

EVHRD EC

Recuperator with dehumidification and air treatment from 300 to 500 m³/h with compressor and inverter



Description

The EVHRD EC is a controlled mechanical ventilation unit with heat recuperator and high efficiency inverter compressor, air treatment section with dehumidification, cooling and heating integration. 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 extrinsically 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. Refrigeration circuit with high efficiency inverter compressor.

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.

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.

Accessories

- V2-1-EVHRD - 2-Way On/Off Water Valve 1/2";
- V3-1-EVHRD - 3-Way On/Off Water Valve 1/2";
- EVFHRDW - Kit Filtri;
- EDRM - Modulating Damper for Outdoor Air Intake.

Version

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

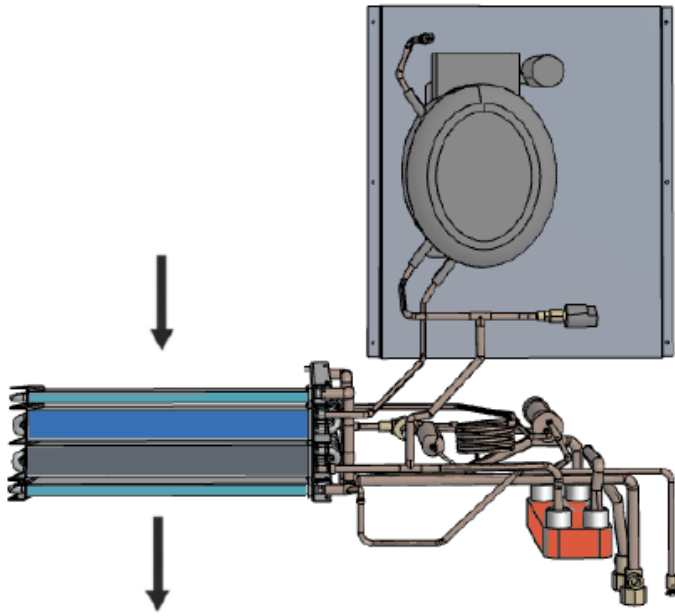
Unit for the renewal of the ambient air with the external one through a high efficiency recuperator, the air flow is increased by partially recirculating the ambient air thus allowing to dehumidify the air and to provide an integration of the cooling / thermal power radiant air conditioning system.

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.



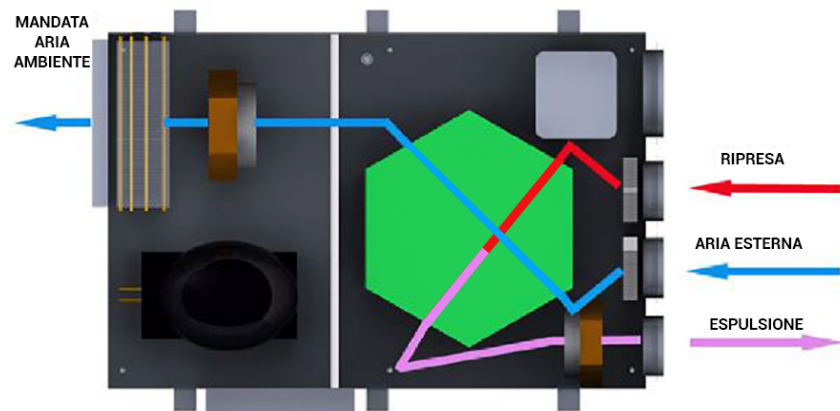
Operation Only with Ventilation

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 EC 30-15 from 0 to 150 m³/h.

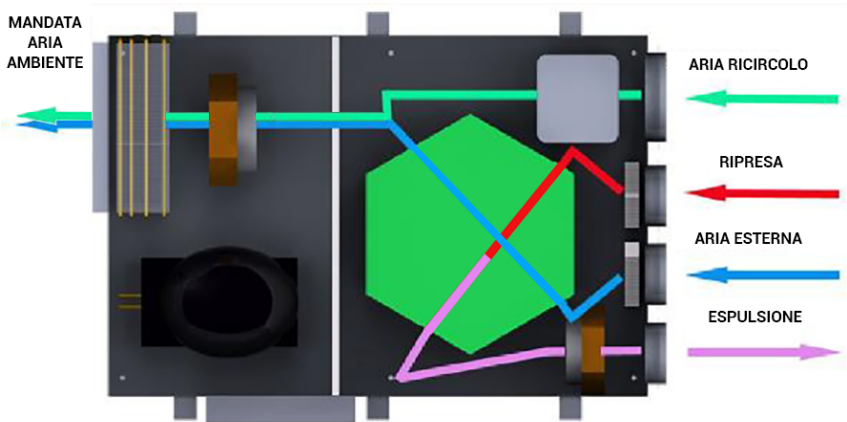
On size EVHRD EC 50-25 from 0 to 250 m³/h.



Ventilation, Dehumidification and Integration Operation

The EVHRD EC unit will continue to satisfy mechanical ventilation with high efficiency heat recovery but will increase the air flow, recirculating from a dedicated room air duct to increase the air volume on the integration part. The integration part consists of a version with dehumidification and integration and hydronic integrative batteries.

It finds its most common application in radiant systems where there is a need for dehumidification and the integration of cooling in the summer period. During operation, the unit uses humidity and temperature probes to activate the refrigeration circuit composed of the compressor, the air evaporation coil and the air and water condenser powered by the radiant system, thus realizing the dehumidification of the air and the integration of cooling. In the winter period, it is however possible to use the unit to integrate the radiant heating by feeding the hydronic hot water battery, obtaining a rapid heat input to the room.



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 EC		30/15	50/25	30/15	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

Technical Features

(1) External air temperature 33°; relative humidity 50%. room temperature 25°C; relative humidity 50%, water temperature 16°. nominal air and water flow.

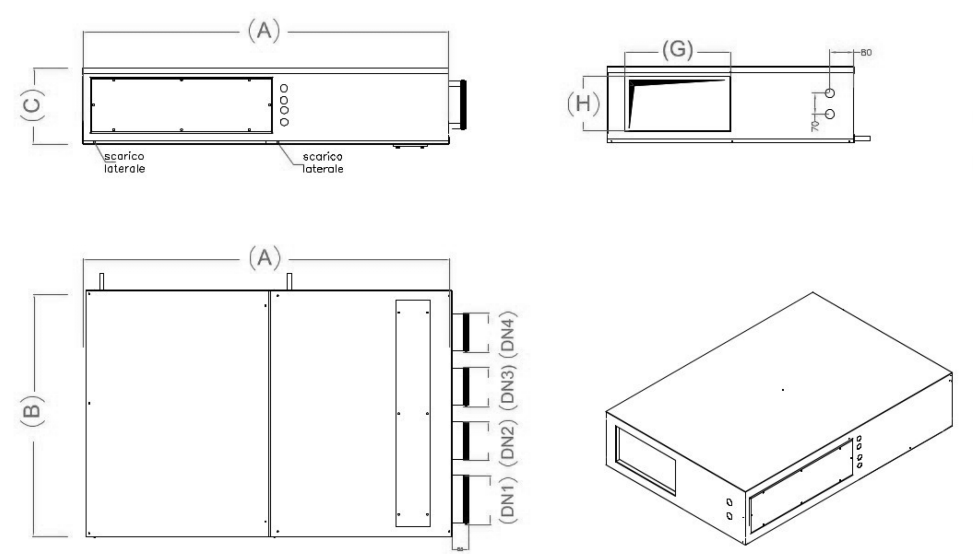
(2) External air temperature 33°; relative humidity 50%. room temperature 25°C; relative humidity 50%, water temperature 16°. nominal air and water flow.

(3) Ambient temperature 20°C; relative humidity 50%, nominal air flow; Water at 35°C.

EVHRD EC		Horizontal		Vertical	
		30/15	50/25	30/15	50/25
Net Dehumidification Capacity (excluding the enthalpy content of outdoor air) (1)	l/24h	75	99	75	99
Total Cooling Capacity ²	kW	3,3	4,35	3,3	4,35
Compressor Power Consumption	kW	0,88	1,06	0,88	1,06
Compressor Operating Frequency	Hz	68	80	68	80
EER		3,71	4,1	3,71	4,1
Sensible Cooling Capacity (available upon integration phase completion)	kW	1,4	1,91	1,4	1,91
Delivered Heating Capacity ³	kW	0,7	1,25	0,7	1,25
Water Flow Rate	m ³ /h	0,15	0,2	0,15	0,2
Pressure Drop	Kpa	12	9	12	9
Sound Pressure Level Lp at 3 m	dB(A)	41,6	42,9	41,0	41,4
	V/Ph/Hz	230/1/50		230/1/50	
Maximum Operating Current Draw	A	4,7	5,9	4,7	5,9
Maximum Operating Power Consumption	kW	1,02	1,27	1,02	1,27
Maximum Current Draw – Components	A	7,5	8,1	7,5	8,1
Potenza massima assorbita componenti	kW	1,61	1,73	1,61	1,73

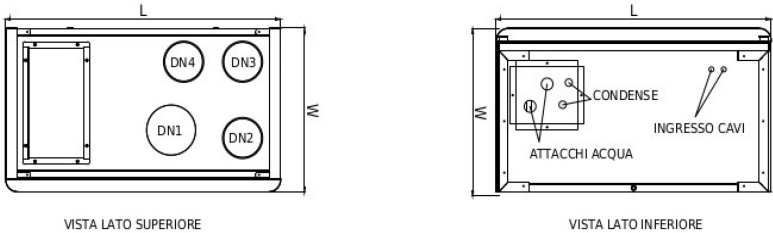
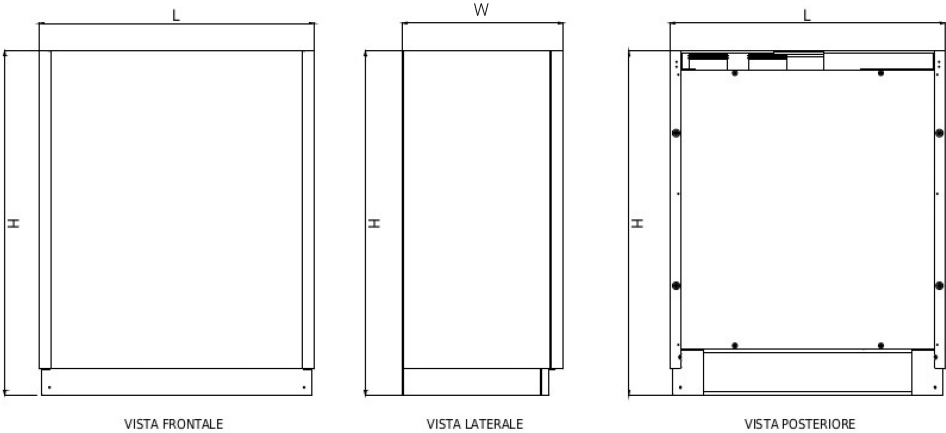
Dimensions Orizzontal Versions

Dimensions EVHRD EC		Horizontal Version	
		30/15	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



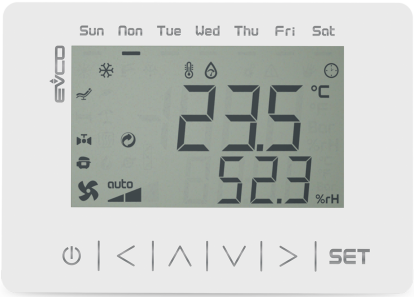
Dimensions Vertical Versions

Dimensions EVHRD EC		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	Eur	Accessories					
			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	EVFHRDW-H - Filter Kit	EDRM - Modulating Damper for Outdoor Air Intake
			EVCNU	EVCNU-2				
			Eur	Eur	Eur	Eur	Eur	
Horizontal	EVHRD EC 30/15	-	-	-	-	-	-	-
	EVHRD EC 50/25	-	-	-	-	-	-	-
Vertical	EVHRD EC 30/15	-	-	-	-	-	-	-
	EVHRD EC 50/25	-	-	-	-	-	-	-



Price List – Insulated Supply Air Plenum

All dimensions are expressed in mm.

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

