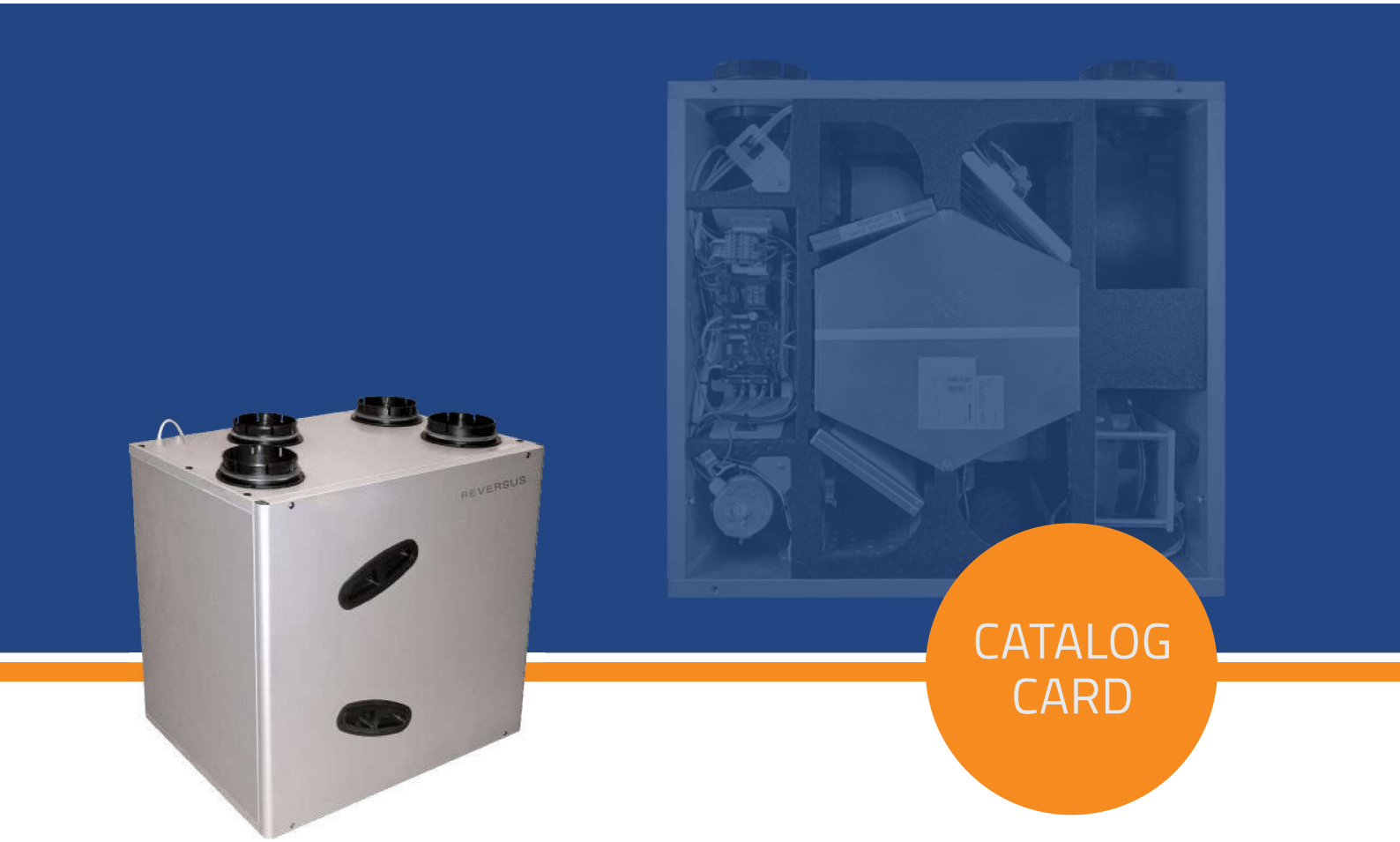
Energy-saving heat recovery ventilation unit



CATALOG CARD

REVERSUS+

www.aerovent.pl

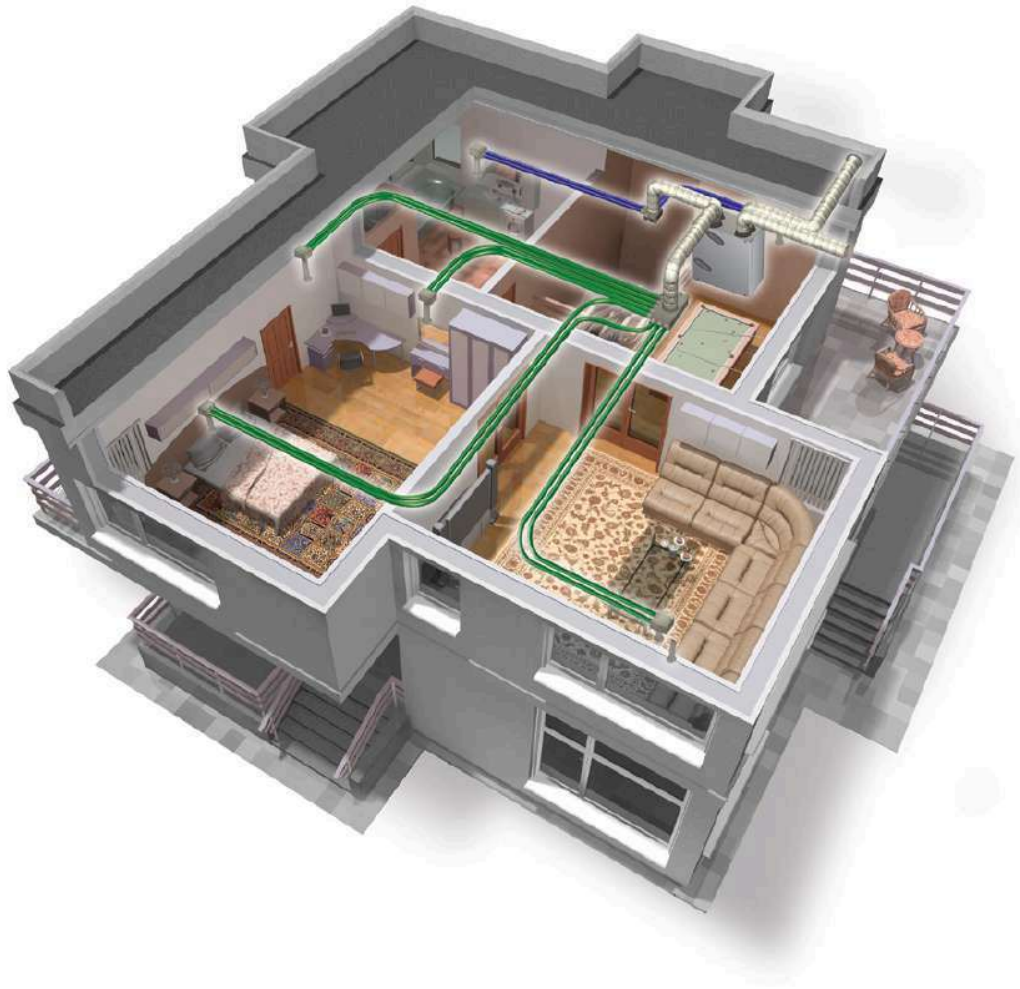
aeroVent
REKUPERATORY I WENTYLACJA

We have been designing and manufacturing ventilation systems for single family homes for years. We offer complete systems, from the ventilator you see in every room to the recuperator, which is responsible for air exchange and heat recovery, to make your home not only healthy but also energy efficient. We know how important home comfort is, how important silence is. How important it is that you don't hear the ventilation.

We know that when you listen to music, you only want to hear music. When you take a deep breath, you want to smell the fresh air even when there are threatening smog alerts. Reversus recuperators are equipped with filters that can trap up to 70% of ePM2.5 particles, responsible for the most troublesome air pollutants. Let your home be a healthy home.

Nobody likes to pay high bills, so we've designed and insulated our recuperators so that they don't require additional electric heaters for defrosting. Your electricity bills will be noticeably lower.

RESIDENTIAL VENTILATOR UNIT WITH DUAL FLOW AND HIGH YIELD HEAT RECOVERY



OUR HEAT RECOVERY VENTILATION UNITS CAN RECOVER

95%

OF ENERGY!

Reversus+

HIGH EFFICIENCY HEAT RECOVERY VENTILATION UNIT

Reversus 450+

Reversus 600+

Structure

REVERSUS+ is manufactured using a self-supporting structure in 25 mm or 36 mm thick sandwich panels, insulated in polyurethane foam. The external part of the structure is manufactured in plastofilmed sheet metal in grey. Inside REVERSUS 300 and 450 is in expanded polypropylene (material that ensures a high level of thermal insulation between air flows) while the interior of REVERSUS 200, 600 and 650 is made in Aluzinc. The access to filters (ePM2,5 70% (F7) for the renewed air flow and ePM10 50% (G4) for the extraction air flow) is particularly easy thanks to the two specific openings on the front panel.

The enthalpy heat exchanger allows to recover sensible and latent energy from the air, that is, to transfer the water vapor from one flow to the other: the moist air water vapor is absorbed on a side of the porous membrane of the exchanger and transferred to the air on the other side. No transmission of vapors, odors, etc. It is not necessary to drain condensate, routine maintenance.

Performance

Equipped with a counter current heat exchanger in thermoplastic material (polystyrene) and a counter current heat exchanger in alluminium and electronic backward blade ventilators. The total bypass as standard allows favourable climatic conditions to be taken advantage of outside the building for free cooling (or free heating) in automatic mode.

Ideal for cold climates because the heated supply air is dry, resulting a dry indoor environment (without enthalpy exchanger); in summer removes moisture from the air inlet (more hot and humid then indoor air). The unit is prepared for installation inside buildings with an ambient temperature between 0°C and 45°C.

It can be installed on a wall with connections for renewal air and expulsion on the upper part; for connections to supply and extraction ducts, you can choose to use the connections available on the top or bottom of REVERSUS (or both).

Control

Advanced control system for Reversus+ HRVU

Reversus+ heat recovery units are supplied with an advanced control system. The built-in automation of the recuperator ensures:

- control of the fans,
- protection against freezing,
- the ability to integrate with a kitchen hood and a home alarm system,
- cooperation with air quality sensors embedded in the control panel,
- cooperation with external* sensors: humidity, CO_2 concentration,
- control of the bypass damper and ground heat exchanger (GHE),
- control of additional accessories, e.g., heaters, coolers,
- integration with smart home management systems – Smart Home,
- MOD-BUS communication.

Reversus units come with a Standard Wi-Fi control panel included in the purchase price. Additionally, they can be equipped with a Comfort Wi-Fi control panel featuring a touchscreen, which visualizes the device's operation.

Bluetooth and Wi-Fi communication allow the use of an iOS or Android phone to control the unit's operation. The phone then takes over the functions of the control panel, enabling remote operation of the recuperator – locally within Bluetooth range or globally via the internet**.

The basic control panel, Standard Wi-Fi, enables measurement of temperature, CO_2 concentration, and relative humidity in the room. This allows for fully automatic operation of the recuperator, depending on the air quality in the controlled room.

Standard Wi-Fi controller panel

Comfort Wi-Fi controller panel

Description	Standard Wi-Fi	Standard BT	Comfort Wi-Fi
Control from an Android/iOS phone from any location	+	–	+
Control via a computer browser from any location	+	–	+
Control from an Android/iOS phone locally within Bluetooth range	+	+	+
Control of fan operation (on/off, 3-level adjustment)	+	+	+
Smooth fan speed adjustment ***	–	–	+
Programming weekly operating schedules ***	–	–	+
Switching operating modes: party, fireplace, ventilation, schedules ***	–	–	+
Reminder about the need to replace filters	+	+	+
Integrated room temperature sensor	+	+	+
Integrated CO_2 concentration sensor	+	+	–
Integrated relative humidity sensor rH%	+	+	–

** External sensors replace the role of built-in sensors.*
*** The recuperator must be within Wi-Fi network range.*
**** Always available from a connected BT or Wi-Fi phone.*

Specifications of the heat recovery ventilation unit

		Reversus 200+	Reversus 300+	Reversus 450+	Reversus 600+	Reversus 650+	Reversus 1300+
Catalog number		R200	R300	R450	R450	R650	R1300
Catalog number (enthalpic version)		R200E	R300E	R450E	R600E	R650E	R1300E
Capacity at a compression of 150 Pa	[m³/h]	200	295	430	580	660	1318
Energy class		A	A/B(E)	A/B(E)	A	A	A
Maximum heat recovery efficiency	[%]	92	95	95	96	95	95
Heat recovery efficiency according to standard EN13141-7	[%]	84,5	86,1	83,1	83,6	82,7	81,8
Noise level	[dB]	57	47	47	52	61	70
Electrical power of fans	[W]	2x50	2x85	2x170	2x170	2x170	2x349
Current for the hrvu	[A]	1,1	1,6	3,5	3,5	3,5	6,0
Curb weight	[kg]	35,6	43	45	75	85	139
Warranty	[years]	2					
Electric pre-heater (version R, e.g. R200R or R200ER)		Optional					
Standard Controller (cat. no. BW10001)		Required choice between BW/CL (10001)					
Comfort+ Controller (cat. no. CL10001)							
Control of ground heat exchanger (cat. no. GWC20024)		Optional					
Internet communication module (cat. no. GSMEV1000)		Optional					
Set of 4 stands for placing the unit on the floor (cat. no. 0P4G)		Optional	Optional	Optional	Optional	Standard	Standard
Wall fastening system (cat. no. WI10001)		Standard	Standard	Standard	Standard	—	—

(E) enthalpic version

Reversus HRVU

Energy class

Unit	Controller	Energy class
Reversus 200+	Basic	A
	Basic + comfort sensor	A
Reversus 300+	Basic	A
	Basic + comfort sensor	A
Reversus 450+	Basic	B
	Basic + comfort sensor	A
Reversus 600+	Basic	B
	Basic + comfort sensor	A
Reversus 650+	Basic	A
	Basic + comfort sensor	A
Reversus 1300+	Basic	A
	Basic + comfort sensor	A

Unit	Controller	Energy class
Reversus 200 Enthalpic	Basic	A
	Basic + comfort sensor	A
Reversus 300 Enthalpic	Basic	B
	Basic + comfort sensor	B
Reversus 450 Enthalpic	Basic	B
	Basic + comfort sensor	B
Reversus 600 Enthalpic	Basic	B
	Basic + comfort sensor	A
Reversus 650 Enthalpic	Basic	B
	Basic + comfort sensor	A
Reversus 750 Enthalpic	Basic	B
	Basic + comfort sensor	A

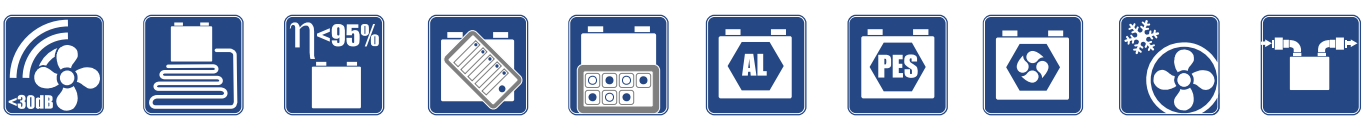
Reversus+ HRVU are equipped with an innovative frost protection system (Eco-frost) that utilizes the warm air stream exhausted from the building to safeguard the heat exchanger against the risk of frosting. The Eco-frost system ensures a significant reduction in electrical energy consumption as it does not require the operation of an electric heater installed in front of the heat exchanger, which aims to heat the air drawn from outside the house.

The recuperator's automation adjusts the proportions of the air streams to simultaneously guarantee the highest possible level of heat recovery and protect the recuperator from freezing. For special applications, the manufacturer has provided the option of installing an electric heater whose heating power smoothly adjusts to the device's current needs based on the flow rate and temperature.

Reversus+ parameters

Unit	Catalogue number	Capacity at a compression of 150 Pa [m³/h]	Counterflow heat exchanger material	Maximum heat recovery efficiency [%]	Noise level [db]	Own weight [kg]
Reversus 200+	R200	205	Aluminium	84,4	57	35,6
Reversus 300+	R300	295	Polyester	86,1	47	43
Reversus 450+	R450	430	Polyester	83,1	47	45
Reversus 600+	R600	580	Aluminium	83,6	52	75
Reversus 650+	R650	650	Aluminium	82,7	61	85
Reversus 1300+	R1300	1318	Aluminium	81,8	70	139

Main features of heat recovery ventilation



Quiet operation

Ground exchanger operation

Exchanger efficiency

Control via internet

Weekly programming

Exchanger aluminium

Exchanger polyester

Enthalpy exchanger

Freeze resistance

Cooperation with a water heater or water cooler

Electrical data

Unit	Fan				Unit Reversus / Ent	
	Power (W)	Supply	Current max. (A)	Insulation class	Supply	Current max. (A)
Reversus 200+	2 x 50	230 V, 50/60 Hz 1F	2 x 0,46	IP 44	230 V, 50 Hz 1F	1,1
Reversus 300+	2 x 85	230 V, 50/60 Hz 1F	2 x 0,75	IP 54	230 V, 50 Hz 1F	1,6
Reversus 450+	2 x 170	230 V, 50/60 Hz 1F	2 x 1,65	IP 54	230 V, 50 Hz 1F	3,5
Reversus 600+	2 x 170	230 V, 50/60 Hz 1F	2 x 1,65	IP 54	230 V, 50 Hz 1F	3,5
Reversus 650+	2 x 170	230 V, 50/60 Hz 1F	2 x 1,5	IP 54	230 V, 50 Hz 1F	3,2
Reversus 1300+	2 x 349	230 V, 50/60 Hz 1F	2 x 3,0	IP 54	230 V, 50 Hz 1F	6,0

The Reversus+ ventilation unit operates based on a counter-current heat exchanger with forced air circulation driven by two EC (electronically commutated) motor fans. The operator panel provides control over the motor speed, thus controlling the air exchange intensity. It allows for smooth speed adjustment, operation with predefined special modes, or complete motor shutdown. The panel also displays the current temperature at its installation location and enables programming of the unit's operation schedules.

The heat exchanger used in the unit allows for the recovery of thermal energy from the air exhausted from the room and transfers it to the fresh air drawn from the outside.

The ventilation unit is equipped with a heat exchanger bypass, which allows for the intake of fresh air with limited heat exchange. Its application is particularly relevant during the summer period, especially when combined with a ground heat exchanger. The cooled air is directly supplied to the house without being heated by the stream of warm air exhausted from the house. The bypass is automatically controlled based on the desired temperature setting or manually from the menu.

The controller located inside the unit includes automation for controlling the temperature of the outside air intake and activating the anti-freeze system if necessary. This is to prevent a situation where negatively temperatured air drawn from the outside could freeze the moisture exhausted from the room in the heat exchanger.

The unit is equipped with safety systems:

- to prevent freezing of the heat exchanger,
- to prevent operation at too low or high temperatures of the outside air,
- to prevent the supply of air with excessively low or high temperatures into the rooms.

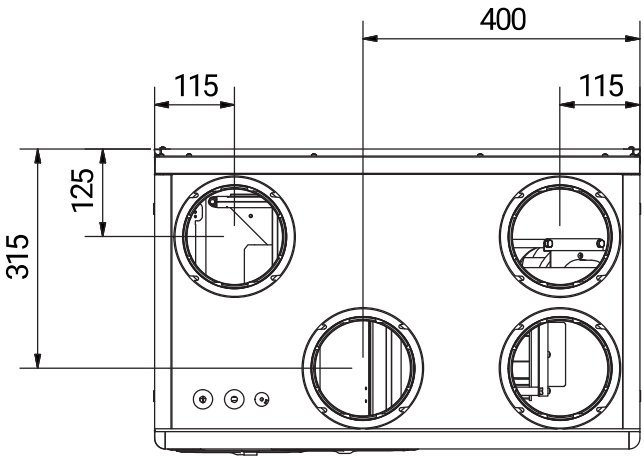
Counter-flow heat recovery ventilation unit

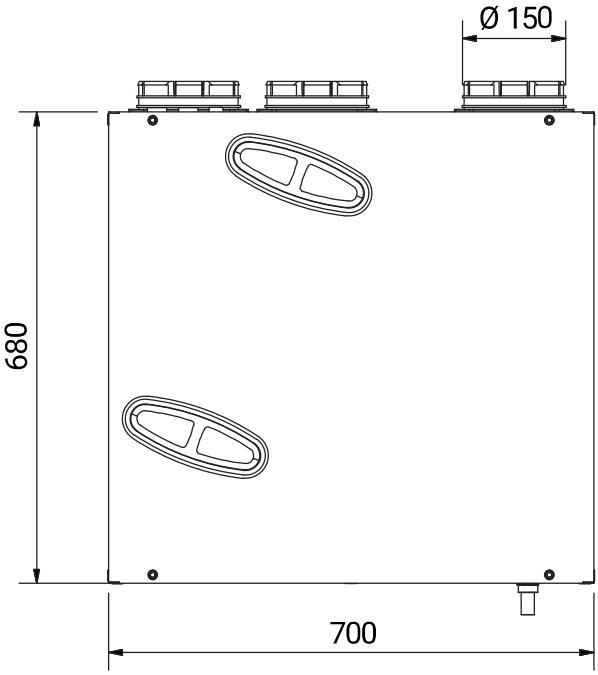
Reversus ventilation units utilize counter-flow heat exchangers for heat recovery, ensuring excellent thermal efficiency of the device while maintaining moderate airflow resistance.

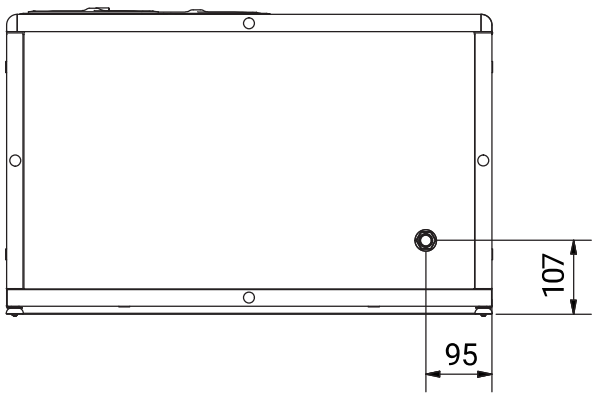
An intelligent frost protection system guarantees a compromise between the operational costs of the ventilation unit and the heat recovery efficiency.

The installation and operating instructions of the Reversus air handling unit are available at:
www.aerovent.pl

Reversus 200+ HRVU







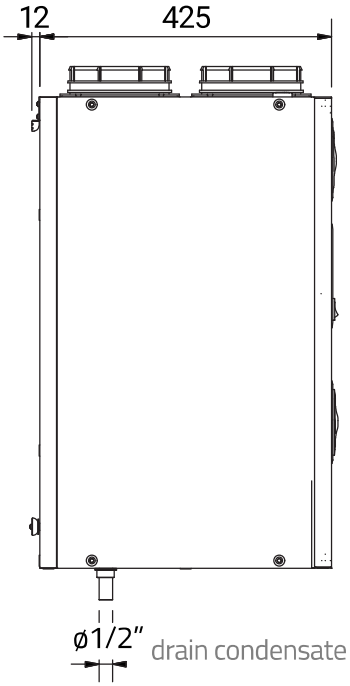
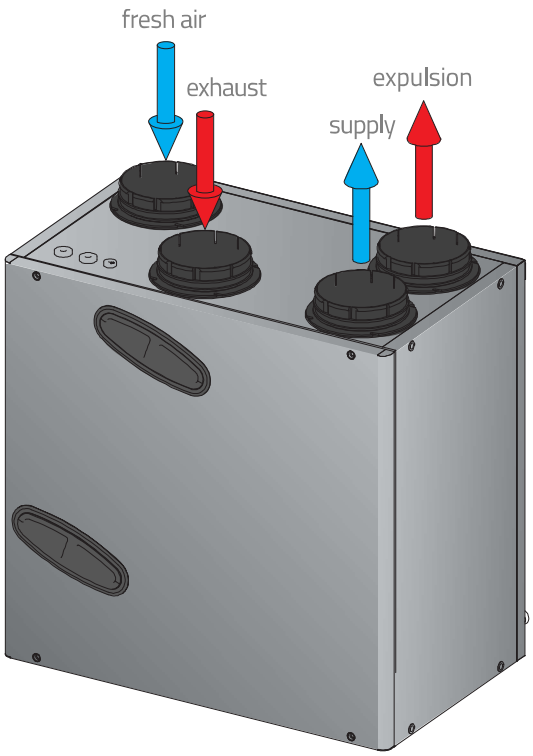


Diagram of the connection of ventilation ducts to the Reversus 200+ HRVU.



Reversus 200+	weight 35,6 kg
Reversus 200E+	weight 35,6 kg

Dimensions in mm.

Reversus 200+ & 200E+ performances graph

(UNI EN 13141-7)

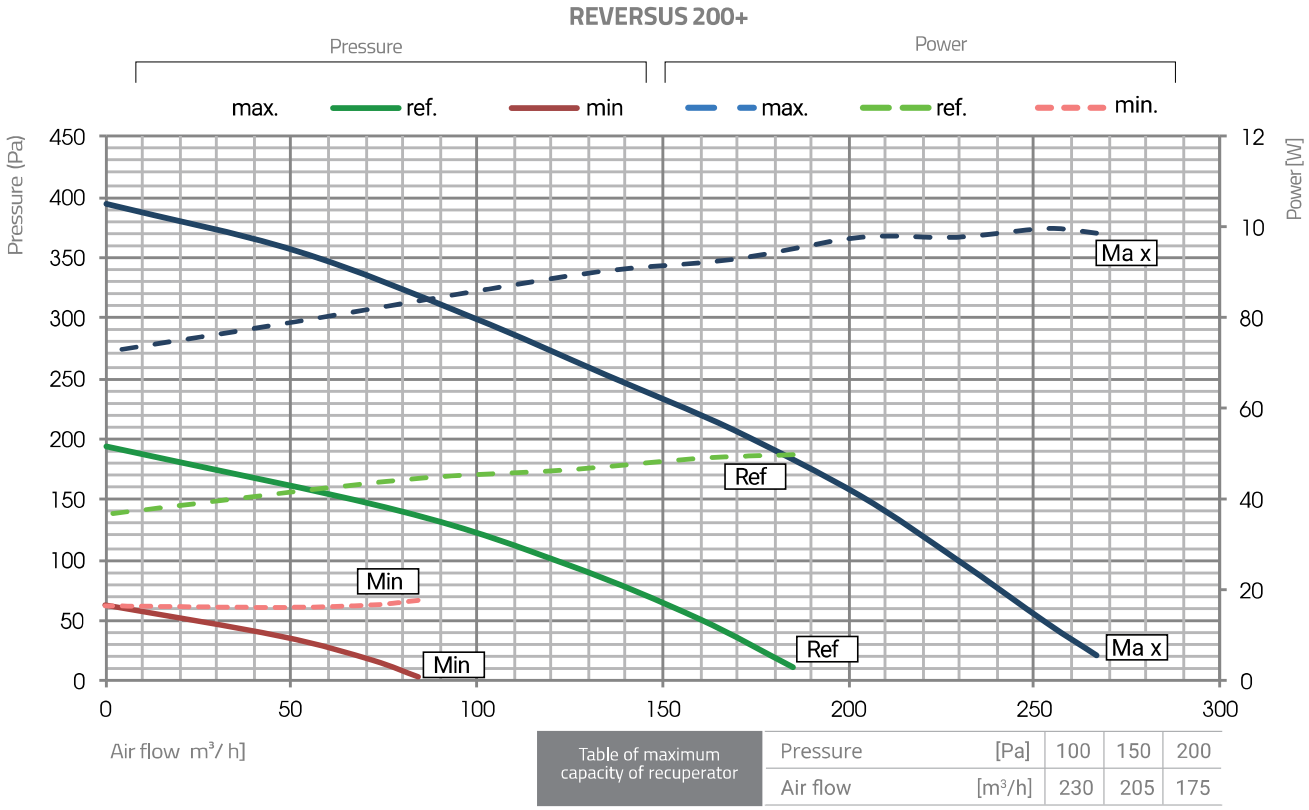


Table of maximum capacity of recuperator					
Pressure	[Pa]	100	150	200
Air flow	[m³/h]	230	205	175

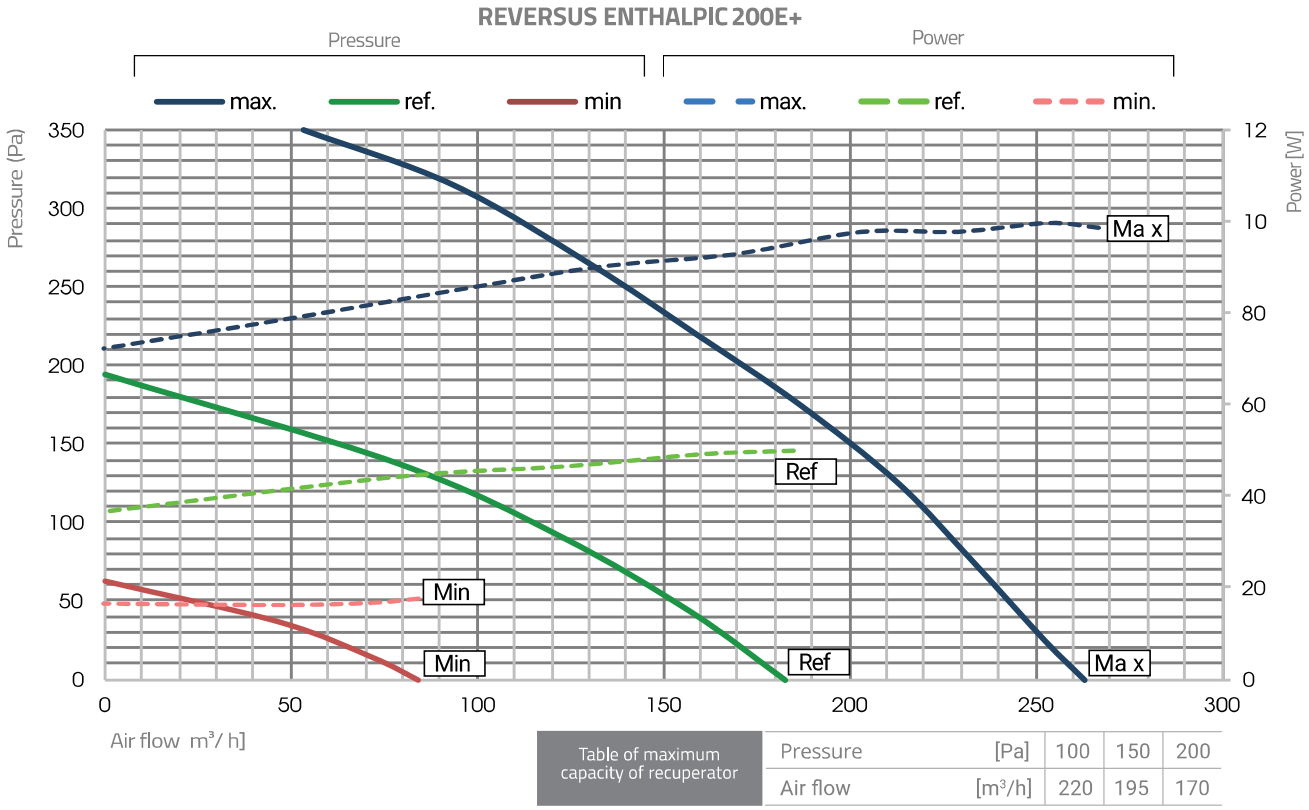
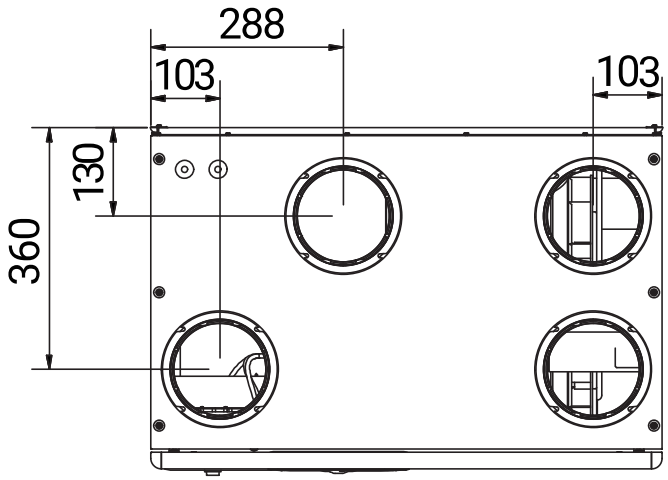
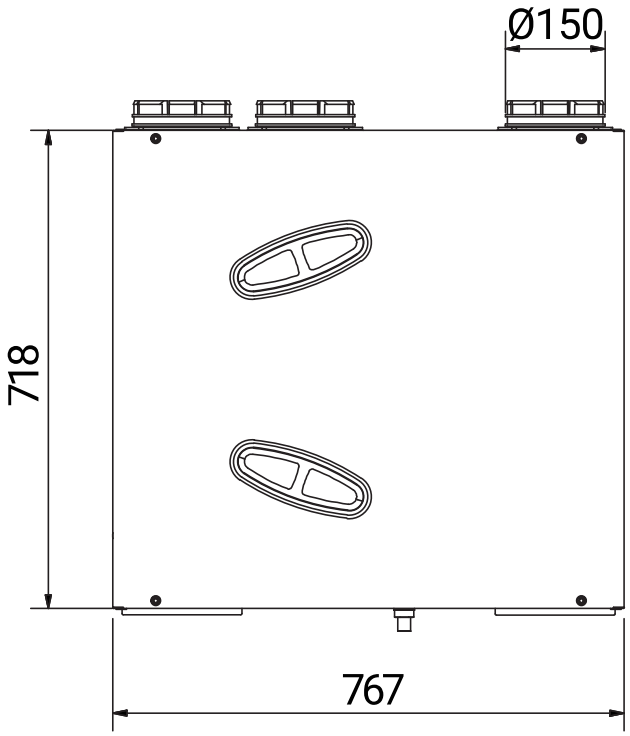


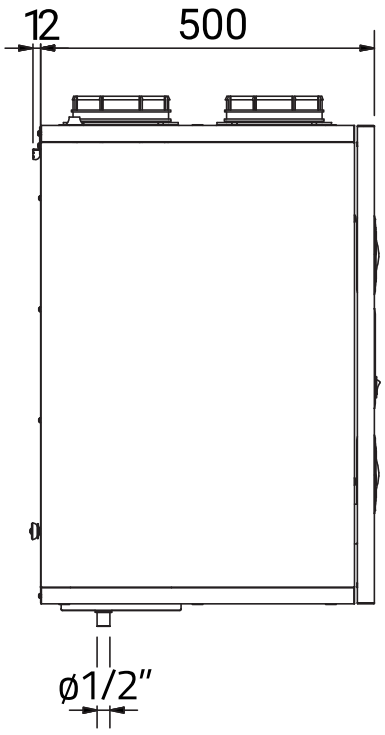
Table of maximum capacity of recuperator					
Pressure	[Pa]	100	150	200
Air flow	[m³/h]	220	195	170

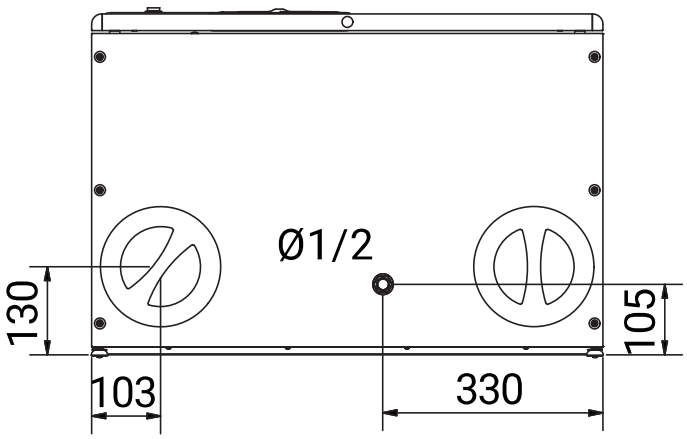
Reversus 300+ & **450+** HRVU



Reversus 200, 300, 450, 600 HRVU are supplied ex-factory with fixing rails for fixing the unit to the to the wall. If it is necessary to position the heat recovery ventilation on the ceiling or floor, the use of dedicated bases is recommended.
Cat. no. (0V013).







Reversus 300+	weight 43 kg
Reversus 300E+	weight 48 kg
Reversus 450+	weight 45 kg
Reversus 450E+	weight 50 kg

Dimensions in mm.

Reversus 300+ & **300E+** performances graph

(UNI EN 13141-7)

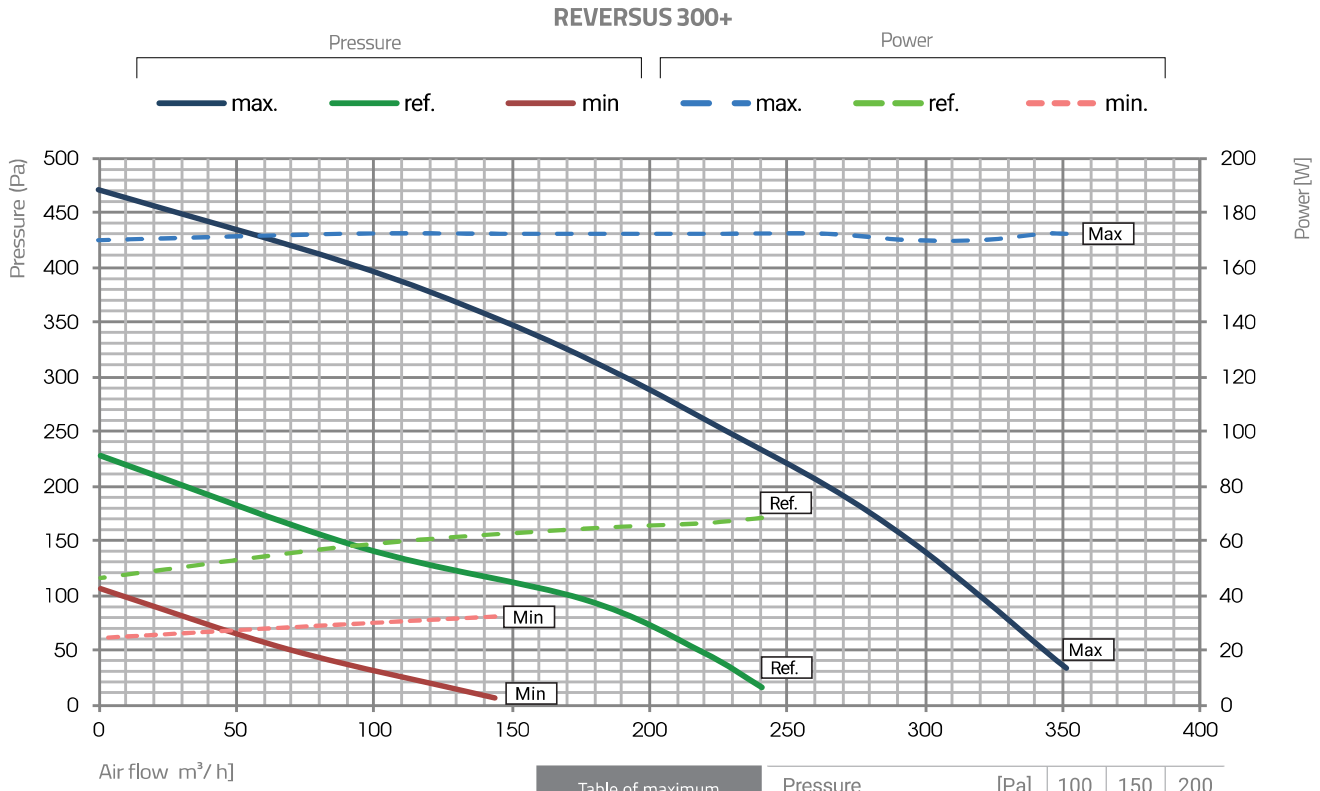


Table of maximum capacity of recuperator					
	Pressure	[Pa]	100	150	200
	Air flow	[m³/h]	320	295	265

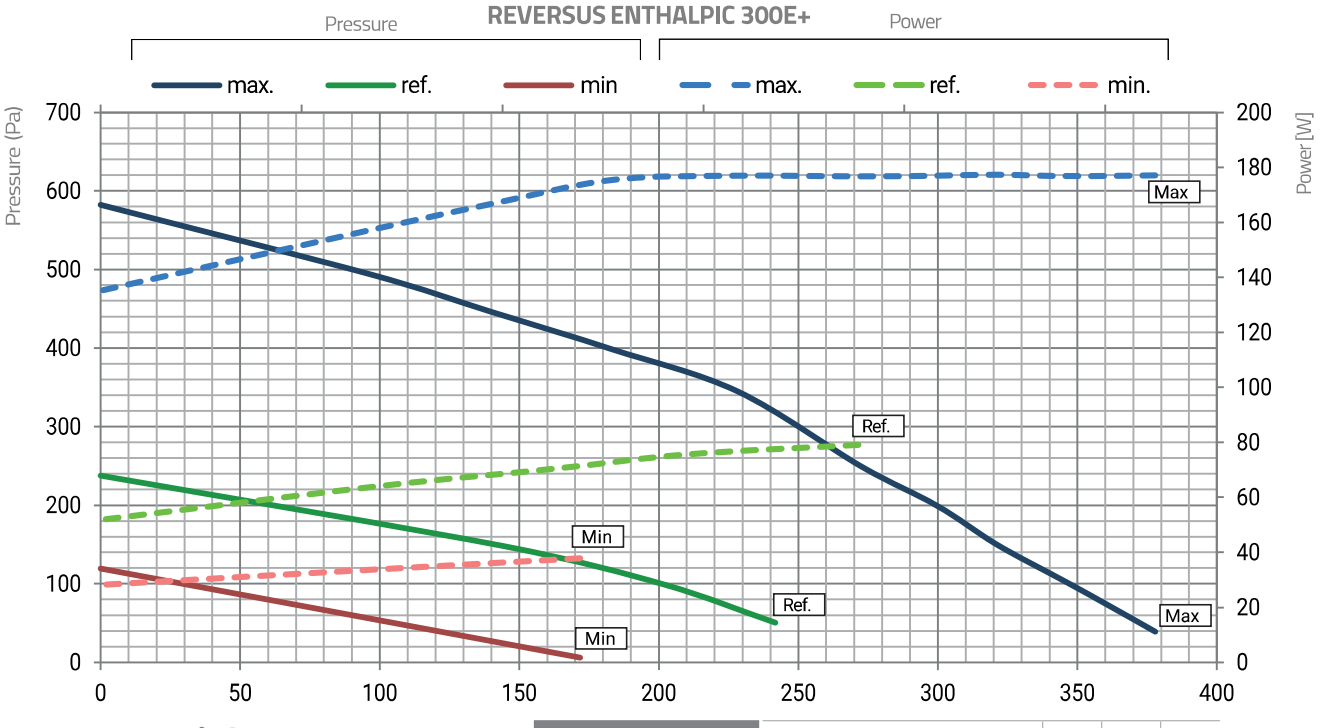
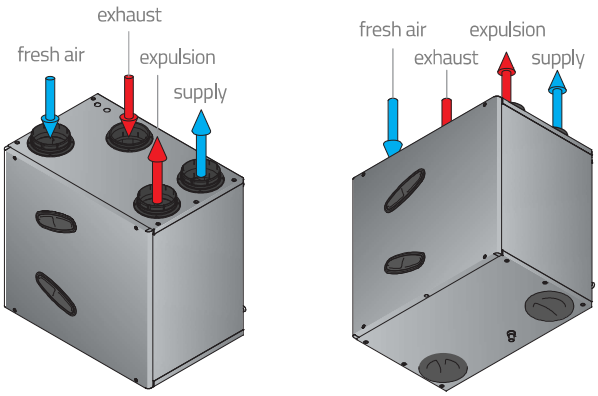


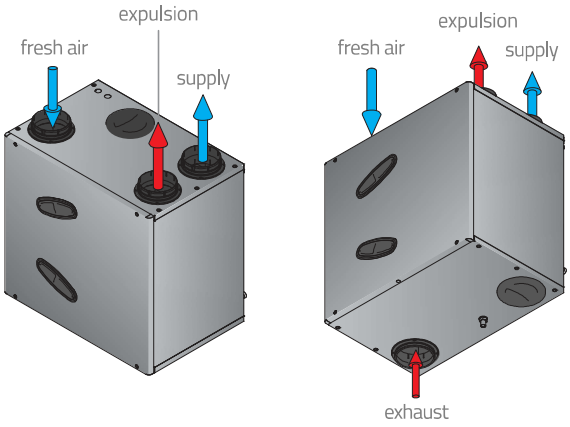
Table of maximum capacity of recuperator					
	Pressure	[Pa]	100	150	200
	Air flow	[m³/h]	350	325	300

Ventilation duct connection diagram

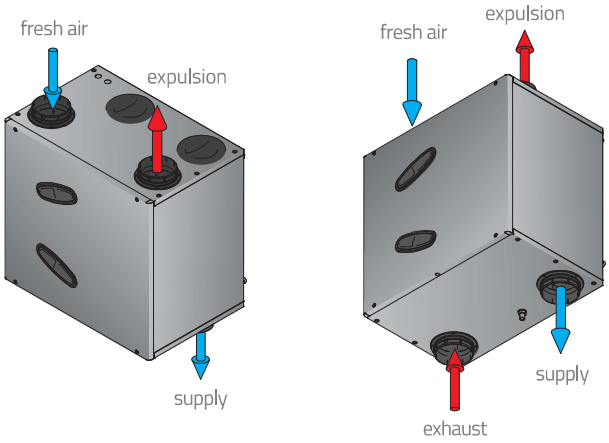
Reversus+ heat recovery ventilation have a unique feature that allows for any connection to the ventilation system. At the assembly stage, by uncovering or blanking the individual stubs, up to four installation variants can be obtained.



Connecting all wires from the top of the recuperator.
Default variant.

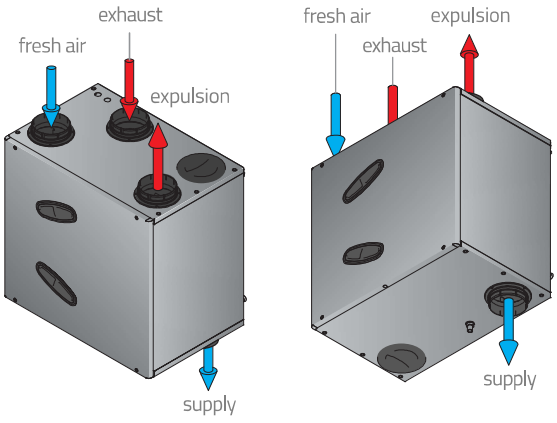


Connecting the ducts from the top of the recuperator.
Feeding warm exhaust air from the house from the bottom of the heat recovery ventilation.



Connecting the ducts from the top of the recuperator. Bringing warm exhaust air and supply air Into the house from the bottom of the recuperator. Preferred configuration when installing the unit in the attic.

Fresh air and air from the roof air intake is supplied from the top of the unit, supply air and exhaust air from the building is from below.



Connecting the ducts from the top of the heat recovery ventilation. Bringing the supply air into the house from the bottom of the heat recovery ventilation.

Reversus 450+ & **450E+** performances graph
(UNI EN 13141-7)

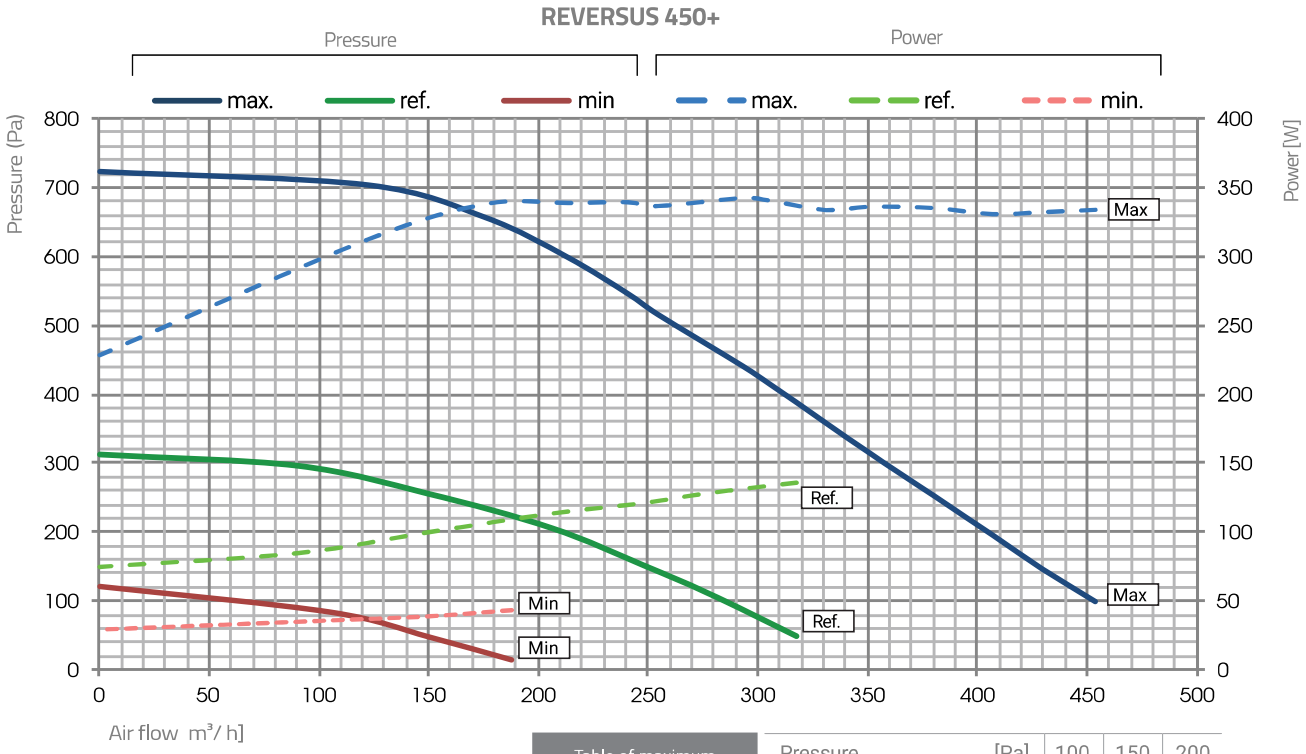


Table of maximum capacity of recuperator				
Pressure	[Pa]	100	150	200
Air flow	[m³/h]	450	430	405

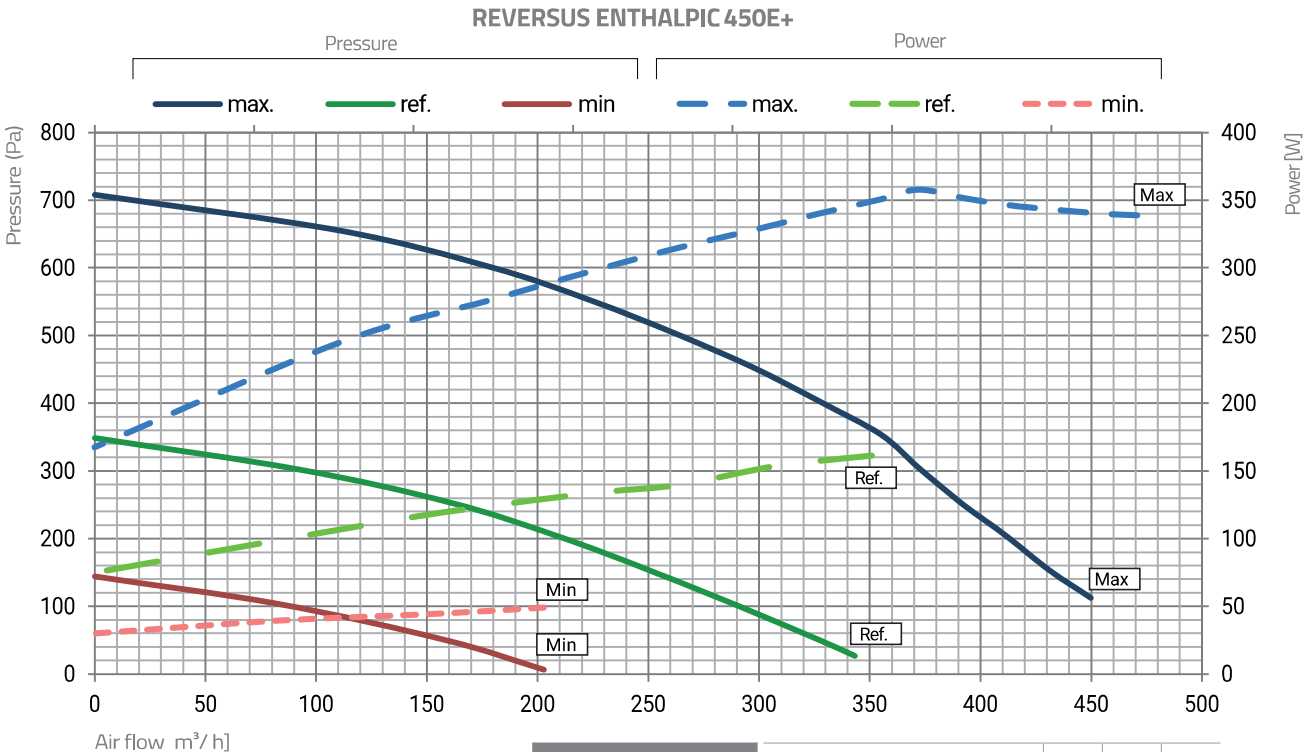
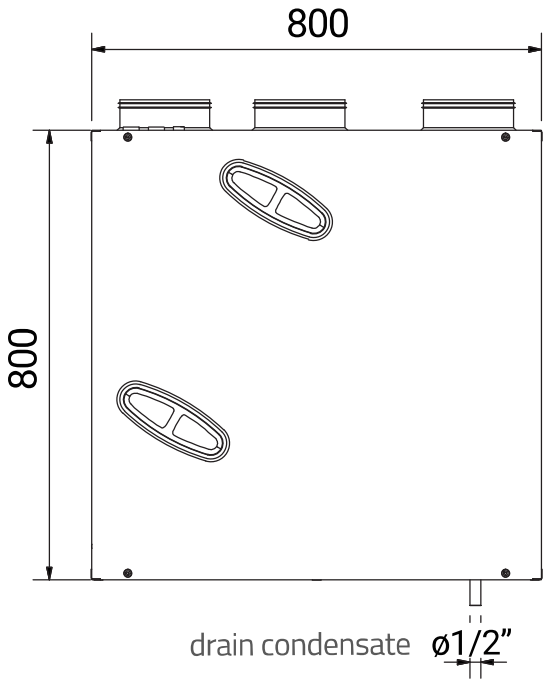
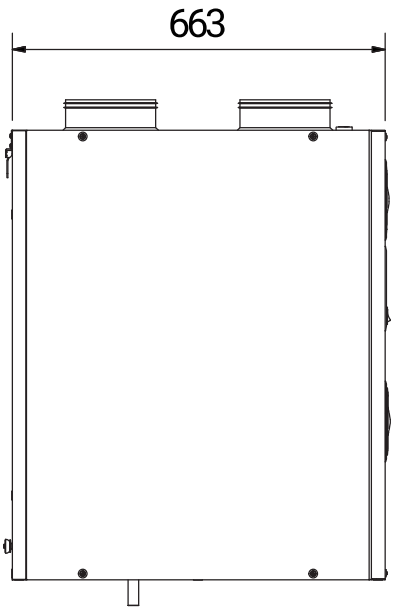


Table of maximum capacity of recuperator				
Pressure	[Pa]	100	150	200
Air flow	[m³/h]	455	430	410

Reversus 600+ & **600E+** HRVU





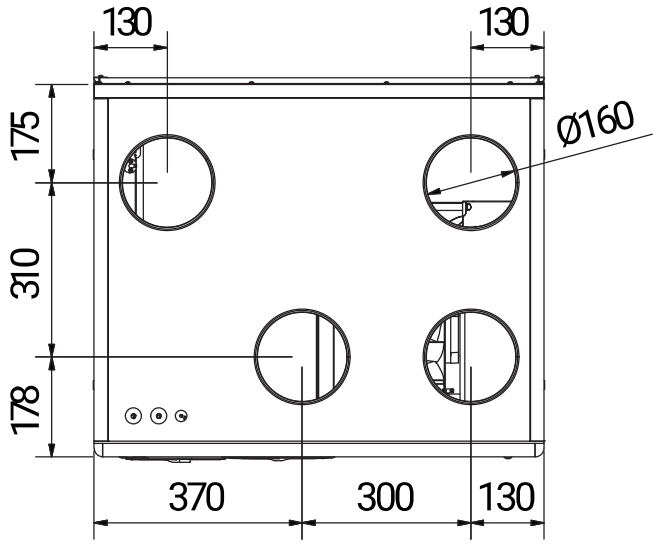
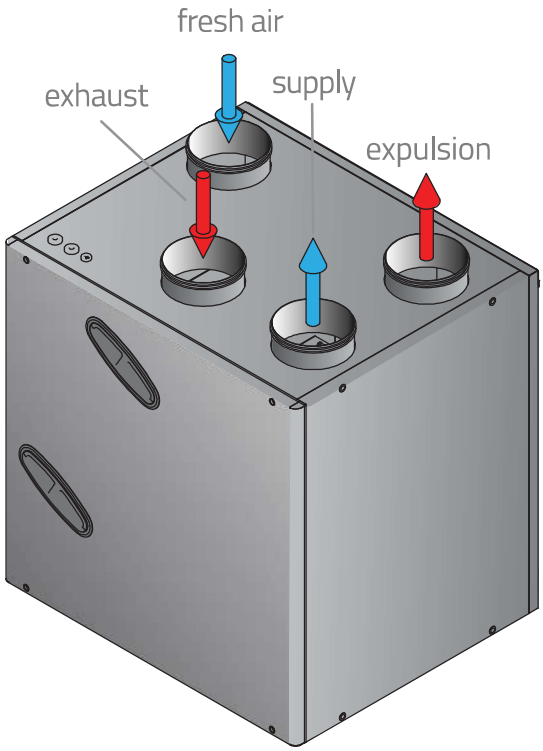


Diagram of the connection of ventilation ducts to the Reversus 600 heat recovery ventilation.



Reversus 600+	weight 75 kg
Reversus 600E+	weight 80 kg

Dimensions in mm.

Reversus 600+ & 600E+ performances graph

(UNI EN 13141-7)

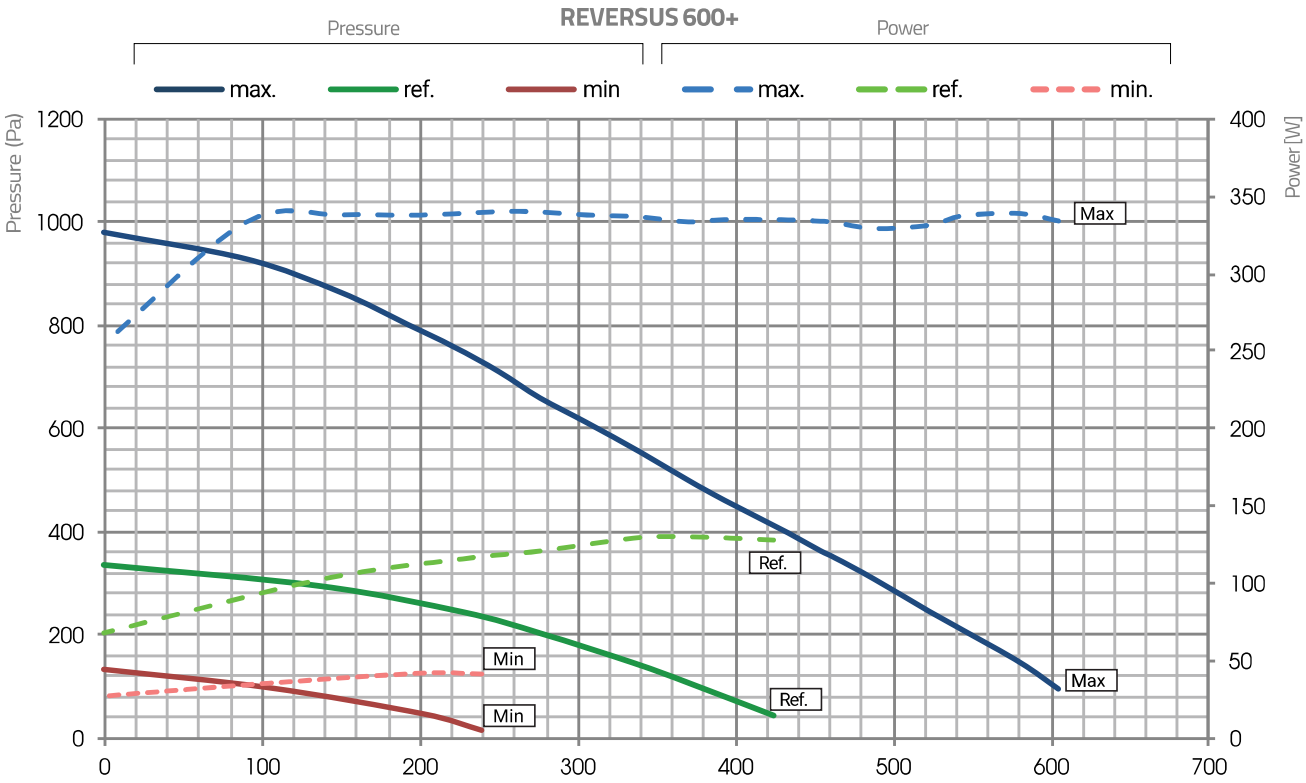


Table of maximum capacity of recuperator

Pressure	[Pa]	100	150	200
Air flow	[m³/h]	600	580	550

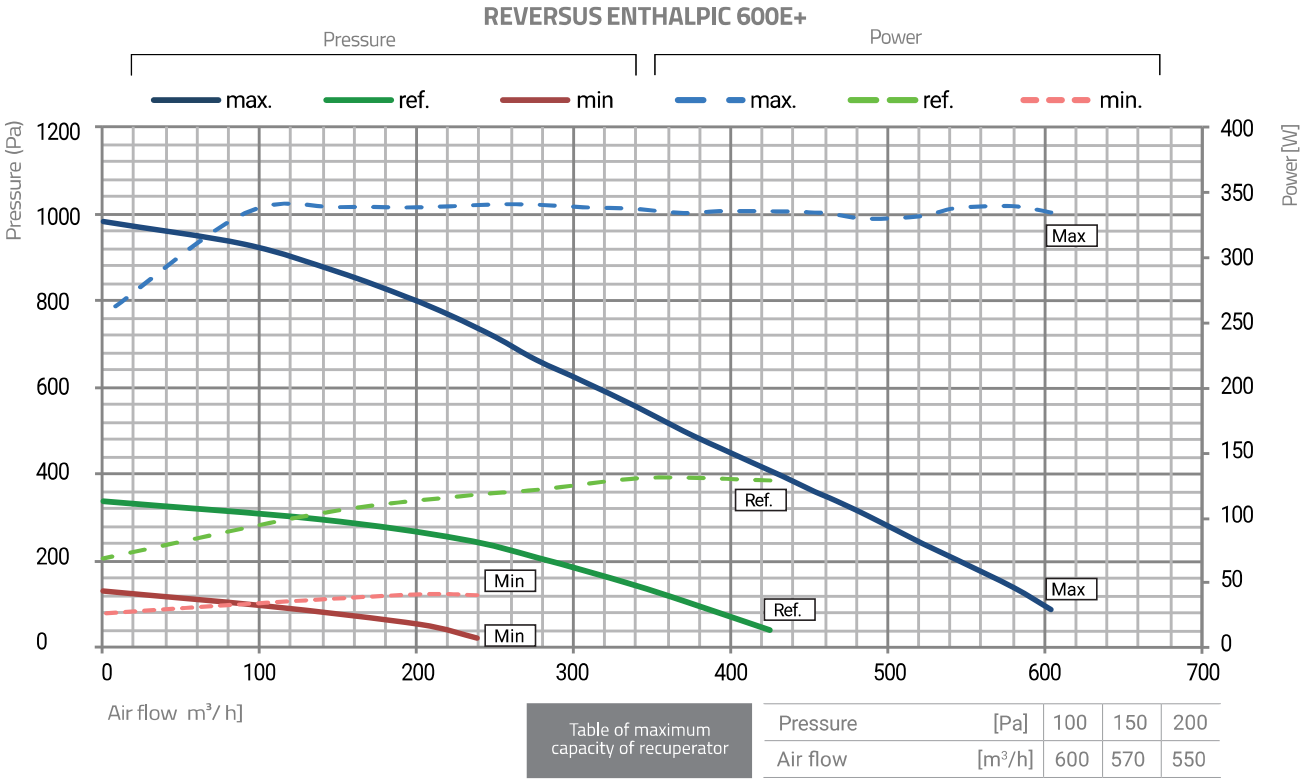
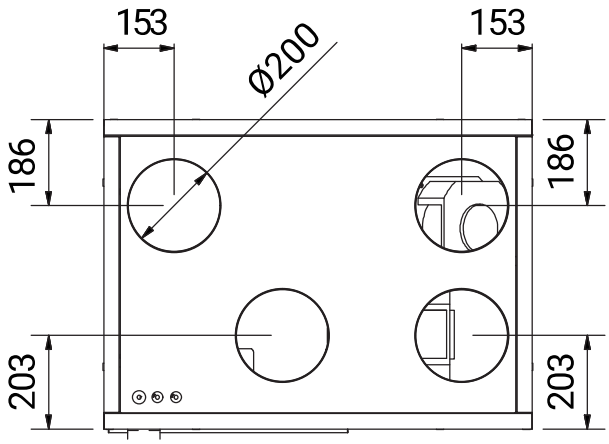
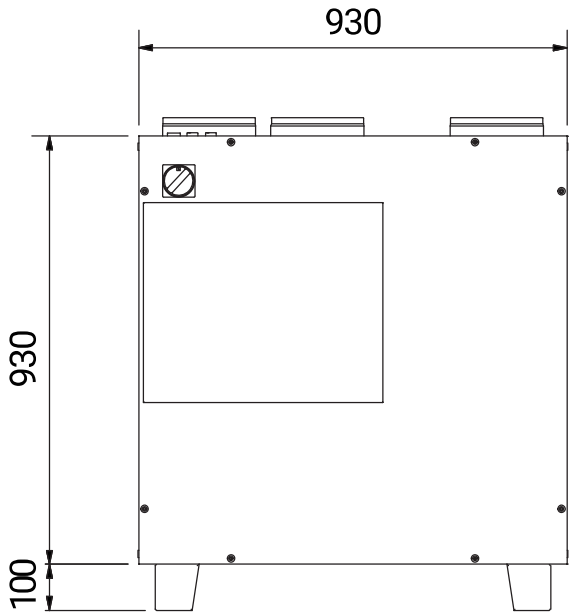


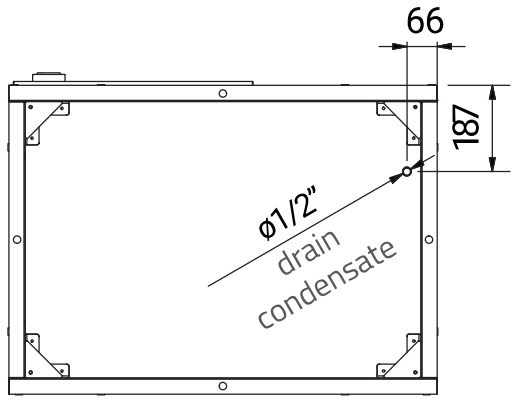
Table of maximum capacity of recuperator

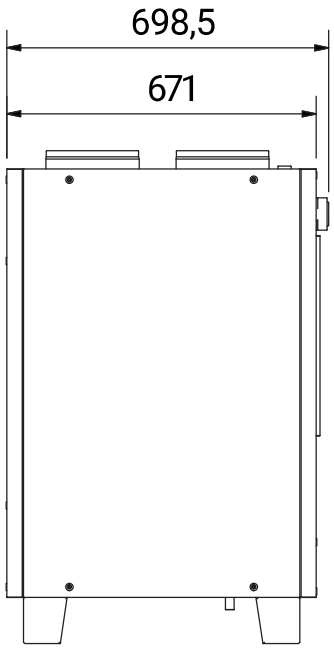
Pressure	[Pa]	100	150	200
Air flow	[m³/h]	600	570	550

Reversus 650+ HRVU



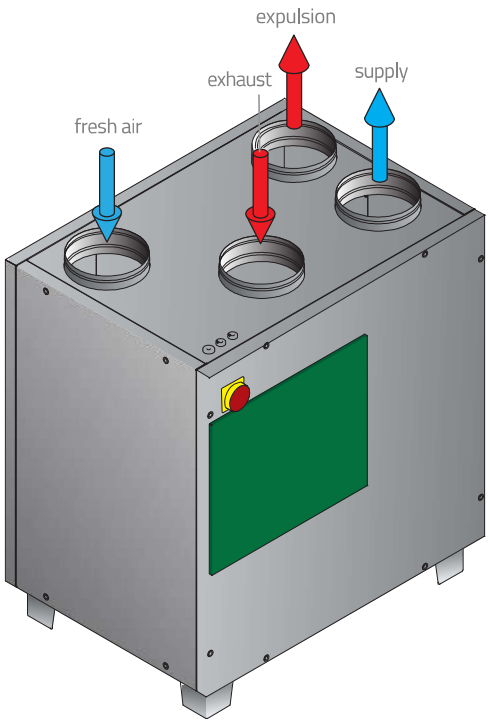






Reversus 650 and 750 HRVU are designed to be placed on the ceiling or floor. The heat recovery ventilation bases are integrated into the structural elements of the recuperator housing.

Diagram of the connection of ventilation ducts to the Reversus 650 and 750 heat recovery ventilation



Reversus 650+	weight 85 kg
Reversus 650E+	weight 85 kg

Dimensions in mm.

Reversus 650+ & **650E+** performances graph

(UNI EN 13141-7)

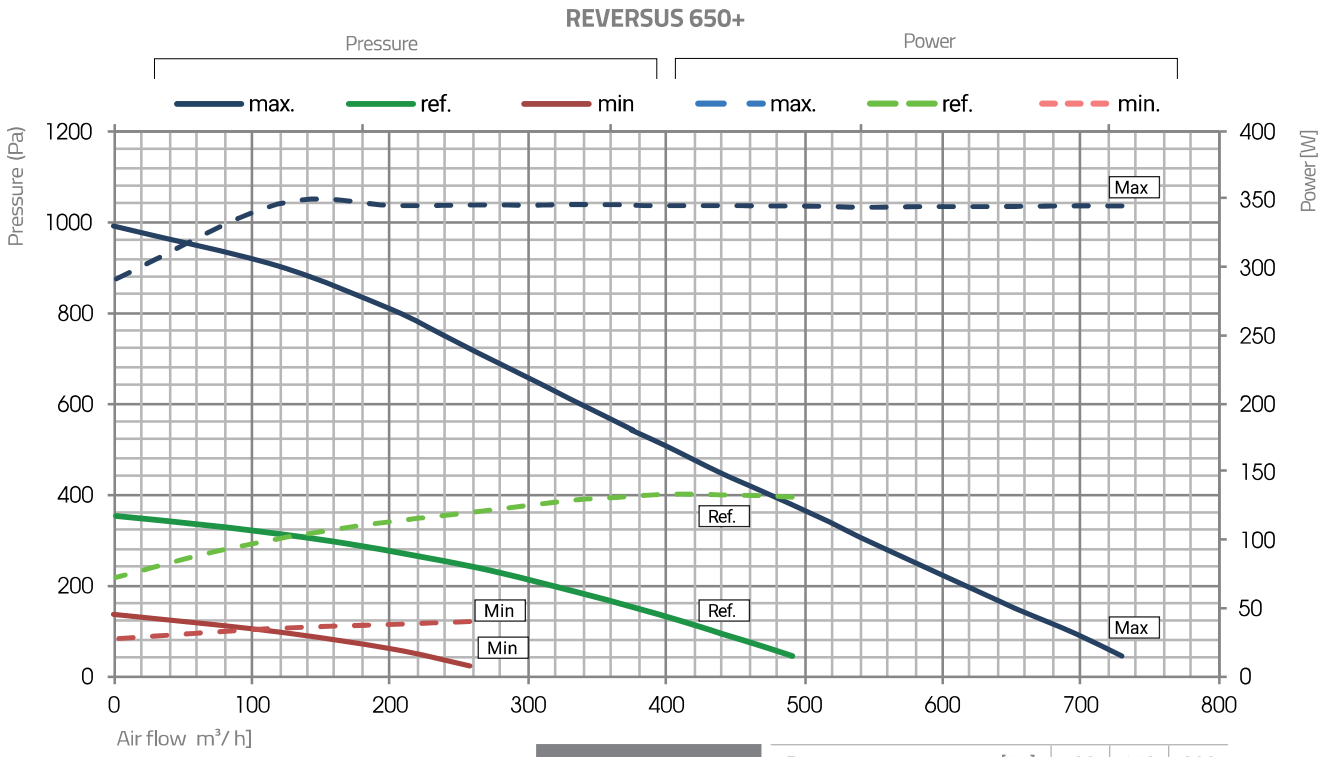


Table of maximum capacity of recuperator					
Pressure	[Pa]	100	150	200
Air Flow	[m³/h]	690	660	610

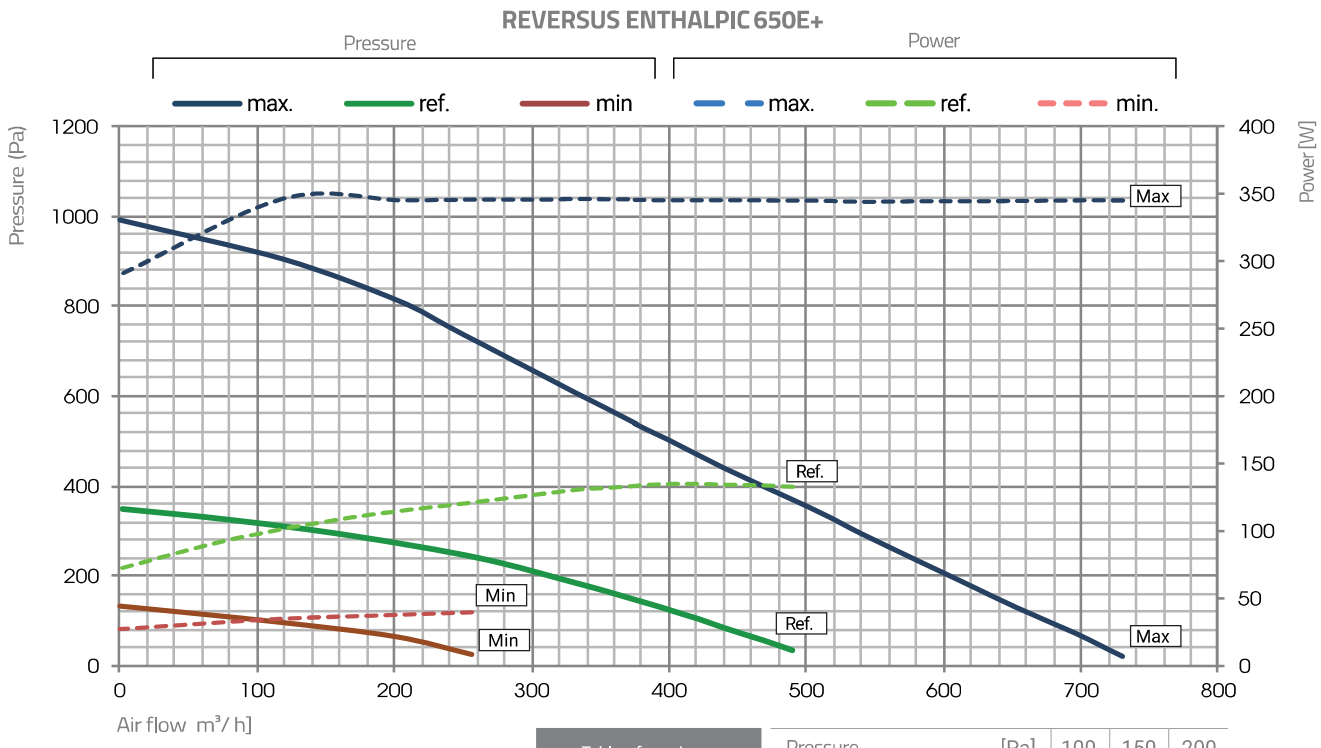
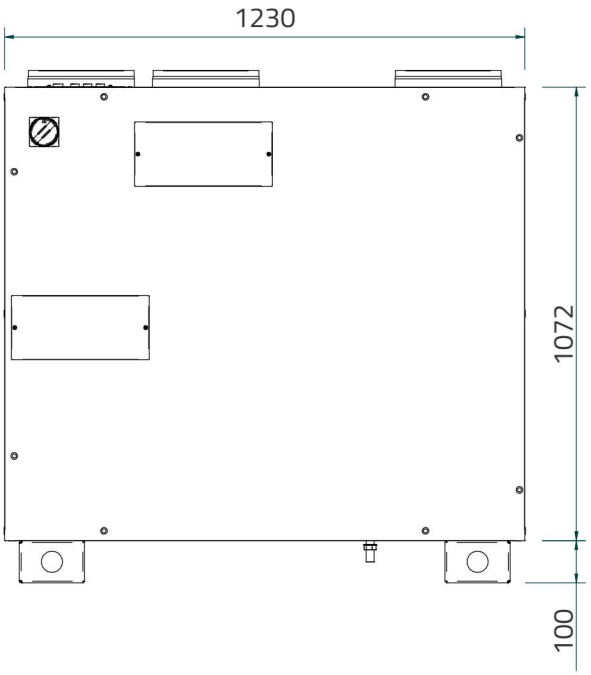
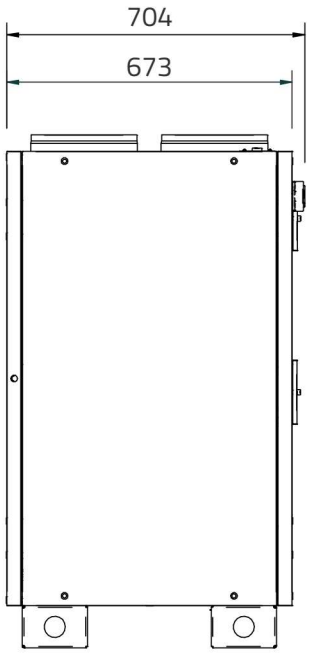
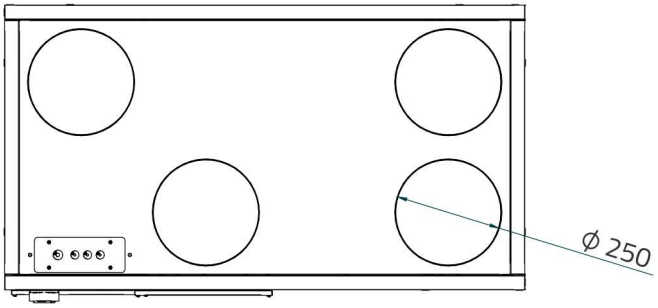


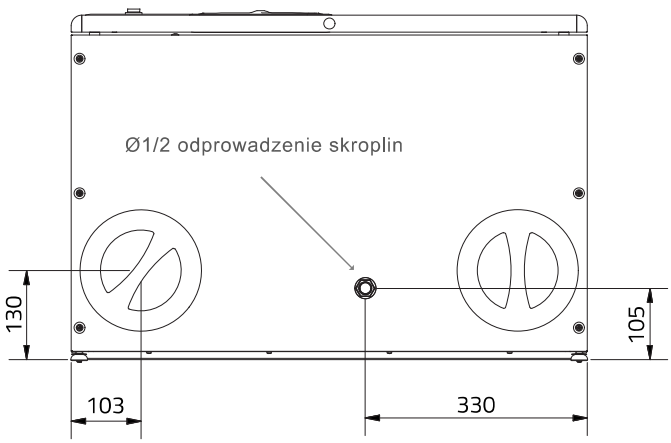
Table of maximum capacity of recuperator					
Pressure	[Pa]	100	150	200
Air flow	[m³/h]	670	650	600

Reversus 1300+ & **1300E+** HRVU



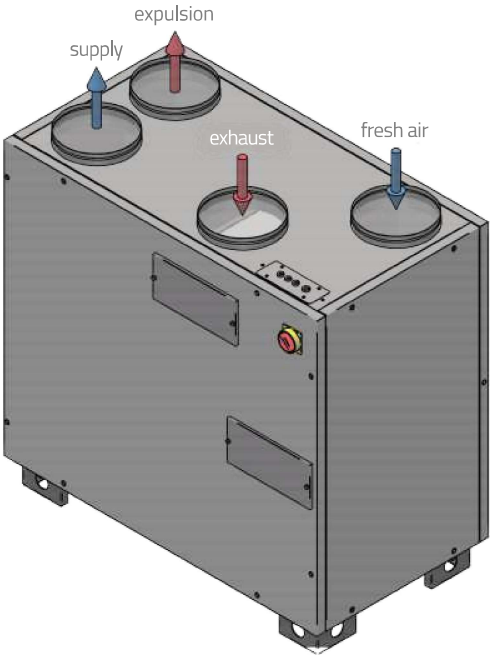






Reversus 1300+ and 1300+ HRVU are designed to be placed on the ceiling or floor. The heat recovery ventilation bases are integrated into the structural elements of the recuperator housing.

Diagram of the connection of ventilation ducts to the Reversus 1300+ heat recovery ventilation

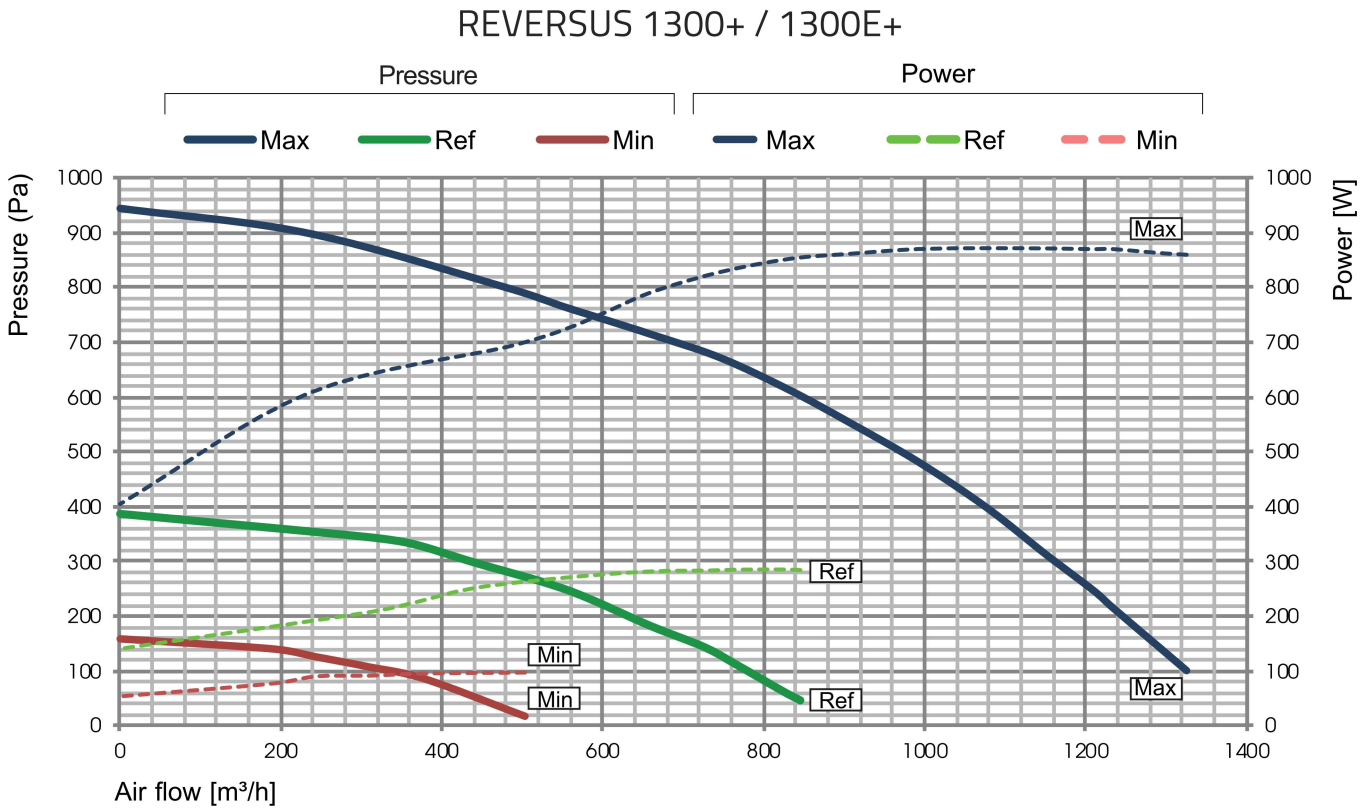


Reversus 1300+	weigt 139 kg
Reversus 1300E+	weight 139 kg

Dimensions in mm.

Reversus 1300+ & **1300E+** performances graph

(UNI EN 13141-7)



Reversus 1300+