

EVHRD Recuperator with dehumidification and air treatment

from 300 to 500 m³/h



Description

The EVHRD is a unit of controlled mechanical ventilation with heat recovery unit high efficiency, air treatment section with dehumidification, cooling and heating . The unit is equipped with plug-and - play solution for quick and simplified installation. The unit consists of a monoblock inclusive of each component for the proper operation and allows the operation with wide temperature range.

Characteristics

Perimeter structure self-supporting in galvanized sheet. Panels are made from double sandwich panel, with extrernhally painted finish. The insulation panel is made with high-performance insulation 23 mm thickness. Polypropylene exchanger in countercurrent high efficiency exceeding 90%. Summer and winter operation. Fans plug -fun brushless electronic motor and modulating control. High efficiency and low noise levels. Comply with Directive Erp. ePM1 filter easily removable on external air inlet and outlet on the air. Coarse filters with low pressure drop and easily removable on the air recirculation . Electrical panel on the unit with microprocessor and dedicated control. Cooling circuit with high efficiency compressor.

Command electronics

Version K: Electrical panel on board unit with microprocessor and dedicated regulation. Fan management, display of internal machine temperature probes, timed dirty filter management, recirculation and renewal air management.

Possibility to control the unit with these three solutions:

- 1: Management through external commands and 0-10vdc signal to control air flow from minimum to maximum;
- 2: Management through remote panel with integrated T / H sensor;
- 3: MODBUS RTU RS 485 communication.

Use

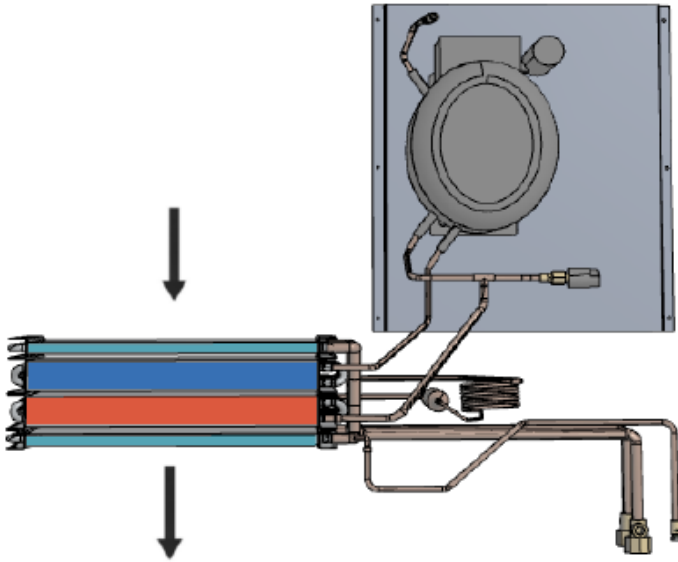
The unit is particularly suitable for residential, commercial or collective residential buildings where, in addition to the air exchange, it is necessary to dehumidify the presence of radiant systems.

Versions

Version D: version for dehumidification with neutral air (isothermal).

Unit for the renewal of the ambient air with the external one through a high efficiency recuperator, the air flow is increased by partially recirculating the ambient air thus allowing the operation of the refrigeration circuit, obtaining during the summer period (compressor active) dehumidified air.

Equipped with a post-cooling / heating hydronic battery which, if supplied, provides a supplement to the cooling / heating capacity of the radiant air-conditioning system (the connection to the heating / cooling system is optional and does not affect air dehumidification).



Version DC: version for dehumidification and integration in cooling / heating.

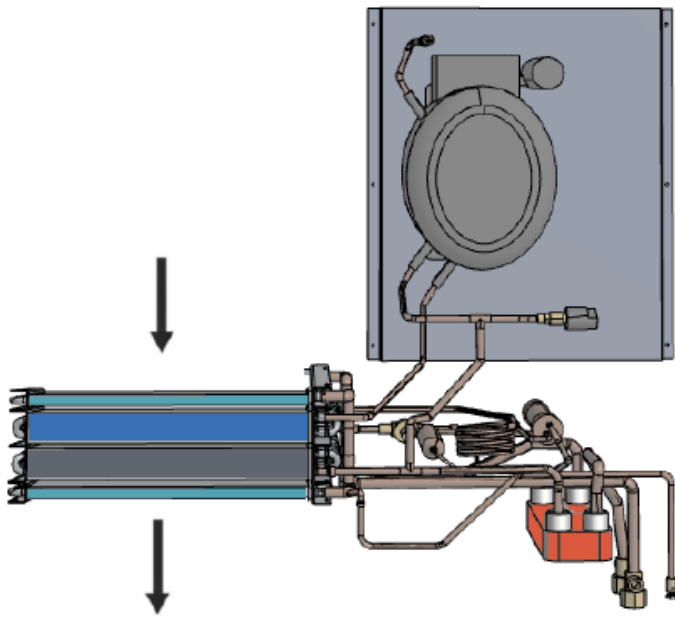
Unit for the renewal of the ambient air with the external one through a high efficiency recuperator, the air flow is increased by partially recirculating the ambient air thus allowing to dehumidify the air and to provide an integration of the cooling / thermal power radiant air conditioning system.

During the summer (active compressor) the unit can work in 2 modes:

Renewal + Dehumidification: The unit condenses partially in air and partially in water through the plate condenser, obtaining dehumidified air;

Renewal + Dehumidification + Cooling integration: The unit completely condenses in water, thus obtaining dehumidified and cooled air.

During the winter period (compressor off) the hydronic battery is supplied with hot water from the heating system and behaves like a thermo-ventilator with recuperator.



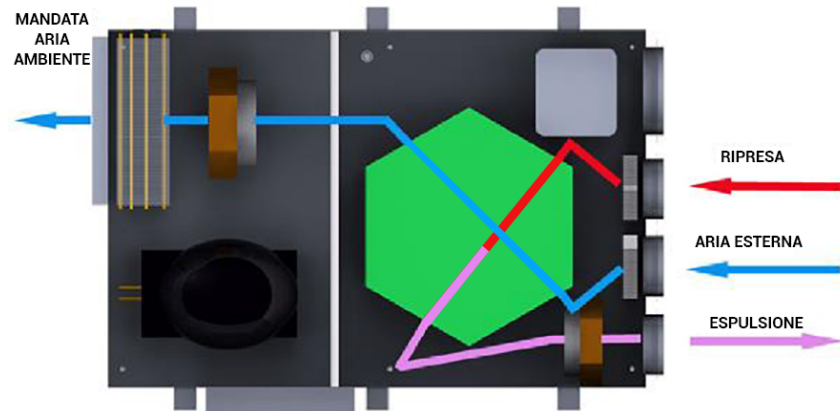
Operation Only with Ventilation

The EVHRD unit will cater for mechanical ventilation with high efficiency heat recovery. It will be possible to select the fan speeds in order to obtain the desired flow rate to meet the air renewal requirements.

The selectable flow rates are:

On size EVHRD 30-15 from 0 to 150 m³/h

On size EVHRD 50-25 from 0 to 250 m³/h



Ventilation, Dehumidification and Integration Operation

The EVHRD unit will continue to satisfy the mechanical ventilation with high efficiency heat recovery but will increase the air flow rate, recirculating from a dedicated ambient air duct to increase the air volume on the integration part.

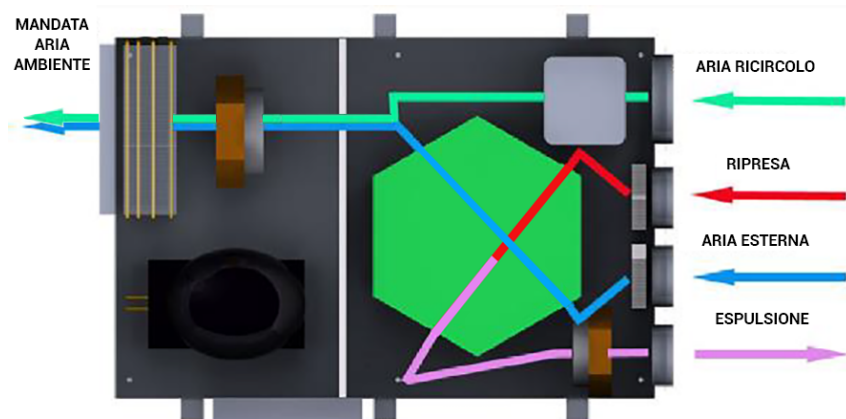
The integration part can consist of a version

with dehumidification (Version D), from a version with dehumidification and integration (Version DC) and hydronic supplementary batteries.

The D version, finds its most common application, in radiant systems where there is the need of only dehumidification in the summer. During operation, the unit, through humidity and temperature probes, activates the refrigerant circuit composed of the compressor, the air evaporation coil and the air condenser, thus performing dehumidification. It is possible to supply the hydronic post battery with the radiant system water (the lack of battery power does not compromise the operation of the refrigeration circuit) it is possible to integrate it with the summer cooling and the winter heating.

The DC version, finds its most common application, in radiant systems where there is the need for dehumidification and the integration of cooling in the summer. During operation, the unit, through humidity and temperature probes, activates the refrigerant circuit composed of the compressor, the air evaporation coil and the air and water condenser supplied by the radiant system, thus achieving air dehumidification and integration. cooling.

In winter, it is still possible to use the unit to integrate the radiant heating by feeding the hot water hydronic battery, obtaining a rapid thermal contribution to the environment.



Unit Performance - General Data

(1) Temperatura aria esterna 7°; umidità relativa 72%. temperatura ambiente 20°C; umidità relativa 28%, portata aria nominale.

		Horizontal Version		Vertical Version	
Size		EVHRD 30/15	EVHRD 50/25	EVHRD 30/15	EVHRD 50/25
Efficienza nominale invernale recuperatore (1)	%	85,7	86	83,9	86
Nominal Outdoor Airflow Rate	m³/h	154	265	161	258
Total Airflow Rate	m³/h	297	520	302	538
Model classification according to European Regulation 1253/2014 and 1254/2014		B	A	B	A

D Version

(1) Outdoor air temperature 30°C; relative humidity 60%. Room temperature 25°C; relative humidity 50%; nominal airflow rate.

(2) Room temperature 25°C; relative humidity 60%; nominal airflow rate; water inlet 16°C, water outlet 18°C.

(3) Room temperature 20°C; relative humidity 60%; nominal airflow rate; water inlet 35°C, water outlet 30°C.

Version D		Horizontal Version		Vertical Version	
		EVHRD 30/15	EVHRD 50/25	EVHRD 30/15	EVHRD 50/25
Net Dehumidification Capacity (excluding the enthalpy content of outdoor air) (1)	l/24h	30,5	56	30,5	56
Cooling Capacity Delivered by Hydronic Coil	kW	0,7	1,56	0,7	1,56
Water Flow Rate	m³/h	0,25	0,35	0,25	0,35
Pressure Drop	Kpa	8,5	10,5	8,5	10,5
Delivered Heating Capacity ³	kW	0,86	1,4	0,86	1,4
Sound Pressure Level Lp at 3 m	dB(A)	40,8	40,9	40,8	40,9
Power Supply	V/Ph/Hz	230 / 1 / 50			
Maximum Absorbed Current	A	5,5	7	5,5	7

DC Version

(1) Outdoor air temperature 30°C; relative humidity 60%. Room temperature 25°C; relative humidity 50%; nominal airflow rate.

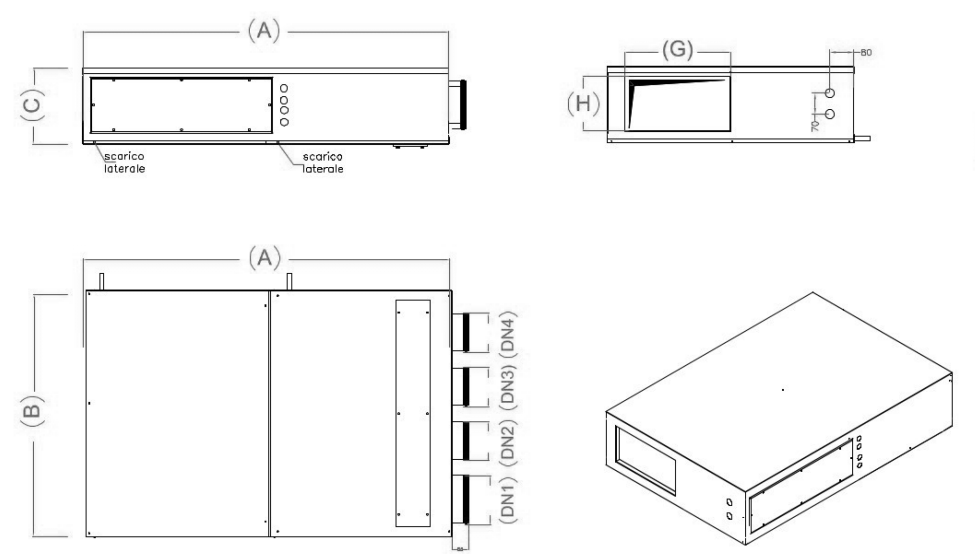
(2) Room temperature 25°C; relative humidity 60%; nominal airflow rate; water inlet 16°C, water outlet 18°C.

(3) Room temperature 20°C; relative humidity 60%; nominal airflow rate; water inlet 35°C, water outlet 30°C.

Version DC		Horizontal Version		Vertical Version	
		EVHRD 30/15	EVHRD 50/25	EVHRD 30/15	EVHRD 50/25
Net Dehumidification Capacity (excluding the enthalpy content of outdoor air) (1)	l/24h	30,5	56	30,5	56
Cooling Capacity Delivered by Compressor (2)	kW	1,55	2,4	1,55	2,4
Cooling Capacity Delivered by Hydronic Coil	kW	0,7	1,56	0,7	1,56
Water Flow Rate	m³/h	0,25	0,35	0,25	0,35
Pressure Drop	Kpa	8,5	10,5	8,5	10,5
Delivered Heating Capacity ³	kW	0,86	1,4	0,86	1,4
Sound Pressure Level Lp at 3 m	dB(A)	40,8	40,9	40,8	40,9
Power Supply	V/Ph/Hz	230 / 1 / 50			
Maximum Absorbed Current	A	5,5	7	5,5	7

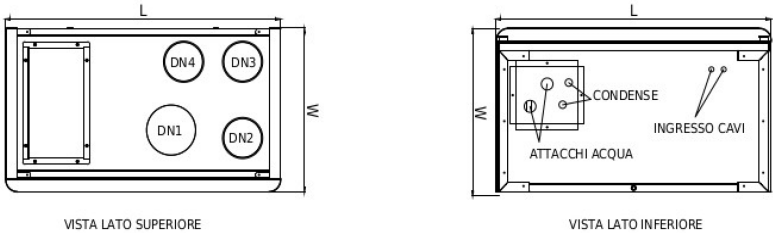
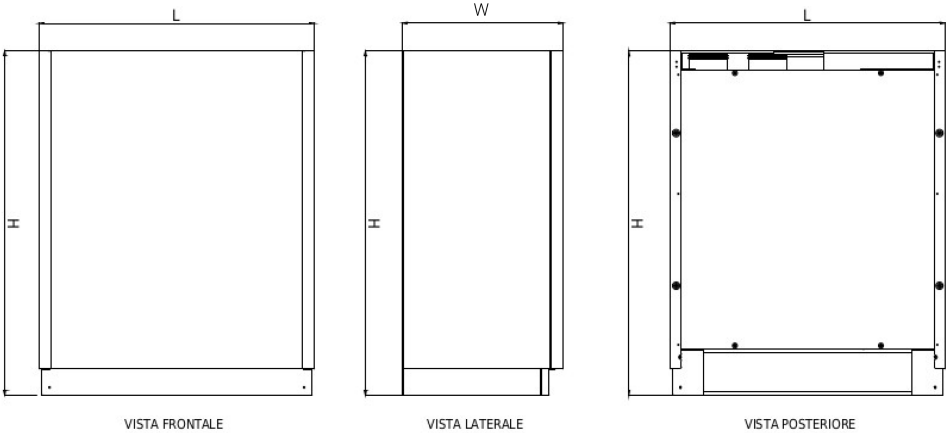
Dimensions Orizzontal Versions

Dimensions		Horizontal Version	
		EVHRD 30/15	EVHRD 50/25
Larghezza A	mm	1220	1220
Depth B	mm	820	960
Altezza C	mm	255	330
Recirculation Air Inlet DN1	mm	160	200
Extract Air Inlet DN2	mm	125	160
Fresh Air Inlet DN3	mm	125	160
Exhaust Air Outlet DN4	mm	125	160
Supply Air Outlet (G × H)	mm	347x177	518x252
Water Connections – Supply / Return	Ø	1/2"-1/2"	1/2"-1/2"
Water Connection Diameter	Ø	20	20



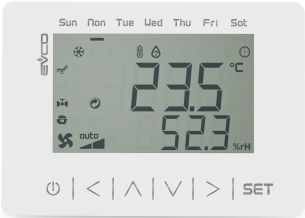
Dimensions Vertical Versions

Dimensions		Vertical Version	
		EVHRD 30/15	EVHRD 50/25
Width L	mm	885	985
Width W	mm	515	740
Height H	mm	1085	1185
Recirculation Air Inlet DN1	mm	160	200
Extract Air Inlet DN2	mm	125	160
Fresh Air Inlet DN3	mm	125	160
Exhaust Air Outlet DN4	mm	125	160
Mandata	mm	347x177	518x252
Water Connections – Supply / Return	Ø	1/2"-1/2"	1/2"-1/2"
Water Connection Diameter	Ø	20	20



Price Recovery and Accessories - Version K

	Models	Heat Recovery Unit Version		Accessories				
		D	DC	EVCNU - Remote Electronic Controller	EVCNU - Remote Electronic Controller	V2-1-EVHRD - 2-Way 1/2" On/Off Water Valve	V3-1-EVHRD - 3-Way 1/2" On/Off Water Valve	Filter Kit
				EVCNU	EVCNU-2			
		Eur	Eur	Eur	Eur	Eur	Eur	Eur
Horizontal	EVHRD 30/15	-	-	-	-	-	-	-
	EVHRD 50/25	-	-	-	-	-	-	-
Vertical	EVHRD 30/15	-	-	-	-	-	-	-
	EVHRD 50/25	-	-	-	-	-	-	-



Price List – Insulated Supply Air Plenum

All dimensions are expressed in mm.

Configurazione	Models	L	H	P	Ø	Eur
Horizontal	EVHRD 30/15	347	177	100	1x160	-
	EVHRD 50/25	518	252	100	2x160	-
Vertical	EVHRD 30/15	347	177	100	1x160	-
	EVHRD 50/25	518	252	100	2x160	-

