



# RECUP/EC

- EC TECHNOLOGY MOTORS
- HIGH ENERGY EFFICIENCY
- COUNTERFLOW PLATE HEAT EXCHANGER
- WITH THERMAL AND ACOUSTIC INSULATION
- WITH INTERCHANGEABLE CONNECTIONS



HIGH EFFICIENCY  
HEAT RECOVERY UNITS



## SODECA's business is centred on providing efficient ventilation and indoor air quality solutions

Indoor Air Quality (IAQ) is the quality of the air that we breathe indoors and is governed by many conditions that directly affect our health and well-being. Different factors exist inside buildings that affect the air that we take into our lungs. The indoor humidity and temperature, along with different contaminants that are present internally, are added to harmful elements entering from the outside. Poor natural ventilation coupled with inadequate installation increases the risk of inhaling viruses and bacteria as well as other contaminants that affect our IAQ.

For this reason, SODECA offers ventilation and air treatment solutions that meet the most stringent quality standards and in accordance with current legislation, to ensure the air that we breathe is of the best quality and is safe for our health as well as our environment.

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This catalogue contains just a few of all the options we offer. Please contact us and we will give you the best advice from our experienced and knowledgeable staff.



# HIGH THERMAL EFFICIENCY AND INDOOR AIR QUALITY

SODECA continuously improves their building ventilation solutions in order to meet the need to breathing healthy air with comfort and energy savings.

Commercial premises, offices, hospitality venues and communal spaces can now have **the most efficient heat recovery units**. High efficiency heat recovery units offer better indoor air quality (IAQ) and ultimately, health and well-being, as well as important energy savings.

# THE IMPORTANCE OF **BREATHING HEALTHY AIR**

Air contamination can have significant consequences on people's health and productivity. However, the solutions we implement in indoor spaces must be chosen correctly.

Ideal indoor air quality is not only a source of wellbeing, it is also an opportunity to optimise resources. People are increasingly spending more time indoors. A building with healthy air equates to well-being as well as efficiency. Breathing healthy air has never been so important as it is today. Investing in high efficiency solutions that transform indoor air into healthy air guarantees peace of mind.



# ENERGY EFFICIENCY INVESTMENT IN SUSTAINABILITY AND HEALTH

Renewing indoor air and saving energy. The aim of Directive 2010/31/EU is to create buildings that are sustainable as well as environmentally friendly.

Heat recovery units are ventilation systems that renew and condition inside air, while saving energy in the process. These units constitute the best solution to achieve good quality indoor air efficiently. An essential step towards a more sustainable world with healthier air.





## HEAT RECOVERY UNITS



To achieve energy savings and sustainability objectives, SODECA uses **high efficiency equipment**.

The efficiency of the filters used in our RECUP/EC recovery units, in accordance with current legislation, is shown in the table below.

Filter	ISO 16890			ISO COARSE
	ePM <sub>1</sub>	ePM <sub>2.5</sub>	ePM <sub>10</sub>	
<b>G4</b>	-	-	-	> 60%
<b>M6</b>	< 40%	50-60%	> 60%	-
<b>F7</b>	50-70%	> 65%	> 80%	-
<b>F8</b>	70-80%	> 80%	> 90%	-
<b>F9</b>	> 80%	> 90%	> 95%	-

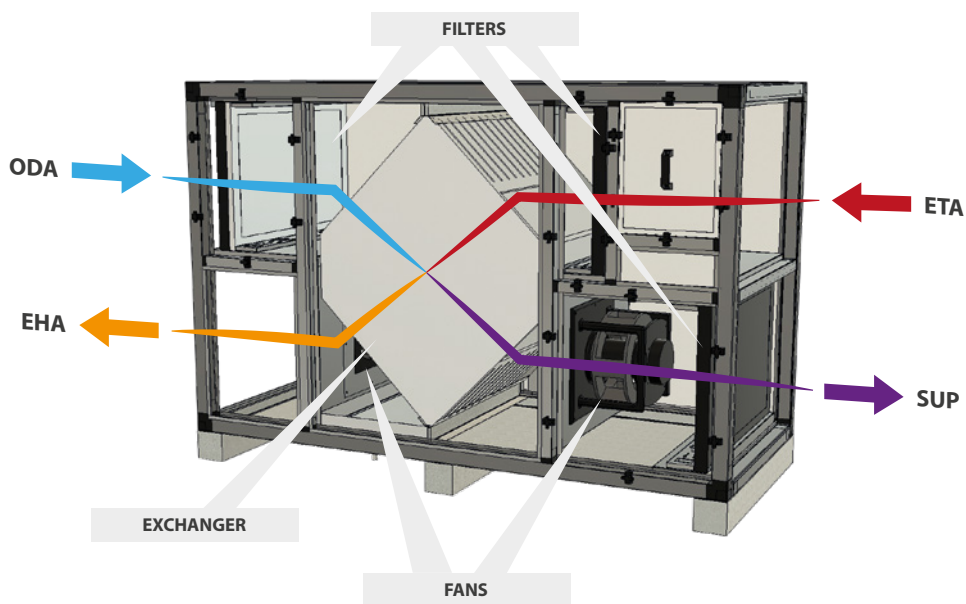
*\*Am: Average performance against synthetic dust*  
*\*Em: Average efficacy against particles measuring 0.4 µm*

The versatility of RECUP/EC units makes it possible to install different filtration stages in the same unit, which in turn enables compliance with regulations in force in different countries.

# HEAT RECOVERY UNITS

Heat recovery units work by means of a combination of two centrifugal fans with low noise levels. One fan extracts stale air from inside the premises and discharges it outside. The other supplies fresh outdoor air to the interior of the premises.

Both circuits cross each other in a heat exchanger but without mixing, where the heat from the discharged air heats the fresh outdoor air.



**ODA:** Fresh outdoor air / **SUP:** Air supplied into the premises / **EHA:** Exit of exhaust air / **ETA:** Air extracted from premises

## PEACE OF MIND GUARANTEED

The greater the thermal efficiency of the exchanger, the less the need to supply additional air conditioning. The RECUP/EC BS and RECUP/EC H heat recovery units incorporate a counterflow plate heat exchanger (Eurovent certificate), EC technology motors and a thermal by-pass. Peace of mind is guaranteed by its high efficiency.

## OUR OBJECTIVES

- Energy saving and the subsequent reduction in the use of natural resources.
- Energy efficiency improvement.
- Reduction in noise pollution.
- Environmental protection.
- Reduction in CO<sub>2</sub> emissions.





## Energy efficiency

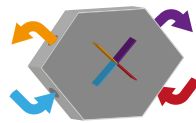
We recommend installing heat recovery units in any air conditioned premise to obtain important energy savings.



High efficiency motors with proportional control capacities.

## HEAT EXCHANGER

The heat exchanger component in the recovery unit transfers heat from the exhaust air extraction circuit to the external clean air supply circuit. The greater the thermal efficiency of the exchanger, the less the need to supply additional air conditioning.



### Counterflow heat exchanger

85-90% thermal efficiency  
With no leaks between air circuits

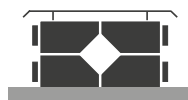
*Heat exchangers may be the heat-sensitive or the enthalpy type. Enthalpy heat exchangers recover heat and moisture, which increases their efficiency, but they require regular cleaning to ensure safe operation.*

## TYPES OF INSTALLATION



### In false ceiling

Low-profile equipment with access to components through the side or base.



### On the roof

Equipment for outdoor operation, with lateral access to components. They may require accessories such as roof support pads, rain shields or other elements.

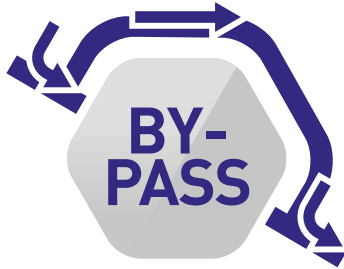


### In technical room

Compact equipment with lateral access to components.

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## THERMAL BY-PASS



*The BY-PASS device diverts the air flow and prevents it from passing through the heat recovery unit and the thermal exchange of the unit.*

## THE BEST THERMAL INSULATION

For some time now, SODECA has endorsed the international goal of improving the energy efficiency of buildings. For this reason, the high efficiency recovery models listed in this catalogue (RECUP/EC BS and RECUP/EC H) incorporate **XPS panels with a thermal bridge break**, to provide a better insulation.

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## AUTOMATIC CONTROL



In heat recovery units, automatic control may offer a wide range of functions, depending on the equipment series or models. The most important are:

- Programmable Timer.
- Flow control based on CO<sub>2</sub> levels
- Connection to a centralised building management control system (BMS), normally using the MODBUS RTU protocol.

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## FILTERS

M6 + F8

F7 + F9

Filters retain particles that affect air quality and they must be replaced after period of time. The load loss of the filters gradually increases.

Some pieces of equipment have load loss control elements aimed at optimising the filter replacement process.

- Pressure sensors: Small sensors that enable load loss detection in the filtration stages.
- Pressure switch: Pressure switch that switches an electric circuit on and off based on the filter load loss reading.

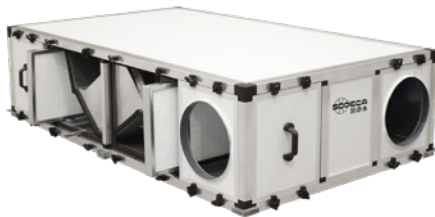
Depending on its configuration, the equipment may have:

- A pre-filter stage to guarantee the correct operation of the equipment. Depending on the system requirements, the filter grades may be: M6+F8.
- Final filter stages to ensure the quality of the air supplied to the premises, where the filter grades may be: F7+F9 or even HEPA, according to the IDA/ODA category.

# RECUP/EC BS



**High efficiency heat recovery units with counterflow plate heat exchangers, automatic control and EC technology motors, for installation in false ceilings**



#### Common characteristics:

- Plug Fan type EC fans regulated from a 0-10 V signal.
- Built-in maintenance section switch.
- Thermal efficiency between 85-90%.
- High quality reinforced aluminium frame structure.
- Panels with a 25 mm thick thermal and acoustic insulation; exterior made of prefinished sheet.
- XPS type panels with thermal bridge break.
- High efficiency filtration:
  - M6+F8
  - F7+F9
- Wide access for maintenance.
- Free cooling with motorised BY-PASS hatch.
- Condensate collection and drainage tray.

- STOP / START and speed control available through control panel or external contacts.
- Built-in temperature and humidity sensors.
- Filter status control by means of built-in pressure switches.
- Fault and fire alarm shut down management.
- Compatible with MODBUS RTU.

#### Finish:

- Aluminium frame and external prefinished sheet structure.
- Panels with a 25 mm thick thermal and acoustic insulation.
- Low profile for installation in false ceilings.
- Interchangeable connections for more versatility.

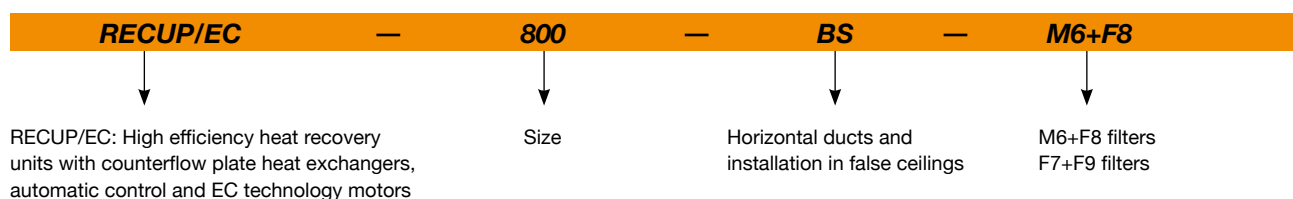
#### Built-in control panel:

- Free cooling control by means of a motorised BY-PASS.
- Fan speed control by manual selection or by optional external sensors (CO<sub>2</sub> or pressure).
- Built-in control system with remote control panel.

#### On request:

- External battery modules for air treatment.
- Special efficacy filters.
- Modules with UVc germicidal chamber.

### Order code



### Characteristics based on size

	RECUP/EC-800-BS	RECUP/EC-1200-BS	RECUP/EC-1600-BS	RECUP/EC-2100-BS	RECUP/EC-2700-BS
Supply filter (ODA)	M6+F8 / F7+F9	M6+F8 / F7+F9	M6+F8 / F7+F9	M6+F8 / F7+F9	M6+F8 / F7+F9
Extraction filter (ETA)	M6	M6	M6	M6	M6
Free cooling function by means of a motorised BY-PASS	YES	YES	YES	YES	YES
Panel thickness	25 mm	25 mm	25 mm	25 mm	25 mm
Condensate discharge	YES	YES	YES	YES	YES
Pressure switch to control built-in filter status	YES	YES	YES	YES	YES
Safety and maintenance switch	YES	YES	YES	YES	YES
Built-in control panel	YES	YES	YES	YES	YES

## Technical characteristics

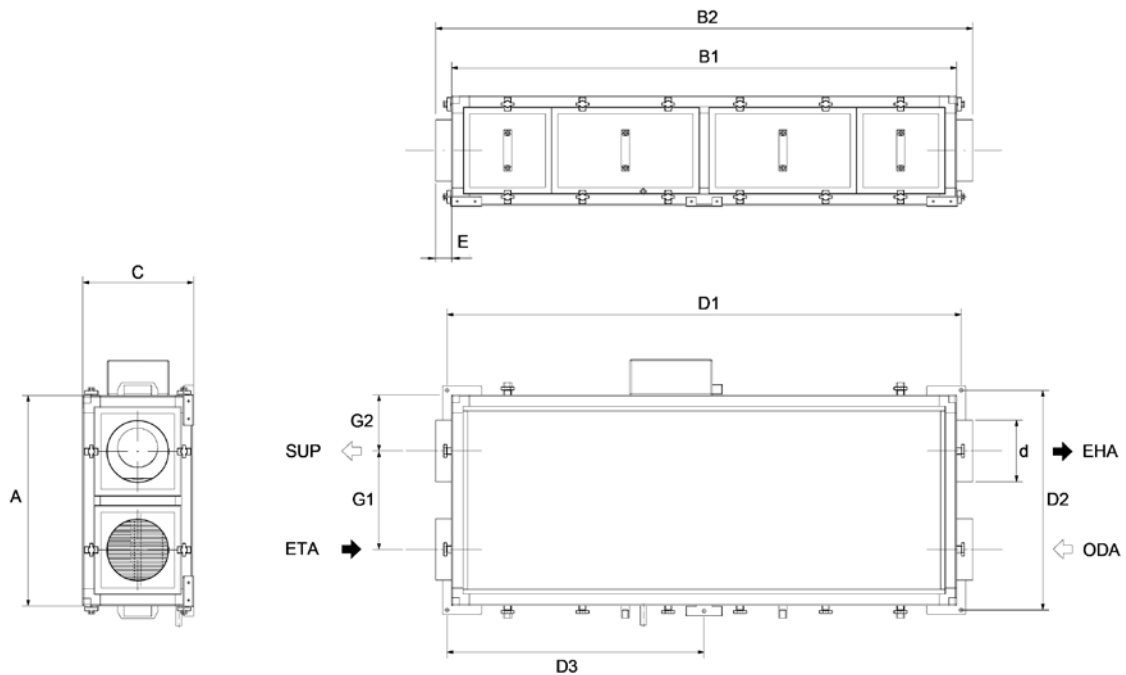
Model	Nominal flow rate (m <sup>3</sup> /h)	Recovery unit efficiency (%)	Available pressure (Pa)	Nominal power (kW)	Nominal current (A)	Voltage (V)	Irradiated sound level at 5 m dB(A)	Weight (kg)	According ErP
RECUP/EC-800-BS	800	86.5	70	0.39	2.91	1/230	45	78	2018
RECUP/EC-1200-BS	1200	86.8	70	0.32	1.16	1/230	34	105	2018
RECUP/EC-1600-BS	1600	86.2	100	0.53	2.11	1/230	40	178	2018
RECUP/EC-2100-BS	2100	88.0	100	0.76	3.14	1/230	43	216	2018
RECUP/EC-2700-BS	2700	86.9	100	1.23	5.17	1/230	50	216	2018



## Erp. (Energy Related Products)

Information on Directive 2009/125/EC can be downloaded from the SODECA website or the QuickFan selector programme.

## Dimensions mm



Model	A	B1	B2	C	D1	D2	D3	E	G1	G2	d
RECUP/EC-800-BS	684	1644	1694	357	1664	704	832	25	320	182	200
RECUP/EC-1200-BS	1124	1890	1940	480	1910	1144	955	25	695	214	315
RECUP/EC-1600-BS	1250	1970	2020	480	1990	1270	995	25	781	235	355
RECUP/EC-2100-BS	1250	2198	2248	620	2218	1270	1109	25	736	257	400
RECUP/EC-2700-BS	1250	2198	2248	620	2218	1270	1109	25	736	257	400

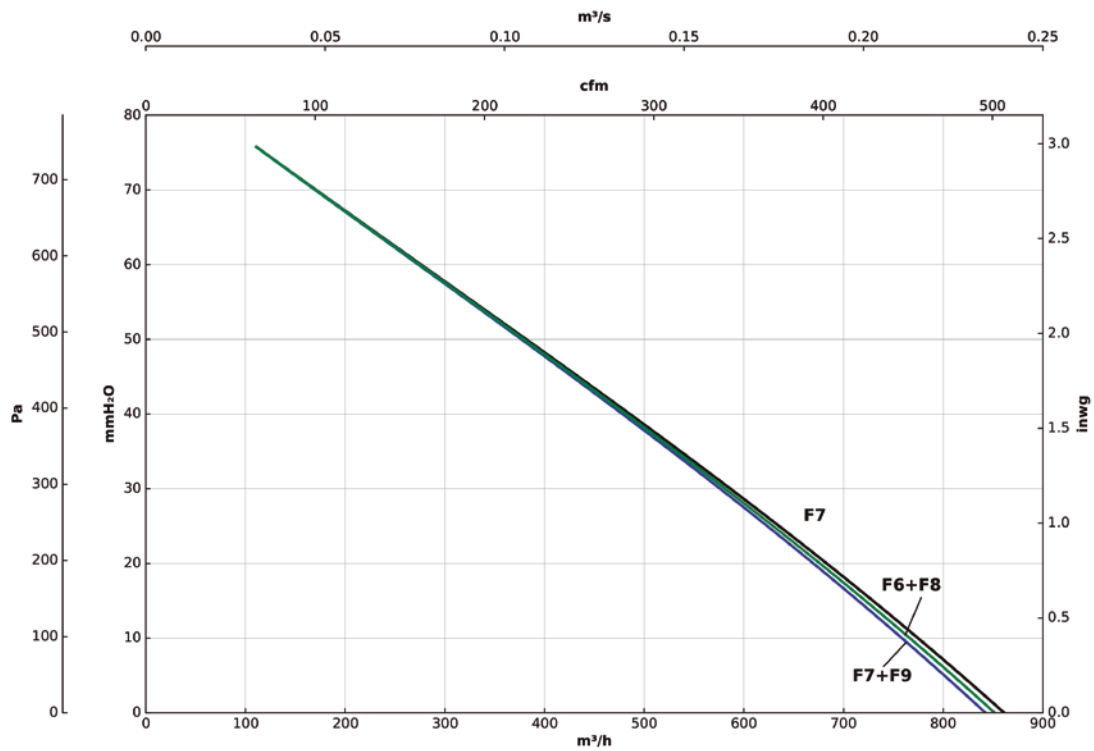
ODA: Fresh outdoor air / SUP: Air impulsion to the premise / EHA: Exit of exhaust air / ETA: Air extraction from premises.

### Characteristic curves

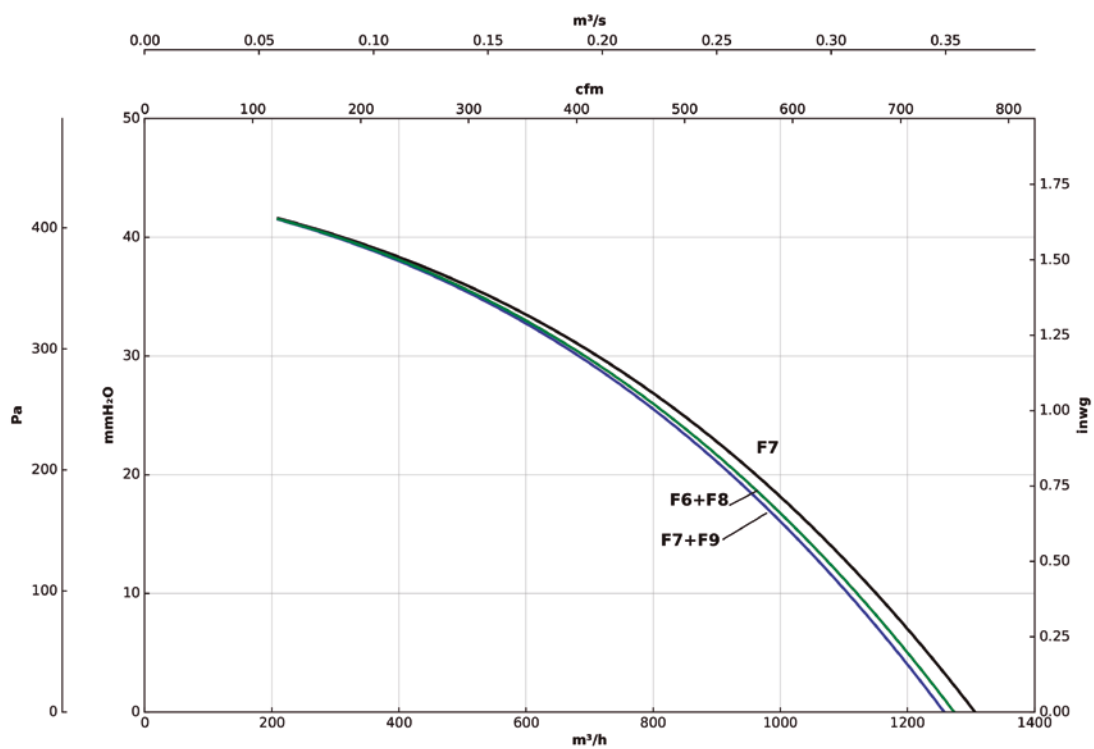
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

#### RECUP/EC-800-BS



#### RECUP/EC-1200-BS

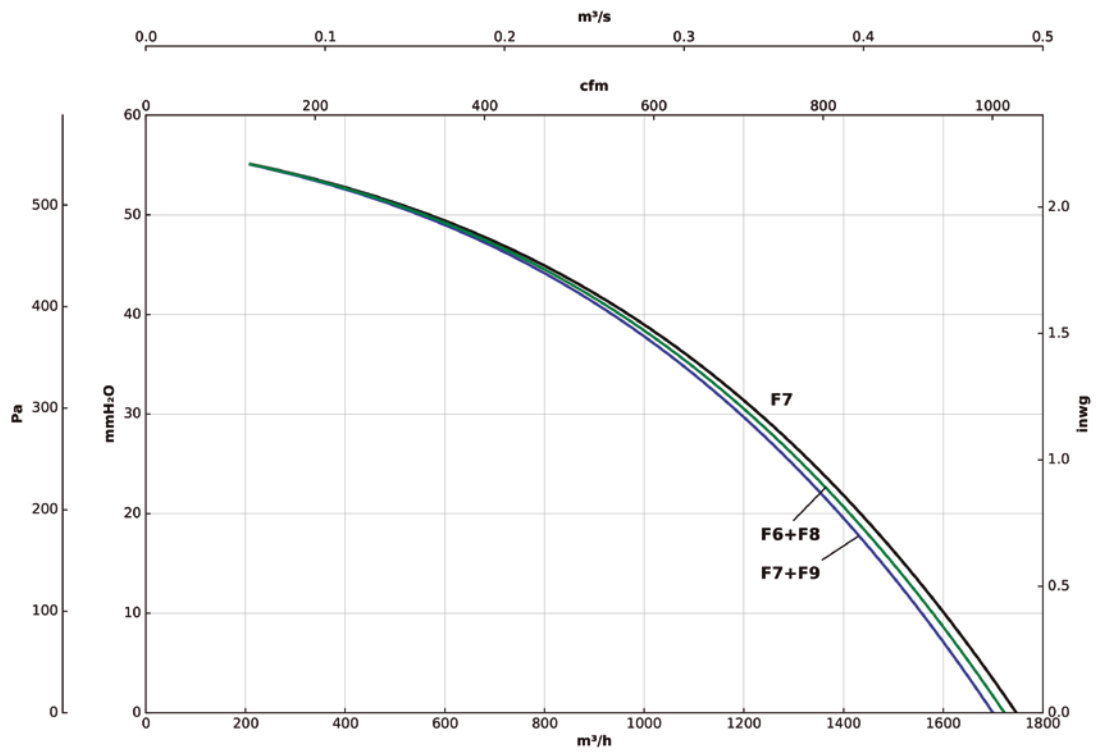


### Characteristic curves

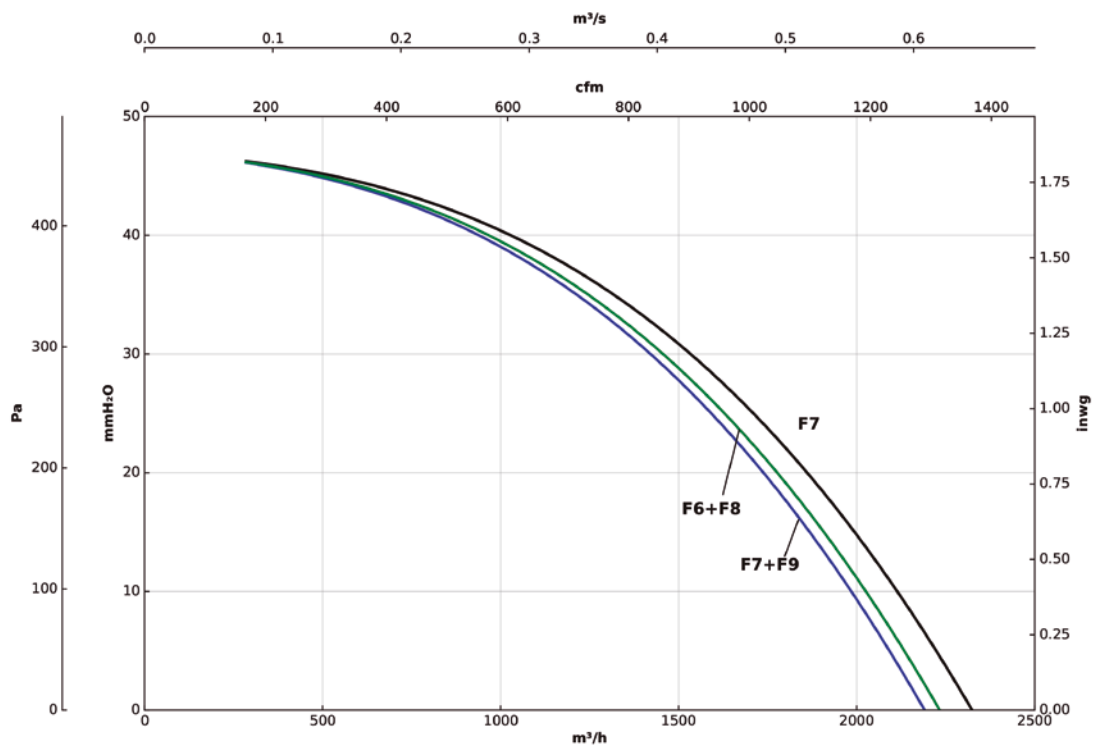
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

#### RECUP/EC-1600-BS



#### RECUP/EC-2100-BS

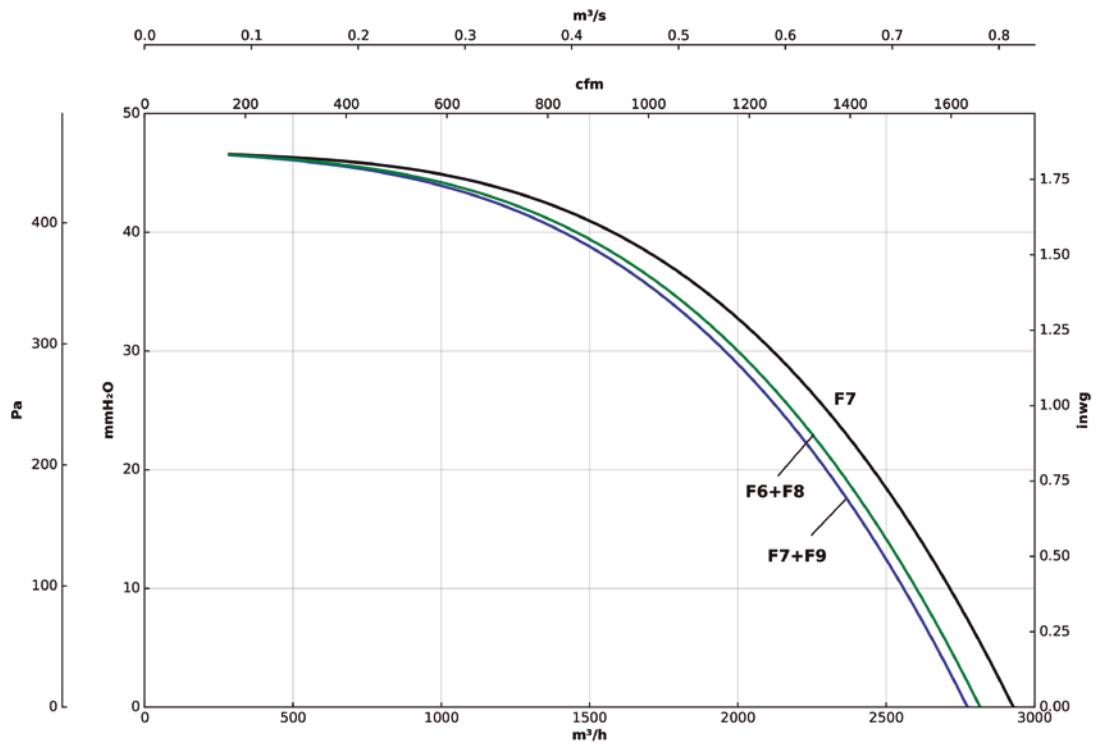


### Characteristic curves

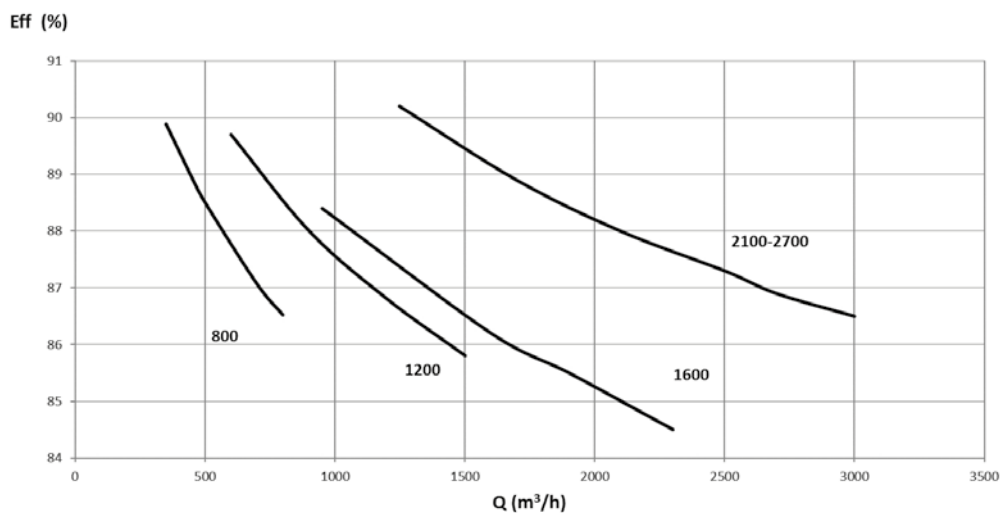
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

#### RECUP/EC-2700-BS



### Efficiency curves



### Accessories



FILTERS



TEJ



PRESSURE SWITCH



SI-CO<sub>2</sub> IND



GERMICIDAL CHAMBER

# RECUP/EC H



**High efficiency heat recovery units with counterflow plate heat exchangers, automatic control and EC technology motors, for installation on roofs or in technical rooms**



**Common characteristics:**

- Plug Fan type EC fans regulated from a 0-10 V signal.
- Built-in maintenance section switch.
- Thermal efficiency between 85-90%.
- High quality reinforced aluminium frame structure.
- Panels with thermal and acoustic insulation; exterior made of prefinished sheet.
- XPS type panels with thermal bridge break.
- G4 pre-filter + M6 or F7 filter on the air supply side.
- High efficiency F8 or F9 filtration on the air impulsion side.
- Wide access for maintenance.
- Free cooling with motorised BY-PASS hatch.
- Condensate collection and drainage tray.

**Built-in control panel:**

- Free cooling control by means of a motorised BY-PASS.
- Fan speed control by manual selection or by optional external sensors (CO<sub>2</sub> or pressure).
- Built-in control system with remote control panel.

- STOP / START and speed control available through control panel or external contacts.
- Built-in temperature and humidity sensors.
- Filter status control by means of built-in pressure switches.
- Fault and fire alarm shut down management.
- Compatible with MODBUS RTU.

**Finish:**

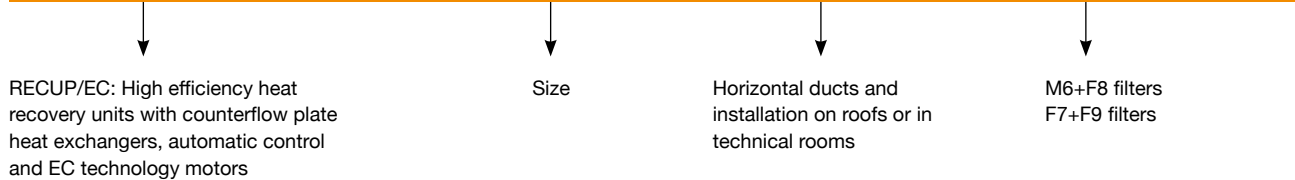
- Aluminium frame and external prefinished sheet structure.
- Panels with a 25 mm thick thermal and acoustic insulation up to model 2700.
- Panels with a 50 mm thick thermal and acoustic insulation beginning with model 3300.

**On request:**

- External battery modules for air treatment.
- Special efficacy filters.
- Modules with UVc germicidal chamber.

**Order code**

**RECUP/EC — 1200 — H — M6+F8**





## Characteristics based on size

### RECUP/EC-1200-H RECUP/EC-1600-H RECUP/EC-2100-H RECUP/EC-2700-H

Supply filter (ODA)	G4+M6/F7	G4+M6/F7	G4+M6/F7	G4+M6/F7
Impulsion filter (SUP)	F8/F9	F8/F9	F8/F9	F8/F9
Extraction filter (ETA)	M6	M6	M6	M6
Free cooling function by means of a motorised BY-PASS	YES	YES	YES	YES
Panel thickness	25 mm	25 mm	25 mm	25 mm
Condensate discharge	YES	YES	YES	YES
Pressure switch to control built-in filter status	YES	YES	YES	YES
Safety and maintenance switch	YES	YES	YES	YES
Built-in control panel	YES	YES	YES	YES

### RECUP/EC-3300-H RECUP/EC-4500-H RECUP/EC-6000-H RECUP/EC-8000-H RECUP/EC-10000-H

Supply filter (ODA)	G4+M6/F7	G4+M6/F7	G4+M6/F7	G4+M6/F7	G4+M6/F7
Impulsion filter (SUP)	F8/F9	F8/F9	F8/F9	F8/F9	F8/F9
Extraction filter (ETA)	M6	M6	M6	M6	M6
Free cooling function by means of a motorised BY-PASS	YES	YES	YES	YES	YES
Panel thickness	50 mm	50 mm	50 mm	50 mm	50 mm
Condensate discharge	YES	YES	YES	YES	YES
Pressure switch to control built-in filter status	YES	YES	YES	YES	YES
Safety and maintenance switch	YES	YES	YES	YES	YES
Built-in control panel	YES	YES	YES	YES	YES

## Technical characteristics

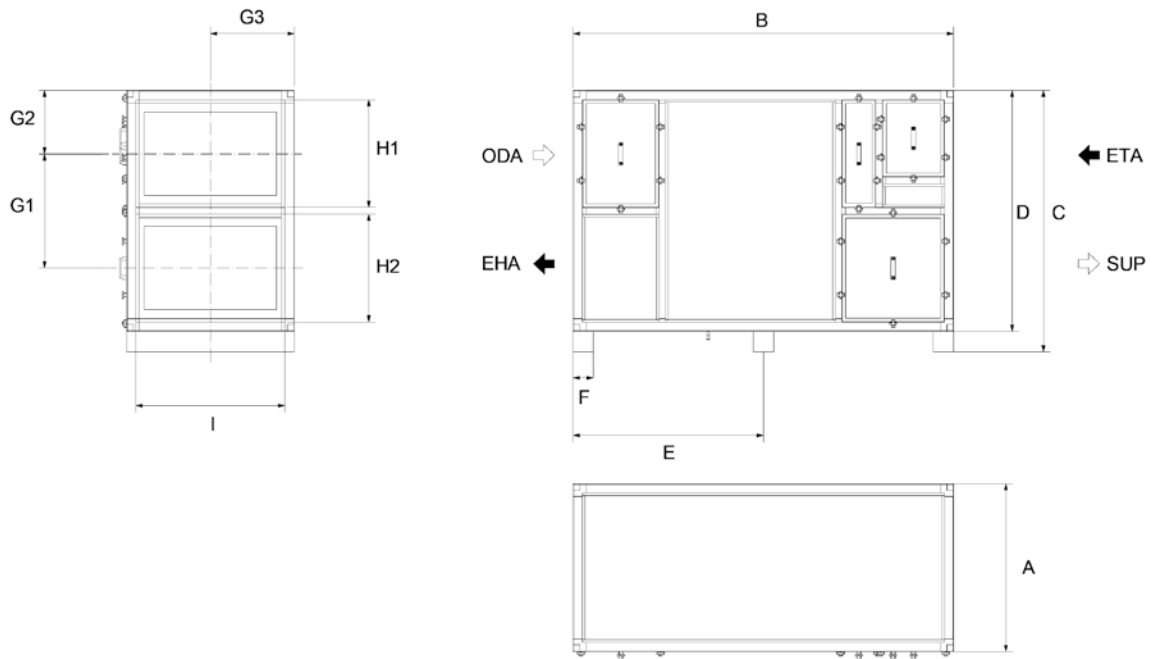
Model	Nominal flow rate (m <sup>3</sup> /h)	Recovery unit efficiency (%)	Available pressure (Pa)	Nominal power (kW)	Nominal current (A)	Voltage (V)	Irradiated sound level at 5 m dB(A)	Weight (kg)	According ErP
RECUP/EC-1200-H	1200	90	200	0.45	1.78	1/230	37	210	2018
RECUP/EC-1600-H	1600	88.8	200	0.63	2.54	1/230	40	210	2018
RECUP/EC-2100-H	2100	88.8	200	0.82	1.48	3+N/400	43	281	2018
RECUP/EC-2700-H	2700	87.8	200	1.11	1.88	3+N/400	46	281	2018
RECUP/EC-3300-H	3300	88.8	300	1.68	2.65	3+N/400	50	324	2018
RECUP/EC-4500-H	4500	88.6	300	2.53	4.34	3+N/400	57	342	2018
RECUP/EC-6000-H	6000	89.1	300	2.55	4.26	3+N/400	47	385	2018
RECUP/EC-8000-H	8000	88	300	4.04	6.41	3+N/400	51	385	2018
RECUP/EC-10000-H	10000	87	300	6.11	9.38	3+N/400	56	385	2018



## Erp. (Energy Related Products)

Information on Directive 2009/125/EC can be downloaded from the SODECA website or the QuickFan selector programme.

### Dimensions mm



Model	A	B	C	D	E	F	G1	G2	G3	H1	H2	I
RECUP/EC-1200-H	566	2213	1507	1387	1030	120	672	355	283	637	647	492
RECUP/EC-1600-H	566	2213	1507	1387	1030	120	672	355	283	637	647	492
RECUP/EC-2100-H	669	2213	1507	1387	1030	120	672	355	335	637	647	595
RECUP/EC-2700-H	669	2213	1507	1387	1030	120	672	355	335	637	647	595
RECUP/EC-3300-H	992	2250	1544	1424	1048	120	677	374	496	637	637	881
RECUP/EC-4500-H	1297	2250	1544	1424	1048	120	677	374	649	637	637	1186
RECUP/EC-6000-H	1889	2250	1544	1424	1048	120	677	374	945	637	637	1778
RECUP/EC-8000-H	1889	2250	1544	1424	1048	120	677	374	945	637	637	1778
RECUP/EC-10000-H	1889	2250	1544	1424	1048	120	677	374	945	637	637	1778

ODA: Fresh outdoor air / SUP: Air impulsion to the premise / EHA: Exit of exhaust air / ETA: Air extraction from premises.

### Accessories



FILTERS



PRESSURE SWITCH



SI-CO2 IND



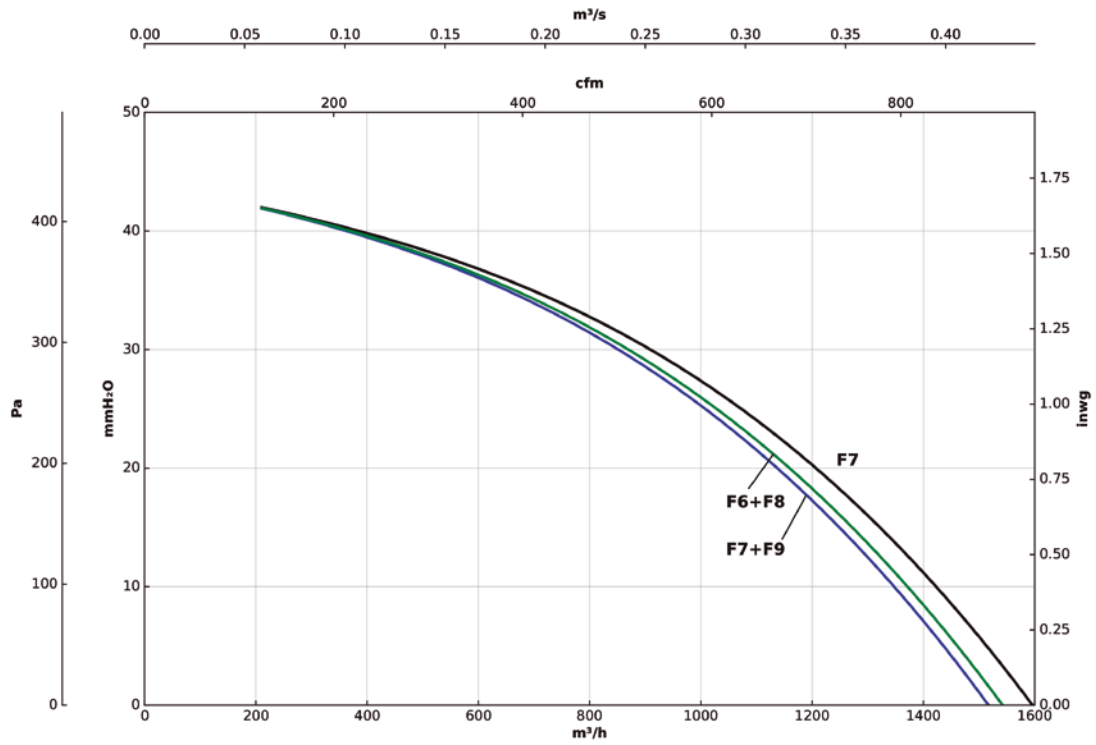
GERMICIDAL CHAMBER

### Characteristic curves

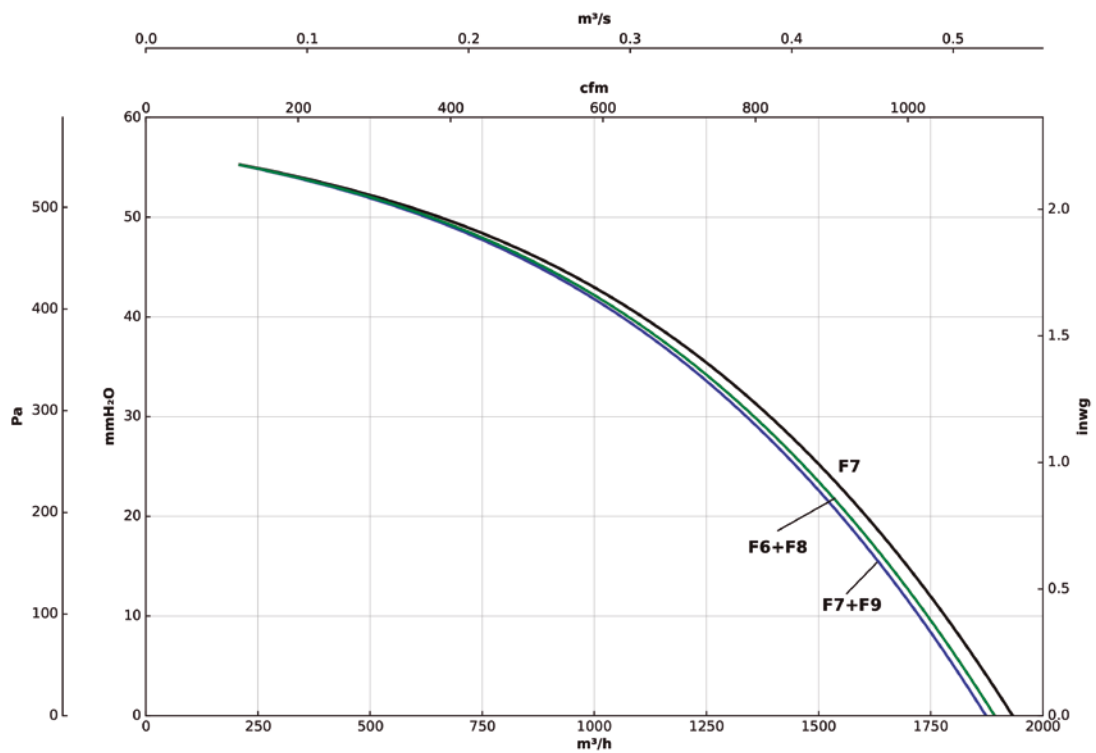
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

#### RECUP/EC-1200-H



#### RECUP/EC-1600-H

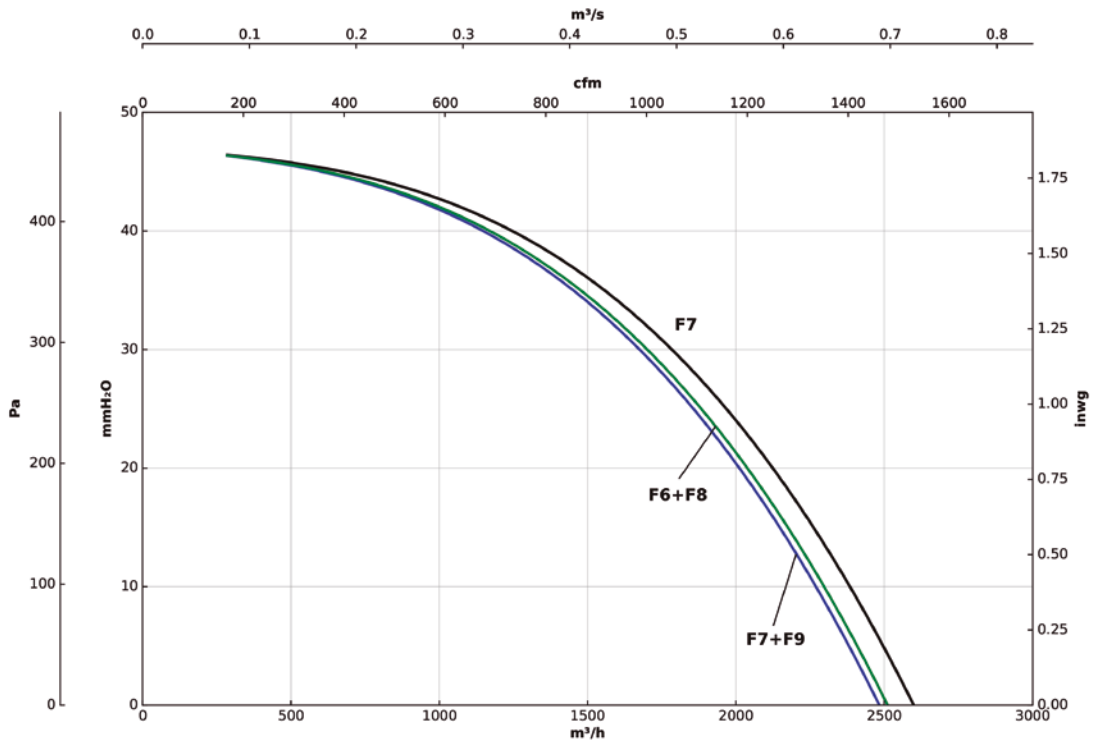


### Characteristic curves

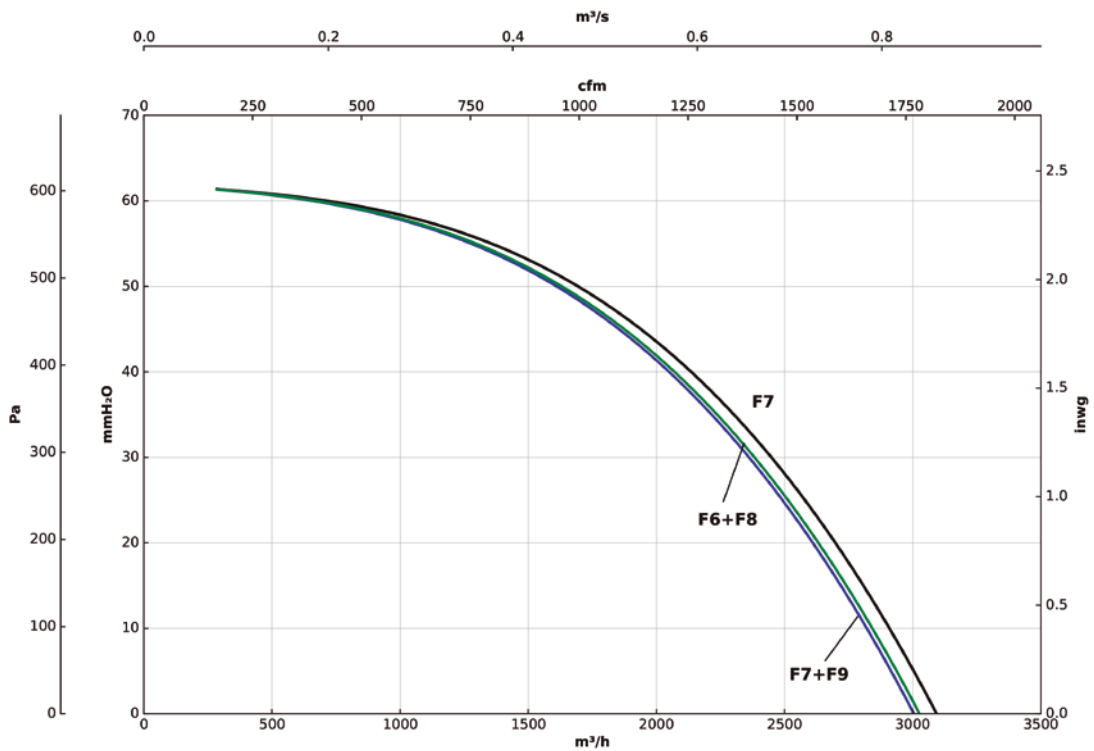
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

#### RECUP/EC-2100-H



#### RECUP/EC-2700-H

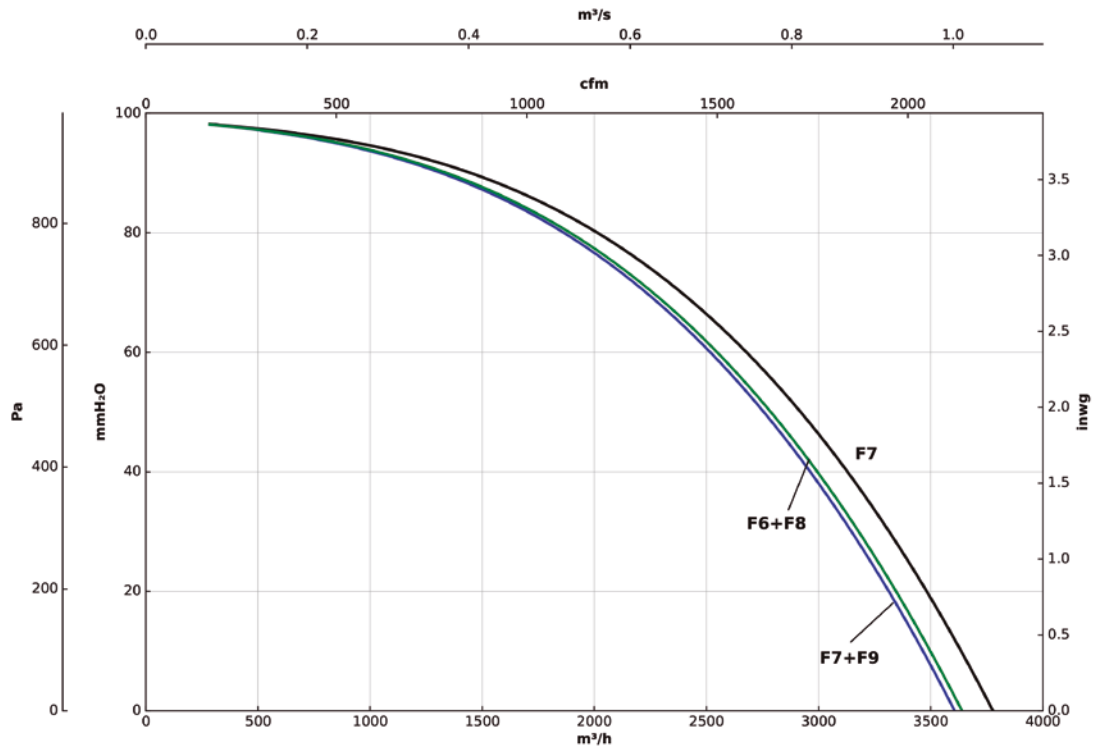


### Characteristic curves

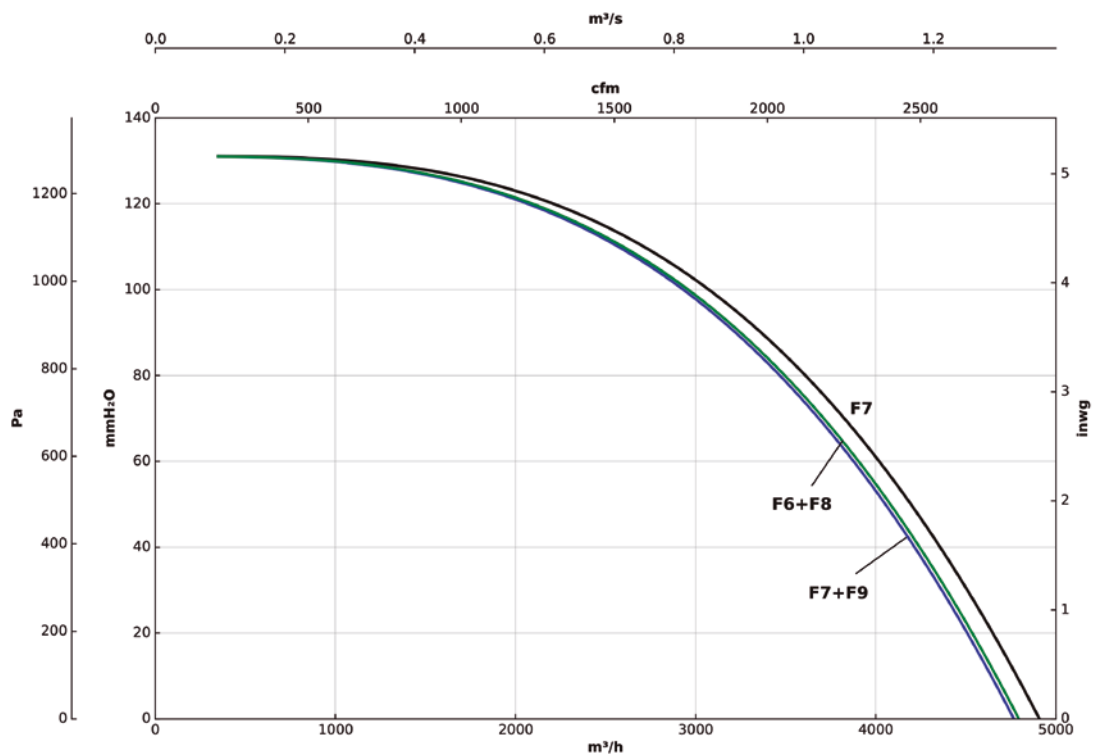
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

#### RECUP/EC-3300-H



#### RECUP/EC-4500-H

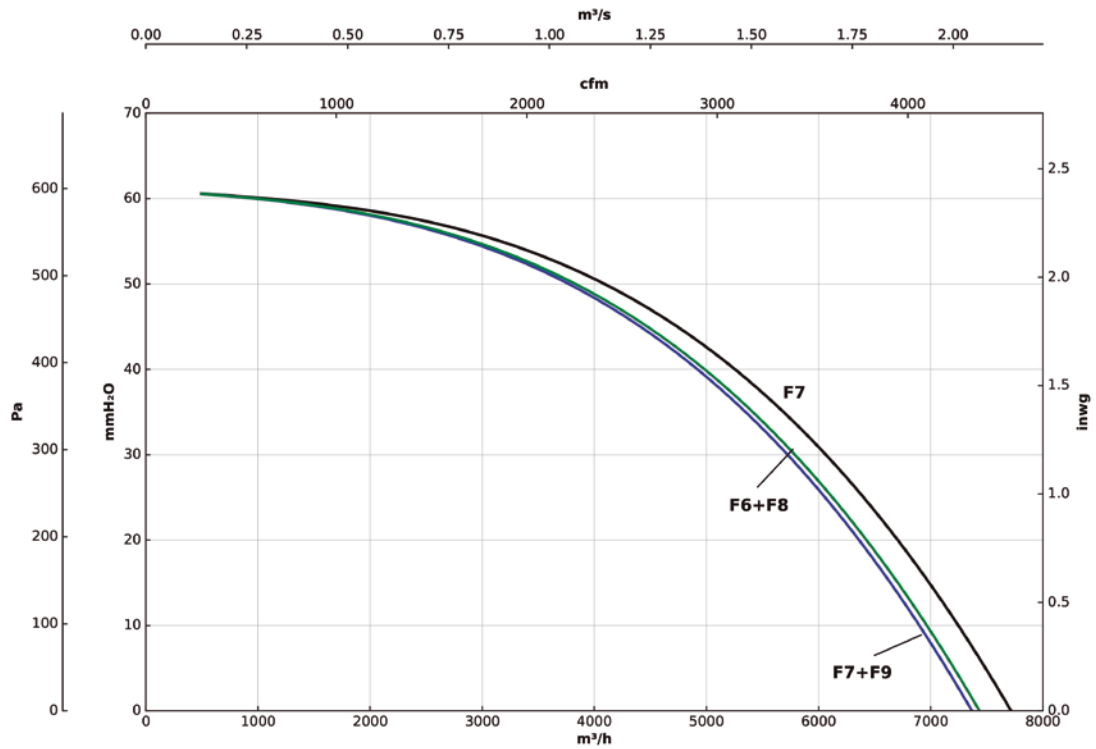


## Characteristic curves

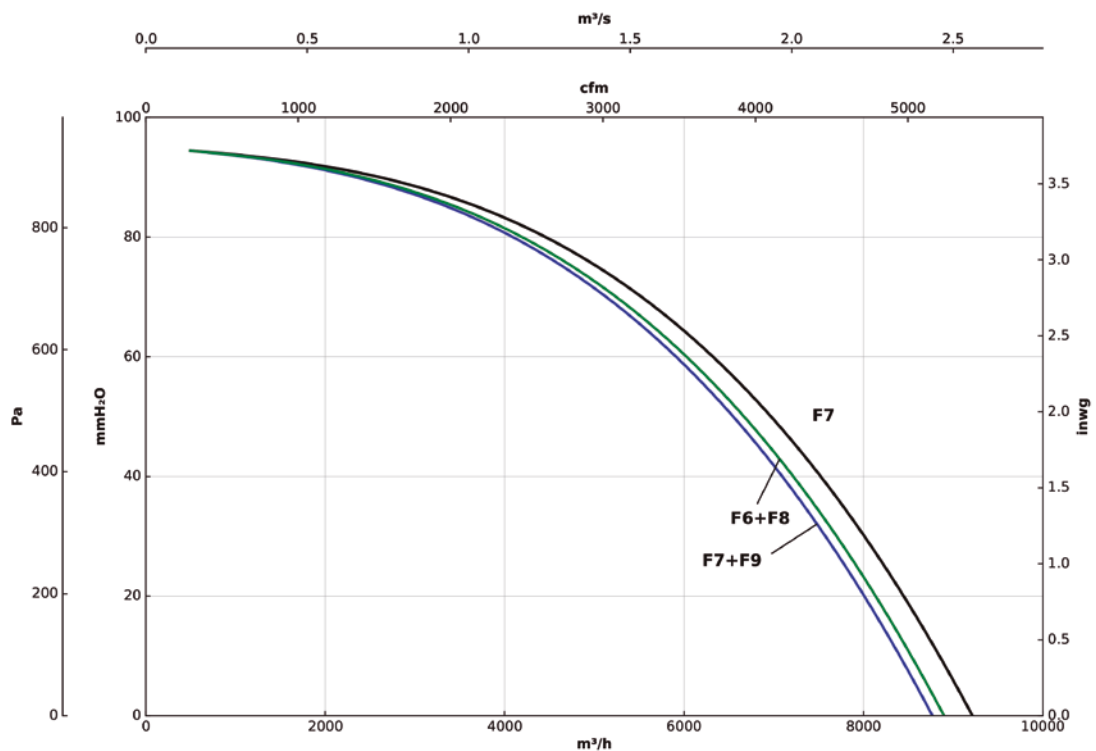
Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm.

Static pressure in mmH<sub>2</sub>O, Pa and inwg.

### RECUP/EC-6000-H

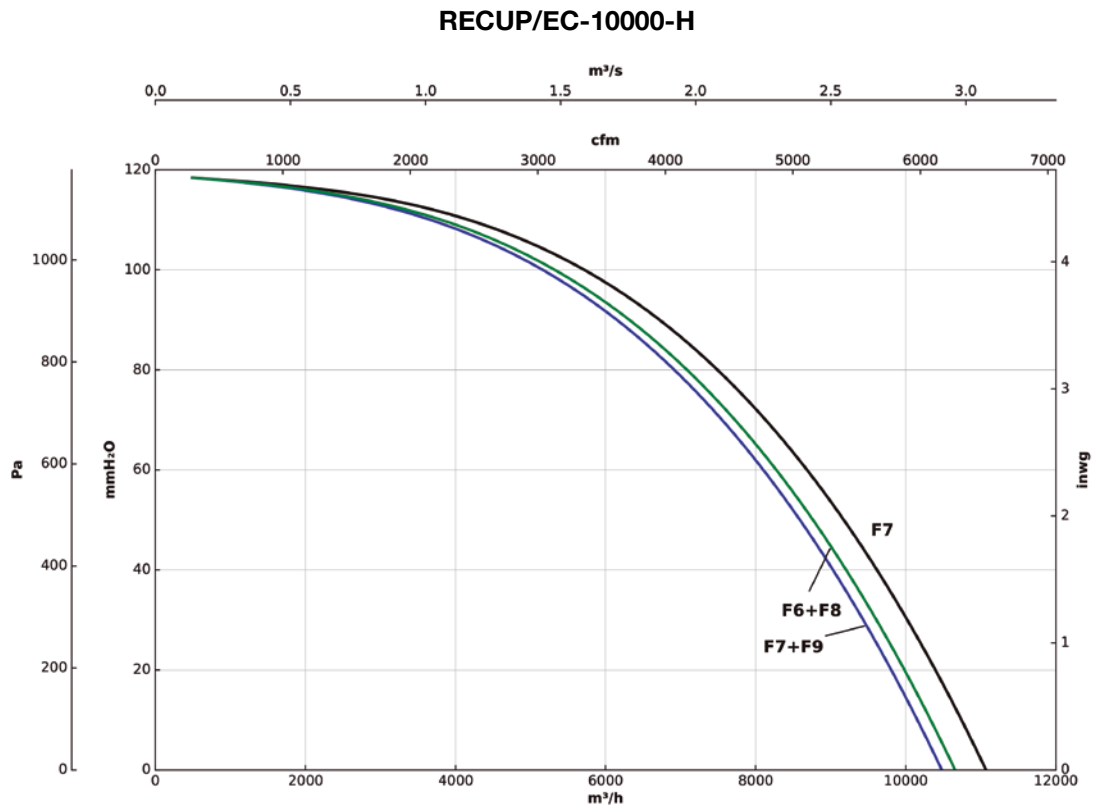


### RECUP/EC-8000-H

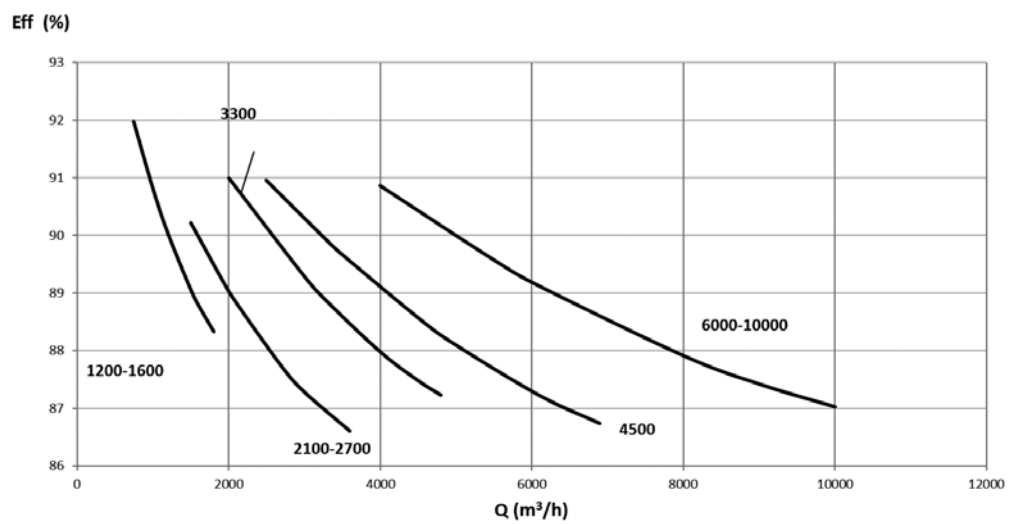


### Characteristic curves

Flow rate in m<sup>3</sup>/h, m<sup>3</sup>/s and cfm. Static pressure in mmH<sub>2</sub>O, Pa and inwg.



### Efficiency curves



**HEADQUARTERS****Sodeca, S.L.U.**

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