

# Zehnder ComfoSpot 50

Technical specification for decentralised ventilation unit



## General

Zehnder ComfoSpot 50 is a decentralised ventilation unit with heat and humidity recovery using synchronous supply and extract air operation. It is often used in apartment renovations as well as in new residential builds. The ventilation unit is suitable for venting individual rooms. An enthalpy exchanger, which ensures a high degree of heat and humidity recovery, is standard on the unit, which has a positive effect on the room humidity and therefore provides a comfortable indoor climate. Zehnder ComfoSpot 50 can be installed with various outside wall hoods or a reveal module for almost invisible integration of the external and exhaust air ducts in the window reveal.



Plastic inside and outside wall panel



Plastic inside wall panel and stainless steel outside wall panel



Zehnder ComfoSpot 50 with reveal module



Zehnder ComfoSpot 50 integrated control panel



Zehnder ComfoLED electronic control panel

## Technical data

### Zehnder ComfoSpot 50

|                                                       |                                                                                                                                                                         |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions of interior/outside wall panel (H x W x D) | 376 x 380 x 50 mm                                                                                                                                                       |
| Outside wall thickness                                | Min. 335 to 900 mm                                                                                                                                                      |
| Wall mounting pipe                                    | Ø 315 mm<br>Length 600 mm (optionally 900 mm)                                                                                                                           |
| Core hole drilling                                    | Ø approx. 340 mm                                                                                                                                                        |
| Fans                                                  | DC radial fan                                                                                                                                                           |
| Filter class                                          | Supply/extract air ISO Coarse ≥ 70% (G4) (optionally supply air ISO ePM10 ≥ 60% (F7))                                                                                   |
| Heat emitter                                          | Cross-counterflow enthalpy exchanger                                                                                                                                    |
| Wall panels                                           | Inside/outside wall panel made of plastic that can be painted over                                                                                                      |
| Unit core                                             | Expanded polypropylene (EPP)                                                                                                                                            |
| Electrical connection                                 | 230 VAC/50–60 Hz                                                                                                                                                        |
| Max. current draw                                     | 0.07 A                                                                                                                                                                  |
| Power consumption                                     | 5 W to 15 W (standby: < 1 W)                                                                                                                                            |
| Shutters                                              | Manually operated shutters for supply and extract air                                                                                                                   |
| Protection class                                      | II (protective insulation)                                                                                                                                              |
| Degree of protection                                  | IP11                                                                                                                                                                    |
| Volume flow                                           | 15–25–40–50 m³/h                                                                                                                                                        |
| Energy efficiency                                     | Up to 85% heat recovery<br>Up to 74% humidity recovery                                                                                                                  |
| Weight                                                | 6.0 kg (unit) / 5.0 kg (reveal)                                                                                                                                         |
| Application                                           | -20 °C to 40 °C                                                                                                                                                         |
| Frost protection                                      | From -5 to -15 °C, unit then switches to standby mode                                                                                                                   |
| Control                                               | 4 fan speeds, standby, supply air or extract air operation, filter message, fault message, optional sensor control by means of humidity, VOC and CO <sub>2</sub> sensor |

## Benefits

- Exceptionally good indoor climate, high energy efficiency and maximum hygiene due to washable enthalpy exchanger
- Quiet operation for maximum living comfort, even in inner-city residential areas
- Maximum climate comfort thanks to synchronous supply air/extract air operation for continuous heat and humidity recovery and demand control using optional humidity, CO<sub>2</sub> and VOC sensor boards
- Quiet operation due to high-quality radial fans and good insulation
- Maximum flexibility in planning due to optional components such as reveal module
- Simple and quick installation with minimal intrusion into the living space
- Attractive and discreet appearance: outside wall panel can be painted over to match the colour of the wall. Alternatively, if the reveal module is used, the outside and exhaust air ducts disappear almost invisibly into the window reveal, so that the appearance of the facade is not affected.

\* Depending on the unit configuration chosen.  
Detailed information on page 6 and at [www.international.zehnder-systems.com](http://www.international.zehnder-systems.com).

- Clean operation, as no condensate disposal is necessary due to the enthalpy exchanger
- Intuitive operating convenience due to integrated control panel and/or external control panel Zehnder ComfoLED

## Energy figures

### DiBT

|                                                         |                                           |
|---------------------------------------------------------|-------------------------------------------|
| Product                                                 | Zehnder ComfoSpot 50                      |
| Approval number                                         | pending (file number III57-1.51.3 -15/15) |
| Extract air volume flow $V_{ab}$ [m³/h]                 | $15 \leq V_{ab} \leq 50$                  |
| Heat recovery efficiency $\eta_{WRG}$ [-]               | 69%                                       |
| Specific electric power consumption $p_{el}$ [W/(m³/h)] | 0.22                                      |

### "Passivhaus" certification

|                                                              |          |
|--------------------------------------------------------------|----------|
| Component ID                                                 | 1195vs03 |
| Application [m³/h]                                           | 15 - 25  |
| Heat recovery efficiency $\eta_{WRG}$ [-]                    | 80%      |
| Specific electric power consumption $p_{el,spec}$ [W/(m³/h)] | 0.30     |
| Humidity recovery $\eta_X$ [-]                               | 54%      |

### EU Energy Consumption Label

|                                    |            |
|------------------------------------|------------|
| Energy efficiency class            | <b>A</b> * |
| Maximum air volume flow [m³/h]     | 50         |
| Sound power level $L_{WA}$ [dB(A)] | 41         |

## Article numbers

| Comfort ventilation unit                                                             | Article number |
|--------------------------------------------------------------------------------------|----------------|
| Zehnder ComfoSpot 50, plastic outside wall panel                                     | 527 007 210    |
| Zehnder ComfoSpot 50, stainless steel outside wall panel                             | 527 007 220    |
| Zehnder ComfoSpot 50 with built-in humidity sensor board, plastic outside wall panel | 527 008 770    |
| Zehnder ComfoSpot 50 for installation with reveal module                             | 527 008 580    |

| Accessories                                                                            | Article number |
|----------------------------------------------------------------------------------------|----------------|
| Reveal module for ComfoSpot 50                                                         | 527 008 660    |
| Round wall mounting pipe made of plastic, Ø 315 mm, length = 600 mm                    | 527 005 440    |
| Round wall mounting pipe made of plastic, Ø 315 mm, length = 900 mm                    | 527 009 130    |
| Square wall mounting pipe made of EPP, 360 x 360 (W x H), length = 600 mm              | 527 005 450    |
| Extension set for ComfoSpot 50, made of EPP, external diameter 315 mm, length = 285 mm | 527 009 150    |
| Humidity sensor board                                                                  | 527 007 260    |
| Humidity and VOC sensor board                                                          | 527 007 270    |
| Humidity and CO <sub>2</sub> sensor board                                              | 527 007 280    |
| Zehnder ComfoLED electronic control panel                                              | 527 007 290    |

| Accessories                                                                                               | Article number |
|-----------------------------------------------------------------------------------------------------------|----------------|
| Filter set for ComfoSpot 50, ISO Coarse $\geq 70\%$ (G4), contents 2 pieces                               | 527 005 390    |
| Filter set for ComfoSpot 50, ISO Coarse $\geq 70\%$ / ISO ePM10 $\geq 60\%$ (G4 / F7), contents 2 pieces  | 527 005 400    |
| Filter set for ComfoSpot 50, ISO Coarse $\geq 70\%$ (G4), contents 10 pieces                              | 527 005 410    |
| Filter set for ComfoSpot 50, ISO Coarse $\geq 70\%$ / ISO ePM10 $\geq 60\%$ (G4 / F7), contents 10 pieces | 527 005 420    |

## Scope of delivery

To install Zehnder ComfoSpot 50 into the wall, a wall mounting pipe is required, which must be ordered separately. The ventilation unit is delivered ready to install with the chosen outside wall panel.

For installation of Zehnder ComfoSpot 50 with reveal module, the unit must be ordered without outside wall panel and wall mounting pipe. The reveal module with fixed round wall mounting pipe for Zehnder ComfoSpot 50 with external wall grilles must be ordered separately.

## Level of efficiency

The generously proportioned enthalpy exchanger, the core of the ventilation unit, functions particularly energy-efficiently. It uses both the sensitive and the latent energy in the extract air. Heat recovery of up to 85% and humidity recovery of up to 74% are possible. Using humidity recovery, the unit functions at temperatures as low as -5°C without the need for a pre-heater or frost protection. This also saves energy and provides the best possible, comfortable indoor climate.

## Fans

Supply and extractor fans are driven by energy-efficient EC direct-current motors. The high-quality radial fans are particularly resistant to wind loads. The unit operates very quietly due to the arrangement of the fans in the sound-insulated unit housing in the wall. The fans can be set to any of four speeds.

## Filters

Standard equipment on Zehnder ComfoSpot 50 includes supply and extract air filters ISO Coarse  $\geq 70\%$  (G4). After the expiry of a certain interval, an indicator on the control panel visually indicates that the filter must be replaced. The filters should then be replaced as soon as possible. A Class ISO ePM10  $\geq 60\%$  (F7) pollen filter can be installed in the supply air inlet as an option.

## Installation

The ventilation unit is installed in an outside wall. No condensate forms in the unit, therefore there is no condensate drain. The facade of the house always remains clean and dry, as no dirt can form due to condensate dripping down. Installation of the unit is quick and easy. A round wall mounting pipe is available, which is inserted into the core hole of the outside wall during renovations. Alternatively, a square wall mounting pipe is available that can be walled in. Zehnder ComfoSpot 50 is inserted from inside the room.

The 230 VAC mains power supply is connected behind the subshell of the inside wall panel of the unit. After the insulated housing tube is adjusted, the weather-resistant outside wall panel is fixed to the outside wall. It is that easy to install the unit and have it ready for operation without great intrusion into the living space.

In addition, the outside air and exhaust air can be ducted via the window reveal. A reveal module, which is integrated into the thermal insulation composite systems, is available for this purpose.

## Operation

Zehnder ComfoSpot 50 has a built-in control panel on the inside wall panel. Depending on where the unit is installed, this can be removed from the bottom of the unit and mounted on the top. The control panel facilitates easy and uncomplicated control of the unit. By pressing the plus/minus buttons, 4 fan speeds can be set or the unit can be switched to standby mode. The automatic function can be set by pressing the plus button from fan speed 4. Visualisation is implemented by a separate LED. To avoid heat recovery in summer, it is possible to select only supply air or only extract air. Operating status, filter replacement and fault messages are indicated. The unit has automatic frost protection. In the event of power failure, or when the unit is switched off, the supply and extract air opening is closed with the manually operated shutters. The optional external Zehnder ComfoLED control panel allows the Zehnder ComfoSpot 50 unit to be operated remotely. The functions of the external electronic control panel correspond to those on the internal control panel installed on the unit. If an external electronic control panel is installed, the internal control panel supplied as standard remains fully functional.

As an option, sensor boards to control humidity, VOC or CO<sub>2</sub> can also be used. In the automatic function, the ventilation unit's control panel checks the measurement results of the sensors and controls the unit's fan speeds to ensure maximum living comfort.

## Maintenance

Routine maintenance of Zehnder ComfoSpot 50 is easy to carry out and should be performed regularly to keep the unit operating in a flawlessly hygienic manner. After the cover is removed, the filters can be pulled out of the housing without tools. The enthalpy exchanger can also be pulled out of the unit in the same way and can be washed out with water. Please see the user manual for information about servicing tasks.

## Frost protection

Using the enthalpy exchanger for humidity recovery, the unit functions at temperatures as low as -5 °C without the need for a pre-heater. Should the outside temperature fall below that level, frost protection is activated to regulate the supply of cold outdoor air. If the outside temperature falls further, the unit switches to standby mode at -15 °C. Unit operation is regulated by a temperature sensor. The unit begins to work automatically when the outside temperature rises again. Frost protection prevents the unit from freezing.

## Tender specification

Zehnder ComfoSpot 50 is a decentralised, compact ventilation unit with heat recovery and an enthalpy exchanger. The ventilation unit is perfectly suited for use in the renovation of single- and two-family houses, vacation apartments, student accommodation and retirement homes, apartment blocks and new builds. The housing is made of high-quality plastic and the outside wall panel can be painted over to match the colour of the wall. In addition, the outside and exhaust air can be ducted via the window reveal. A reveal module, which is integrated into the thermal insulation composite system, is available for this purpose. The unit housing is made of expanded polypropylene (EPP) to provide heat and sound insulation. The high-quality radial fans are driven by energy-efficient direct-current motors and are particularly resistant to wind loads. This enables economical operation with a high degree of electrical efficiency. The core of Zehnder ComfoSpot 50 is its plastic cross-counterflow enthalpy exchanger. With heat recovery of up to 82% and humidity recovery of up to 70%, it ensures the maximum in energy recovery. No condensate forms in the unit. It functions at temperatures as low as -5 °C without the need for a pre-heater or frost protection.

The control panel on the inside wall panel of the unit can be removed from the bottom of the unit and mounted on top if needed. This facilitates flexible unit installation.

As an option, Zehnder ComfoSpot 50 can also be operated remotely with the external Zehnder ComfoLED control panel. To ensure even greater convenience and energy efficiency, optional humidity, CO<sub>2</sub> or VOC sensor boards can be used. There is a choice of four fan speeds, supply air or extract air is possible and the unit can be switched to standby mode. The control panel displays fault and filter replacement messages.

Zehnder ComfoSpot 50 is delivered ready to connect to the 230 VAC mains power supply with plastic or stainless steel outside wall panel. The wall mounting pipe must be ordered separately (not required for the reveal module). Zehnder ComfoSpot 50 is suitable for wall thicknesses up to 600 mm as standard. For wall thicknesses greater than 600 mm, an extension set (length = 285 mm) is available in combination with a round wall mounting pipe (length = 900 mm). The filters are located at the front and can be easily replaced by the user without tools after removing the cover. Zehnder ComfoSpot 50 is mounted in an outside wall and vents outdoor and exhaust air directly via the outside wall panel.

#### Control possibilities:

- Four fan speeds, manual selection
- Automatic function can be selected
- Supply or extract air operation for summer ventilation
- Automatic frost protection
- Manual shutter fastener
- Time-controlled filter replacement indicator
- Fault indicator

#### Options:

- Zehnder ComfoLED electronic control panel
- Humidity sensor board (optional factory-fitted)
- Humidity and VOC sensor board
- Humidity and CO<sub>2</sub> sensor board
- Pollen filter of filter class ISO ePM10 ≥ 60% (F7)
- Unit with stainless steel outside wall panel
- Reveal module for ducting the outside and exhaust air in the window reveal
- Round wall mounting pipe, made of plastic, Ø 315 mm, length = 600 mm, with 2 blanking plugs, for retrofitting
- Round wall mounting pipe, made of plastic, Ø 315 mm, length = 900 mm, with 2 blanking plugs, for retrofitting
- Square wall mounting pipe, made of EPP, 360 x 360 mm (W x H), length = 600 mm, with 2 blanking plugs, for new builds
- Extension set for ComfoSpot 50, made of EPP, with 2 blanking plugs, outside diameter 315 mm, length = 285 mm. For wall thicknesses greater than 600 mm, in combination with round wall mounting pipe length = 900 mm

## Sound specifications

#### Noise level at a distance of 3 m, open space<sup>1)</sup>

|             | Noise level [dB(A)] |
|-------------|---------------------|
| Fan speed 1 | 5.2                 |
| Fan speed 2 | 14.7                |
| Fan speed 3 | 23.2                |
| Fan speed 4 | 29                  |

#### Sound transmission<sup>2)</sup>

|                | Weighted sound reduction index R <sub>w</sub> [dB] | Weighted normalised level difference D <sub>n</sub> [dB] |
|----------------|----------------------------------------------------|----------------------------------------------------------|
| Shutter open   | 30                                                 | 48                                                       |
| Shutter closed | 32                                                 | 51                                                       |

#### Operating data<sup>1)</sup>

|             | Volume flow [m <sup>3</sup> /h] | Thermal efficiency [%] | Humidity efficiency [%] | Power consumption [W] |
|-------------|---------------------------------|------------------------|-------------------------|-----------------------|
| Standby     |                                 |                        |                         | < 1                   |
| Fan speed 1 | 15                              | 85                     | 74                      | 4                     |
| Fan speed 2 | 25                              | 76                     | 58                      | 6                     |
| Fan speed 3 | 40                              | 69                     | 46                      | 10                    |
| Fan speed 4 | 50                              | 62                     | 44                      | 15                    |

<sup>1)</sup> Measured by an independent testing laboratory, for Zehnder ComfoSpot 50 with outside wall panel and reveal module

<sup>2)</sup> Measured by independent testing laboratory, for Zehnder ComfoSpot 50 with outside wall panel

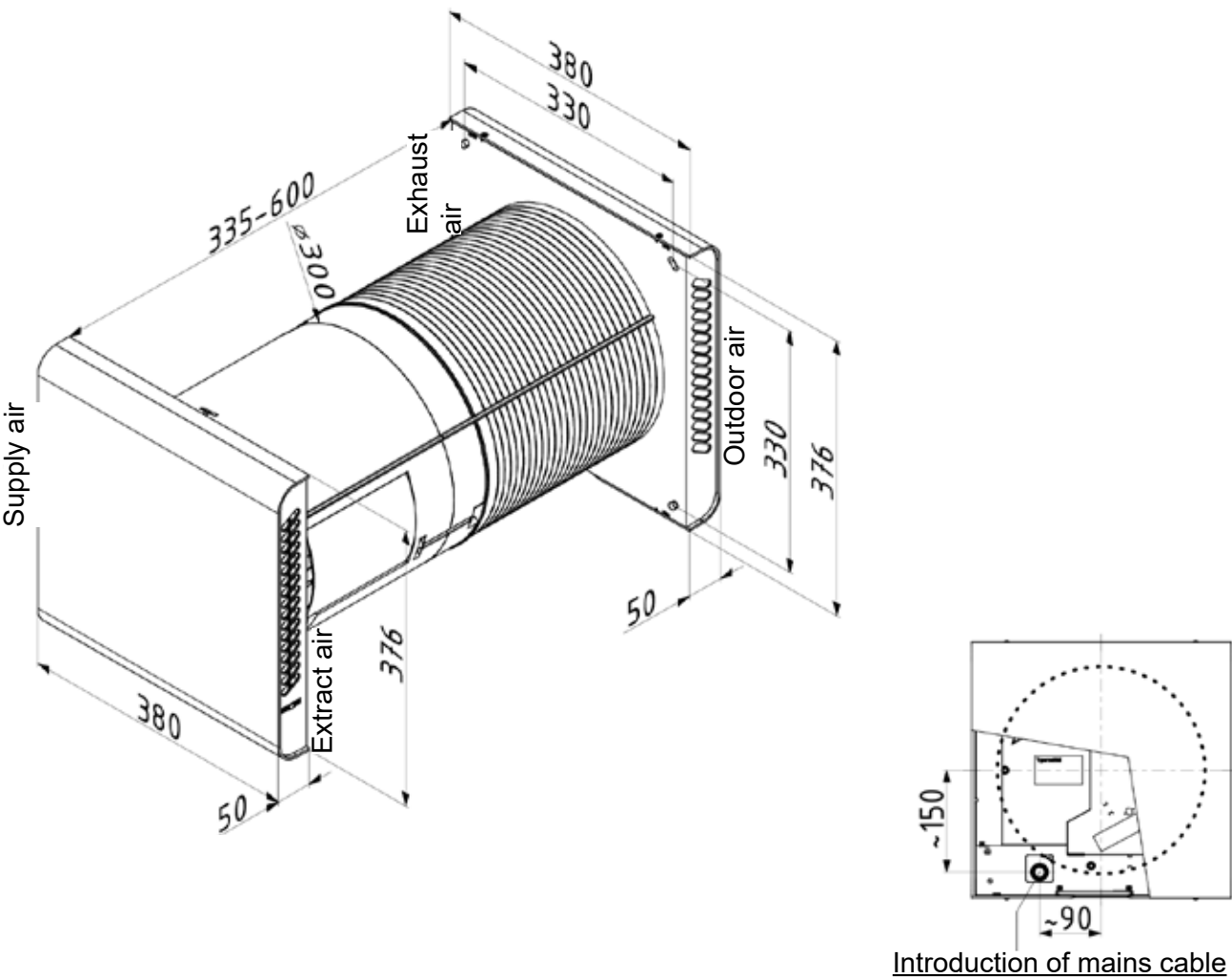
Energy efficiency classes

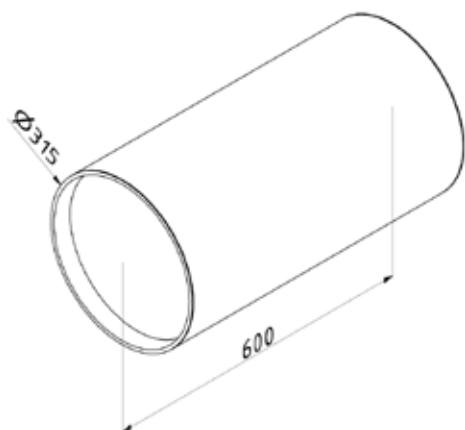
Energy efficiency classes in accordance with EU Regulation no. 1254/2014.

| Energy efficiency classes |                                                          |                                        |                                          |                                                       |
|---------------------------|----------------------------------------------------------|----------------------------------------|------------------------------------------|-------------------------------------------------------|
| Comfort ventilation unit  | Article number                                           | Control according to site requirements |                                          | Manual control <sup>1)</sup>                          |
|                           |                                                          | Humidity sensor board 527 007 260      | Humidity and CO sensor board 527 007 270 | Humidity and CO <sub>2</sub> sensor board 527 007 280 |
|                           |                                                          |                                        |                                          | No further accessories                                |
| ComfoSpot 50              | 527 007 210<br>527 007 220<br>527 008 580<br>527 008 770 | A                                      |                                          | B                                                     |

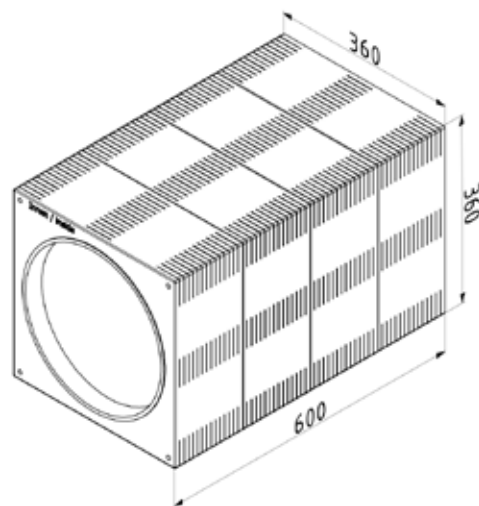
<sup>1)</sup> The control is integrated in the ventilation unit

Dimensional drawings

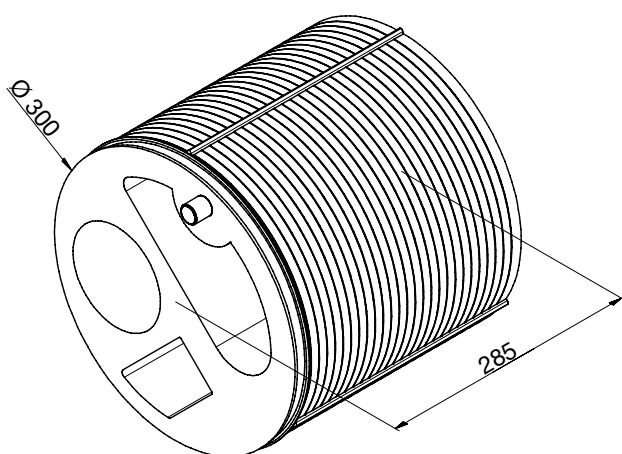




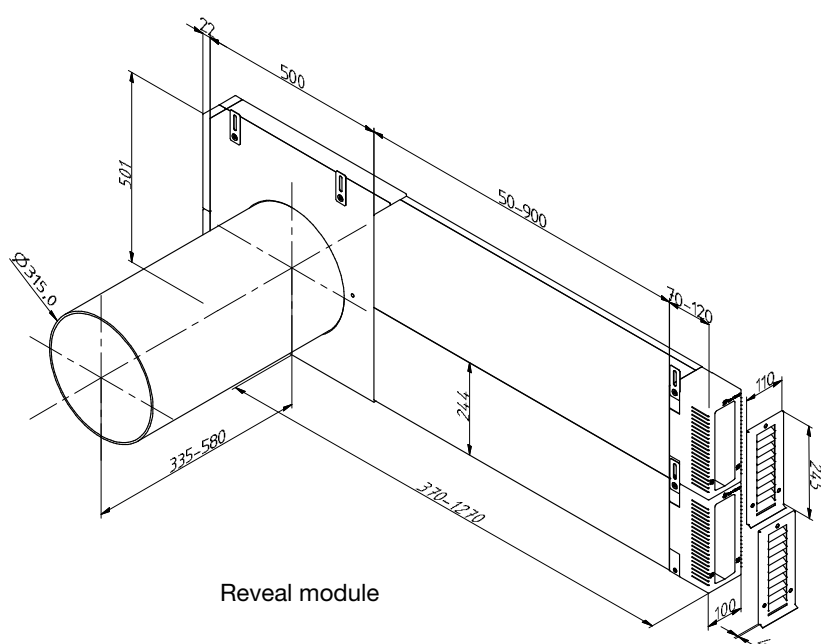
Structural shell set round L = 600 mm  
(also available with L = 900 mm)



Square structural shell



Extension set



Reveal module

## ComfoSpot 50 Declaration of Performance

| <b>Product data sheet for RVUs as per EU Regulation No. 1254/2014</b><br><b>Contains information requirement for RVUs as per EU Regulation No. 1253/2014</b><br><b>Zehnder ComfoSpot 50 room ventilation unit</b> |                                                                 |          |       |                                                                 |          |       |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------|-------|-----------------------------------------------------------------|----------|-------|--|--|--|--|--|--|
| Supplier's name or trademark                                                                                                                                                                                      | Zehnder Group                                                   |          |       | Zehnder Group                                                   |          |       |  |  |  |  |  |  |
| Supplier's model identifier                                                                                                                                                                                       | ComfoSpot 50                                                    |          |       | ComfoSpot 50 sensor technology                                  |          |       |  |  |  |  |  |  |
| SEC [kWh/(m²a)] specific energy consumption (cold, average, warm)                                                                                                                                                 | -61.5                                                           | -30.1    | -9.5  | -73.3                                                           | -38.4    | -15.7 |  |  |  |  |  |  |
| SEC class                                                                                                                                                                                                         | A+                                                              | <b>B</b> | F     | A+                                                              | <b>A</b> | E     |  |  |  |  |  |  |
| Type of ventilation unit                                                                                                                                                                                          | Bidirectional RVU                                               |          |       | Bidirectional RVU                                               |          |       |  |  |  |  |  |  |
| Type of drive installed                                                                                                                                                                                           | Multi-stage drive                                               |          |       | Speed control                                                   |          |       |  |  |  |  |  |  |
| Type of heat recovery system                                                                                                                                                                                      | Recuperative                                                    |          |       | Recuperative                                                    |          |       |  |  |  |  |  |  |
| Thermal efficiency [%]                                                                                                                                                                                            | 70                                                              |          |       | 70                                                              |          |       |  |  |  |  |  |  |
| Maximum air volume flow rate [m³/h]                                                                                                                                                                               | 50                                                              |          |       | 50                                                              |          |       |  |  |  |  |  |  |
| Electric power input [W]                                                                                                                                                                                          | 15                                                              |          |       | 15                                                              |          |       |  |  |  |  |  |  |
| Sound power level [dB(A)]                                                                                                                                                                                         | 41                                                              |          |       | 41                                                              |          |       |  |  |  |  |  |  |
| Reference air volume flow rate [m³/h]                                                                                                                                                                             | 35                                                              |          |       | 35                                                              |          |       |  |  |  |  |  |  |
| Reference pressure difference [Pa]                                                                                                                                                                                | 0                                                               |          |       | 0                                                               |          |       |  |  |  |  |  |  |
| SPI [W/(m³/h)]                                                                                                                                                                                                    | 0,23                                                            |          |       | 0.23                                                            |          |       |  |  |  |  |  |  |
| Control factor and control typology                                                                                                                                                                               | 1<br>Manual control                                             |          |       | 0.65<br>Control according to site requirements                  |          |       |  |  |  |  |  |  |
| Declared maximum internal and external leakage rates [%]                                                                                                                                                          | Internal: 4.2                                                   |          |       | Internal: 4.2                                                   |          |       |  |  |  |  |  |  |
|                                                                                                                                                                                                                   | External: 3.4                                                   |          |       | External: 3.4                                                   |          |       |  |  |  |  |  |  |
| Mixing rate                                                                                                                                                                                                       | U2                                                              |          |       | U2                                                              |          |       |  |  |  |  |  |  |
| Position and description of visual filter warning                                                                                                                                                                 | Warning on the unit display                                     |          |       | Warning on the unit display                                     |          |       |  |  |  |  |  |  |
| Internet address for assembly and disassembly instructions                                                                                                                                                        | www.zehnder-systems.de<br>www.international.zehnder-systems.com |          |       | www.zehnder-systems.de<br>www.international.zehnder-systems.com |          |       |  |  |  |  |  |  |
| Airflow sensitivity to pressure variations [%]                                                                                                                                                                    | < 20                                                            |          |       | < 20                                                            |          |       |  |  |  |  |  |  |
| Indoor/outdoor air tightness [m³/h]                                                                                                                                                                               | to the outside: 4,4<br>to the inside: 6,5                       |          |       | to the outside: 4,4<br>to the inside: 6,5                       |          |       |  |  |  |  |  |  |
| AEC [kWh/a] annual electricity consumption (cold, average, warm)                                                                                                                                                  | 899                                                             | 362      | 317   | 716                                                             | 179      | 134   |  |  |  |  |  |  |
| AHS [kWh/a] annual heating saved (cold, average, warm)                                                                                                                                                            | 7,523                                                           | 3,846    | 1,739 | 8,245                                                           | 4,215    | 1,906 |  |  |  |  |  |  |

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