

# Overview and Specifications

## ComfoAir 350



# General Information

## Use

The ComfoAir 350 ventilation unit was developed for residential and small commercial buildings. It combines maximum comfort, simple operation and very high efficiency. The CA350 exchanges up to 218 cfm of air at 0.80" wc. A ComfoAir 350 system is typically designed to exchange about 120 cfm in medium speed.

## Efficiency

The integrated cross-counterflow heat exchanger achieves efficiencies of up to 84% (according to the Passive House Institute). For user comfort this means no unpleasant cold drafts in winter, because the supply air is heated nearly to room temperature, even when external temperatures are very low.

## Fans

The supply fan and extract fan are driven by efficient ECM DC motors. Differential pressures in the supply and extract air distribution systems can be adjusted thanks to individual control. The especially quiet fans can be adjusted to the required volumetric flow in 1% increments. The air volumes of the selectable stages can be set to between 29 cfm and 218 cfm.

## Filters

The CA350 is equipped with two class G4 filters (MERV 7/8). An optional class F7 pollen filter (MERV 13) is available for fresh air intake.

## Installation

The CA350 can be wall-mounted or floor-mounted (with optional base). Connections for air and wiring are on the top of the unit. The insulated, sound-absorbing pipe connections can be rotated to optimize the location of the ventilation tubes while acoustically decoupling the CA350 from the air distribution system. The condensate drain is located on the bottom of the unit. The CA350 must be ordered as either a left-hand or a right-hand unit. This cannot be changed in the field.

## Operation

The controls for the CA350 are accessed through the ComfoSense 67 controller, which may be installed in the mechanical room or anywhere in the living area. The ComfoSense is hard-wired to the CA350 with low-voltage cable. Additionally, hard-wired, low-voltage switches may be installed in the bathrooms, kitchen or any other room from which the user would like to initiate a timed boost mode.

## Maintenance

Maintenance of the CA350 is limited to periodic cleaning or replacement of the filters accessible from the front of the unit. The exchanger core should be inspected and cleaned annually (depending on outside air quality). Please see the unit manual for additional servicing tasks.

## Frost protection

The ComfoAir 350 is equipped with an automatic frost protection feature that will reduce supply air as necessary to keep condensation in the extract air from freezing and damaging the core. In extreme cold this may result in supply air being completely shut down for intermittent periods. Optional pre-heaters are available to enable continuous ventilation in cold climates. The optional ComfoFond-L geothermal heat exchanger effectively pre-heats outside air in even the coldest climates (and also provides some bonus pre-cooling in summer). Optional electric resistance pre-heaters are also available, as either a smaller heater installed inside the CA350 or as a larger heater installed on the outside air duct outside the CA350.

## Bypass

During summer nights and in the "shoulder" seasons of spring and fall with strong sunshine, the house can become too warm, while the outside temperature remains pleasantly cool. In such cases, heat removal by what is known as "free cooling" helps: The CA350 is equipped with a standard automatic bypass that diverts 100% of the relatively warm extract air from the heat exchanger, introducing cool supply air to the space.



# Product Information

## Optional Additions

- Humidity recovery with the Zehnder enthalpy exchanger  
When the CA350 is fitted with an enthalpy exchanger core, the humidity from the extracted air is partly transferred to the fresh supply air. In this case, the process of drying out the house in dry winter months is delayed.

The Zehnder enthalpy exchanger provides the ideal hygienic solution. Supply and extract air flows are kept completely separate so there is no transfer of odors or bacteria.

- Pollen filter (F7/MERV 13)  
A pollen filter installed in the intake air line (upstream of the heat exchanger) keeps the inside of the house pollen-free and reduces particulates, spores and germs so occupants can breathe freely in times of increasing allergies.
- Open fire program  
The ventilation system can be installed in a home with a fireplace, wood stove, etc. but must be accounted for in the control unit. By indicating in the ComfoSense controller the presence of a fireplace, negative pressure and possible back-drafting of unpleasant fumes and/or harmful gases can be avoided.

## Benefits

- Comfort ventilation up to a design rate of 120 CFM
- Heat recovery with an efficiency of 84% (according to PHI)
- Moisture recovery with optional Zehnder enthalpy exchanger
- Low power consumption thanks to DC motors
- Automatic summer bypass
- Electric post-heater integration
- Quick, safe installation, maintenance and servicing
- Frost Protection Function
- Optional, integrated electric pre-heater
- Filter replacement indicator
- Simple Operation
- CO2 control (optional)
- Relative humidity control (optional)

## Product Numbers

VV = integrated electric pre-heater

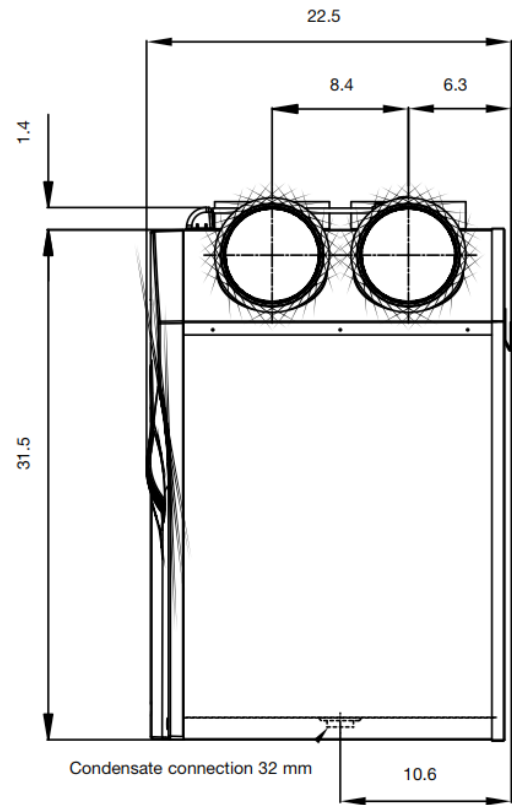
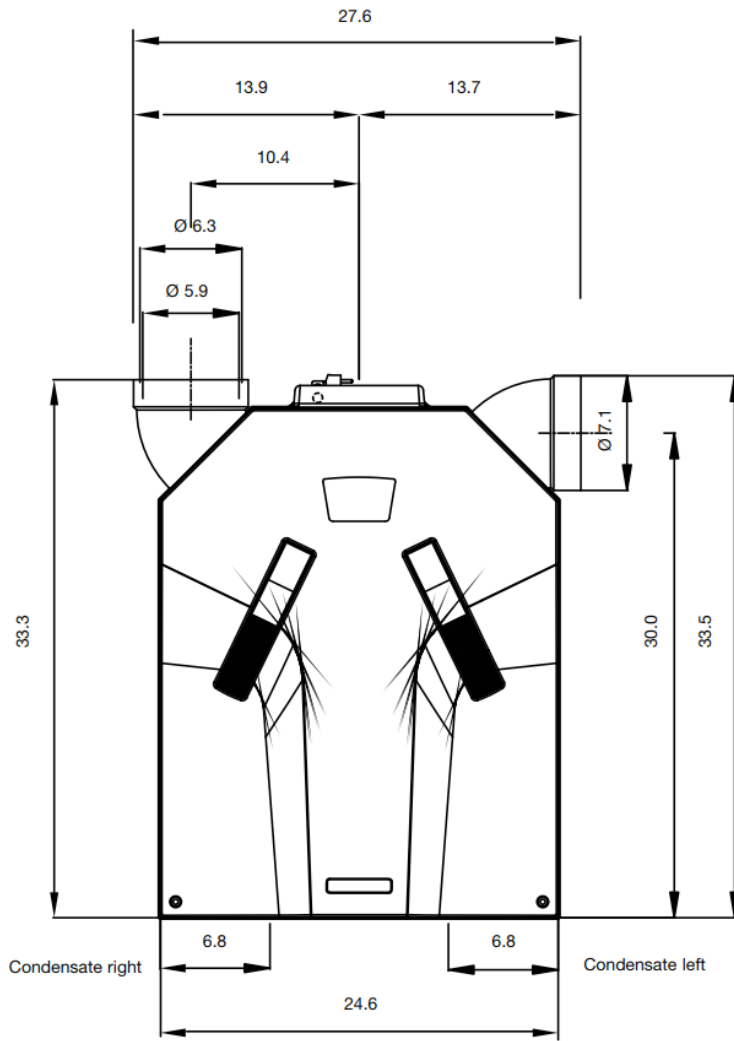
| Product        | Article Number | Product Number |
|----------------|----------------|----------------|
| CA350 HRV L    | 471 236 710    | 9244-01        |
| CA350 HRV R    | 471 236 715    | 9245-01        |
| CA350 HRV VV L | 471 236 730    | 9304-01        |
| CA350 HRV VV R | 471 236 735    | 9452-01        |
| CA350 ERV L    | 471 236 840    | 9246-01        |
| CA350 ERV R    | 471 236 845    | 9247-01        |
| CA350 ERV VV L | 471 236 850    | 9428-01        |
| CA350 ERV VV R | 471 236 855    | 9429-01        |

| Accessories                | Article Number | Product Number |
|----------------------------|----------------|----------------|
| ComfoSense Control Unit    | 655 010 215    | 9257-01        |
| Wired Boost Switch         |                | 9556-00        |
| Waterless P-Trap           | 990 201 330    | 9362-00        |
| ComfoAir 350 Assembly Base | 642 300 135    | 9286-00        |
|                            |                |                |
| Filters                    | Article Number | Product Number |
| G4 (MERV 7/8) 1 pc         | 006 040 201    | 9240-00        |
| F7 (MERV 13) 1pc           | 006 040 211    | 9241-00        |

# Technical Specifications

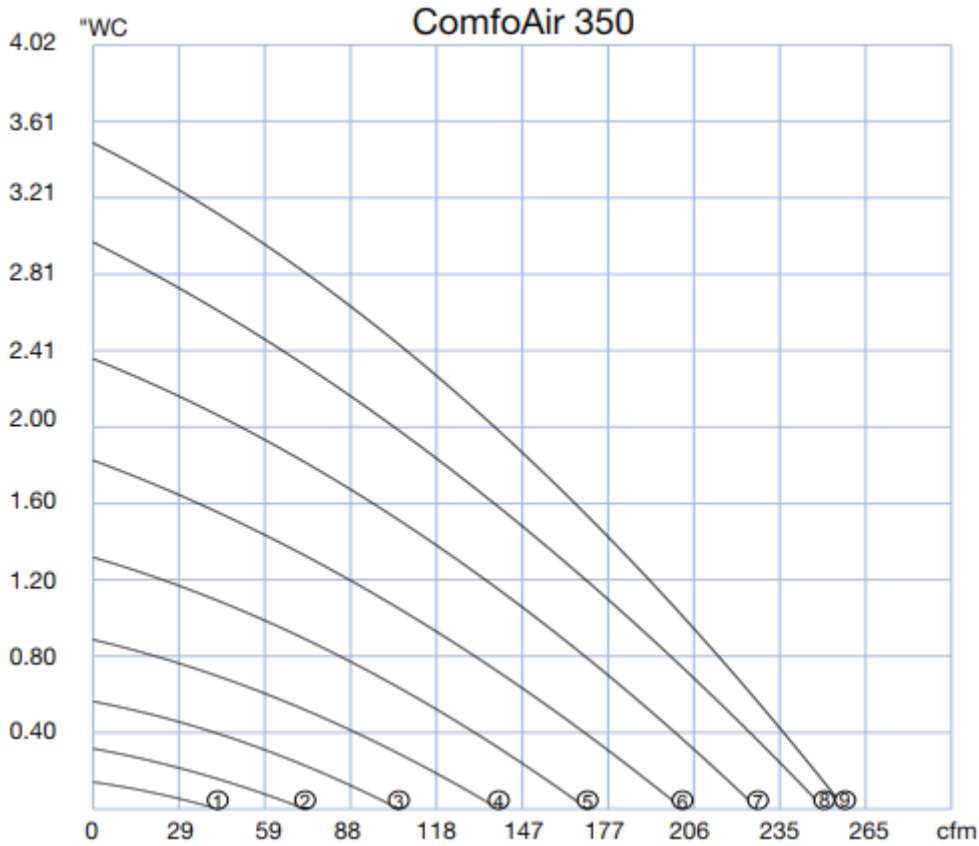
|                         |  |
|-------------------------|--|
| Heat Exchanger:         | Polystyrene  |
| Fans:                   | ECM direct current, radial fans  |
| Filters:                | (2) Class G4 (MERV 7/8), F7 (MERV 13) optional   |
| Condensate Connection:  | 32mm   |
| Air Duct Connections:   | 6" inside diameter (nominal); (x4)   |
| Electrical Connection:  | 230v, 50-60Hz  |
| Acoustic Performance:   | Extract air (min – max): 34 - 59 dB(A)   |
| Supply air (min – max): | 32 - 74 dB(A)  |
| Heat Recovery:          | 84% (according to PHI)   |
| Volumetric Flow:        | 29 cfm - 218 cfm   |
| Power Consumption:      | 10W – 198W   |
| Dimensions:             | Height: 33.9"<br>Width: 24.6"<br>Depth: 22.5"  |
| Weight:                 | 77.2 lbs. (35kg)   |
| Versions:               | CA350 HRV L      CA350 ERV L<br>CA350 HRV R      CA350 ERV R<br>CA350 HRV VV L      CA350 ERV VV L<br>CA350 HRV VV R      CA350 ERV VV R |
| Manufacturer:           | Zehnder Group Nederland B.V.<br>8028 PM Zwolle<br>NETHERLANDS  |

# Dimensions



# Pressure and Power Information

| Switch settings     | Speed | Air Volume | Pressure        | Power Consumption | Current Consumption | Acoustic Performance |             |            |      |
|---------------------|-------|------------|-----------------|-------------------|---------------------|----------------------|-------------|------------|------|
| Factory setting     |       | Qv         | $\Delta P_{st}$ |                   |                     |                      | Extract air | Supply air |      |
| (speed)             | %     | cfm        | *WC             | w                 | A                   | (-)                  | dB(A)       | dB(A)      | lb   |
| <b>ComfoAir 350</b> |       |            |                 |                   |                     |                      |             |            |      |
| (1)                 | 15    | 24         | 0.016           | 10                | 0.08                | 0.50                 | 34          | 32         | 77.2 |
| (2)                 | 30    | 59         | 0.080           | 17                | 0.13                | 0.57                 | 37          | 45         |      |
| (3)                 | 40    | 82         | 0.161           | 27                | 0.21                | 0.56                 | 43          | 53         |      |
| (4)                 | 50    | 1-6        | 0.261           | 44                | 0.35                | 0.55                 | 47          | 59         |      |
| (5)                 | 60    | 132        | 0.402           | 70                | 0.55                | 0.55                 | 52          | 64         |      |
| (6)                 | 70    | 153        | 0.562           | 105               | 0.81                | 0.56                 | 54          | 68         |      |
| (7)                 | 80    | 177        | 0.703           | 145               | 1                   | 0.58                 | 57          | 71         |      |
| (8)                 | 90    | 191        | 0.893           | 198               | 1.42                | 0.60                 | 59          | 74         |      |



# Sound Information

## Sound, supply air

Acoustic performance at the intake air connection at 0 feet

| Zehnder ComfoAir 350 |        |        |        |         |         |         |         |
|----------------------|--------|--------|--------|---------|---------|---------|---------|
| Speed                | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
| 1                    | 46     | 35     | 23     | 11      | 4       | 5       | 13      |
| 2                    | 55     | 49     | 40     | 33      | 22      | 12      | 12      |
| 3                    | 60     | 59     | 49     | 43      | 35      | 25      | 12      |
| 4                    | 66     | 64     | 56     | 50      | 43      | 34      | 22      |
| 5                    | 71     | 68     | 62     | 56      | 49      | 42      | 29      |
| 6                    | 74     | 70     | 66     | 60      | 53      | 47      | 35      |
| 7                    | 76     | 73     | 69     | 64      | 57      | 51      | 39      |
| 8                    | 78     | 76     | 72     | 68      | 61      | 55      | 43      |
| 9                    | 79     | 76     | 74     | 69      | 62      | 57      | 45      |

## Sound, extract air

Acoustic performance at the extract air connection at 0 feet

| Zehnder ComfoAir 350 |        |        |        |         |         |         |         |
|----------------------|--------|--------|--------|---------|---------|---------|---------|
| Speed                | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
| 1                    | 50     | 34     | 3      | 23      | 10      | 7       | 12      |
| 2                    | 51     | 41     | 30     | 30      | 12      | 7       | 12      |
| 3                    | 53     | 49     | 39     | 39      | 22      | 10      | 11      |
| 4                    | 55     | 54     | 45     | 45      | 29      | 19      | 7       |
| 5                    | 57     | 56     | 51     | 51      | 34      | 25      | 13      |
| 6                    | 60     | 60     | 54     | 54      | 38      | 29      | 19      |
| 7                    | 63     | 61     | 57     | 57      | 42      | 33      | 23      |
| 8                    | 65     | 64     | 59     | 59      | 44      | 36      | 27      |
| 9                    | 65     | 65     | 61     | 61      | 46      | 38      | 29      |

## Sound, unit emission

| Zehnder ComfoAir 350 |        |        |        |         |         |       |
|----------------------|--------|--------|--------|---------|---------|-------|
| Speed                | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | dB(A) |
| 1                    | 27     | 17     | 17     | 14      | 4       | 19    |
| 2                    | 32     | 29     | 24     | 19      | 16      | 26    |
| 3                    | 36     | 36     | 32     | 29      | 27      | 35    |
| 4                    | 41     | 40     | 39     | 36      | 35      | 41    |
| 5                    | 36     | 44     | 44     | 42      | 41      | 47    |
| 6                    | 50     | 47     | 50     | 46      | 45      | 52    |
| 7                    | 52     | 49     | 52     | 50      | 49      | 55    |
| 8                    | 53     | 52     | 55     | 54      | 52      | 58    |
| 9                    | 53     | 53     | 56     | 55      | 54      | 59    |