

## Series

# VENTS VUTR P EC

# VENTS VUTR PE EC



Air handling units in heat- and sound-insulated casing.  
Air flow up to **710 m<sup>3</sup>/h**.  
Heat recovery efficiency up to **87 %**.

## Description

The air handling units VUTR P/PE EC are the fully-featured ventilation units that ensure air filtration, fresh air supply and stale air extract. During the operation process the extract air heat is transferred to the supply air through the rotary heat exchanger. The units are used in ventilation systems installed in various premises that require reasonable energy saving solutions and controllable ventilation systems. EC motors reduce energy demand by 1.5-3 times and ensure high performance and low noise operation. All models are designed for connection to ø160 and 200 mm round air ducts.

## Modifications

VUTR P(2) EC models (without an electric heater).  
VUTR P(2)E EC models (with an electric heater).  
VUTR P2(E) EC models with a low profile casing and 20 mm insulation.

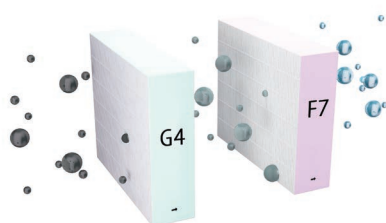
## Casing

Made of galvanized steel, internally filled with a mineral wool heat- and sound-insulating layer. The insulation thickness is 40 mm for the VUTR P/PE EC models and 20 mm for the VUTR P2/P2E EC models. Unit maintenance is performed from the bottom panel side. The distinctive feature of the VUTR P2/P2E EC units is a low profile casing.



## Filter

Two built-in filters with filtering class G4 and F7 provide efficient supply air filtration. Extract air is cleaned by the integrated G4 filter. The optional H13 filter is available for supply air filtration.



## Motor

The units are equipped with high-efficient EC motors with an external rotor and a centrifugal impeller. These state-of-the-art motors offer the very best in energy efficiency today. EC motors are characterised with high performance and optimum control across the entire speed range. In addition to that, the efficiency of the electronically commutated motor reaches very impressive levels of up to 90 %.

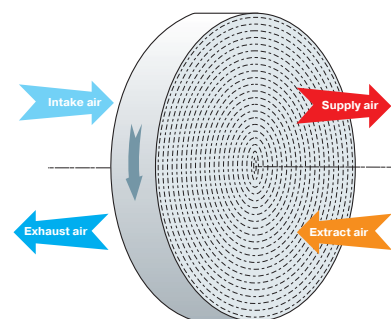
## Rotary heat exchanger

The rotary heat exchanger is a short rotating cylinder filled with layers of corrugated aluminium tape packaged in a such way so as to enable free passage of the supply and extract air flows.

As the cylinder rotates the aluminium tape contained in the heat exchanger is first exposed to the supply air stream and then – to the extract air stream.

As a result the material undergoes repeated warming and heating cycles thereby transferring heat and humidity from the warm air stream to the cold one.

As compared to plate heat exchangers, the rotary heat exchangers are distinguished with no condensate forming, ability to maintain comfortable air humidity and extremely low freezing danger.



Rotary heat exchanger operation principle

## Heater

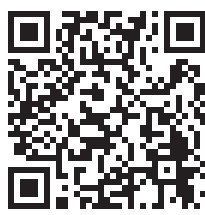
The VUTR PE EC units are equipped (with an electric heater). If heat recovery is not sufficient to reach the set supply air temperature, the heater is activated to warm up supply air. The heaters are equipped with protecting devices to ensure safe and reliable operation of the unit.

## Automation

The **VUTR P/P2/PE/P2E EC A21** units are equipped with an integrated control system. The **A21** controller allows integrating the unit into the **Smart Home system** or **BMS (Building Management Systems)**. The remote control panel is not included in the delivery set (purchased separately). To control the unit using a mobile application via Wi-Fi, you need to download the VENTS AHU mobile application.

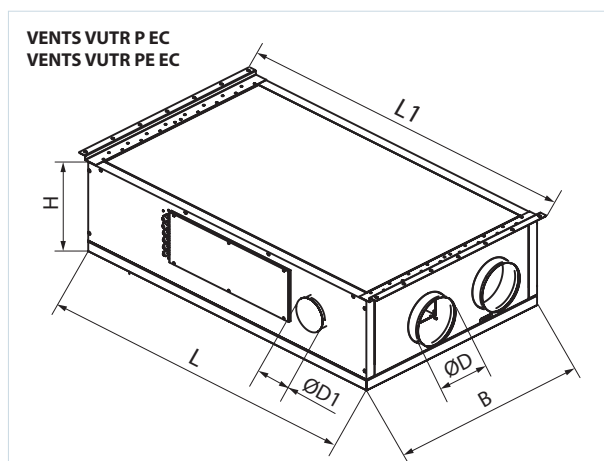
## Designation key

| Series           | Heat exchanger type | Rated air flow [m <sup>3</sup> /h] | Spigot orientation           | Casing design                                                                                  | Heater type                                                | Motor type                                             | Control panel |
|------------------|---------------------|------------------------------------|------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------|---------------|
| <b>VENTS VUT</b> | <b>R:</b> rotary    | 250, 350, 650                      | <b>P:</b> suspended mounting | _: standard (insulation thickness 40 mm)<br><b>2:</b> low-profile (insulation thickness 20 mm) | _: without a heater<br><b>E:</b> (with an electric heater) | <b>EC:</b> synchronous electronically commutated motor | <b>A21</b>    |



### Overall dimensions

| Model           | Dimensions [mm] |      |      |      |     |     |
|-----------------|-----------------|------|------|------|-----|-----|
|                 | Ø D             | Ø D1 | L1   | L    | B   | H   |
| VUTR 250 P EC   | 160             | 125  | 1100 | 1003 | 688 | 345 |
| VUTR 250 PE EC  |                 |      |      |      |     |     |
| VUTR 250 P2 EC  | 160             | 125  | 1097 | 1002 | 666 | 245 |
| VUTR 250 P2E EC |                 |      |      |      |     |     |
| VUTR 350 P EC   | 160             | 125  | 1365 | 1270 | 818 | 361 |
| VUTR 350 PE EC  |                 |      |      |      |     |     |
| VUTR 350 P2 EC  | 160             | 125  | 1457 | 1362 | 847 | 245 |
| VUTR 350 P2E EC |                 |      |      |      |     |     |
| VUTR 650 P EC   | 200             | 125  | 1542 | 1445 | 932 | 422 |
| VUTR 650 PE EC  |                 |      |      |      |     |     |



### Calculation of air temperature at heat exchanger outlet:

$$t = t_{int} + k_{eff} * (t_{ext} - t_{int}) / 100,$$

where

$t_{int}$  – intake air temperature [°C]

$t_{ext}$  – extract air temperature [°C]

$k_{eff}$  – heat recovery efficiency (as per diagram) [%]

### ■ Mounting

The unit is designed for wall or floor mounting.

The access for unit and filter maintenance is available from the front panel.

The service and the back panels can be rearranged allowing connection both on the right and on the left side.

### Control and automation

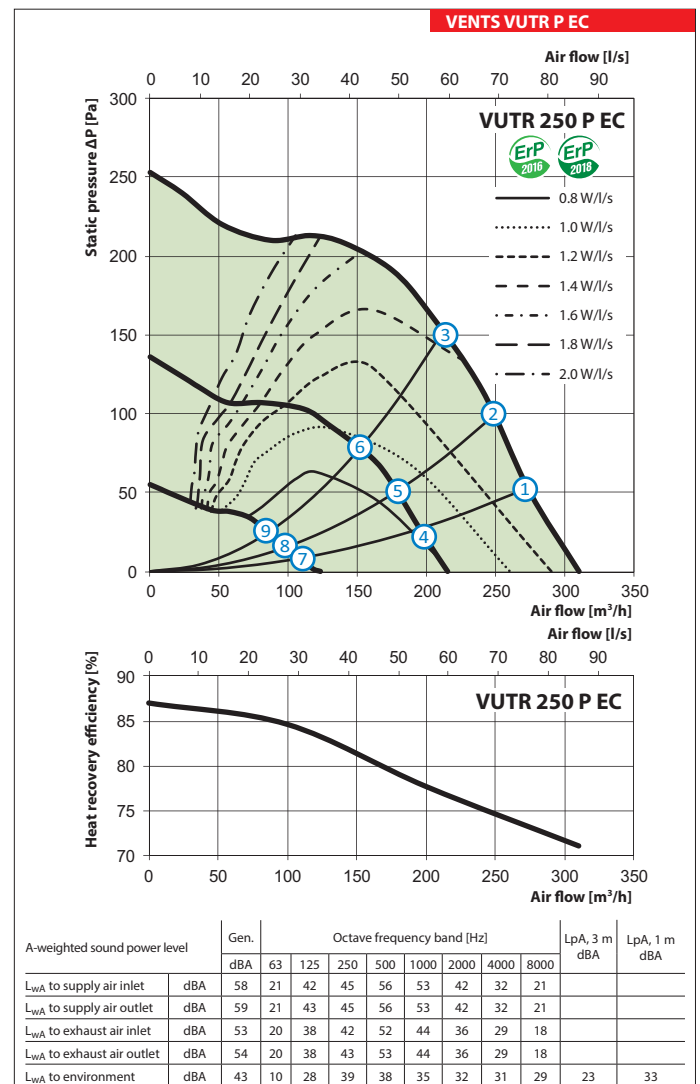
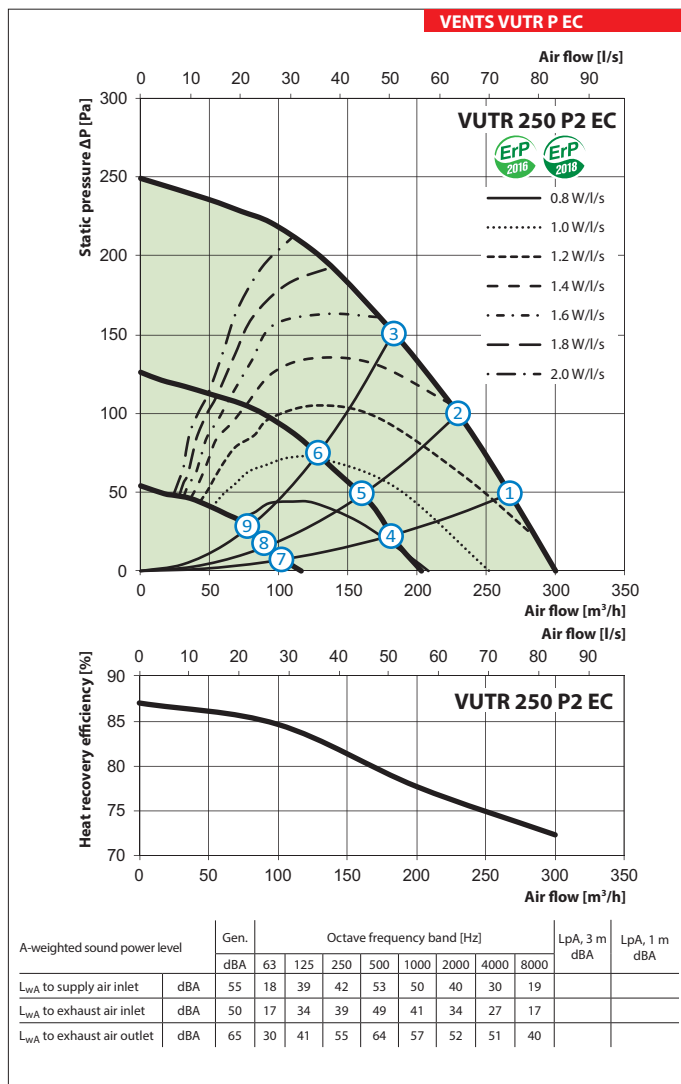
| Functions                                    | A21                                                                                                        |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Control via Wi-Fi using a mobile application | +                                                                                                          |
| Control via a wired remote control panel     | A22 (option)<br>        |
| Control via a wireless remote control panel  | A22 Wi-Fi (option)<br> |
| Control via a wired remote LCD control panel | A25 (option)<br>      |
| BMS                                          | RS-485<br>WI-FI<br>Ethernet<br>MODBUS (RTU, TCP)                                                           |
| Service Vents Cloud Server                   | +                                                                                                          |
| Speed selection                              | +                                                                                                          |
| Filter replacement indication                | according to hour meter readings                                                                           |
| Alarm indication                             | full alarm description in the mobile application                                                           |
| Week-scheduled operation                     | +                                                                                                          |
| Timers                                       | +                                                                                                          |
| Boost mode                                   | +                                                                                                          |
| Fireplace mode                               | +                                                                                                          |
| Reheater connection                          | integrated in E models, external reheater cannot be connected                                              |
| Cooler connection                            | option                                                                                                     |
| Kitchen hood connection                      | option                                                                                                     |
| Minimum supply air temperature control       | +                                                                                                          |
| Humidity control                             | option                                                                                                     |
| CO <sub>2</sub> controller                   | option                                                                                                     |
| VOC controller                               | option                                                                                                     |
| Fire alarm sensor connection                 | option                                                                                                     |

\*Option. The functionality is available when you purchase the appropriate accessory.

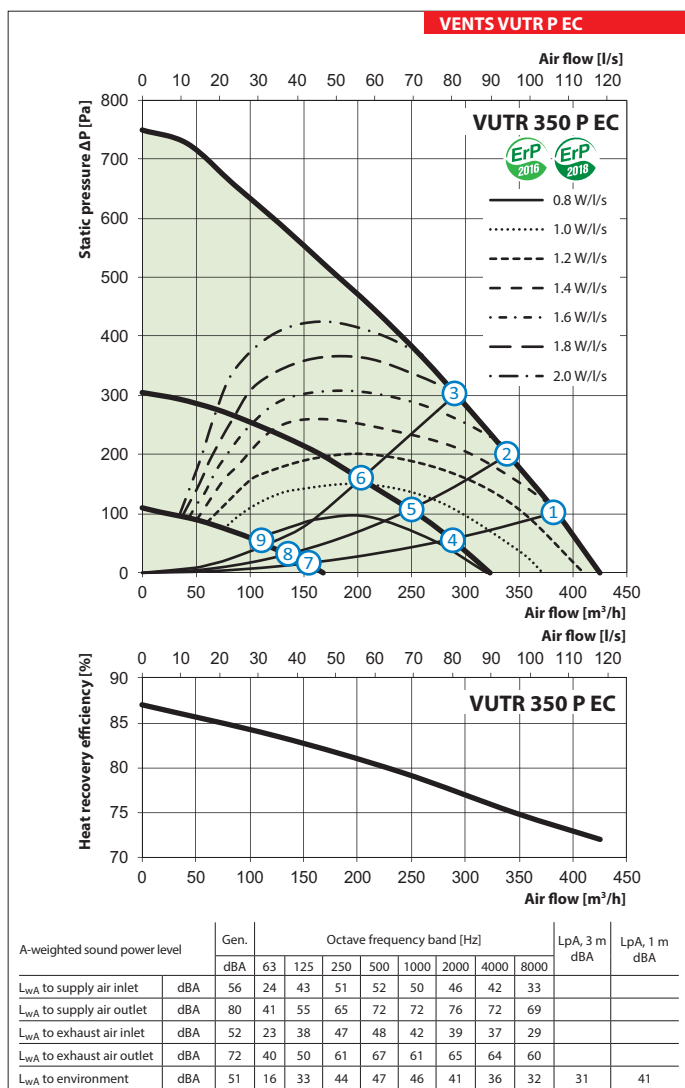
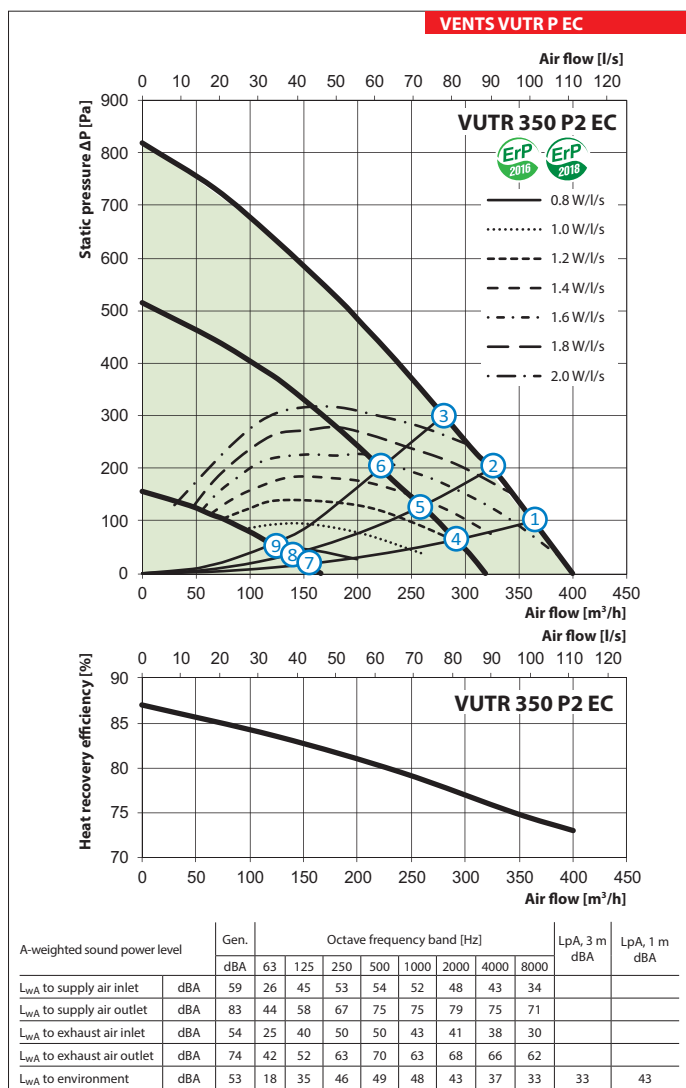
## HEAT RECOVERY AIR HANDLING UNITS

### Technical data

|                                                       | VUTR 250 P2 EC      | VUTR 250 P2E EC | VUTR 250 P EC      | VUTR 250 PE EC |
|-------------------------------------------------------|---------------------|-----------------|--------------------|----------------|
| Unit voltage [V/50 (60) Hz]                           | 1~220-240           |                 |                    |                |
| Maximum unit power (without an electric heater) [W]   | 128                 |                 | 135                |                |
| Maximum unit power (with an electric heater) [W]      | 128                 | 828             | 135                | 835            |
| Maximum unit current (without an electric heater) [A] | 0.9                 |                 | 1.0                |                |
| Maximum unit current (with an electric heater) [A]    | 0.9                 | 4.0             | 1.0                | 4.1            |
| Maximum air flow [m³/h]                               | 300                 |                 | 310                |                |
| RPM [min <sup>-1</sup> ]                              | 2200                |                 | 2200               |                |
| Sound pressure level at 3 m distance [dBA]            | 23                  |                 | 21                 |                |
| Transported air temperature [°C]                      | -25 up to +40       |                 |                    |                |
| Casing material                                       | galvanized steel    |                 |                    |                |
| Insulation                                            | 20 mm mineral wool  |                 | 40 mm mineral wool |                |
| Extract filter                                        | G4                  |                 |                    |                |
| Supply filter                                         | G4, F7 (H13 option) |                 |                    |                |
| Connected air duct diameter [mm]                      | 160                 |                 |                    |                |
| Weight [kg]                                           | 53                  | 54              | 55                 | 56             |
| Heat recovery efficiency [%]                          | from 76 up to 87    |                 | from 71 up to 87   |                |
| Heat exchanger type                                   | rotary              |                 |                    |                |
| Heat exchanger material                               | aluminium           |                 |                    |                |
| SEC class                                             | A                   |                 | A                  |                |

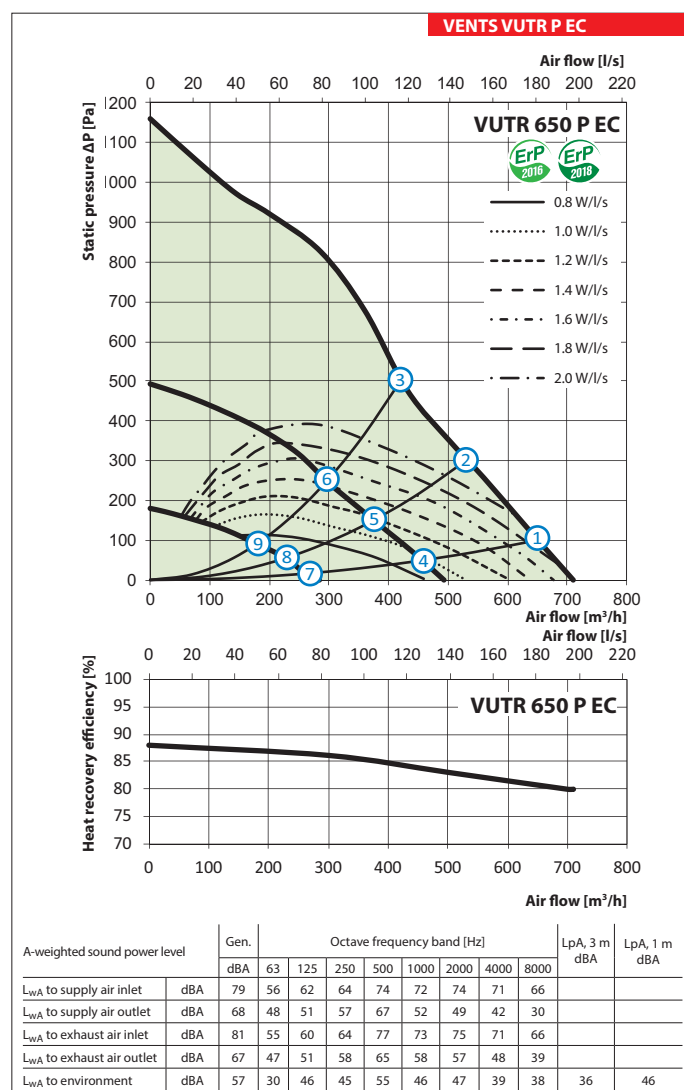


|                                                       | VUTR 350 P2 EC      | VUTR 350 P2E EC | VUTR 350 P EC      | VUTR 350 PE EC |
|-------------------------------------------------------|---------------------|-----------------|--------------------|----------------|
| Unit voltage [V/50 (60) Hz]                           | 1~220-240           |                 |                    |                |
| Maximum unit power (without an electric heater) [W]   | 200                 |                 | 185                |                |
| Maximum unit power (with an electric heater) [W]      | 200                 | 1600            | 185                | 1585           |
| Maximum unit current (without an electric heater) [A] | 1.3                 |                 |                    |                |
| Maximum unit current (with an electric heater) [A]    | 1.3                 | 6.9             | 1.3                | 6.9            |
| Maximum air flow [m³/h]                               | 400                 |                 | 430                |                |
| RPM [min <sup>-1</sup> ]                              | 3200                |                 | 3570               |                |
| Sound pressure level at 3 m distance [dBA]            | 33                  |                 | 31                 |                |
| Transported air temperature [°C]                      | -25 up to +40       |                 |                    |                |
| Casing material                                       | galvanized steel    |                 |                    |                |
| Insulation                                            | 20 mm mineral wool  |                 | 40 mm mineral wool |                |
| Extract filter                                        | G4                  |                 |                    |                |
| Supply filter                                         | G4, F7 (H13 option) |                 |                    |                |
| Connected air duct diameter [mm]                      | 160                 |                 |                    |                |
| Weight [kg]                                           | 78                  | 79              | 81                 | 82             |
| Heat recovery efficiency [%]                          | from 73 up to 87    |                 | from 72 up to 87   |                |
| Heat exchanger type                                   | rotary              |                 |                    |                |
| Heat exchanger material                               | aluminium           |                 |                    |                |
| SEC class                                             | A                   |                 |                    |                |



# Technical data

|                                                       | VUTR 650 P EC       | VUTR 650 PE EC |
|-------------------------------------------------------|---------------------|----------------|
| Unit voltage [V/50 (60) Hz]                           | 1~220-240           |                |
| Maximum unit power (without an electric heater) [W]   | 367                 |                |
| Maximum unit power (with an electric heater) [W]      | 367                 | 3167           |
| Maximum unit current (without an electric heater) [A] | 2.5                 |                |
| Maximum unit current (with an electric heater) [A]    | 2.5                 | 13.7           |
| Maximum air flow [m³/h]                               | 710                 |                |
| RPM [min⁻¹]                                           | 3600                |                |
| Sound pressure level at 3 m distance [dBA]            | 36                  |                |
| Transported air temperature [°C]                      | -25 up to +40       |                |
| Casing material                                       | galvanized steel    |                |
| Insulation                                            | 40 mm mineral wool  |                |
| Extract filter                                        | G4                  |                |
| Supply filter                                         | G4, F7 (H13 option) |                |
| Connected air duct diameter [mm]                      | 200                 |                |
| Weight [kg]                                           | 102                 | 104            |
| Heat recovery efficiency [%]                          | from 80 up to 87    |                |
| Heat exchanger type                                   | rotary              |                |
| Heat exchanger material                               | aluminium           |                |
| SEC class                                             | A                   |                |



| Point | Power [W]                         |                                 |                                   |                                 |                                 |
|-------|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|
|       | VUTR 250 P2 EC<br>VUTR 250 P2E EC | VUTR 250 P EC<br>VUTR 250 PE EC | VUTR 350 P2 EC<br>VUTR 350 P2E EC | VUTR 350 P EC<br>VUTR 350 PE EC | VUTR 650 P EC<br>VUTR 650 PE EC |
| 1     | 93                                | 101                             | 172                               | 154                             | 342                             |
| 2     | 89                                | 115                             | 171                               | 151                             | 342                             |
| 3     | 77                                | 80                              | 167                               | 149                             | 342                             |
| 4     | 41                                | 45                              | 125                               | 116                             | 122                             |
| 5     | 39                                | 42                              | 124                               | 116                             | 122                             |
| 6     | 38                                | 40                              | 122                               | 115                             | 122                             |
| 7     | 17                                | 17                              | 98                                | 76                              | 34                              |
| 8     | 17                                | 17                              | 97                                | 75                              | 33                              |
| 9     | 16                                | 16                              | 97                                | 63                              | 33                              |

| Sound pressure level at 3 m distance [dBA] |                                 |                                   |                                 |                                 |
|--------------------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| VUTR 250 P2 EC<br>VUTR 250 P2E EC          | VUTR 250 P EC<br>VUTR 250 PE EC | VUTR 350 P2 EC<br>VUTR 350 P2E EC | VUTR 350 P EC<br>VUTR 350 PE EC | VUTR 650 P EC<br>VUTR 650 PE EC |
| 23 (33)                                    | 21 (31)                         | 33 (43)                           | 31 (41)                         | 36 (46)                         |
| 23 (33)                                    | 21 (31)                         | 33 (43)                           | 31 (41)                         | 36 (46)                         |
| 22 (32)                                    | 20 (30)                         | 32 (42)                           | 30 (40)                         | 35 (45)                         |
| 21 (31)                                    | 18 (28)                         | 31 (41)                           | 27 (37)                         | 31 (41)                         |
| 19 (29)                                    | 17 (27)                         | 28 (38)                           | 26 (36)                         | 29 (39)                         |
| 18 (28)                                    | 17 (27)                         | 27 (37)                           | 26 (36)                         | 29 (39)                         |
| 18 (28)                                    | 16 (26)                         | 27 (37)                           | 24 (34)                         | 27 (37)                         |
| 17 (27)                                    | 16 (26)                         | 23 (33)                           | 21 (31)                         | 24 (34)                         |
| 17 (27)                                    | 16 (26)                         | 23 (33)                           | 21 (31)                         | 24 (34)                         |

### Accessories

| Model                 | G4 panel filter                                                                     | F7 panel filter                                                                     | H13 panel filter                                                                    | LCD control panel                                                                   | Control panel                                                                        | Control panel with Wi-Fi                                                              | VOC sensor (0-10 V)                                                                   | CO <sub>2</sub> sensor (0-10 V)                                                       |
|-----------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                       |  |  |  |  |  |  |  |  |
| VUTR 250 P2(E) EC A21 | SF 280x180x48<br>G4                                                                 | SF 280x180x48<br>F7                                                                 | SF 280x180x48<br>H13                                                                |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |
| VUTR 250 P(E) EC A21  | SF 260x220x48<br>G4                                                                 | SF 260x220x48<br>F7                                                                 | SF 260x220x48<br>H13                                                                |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |
| VUTR 350 P2(E) EC A21 | SF 372x180x48<br>G4                                                                 | SF 372x180x48<br>F7                                                                 | SF 372x180x48<br>H13                                                                | A25                                                                                 | A22                                                                                  | A22 Wi-Fi                                                                             | DPWQ30600                                                                             | DPWQ40200                                                                             |
| VUTR 350 P(E) EC A21  | SF 320x235x48<br>G4                                                                 | SF 320x235x48<br>F7                                                                 | SF 320x235x48<br>H13                                                                |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |
| VUTR 650 P(E) EC A21  | SF 378x295x48<br>G4                                                                 | SF 378x295x48<br>F7                                                                 | SF 378x295x48<br>H13                                                                |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |

| Model                 | Humidity sensor (0-10 V)                                                            | Humidity sensor (NO)                                                                | Humidity sensor (0-10 V)                                                            | Kitchen hood                                                                        | Back valves                                                                          | Air dampers                                                                           | Clamps                                                                                | Electric actuator                                                                     |                                                                                       |
|-----------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                       |  |  |  |  |  |  |  |  |  |
| VUTR 250 P2(E) EC A21 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| VUTR 250 P(E) EC A21  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| VUTR 350 P2(E) EC A21 | DPWC11200                                                                           | HR-S                                                                                | HV-2                                                                                | KH-1                                                                                | KOM 160                                                                              | KRV 160                                                                               | C 160                                                                                 | LF230                                                                                 | TF230                                                                                 |
| VUTR 350 P(E) EC A21  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| VUTR 650 P(E) EC A21  |                                                                                     |                                                                                     |                                                                                     |                                                                                     | KOM 200                                                                              | KRV 200                                                                               | C 200                                                                                 |                                                                                       |                                                                                       |

VENTS  
AIR HANDLING UNIT WITH  
VUTR P EC  
HEAT RECOVERY SERIES  
VUTR PE EC

Application options

