EVHRA-D Autonomous unit with heat recuperator efficiency > 90%

Description:

Active and passive heat recovery unit for the heating, cooling and air renewal of rooms, consisting of a one-piece structure including all components for correct operation: fans, cooling circuit with high efficiency compressors, air filtration sections and high efficiency counter-current heat recovery unit. The machine can work as a passive heat recovery unit and as an active thermodynamic heat recovery unit and it is particularly suitable for residential environments.

Use:

Houses, surgeries and shops for air exchange with up to 90% reduction in energy waste.

Characteristics:

Complete unit capable of providing fresh air and integrating the heating or cooling requirements of the rooms served. The unit comes complete with all components required for its operation and it is ready for use. High efficiency counter-current cross-flow polypropylene heat exchanger. Low freezing temperatures and operation down to -25°C.
Backward-curved fans with direct-coupled Brushless motor.
The unit allows for the energy contained in the exhaust air to be recovered by means of a heat exchanger and cooling circuit, supplying it to the indoor environment. The heat recovery unit features two ePMl 70-80% filters on the supply and exhaust air with low pressure drops. Self-supporting frame with galvanised sheet metal sandwich panels, painted on the outside, with polystyrene insulation on the inside, internal cladding made of thick galvanised sheet metal.
Cooling circuit made of brazed copper complete with high efficiency compressor, filter drier, finned coils, solenoid valves, electronic expansion valve, liquid receiver, pressure transducers and safety devices.
The on-board electrical panel features a microprocessor and dedicated control thanks to which the speed of the fans is adjusted and the dirty filter warning is managed in a timed manner.
In addition to this, a defrost procedure is automatically managed in extreme environmental conditions.
Simplified touch interface for correct machine operation.

Operating

In both winter and summer, the unit ventilates the rooms, recovering up to 90% of the energy through the sensible heat recovery unit. By means of the heat pump, the unit contributes to the room heating demand in winter and the cooling demand in summer.

General technical data (models 14 - 20 - 30)

(1) Outside air -5°/80% RH - Indoor air 20°/50% RH - Nominal flow rate
(2) Sound pressure at 3m in open field according to 3744

Size		14	20	30
Type of fans		Forward-curved centrifugal with Brushless motor		
No. of Fans		2		
Nominal air flow	m^3/h	210	235	320
Useful pressure	Pa	100	100	100
Type of compressor		Rotary BLDC inverter		
Refrigerant gas		R410A		
Passive heat recovery unit		Polypropylene counter-current		
Minimum efficiency of heat recovery unit in winter[1]	%	87	85	83
Filters		ePM1 70-80%		
Max. power consumption of fans	kW	0,28	0,28	0,228
Max. power consumption of compressors	kW	1,4	1,4	1,4
Power supply	V/ph/Hz	230/1/50		
Max. total power consumption	kW	1,7	1,7	1,7
Max. total current consumption	A	8,5	8,5	8,5
IP protection rating	IP	20		
Sound pressure[2]	dB(A)	37	38	40

Technical data for winter operation (models 14 - 20 - 30)

(1) Outside air -5°/80% RH - Indoor air 20°/50% RH - Nominal flow rate

Size		14	20	30
Active heat recovery				
Total heat output[1]	kW	3,58	3,98	5,15
Useful heat output excluding ventilation	kW	2,01	2,22	2,76
Passive heat recovery[1]	kW	1,53	1,69	2,23
Heat output[1]	kW	2,05	2,29	2,92
Power consumption	kW	0,64	0,75	0,95
COP		5,6	5,3	5,4

Technical data for summer operation (models 14 - 20 - 30)

(1) Outside air 35°/50% RH - Indoor air 27°/50% RH - Nominal flow rate

Size		14	20	30
Active heat recovery				
Total cooling capacity[1]	kW	2,18	2,46	2,99
Useful cooling capacity excluding ventilation	kW	1,03	1,12	1,37
Passive heat recovery[1]	kW	0,43	0,48	0,62
Cooling capacity[1]	kW	1,75	1,98	2,37
Power consumption	kW	0,59	0,68	0,84
EER		3,69	3,61	3,55

General technical data (model 50/15)

(1) Outside air -5°/80% RH - Indoor air 20°/50% RH - Nominal flow rate
(2) Sound pressure at 3m in open field according to 3744

Size		50/15
Type of fans		Centrifugal and backward-curved radial with Brushless motor
No. of Fans		4
Nominal air flow rate - fresh air	m^3/h	0 - 150
Nominal air flow - recirculation	m^3/h	300 - 450
Total air flow rate - supply	m^3/h	462
Useful pressure	Pa	100
Type of compressor		Rotary BLDC inverter
Refrigerant gas		R410A
Passive heat recovery unit		Polypropylene counter-current
Minimum efficiency of heat recovery unit in winter[1]	%	86,7
Filters		2 x ePM1 70-80% + 1 coarse
Max. power consumption of fans	kW	0,38
Max. power consumption of compressors	kW	1,4
Power supply	V/ph/Hz	230/1/50
Max. total power consumption	kW	1,78
Max. total current consumption	A	9,8
IP protection rating	IP	20
Sound pressure[2]	dB(A)	41

Technical data for winter operation (model 50/15)

(1) Outside air -5°/80% RH - Indoor air 20°/50% RH - Nominal flow rate

Size		50/15
Active heat recovery		
Total heat output[1]	kW	3,71
Useful heat output excluding ventilation	kW	2,50
Passive heat recovery[1]	kW	1,06
Heat output[1]	kW	2,65
Power consumption	kW	0,88
COP		4,2

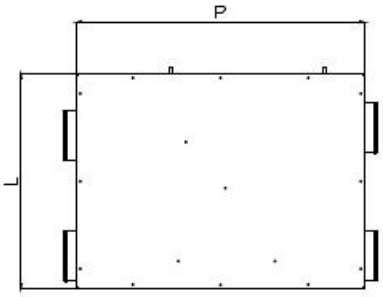
Technical data for summer operation (model 50/15)

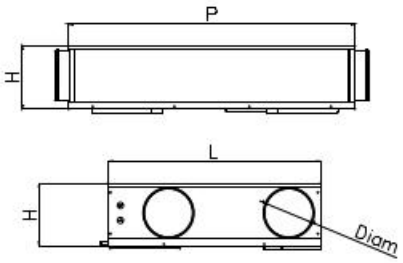
(1) Outside air 35°/50% RH - Indoor air 27°/50% RH - Nominal flow rate

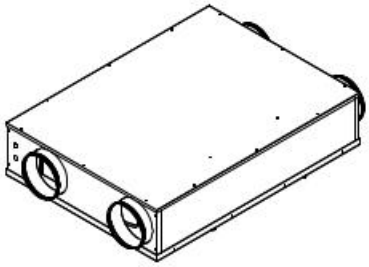
Size		50/15
Active heat recovery		
Total cooling capacity[1]	kW	2,61
Useful cooling capacity excluding ventilation	kW	1,68
Passive heat recovery[1]	kW	0,31
Cooling capacity[1]	kW	2,3
Power consumption	kW	0,75
EER		3,48

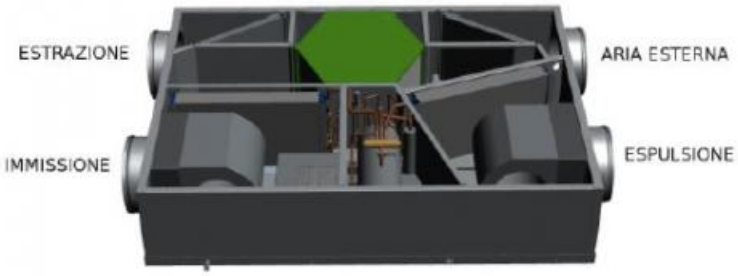
Dimensions (models 14 - 20 - 30)

Size			14	20	30
Width	**L**	mm	850	850	850
Depth	**P**	mm	1150	1150	1150
Height	**H**	mm	255	255	255
Connection diameter	**DN**	mm	200	200	200
Condensate	**Ø**	mm	16	16	16



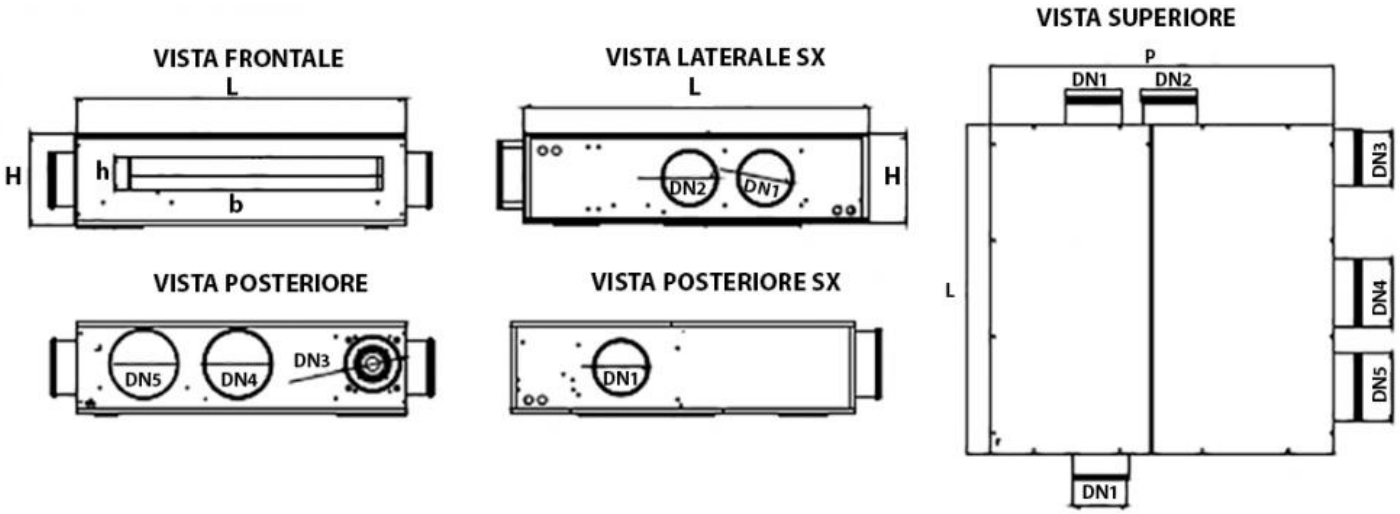


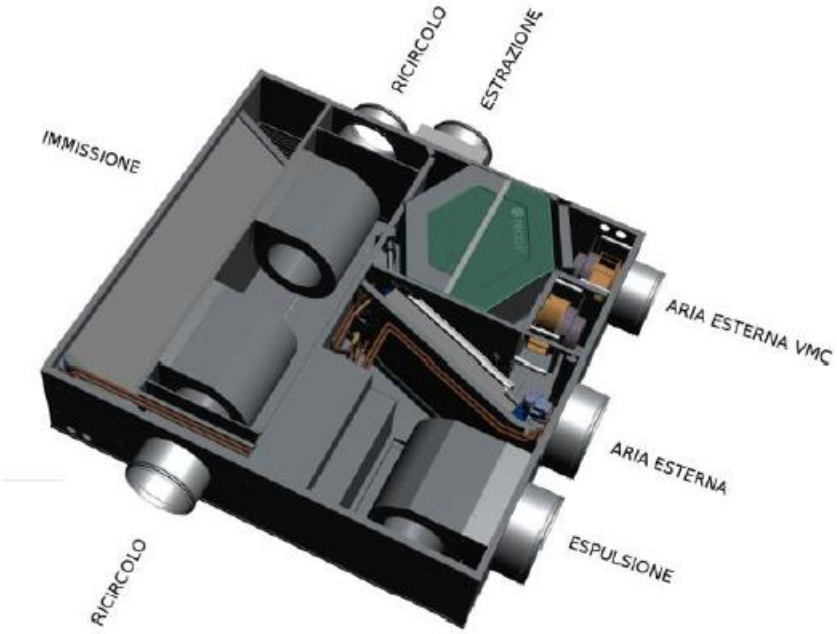




Dimensions (model 50/15)

Size			50/15
Width	**L**	mm	960
Depth	**P**	mm	1000
Height	**H**	mm	260
Supply bxh	**b x h**	mm	700 x 140
Diameter DN 1 - 2 – 3	**Ø**	mm	160
Diameter DN 4 - 5	**Ø**	mm	200
Condensate	**Ø**	mm	16





Operating limits

Grandezza		14 - 20 - 30 HY	50/15 RHY
Heating		Indoor Air	Outside air
	°C	10 / 25°C	-20 / 20°C
Cooling		Indoor Air	Outside air
	°C	18 / 28°C	15 / 38°C

Heat recovery units price list

model	euro	EVCNT remote electronic control with Wi-Fi connection	Filter kit
		euro	euro
EVHRA-D 14 HY	⌄	⌄	⌄
EVHRA-D 20 HY	⌄	⌄	⌄
EVHRA-D 30 HY	⌄	⌄	⌄

model	euro	EVCNT remote electronic control	Supply and exhaust filter kit	Replacement filter kit
		euro	euro	euro
EVHRA-D 50/15 RHY	⌄	⌄	⌄	⌄