UC 300 V2

TECHNICAL SHEET

Air handling unit for room air exchange with high efficiency heat recovery (~90%) and for summer dehumidification, made of galvanised sheet metal. Fresh air intake flow-rate and supply air flow-rate are handled separately (partial recirculation of air is possible). The fresh air flow-rate can be set from 80 to 160 m^3/h, while the supply air flow rate can be set from 160 to 300 m^3/h. The unit can be managed either through User Display or from an external device (via digital input), via RDZ Wi electronic control unit or KNX interface.

- Dehumidification capacity (recirculation) 38,7 l/24h at (26 °C RH 65%)
- Dehumidification capacity (renewal) 51,4 l/24h at (35 °C RH 50%)
- Nominal water flow capacity (at 15 °C): 410 l/h
- Additional sensible cooling capacity: 900 W
- Air duct connections for clean room intake and supply air Ø 160 mm
- Air duct connections for fresh air intake, air exhaust and stale air extract Ø 100 mm
- Maximum electrical power: 550 W
- 2 mandatory condensate drain kits

Description	Weight	Code
UC 300 V2	68 kg	7041308

COMPONENTS

AIR FLOWS

IN — Fresh Air Inlet

EXT — Stale Air Extraction

OUT — Exhaust Air

SUP — Supply Air

REC — Recirculation Air

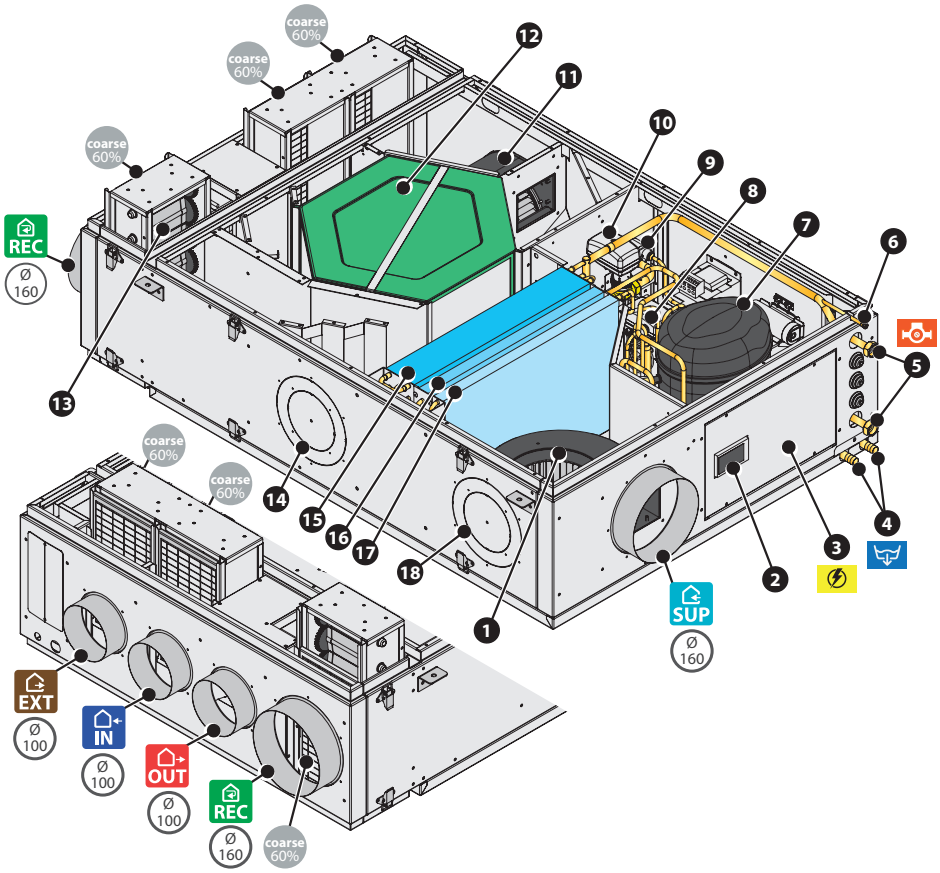
AIR FILTERS Classes, Minimum Efficiency, Type Of Particulate

ISO coarse — **e(PM10) min ≤50 %** hairs

Wiring Box

Ø 14 mm Condensation Drain

1/2" F Hydraulic connection



Ref.	Description	Ref.	Description
1	Inflow Fan	10	Pre-Treatment modulating Valve
2	Controller on board machine with LED display	11	Discharge fan
3	Wiring box	12	Heat exchanger condensed with water
4	Ø 14 mm Condensation drain	13	Recirculation damper
5	1/2" F Hydraulic connection	14	Free-Cooling PRE optional vent
6	Vent valve	15	Finned pack pre-treatment coil
7	Compressor	16	Finned pack evaporating coil
8	Integration modulating valve	17	Finned pack condensing coil
9	Heat exchanger condensed with water	18	Free-Cooling POST optional vent

DIMENSIONS AND TECHNICAL DATA

Air flows

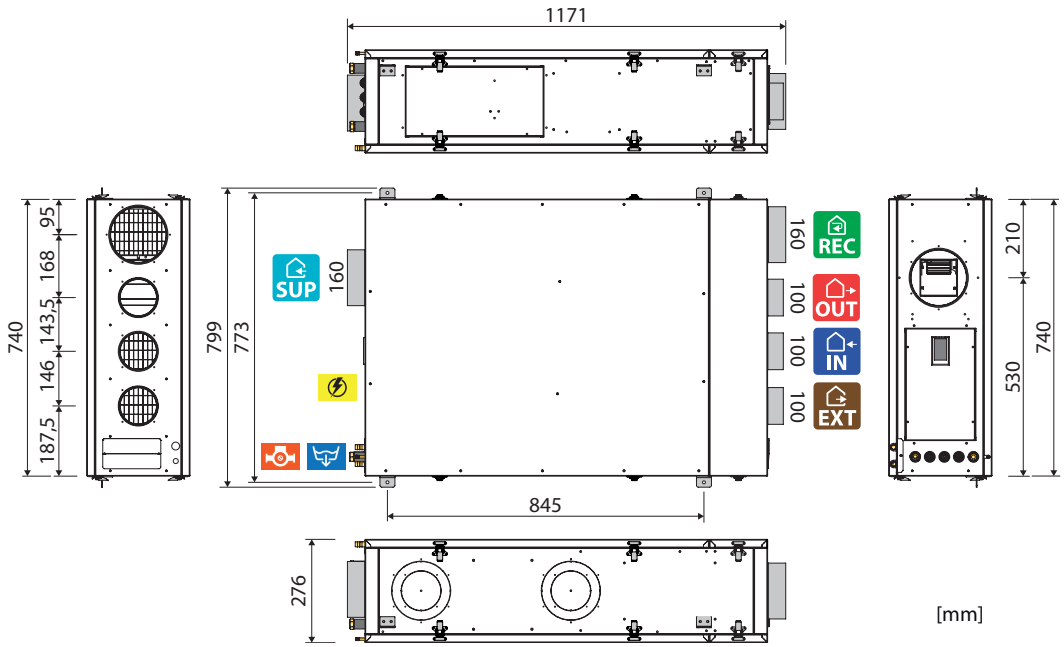
IN Fresh Air Inlet

OUT Exhaust Air

EXT Stale Air Extraction

SUP Supply Air

REC Recirculation Air



Overall unit machines	
Height	276 mm
Width (no hydraulic connections)	773 mm
Depth	1171 mm
Weight	68 kg

Technical characteristics		
Technical specifications		
Condensation (26 °C - 65% - 300m³/h) without external air	32	l/day
Condensation (26 °C - 65% - 300m³/h) with external air (35 °C - 50% - 160m³/h)	44,9	l/day
Voltage-Phases-Frequency	230 + N50/60 Hz	
Rated electrical power	494	W
Total maximum power consumption of the fan	56	W
Max absorbed current	5,3	A
Power consumption on stand-by mode	5	W
Nominal air flow rate	300	m³/h
Nominal renewal air flow rate	160	m³/h
Unit water flow rate	410	l/h
Condensation water supply	1/2" F	
Pre-cooling water head loss	1284	DaPa
Refrigerant R 290 - GWP: 3	95	gr
Carbon dioxide equivalent	0,00029	t

MANDATORY COMPLEMENTS

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

Condensation drains		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**

ACCESOIRES

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 filters kit		Code
	**FILTER KIT FOR UC 300 V2** Kit for complete replacement of unit filters containing: • 3 ISO Coarse 60% filter - Size 255x142x10 mm	**7044150**

OPERATING LIMITS

Summer operation: the maximum permissible water temperature in summer operation is 18 °C. Above 25 °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.

FLOW RATE DIAGRAM

Air flows

IN Fresh Air Inlet

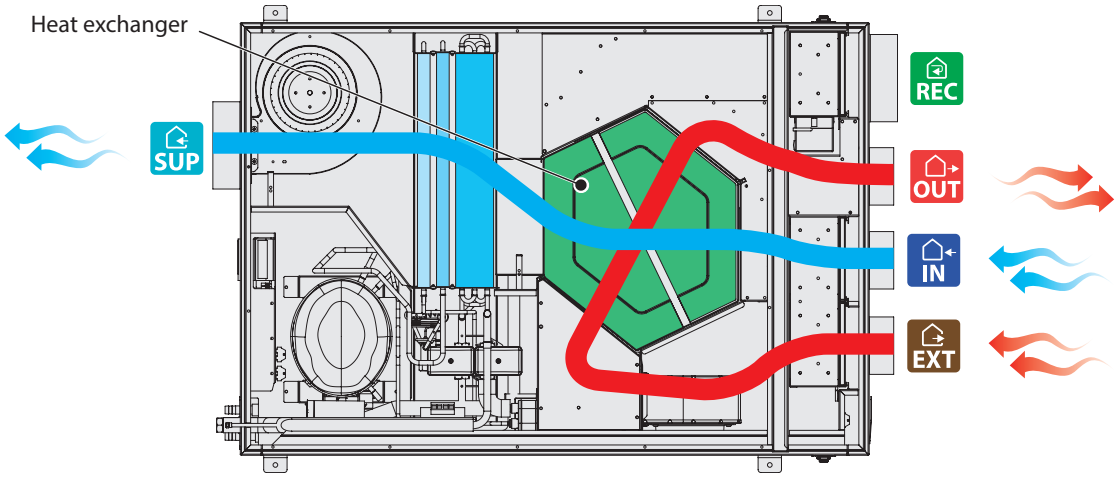
OUT Exhaust Air

EXT Stale Air Extraction

SUP Supply Air

REC Recirculation Air

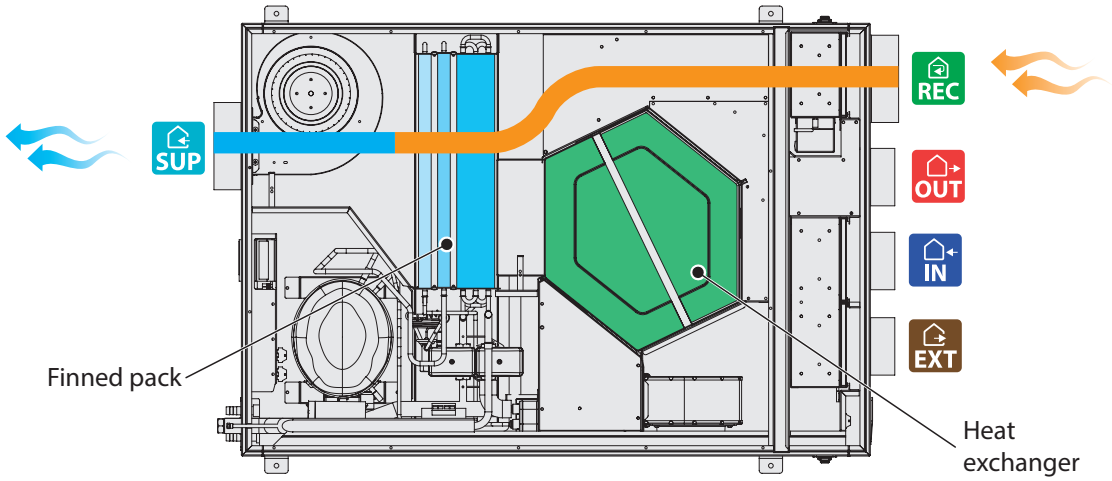
MVHR



Feature	Value
Ventilation	Settable flow rate
Booster	% setting to be added to the ventilation value
Free-Cooling	% setting to the range (0% = 80 m³/h, 100% = 160 m³/h)

Feature	Range [m³/h]	
	Min	Max
Ventilation	80	160
Booster	Ventilation set	160
Free-Cooling	80	160

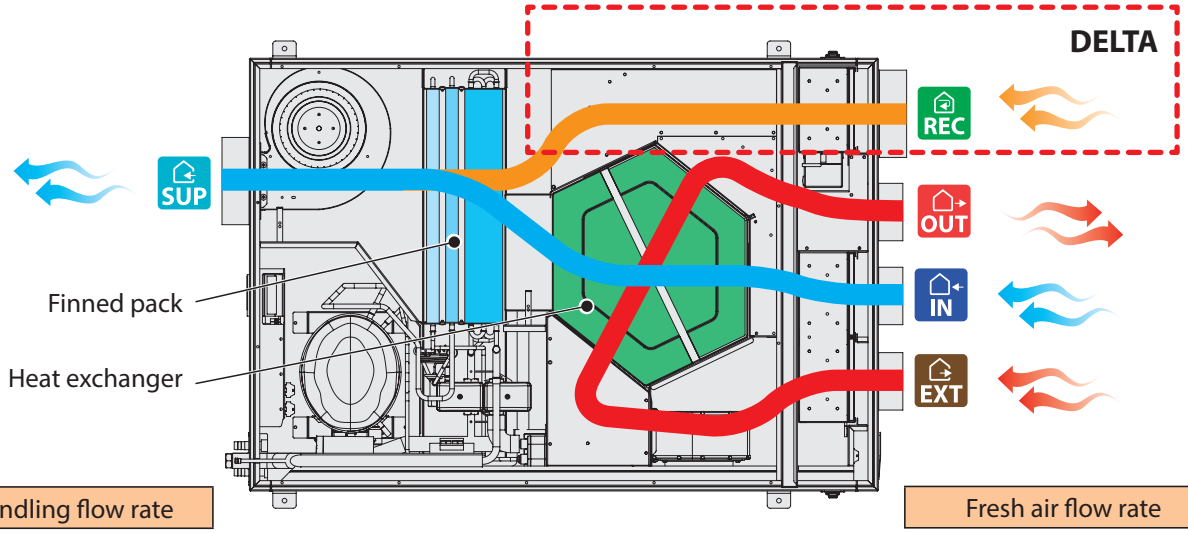
Air handling (Room supply)



Feature	Value
One setting	% setting to the range (0% = 160 m³/h, 100% = 300 m³/h)

Feature	Range [m³/h]	
	Min	Max
Dehumidification	160	300
Integration		

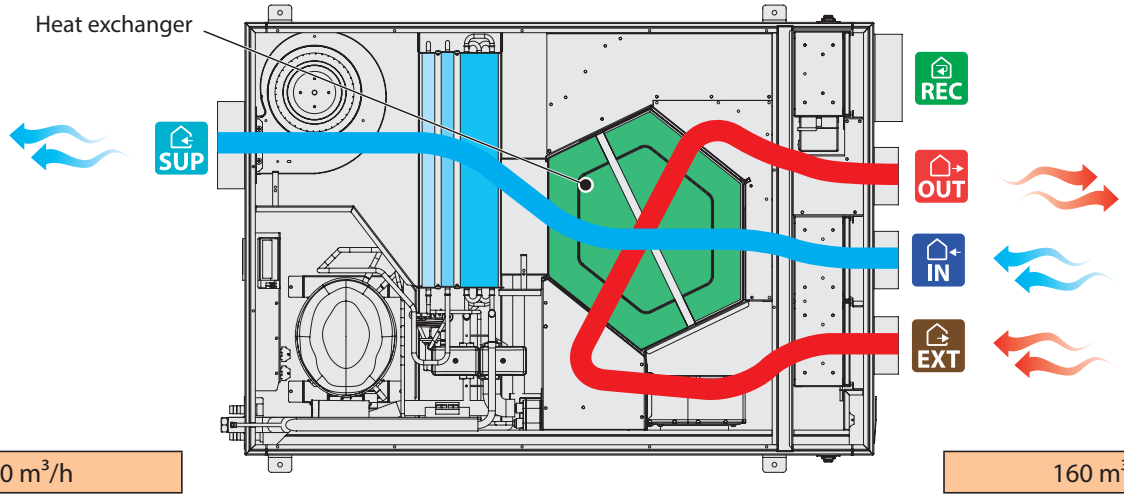
Air handling + fresh air venitlation



Air handling flow rate

Fresh air flow rate

Hair handling + boost or free-cooling



160 m³/h

160 m³/h

N.B.
- Free-Cooling POST + Dehumidification: free-cooling operation is disabled
- Free-Cooling POST + Integration: integration operation is disabled

SUMMER PERFORMANCE

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

Performance in recirculation mode

Inlet air		Outlet air		Latent cooling power		Min. inflow air temp.	Sens. cooling power		Cooling power to be supplied to the unit	
							Max	Set 19 °C	Dehumidific.	Integration*
° C	% UR	° C	% UR	W	l/day	° C	W	W	W	W
200 m³/h										
26,0	55	26	40	522	19,9	12,3	960	490	945	1765
26,0	65	26	41	795	30,2	13,2	896	490	1215	1985
300 m³/h										
26,0	55	26	44	522	19,9	14,9	1165	735	925	2040
26,0	65	26	48	841	32	15,4	1113	735	1280	2300

Performance in recirculation mode + renewal mode

Recirculation air			Renewal air			Neutral outlet air		Latent cooling power		Min. inflow air temp	Sens. cooling power		Cooling power to be supplied to the unit	
											Max	Set 19 °C	Dehumidific.	Integration*
° C	% UR	m³/h	° C	% UR	m³/h	° C	% UR	W	l/day	° C	W	W	W	W
200 m³/h														
26,0	55	120	35	50	80	26	42	885	33,7	13,8	854	490	1350	2075
26,0	65	120	35	50	80	26	46	1000	38	14,9	777	490	1513	2230
26,0	55	40	35	50	160	26	45	1090	41,5	14,3	819	490	1675	2335
26,0	65	40	35	50	160	26	45	1135	43,2	14,9	777	490	1695	2385
300 m³/h														
26,0	55	220	35	50	80	26	48	818	31,1	15,3	1124	735	1315	2300
26,0	65	220	35	50	80	26	49	978	37,2	16	1050	735	1500	2430
26,0	55	140	35	50	160	26	51	978	37,2	15,6	1092	735	1500	2470
26,0	65	140	35	50	160	26	53	1181	44,9	16,5	998	735	1740	2630

* The power to give to the integration unit has to be intended as the necessary power on the default set-point, for different value the power has to be verified.

Performance in renewal mode**

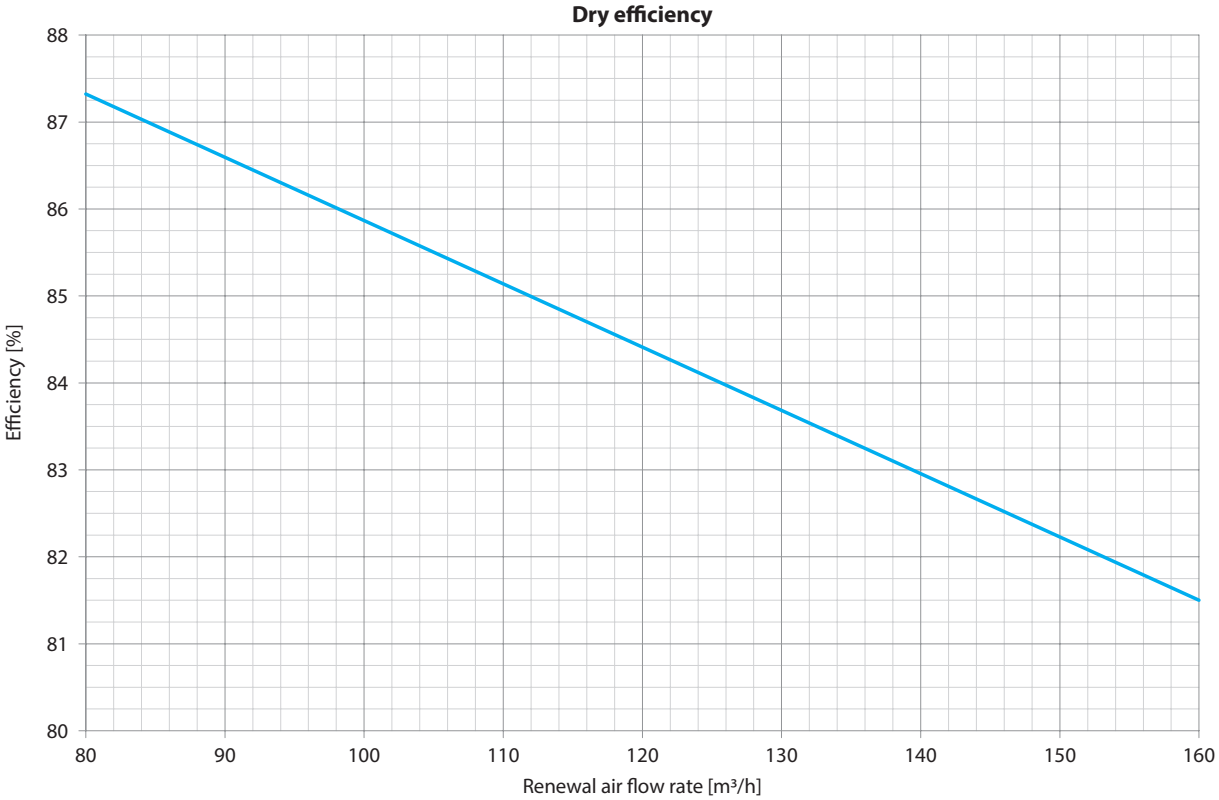
Inlet air		Outlet air		Latent cooling power		Min. inflow air temp.	Sens. cooling power		Cooling power to be supplied to the unit	
							Max	Set 19 °C	Dehumidific.	Integration*
° C	% UR	° C	% UR	W	l/day	° C	W	W	W	W
30	50	26	40	705	26,8	11,8	795	392	1150	1790
33	50	26	41	931	35,4	12,8	739	392	1460	2040
35	50	26	48	1136	43,2	13,3	711	392	1695	2270

* The power to give to the integration unit has to be intended as the necessary power on the default set-point, for different value the power has to be verified.

** Renewal function is allowed only if the intake fan and the expulsion fan are working with the same flow rate of 160 m³/h, to calculate the air temperature after the heat recovery unit is supposed a room temperature of 26 °C.

RECOVERY UNIT PERFORMANCE

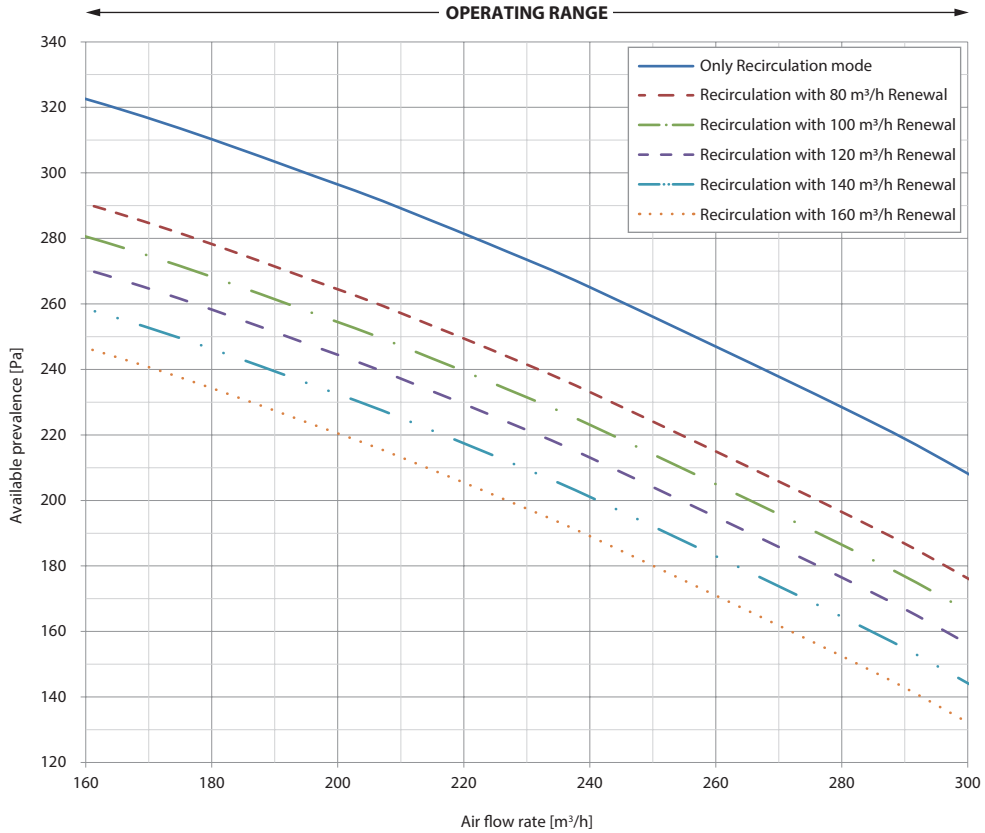
The heat recovery unit is of high efficiency type (~90%). The performance, however, must not be considered fixed. It can vary according to various factors: air flow rate, outdoor temperature and relative humidity (the last two factors only apply to winter mode).



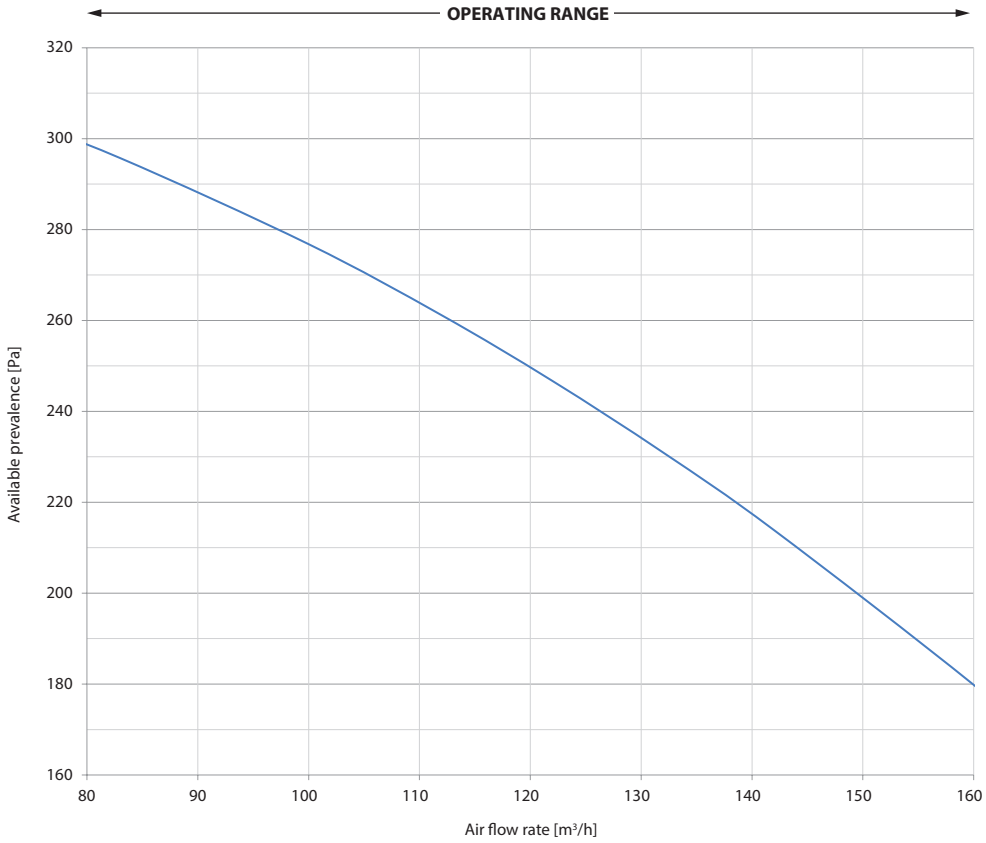
FAN PERFORMANCE

Supply air fan

It is possible to display, within the machine's operating range, the maximum head available in only Air Recirculation mode. In the case of combined recirculation with renewal operation, the losses due to the heat recovery unit have been subtracted based on the various renewal rates.



Expulsion air fan



ACOUSTIC CHARACTERISTICS

Acoustic measurements of the irradated noise from the case

OPERATION IN ONLY AIR RECIRCULATION MODE					
Air Flow rate	Supply Fan		Expulsion Fan		Sound pressure 1 m
	Prevalence	Fan Speed	Prevalence	Fan Speed	
m³/h	Pa	rpm	Pa	rpm	dB(A)
300	180	1900	-	-	43
300	210	2000	-	-	48
300	150	1800	-	-	44
300	120	1700	-	-	42
300	70	1500	-	-	42

OPERATION IN ONLY AIR RENEWAL MODE					
Air Flow rate	Supply Fan		Expulsion Fan		Sound pressure 1 m
	Prevalence	Fan Speed	Prevalence	Fan Speed	
m³/h	Pa	rpm	Pa	rpm	dB(A)
160	20	1300	20	2100	42
160	110	1800	20	2100	43
160	100	1800	50	2300	47
160	100	1800	100	2600	48
120	100	1500	100	2300	44

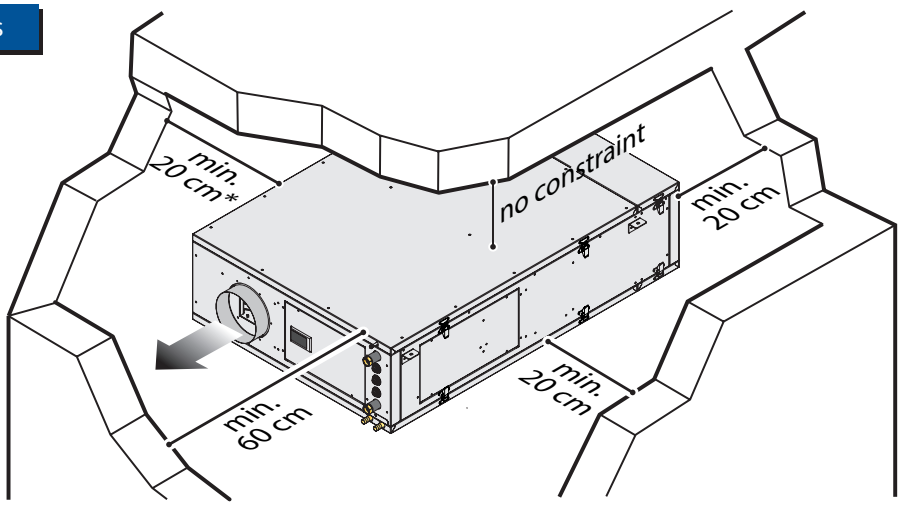
OPERATION IN DEHUMIDIFICATION + RENEWAL						
Air Flow rate		Supply Fan		Expulsion Fan		Sound pressure 1 m
		Prevalence	Fan Speed	Prevalence	Fan Speed	
m³/h		Pa	rpm	Pa	rpm	dB(A)
300		100	1800	100	2300	48
140	DEU					
160	RIN					

The detected acoustic value can be further improved thanks to the noise reduction offered by the presence of the plasterboard ceiling where the machine is installed. The detected radiant acoustic measurement does not take into consideration the transmission of the noise generated by the fans which, through the distribution line, can reach the various rooms.

It is highly recommended to install a silencer near the unit in correspondence with the supply line. Also connect the silencer to the unit possibly with a rigid pipe.

POSITIONING TO THE CEILING

Minimum space allowanceses



* Minimum 40 cm
with free-cooling