat exchanger surface, see Figure 28. The water connection is on the left-hand side of the product and the connection hoses can be routed through an opening in the side of the product, see Figure 27. A cable tie can be pulled through the small hole in the product and around the hoses to hold them in place. Alternatively, they can also be routed out at the rear of the product, see Figure 28.

The supply pipe is connected at the pipe end nearest the rear of the product, and the return pipe is connected at the pipe end nearest the product's discharge grille. There are two bleeding screws on the return.

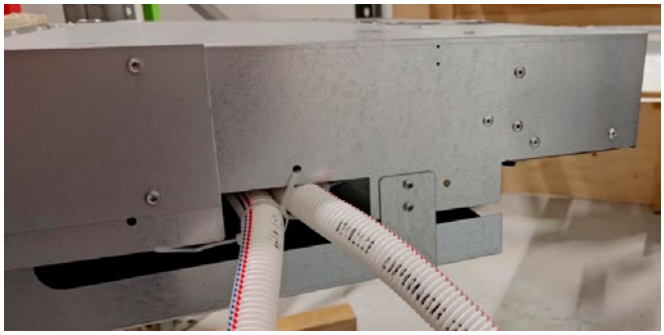


Figure 27. Cut-out for routing the water pipe out from the side of the product.

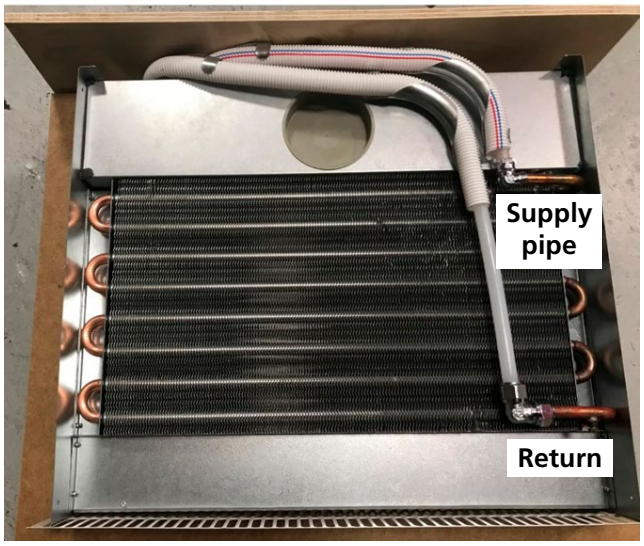


Figure 28. Alternative routing of water pipe, out at the rear of the product.

System requirements

On hot summer days, the humidity can sometimes be high. A higher moisture content in the air means a higher dew point temperature, for condensation on surfaces. In a Mollier diagram (moisture-enthalpy diagram) this relationship can be read out. At, for example, 25°C and 50% relative humidity, the dew point is 14°C. Which means that condensation will occur on a surface whose temperature is 14°C or lower. During summer days, the dew point temperature can sometimes rise to 15°C, and in extreme cases, after a rain shower, up to 17°C.

To ensure a condensation-free system, the cooling line's delivery must be dew point regulated, so that the inlet temperature is higher than the dew point temperature in the apartment. This can be done in different ways, depending on whether it is a central ventilation system or apartment-located ventilation units. In the case of a central ventilation system, the dew point regulation can be managed with a sensor, that measures the relative humidity in the exhaust air. In combination with a shunt group valve that is controlled to keep the supply temperature above the calculated dew point temperature. This technology does not work as well with apartment-located ventilation units. This is because the representative exhaust air becomes moist if the resident takes a shower in the bathroom, which results in a reduction of cooling effect in other spaces in the home, which are cooled by CCF comfort modules. In order to better regulate the dew point of the cooling system with ventilation units located in apartments, the relative humidity should instead be measured in a room that is air-conditioned by CCF. Either with a humidity sensor in each apartment, or a humidity sensor in a few selected apartments. The apartment that registers the highest dew point temperature must controll the supply temperature.

In addition to a dew point-regulated supply line, a condensation sensor is also installed per room controller. If this sensor detects condensation, it closes the cooling valve and thus the incoming water flow to the CASA CCF. The condensation sensor is mounted on the battery of the CCF.

As an extra security, it is recommended that a leakage indicator should be installed under the product when it is ceiling mounted, see Figure 17. When it is floor mounted, the product itself functions as a leakage indicator.

Change-over cooling/heating

In order to supply a home with both cooling and heating, a change over system is required. This can be accomplished with a 4-pipe system or a 2-pipe system.

In the case of a 4-pipe system, the change over system is most commonly designed with a 6-way valve into each apartment. This gives each apartment individual regulation with cooling and heating all year round.

In the case of a 2-pipe system, the change over system is most commonly designed with a central change over valve which is placed in the technology room. This means that all apartments in the same building will either get cooling or heating. The switching between cooling and heating can be controlled in three ways:

1) Manually

2) With the house automation system, based on temperature inside and outside

3) With the house automation system, based on date

Before commissioning

The product's dust protection packaging must be removed before commissioning.

The system must be pressure tested up to 900 kPa, before commissioning. In the event of leakage due to defects in the products, Swegon covers the cost of replacement or repair of the product. Any other costs or consequent damage that arises prior to pressure testing or due to pressure testing being neglected or occurred too late will not be reimbursed by Swegon.

Remember, pressure testing is a safety precaution to ensure the installation is free from faults and that damage has not occurred during transport, assembly or other handling. Accordingly, the whole installation/circuit and component parts must also be observed during the complete pressure testing.

Water quality

Swegon recommends water quality according to VDI 2035-2 for both the heating and cooling systems. In order to maintain the oxygen content in the water below the levels (<0.1 mg/l) prescribed in VDI 2035-2, it is recommended to install a vacuum degasser, particularly in cooling systems where it is more challenging to get rid of dissolved gas. It is also important that the pre-charge pressure in the expansion vessel is dimensioned according to EN-12828 for both the heating and cooling systems and that regular checks are made of the pre-charge pressure. The cooling and heating systems must be designed to prevent oxygen from entering the system. This is particularly important to consider when selecting flex hoses, pipes and expansion vessels.

When the system is filled with fresh water, it has an oxygen content of approximately 8 mg/l. This oxygen is consumed quickly through corrosion processes, and within a few days the oxygen in the water should be consumed. Nevertheless, it is important to avoid filling the system with fresh water unnecessarily.

Automatic deaerators are often installed to facilitate filling of the system. It is recommended that the automatic deaerators are turned off once the system has been fully vented to avoid these drawing in air in the system if the pre-charge pressure in the expansion vessel should drop.

In low-flow systems, it is particular important for bleeding to take place via available bleeding screws in all products when commissioning.

When using shear valves, these must be set to open for a period to ensure that all air and dirt disappear from the system.

Accessories

CCF can be ordered with separate accessories or accessory kits.

Control accessories

Below is a list of available accessories within control equipment:

Room controller	LUNAd RE-S MB
Room controller	LUNAd RE-S C/O HME MB
Valve, cooling/heating	VDN 110 straight valve
Thermostat, cooling/heating	RTN81 5M
Valve 6-way	CCO-kit
Condensation sensor	Condensation sensor CG-IV
Strap-on sensor	Strap-on sensor TEPK NTC 10
Valve actuator	Actuator c 24 V NC
Temp. sensor	Temperature sensor T-TG-1

Separate accessories

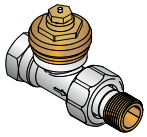
Controller, LUNAd RE, 80967212, 81870411

To control the room temperature. Set point value is set on the controller which is mounted on the wall.

- Four outputs for controlling heating and cooling actuators.
- Built-in temperature sensor and possibility to connect an external temperature sensor.
- Four outputs for condensation sensors or occupancy sensors.

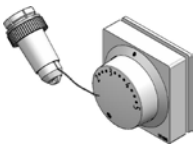
Valve (straight), SYST VDN 110, 932469001

Function	Type	Dim.	K_v (m^3/h)
Cooling/heating	VDN110	DN10 (3/8")	0.09-0.63



Thermostat, RTN81 5 m, 82089902

Can be used in combination with valve types VDN, VEN, VUN, VPD and VPE, which have thread M30 x 1.5 for connection of actuators. 5 metre long capillary tube.



Valve actuator, cooling & heating, ACTUATOR c 24 V NC, 82084001

Valve actuators for cooling and heating. 24V AC/DC, NC (Normally Closed).

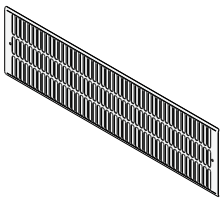
For more information about the actuator, see the separate product data sheet on www.swegon.com.

Strap-on sensor, Strap-on sensor TEPK NTC 10, 942449002

Strap-on sensor for measuring temperature. Mounted on pipe with cable tie.

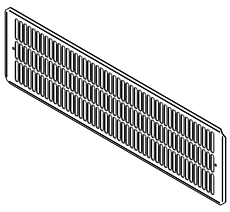
Grille 166, 82085311

Standard grille that is 166 mm tall, suitable for floor mounting of the product.



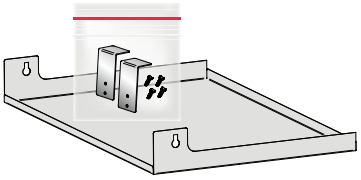
Grille 196, 82082511

For ceiling installation, this grille is recommended instead of Grille 166.

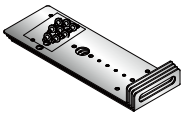


Accessory kits

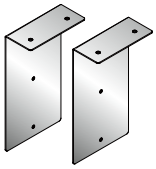
Leakage indicator kit, 82221501
A leakage indicator for extra security in case of ceiling installation. Hooked into place in keyholes at the front edge of the product, and placed at the rear edge on top of supplied brackets that are screwed into pre-punched holes in the product.



Suspension with screw, SYST SB-KIT, 80111911
Suspension kit that can be used, for example, when the product is to be screwed into place in the overlying ceiling.

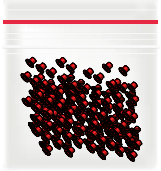


Angle bracket kit, 82220411
Suspension bracket for screwing the product directly into the wall, for example when installing in bathroom modules.



6-way valve, CCO-KIT, 80801105
6-way valve including motor, suspension bracket and hoses.

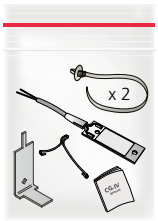
Nozzle plugs, DP-6.4-100 pcs, 82222301
100 plastic plugs for adjusting flow out of product.



Condensation sensor, Condensation sensor CG-IV-KIT, 80610102
Condensation sensor CG-IV and assembly parts for retrofitting.

The condensation sensor's sensor element comprises a circuit card with gold-plated conductive paths that react when short circuit occurs due to water/condensation. When condensation arises, the cooling valve closes the incoming water flow to the product. When the condensation on the conductive paths has been wiped off, the cooling valve opens again. Sensor is positioned on the coil fins by the cooling supply.

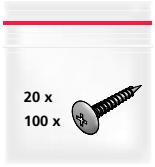
For more information about the condensation sensor, see the separate product data sheet on www.swegon.com.



Temperature sensor, CONDUCTOR T-TG-1, 942358003
External temperature sensor for measuring temperature.

Screw for grille, 82222901, 82222911
Screw with head painted white to match the white grille.

Available in packs of 20 or 100.



Dimensions and weight

Weight

Table 5. Data - water volume & weights

Length	Dim.	Dry weight* (kg)			Water volume
mm	Ø	excl. grille	incl. 166 grille	incl. 196 grille	(l)
600 excl. leakage indicator	100	5.0	5.3	5.4	0.51
600 incl. leakage indicator	100	6.2	N/A	6.6	0.51

Dimensions

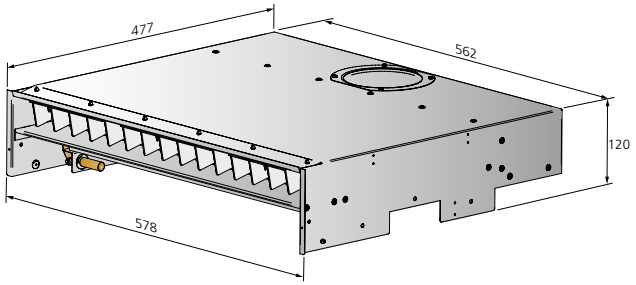


Figure 29. Dimensional drawing excl. grille & leakage indicator, sleeve connection side 5.

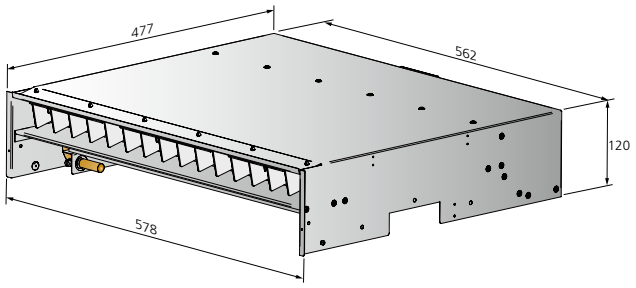


Figure 30. Dimensional drawing excl. grillew & leakage indicator, sleeve connection side 2.

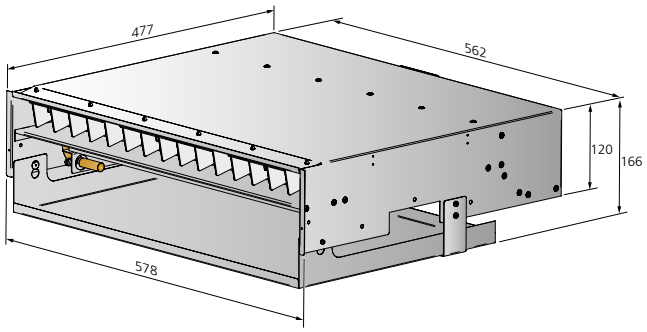


Figure 31. Dimensional drawing excl. grille, incl. leakage indicator, sleeve connection side 2.

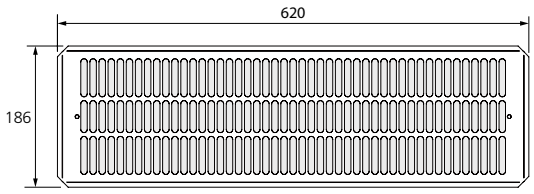


Figure 32. Dimensional drawing grille 196.

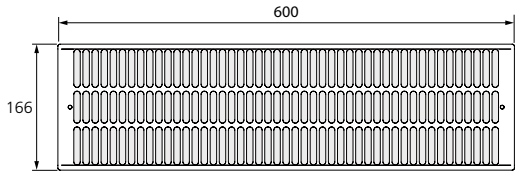


Figure 33. Dimensional drawing grille 166.

Specification

CASA Climate CCF

1-way blowing, active comfort module with cooling, heating and ventilation, specially developed for homes.

Colour

The product's grille is painted as standard in RAL 9003 Standard colour, white, gloss ratio 30 ± 6%. The grill can also be ordered in the following colours.

- RAL 7037 Grey, gloss ratio 30-40%
- RAL 9010 White, gloss ratio 30-40%
- RAL 9005 Black, gloss ratio 30-40%
- RAL 9006 White, gloss ratio 70-80%
- RAL 9007 Grey, gloss ratio 70-80%

Delivery demarcation

Demarcation list

Text	B	BE	VE	EE	PE	Remarks
Cutting opening in wall		x				
Suspension and integration		x				
Connecting water coil					x	
Mounting electrical control equipment				x		
Connecting electrical control equipment				x		
Mounting actuators and valves					x	
Installation of fan units			x			
Routing ventilation pipes			x			
Connecting ventilation pipes			x			
Commissioning ventilation			x			

Explanation: B = Client, BE = Construction contractor, VE = Ventilation contractor, EE = Electrical contractor, RE = Pipework contractor

Swegon's limits of supply are at the connection points for water.

At these connection points, the RE pipework contractor connects to plain pipe ends and/or male threads towards valves, fills the system, bleeds it and tests the pressure in the circuits.

The ventilation contractor connects to the duct connections with dimensions as specified on the basic size drawing in the section "Dimensions".

EE electrical equipment contractor provides a 24 V AC network power supply or earthed 230 V outlets for a transformer, as well as a junction box, if required, installed in a wall for a room thermostat.

The building contractor cuts the openings in corridor wall for the supply air duct, in the interior wall and suspended ceiling for the supply air and extract air grilles and in the bathroom ceiling for the extract air duct.

The electrical contractor connects the power (24 V) and signal cables to the connection terminals. Maximum cable cross section 2.5 mm^2.

Maintenance

See the separate document "Quick Guide".

Ordering key

CASA Climate CCF	a	bbb-	c-	ddd
Version:				
Length (mm)				
600				
Connection side - air				
2 = side 2				
5 = side 5				
6 = side 6				
Nozzle setting				
100 = 100% open				
75 = 75% open				
50 = 50% open				

Ordering examples

Example:

CASA Climate CCF version a in length 600. Air connection side 5 Ø100 and nozzle setting 100% open.

CASA Climate CCF a 600-5-100

Specification text

This technical description is connected to AMA:

PTC.312	Duct connected chilled beams
PTD.4	Duct-connected room devices for heating and cooling.

1-way blowing comfort module CASA Climate CCF with integrated comfort guarantee (ADC) for setting of the desired direction of the distributed air. Designed for both floor discharge and ceiling discharge. Placed in cabinet bases, in furniture or in a wall.

Available in three designs as regards sleeve location:

- rear connection
- bottom connection
- top connection.

Available in three standard designs as regards plugging the nozzles:

- 100% open
- 75% open
- 50% open

(Extra plugs can be purchased in packs of 100)