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## Ventilation unit

## Zehnder ComfoAir 550

### Use

The Zehnder ComfoAir 550 ventilation unit was specially developed for use in residential and commercial buildings with high ventilation demand. It combines maximum comfort, simple operation and high efficiency with flexible integration into building services. The ComfoAir 550 ventilation unit moves up to 324 cfm of air at an external pressure of 0.8" wc.

### Efficiency

The integrated cross-counterflow heat exchanger achieves efficiencies of up to 95%. For user comfort this means no unpleasant draft effects, because the supply air is heated almost to room temperature even when external temperatures are around freezing.

### Fans

The two supply and extract fans are driven by efficient DC motors. Differential pressures in the supply and extract air distribution systems can be compensated thanks to direct 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 324 cfm on the Zehnder ComfoAir 550.

### Filters

The ComfoAir 550 ventilation unit is equipped with a class G4 filter (MERV 7/8). An optional F7 pollen filter (MERV 13) is available for outside air.

### Installation

The Zehnder ComfoAir 550 ventilation unit is characterised by its compact design. All air and electrical connections are located on the top. The condensate drain is located on the bottom of the unit to save space.

### Operation

The ventilation unit is controlled using a control unit commonly employed in living areas. The ComfoAir 550 is controlled by the Comfosense 67 as standard

### Servicing

All necessary servicing is simple to perform on the Zehnder ComfoAir 550 ventilation unit. Filter replacement requires no tools thanks to the filter covers integrated in the front of the unit. The heat exchanger can also be easily removed from the unit for cleaning after opening the front. Please see the unit operating instructions for additional notes on servicing tasks.

### Frost protection

If the ventilation unit is operated without a geothermal heat exchanger, the condensate in the extract air may freeze. The frost protection setting prevents this by variably reducing the supply air volume. In order to ensure reliable operation even at extreme outside temperatures, an optional electrical preheater register is available.



Comfosense 67 controller

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**Bypass**

During summer nights and in the transition periods with strong sunshine, the house often becomes too warm, while the outside air remains pleasantly cool. In this case heat removal by what is known as *free cooling* helps: The cooler outside air is fed to the rooms in the living area, bypassing the heat exchanger. The Zehnder ComfoAir 550 ventilation unit is equipped with an automatic bypass for just this purpose. The bypass is a standard component and takes 100% of the extract air past the heat exchanger. The personal comfort temperature is adjustable.

**Options**

- Moisture recovery with the Zehnder enthalpy exchanger**  
The Zehnder enthalpy cross-counterflow heat exchanger provides a hygienically ideal solution for excessively dry air in winter. Not only heat, but also up to 65% of the moisture contained in the extract air is transferred from the exhaust air to the supply air. Supply and extract air flows are kept completely separate therefore no transfer of odors or bacteria.
- Zehnder ComfoFond-L brine geothermal heat exchanger**  
The Zehnder ComfoFond-L utilises the ground as passive storage via a brine loop. During the summer, it extracts heat from the outside air and transfers it to the ground. In winter, the outside air is preheated using the heat stored in the ground. It is controlled using the ComfoAir 550.
- Electric air heater and hot water postheater**  
An external electrical air heater or hot water postheater guarantees a defined supply air temperature, even in extreme climatic conditions and demanding situations.
- Wired boost switch**  
The wired boost switch (connected to the CA550 via low voltage cable) can be used to trigger a high-speed boost cycle from a location other than the main control panel. Boost switches are typically located in bathrooms and default setting is 30 minutes.
- Open fireplace mode**  
Simultaneous operation of a ventilation system and an open flue fireplace can be registered in the control unit. This prevents a controller-related negative pressure. In a frost protection situation both fans are stopped. Pure extract air mode is not possible and the supply fan is also switched off if a fault occurs.



ComfoAir 550 with optional ComfoFond-L geothermal heat exchanger



Wired boost switch

**Technical specifications**

Unit dimensions	
Max. air volume	324 cfm
Min. air volume	29 cfm
Height	31.5"
Width	28.5"
Depth	22.17"

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**Benefits**

- Comfort ventilation up to 324 cfm
- Heat recovery with an efficiency of up to 95%
- Moisture recovery with the Zehnder enthalpy exchanger (optional)
- Low power consumption thanks to EC direct current motors
- Automatic 100% summer bypass
- Infinitely variable frost protection function, efficient even at low temperatures
- Quick, safe installation and servicing
- Simple operation
- Integrated preheater (optional)
- Integrated controller for brine geothermal heat exchanger
- Electrical and hot water postheater integration possible
- Controls can be expanded by wireless remote control
- Digital ComfoSense Controller
- Demand control by CO<sub>2</sub> or other 3rd party 0-10V sensors (optional)
- With weekly timer as standard
- Open fireplace mode

**Article numbers**

L = supply air left, R = supply air right, V = integrated electric preheater  
Enthalpy = enthalpy heat exchanger integrated (ERV)

Product	Article number	Reference number
ComfoAir 550 L Luxe	N/A	9252-01
ComfoAir 550 R Luxe	N/A	9253-01
ComfoAir 550 VL Luxe	N/A	9305-01
ComfoAir 550 VR Luxe	N/A	9436-01
ComfoAir 550 L Luxe Enthalpy	471 336 435	9254-01
ComfoAir 550 R Luxe Enthalpy	471 336 440	9255-01
ComfoAir 550 VL Luxe Enthalpy	471 338 540	9437-01
ComfoAir 550 VR Luxe Enthalpy	471 338 545	9438-01

Accessories	Article number	Reference number
ComfoSense Controller	655 010 215	9257-01
Wired boost switch	N/A	9556-00
ComfoAir 550 assembly base	642 300 140	9287-00

Filters	Article number	Reference number
Filter for ComfoAir 550 G4 (MERV 7/8)	006 040 201	9240
Filter for ComfoAir 550 F7 (MERV 13)	006 040 211	9241

**Function**

- Frost protection function/automatic defrost
- Supply and extract air separate and infinitely variably programmable
- Switch on and off delay for bathroom switch
- Adjustable comfort temperature
- Filter replacement indicator
- Supply and extract air can be switched off separately

### Description

#### Comfort ventilation unit ComfoAir 550 Luxe

The Zehnder ComfoAir 550 Luxe is a centralized, compact ventilation unit with heat recovery and integrated summer bypass. This ventilation unit is eminently suited to new buildings as well as in renovation projects. The ComfoAir 550 Luxe can be installed both wall-hanging and on the floor with an optionally available base. It is connected via 4 x 180mm (~7") pipe connections at the top of the unit. The housing, made of painted sheet steel, is acoustically and thermally insulated. EC direct current fans guarantee power-saving operation and provide high electrical efficiency. Supply and extract fans can be controlled separately and can be precisely adjusted to balance air volume to within one percent. The core of the ComfoAir 550 Luxe is the plastic cross-counterflow heat exchanger with up to 95%. It is controlled by the ComfoSense 67, which is connected to the ventilation unit by low-voltage cable. All operating statuses and error messages can be read from the control unit display. The ComfoAir 550 is delivered with a safety NEMA 6-15 plug. The filters are replaced easily from the front by the user without opening the unit.

#### Options:

- Integrated electric preheater (CA550 VL and CA550 VR)
- Units with integrated enthalpy heat exchanger (CA550 L Luxe Enthalpy and CA550 R Luxe Enthalpy)

#### Controller features:

- Automatic frost protection controller
- Timer-controlled filter servicing display
- G4 (MERV 7/8) (optionally available in filter class F7 (MERV 13))
- With automatic and temperature-controlled 100% summer bypass
- Fault history including the last three error messages
- Supply and exhaust fans can be activated separately
- Connection options for external intermittent ventilation switch
- Comfort temperature controller
- External 'OFF' contact
- Weekly timer programmes
- Chimney sweep control
- Integrated controller for Zehnder ComfoFond-L brine geothermal heat exchanger
- Control and regulating functions with external 0-10 V transducer

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**Descriptions**

**Technical specifications**

Heat exchanger:	Plastic
Fans:	EC direct current radial fans
Filters:	Extract air: G4 (MERV 7/8) Outside air: G4 (optional F7 (MERV 13)
Condensate connection:	DN 32 mm
Air duct connections:	4 x 180mm(~7") at top
Electrical connection:	220-240V/50-60 Hz (208V will result in ~7% reduction in airflow; performance data based on 230V/50Hz)
Temperature range:	Min. 50 °F/max. 104 °F
Acoustic performance (min./max.):	Extract air 28 dB(A)/63 dB(A) Supply air: 35 db(A) / 79 dB(A)
Heat recovery:	Up to 95%
Volumetric flow:	Maximum 324 cfm at 0.96" wc external Minimum 29 cfm at 0.02" wc external
Power consumption:	
At 132 cfm and 0.40" wc:	0.18 W/cfm
Dimensions:	Height: 31.5" Width: 28.5" Depth: 22.4"
Weight:	103.6 lb

**Manufacturer:** **Zehnder GmbH**  
**Almweg 34**  
**77933 Lahr**  
**+49 (0) 7821/586-0**

**Air direction**

The figures on the right show the air directions (top view).

**Certificates**

- Passive House Certified (PHI)



ComfoAir 550 left



ComfoAir 550 right

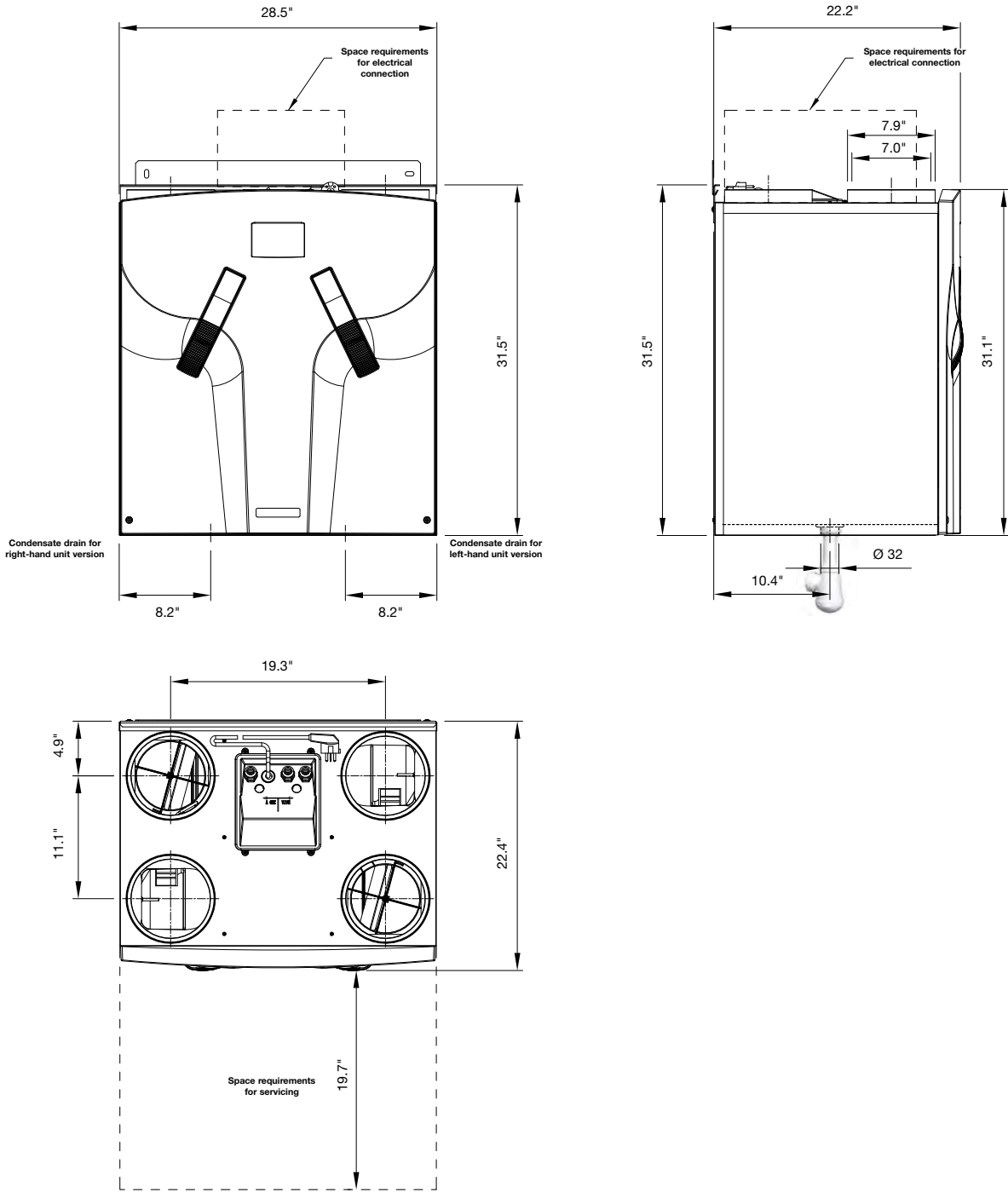
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Dimensions



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Ventilation unit

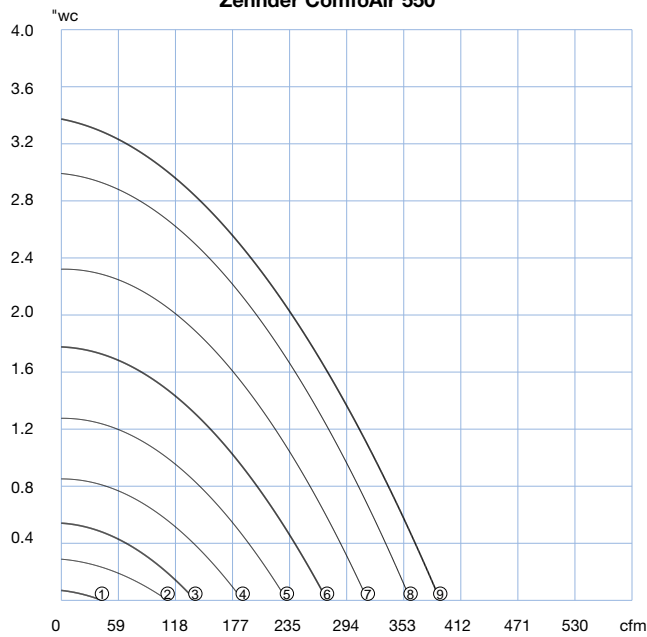
Zehnder ComfoAir 550

Stage	Speed %	Air volume Qv cfm	Pressure $\Delta P_{st}$ "wc	Power consumption W	Current consumption A	COS $\phi$ (-)	Installed noise level		Weight lb
							Extract air	Supply air	
							dB(A)	dB(A)	

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(1) Absent	15%	29	0.02	13	0.12	0.47	28	35	103.6
(2)	30%	82	0.12	26	0.22	0.51	38	50	
(3) Stage 1	40%	106	0.24	41	0.35	0.51	44	58	
(4)	50%	132	0.40	69	0.57	0.53	48	63	
(5)	60%	165	0.60	110	0.86	0.56	52	67	
(6) Stage 2	70%	194	0.86	160	1.21	0.57	55	71	
(7)	80%	224	1.14	220	1.65	0.58	59	74	
(8)	90%	253	1.45	310	2.22	0.61	63	78	
(9) Stage 3	100%	271	1.65	350	2.459	0.62	63	79	

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Sound, supply air

Ventilation unit		Acoustic performance at the intake air connection at a distance of 0 ft						
Type	Speed	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
ComfoAir 550	9	78	78	79	69	70	66	53
ComfoAir 550	8	78	77	77	67	69	65	52
ComfoAir 550	7	75	75	73	66	66	61	48
ComfoAir 550	6	73	72	70	63	63	56	43
ComfoAir 550	5	70	70	66	58	58	51	38
ComfoAir 550	4	67	68	61	53	53	44	32
ComfoAir 550	3	63	65	55	45	44	35	24
ComfoAir 550	2	56	55	47	37	37	25	14
ComfoAir 550	1	45	39	29	26	21	9	12

Sound, extract air

Ventilation unit		Acoustic performance at the extract air connection at a distance of 0 ft						
Type	Speed	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
ComfoAir 550	9	67	66	63	51	49	42	33
ComfoAir 550	8	66	65	64	50	47	41	3
ComfoAir 550	7	63	62	60	48	45	37	27
ComfoAir 550	6	60	60	54	45	41	33	23
ComfoAir 550	5	57	57	50	41	37	28	20
ComfoAir 550	4	52	55	46	36	32	21	18
ComfoAir 550	3	46	51	38	29	25	14	13
ComfoAir 550	2	45	44	33	27	18	8	11
ComfoAir 550	1	40	29	22	20	3	6	13

Sound, unit emission

Ventilation unit		Acoustic performance at the extract air connection at a distance of 0 ft					
Type	Speed	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	db(A)
ComfoAir 550	9	57	56	53	46	44	54
ComfoAir 550	8	56	55	52	45	43	53
ComfoAir 550	7	53	52	50	42	40	50
ComfoAir 550	6	50	49	48	39	36	48
ComfoAir 550	5	47	47	46	34	32	45
ComfoAir 550	4	44	45	39	30	27	41
ComfoAir 550	3	38	41	32	24	21	35
ComfoAir 550	2	37	36	27	20	15	28
ComfoAir 550	1	26	29	20	19	17	25