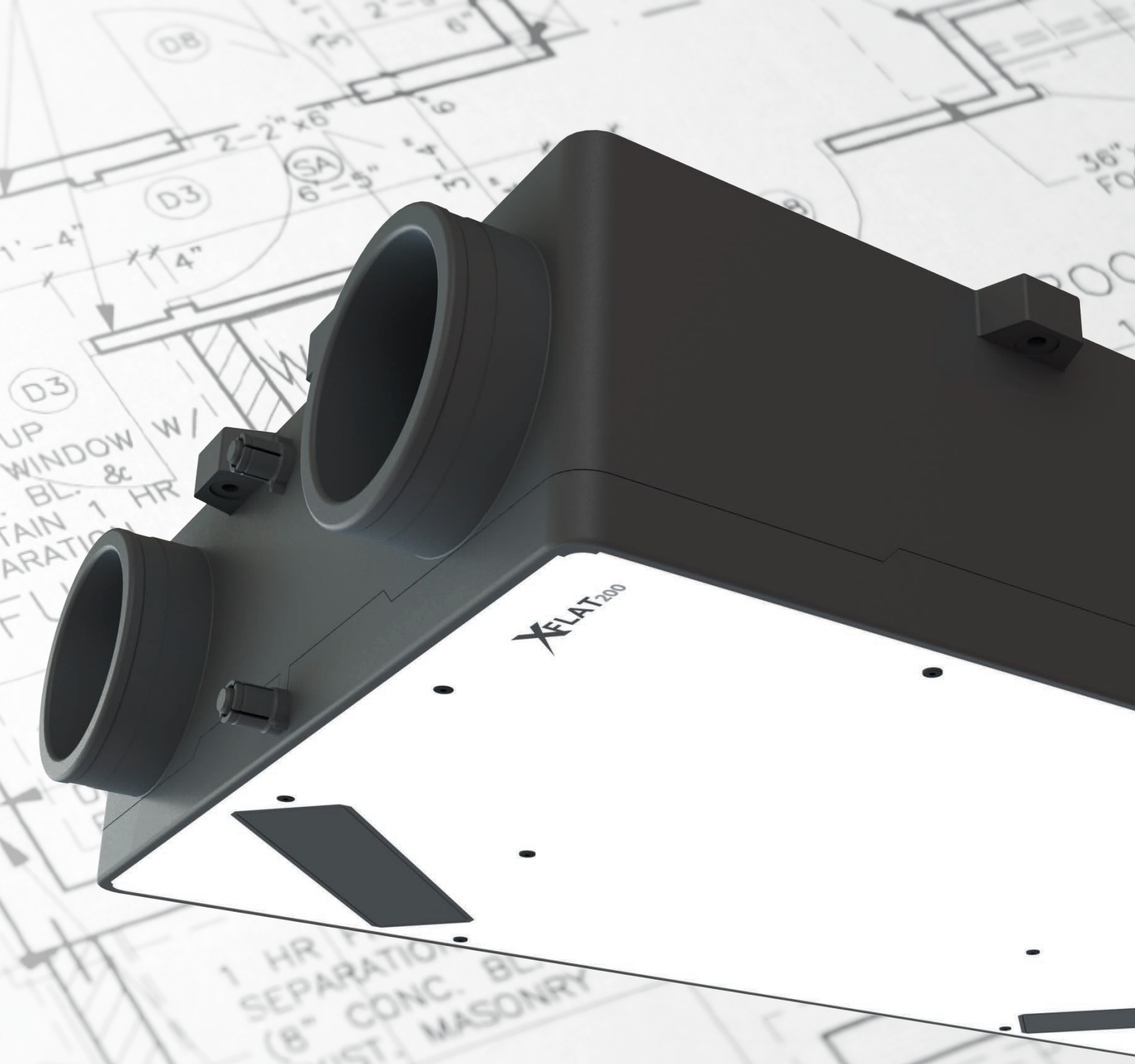


Ventilation unit with heat and moisture recovery

XFLAT200

COMFORT+

COMFORT

ESSENTIAL

www.xvent.cz

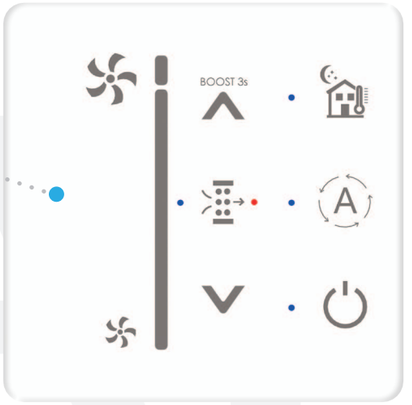
Heat and moisture recovery unit
XFLAT200

suitable for apartments and family houses
universal installation position
heat recovery and humidity regeneration
constant flow controls
simple installation

...**The latest Xflat200 unit** from the Xflat range offers the highest possible comfort in its category. Thanks to a **well-thought-out design, advanced technologies and system „MultiFlex“** provides users with maximum comfort and efficiency in everyday life. Simplicity and flexibility of assembly are key factor for users and installation companies.

Filters with high capacity
Filtration class M5 (ePM 10 55%),
Filtration class F7 (ePM 50%),

The control panel (wired) is used to control the air output and other functions of the unit. Connection to the connector. 10m cable included.



The design metal sheet cover is removable if the major servicing or cleaning is needed.

Accessible controls - simple connection of accessories

EPP insulated throats for duct connection. Possibility turn by 90°. Outer diameter 160mm, inner diameter 130mm

Option of remote control by WIFI and connection to smart home system

The option to connect an external **pre-heater and after-heater controlled directly by unit.** Thanks to this solution, heaters are operating only when needed.

The unit stands out **low weight and small height (only 16kg and 210mm)**

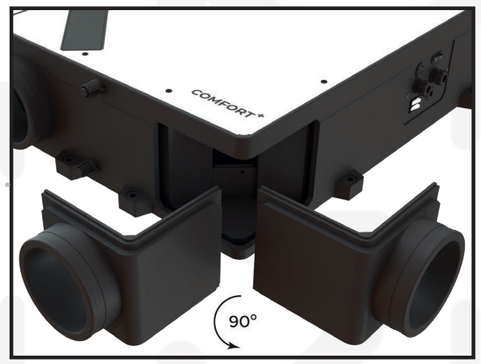
The option to install the unit **under the ceiling or on the wall.**

The body of the unit is made of black EPP (expanded polypropylene).

„MULTIFLEX“ system

„MultiFlex“ system makes the unit **extremely versatile**

Turning the throats by 90° for a smooth duct connection.



Switching between left and the right execution during installation. By reconnection of small PCB bridge.

Settings of nominal flow rate to 150 or 200 m³/h directly on the unit. By reconnection of small PCB bridge.

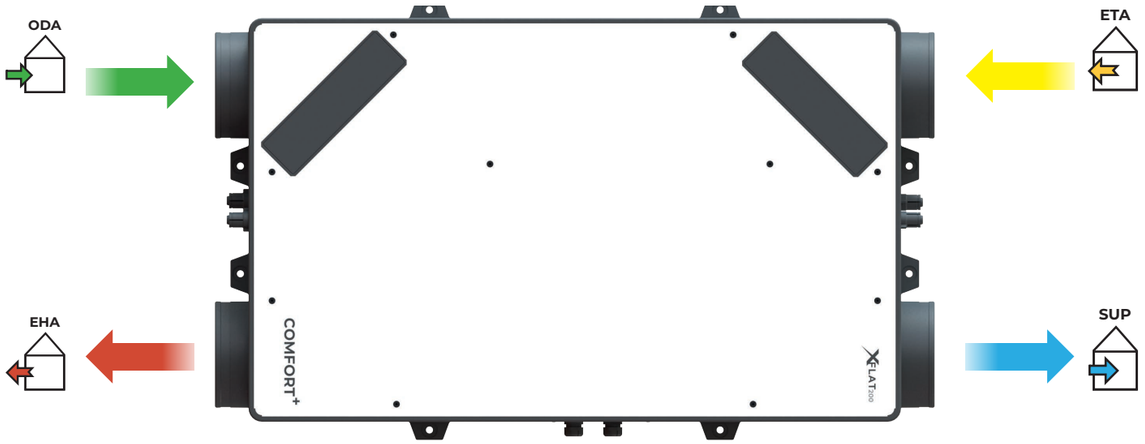
XFLAT200

....a description of the unit and its features...

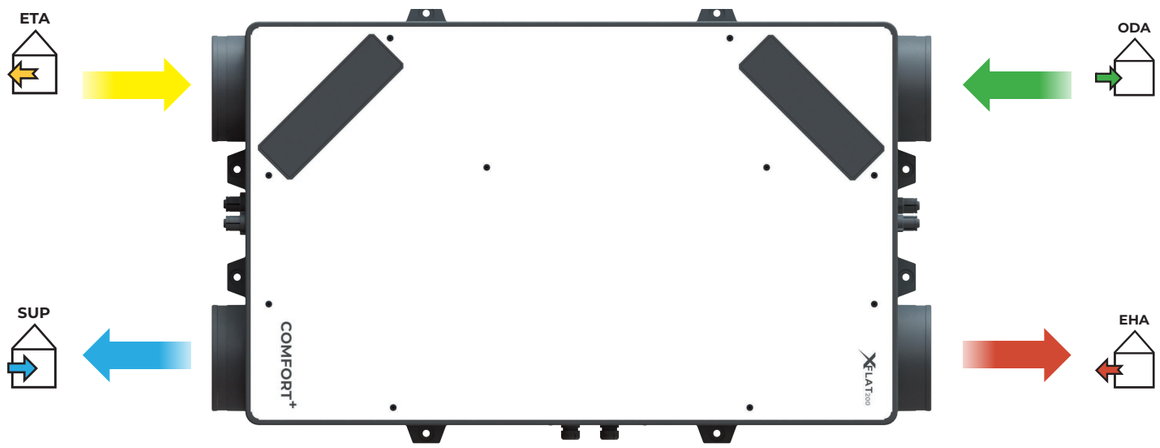
Central unit Xflat200 with heat and humidity recovery. This is very suitable device for the ventilation of apartments and family houses, with its air output of 200 m3/h (alternatively 150 m3/h). The unit can be installed both ways - under the ceiling or vertically on the wall, due to its smart design. Xflat200 can be mounted on ceilings of normal height without getting in the way, thanks to its minimum height. The biggest advantage is the universality and flexibility of the connection.

Airflow diagram

Right execution A - RIGHT



Left execution B -LEFT



coding Xflat200

XF1-020-ECS0HRXAC-0A0

- **XF1** unit type: Xflat200 - mark 1
- **020** airflow 200m³/h
- **EC** EF fans
- **S0** without afterheater
- **HR** heat recovery exchanger
- **ER** enthalpy exchanger
- **X** without preheater
- **A** right execution
- **B** left execution
- **C** control - comfort
- **E** control - essential
- **0** electronic bypass
- **1** mechanic bypass
- **A** standard color
- **0** reserve

Frequently asked questions / Answers

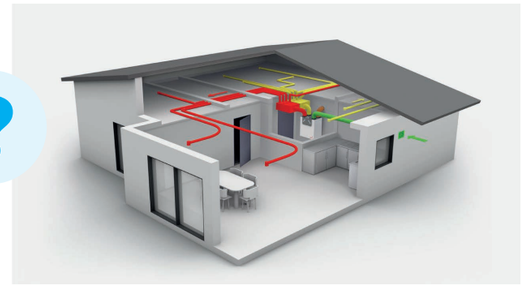
Decentral vs. central ventilation...

Decentral ventilation is mechanical ventilation for one room only. **Central ventilation** is mechanical ventilation of more rooms by once device.

Central ventilation is provided by units with bigger dimensions than units for decentral ventilation, since these has to supply higher air volume. Units for central ventilations are usually located in the technical room where they are not annoying the users by high noise level and they are not blocking any space. Central ventilation systems require ducting for supply and extract air, which are often difficult to place in the way to do not disturb. Central ducting systems require cleaning every year, which is complicated. Cost investment of the installation of ducting and theirs covers are usually in the same level as the purchase price of the ventilation unit. Another aspect is regulation and controlling of these systems in order to achieve minimum operation costs and distribution of the air to there where is needed. The advantage is, that suction and exhaust does not have to be located on the outside wall and if so, there are always only two openings.

Decentral units are used for ventilation of one room only. Theirs dimensions vary from very small ones located in to the wall, to bigger ones with dimensions similar to smaller radiator. These units ventilate only selected rooms and when needed. Theirs advantage is, that these units can be operated according to sensors of quality of the air (Air Quality sensors -AQS), typically by CO2 sensor or relative humidity sensor. Thanks to the sensors the unit ventilates only when the concentration of pollution in the air is above set level – this means “ON DEMAND”. This ensure, that the energy consumption during ventilation is at minimum level, about 35% lower than ventilation without sensors. More powerful units can supply in to the room bigger air volume of the air in case of need than central units and thus can ventilate the room faster and better.

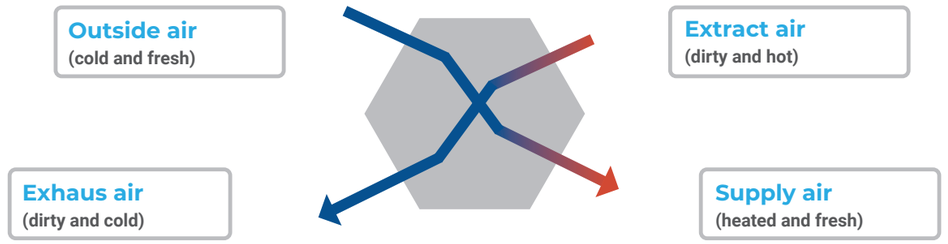
It is necessary to consider more suitable solution for each specific project.



What is heat recovery...

Heat recovery generally means backwards usage of the energy. In the case ventilation we talk about heat recovery or eventually about moisture regeneration. Quantity of energy to be saved is expressed by efficiency shown in percentage points and such a value represent quantity of the heat/moisture, what is the unit able to gain from the extracted(exhausted) air and transfer it to supplied (fresh) air. Higher efficiency value means better. This is valid for heat recovery with efficiency up to 85%, because the heat recovery with higher efficiency has trouble with freezing condensate in the exchanger. This fact seriously limits the heat recovery during winter time.

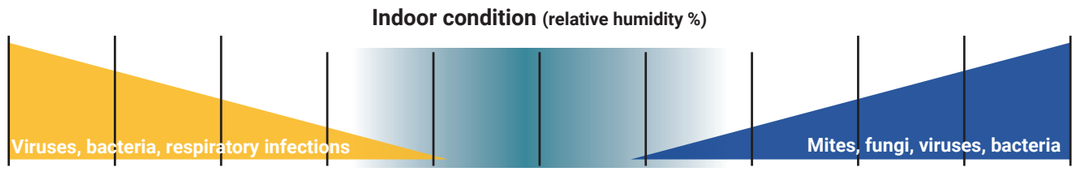
Important fact is, that ventilation with heat recovery saves up to 85% of the heating costs in comparison with ventilation by windows.



What means enthalpic regeneration...

Enthalpic regeneration (ERV) means backwards gaining of the moisture from the extract air. The supplied air is so dry in the winter, that it can reduce the indoor relative humidity in the air below 20%. Such a low relative humidity cause drying-off the skin, mucous membrane and wood--made furniture and floors. Dry mucous membrane makes breathing less comfortable and cause respiratory diseases. Dehydration of the skin makes wrinkles and the drying-off the wood can damage furniture or floors. Ideal relative humidity inside should be around 50%. The solution is usage of **Enthalpic Recovery Exchanger** (Xvent recommends).

It is important to know that enthalpy heat exchangers always also recover heat.



How to choose right size of the unit...

One of the mains parameters of the unit is the air volume which is the unit able to supply in to the room. Value which is usually used for choice, is quantity of the air at one square meter of the floor space. **Manufactures usually used 25m3/h at 20m2**. This is half quantity which ensure healthy climate. For the most cases are better to use quantity of the air need at quantity of the people inside the room. Typical value is **25m3/h/person**.

It is important to choose higher value of both methods in specific case anyway.

Why is mechanical ventilation needed...

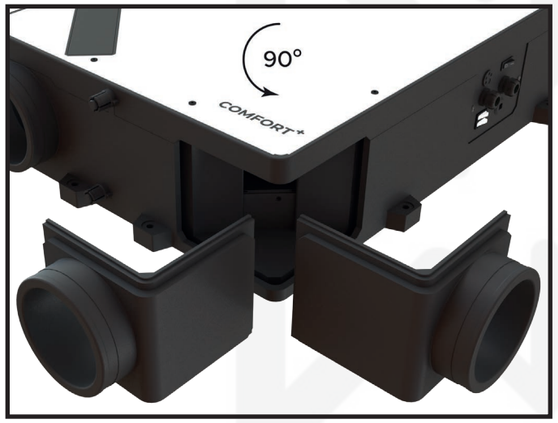
Ventilation by windows is in many cases enough (residential areas, alone houses close to the forest), but does not ensure the energy savings (heat in the winter, cold during summer). But if there is noise outside, pollen, annoying smell or freezing conditions, the ventilation by window is not the best solution. Even thought in the summer, if the room is equipped by air conditioner, is the opening the windows not suitable. In all cases mentioned above is the mechanical ventilation senseful solution. If the unit is equipped by heat recovery and/or moisture regeneration, the energy savings reach 85%, which will have to be supplied by heating or by cooling device otherwise.

It is important to consider if the priority is price or health.

What does the „MULTIFLEX“ system

The **Xflat200** recuperation unit provides maximum versatility both in selection and even during installation, when changes are often already difficult. Thanks to the MULTI-FLEX system, you can choose correct air output of 150 or 200 m3/h directly on the unit. The unit can also be switched between the left and right version, which practically means that its behavior is electronically adapting the direction of the flow of outdoor and indoor air. Turning the throats 90° is another and indisputable advantage during final assembly.

90° rotation of the throats for a easy connection of the duct.

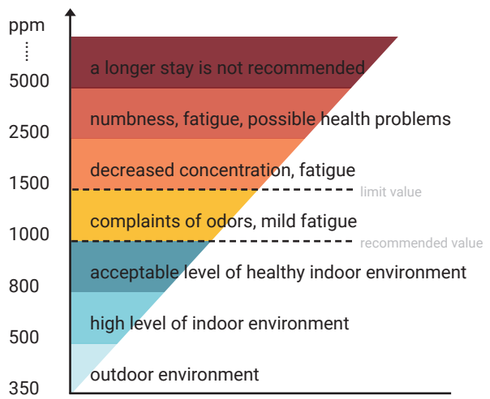


Switching between left and the right execution during installation. By reconnection of small PCB bridge.

Settings of nominal flow rate to 150 or 200 m³/h directly on the unit. By reconnection of small PCB bridge.

Why sensors (air quality sensors)...

Sensors enable automatic operation of the unit. The unit operates only, when the inside quality of the air is worse than requested. When fulfilling the air quality request, such a solution generate only minimum ventilation costs in the real operations! This also means lower operation costs and faster paid back of the investment to ventilation unit purchase. Xflat enables connection of **CO2 sensor, RH sensor and radon sensor.**
It is important to consider, if the more important are operation costs, or purchase investment.



What are the operation costs...

Operation costs are generated by heating costs, costs to operate the fans and by maintenance and service costs. Heating costs are lower about 85% in comparison with ventilation by windows for the same time period. Operation costs of the fans are thanks to the EC fans 1 EUR/month when considering average usage four hours a day every day. Costs of filter replacement are around 10 EUR/month when replaced twice a year.

How complicated is the installation...

Installation of the unit is simplified, that handyman can install it by him self. Installation does not require any specialist. Because the unit is very light, installation is possible in one. The mains connection cable is already removed from the unit. Retrofitting and connection of accessories is carried out in the control box.

How difficult is the maintenance...

The Xflat is designed to be maintenance free. Only thing needs to be under the control is filter clogging. Good condition of the filters ensures smooth operation and stable high level heat recovery and moisture regeneration. Clogged filter is signal by flashing diode “filter” on the control panel. In such case is necessary to follow the operation manual. The front cover comes to remove and by opening two plugins with inscription “FILTER” is possible to access and replace these filters by new clean ones. The replacement of the filters to be confirmed by pushing the RESET button and that’s it.
It can not be easier.

What is the difference between electronic and mechanical bypass...

Summer bypass - During the colder nights of the summer, in addition to the normal ventilation of the windows, it is also possible to use forced ventilation with the bypass function. Otherwise, it pays to use a ventilation system with heat recovery. This bypass directs the exhaust air around the heat exchanger (see figure), thus preventing the „cooler“ supply air from being heated by the warm exhaust air.
Elektronic bypass - Electronic bypass - there is no physical bypass of the recuperator, but only the exhaust fan is switched off. The supply fan pushes the air through the recuperator, but it is not heated by the exhaust air.

Better price, greater thermal efficiency, fewer mechanical parts

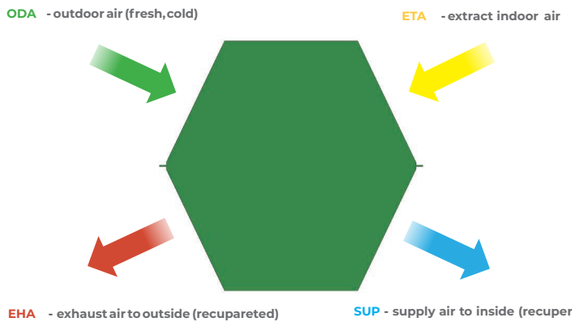
No air is discharged during bypass switching (the object is slightly overpressured)

Mechanický bypass - there is a physical bypass channel with a flap that opens the bypass channel and closes the recuperation section at the same time.

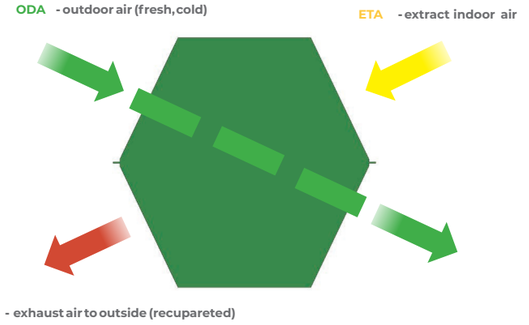
Equal pressure ventilation

Lower thermal efficiency, higher price, more mechanical parts

Recovery logic



Bypass logic (fresh air bypasses the recuperation part)



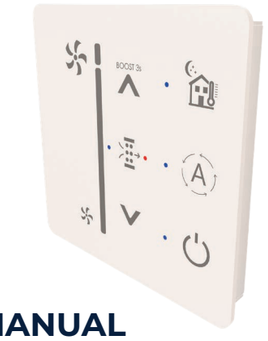
Control description

XFLAT200

COMFORT+

COMFORT

COMFORT+ and COMFORT regulation allows complete setting of the recuperation unit. The controller connects to the unit using a cable with RJ45 connectors (10 m in the package) - this guarantees a simple and secure connection. The control can be extended with a WIFI module and everything can be controlled conveniently using the web application. You can also connect the unit to a BMS



AUTOMAT/MANUAL

Press the button to set the manual mode. Ventilation is manually controlled by the user, outputs from AQS sensors are ignored. Press the button again to activate automatic mode - ventilation on request based on AQS sensors (if connected)

FILTER CLOGGING

The clogged filter indication is activated by timer, after approximately 6 months of operation (only if the unit is ventilating). Indication

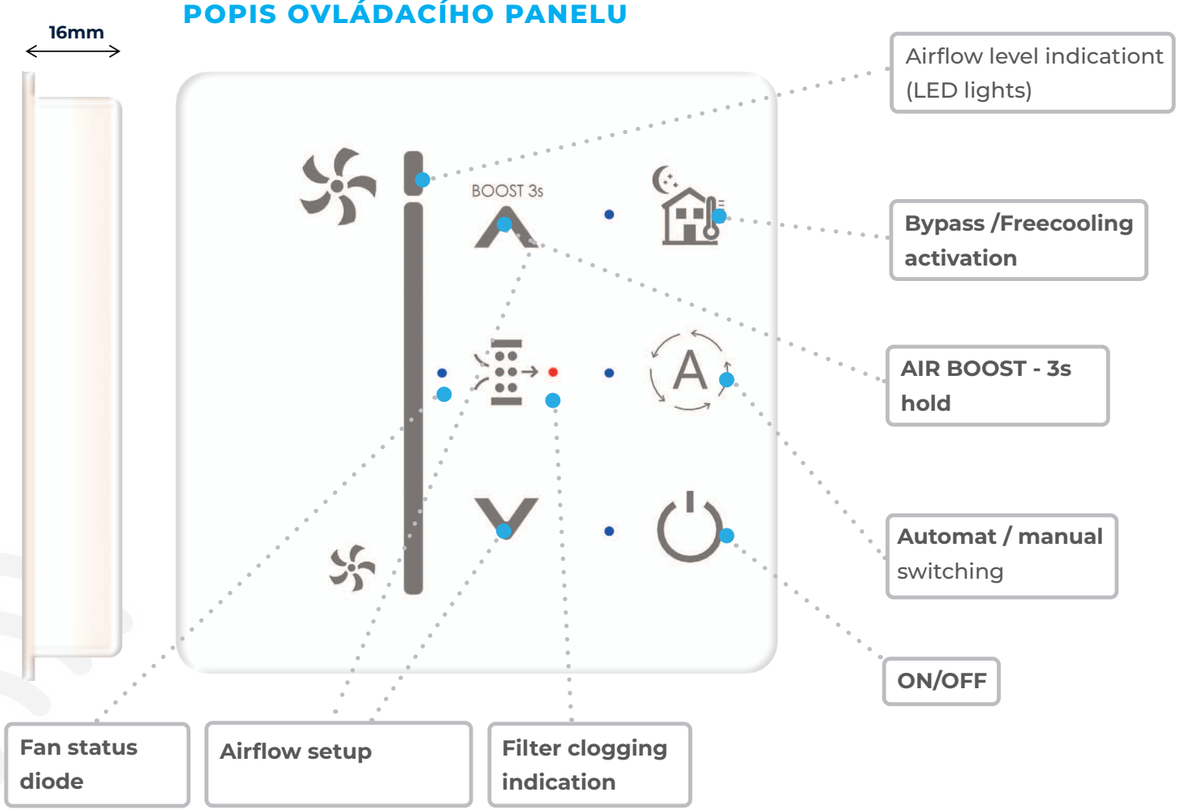
FREE COOLING (bypass)

Activate the night free cooling function by pressing a button. Free cooling is cooling the room in summer by cold night air. This function is running automaticly acc. internal logic. The intensity of the supplied air is possible to change during this mode.

AIRFLOW BOOST

By pressing the button for 3sec the intensive ventilation will start for 30sec period. Shall you wish to turn off this regime within 10 minutes, press the button for 3 sec once again and the unit comes to the setting used before. Boost time running you are able to set in customer menu (30sec - 20min)

POPIS OVLÁDACÍHO PANELU



UNBALANCING FLOW

In customer menu its possible to unbalanced flow of fans (0-35%). The exhaust fan will have less power than the supply fan.

CHILDREN‘S LOCK

Activated by pressing the summer mode button for 6 seconds.

ANTIFREEZE PROTECTION

The unit is equipped with an anti-freeze sensor located in the recuperator. If the temperature drops below the set limit, the unit starts the antifreeze protection - fan balancing. If the unit is equipped with an external preheater, which is connected to the unit control, the preheating is started first and if it is insufficient, the fan balancing is started.

Control description XFLAT200 ESSENTIAL

The ESSENTIAL regulation is a simplified version control of the recovery unit. Still, it provides the basic and fully sufficient functions. Two potentiometers allow set the desired flow rate and time period of the night cooling (bypass). The controller is connected to the unit by 10m by cable.

FILTER CLOGGING

The clogged filter indication is activated by timer, after approximately 6 months of operation (only if the unit is ventilating). Indication

FREECOOLING (bypass)

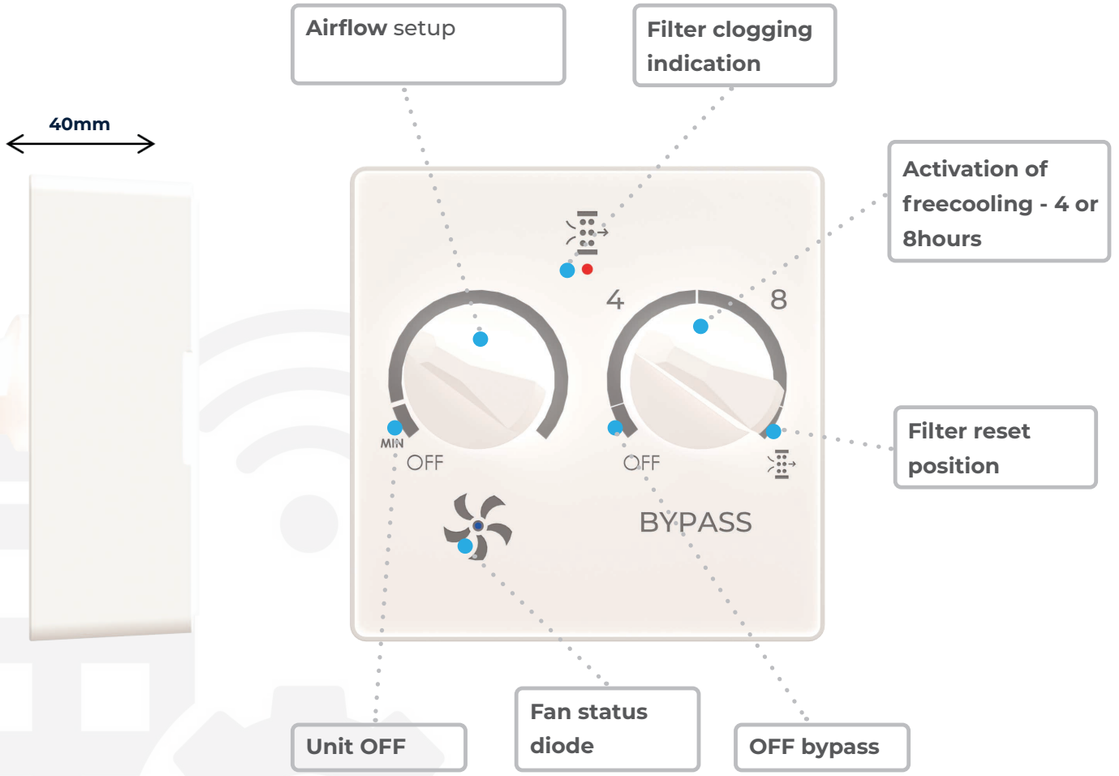
The function can be activated at any given time time period 4 and 8h. Then the unit returns

ANTIFREEZE PROTECTION

The unit is equipped with antifreeze sensor. If the temperature drops below set limit, the unit starts frost protection.

AIRFLOW BOOST

The possibility of connecting an external contact, which activates BOOST mode (max. power units).



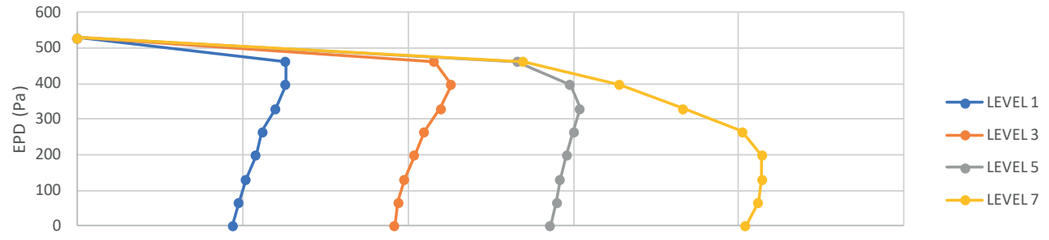
Technical data Xflat200

type XFLAT 200 SET - 200m³/h		XF1-020-ECS0HR-XAC-0A0	XF1-020-ECS0ER-XAC-0A0	XF1-020-ECS0HR-XAE-0A0	XF1-020-ECS0ER-XAE-0A0	XF1-020-ECS0HR-XAC-1A0 verze s mechanickýcm bypassem	XF1-020-ECS0ER-XAC-1A0 verze s mechanickýcm bypassem
		COMFORT		ESSENTIAL		COMFORT+	
Type of exchanger		HRV	ERV	HRV	ERV	HRV	ERV
Nominal airflow (EPD 200Pa)	m3/h	200					
Noise level *	dB (A)	35,1					
Weight **	kg	16				16,5	
Power supply	V/Hz	1 ~ 230 / 50-60					
Nominal power comsumption	W	170					
Efficiency EN 13141-7 heat/humidity ***	%	88 / -	78 / 40	88 / -	78 / 40	88 / -	78 / 40
IP rating	IP	20					
Energy class (SEC)	-	cold A+ ; middle A ; warm E					

* accoustic pressure in 3m (freespace)
** weight without packaging
*** at 70% of nominal airflow acc. EN 308

ErP COMPLIANT

PERFORMANCE CHARACTERISTIC AT 200M3/H

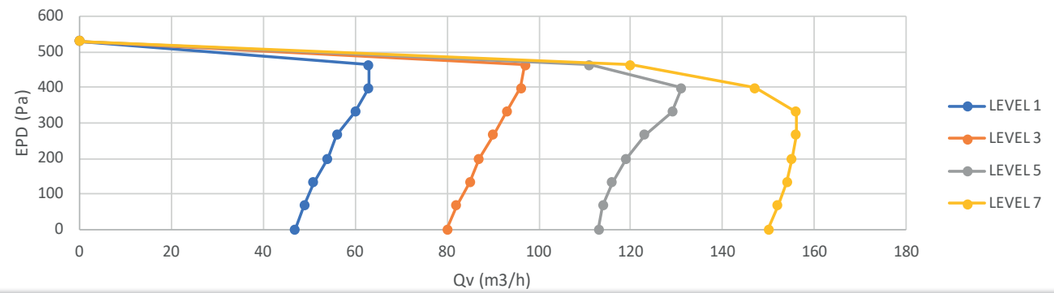


type XFLAT 200 NASTAVENÍ 150m³/h		XF1-020-ECS0HR-XAC-0A0	XF1-020-ECS0ER-XAC-0A0	XF1-020-ECS0HR-XAE-0A0	XF1-020-ECS0ER-XAE-0A0	XF1-020-ECS0HR-XAC-1A0 verze s mechanickýcm bypassem	XF1-020-ECS0ER-XAC-1A0 verze s mechanickýcm bypassem
		COMFORT		ESSENTIAL		COMFORT+	
Type of exchanger		HRV	ERV	HRV	ERV	HRV	ERV
Nominal airflow (EPD 200Pa)	m3/h	200					
Noise level *	dB (A)	31,4					
Weight **	kg	16				16,5	
Power supply	V/Hz	1 ~ 230 / 50-60					
Nominal power comsumption	W	104					
Efficiency EN 13141-7 heat/humidity ***	%	89,3 / -	80,5 / 43	89,3 / -	80,5 / 43	89,3 / -	80,5 / 43
IP rating	IP	20					
Energy class (SEC)	-	cold A+ ; middle A+ ; warm E					

* accoustic pressure in 3m (freespace)
** weight without packaging
*** at 70% of nominal airflow acc. EN 308

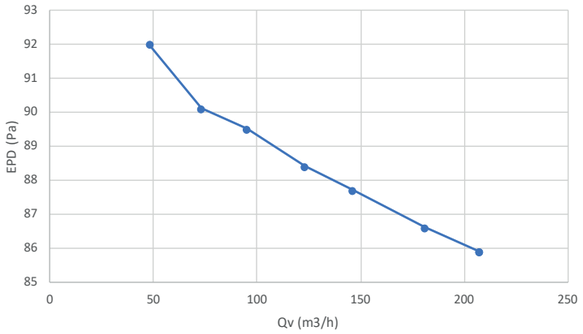
ErP COMPLIANT

PERFORMANCE CHARACTERISTIC AT 150M3/H

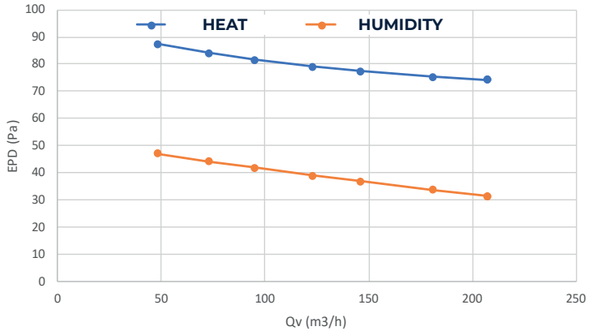


Range		Xflat 200 - set 200m3/h								
Unit type		XF1-020-ECS0HRXAx-0A0				XF1-020-ECS0ERXAx-0A0				
Type of exchanger		HRV (heat)				ERV (entalpic)				
		Airflow (m3/h)	Efficiency (%)	Current (A)	Com-sumpti-on (W)	Airflow (m3/h)	Efficiency (%)	Efficiency (hu-midity) (%)	Current (A)	Com-sumpti-on (W)
Airflow level	1.	**48**	92	0,1	11,7	**48**	87,4	47,2	0,1	11,7
	2.	**73**	90,1	0,1	18,4	**73**	84	44,3	0,1	18,4
	3.	**95**	89,5	0,2	26,2	**95**	81,5	42	0,2	26,2
	4.	**123**	88,4	0,3	42,5	**123**	79	39,1	0,3	42,5
	5.	**146**	87,7	0,5	66,4	**146**	77,3	37	0,5	66,4
	6.	**181**	86,6	0,9	126,0	**181**	75,4	33,8	0,9	126,0
	7. - nominal	**207**	85,9	1,2	173,0	**207**	74,2	31,6	1,2	173,0
	8. - boost	**207**	85,9	1,2	173,0	**207**	74,2	31,6	1,2	173,0

EFFICIENCY DIAGRAM - HRV

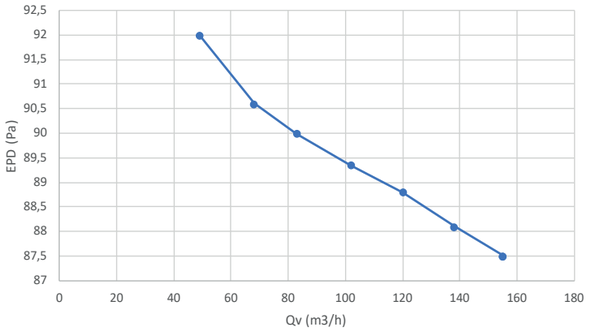


EFFICIENCY DIAGRAM - ERV

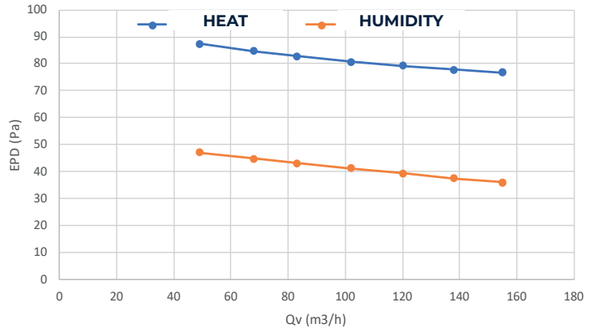


Range		Xflat 200 - set 150m3/h								
Unit type		XF1-020-ECS0HRXAx-0A0				XF1-020-ECS0ERXAx-0A0				
Type of exchanger		HRV (heat)				ERV (entalpic)				
		Airflow (m3/h)	Efficiency (%)	Current (A)	Com-sumpti-on (W)	Airflow (m3/h)	Efficiency (%)	Efficiency (hu-midity) (%)	Current (A)	Com-sumpti-on (W)
Airflow level	1.	**49**	92	0,12	13,14	**49**	87,4	47,2	0,12	13,14
	2.	**68**	90,6	0,15	18,44	**68**	84,7	44,9	0,15	18,44
	3.	**83**	90	0,18	23,43	**83**	82,8	43,2	0,18	23,43
	4.	**102**	89,4	0,26	35,48	**102**	80,8	41,2	0,26	35,48
	5.	**120**	88,8	0,36	50,55	**120**	79,2	39,4	0,36	50,55
	6.	**138**	88,1	0,51	71,74	**138**	77,9	37,6	0,51	71,74
	7. - nominal	**155**	87,5	0,74	104	**155**	76,8	36,1	0,74	104
	8. - boost	**155**	87,5	0,74	104	**155**	76,8	36,1	0,74	104

EFFICIENCY DIAGRAM - HRV



EFFICIENCY DIAGRAM - ERV



Data - NOISE

XFLAT 200 - SET 200m³/h

XF1-20-ECS0XRXAS-0A0 - radiating the unit into the interior (inside the room)										Sound power level LWA (dB A)	Sound pressure level in a free field on a reflecting plane	
Airflow - setting		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		LPA (dB) in 1,5m	LPA (dB) in 3m
48	dB	-	11,9	23,3	23,5	22,0	14,8	12,9	12,3	31,4	<20	<20
123		17,6	27,3	36,3	31,9	40,0	30,6	24,5	15,4	45,7	32,3	24,4
207		30,5	38,7	47,7	42,7	47,5	45,8	40,0	31,0	56,5	43,0	35,1

XF1-15-ECS0HRXAS-0A0 - vyzařování jednotky do potrubí										Hladina akustické-ho výkonu LWA(dB A)
Airflow - setting		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
ODA	dB	37,1	47,0	42,6	40,8	38,7	29,5	25,3	19,8	57,6
SUP		50,0	54,3	59,5	58,9	55,4	58,1	54,4	50,8	70,1
ETA		36,0	44,6	48,0	41,4	39,4	33,4	26,2	21,0	57,7
EHA		52,1	56,1	58,9	55,9	58,2	56,7	53,9	51,0	70,1

XFLAT 200 - SET 150m³/h

XF1-20-ECS0XRXAS-0A0 - radiating the unit into the interior (inside the room)										Sound power level LWA (dB A)	Sound pressure level in a free field on a reflecting plane	
Airflow - setting		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		LPA (dB) in 1,5m	LPA (dB) in 3m
49	dB	-	12,1	23,6	23,8	22,3	15,0	13,2	12,5	31,7	<20	<20
102		17,3	26,5	34,1	30,4	38,6	28,5	22,4	14,4	44,0	30,6	22,7
155		26,5	35,5	44,3	39,3	44,1	40,3	35,4	25,9	52,7	39,3	31,4

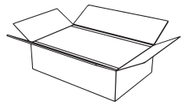
XF1-20-ECS0XRXAS-0A0 - radiating the unit into the duct									Sound power level LWA (dB A)
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
ODA	dB	32,4	43,8	39,2	37,5	35,9	25,4	19,8	15,8	54,9
SUP		47,9	51,6	56,4	55,1	52,0	51,9	49,7	45,7	66,8
ETA		32,4	42,0	45,1	37,8	37,0	28,8	21,7	16,5	55,0
EHA		48,1	52,5	56,1	52,9	55,2	51,4	50,3	46,4	67,2

Packaging and dimensions

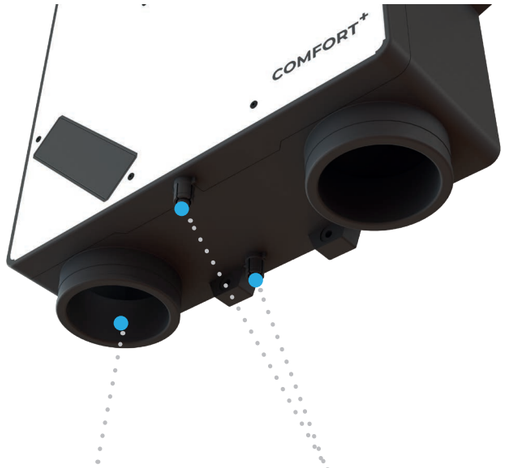
	Type	Code	Weight		Package dimension	Pcs at EU pallete
			Brutto	Netto		
			kg		m	ks
	Xflat 200	XF1-020-ECS0xxXAx-xxx	18	16	1100x750x250	7

Package includes:

- unit Xflat
- Quick manual
- Safety instruction
- Condensate pipe
- Controller+cable



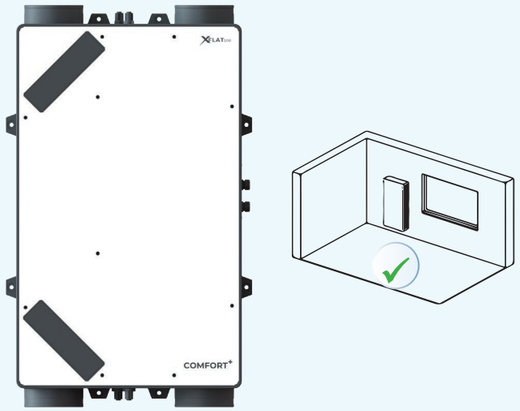
Basic dimensions



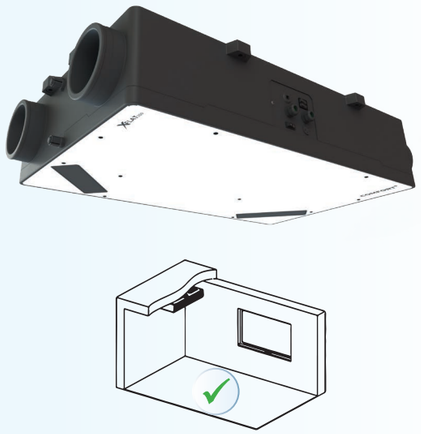
Instalation Xflat200

The Xflat unit allows installation both ways; on the wall (horizontally, vertically) and on the ceiling. Fastening is made by screws and washers into the prepared holes in the EPP body. The relevant condensate drain must be cut during installation and the condesate hose must be connected

WALL VERTICAL



CEILING INSTALLATION



Accessories

FILTERS Xflat200

M5 - ePM 10 55% ISO 16890	F7 - ePM1 50 % ISO 16890
XF-020-FILTER-M5	**XF-020-FILTER-F7**

CO_2 AQS

CO2 sensor
NL-ECO-CO2

Rh AQS

RH sensor
NL-ECO-RH

CO2+RH AQS

RH sensor
NLII-CO2+RH

AQS BRIDGE

AQS extension
PRO-SUM-08

WIFI module

WIFI module
WIFI-MODULE-V01

External electric after heater

After heater
EK-AH-160-0,6-1f

External electric pre-heater

Pre heater
EK-PH-160-06-1f

External water heater/cooler

Water heater/cooler
CWC-160-3 , CWC-125-3

Xvent | Beauty in simplicity

more info

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