

DOUBLE-ECM

Fan coil unit with integrated recovery unit

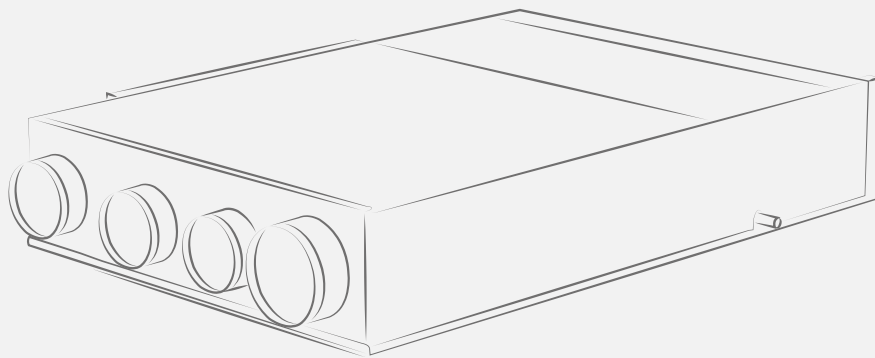


Product Catalog

Rel. 10_24_01_04_EN

DOUBLE-ECM

Fan coil unit with integrated recovery unit



DOUBLE-ECM

New concept of comfort and efficiency

❄️ 2.6 ÷ 4.7 kW
cooling

☀️ 2.2 ÷ 4.6 kW
heating

🌀 300 - 700 m³/h
air flow

↻ 83 - 88 %
thermal efficiency

DOUBLE-ECM

**Structure:**

galvanized or painted sheet (optional) thickness 10/10, insulated in all parts in indirect contact with the heat transfer fluid. Condensate drain pan in galvanized insulated sheet, complete with connections for condensate drainage.

Pre-drilled sides for practical attachment of accessories.

Wall anchoring slots for easy fixing and leveling of the appliance. Wide range of accessories available as plenum with bayonet connection and circular fittings.

The unit is supplied as standard with hydraulic connections on the left and terminal block on the right.

**Recovery unit:**

static high-efficiency polystyrene recuperator, complete with By-pass system.

**Air filter:**

filtration system composed by air filters class F7*/EU7** for primary air, M5*/EU5** for the recirculation airflow, and G2 * / EU2 ** for expulsion air to safeguard the recuperator. (* according to EN779 / ** according to Eurovent)

**Fan section:**

double-inlet centrifugal fans type ECM brushless with statically and dynamically balanced horizontally-oriented aluminium impellers, directly coupled to the fans and cushioned with flexible mountings to ensure low noise. Thermal recovery part equipped with two ECM plug-fan type, as a guarantee of an excellent reduction of energy.

**Coils:**

copper tube coil with aluminum fins with continuous pack blocked on the tubes by mechanical expansion. Brass manifolds equipped with \varnothing 1/2"~ 3/4" female gas connections and easily accessible air vent valves. Hydraulic connections positioned on the left (front view) on request can be supplied on the right. The coils are reversible, so the connection side can also be reversed on site. The heat exchange coil is not suitable for use in corrosive atmospheres.

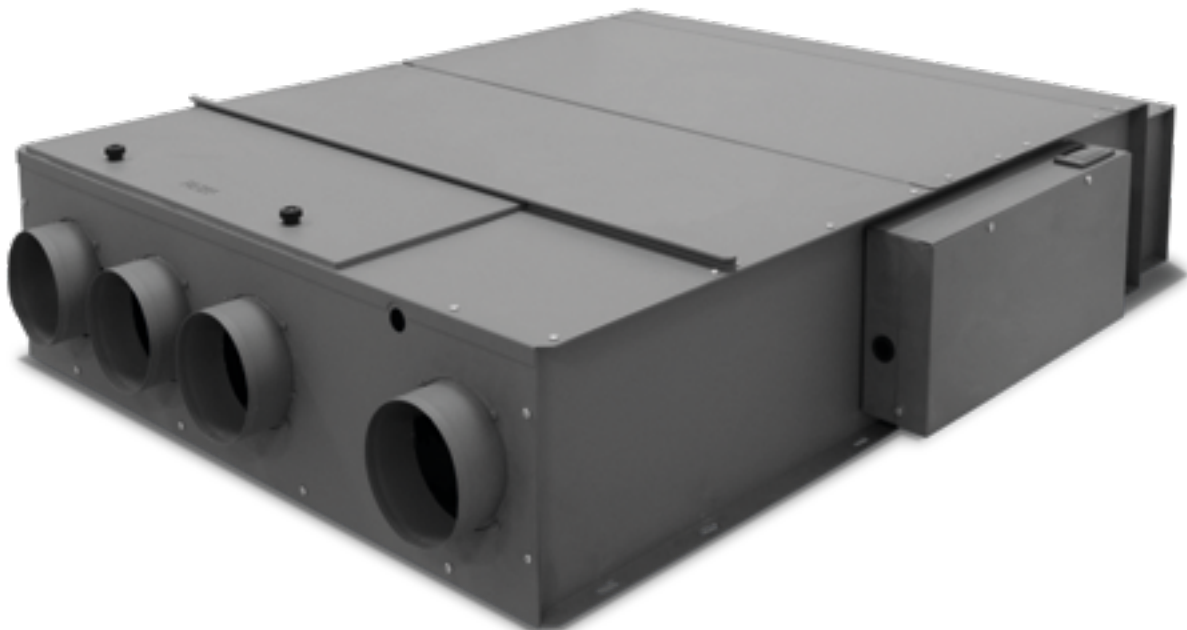
With the advent of avant-garde building technologies, the newly designed housing units are increasingly thermally insulated with direct consequence of limited thermal loads needed to achieve the desired comfort. At the same time, thanks to the absence of dispersions, constant regeneration of the air through a controlled mechanical ventilation system is essential to guarantee the appropriate air quality in the environments.

Nowadays moreover, the use of living spaces reflects new frenetic and unpredictable lifestyles. A flexible system is therefore a winning choice, allowing optimal management of environmental comfort based on real needs, with extremely rapid response times, without any waste.

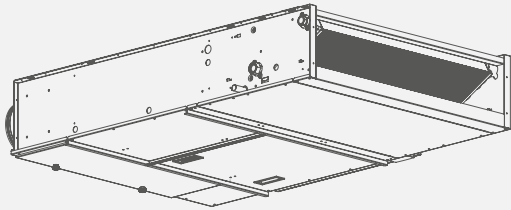
The ideal solution to meet all these needs in a simple, practical and economical way is the newly developed DOUBLE-ECM unit, which in just 238 mm thick encloses a high-efficiency air conditioning system that can heat, cool (with relative dehumidification), filter and renew the air with integrated recovery, also through the free-cooling and free-heating functions. All this through a single extremely compact unit, able to completely replace traditional systems in residential / commercial environments with surfaces up to about 120 square meters.

The range consists of 2 models of 300 m³/h o 700 m³/h, in 2 configurations, horizontal and vertical, with thermal outputs from 2,2 a 4,6 kW and cooling capacities from 2,6 a 4,7 kW.

Versions	
DOUBLE-ECM 300-H	300 m ³ /h for horizontal installation
DOUBLE-ECM 300-V	300 m ³ /h for vertical installation
DOUBLE-ECM 700-H	700 m ³ /h for horizontal installation
DOUBLE-ECM 700-V	700 m ³ /h for vertical installation

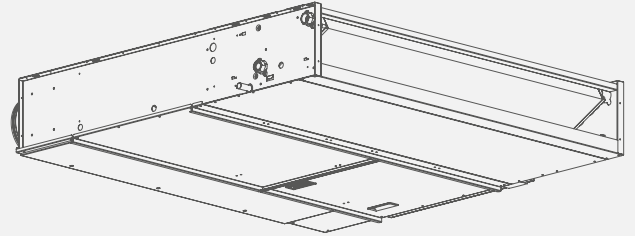


300 - H



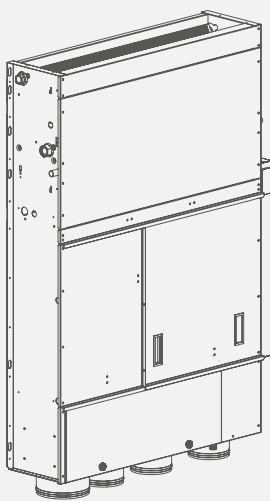
Nominal airflow 300 m³/h
Recovery airflow 80-150 m³/h
Horizontal installation

700 - H



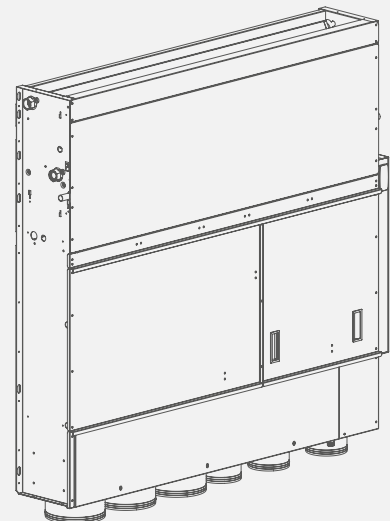
Nominal airflow 700 m³/h
Recovery airflow 80-150 m³/h
Horizontal installation

300 - V



Nominal airflow 300 m³/h
Recovery airflow 80-150 m³/h
Vertical installation

700 - V



Nominal airflow 700 m³/h
Recovery airflow 80-150 m³/h
Vertical installation

i-Plus



On-board unit interface



Interface for wall installation

The i-Plus controller has been developed specifically for controlling the DOUBLE unit to automate all its functionality and offer a perfect control of comfort conditions.

i-Plus manages both room temperature control and ambient air quality control.

The user sets the desired temperature value and i-Plus performs the operations automatically by processing the temperature and air quality probes (or humidity) and acting suitably on the air handling unit, renewal, free cooling/free heating damper, water intake valve.

However, if you prefer, you can manually define engine rotation speeds.

i-Plus integrates the chronothermostat function (time scheduler) and the possibility of remote on-off and remote change season.

i-Plus can be connected via MODbus protocol to a centralized system to be remotely programmed and supervised. You can connect to the i-Plus controller the remote keyboard to position it where the user prefers.

Power supply 12/24 Vac; 50/60Hz through transformer.

i-Eco



The i-Eco controller includes a programmable electronic thermostat model i-30 with LCD display able to manage the air-treatment unit (fan coil unit).

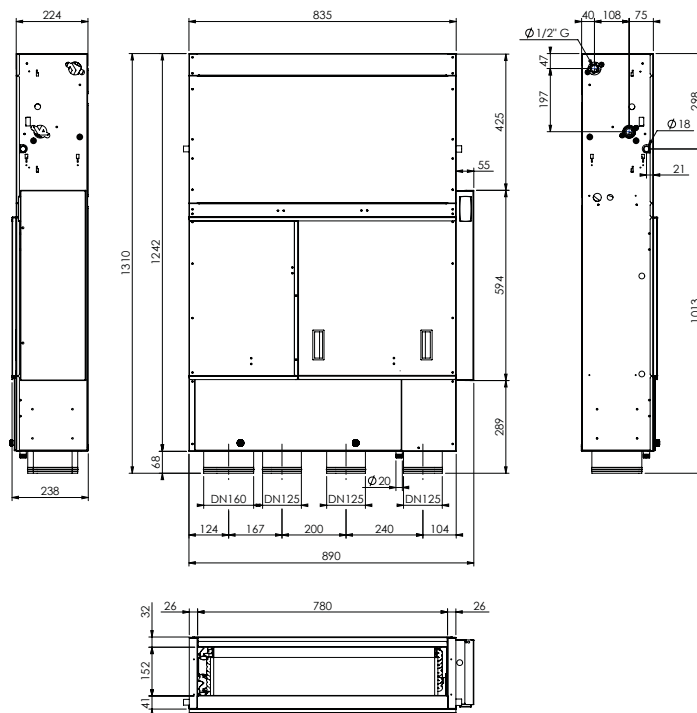
N.B. if used with 24 Vac valves, the thermostat must be powered through a 230/24 Vac transformer.

		300	700				
Portata aria nominale / Nominal airflow Débit d'air nominal / Nennluftstrom / Caudal de aire nominal	m ³ /h	300	700				
Pressione statica / Static pressure Pression statique / Statischer Druck / Presión estática	Pa	50	50				
❄️ RECUPERO TERMICO INVERNO / WINTER HEAT RECOVERY RÉCUPÉRATION THERMIQUE EN HIVER / WÄRMERÜCKGEWINNUNG IM WINTER / RECUPERACIÓN TÉRMICA INVIERNO							
Portata aria / Air flow Débit d'air / Luftstrom / Caudal de aire	(1) m ³ /h	80	120	150	80	120	150
Efficienza recupero / Recovery efficiency Efficacité de récupération / Rückgewinnungseffizienz / Eficiencia de recuperación	(1) %	88,5	85,4	83,5	88,5	85,4	83,5
Potenza termica recupero / Recovery heating capacity Puissance thermique récupération / Wärmerückgewinnungsleistung / Potencia térmica de recuperación	(1) kW	628	922	1134	628	922	1134
Temperatura uscita aria / Air outlet temperature Température de sortie d'air / Luftaustrittstemperatur / Temperatura del aire de salida	(1) °C	18,23	17,73	17,38	18,23	17,73	17,38
☀️ RECUPERO TERMICO ESTATE / SUMMER HEAT RECOVERY RÉCUPÉRATION THERMIQUE D'ÉTÉ / WÄRMERÜCKGEWINNUNG IM SOMMER / RECUPERACIÓN TÉRMICA DE VERANO							
Portata aria / Air flow Débit d'air / Luftstrom / Caudal de aire	(2) m ³ /h	80	120	150	80	120	150
Efficienza recupero / Recovery efficiency Efficacité de récupération / Rückgewinnungseffizienz / Eficiencia de recuperación	(2) %	88,7	85,6	83,5	88,7	85,6	83,5
Potenza termica recupero / Recovery heating capacity Puissance thermique récupération / Wärmerückgewinnungsleistung / Potencia térmica de recuperación	(2) kW	141	204	249	141	204	249
Temperatura uscita aria / Air outlet temperature Température de sortie d'air / Luftaustrittstemperatur / Temperatura del aire de salida	(2) °C	27,68	27,86	27,99	27,68	27,86	27,99
VENTILATORE / FAN VENTILATEUR / VENTILATOR / VENTILADOR							
Ventilatore centrifugo con motore Brushless ECM per unità di trattamento aria / Centrifugal fan with ECM Brushless motor for air treatment unit / Ventilateur centrifuge avec moteur ECM Brushless pour unités de traitement air / Radialventilator mit bürstenlosem ECM/Motor für Lüftungsgeräte / Ventilador centrífugo con motor ECM sin escobillas para unidades de tratamiento de aire							
Ventilatore radiale con motore Brushless ECM per unità di recupero calore / Radial fan with ECM Brushless motor for heat recovery unit / ventilateur radial avec moteur Brushless ECM pour les unités de récupération de chaleur / Radialventilator mit bürstenlosem ECM/Motor für Wärmerückgewinnungsgerät / Ventilador axial con motor ECM sin escobillas para recuperador de calor							
BATTERIA AD ACQUA / WATER COIL BATTERIE À EAU / WASSERWÄRMETAUSCHER / BATERÍA DE AGUA							
Ranghi / Rows Rangs / Rohrreihen / Rangos	kW	3	3				
Potenza termica totale / Total heating capacity Puissance thermique totale / Gesamtheizleistung / Potencia térmica total	(3) kW	2242	4571				
Temperatura uscita aria / Air outlet temperature Température de sortie d'air / Luftaustrittstemperatur / Temperatura del aire de salida	°C	41,2	38,9				
Perdita di carico lato acqua / Water pressure drop Pertes charge côté eau / Wasserseitiger Druckverlust / Pérdida de carga lado agua	kPa	8,4	10,3				
Portata acqua nominale / Nominal water flow Débit d'eau nominal / Nennwasserdurchfluss / Caudal nominal de agua	l/h	390	796				
Potenza frigorifera totale / Total cooling capacity Puissance frigorifique totale / Kälteleistung gesamt / Potencia frigorífica total	(4) kW	2618	4650				
Potenza frigorifera sensibile / Sensible cooling capacity Puissance frigorifique sensible / Sensible Kälteleistung / Potencia frigorífica total sensible	kW	1471	3068				
Temperatura uscita aria / Air outlet temperature Température de sortie d'air / Luftaustrittstemperatur / Temperatura del aire de salida	°C	12,6	14				
Perdita di carico lato acqua / Water pressure drop Pertes charge côté eau / Wasserseitiger Druckverlust / Pérdida de carga lado agua	kPa	13	12,6				
Portata acqua nominale / Nominal water flow Débit d'eau nominal / Nennwasserdurchfluss / Caudal nominal de agua	l/h	449	798				
ASSORBIMENTI ELETRICI / ELECTRICAL ABSORPTIONS CONSOMMATION ÉLECTRIQUE / STROMVERBRAUCH / ABSORCIÓN ELÉCTRICA							
Alimentazione elettrica / Power supply Alimentation électrique / Stromversorgung / Fuente de alimentación	-	230V / 50Hz	230V / 50Hz				
Massima potenza assorbita / Max absorbed power Puissance maximale / Maximale Leistungsaufnahme / Potencia máxima absorbida	kW	260	340				
Massima corrente assorbita / Max absorbed current Courant maximal admissible / Stromaufnahme / Corriente máxima absorbida	A	1,15	1,48				
LIMITI DI FUNZIONAMENTO / OPERATING LIMITS LIMITES DE FONCTIONNEMENT / EINSATZGRENZEN / LIMITES DE FONCIONAMIENTO							
Temperatura aria esterna / Outdoor air temperature Température de l'air extérieur / Außenlufttemperatur / Temperatura del aire exterior	°C	min (-) max (+) 45)					
Umidità aria esterna / Outdoor humidity Humidité air extérieur / Außenluftfeuchtigkeit / Humedad del aire exterior	%	min 10 - max 75					
Temperatura aria interna / Indoor air temperature Température de l'air intérieur / Raumlufttemperatur / Temperatura del aire interior	°C	min 15 - max 30					
Umidità aria interna / Indoor humidity Humidité air intérieur / Raumluftfeuchtigkeit / Humedad del aire interior	%	min 10 - max 75					
Massima pressione di esercizio acqua / Max water pressure Pression maximum d'utilisation d'eau / maximaler Wasserdruck / Presión de agua máxima de trabajo	Bar	8					
Massima temp. esercizio acqua / Max inlet water temperature Temp. maximum d'utilisation d'eau / maximale Wassereintrittstemperatur / Temperatura de agua máxima de trabajo	°C	70					
(1)	Temperatura aria di rinnovo / Air temperature renewal / Température de l'air neuf / Frischlufttemperatur / Temperatura del aire de renovación	-5°C					
	Temperatura aria espulsione / Exhaust air temperature / Température de l'air extérieur / Ablufttemperatur / Temperatura del aire de expulsión	20°C					
(2)	Temperatura aria di rinnovo / Air temperature renewal / Température de l'air neuf / Frischlufttemperatur / Temperatura del aire de renovación	33°C 50%					
	Temperatura aria espulsione / Exhaust air temperature / Température de l'air extérieur / Ablufttemperatur / Temperatura del aire de expulsión	27°C 50%					
(3)	Temp. aria esterna/Acqua - Outside temp. air/Temp. water - Temp. air extérieur/Eau - Temp. Aussenluft/Wasser - Temp. aire exterior/agua	-5°C / 45-40°C					
(4)	Temp. aria esterna/Acqua - Outside temp. air/Temp. water - Temp. air extérieur/Eau - Temp. Aussenluft/Wasser - Temp. aire exterior/agua	33°C 50% / 7-12°C					

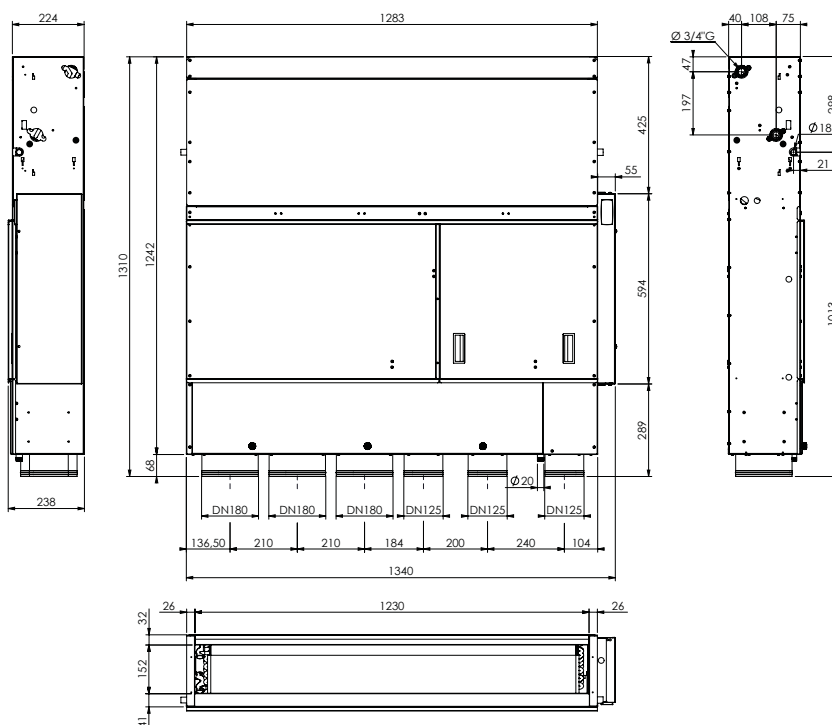
Dimensions

			300	700
Lunghezza / Length / Longueur / Lange / Longitud	L	mm	890	1340
Altezza / Height / Hauteur / Hohe / Altura	H	mm	1310	1310
Profondita / Depth / Profondeur / Tiefe / Profundidad	P	mm	238	238
Scarico recuperatore / Cross-flow recovery drain Evacuation - recuperateur / Kreuzstromplattentauscher / Escape recuperador	R	mm	20	20
Scarico trattamento aria / Air treatment drain Evacuation - traitement de l'air / Entluftungsventil / Escape de tratamiento de aire	F	mm	18	18

Mod. 300



Mod. 700



DOUBLE-ECM

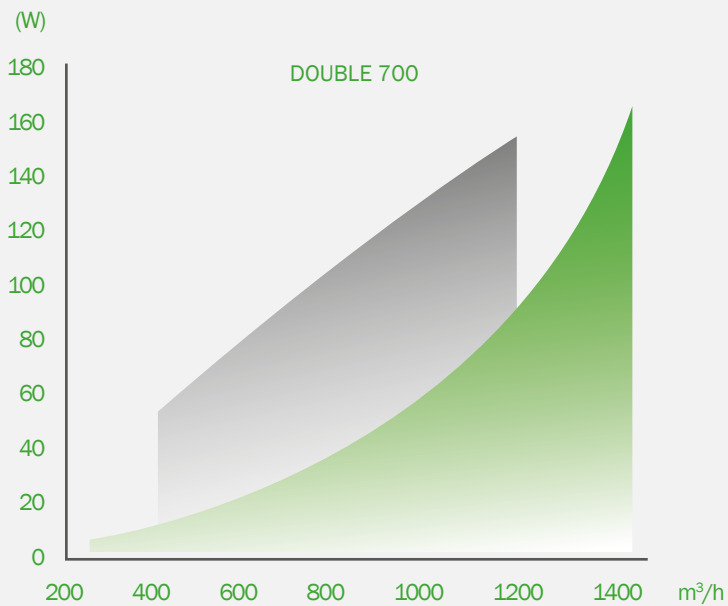
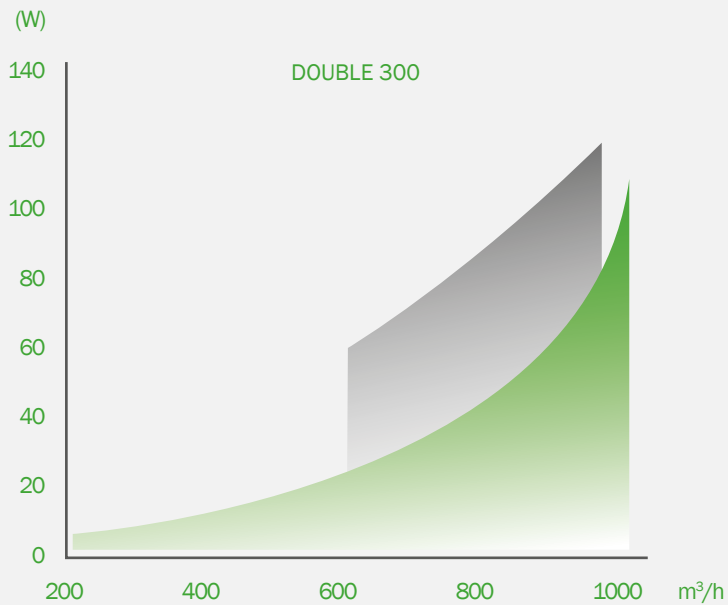


ECM motors, not only as a savings guarantee

The DOUBLE system is equipped with brushless ECM motors of the latest generation, as a guarantee of a perfect combination of high performance, excellent reduction of energy consumption and low ambient noise emission.

Fundamental plus of these innovative fan groups is the capacity to modulate in a precise and constant way the air flow based on actual working loads required for the benefit of a reduction of consumption, absence of unnecessary waste and greater psychological and physical comfort in an environment guaranteed by greater management sensitivity and low noise thanks to the intelligent management of air flow.

The diagram shows the comparison between the absorption of asynchronous centrifugal motor and brushless centrifugal ECM motor with the same air flow.



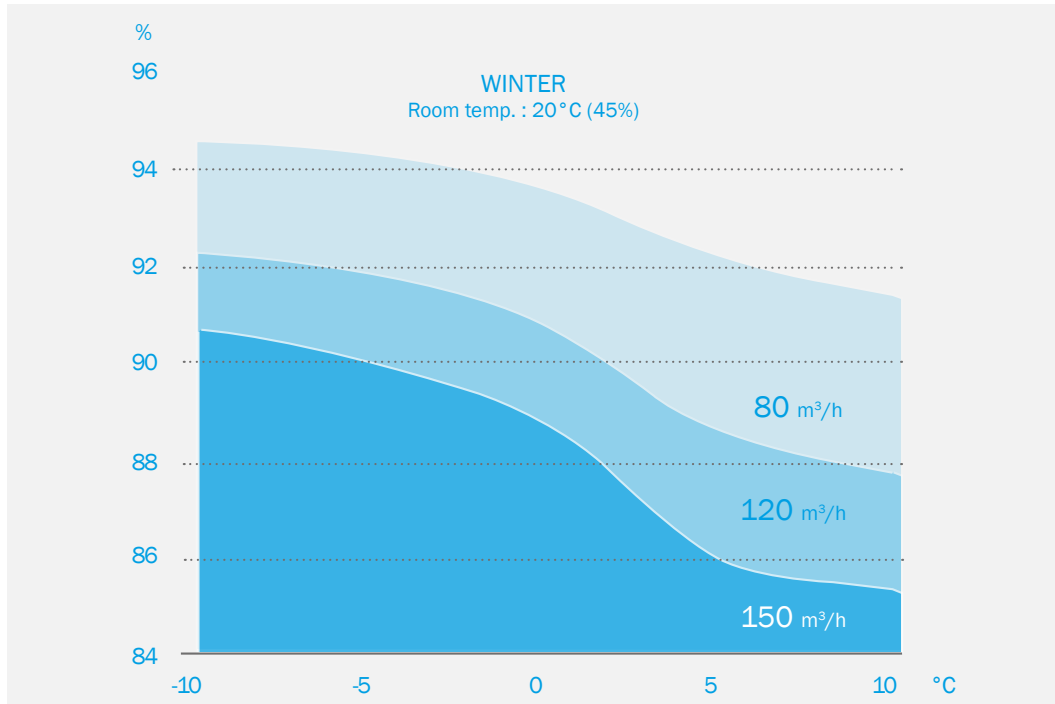
■ Asynchronous motor ■ ECM motor



Heat recovery efficiency

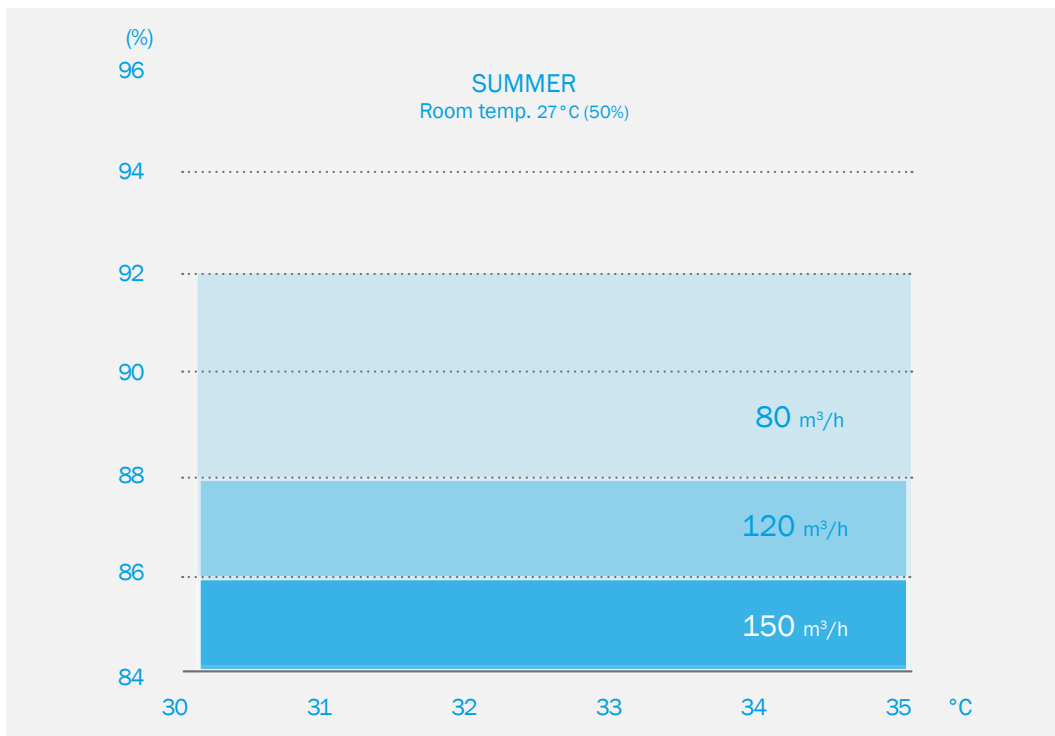
WINTER

Representation of the degree of efficiency of the plate heat exchanger, with external temperatures between -10 °C and +10 °C; relative humidity of 70%.



SUMMER

Representation of the degree of efficiency of the plate heat exchanger, with external temperatures between 30°C and 35°C; relative humidity of 50%.



Note: for temperatures below 0°C is important to use a defrosting system, managed by the control unit.

Cooling mode

1 RECIRCULATION AIR INLET

The air is drawn from rooms less predisposed to generate stale air like living room and/or bedroom and, after a suitable filtration, is allowed to flow to the part used for the treatment

2 STALE AIR INLET

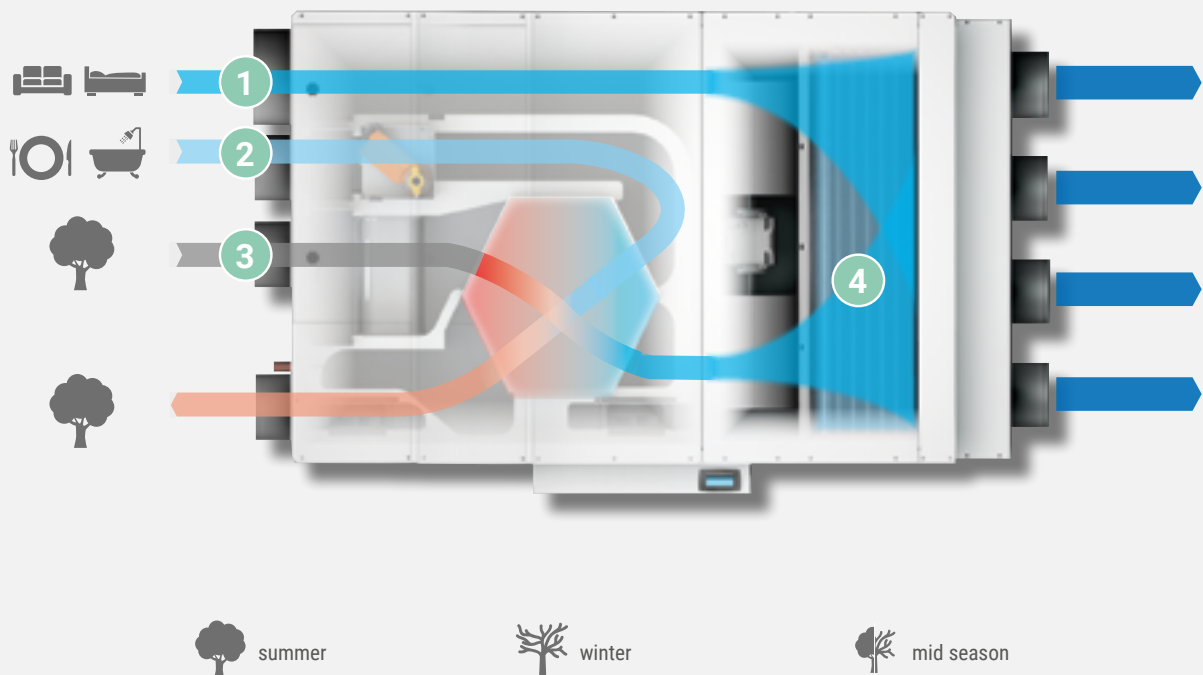
The stale air, usually taken from the kitchens and bathrooms, before being ejected is made to flow through the plate heat exchanger to recover up to 92% of the thermal energy that otherwise would be unnecessarily wasted.

3 EXTERNAL AIR INLET

The hot and moist air, taken from the outside and used for the renewal is inserted into the unit and, after a suitable filtration to remove contaminants, is conveyed through the heat recovery assimilating up to 92% of the thermal energy transferred from the outgoing cold stale air, and then flow to the part used for the treatment. If the external conditions are in line with the required internal load, the primary air through the By-pass function that is automatically activated with the dedicated control, will be entered directly into the room after a suitable filtration.

4 TREATMENT

The air mix thus obtained, composed partly of recirculated air and partly by pre-treated new fresh air, it is now cooled by the coil according to the exact requirements of comfort selected by the user, before to be re-entered in the environments through dedicated multiplexed distribution network



Heating mode

1 RECIRCULATION AIR INLET

The air is drawn from rooms less predisposed to generate stale air like living room and/or bedroom and, after a suitable filtration, is allowed to flow to the part used for the treatment.

2 STALE AIR INLET

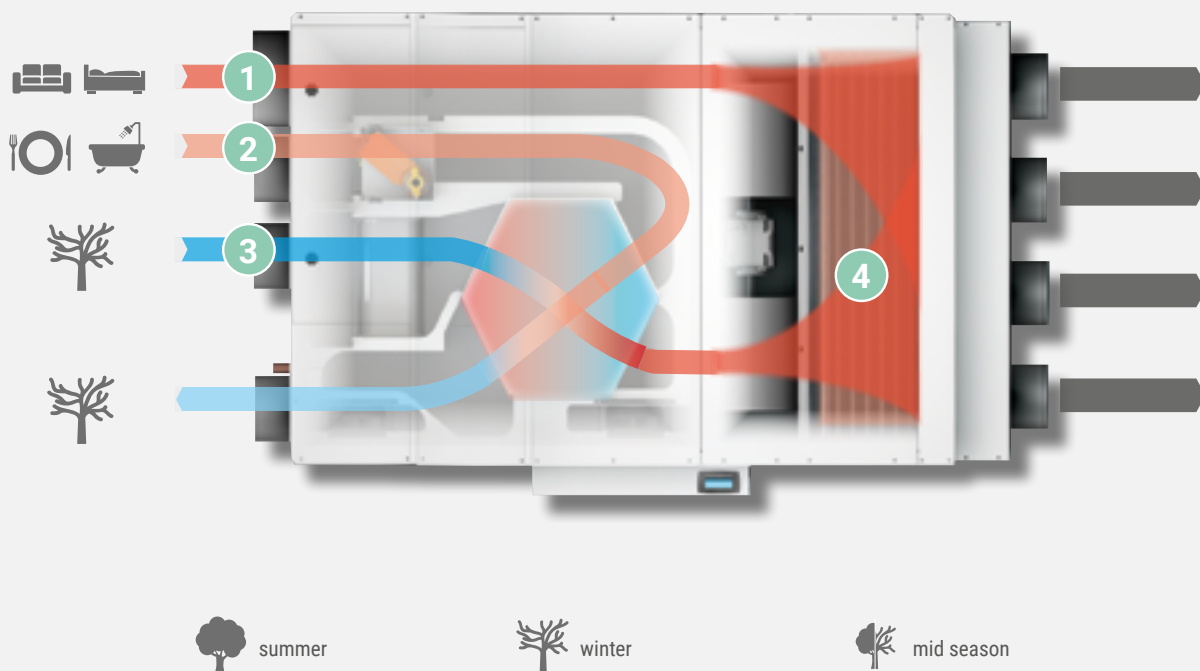
The stale air, usually taken from the kitchens and bathrooms, before being ejected is made to flow through the plate heat exchanger to recover up to 94% of the thermal energy that otherwise would be unnecessarily wasted.

3 EXTERNAL AIR INLET

The cold and moist air, taken from the outside and used for the renewal is inserted into the unit and, after a suitable filtration to remove contaminants, is conveyed through the heat recovery assimilating up to 94% of the thermal energy transferred from the outgoing warm stale air, and then flow to the part used for the treatment. If the external conditions are in line with the required internal load, the primary air through the By-pass function that is automatically activated with the dedicated control, will be entered directly into the room after a suitable filtration.

4 TREATMENT

The air mix thus obtained, composed partly of warm recirculated air and partly by pre-treated new fresh air, is now heated by the coil according to the exact requirements of comfort selected by the user, before to be re-entered in the environments through dedicated multiplexed distribution network.



FC Free cooling mode

1 RECIRCULATION AIR INLET

The air is drawn from rooms less predisposed to generate stale air like living room and/or bedroom and, after a suitable filtration, is allowed to flow to the part used for the treatment.

2 STALE AIR INLET

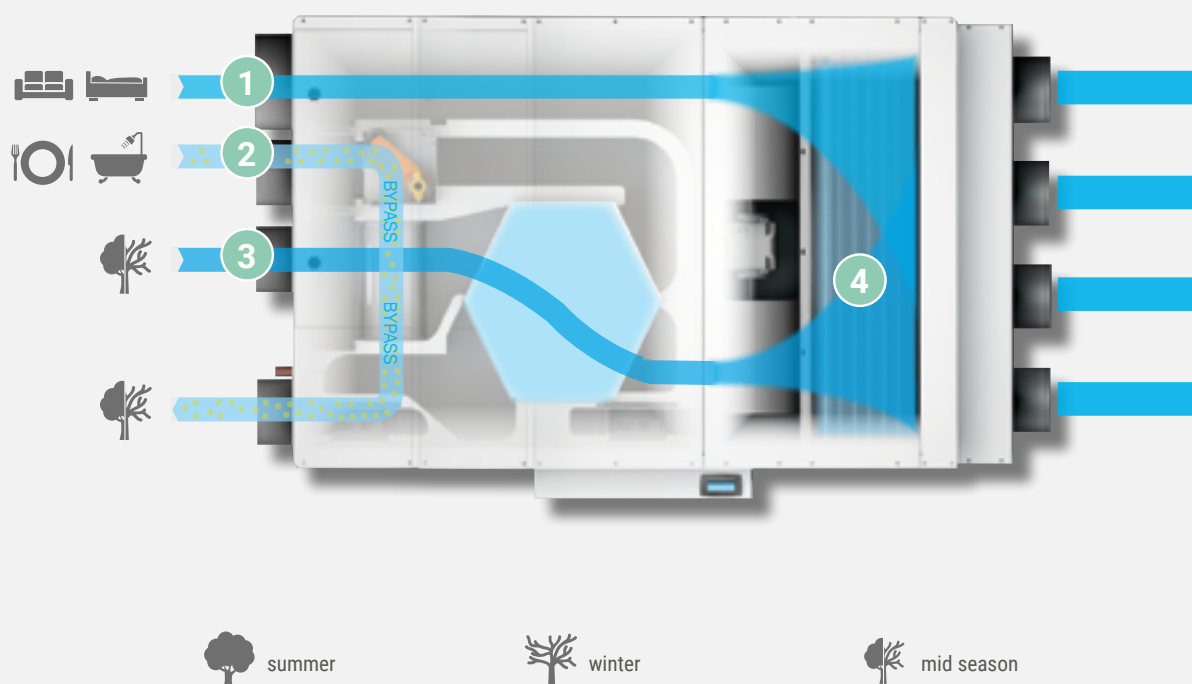
The stale air, usually taken from the kitchens and bathrooms, is directly ejected outside of the building.

3 EXTERNAL AIR INLET

If the cool external conditions are in line with the required internal load, the primary air through the By-pass function that is automatically activated with the dedicated control, will be entered directly into the room after a suitable filtration.

4 TREATMENT (IF NEEDED ONLY)

The air mix thus obtained, composed partly of recirculated air and partly by fresh air sourced in free cooling, it is now further cooled only if needed by the coil according to the exact requirements of comfort selected by the user, before to be re-entered in the environments through dedicated multiplexed distribution network.



1 RECIRCULATION AIR INLET

The air is drawn from rooms less predisposed to generate stale air like living room and/or bedroom and, after a suitable filtration, is allowed to flow to the part used for the treatment.

2 STALE AIR INLET

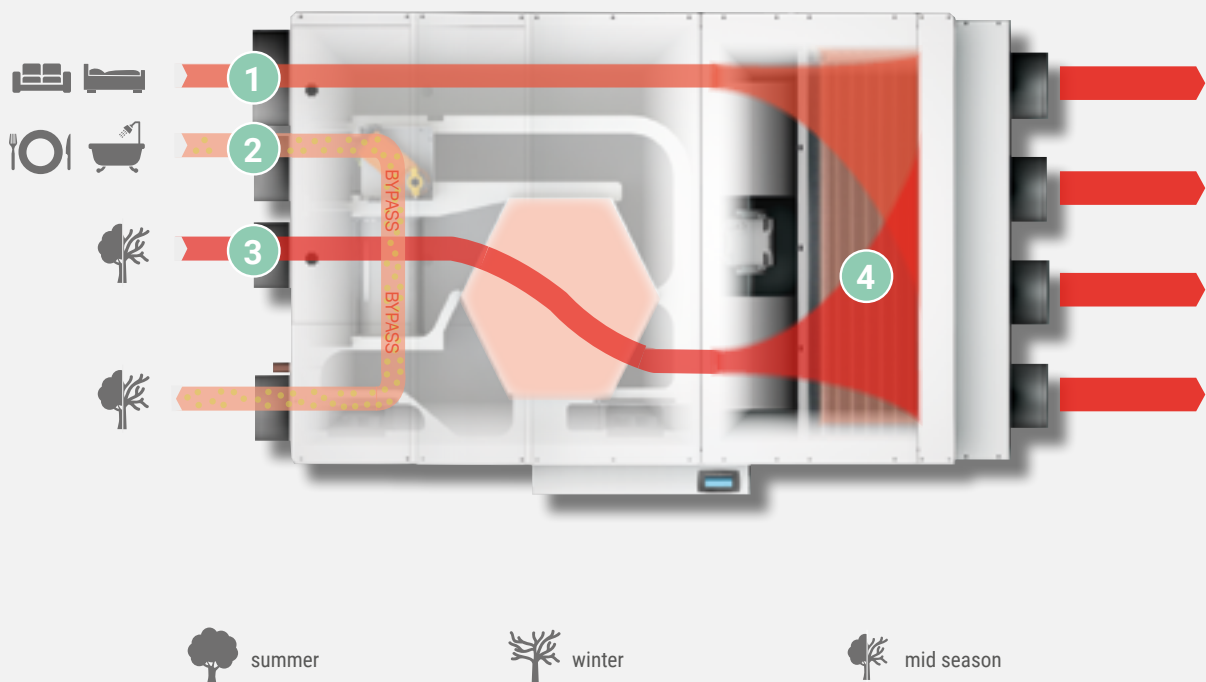
The stale air, usually taken from the kitchens and bathrooms, is directly ejected outside of the building.

3 EXTERNAL AIR INLET

If the warm external conditions are in line with the required internal load, the primary air through the By-pass function that is automatically activated with the dedicated control, will be entered directly into the room after a suitable filtration.

4 TREATMENT (IF NEEDED ONLY)

The air mix thus obtained, composed partly of recirculated air and partly by fresh air sourced in free heating, it is now further heated only if needed by the coil according to the exact requirements of comfort selected by the user, before to be re-entered in the environments through dedicated multiplexed distribution network.



The diagrams, the descriptions and the pictures shown herein are merely indicative and in no way binding. In order to continuously improve and in view of constant research and development, A GROUP S.p.A. reserves the right to modify, also without prior notice, technical data and all the contents included in this document.

Concept and design: Aliseo Group

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