

VENTILATION UNIT FOR DEMAND-CONTROLLED MECHANICAL EXTRACTION

Healthbox 3.0 is at the center of the energy-efficient ventilation concept C+.
 It controls the fresh air supply to dry dwellings through window ventilation and the mechanical extraction of stale air via Healthbox 3.0.

RANGE OF APPLICATION

- Incorporating demand-controlled ventilation in a dwelling/apartment/etc.
- Suitable for use in new buildings and renovation projects.
- A suitable system to achieve a worthwhile gain in E-level (Flemish energy performance requirement), thus bringing the dwelling up to the legally required E-level or better.
- SmartZone option: direct control of air quality can be achieved in all rooms in the dwelling by extracting stale air from dry rooms as well. This will achieve the maximum E-level gain in the system.
- Optimum operation of the C+ ventilation system can only be guaranteed if the following components are in place and matched to one another:
 - Fresh air supply via self-regulating Renson window ventilators in dry spaces
 - Air throughput
 - Extraction of stale air via the Healthbox 3.0



Basic form

MAIN FEATURES

Healthbox 3.0 consists of a fan unit with control valves to be connected externally.

- **Demand-driven ventilation**
 - Guaranteed good air quality with heat savings of up to 60%*
 - Built-in sensors measure indoor air quality 24 hours a day in the extracted air flow
 - Extraction flow rate controlled on the basis of measured indoor air quality
- **Central fan**
 - Low-noise and energy-efficient EC motor
- **Up to 11 rooms can be connected**
- **Ease of installation**
 - The installer app guides the installer through the start-up process:
 - Automatic calibration appreciably reduces installation time
 - Configurable control valves: extraction flow rate can be set individually for each room
 - Smart / compact air duct management in small spaces thanks to the valve collectors
 - Digital generation of installation report
- **SmartConnect**
 - Healthbox 3.0 communicates with the user app, installer app and other devices/appliances in a smart home
- **Design extraction points**
 - Design extraction points (recessed or surface-mounted) can be fitted without control valves in the rooms



Renson Ventilation Set-up



* in relation to the nominal flow rate, depending on configuration and occupancy

ITEM CODE

Item code	Designation	Main components
66060102	Healthbox 3.0 kit	<ul style="list-style-type: none"> Healthbox 3.0 fan unit Control valves: kitchen - bathroom - toilet
66060114	Healthbox 3.0 kit CO ₂	<ul style="list-style-type: none"> Healthbox 3.0 fan unit with central CO₂ detection Control valves: kitchen - bathroom - toilet
66060103	Healthbox 3.0 SmartZone kit	<ul style="list-style-type: none"> Healthbox 3.0 fan unit Control valves: kitchen - bathroom - toilet - two bedrooms

SYSTEM SPECIFICATIONS

Type of ventilation	Mechanical demand-controlled extraction
[Max.] ventilation flow rate	475 m³/h [at 135 Pa] 430 m³/h [at 200 Pa] <i>Fan specifications: see technical drawings</i>
Supply voltage	230 VAC ±10% [50 Hz, 60 Hz] <i>Mains plug included [length: ± 2 m]</i>
Fan unit rated power - At max. flow rate of 150 m³/h: - At max. flow rate of 225 m³/h: - At max. flow rate of 325 m³/h: - At max. flow rate of 400 m³/h: - At max. flow rate of 475 m³/h:	28 watts 35 watts 53 watts 80 watts 85 watts <i>See graphs</i>
Dimensions: - Fan unit without control valves - Fan unit with control valves	390 x 443 x 200 mm [LxWxH] 567 x 567 x 200 mm [LxWxH] <i>See technical drawings</i>
Weight: - Fan unit without control valves - Control valve + adaptor	3992 g 240 g + 65 g
Connection dia. for intake duct	Choice via adaptor: 80 and/or 125 mm dia.
Connection dia. for extraction duct	Choice via adaptor: 125 or 150 mm dia. [160 mm dia. via optional ring]
Fan	Extremely quiet & energy-efficient EC motor with 180 mm dia. impeller. Active variable pressure control: the lowest possible pressure level is set in each case consistent with the required extraction flow rates.
Maximum fan operating pressure	350 Pa - Recommended operating pressure at design flow rate: ≤ 200 Pa
Calibration readout	Via user app, installer app & Renson My-Lio-professional web portal
Automatic calibration of ventilation flow rates <i>[patented]</i>	Takes place in 2 successive stages: - Stage 1: pressure drop readings taken automatically in all air ducts - Stage 2: valve positions for air distribution calculated automatically
Automatic calibration time	- Calibration of 2 to 5 control valves: up to ± 3 minutes - Calibration of 6 to 8 control valves: up to ± 5 minutes - Calibration of 9 to 11 control valves: up to ± 6 minutes
Maximum number of connection points for extraction: - Basic form - Using valve collectors	7 11 <i>[subject to a few limiting conditions]</i>
Valve collector	1 or 2 valve collectors to be connected to the fan unit, with 1 to 3 control valves to be connected to each valve collector. The valve collector can also be connected remotely from the fan unit. Electrical connection [UTP cable Cat 5e, wire gauge 24AWG, 30 metres max.].

Connections	- 1x Ethernet connection - 2x USB connection <i>[USB dongle for Wi-Fi connection included]</i> - Inputs: 3x DIGITAL, 1x ANALOGUE [0-10 V]
Sound power level [LWA] [point of reference: Ecodesign]	Qmax 150m³/h: 32 dB(A) Qmax 225m³/h: 34 dB(A) Qmax 325m³/h: 39 dB(A) Qmax 400m³/h: 43 dB(A) Qmax 475m³/h: 47dB(A)
Breeze function	Temporary nominal ventilation [= demand control deactivated] at times when there is a given cooling need [= optimum shading factors]

DEMAND-CONTROLLED VENTILATION CONTROL

- The **control valves** provide individual demand control for each connected room. The control is applied consistent with the chosen country setting.

Air quality detection [CO ₂ , humidity and/or VOC]	Via electronic sensors in control valves. The sensors measure indoor air quality 24 hours a day in the exhaust air flow for each room.
Automatic control of ventilation extraction flow rate for each room	The stepper motor positions the internal valve damper based on measured sensor values. The extraction flow rate is controlled in this way consistent with air quality.
Ventilation extraction flow rate control algorithm [BE]	- CO ₂ detection: proportional - VOC detection: dynamic - Humidity detection: dynamic + proportional

- Healthbox 3.0 version with **central CO₂ detection** on the main board






Air quality detection [CO ₂]	Via electronic sensor centrally on the PCB. The sensor measures the CO ₂ concentration 24 hours a day in the exhaust air flow for each humid room.
Automatic control of ventilation extraction flow rate	In case of too high CO ₂ concentration, all humid rooms are ventilated at nominal flow rate.
Ventilation extraction flow rate control algorithm [BE]	Dynamic

CONTROL VALVES

There are a number of predefined control valves. The desired nominal flow rate for each control valve can be set via the installer app. The make-up of the control valves is virtually identical, the only differentiation being:

- Plug-in printed circuit board with sensors
- Sticker on the stepper motor that shows the room to be connected



Predefined control valves				
Sticker on stepper motor	Room to be ventilated (BE)	CO ₂ detection	Humidity detection	VOC detection
	Bathroom with toilet <i>Wellness, garage, basement, etc.</i>	—	✓	✓
	Laundry room <i>Shower room, bathroom without toilet, etc.</i>	—	✓	—
	Toilet <i>Storeroom, technical rooms, workshop, walk-in wardrobe, hall/corridor, etc.</i>	—	—	✓
	Kitchen (open/closed)	✓	✓	—
	Bedroom <i>Living room, office, study, hobby room, waiting room, leisure area, dining room, etc.</i>	✓	✓	—

OTHER FEATURES

Automatic fault indication	- Via user app - Via installer app and Renson My-Lio-professional web portal (installer): fault indication reported during start-up phase
Automatic software updates	If Healthbox 3.0 is connected to the internet
User & installer app	Can be downloaded free of charge from Play Store [Android] and App Store [Apple] - User app: Healthbox 3.0 - Installer app: Renson Ventilation Set-up
Integration into smart home & home automation	- Smart home: via API - Home automation: switch module (3 connections)
Access to Renson My-Lio-professional web portal	- User: if Healthbox 3.0 is connected to the internet, via account - Installer: via account
Fire protection (= release pressure in system with valves shut)	✓
EU declaration of conformity	✓
EPB	Reduction factors according to table 2 of the flat rate table - Listed in EPB product data base - FAN AND VENTILATION GROUP - Listed in EPB product data base - REQUIRED VENTILATION SYSTEMS

CONTROL

- User app 'Healthbox 3.0':
 - Readout of air quality in dwelling down to room level
 - Facility for personalisation and [temporary] manually changing ventilation extraction flow rate down to room level
- Zero potential multi-position switch for manually changing ventilation extraction flow rate



HEALTHBOX 3.0 INSTALLATION

Installation

Room	Indoor installation, preferably in insulated room. - Ambient temperature: -10°C to 50°C - Relative humidity < 90%
Mounting options	- Can be mounted in any attitude: upright, flat (above/below), angled - Four mounting options: wall mounted, ceiling mounted, floor mounted, cord mounted (suspended, cover on top)
Exhaust direction	By using valve collectors, the exhaust direction can always be fitted in any desired direction => reduced pressure drop
Exhaust in central extraction duct of an apartment building	✓ If an (auxiliary) roof fan is used: constant pressure control
Accessibility	Keep easily accessible for maintenance and service; e.g., inspection hatch provided in case of installation in false ceiling

The fan unit requires a minimum of 2 control valves to be connected to it.

Start-up

Start-up via installer app	The app guides the installer through the start-up, enabling a reliable high-quality system to be installed rapidly: - Display of control valve configuration - Automatic calibration start-up, with facility for adjusting nominal flow rate + indication of remaining time - Overview of completed installation + digital generation of installation report
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Renson My-Lio-professional web portal

The Renson My-Lio-professional web portal guides the installer throughout project management and monitoring, from start-up to completion. Some features:

- Project creation
- Project address details, installer on duty, installation parameters, etc.
- Sending installation report digitally

This will bring about digitisation and administrative simplification of paperwork.

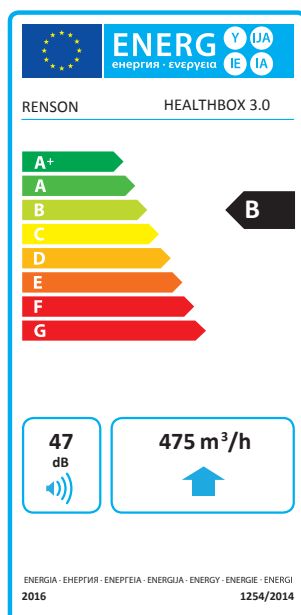
RENSON OPTIONS



Extraction vents	Design extraction points (recessed or surface-mounted)
Easyflex air ducts	Air transport ducts, airtightness class D
Acoudec	Air hose with high acoustic insulation properties
Roof exhaust / wall louvre	Suitable feed-through fittings with low pressure drop

For more information, please consult our company website www.renson.eu [products → mechanical ventilation].



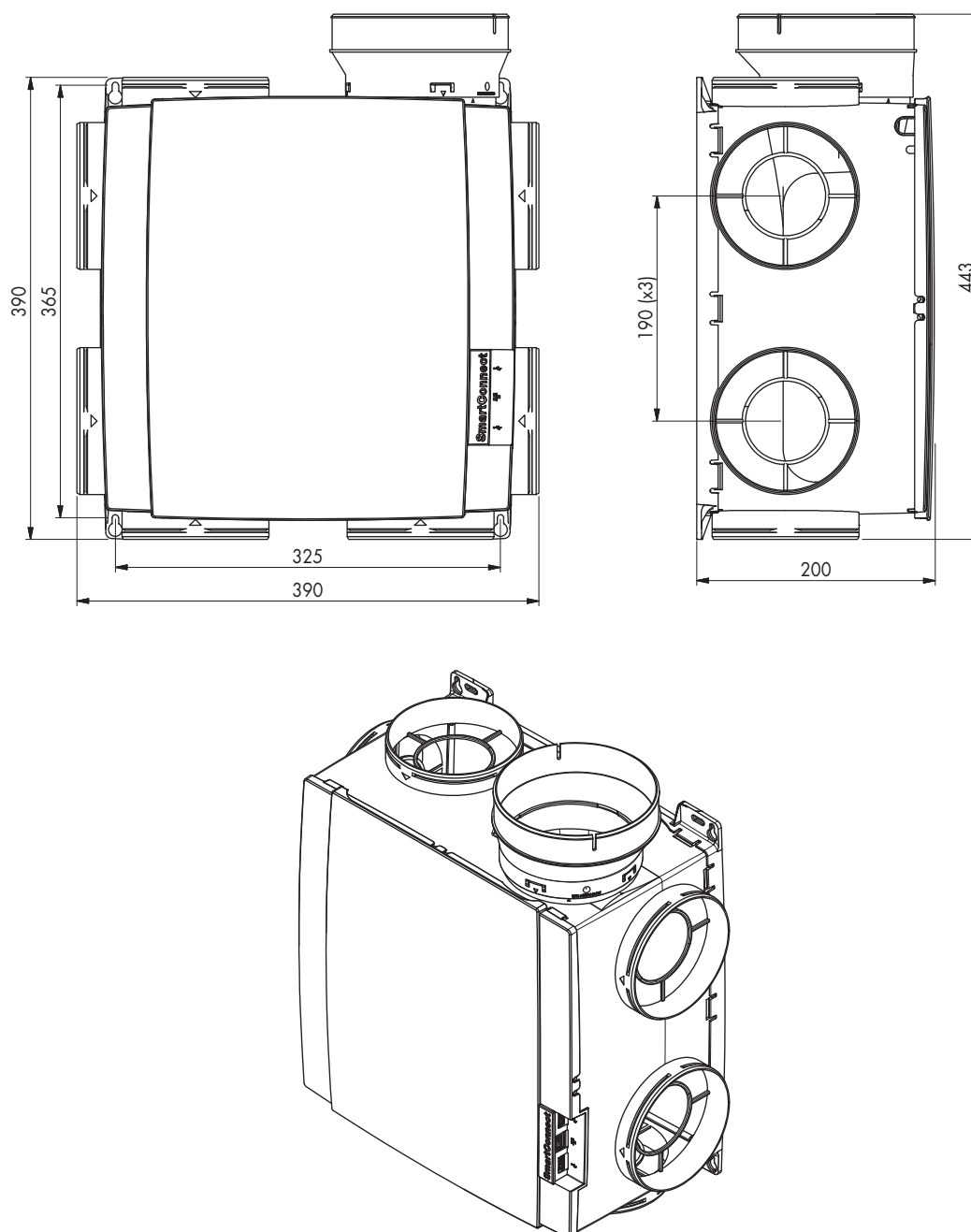
ECOLABEL



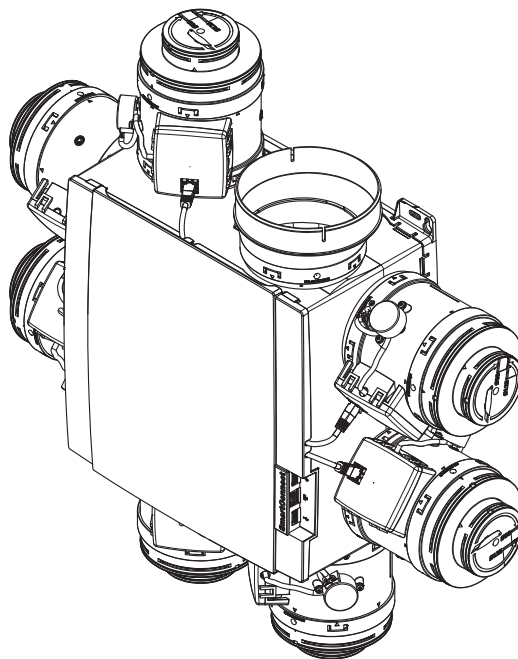
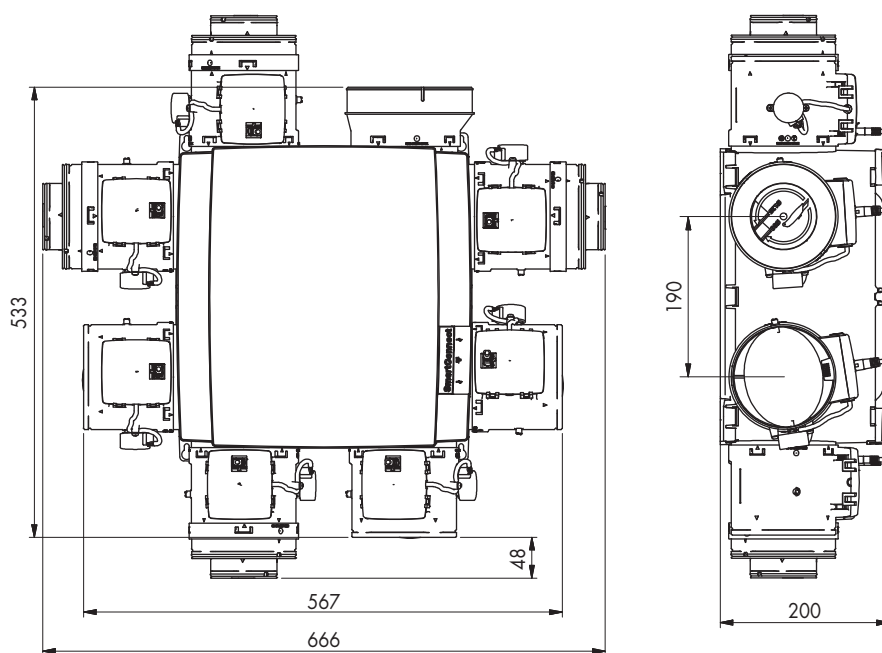
	
150 m³/h	32 dB
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TECHNICAL DRAWINGS

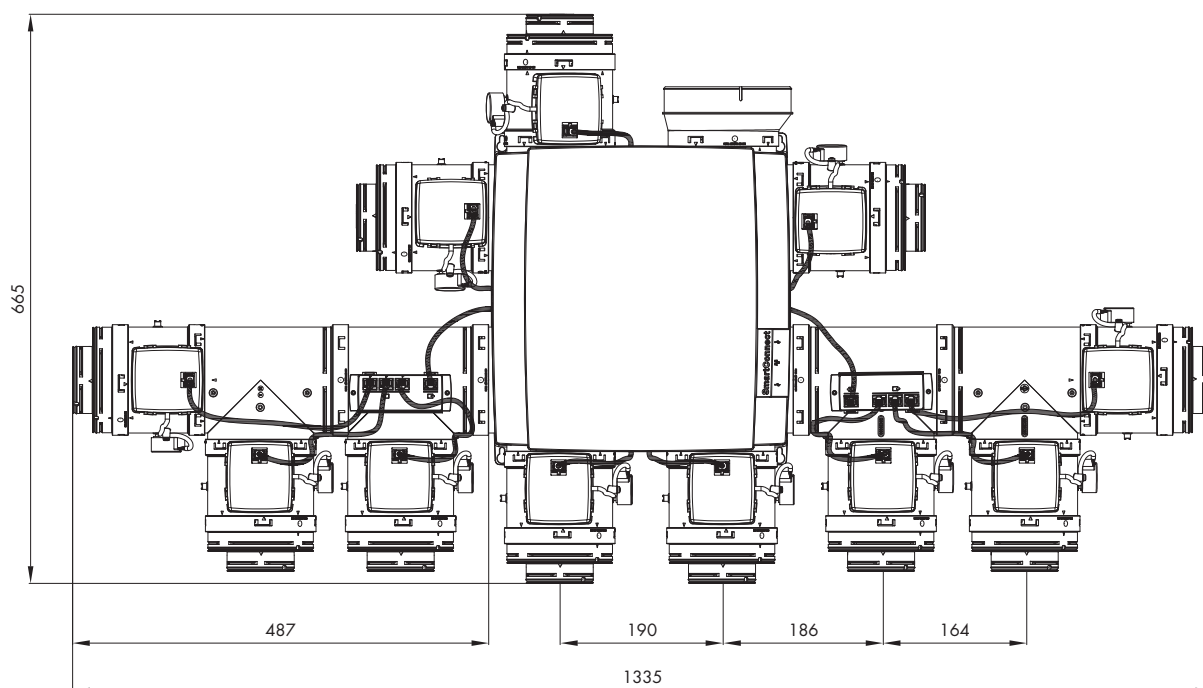
- Fan unit without control valves



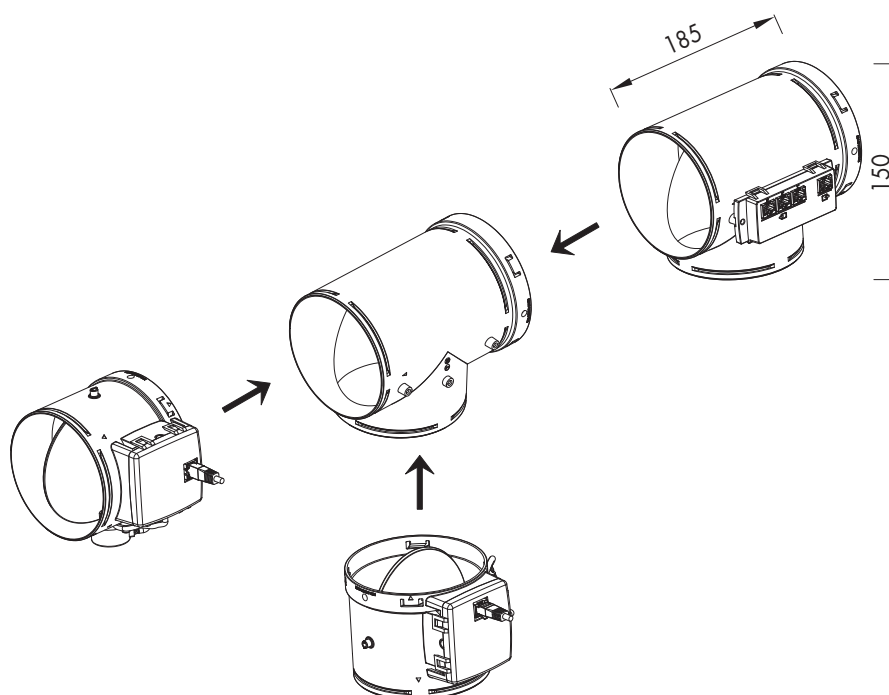
- Fan unit with control valves



- Healthbox 3.0 with 11 control valves

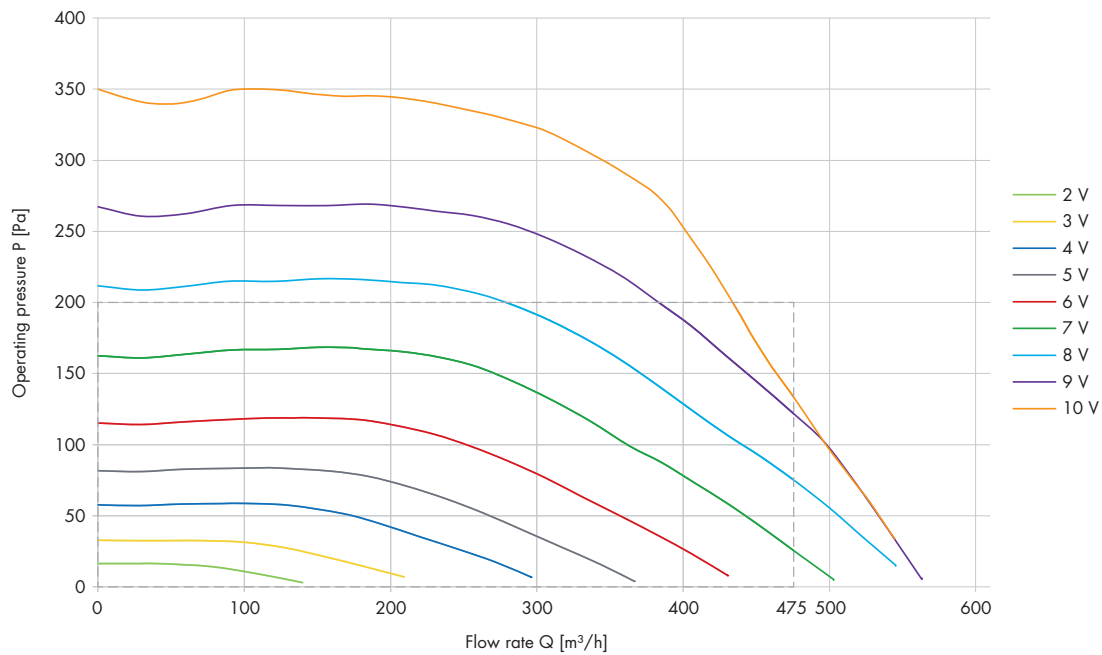


- Valve collector



GRAPHS

• Fan unit characteristics



• Fan power curves

