

TECHNICAL SHEET



Air handling unit for room air exchange with high efficiency heat recovery (~90%) and summer dehumidification, with the possibility of summer and winter integration operating as a heat pump (refrigerant R134a). It uses outdoor air only, and it is designed for horizontal ceiling installation. UAP 201-PDC consists in three separate modules: 2 fan modules and a recovery/treatment unit, which can be installed close together or in different positions to make installation easier and to optimise the available space. The machine is equipped with a complete cooling circuit (R134a), pre-treatment coil with Ø ½" modulating valve to be supplied with cooled water (15 °C), EC high efficiency modulating fans, by-pass for free-cooling, and ISO ePM10 50% filters (M5). The heat discharge takes place in the stale air exhaust ducting, thus reducing energy consumption both in dehumidification and integration modes. The unit can be managed with User Display, with an external device (via digital input), with RDZ Wi electronic control unit or with KNX interface. It is mandatory to use 2 condensate drain kits.

- Dehumidification capacity (35 °C RH 50% EXT - 26 °C RH 65% INT) with flow rate 200 m³/h: 38,7 l/24h
- Nominal water flow rate (at 15 °C): 240 l/h
- Additional sensible cooling capacity up to 770 W
- Additional sensible heating capacity up to 1090 W
- Air duct connections Ø 160 mm
- Weight: 51 kg (treatment/recovery unit) - 7 kg (each fan unit) / Weight of the fan units: 13 kg
- Max. electrical power: 590 W
- Dimensions for the treatment/recovery unit (wxhxd): 825x244x1118 mm
- Dimensions for the fan units (wxhxd): 330x200x385 mm

Description	Weight	Code
UAP 201-PDC	51 kg	7040202

COMPONENTS

AIR FLOWS



Fresh Air Inlet



Exhaust Air



Stale Air Extraction



Supply Air

AIR FILTERS

Classes, Minimum Efficiency, Type Of Particulate



e(PM10) min ≥ 50 %
Pollen, sand and dust



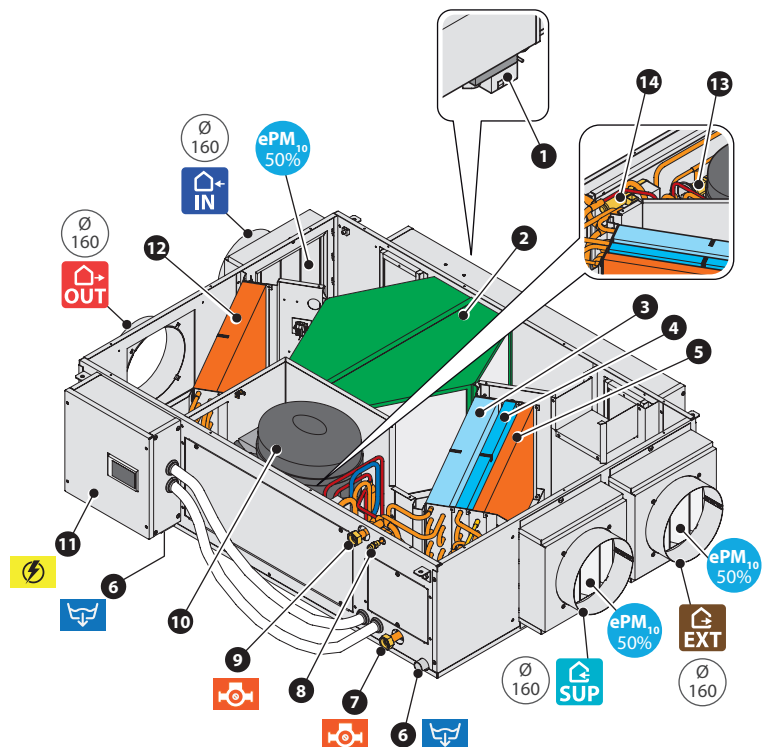
Wiring Box



Ø 14 mm Condensation Drain



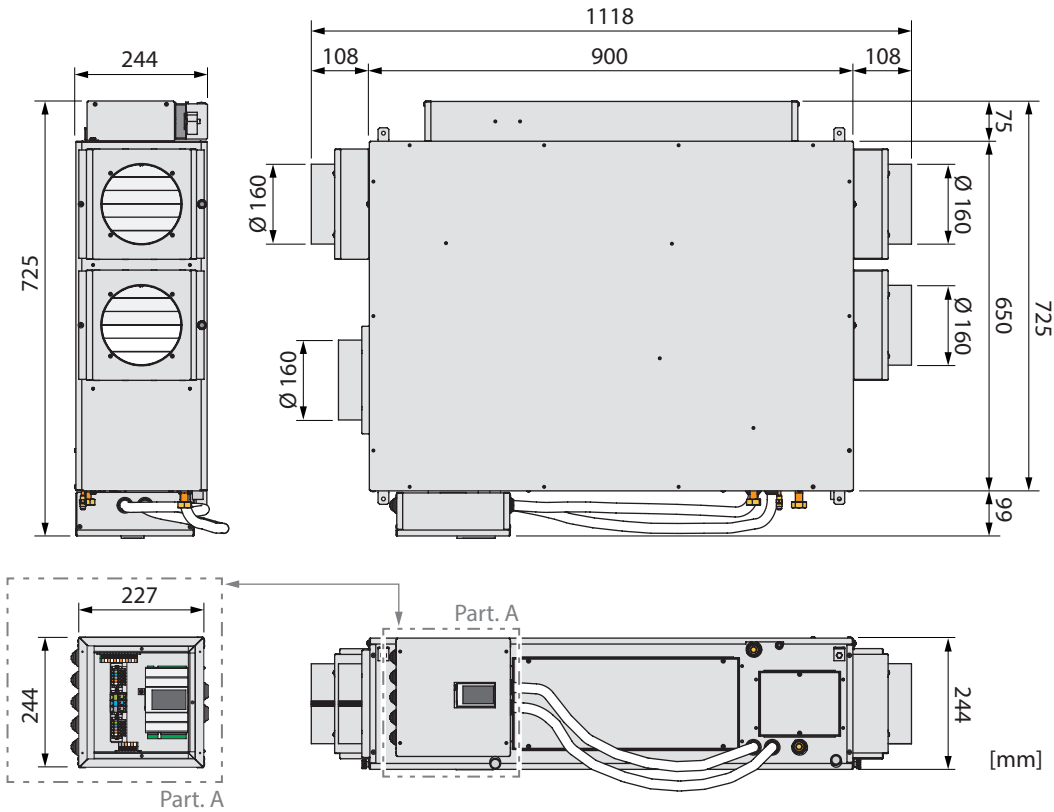
1/2" F Hydraulic connection



Rif.	Description	Rif.	Description
1	Free-cooling damper actuator	10	Compressor
2	Recovery unit	11	Wiring box
3	Pre-treatment coil	12	Condensing coil (evaporating into heat pump)
4	Evaporating coil (condensing in heat pump)	13	Thermostatic valve
5	Condensing coil	14	4-way valve
6	Condensate drain		
7	Water inlet		
8	Vent valve		
9	Water outlet		

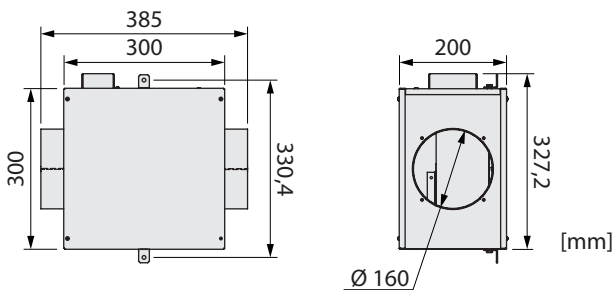
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DIMENSIONS AND TECHNICAL DATA



Overall unit dimensions	
Height	244 mm
Width	825 mm
Depth	1118 mm
Weight	51 kg

Fan dimensions



Fans overall dimensions	
Height	200 mm
Width	327,2 mm
Depth	385 mm
Weight	7 kg

Table of technical characteristics

Technical specifications

Condensation (35 °C - 50% - 200 m ³ /h)	l/day	38,7
Rated electrical power	W	460
Total max power consumption of the fans	W	130
Nominal air flow rate	m ³ /h	200
Fan performance	Pa	300
Unit water flow rate	l/h	240
Hydraulic connections		F1/2
Sound power level (*)	dB(A)	44
Sound pressure level (**)	d(B(A)	36
Pre-cooling water head loss	DaPa	920
Refrigerant R134a - GWP: 1430		250 gr
Carbon dioxide equivalent		0,358 t



(*) Sound power measured at a flow rate of 200 m³/h with no back pressure (DP= 0 Pa) in both air ducts.

(**) Sound pressure measured at a distance of 1 m from the unit in a semi-reflective free field, under the same flow and pressure conditions as the sound power.



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MANDATORY COMPLEMENTS


The installation of no. 2 condensate drain choosing, according to the needs, among those proposed.

Condensate drain		Code
	SF-M 13 Condensate drain kit consisting of a siphon with silicone membrane, hose and fitting, to be used in combination with RDZ air handling units.	3600401
	SF-P Condensate drain kit with casing, designed for wall installation. It can be used in combination with RDZ air handling units, and it is suitable for Ø 20-32 mm piping. The external shell can be adjusted considering the thickness of the wall. Washable internal cartridge.	7045502

ACCESSORIES

Control panels		Code
	USER DISPLAY Room control panel to display functions and alarms and to change the parameters of the air handling unit. Users can set 24 hour programmable scheduling and running modes, and they can adjust the ventilation rate. Wall installation in 3-module box. Bus connection and direct power supply from the air handling unit.	7041470
	USER DISPLAY TH It also integrates an ambient temperature and humidity sensor.	7041475
	KNX-UTA INTERFACE Interface for integrating the ventilation unit into a home automation system with KNX protocol. It is possible to display operating statuses, alarms and change the unit's settings.	7041480

SPARE PARTS

Air filter kit		Code
	UAP 201-PDC FILTER KIT Kit for complete replacement of unit filters containing: - 3 ePM10 50% filter - Size 200x200x48 mm	7044145

OPERATING LIMITS

Summer operation: the maximum permissible water temperature in summer operation is 18 °C. Above 19 °C, the compressor is excluded, leaving only the fan running.

Winter operation: permissible water temperature in winter operation <55 °C. At higher temperatures, the appliance may be damaged.

SUMMER PERFORMANCE






Yield during dehumidification, depending on room temperature, relative humidity, considering a unit supplied with water at 15 °C.






Performance in dehumidification mode							
Inlet air		Outlet air		Latent cooling power		Sensible cooling power	Cooling power to be supplied to the unit
°C	% UR	°C	% UR	W	l/g	W	W
100 m³/h							
33	50	26	35,1	729	25,2	374	560
35	50	26	36,9	859	29,7		650
150 m³/h							
33	50	26	44,0	855	29,5	561	710
35	50	26	46,7	1023	35,3		820
200 m³/h							
33	50	26	50,2	913	31,5	748	820
35	50	26	53,6	1121	38,7		940

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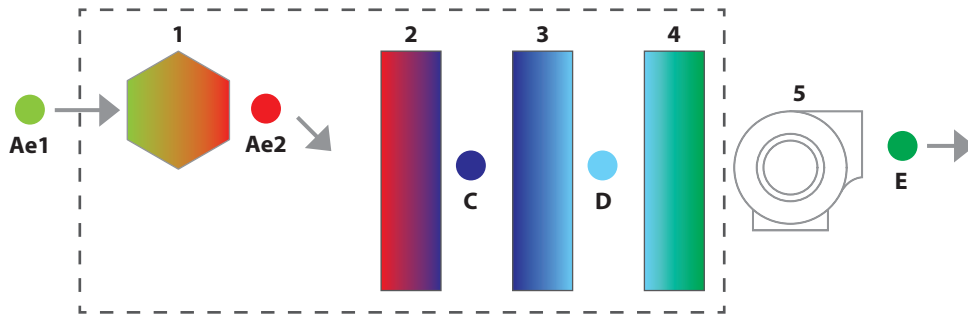
EXAMPLE OF RENEWAL PERFORMANCE

Yield during dehumidification in renewal mode, with a flow rate of 150 m³/h, with a unit supplied with water at a temperature of 15 °C, with outdoor air delivery at 35° and a R.H. of 50% and later delivered back into the room at 26° and R.H. of 46.7%.

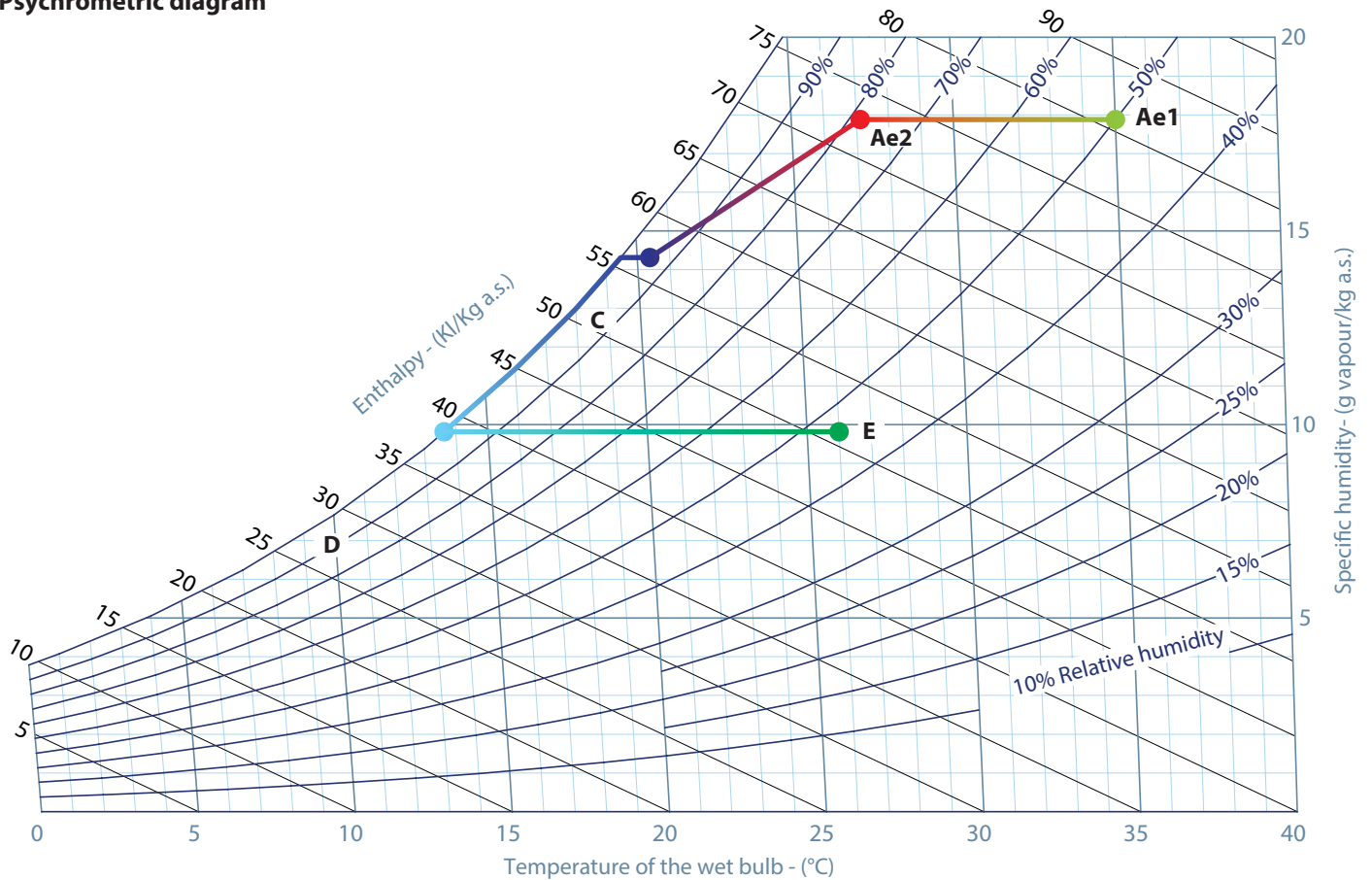
Air key		
Ae1		Outdoor Air Intake
Ae2		Post Recovery Unit Outdoor Air
C		Pre-Treatment Post-Coil
D		Evaporator Post-Coil
E		Room Air Delivery

Parts key		
1		Recovery unit
2		Pre-treatment coil
3		Evaporator coil
4		Condenser coil
5		Delivery fan

Air flow diagram



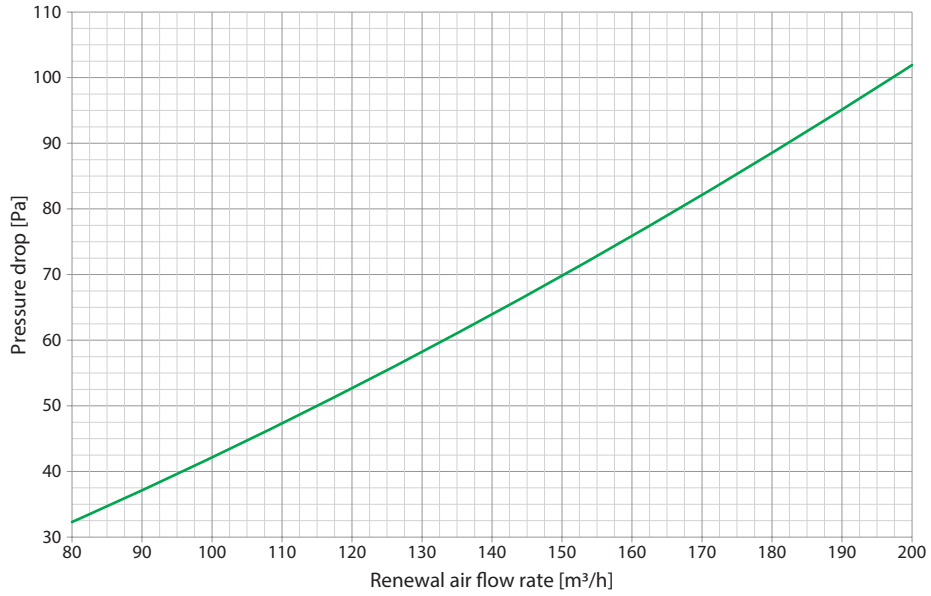
Psychrometric diagram



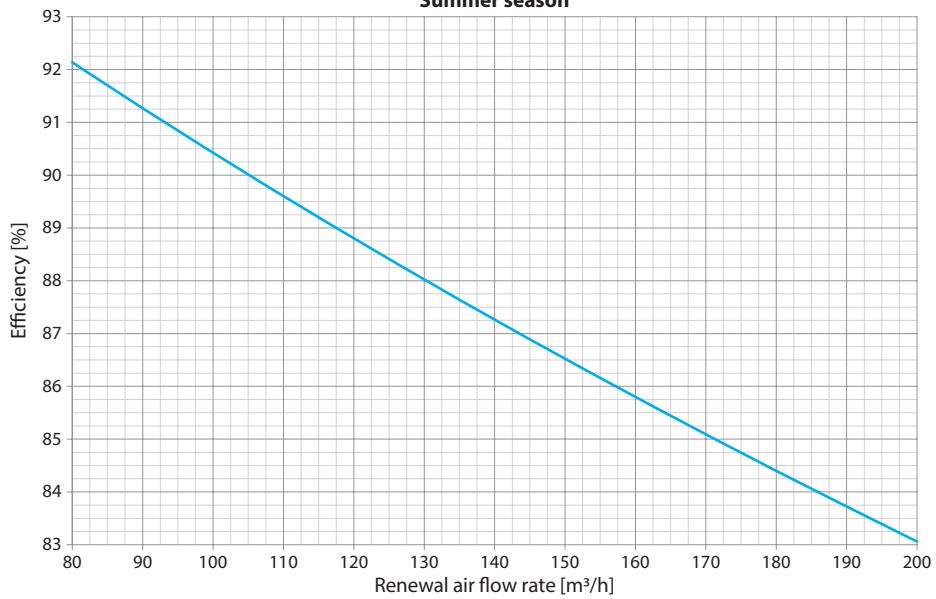
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RECOVERY UNIT PERFORMANCE

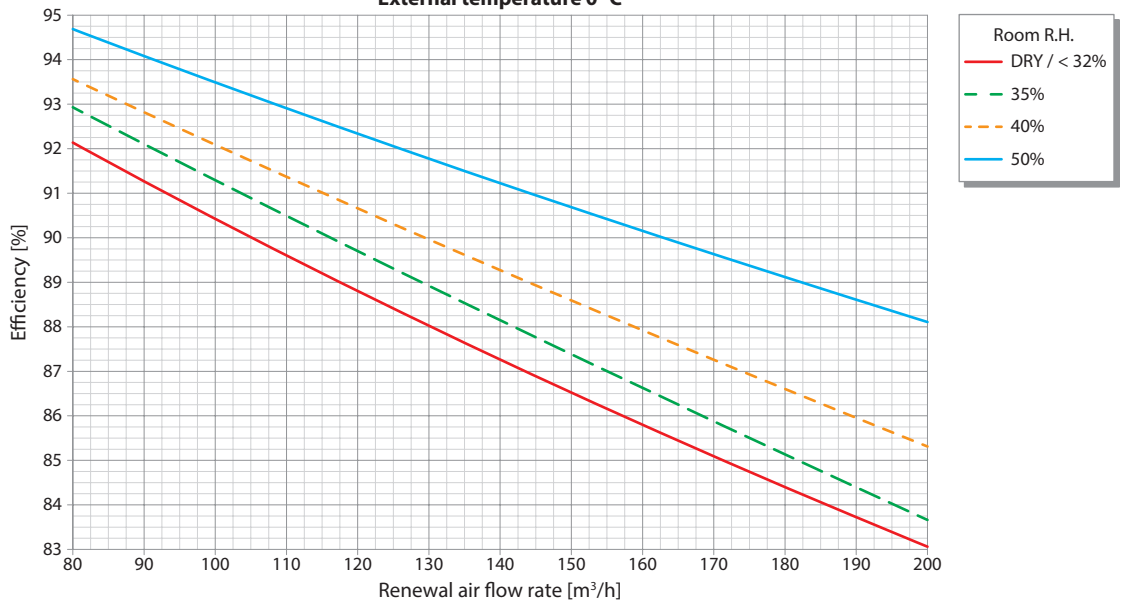
The heat recovery unit is of high efficiency type (~90%). The performance, however, must not be considered fixed. It can vary according to various factors: air flow rate, outdoor temperature and relative humidity (the last two factors only apply to winter mode). Several graphs are provided below, which group together various possible solutions, and can be used to find a more exact efficiency value.



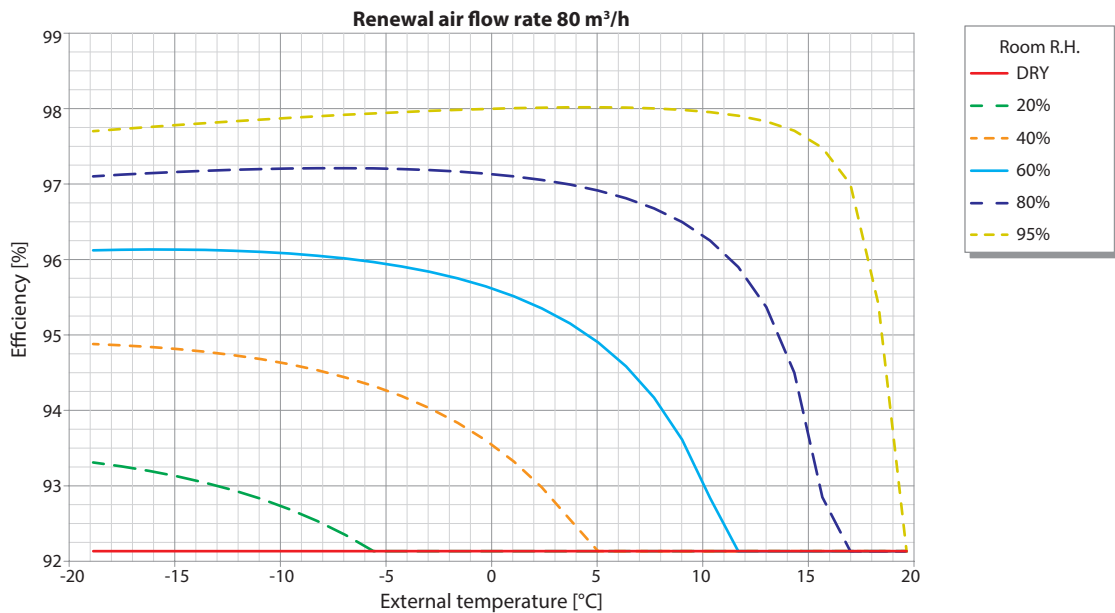
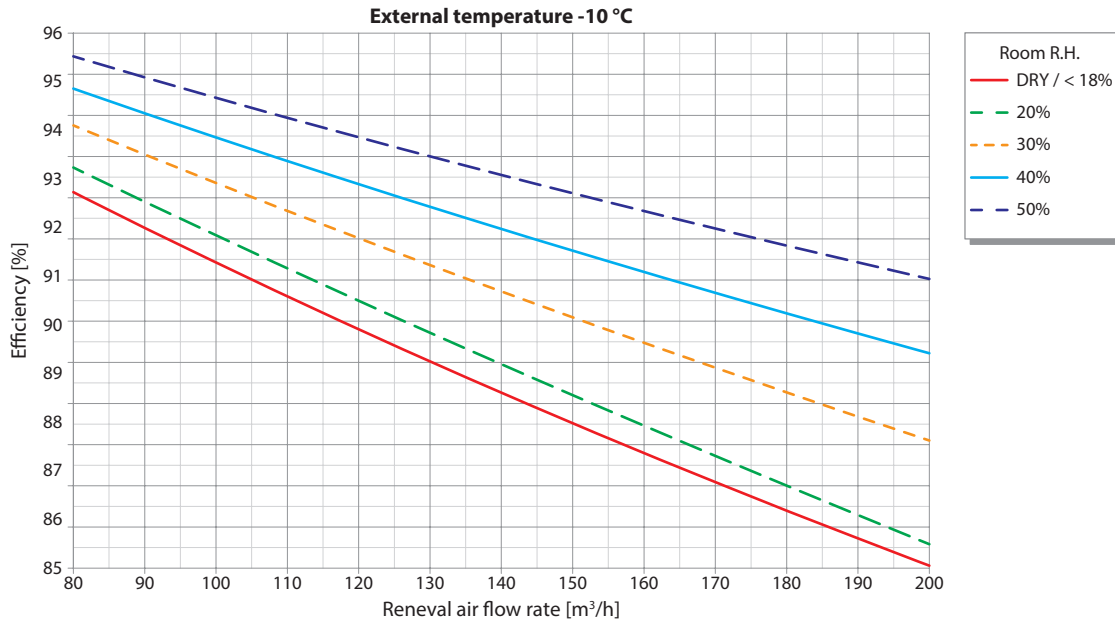
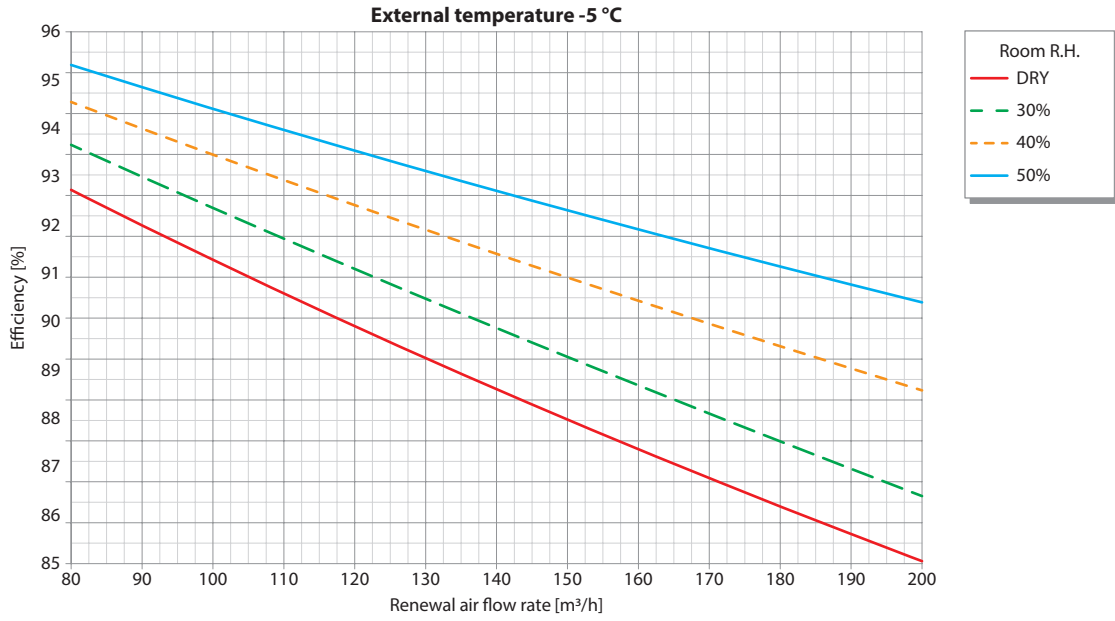
Summer season



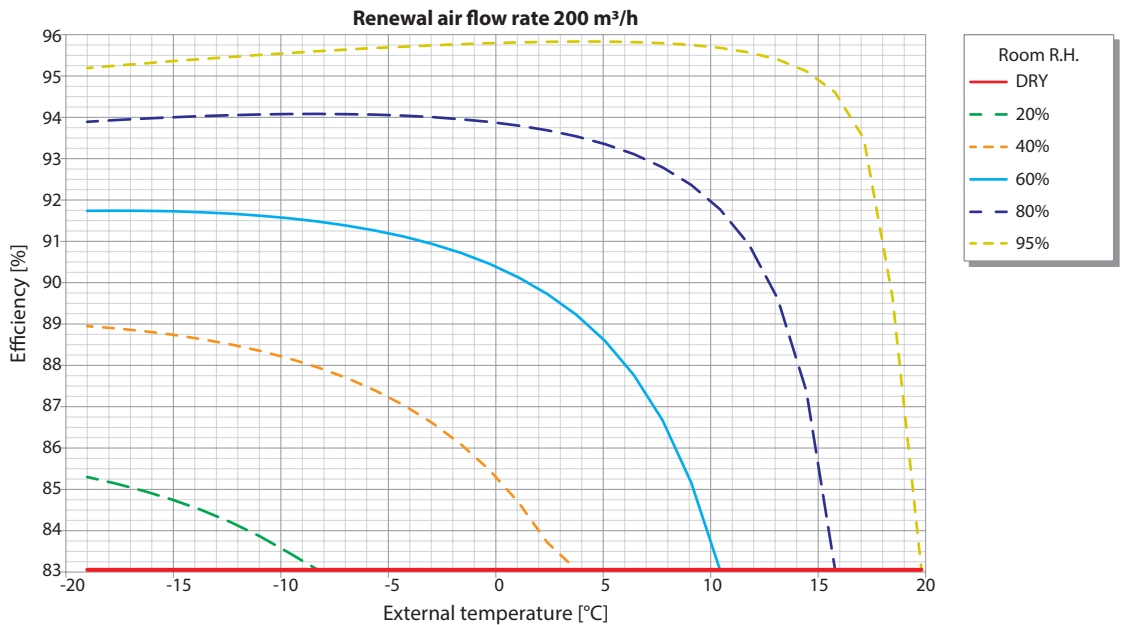
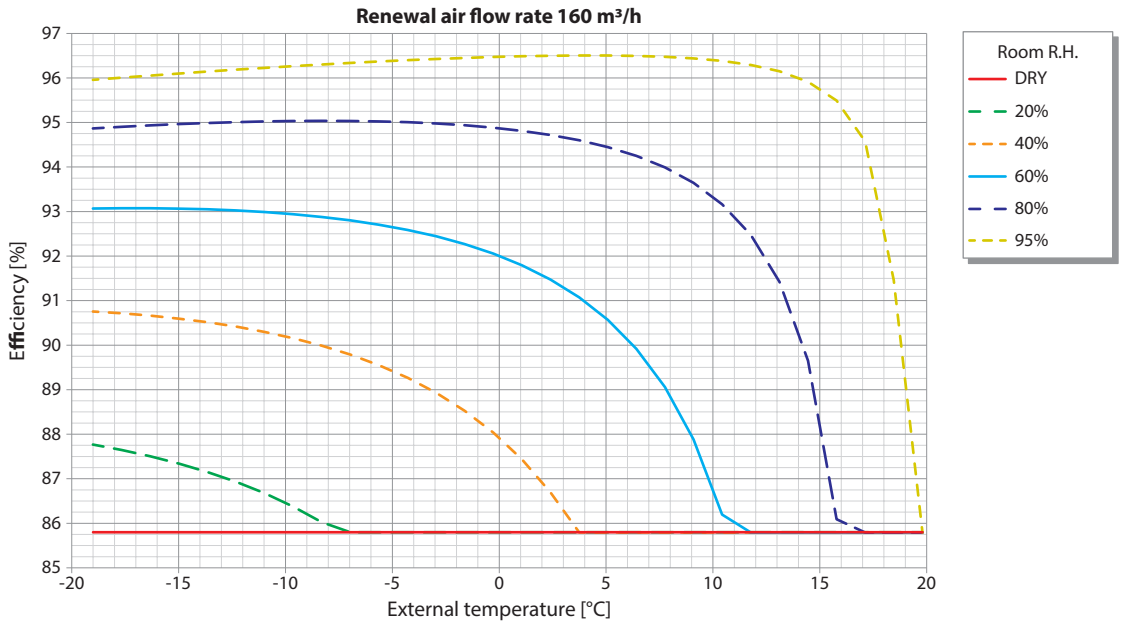
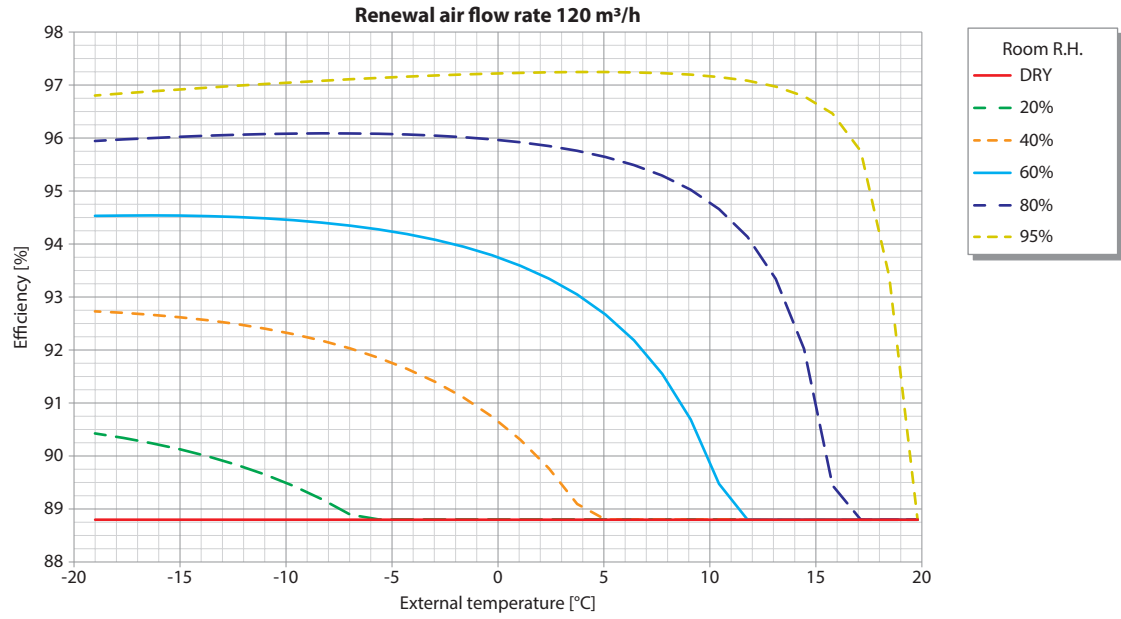
External temperature 0 °C



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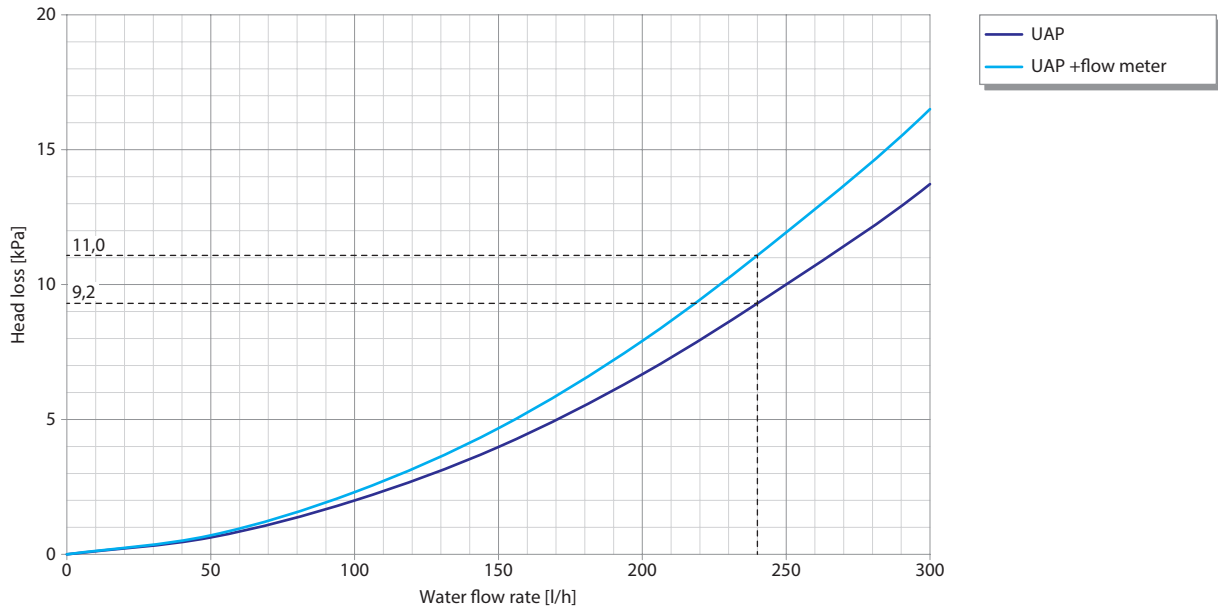
ACOUSTIC CHARACTERISTICS

The sound of the fan can be transmitted through the distribution ducts into the room.



It is recommended to install a silencer close to the supply terminal and in the rigid ducts used to connect it.

PRESSURE LOSS OF THE HYDRAULIC CIRCUIT



POSITIONING TO THE CEILING

