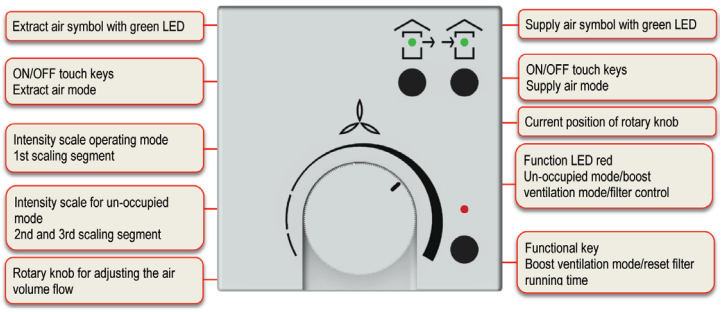
Zehnder Climos 200 Eco

Technical specification for comfort ventilation unit

always the best climate

General

The Climos 200 Eco comfort ventilation unit was developed for use in demanding residential and commercial buildings. It guarantees comfort ventilation paired with user-friendly operation and the highest energy efficiency. The various installation options and different models allow it to be flexibly incorporated into building services. The comfort ventilation unit moves a maximum of 200 m³/h at an external pressure of 150 Pa.



Control panel

Operation

To control the fans, the control panel has a rotary knob with an infinitely variable adjustment range (first scaling segment on the intensity scale) for the air volume flow.

The two ON/OFF keys can be used to set the operating mode. You can choose between normal mode (both fans switched on), extract air mode (only the exhaust air fan switched on) or supply air mode (only the supply air fan switched on). The green LED above the respective symbol indicates which mode has been set. Use the boost ventilation mode/reset filter running time key to trigger the operating function associated with each one. The operating LED lights up red to indicate that the un-occupied or boost ventilation operating modes are possibly active or that the filters should be inspected.

Top Benefits

- Flexible installation options due to the compact flat design and the fact that there is no need for a condensate drain
- Energy-efficient operation and maximum climate comfort, as enthalpy exchanger is included as standard
- Reduces excessively dry air in the winter and excessively humid air in the summer, and means that post-heaters or frost-protection functions are only required with outdoor temperatures of approx. -6 °C or lower
- Maximum energy efficiency due to EC centrifugal fans regulated to a constant volume and with balancing
- Simple and user-friendly control with filter replacement indicator
- Optionally possible to add IAQ sensor

Article numbers

Description	Article number
Climos 200 Eco VR entalphy	527 006 320
Climos 200 Eco VL entalphy	527 006 330

Control panel is included for all models
V = pre-heater, L/R = left-hand/right-hand supply air

Accessories	Article number
Designer filter cover set, colour RAL 3020	528 007 870
Access panel for dry-wall installation	528 007 930
Filter set for Climos 200, ISO coarse ≥ 75% (M5), contents 2 pieces	527 004 270
Filter set for Climos 200, ISO coarse ≥ 75% / ISO ePM1 ≥ 60% (M5 / F7), contents 2 pieces	527 004 280

Tender specification

- Climos 200 Eco comfort ventilation unit with maximum air volume of 200 m³/h at 150 Pa
- 594 x 1019 x 250 (W x L x H)
- Housing made from galvanised powder-coated sheet steel, RAL 7016 anthracite
- High-quality EPP interior lining
- Climos 200 Eco with cross-counterflow heat exchanger, passive house-certified waste heat recovery of up to 84%
- Climos 200 Eco with cross-counterflow enthalpy exchanger
- EC centrifugal fans with integrated controllers, regulated to a constant volume, adjustable in 1% increments
- Sensor-controlled summer bypass function
- Integrated pre-heater
- Equipped with outdoor and extract air filters with filter class ISO coarse ≥ 75% (M5), optional pollen filter with filter class ISO ePM1 ≥ 60% (F7)
- Left and right unit versions
- Installation positions: suspended from the ceiling or lying (horizontal), mounted on the wall (horizontal or vertical), and on the wall slope (horizontal or vertical)
- Controlled with external control panel. Optionally possible to control with IAQ sensor

Technical specifications

Height (mm)	250 mm
Length (mm)	1019 mm
Width (mm)	594 mm
Weight	25 kg
Cross-counterflow enthalpy exchanger with humidity recovery	Plastic / membrane polymer
Interior lining material	Expanded polypropylene (EPP)
Housing	Galvanized sheet steel, powder-coated
Installation	Ceiling-mounted or lying (horizontally), wall-mounted or inclined wall (horizontally / vertically)
Temperature range	-20 °C up to +40 °C
Weight	25 kg
Supply voltage	230 VAC, 50-60 Hz, connection cable 2m ready-to-plug
Current draw without/with defroster	0.14 kW/ 0.75 kW
Protection class	I
Degree of protection	IP 30
Control modules	▪ External control panel (W x H x D in mm: 71 x 71 x 25) ▪ External control signal (0–10 V)

Energy figures

DIBt (preliminary data)	
Product	**Climos 200 enthalpy**
Approval number	Z 51.3-380
Extract air volume flow V_{ab} [m³/h]	$76 \leq V_{ab} \leq 200$
Waste heat recovery η_{WRG} [-]	76%
Specific electric power consumption p_{el} [W/(m³/h)]	0.30*

"Passivhaus" certification	
Component ID	0680vs03
Range of application [m³/h]	100 – 115
Waste heat recovery η_{WRG} [-]	84%
Specific electric power consumption $p_{el,spec}$ [W/(m³/h)]	0.40
Humidity recovery ηX [-]	57%

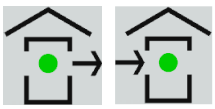
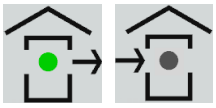
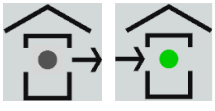
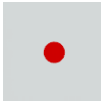
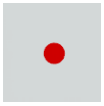
EU Energy Consumption Label	
Energy efficiency class	A+*
Maximum air volume flow [m³/h]	200
Sound power level L_{WA} [dB]	45

* Depending on the control unit/sensor technology chosen.
Detailed information on page 9.

External control panel operating functions

Description	Explanation
Intensity scale Rotary knob positioning	**Operating mode:** Ventilation with constant air volume flow according to the intensity scale Position 1st scaling segment on the left: lowest air volume flow Position 1st scaling segment on the far right: highest air volume flow Positions within the 1st scaling segment: air volume flow proportional to the intensity scale **Un-occupied mode:** Ventilation with the lowest intermittent air volume flow Position 2nd scaling segment: 5 minutes ON and 1 minute OFF Position 3rd scaling segment on the far left: 1 min ON and 5 min OFF Positions within 2nd and 3rd scaling segment: ON/OFF cycle-time ratio adapted indirectly proportional
Touch key Extract air mode	Pressing this key so that it clicks into place activates extract air mode and switches on the exhaust air fan. Pressing it again deactivates extract air mode. **DANGER: Potentially lethal smoke poisoning** If the ventilation unit is being operated together with a fireplace, do not use this touch key unless supply air mode is activated at the same time! Simultaneous operation of a ventilation system and fireplace imposes more stringent safety requirements with regard to low pressure monitoring and a switch-off function is required for the ventilation unit.
Touch key Supply air mode	Pressing this key so that it clicks into place activates the supply air mode and switches on the supply air fan. Pressing it again deactivates the supply air mode.
Normal mode	Pressing both keys so that they click into place switches on both fans.
Key Boost ventilation mode/reset filter running time	Function key for boost ventilation mode: Pressing this key activates boost ventilation for 15 minutes with an air volume flow corresponding to the rotary knob being turned all the way to the right. At the end of the 15-minute boost ventilation time, the unit reverts to the previous air volume in the currently active mode. You can cancel the boost ventilation mode at any time by pressing this key again for > 3 s. Function key for reset filter running time: To ensure cyclic filter inspection, the control has an integrated operating hours counter with a fixed running time of 180 d. The boost ventilation mode/reset filter running time key allows you to reset the filter running time. To restart the filter running time, press and hold this key for > 3 s. If the filter running time is reset before the end of 180 d by pressing this key for > 3 s, the LED - fan symbol will blink rapidly four times in succession to confirm the reset operation. **NOTE**: No reset command can be issued while the boost ventilation mode is active.

Functions assigned to LED signals

Symbol	LED signal	Function / Meaning / Action required
	Both LEDs light up	Normal mode (extract air and supply air)
	Extract air symbol LED lights up	Extract air mode is active (extract air only)
	Supply air symbol LED lights up	Supply air mode is active (supply air only)
	Fan symbol LED lights up	Ventilation boost mode is active **NOTE** Ventilation boost mode can be selected while in any other mode.
	Fan symbol LED blinks	Un-occupied mode is active **NOTE** Un-occupied mode can be selected while in any other mode.
	Fan symbol LED blinks rapidly	Filter change interval expired, inspect or replace filter **NOTE** Boost ventilation mode cannot be activated until a reset command is issued.

External control signal, 0–10 V

The ventilation unit can be operated with an external 0–10 V control signal. When a 0–10 V analogue signal is applied, it is interpreted as a control signal for the fan speed. The current position of the rotary knob on the scale marks the point at which the external control voltage becomes effective.
NOTE: To make use of the entire external 0–10 V control range, the rotary knob must be pointing to the position of the 3rd scaling segment.

Boost ventilation mode with external boost ventilation key

Boost ventilation keys are usually installed in rooms from which air is extracted, such as bathrooms, toilets or kitchens. In this way, maximum ventilation can be activated locally within these rooms for a specific period to enable rapid extraction of high humidity and odours. When this control module is activated, the functional features and displays described for boost ventilation mode apply. Boost ventilation mode is restarted each time it is activated and interrupts the currently set air volume flow. Afterwards, the unit reverts to the previously active working condition.

Level of efficiency

The comfort ventilation units in the Climos 200 series are equipped with a cross-counterflow enthalpy exchanger with humidity recovery as standard, and achieve a waste heat recovery of 84% as certified for humidity-transferring ventilation units according to passive house regulations.
For user comfort this means: no unpleasant draught effects, because the supply air is heated almost to room temperature even at temperatures around freezing.

Humidity recovery

Because of its physical characteristics, the standard enthalpy exchanger can transfer not only heat but also up to 57% of the ambient humidity, making it the perfectly hygienic solution to the problem of overly dry winter air. Supply and extract air flows are kept completely separate: no transfer of odours or germs.

Fans

The quiet, particularly energy-efficient EC centrifugal fans with integrated controllers can be adjusted to the required volume flow in 1% increments and are also regulated to a constant volume. The air volumes of the selectable speeds for the Climos 200 Eco are between 50 and 200 m^3/h at an external pressure of 150 Pa.

Frost protection

The Climos 200 Eco comfort ventilation unit is equipped with automatic frost protection, which prevents the heat exchanger from freezing should the outdoor air temperature drop to a very low level. In order to ensure reliable operation even at extreme outside temperatures, an integrated electric pre-heater is used. This guarantees safe, continuous, frost-free operation even at temperatures below freezing.

Summer ventilation

An electronic bypass function can be used for summer ventilation so that, for instance, cooler outdoor air can be directed into the living areas via “free cooling”. Extract air is deactivated during the active phase of the electronic bypass function in order to prevent the transfer of heat and humidity.

Filters

The Climos 200 Eco comfort ventilation unit is equipped with ISO coarse ≥ 75% (M5) filters as standard. An optional ISO ePM1 ≥ 60% (F7) pollen filter is available for outdoor air. This protects the room air from pollen and reduces contamination from fine particulate matter, spores and germs.

Installation

The Climos 200 Eco comfort ventilation unit is characterised by its highly compact, flat design. This makes it ideal for ceiling installation. An optional custom-fitted access panel for dry-wall installation is available for installation in suspended ceilings. No condensate drain is required, which allows for flexible installation options on the ceiling, roof slope or at floor level. As a result, Climos 200 Eco is not only perfect for use in modernisation projects but also for use in confined or complicated spaces in new builds. Both left-hand and right-hand supply versions are available to optimise the routing of the ventilation tubes to the ventilation unit.

Maintenance

Maintenance on the Climos 200 Eco comfort ventilation unit is limited to regular replacement of the filter integrated in the front of the unit. The EPP filter covers on the housing cover are directly accessible for easy filter replacement. The heat exchanger should be inspected for dust and dirt every two years and cleaned as necessary. This can be done by simply removing the front panel, pulling the heat exchanger out of the unit and rinsing it with lukewarm, soapy water.
Please refer to the user manual for additional maintenance tips and tasks.

Sound specifications

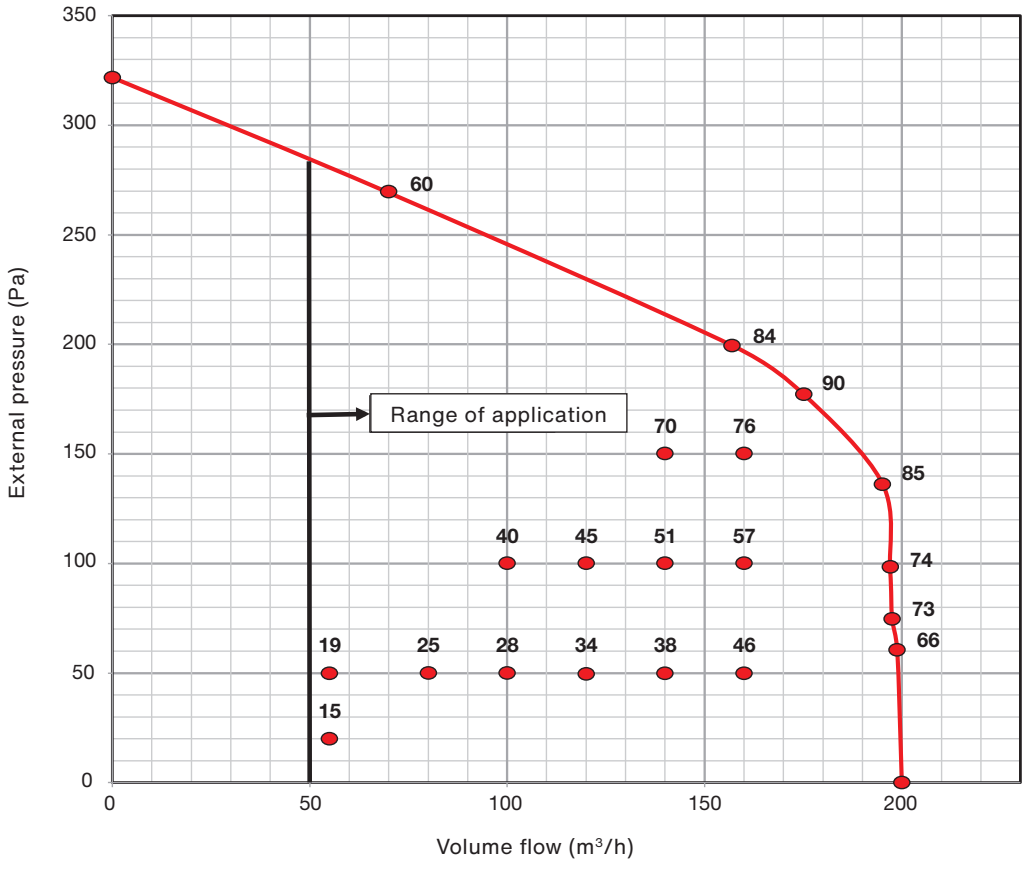
Sound, supply air (at the supply air connector at a distance of 0 m)											
Speed level	Air volume m^3/h	Pressure ΔP st Pa	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1000 Hz dB(A)	2000 Hz dB(A)	4000 Hz dB(A)	8000 Hz dB(A)	Total dB(A)
45%	100	100	46.9	62.2	60.3	59.6	58.7	51.9	47.3	40.5	66.0
67%	138	100	48.6	61.4	61.3	59.6	60.3	53.6	49.1	43.0	66.6
72%	150	100	47.7	62.0	62.0	60.0	61.1	54.5	50.5	43.8	67.3
100%	200	100	49.6	63.2	65.3	62.7	63.6	58.6	53.7	48.4	70.0

Sound, extract air (at the extract air connector at a distance of 0 m)											
Speed level	Air volume m^3/h	Pressure ΔP st Pa	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1000 Hz dB(A)	2000 Hz dB(A)	4000 Hz dB(A)	8000 Hz dB(A)	Total dB(A)
45%	100	100	39.9	52.1	53.4	43.5	33.1	22.5	19.4	15.3	55.6
67%	138	100	43.0	54.3	55.7	45.5	35.5	25.2	20.0	15.3	57.8
72%	150	100	44.4	54.6	56.2	46.0	36.7	25.8	19.5	15.3	58.2
100%	200	100	49.2	58.1	59.3	48.4	40.2	29.4	23.4	15.4	61.2

Sound, unit emission (at unit at a distance of 0 m)											
Speed level	Air volume m^3/h	Pressure ΔP st Pa	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1000 Hz dB(A)	2000 Hz dB(A)	4000 Hz dB(A)	8000 Hz dB(A)	Total dB(A)
45%	100	100	33.1	41.7	47.7	49.6	51.9	52.4	37.5	29.5	57.0
67%	138	100	36.1	43.8	50.7	51.5	53.7	52.4	40.6	31.2	58.5
72%	150	100	34.4	44.6	50.6	52.3	54.1	52.4	41.1	31.3	58.8
100%	200	100	37.7	49.4	55.8	58.3	59.5	52.4	47.0	35.7	63.5

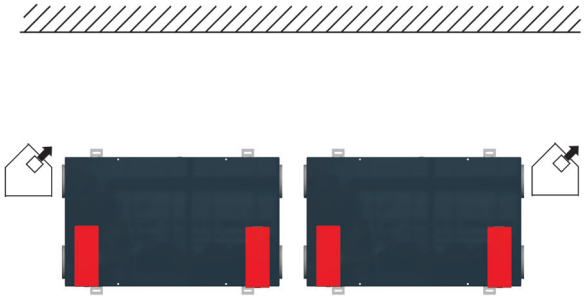
Performance data

Switch setting, factory setting (speed level)	Speed %	Air volume Qv m^3/h	Pressure ΔP st Pa	Power consumption W
Climos 200 Eco				
(1)	21	55	50	19
(2)	40	80	50	25
(3)	45	100	50	28
(4)	56	120	50	34
(5)	68	140	50	38
(6)	79	160	50	46
(1)	45	100	100	40
(2)	56	120	100	45
(3)	68	140	100	51
(4)	79	160	100	57
(5)	98	195	100	74
(1)	68	140	150	70
(2)	79	160	150	75
Climos 200 Eco V, pre-heater switched on				
(-)	100	200	(-)	750

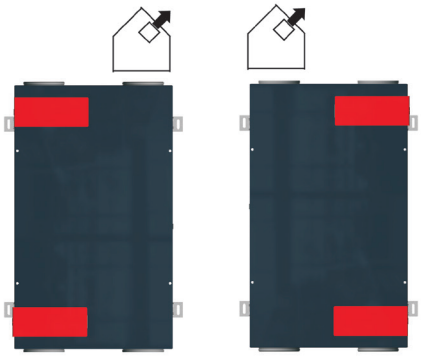


Installation positions

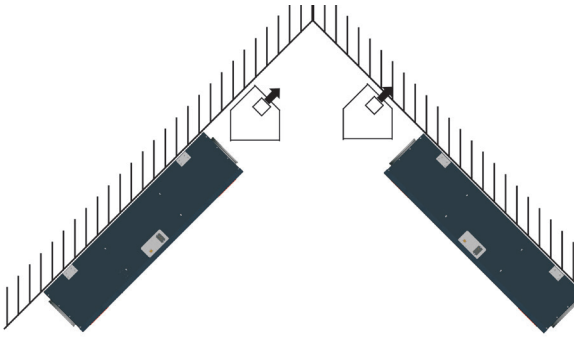
= exhaust air / exhaust air connection must always be at the top



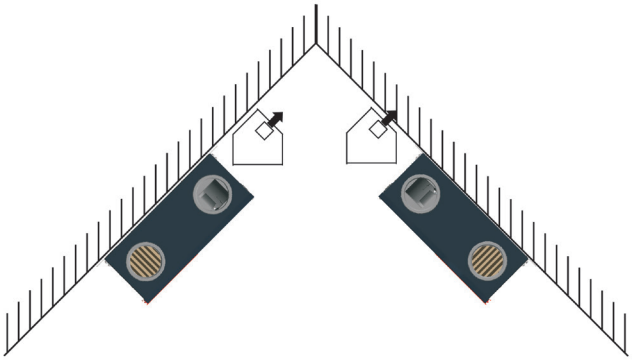
Installation position:
mounted horizontally on the wall



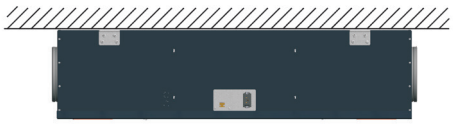
Installation position:
mounted vertically on the wall



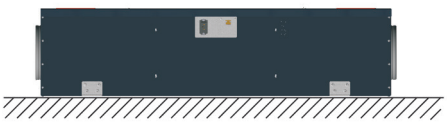
Installation position:
mounted vertically on the wall slope



Installation position:
mounted horizontally on the wall slope



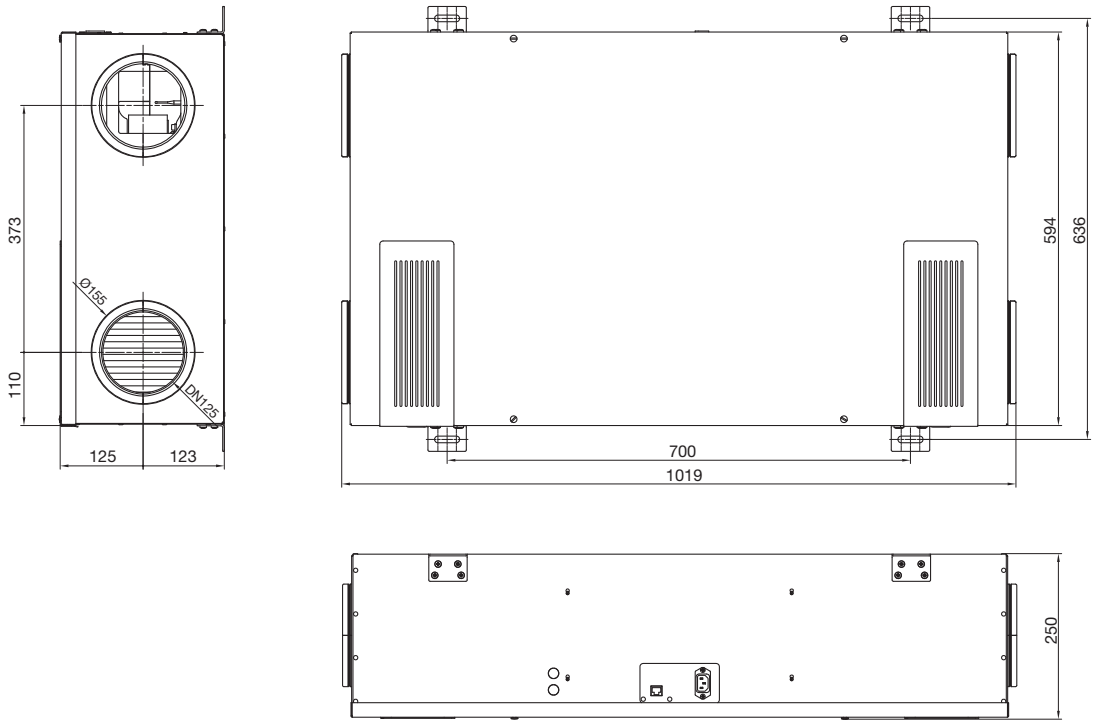
Installation position:
suspended from the ceiling



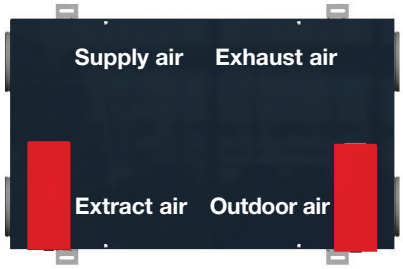
Installation position:
lying

For detailed information on installation positions, please see the user manual.

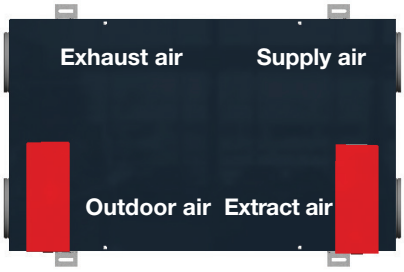
Dimensional drawing



Air directions



Type B, supply air left (L)



Type A, supply air right (R)

Climos 200 Eco Enthalpy Declaration of Performance

Product fiche for RVU per EU Regulation No. 1254/2014
Contains information requirement for RVUs as per EU Regulation No. 1253/2014
Heat recovery unit Zehnder Climos 200 Enthalpie Eco (V)

Supplier's name or trademark	Zehnder Group			Zehnder Group			Zehnder Group					
Supplier's model identifier	Climos 200 Enthalpie Eco (V)			Climos 200 Enthalpie Eco (V)			Climos 200 Enthalpie Eco (V)					
Specific Energy Consumption (SEC) [kWh/(m²a)] (cold / average / warm)	-66.9	-32.2	-9.6	-71.6	-35.8	-12.7	-77.2	-40.0	-16.1			
SEC Class	A+	**B**	F	A+	**A**	E	A+	**A**	E			
Type of ventilation unit	Bidirectional RVU			Bidirectional RVU			Bidirectional RVU					
Type of drive installed	Multi-speed			Variable speed			Variable speed					
Type of heat recovery system	Recuperative			Recuperative			Recuperative					
Thermal efficiency [%]	78			78			78					
Maximum flow rate [m³/h]	200			200			200					
Electric power input [W]	74			74			74					
Sound power level [dB(A)]	45			45			45					
Reference flow rate [m³/s]	0,038			0,038			0,038					
Reference pressure difference [Pa]	50			50			50					
SPI [W/(m³/h)]	0.30			0.30			0.30					
Control factor and typology	1 Manual control			0.85 Central demand control			0.65 Local demand control					
Declared maximum internal and external leakage rates [%]	Internal: 0.5			Internal: 0.5			Internal: 0.5					
	External: 1.3			External: 1.3			External: 1.3					
Mixing rate	-			-			-					
Position and description of visual filter warning	Symbolized message on control panel			Symbolized message on control panel			Symbolized message on control panel					
Internet address for assembly and disassembly instructions	www.international.zehnder-systems.com			www.international.zehnder-systems.com			www.international.zehnder-systems.com					
Airflow sensitivity to pressure variations [%]	-			-			-					
Indoor/outdoor air tightness [m³/h]	-			-			-					
Annual Electricity Consumption (AEC) [kWh/(100m²a)] (cold / average / warm)	958	421	376	854	317	272	741	204	159			
Annual Heating Saved (AHS) [kWh/(100m²a)] (cold / average / warm)	8216	4200	1899	8421	4305	1947	8695	4445	2010			

Zehnder Baltics OÜ
Rannamõisa tee 38d ▪ 13516 Tallinn ▪ Estonia
T +372 684 0937 ▪ info.baltics@zehndergroup.com ▪ www.zehnder.ee