Zehnder ComfoAir Q 600

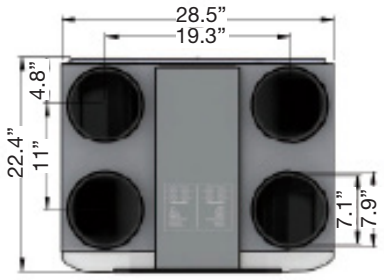
always the best climate

The Zehnder ComfoAir Q is the new generation of heat recovery ventilation units, a “quantum” leap over conventional HRVs/ERVs on the market until now. The Q builds on the superior performance and established success of Zehnder’s ComfoAir systems with features such as improved heat recovery efficiencies, integrated humidity sensors and app-based controls to provide a world class, comfortable, healthy and energy-efficient indoor climate.

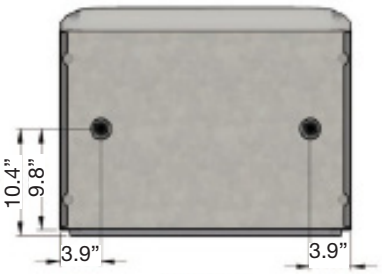
Key Features

- HRV/ERV Options
- World class efficiency (up to 96% heat recovery)
- Commissioning wizard, including automated left- or right-hand designation and configuration
- Filter options up to MERV 13
- Advanced connectivity and control options, including remote, smart phone app-based controls
- Pressure monitoring to maintain commissioned flow rates
- Optional internal pre-heater
- Passive House certified

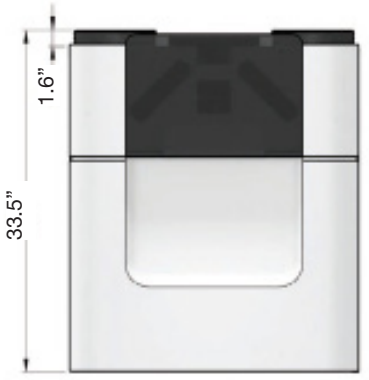
Dimensions



Top view



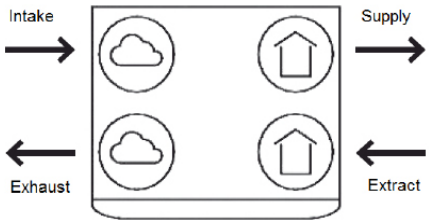
Bottom view
Drain locations



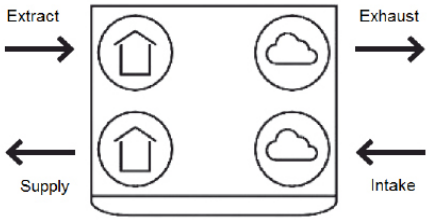
Front view

Side view

Air Direction/Connection



Right Hand (factory setting)



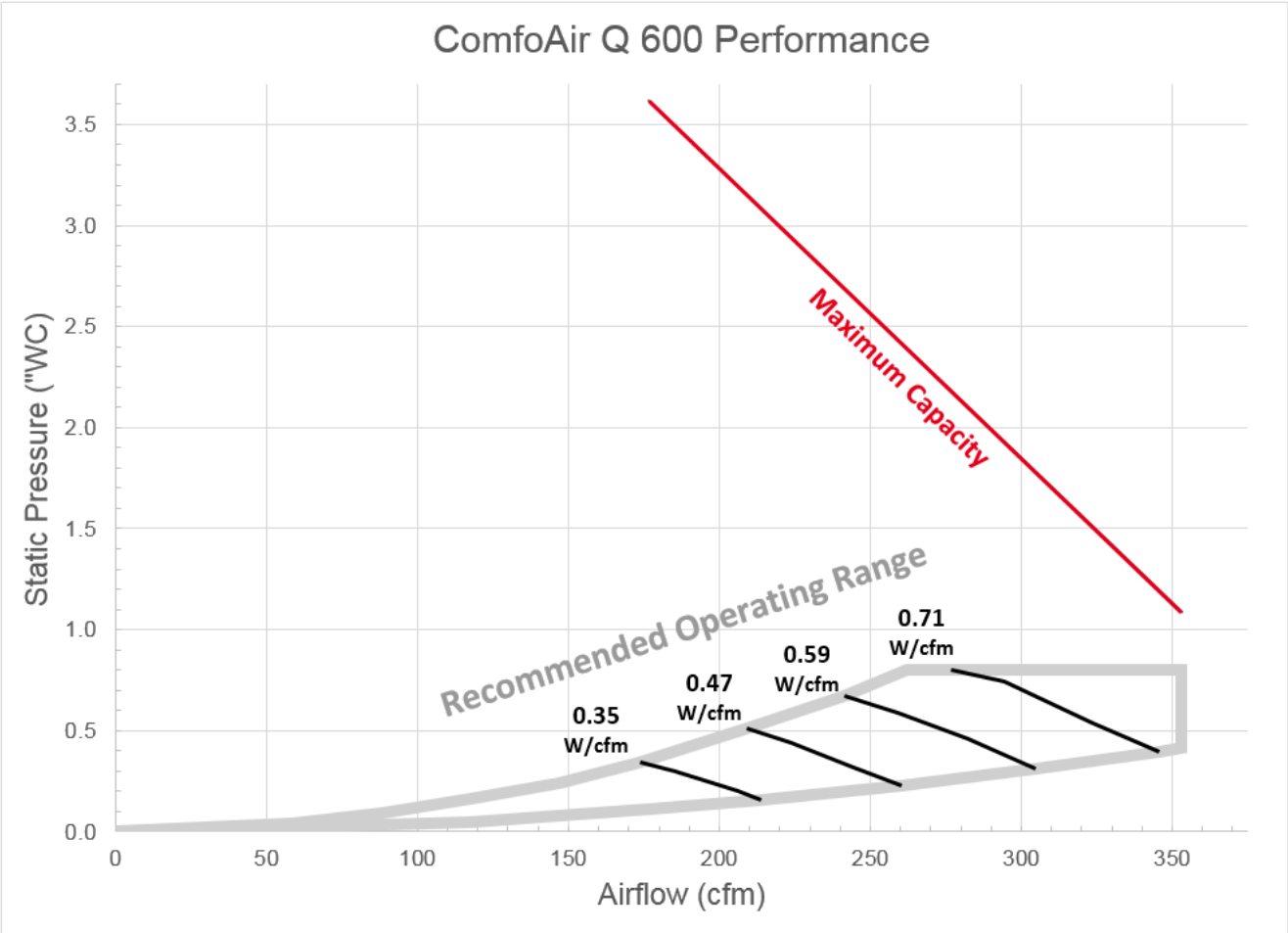
Left Hand

Technical Data

Height	33-1/2”
Width	28-1/2”
Depth	22-1/2”
Weight	110 lbs
Ducting ø	Internal - 180 mm (7.09”)
	External - 200 mm (7.87”)
Condensate connection ø	32 mm (1.26”)
Filter grade	Standard G4 (MERV 7/8)
	Optional F7 (MERV 13)
Materials	Internal - EPP/ABS
	External - coated sheet steel

Supply Voltage	208-240V/single-phase/50-60Hz
(Performance data is based on 230V.)	
(Allow up to 7% reduction in fan speed capacity for 208V.)	
Maximum power consumption with/without pre-heater	260W / 350W
Current draw with/without pre-heater	12.7A / 2.77A
Minimum Circuit Breaker	15A
Specific Fan Power	0.23 W/cfm (0.6 W/l/s)
Heat Recovery Efficiency	Up to 96%
Pre-heater power	2.4kW

Pressure Curve



Passive House Certification

	Standard heat exchanger (HRV)	Enthalpy heat exchanger (ERV)
Air flow range	70-345m³/hr (41-203 cfm)	70-345m³/hr (41-203 cfm)
Heat recovery rate	nHR=88%	nHR=83%
Specific electric power	Pel,spec=0.21 Wh/m³ (0.006Wh/ft³)	Pel,spec=0.21 Wh/m³ (0.006Wh/ft³)
Humidity recovery		nx = 71%

CERTIFIED COMPONENT
Passive House Institute

Sound Data

Speed	Test Area	Octave Band (Hz) Sound Power Level, dB							dB(A) @ 3m
		125	250	500	1000	2000	4000	8000	
20%	Casing	36.7	33.3	27.6	21.6	17.2	12.7	17.2	12.3
	Supply/Exhaust	51.1	46.2	41.5	34.2	27.6	17.1	14.5	
	Extract/Intake	42.6	35.7	26.1	20.2	17.7	12.9	18.5	
40%	Casing	46.6	47.2	40.3	35.4	30.7	23.9	19.3	25.2
	Supply/Exhaust	57.2	57.7	50.1	45.4	42.3	34.7	23.7	
	Extract/Intake	50.5	48.4	38.0	31.1	26.8	20.5	19.1	
60%	Casing	50.0	51.5	46.5	40.6	37.4	32.4	26.6	30.6
	Supply/Exhaust	61.7	68.7	57.4	51.7	49.6	44.1	34.8	
	Extract/Intake	55.5	53.3	45.0	36.2	32.3	27.0	22.0	
80%	Casing	53.3	55.9	52.7	45.8	44.1	41.0	33.9	36.2
	Supply/Exhaust	66.2	69.6	64.8	58.0	56.9	53.5	45.9	
	Extract/Intake	60.5	58.3	52.0	41.4	37.7	33.6	24.9	
100%	Casing	56.7	60.2	58.9	51.0	50.8	49.5	41.3	42.2
	Supply/Exhaust	70.8	75.6	72.1	64.3	64.2	62.9	57.0	
	Extract/Intake	65.5	63.3	59.0	46.5	43.2	40.2	27.7	

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.

Article Numbers

Description	6-digit code (N. America)	9-digit code (International)
Zehnder ComfoAir Q 600 HRV	9615-00	471502023
Zehnder ComfoAir Q 600 ERV	9652-01	471502026
Zehnder ComfoAir Q 600 internal pre-heater	9616-00	400502007
Zehnder ComfoSense C 67 remote display for ComfoAir Q	9579-00	655010235
Zehnder ComfoSwitch C 67 speed control for ComfoAir Q	9575-00	655010255
Zehnder ComfoConnect KNX C for ComfoAir Q		655011120
Zehnder ComfoConnect LAN C for ComfoAir Q	9619-00	655011100
Zehnder Option Box for ComfoAir Q	9620-00	471502007
Zehnder ComfoSplitter for ComfoAir Q		655010275
Support frame for Zehnder ComfoAir Q	9573-00	471502008
Filter G4 (MERV 7/8) for ComfoAir Q	9671-00	400502014
Filter F7 (MERV 13) for ComfoAir Q	9670-00	400502015
Heat exchanger (HRV core) for ComfoAir Q		400502008
Enthalpy exchanger (ERV core) for ComfoAir Q	9645-00	400502010
Waterless P-trap	9362-00	990201330
Bathroom boost switch; hard-wired, low voltage	9556-00	

Consultant 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 electronically commutated DC motors (ECM) 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 optimize 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 rendering a condensate drain optional.

The unit shall contain filters manufactured from recyclable material which has been tested to a minimum G4 (MERV 7/8) standard with the option to upgrade to F7 (MERV 13). The filters shall be pleated to reduce the pressure drop and required cleaning frequency.

The unit shall have 180mm (7.09") duct connections, and be suitable for vertical wall mounting or floor stand mounting with the ability to allow left- or right-hand configuration to be selected and set up through the unit's software and automated mechanisms alone – no manual adjustment shall be required to the internal configuration of the unit.

Integrated modulating preheater options shall be available to regulate its output to enable balanced ventilation with external air temperature -10C/14F.

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 temperatures to maximize 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 fans, heat exchanger and access to electrical connections. The motors shall be suitable for removal without the requirement for the unit to be removed from its installed location. Motors shall be available as spare parts for a minimum of 10 years even after ceasing manufacture of the unit.

Operation

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

The fresh filtered air from outside shall be supplied to each of the bedrooms and other designated habitable rooms and pre-heated (in heating season) or pre-cooled (in cooling season) by the 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 built-in sensors or external switches.

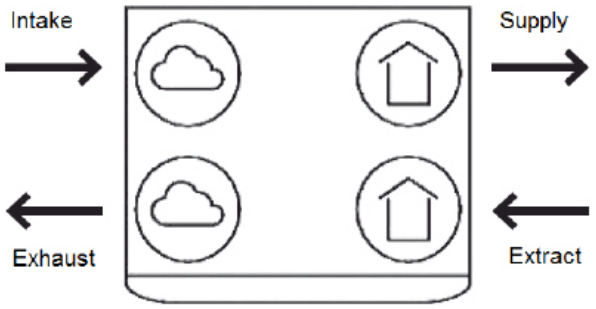
The unit shall have the ability to adjust and commission the supply and extract motors independently via the front mounted built-in LCD interface. The motors shall both automatically adjust independently to the system pressure to achieve the input flow rate.

Controls

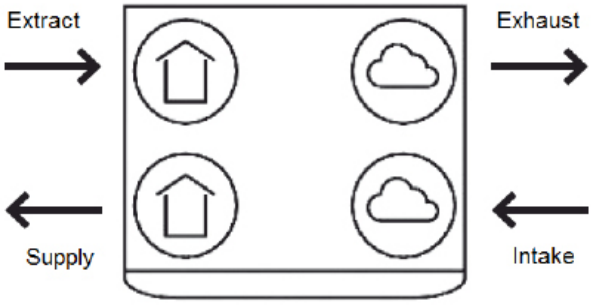
All ComfoAir Q units shall contain the following functions within the unit, pre-wired and factory-fitted by the manufacturer:

- Fully adjustable motor settings in 1% increments with 4 variable-speed flow rate set points
- Automatic, filtered, modulating summer bypass boost for free night-time cooling, with timed manual override option
- Automated commissioning wizard
- Integral service, fault and operation indicators
- Control panel PIN protection
- Humidity sensors in all air streams to adjust operation in response to indoor humidity spikes, while considering outdoor humidity levels (as opposed to a single threshold humidity point to activate the high set point)
- Variable timer setting for boost function
- Connectivity options: Wifi, switched live input, volt-free contact, and 0-10V input options
- Pre-heater frost protection and post-heater control options
- Control input for single or multiple capacitive touch speed controllers with 7-day program capability
- Control input for single or multiple 4-speed manual/auto controller with filter change remind

Air Direction/Connection



Right Hand (factory setting)

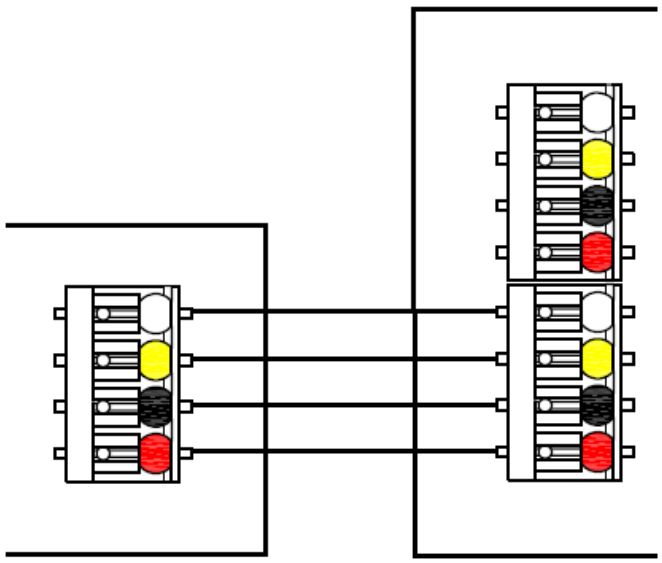


Left Hand

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,
ComfoSence 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 impellors 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 >55% (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.