

Zehnder ComfoAir Q 450

The Zehnder ComfoAir Q is the NEW generation of heat recovery ventilation units, with state of the art design and intelligent technology, regardless of whether you are working on a new build or an old building, with Zehnder comfortable ventilation you have an innovative, tried and tested complete system. It contains features such as its automatic modulating true summer by-pass, world class heat recovery efficiency and integrated humidity sensor to provide a comfortable, healthy and energy-efficient indoor climate.



CCRFB Radio Frequency



ComfoSense C67



ComfoSwitch C67



Zehnder ComfoControl App

Key Features

- World class 96% efficiency.
- 100% full and filtered modulating summer bypass.
- Left or right hand configuration through software alone, no mechanical alteration required.
- Commissioning wizard for a quick and simple set-up process.
- Flow control to maintain commissioned flow rates.
- Adaptive comfort technology.
- Automatic passive temperature boost in summer.
- Humidity boost continuously monitors the humidity level within the home and looks for a man-made spike before boosting the unit, irrespective of distance or dilution.
- Tool free filter access.
- ISO ePM1 >65% (F7) filter option.
- App for installer and end user option.
- Wireless commissioning option.
- Remote access option.
- KNX compatibility option.
- 0-10V input option.
- Internal pre-heater option.
- Post heater control option.
- Enthalpy cube option.
- Passive House certified.

SAP PCDB Test Results

| | SFP (W/s) | | Efficiency (%) | |
|-----|-----------|------|----------------|------|
| | 2009 | 2012 | 2009 | 2012 |
| K+1 | | 0.54 | | 96% |
| K+2 | 0.56 | 0.53 | 96% | 95% |
| K+3 | 0.48 | 0.55 | 95% | 94% |
| K+4 | 0.49 | 0.62 | 95% | 94% |
| K+5 | 0.53 | 0.73 | 94% | 93% |
| K+6 | 0.60 | 0.86 | 94% | 93% |
| K+7 | 0.68 | 1.04 | 94% | 93% |

SEC Class



Based on average climate with local demand control

Passive House Certification

| | Standard heat exchanger | Enthalpy heat exchanger |
|-------------------------|---------------------------------|---------------------------------|
| Air flow range | 70-345m ³ /hr | 70-345m ³ /hr |
| Heat recovery rate | nHR=88% | nHR=83% |
| Specific electric power | Pel,spec=0.21 Wh/m ³ | Pel,spec=0.21 Wh/m ³ |
| Humidity recovery | | nx = 71% |



Article Numbers

| Description | Product Code | 9 digit code |
|---|--------------|--------------|
| Zehnder ComfoAir Q450 | 471502019 | |
| Zehnder ComfoAir Q450 with pre-heater, right handed | 471502020 | |
| Zehnder ComfoAir Q450 with pre-heater, left handed | 471502021 | |
| Zehnder ComfoAir Q450 with enthalpy exchanger | 471502022 | |
| Zehnder ComfoSense C 67 remote display for Zehnder ComfoAir Q350/450/600, incl. mounting box | 655010235 | |
| Zehnder ComfoSwitch C 67 speed controller for Zehnder ComfoAir Q350/450/600, incl. mounting Box | 655010255 | |
| Zehnder ComfoControl RFZ wireless controller for use with Zehnder ComfoSense 67/C67 | CCRFZ | 655000755 |
| Zehnder ComfoConnect KNX C for ComfoAir Q350/450/600 | 655011120 | |
| Zehnder ComfoConnect LAN C for ComfoAir Q350/450/600 | 655011100 | |
| Zehnder Option Box with additional connectivity for Zehnder ComfoAir Q350/450/600 | 471502105 | |
| Zehnder ComfoSplitter for ComfoAir Q350/450/600 | 655010275 | |
| Zehnder RF-PCB to offer wireless connectivity to the CCRFZ without the use of a ComfoSense C67 | 400502016 | |
| Support frame for Zehnder ComfoAir Q350/450/600, height 252mm | 471502008 | |
| Filter for Zehnder ComfoAir Q350/450/600, ISO Coarse >65% (G4), 2 Pieces | 400502012 | |
| Filter for Zehnder ComfoAir Q350/450/600, ISO Coarse >65% (G4), 10 Pieces | 400502014 | |
| Filter for Zehnder ComfoAir Q350/450/600, ISO Coarse >65% (G4), 50 Pieces | 400502021 | |
| Filter for Zehnder ComfoAir Q350/450, ISO Coarse >65% / ISO ePM1 >65% (G4 / F7), 2 Pieces | 400502013 | |
| Filter for Zehnder ComfoAir Q350/450, ISO ePM1 >65% (F7), 10 Pieces | 400502015 | |
| Filter for Zehnder ComfoAir Q350/450, ISO ePM1 >65% (F7), 50 Pieces | 400502022 | |
| Heat exchanger for Zehnder ComfoAir Q350/450/600 | 400502008 | |
| Enthalpy exchanger for Zehnder ComfoAir Q350/450/600 | 400502010 | |

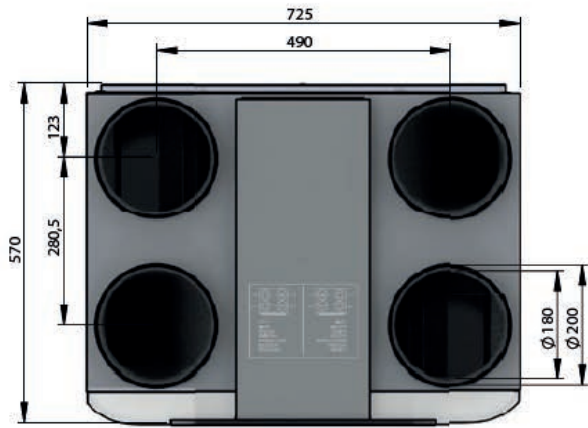
Technical Specification

Dimensions

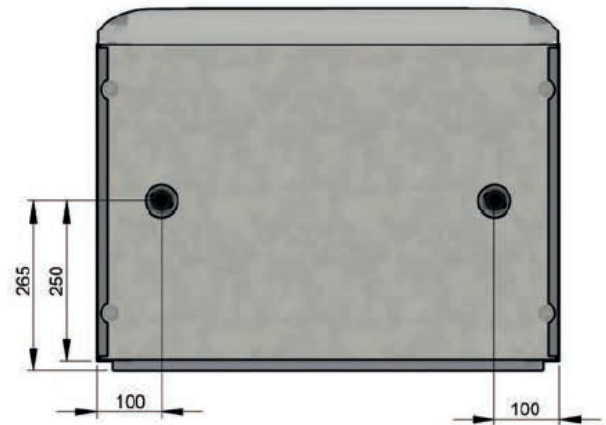
| | |
|---|--|
| Weight | 50 Kg |
| Ducting ø | Internal - 180 mm External - 200 mm |
| Condensate connection ø | 32 mm |
| Filter grade | Standard - ISO Coarse >65% / ISO Coarse >65% (G4 / G4) Optional - ISO Coarse >65% / ISO ePM1 >65% (G4 / F7) |
| Materials | Internal EPP / ABS |
| Supply voltage | External coated sheet steel |
| Maximum power consumption including / excluding pre-heater | 230V / single-phase / 50Hz 2240W / 250W |
| Current draw including / excluding pre-heater | 10.8A / 1.98A |
| Fuse rating including / excluding pre-heater | 13 / 3 amp |
| Specific Fan Power | 0.48 W/l/s |
| Heat Recovery Efficiency | 96% |
| Pre-heater power | 2.2kW |

| | |
|--------|--------|
| Height | 850 mm |
| Width | 725 mm |
| Depth | 570 mm |

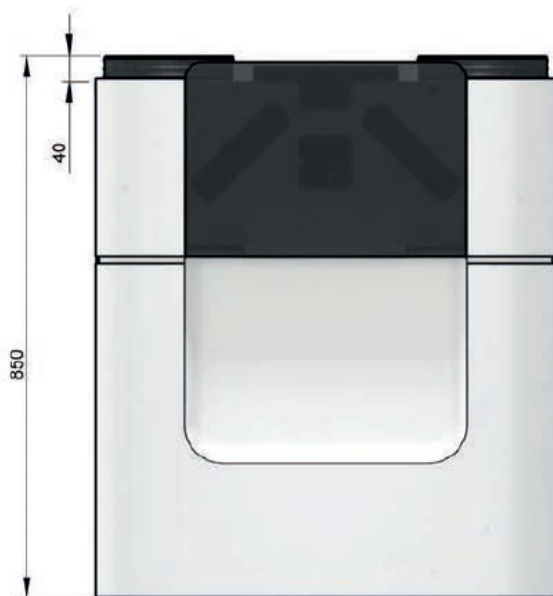
Dimensions



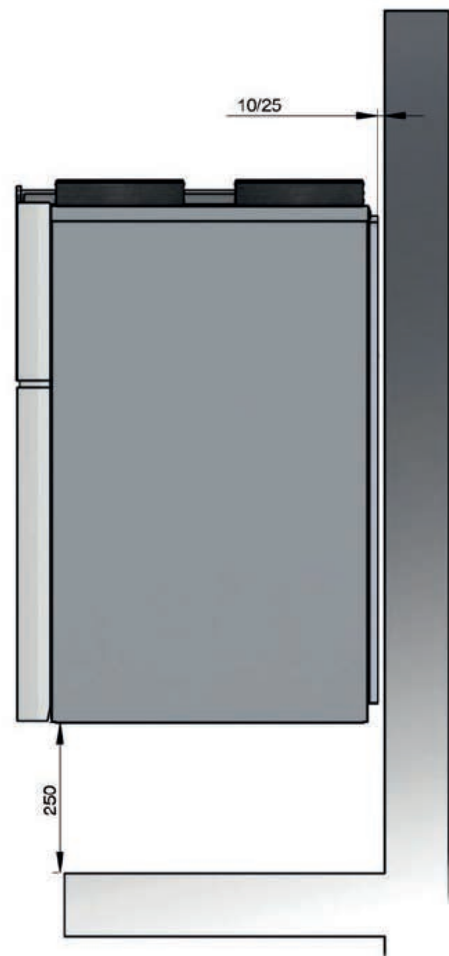
Top view



Rear view

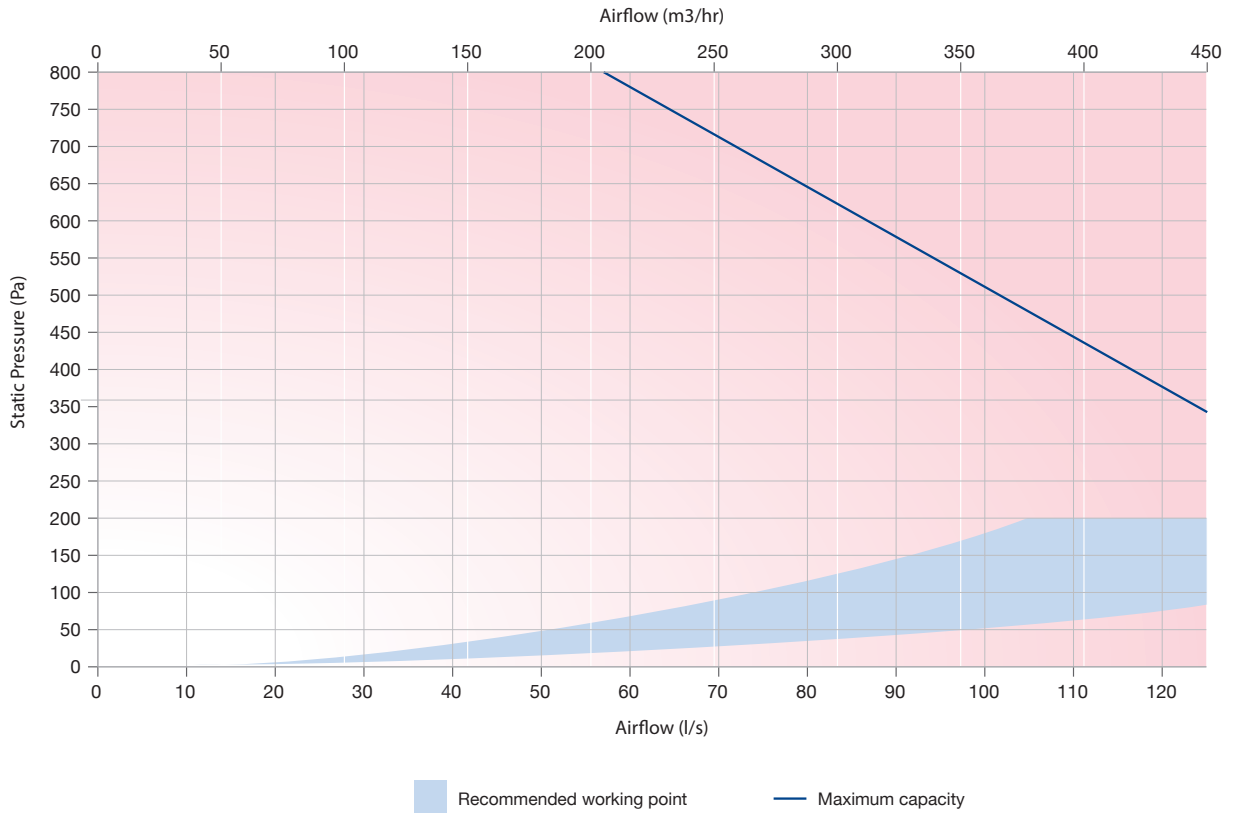


Front view



Side view

Pressure Curve

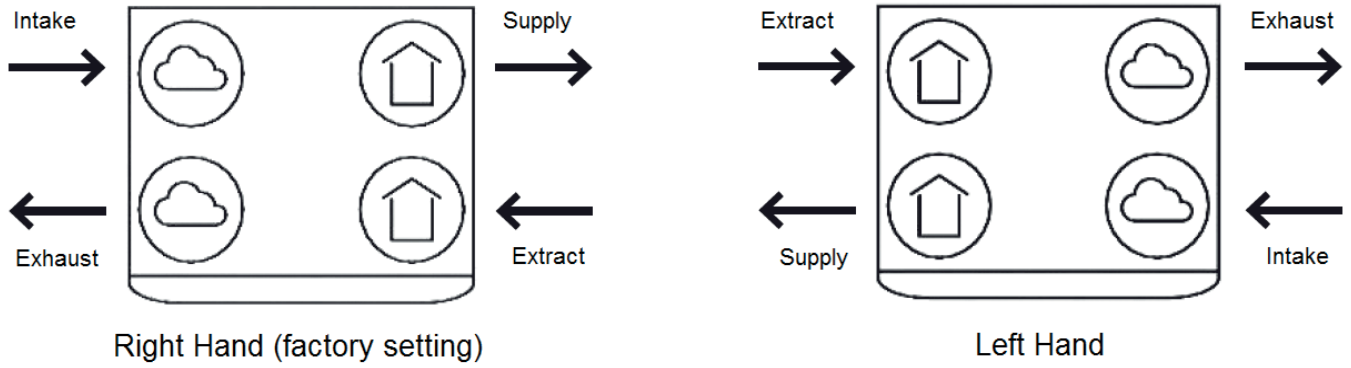


Sound Data

| Speed | Test Area | Octave Band (Hz) Sound Power Level, dB | | | | | | | dB(A) @3m |
|-------|----------------|--|------|------|------|------|------|------|--------------|
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| 20% | Casing | 35.3 | 31.4 | 25.7 | 19.8 | 15.0 | 10.8 | 16.7 | 10.5 |
| | Supply/Exhaust | 50.9 | 44.0 | 39.6 | 32.1 | 25.0 | 14.1 | 12.5 | |
| | Extract/Intake | 41.4 | 33.7 | 24.3 | 18.7 | 16.4 | 11.9 | 18.5 | |
| 40% | Casing | 41.0 | 43.9 | 33.0 | 28.8 | 27.0 | 18.1 | 14.5 | 20.3 |
| | Supply/Exhaust | 53.4 | 54.8 | 46.2 | 41.1 | 38.3 | 29.0 | 12.2 | |
| | Extract/Intake | 45.6 | 46.7 | 32.0 | 24.3 | 19.6 | 14.0 | 17.0 | |
| 60% | Casing | 45.7 | 47.6 | 38.9 | 33.8 | 32.7 | 25.4 | 19.6 | 25.0 |
| | Supply/Exhaust | 57.6 | 59.6 | 52.2 | 46.2 | 44.3 | 36.6 | 23.8 | |
| | Extract/Intake | 50.2 | 50.4 | 37.8 | 29.3 | 25.1 | 19.4 | 18.7 | |
| 80% | Casing | 50.5 | 51.3 | 44.9 | 38.8 | 38.4 | 32.7 | 24.8 | 29.9 |
| | Supply/Exhaust | 61.8 | 64.3 | 58.3 | 51.3 | 50.3 | 44.2 | 35.3 | |
| | Extract/Intake | 54.8 | 54.2 | 43.7 | 34.2 | 30.5 | 24.7 | 20.5 | |
| 100% | Casing | 55.2 | 55.1 | 50.9 | 43.8 | 44.1 | 40.0 | 30.0 | 35.1 |
| | Supply/Exhaust | 66.0 | 69.1 | 64.3 | 56.4 | 56.3 | 51.8 | 46.9 | |
| | Extract/Intake | 59.5 | 58.0 | 49.5 | 39.2 | 35.9 | 30.1 | 22.2 | |

Casing tested according to ISO 3741:2010. Supply and Extract tested according to ISO 5135:1997 showing induct sound power level corrected for end duct reflection according EN13053:2006. Casing dB(A) @ 3m given as hemispherical.

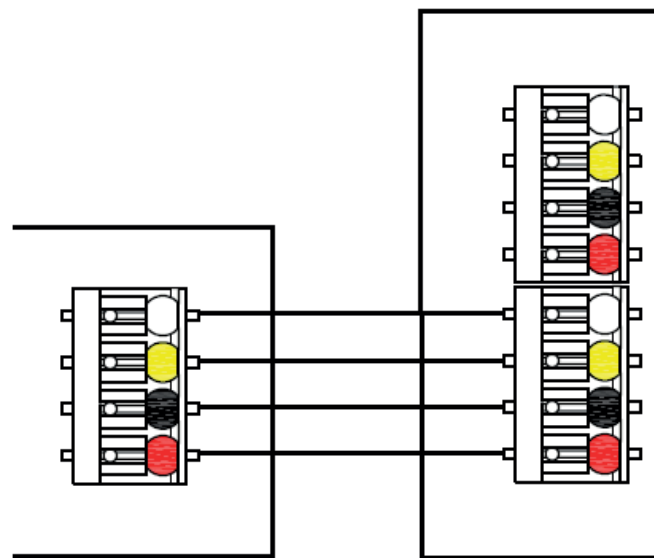
Air Direction/Connection



Wiring

Electrical connections should be carried out in accordance to IEE regulations by a qualified electrician. The unit is supplied with a flying lead for connection to the mains supply.

CAQ ancillary wiring



ComfoSwitch C,
ComfoSense C,
ComfoConnect LAN C,
ComfoConnect KNX C,
Option Box

ComfoAir Q

4 core cable, 1.5mm Max.
(up to 50 metres)

Consultant Specification

Specification

The unit shall consist of a body manufactured in powder coated sheet steel. The unit shall be fully insulated using high quality EPP to maintain excellent thermal characteristics and prevent shrinkage over time. It shall have DC motors with sealed for life bearings. The fans impellers should be low pressure centrifugal type with backward curved blades within ABS scroll housing and flow ring to provide accurate pressure measurement and incorporate a flow grid to optimise the airflow into the fan. The heat exchanger shall be a diamond shaped multi-plate, counter flow design constructed from Polystyrene with laser welded joints and shall retain up to 96% of the temperature differential of outgoing air with the option to upgrade to an enthalpy heat exchanger for latent and sensible heat transfer plus moisture recovery negating the need for a condensate drain.

The unit shall contain filters manufactured from recyclable material which has been tested to a minimum of ISO Coarse >65% (G4) standard with the option to upgrade to ISO ePM1 >65% (F7). The filters shall be pleated to reduce the pressure drop and required cleaning time. The unit shall have 180mm duct connections, and be suitable for vertical wall mounting or floor stand with the ability to allow left or right hand configuration through the unit's software alone – no mechanical reconfiguration shall be required. Integrated modulating preheater options shall be available to regulate its output to enable balanced ventilation with external air temperatures -10°C.

The unit shall have a 100% full summer bypass using an in-line modulating mechanism to provide filtered supply air 365 days of the year, even under bypass conditions. It shall provide fresh filtered air to aid night time cooling and prevent condensation within the supply pipework, regardless of the external air temperature. The unit shall contain a temperature sensor for each air stream to ensure correct and logical operation of the bypass damper by evaluating differential as well as absolute temperature to maximise the opportunity for free cooling. The unit shall control air flow to react to prolonged, sustained increased pressure drops to best achieve the commissioned flow rate even when filter degradation occurs. Airflow should not react to short term 'wind gusts' to avoid nuisance running.

The unit shall be constructed to have a removable cover to allow full maintenance access. The removable cover shall enable access to the supply/extract fan, heat exchanger and access to electrical connections. The motors shall be suitable for removal without the requirement for the unit to be removed from situ and be available as spare parts for a minimum of 10 years even after ceasing manufacture of the unit.

The unit shall conform to LVD and EMC standards and be CE Marked in addition to having an EU compliant energy rating label (SEC) with a minimum grade of A. The unit shall be manufactured by Zehnder.

Operation

The supply and extract unit shall be a ComfoAir Q manufactured by Zehnder and shall be suitable to mount on a floor stand, wall or in a cupboard in accordance with the specification.

The fresh filtered air from outside shall be supplied to each of the habitable rooms and pre-heated by the warm extract air from the wet areas, such as kitchen or bathroom, via the plastic counter flow heat exchanger. The unit shall vary its speed of the EC motors automatically when it receives a signal from one of the inbuilt sensors or via external switches.

The unit shall have the ability to adjust and commission the supply and extract motors independently via the front mounted in-built LCD interface. The motors shall both automatically adjust independently to the system pressure to achieve the input flow rate.

Consultant Specification

Controls

All ComfoAir Q units shall contain the following functions within the unit pre-wired and factory fitted by the manufacturer:

- Dial-a-duty motor control
- 4 Variable speed flow rate set points
- Automatic filtered modulating summer bypass with timed manual override option
- Heat exchanger frost protection
- Commissioning wizard to enable commissioning of the unit
- Integral service, fault and operation indicators
- Control panel PIN protection
- Tool free filter access
- Humidity sensors to operate the unit in response to humidity spikes above natural background humidity levels as opposed to a single threshold humidity point to activate the high set point
- Automatic passive boost for night time cooling
- Variable overrun timer relative to high speed activation period
- BMS compatibility via KNX protocol option
- Wi-Fi connectivity option
- RFZ wireless connectivity option
- Switched live input option
- Volt free contact option
- 0-10V input option
- Pre-heater frost protection option
- Post-heater control option
- Control input for single or multiple capacitive touch speed controllers with 7 day programmer capabilities
- Control input for single or multiple 4 speed manual/auto controller with filter alert

zehnder
always the
best climate