

## HRD H

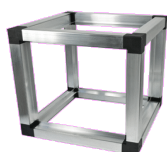
Compact unit for controlled mechanical ventilation,  
dehumidification and air treatment with high efficiency heat recovery  
for application with radiant panels



## GENERAL FEATURES

### STRUCTURE

High strength structure with frame self-supporting in painted sheet metal. Choice of materials with high thermal and acoustic insulation characteristics



### FANS

The unit is equipped with centrifugal fans Erp2018 with low electronic motor energy consumption.



### RECOVERER

High efficiency countercurrent cross flow polypropylene heat exchanger.



### COMPRESSOR

High efficiency reciprocating compressor



### FILTRATION

There are flat filters with filtration class on the external and supply air inlet PM1 while on the recirculation there are Coarse filters;



### 2 ELECTRONICS

The management of the system is entrusted to two possible advanced electronic systems that are easy to manage. An on-line help guarantees correct use via the control keyboard.

## TECHNICAL FEATURES

HRD H is a controlled mechanical ventilation unit with high efficiency heat recovery unit, air handling section with dehumidification, cooling and heating. The unit is particularly suitable for residential, commercial or collective residential buildings and is supplied plug-and-play for quick and simplified installation. The unit consists of a monobloc including each component for correct operation and allows operation with wide external temperature ranges.

<b>RECOVERY SECTION:</b>	High efficiency counter-current polypropylene exchanger > 90%. Summer and winter operation.
<b>VENTILATION:</b>	Brushless plug-fan fans with electronic motor and modulating control. Very high efficiency and low noise levels Compliant with Erp2018 legislation.
<b>AIR TREATMENT SECTION:</b>	The unit can be equipped with a refrigeration circuit for dehumidification or integration of cooling and heating. In the various configurations, it will be possible to select the type of air treatment desired between dehumidification only or dehumidification with heating and cooling of the primary air.
<b>FILTRATION:</b>	PM1 80% filters easily removable on the external air intake on the extract air. Coarse filters with low pressure drop easily removable on the recirculation air.
<b>STRUCTURE:</b>	Panels made of double Alu-zinc sandwich panel, with pre-painted finish on the outside. Self-supporting perimeter structure in galvanized sheet metal. The insulation of the panels is made with high-performance insulation 20 mm thick and adhesive polyethylene insulation 10 mm thick.
<b>REFRIGERANT CIRCUIT:</b>	Made of brazed copper complete with: High efficiency compressor, filter drier, finned coils, water exchanger, solenoid valves, lamination device, liquid receiver, high and low pressure switches and thermal insulation of pipes.
<b>ADJUSTMENT:</b>	<b>K VERSION</b> Electrical panel on board the unit with microprocessor and dedicated regulation. Management of the fans, display of the internal temperature probes of the machine, management of timed dirty filters, management of recirculation and renewal air. Possibility of controlling the unit with these three solutions: 1: Management through external commands and 0-10v dc signal for air flow control from minimum to maximum; 2: Management via remote panel with integrated T / H sensor 3: MODBUS RTU RS 485 communication

## CONTROLS FUNCTIONALITY

Here Of following he comes defined there composition of the three possible electronic of unit And of the functions of the various versions:

VERSION K

CARDS TO EDGE MACHINE



PANEL REMOTE WITH T / H PROBE



MANAGEMENT WITH EXTERNAL CONTACTS OR MODBUS RTU



**Modbus**

## ECODESIGN CLASSIFICATION

The regulation, which entered into force on December 15, 2014, defines the energy consumption labels to be applied to the ventilation units and the information to be placed in the instruction booklets of the appliances, so that consumers are fully informed about consumption and energy efficiency. of appliances.

**DEFINITIONS:** By "ventilation unit" we mean an electrically powered appliance equipped with at least one impeller, a motor and a casing, designed to exchange the exhausted air with air coming from outside a building or part of it. The residential ventilation units subject to the obligation are those with a maximum range of 250 m<sup>3</sup>/h. The rules are extended to those of range between 250 and 1,000 m<sup>3</sup>/h only if they are intended, as declared by the manufacturer, exclusively for the ventilation of residential buildings.

**LABEL:** The label will inform the consumer about the supplier's name or brand, the supplier's model identifier, the energy efficiency class of the appliance, the sound power level (LWA), in dB and maximum range, in m<sup>3</sup>/h.

**LIABILITY OF SUPPLIERS:** Suppliers who place residential ventilation units on the market shall ensure that, starting from 1 January 2016, the following conditions are met:

1. Each residential ventilation unit is accompanied by a printed label, in the format set out in Annex III, and containing the information indicated therein; the label must be present at least in the unit packaging. For each model of residential ventilation unit, an electronic label with the format and information set out in Annex III is available to distributors;

2. A product fiche is available as indicated in Annex IV. The card is present at least in the unit packaging. An electronic product sheet, as described in Annex IV, is available to distributors and on public websites for each model of residential ventilation unit;

3. The technical documentation referred to in Annex V is provided upon request to the authorities of the Member States and the Commission;

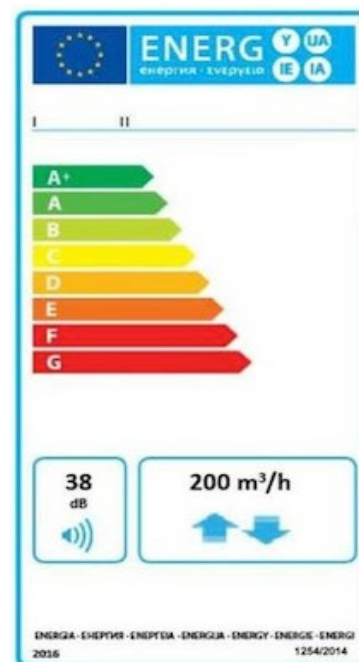
4. Instructions for use are provided;

5. Any advertisement relating to a specific model of residential ventilation unit that contains information concerning energy or price indicates the specific energy consumption class of that model;

6. Any technical promotional material relating to a specific model of residential ventilation unit, describing its specific technical parameters, indicates its specific energy consumption class.





**RESPONSIBILITY OF THE DISTRIBUTORS:** Distributors, on the other hand, provide for:

1. At the point of sale, each residential ventilation unit carries the label made available by suppliers pursuant to Article 3 (1) (a) on the outside of the front or top of the appliance so that it is clearly visible;



<p>2. The residential ventilation units offered for sale, for hire or for sale by installments in situations where the end user is not expected to view the product displayed, are marketed accompanied by the information provided by suppliers in accordance with Annex VI, unless the offer is made via the Internet, in which case the provisions of Annex VII apply;</p> <p>3. Any advertisement relating to a specific model of residential ventilation unit that contains information concerning energy or price indicates the specific energy consumption class of the unit;</p> <p>4. Any technical promotional material relating to a specific model, which describes the technical parameters of a residential ventilation unit, includes the specific energy consumption class of the model, as well as the instruction manual provided by the supplier.</p>	
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The classification of the various models according to the European regulation 1253/2014 and 1254/2014 is summarized below

Size	30/15 D - DC	40/20 D - DC	50/25 D - DC	60/30 D - DC
				

## UNIT CONFIGURATION

	-1-	-2-	-3-	-4-
HRD	30/15	H.	K	D.

### 1) Defines the total flow and the fresh air flow

models 300/150 m<sup>3</sup>/h - 600/300 m<sup>3</sup>/h

### 2) Type of installation

H: Horizontal

### 3) Electronic type

K: K electronics

### 4) Type of construction

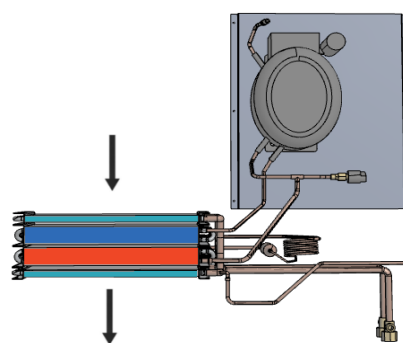
D: Version for dehumidification with neutral air (isothermal)

DC: Version for dehumidification and integration in cold and heat

### BRIEF DESCRIPTION OF THE VERSIONS

#### Version for dehumidification with neutral air (isothermal) (D)

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 (active compressor) dehumidified air. Equipped with pre- and post-cooling / heating hydronic batteries which, if powered, allow to supply an integration of the cooling / heating capacity to the radiant air conditioning system (the connection to the heating / cooling system does not block the operation of the unit even if decreases the dehumidification performance;



Version D in dehumidification phase

#### Version for dehumidification and integration in cooling / heating (DC)

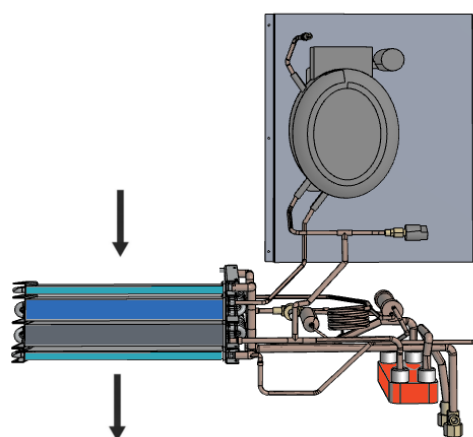
Unit for the renewal of the ambient air with the external one through a high efficiency recuperator, the air flow is increased by partially recirculating the ambient air thus allowing to dehumidify the air and to provide an integration of the cooling / heating capacity to the 'radiant air conditioning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

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

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

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

During the winter period (compressor off) the hydronic coil is supplied with hot water from the heating system and acts as a thermo fan with recuperator.



DC version in the summer integration phase

## COMPOSITION OF THE UNIT

	<i>Version -D-</i>	<i>Version -A.D-</i>
<b>REFRIGERANT CIRCUIT</b>		
Hermetic reciprocating compressor	•	•
Copper tube air condenser with aluminum fins	•	•
Hydronic condenser with stainless steel exchanger	/	•
Copper tube heat exchanger with aluminum fins	•	•
Laminating organ	•	•
Filter drier	•	•
High pressure switches	•	•
<b>HYDRAULIC CIRCUIT</b>		
Post-cooling / heating hydronic coil	•	•
Hydronic pre-cooling / heating coil	•	•
<b>AERAULIC CIRCUIT</b>		
Polypropylene heat exchanger	•	•
N ° 2 plug-fun radial fans with Brushless motors	•	•
PM1 filters on the external air intake and on the supply air	•	•
Coarse filters on the recirculation air intake	•	•
<b>ELECTRICAL CIRCUIT</b>		
Microprocessor	•	•

•= Installed as standard

/ = Not available



## OPERATION OF THE UNIT

### VENTILATION ONLY OPERATION

The HRD unit will satisfy 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 satisfy the requests for air renewal.

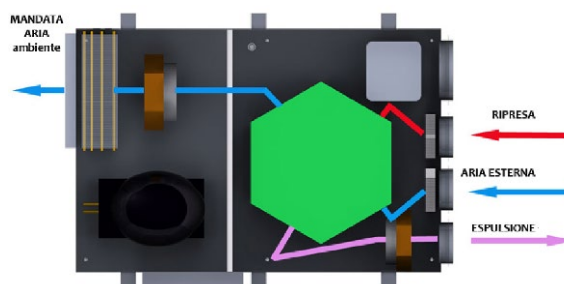
The selectable ranges are:

On size 30/15 from 0 to 150 m<sup>3</sup>/h

On size 40/20 from 0 to 200 m<sup>3</sup>/h

On size 50/25 from 0 to 250 m<sup>3</sup>/h

On size 60/30 from 0 to 300 m<sup>3</sup>/h



### VENTILATION, DEHUMIDIFICATION AND INTEGRATION OPERATION

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

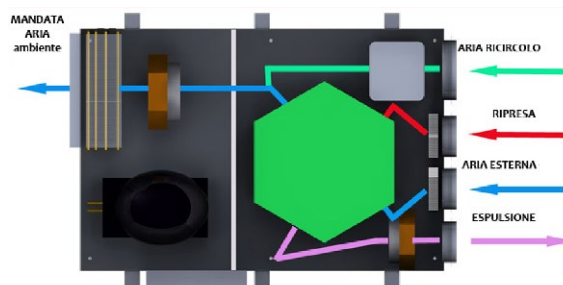
The integration part can consist of a version with dehumidification (Version D), a version with dehumidification and integration (Version DC) and supplementary hydronic coils.

Version D finds its most common application in radiant systems where only dehumidification is required in the summer. During operation, the unit through humidity and temperature probes activates the refrigeration circuit consisting of the compressor, the air evaporation coil and the air condenser, thus carrying out dehumidification.

It is possible by feeding the pre-post hydronic battery with the water from the radiant system (the lack of power supply of the battery does not compromise the functioning of the refrigeration circuit) it is possible to integrate the summer cooling and winter heating.

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

In the winter period, however, it is possible to use the unit to integrate radiant heating through the hot water supply of the hydronic battery, obtaining a rapid heat input to the environment.



## PERFORMANCE UNIT

### GENERAL TECHNICAL DATA

Size		HRD 30/15	HRD 40/20	HRD 50/25	HRD 60/30
Heat recovery unit nominal winter efficiency 1	%	85.7	81.2	86	81.8
Nominal external air flow	m <sup>3</sup> /h	154	199	265	313
Total air flow	m <sup>3</sup> /h	297	391	520	619

(1) External air temperature 7 °; relative humidity 72%. ambient temperature 20 ° C; relative humidity 28%, nominal air flow

### VERSION D-

Useful dehumidification capacity	l / 24h	22	30.5	40	56
Cooling capacity yielded by hydronic battery 2	kW	0.53	0.7	1.25	1.56
Thermal power output 3	kW	0.62	0.86	1.3	1.4
Water flow	m <sup>3</sup> /h	0.15	0.25	0.3	0.35
Loss of pressure	Kpa	4.5	8.5	9.0	10.5
Sound pressure Lp at 3 m	dB (A)	38.6	40.8	40.2	40.9
Power supply	V / Ph / Hz	230/1/50	230/1/50	230/1/50	230/1/50
Maximum absorbed current	TO	3.5	5.5	5.9	7

(1) External air temperature 30 ° C; relative humidity 60%. ambient temperature 25 ° C; relative humidity 50%, nominal air flow

(2) Ambient temperature 25 ° C; relative humidity 60%, nominal air flow; Water in 16 ° C;

(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C;

### DC VERSION-

Useful dehumidification capacity	l / 24h	22	30.5	40	56
Cooling capacity delivered by compressor 2	kW	1.14	1.55	2.02	2.4
Cooling capacity yielded by hydronic battery 2	kW	0.53	0.7	1.25	1.56
Thermal power output 3	kW	0.62	0.86	1.3	1.4
Water flow	mc / h	0.15	0.25	0.3	0.35
Loss of pressure	Kpa	4.5	8.5	9.0	10.5
Sound pressure Lp at 3 m	dB (A)	38.6	40.8	40.2	40.9
Power supply	V / Ph / Hz	230/1/50	230/1/50	230/1/50	230/1/50
Maximum absorbed current	TO	3.5	5.5	5.9	7

(1) External air temperature 30 °; relative humidity 60%. ambient temperature 25 ° C; relative humidity 50%, nominal air flow

(2) Ambient temperature 25 ° C; relative humidity 60%, nominal air flow; Water in 16 ° C;

(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C

## HRD 30-15

### Fans

Type of Fans		Reverse blade radials - directly coupled electronic motor - 0/10 V signal
Number of fans	Nr	2
Air flow ventilation	m <sup>3</sup> /h	154
Integration air flow	m <sup>3</sup> /h	297
Useful pressure	Pa	100

### Heat exchanger

Type of exchanger		Counter-current plates - polypropylene material
Number of Exchangers	Nr	1
Recovery efficiency	%	85.7

### Data Thermal and cooling capacities / dehumidification capacity

Useful dehumidification capacity (net of the enthalpy content of the external air) 1	l / 24h	22
Cooling capacity yielded by hydronic battery 2	kW	0.53
Water flow in summer operation	m <sup>3</sup> /h	0.15
Pressure drop in summer operation	Kpa	4.5
Summer compressor cooling capacity	kW	1.14 (DC VERSION ONLY)
Compressor absorbed power	kW	0.35
Thermal power output 3	kW	0.62
Water flow for winter operation	m <sup>3</sup> /h	0.15
Pressure drop in winter operation	Kpa	4.5
Refrigerant gas		R134a

(1) External air temperature 30 °; relative humidity 60%. ambient temperature 25 ° C; relative humidity 50%, nominal air flow

(2) Ambient temperature 25 ° C; relative humidity 60%, nominal air flow; Water in 16 ° C

(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C

(4) Ambient temperature 25 °; relative humidity 60%, nominal air flow;

### Filters

Type of filters		Flat Filters
Filtration class		Coarse + PM1 + PM1

### Acoustic data

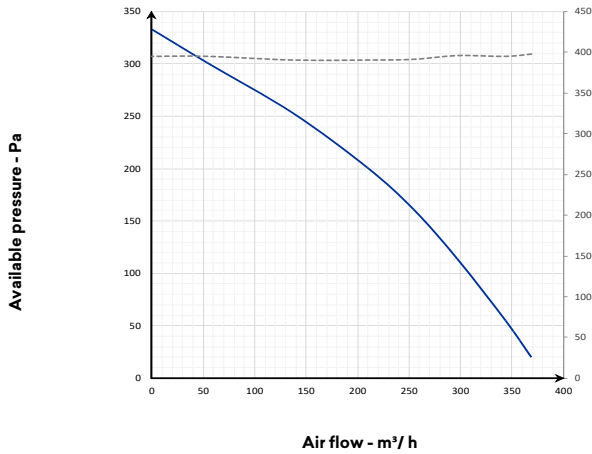
Sound power Lw transmitted by the structure	dB (A)	62.2
Sound power Lw radiated into the canal	dB (A)	66.6
Average sound pressure Lp at 1 m	dB (A)	48.4
Average sound pressure Lp to 3 m	dB (A)	40.7

### Electrical Data

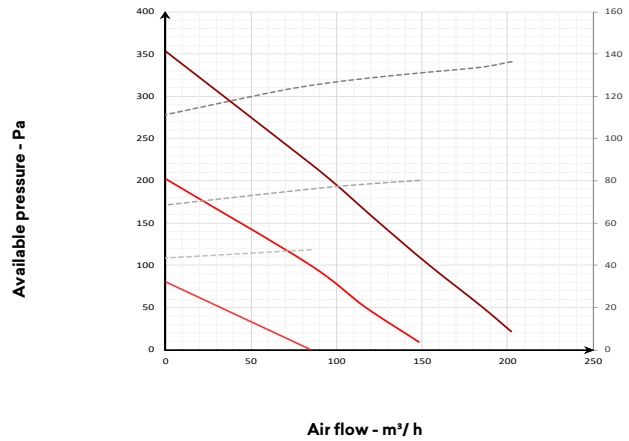
Supply voltage	V.	230/1/50 Hz.
Current consumption	TO	3.5
Degree of protection	IP	44

## HRD 30-15 CURVES

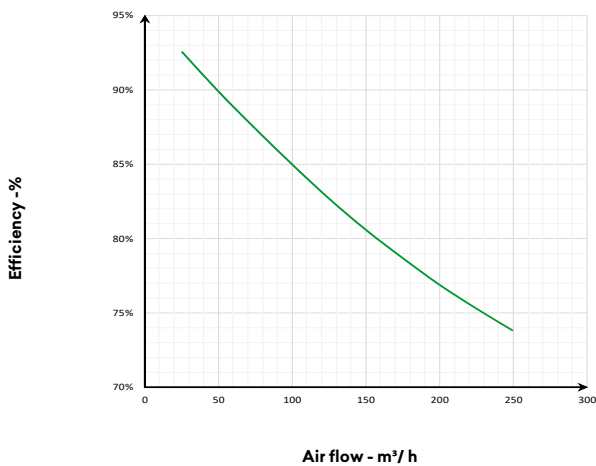
### AEREAULIC PERFORMANCE INTEGRATION / DEHUMIDIFICATION



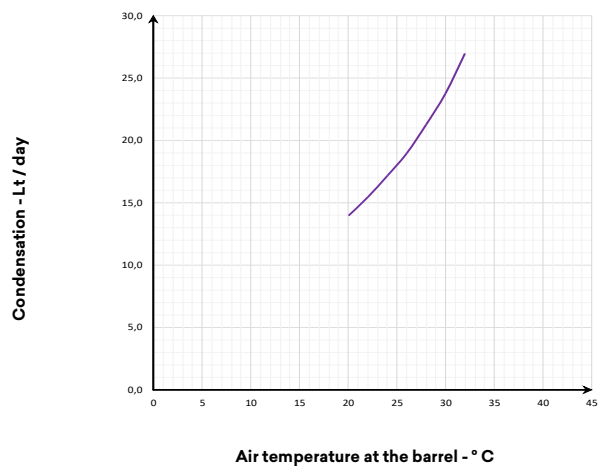
### AEREAULIC PERFORMANCE VENTILATION



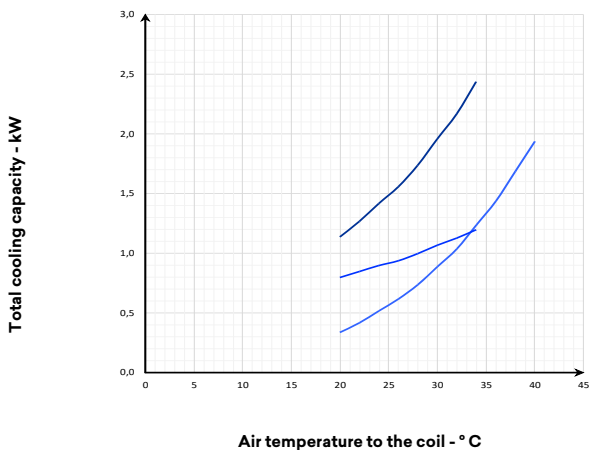
### THERMAL EFFICIENCY (1)



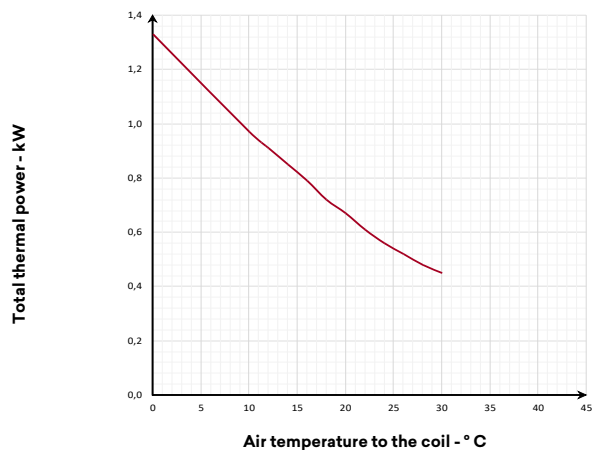
### DEHUMIDIFYING CAPACITY (2)



### REFRIGERANT YIELD (3)




### THERMAL OUTPUT (4)




- 1) - External air temperature 7 °; relative humidity 72%. ambient temperature 20 ° C; relative humidity 28%,
- 2) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 3) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 4) - Ambient temperature 20 °; relative humidity 60%, nominal external air flow, water inlet temperature 35 ° C

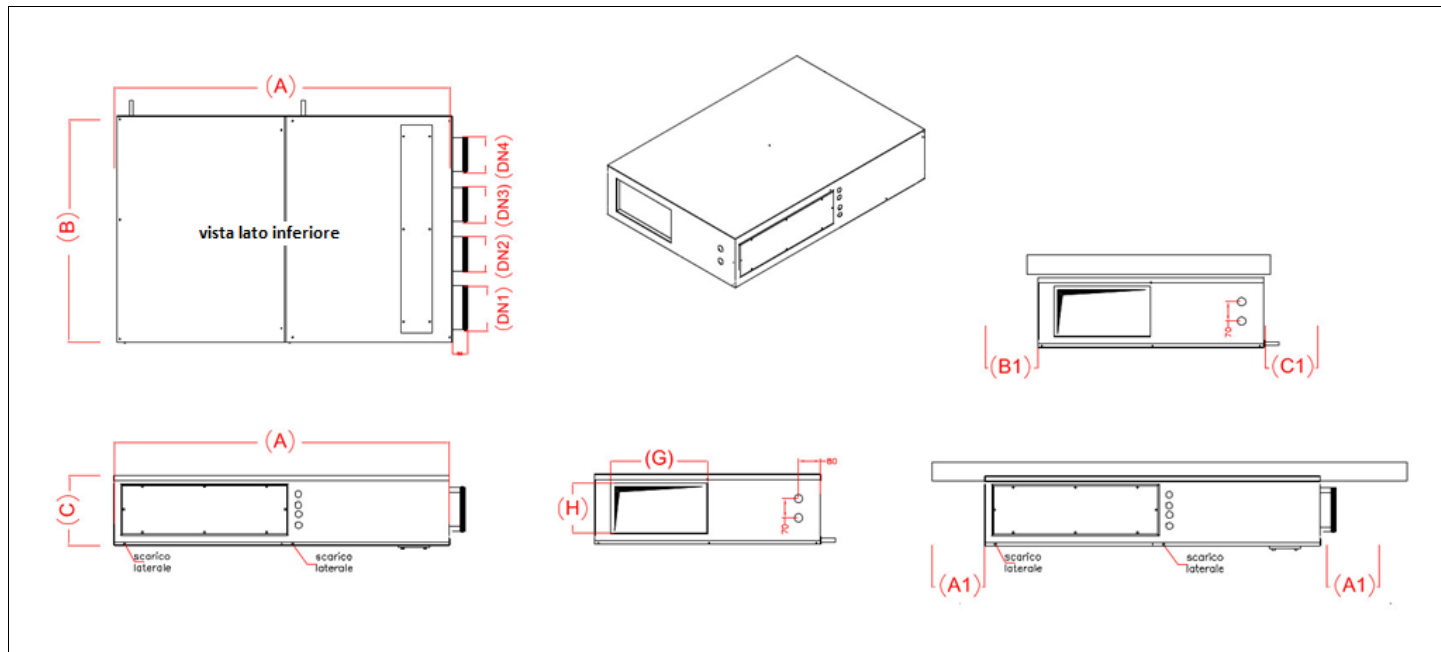
## ERP DATA ECODESIGN HRD 30-15

TO	Supplier's name or brand			
B.	Model identifier			
C.	Version		Standard unit / Central demand control	
	SEC	Kwh / mQ	COLD	-67.4
			AVERAGE	-29.3
			WARM	-4.9
SEC CLASS			<b>B</b> 	
D.	Type declared			UVR - Bidirectional
AN D	Drive type installed			Speed variator
F.	Heat recovery system			In recovery
G.	Thermal efficiency of heat recovery	%	85.7	
H.	Maximum capacity	m <sup>3</sup> / s	0.04	
THE	Electric power absorbed at maximum flow rate	W / h	130	
J	Sound power level	Lwa	62.2	
K	Reference range	m <sup>3</sup> / s	0.0325	
L	Reference pressure	Pa	50	
M.	SPI	W / m <sup>3</sup> / h	0.69	
No.	Control factor	CLTR	0.65	
OR	Maximum percentages of leakage declared	%	4.8 ext. / 5.2int.	
Q	Location and description of the signal related to the filter			Displayed on the unit and remote control display e on the instruction manual
S.	Internet address for disassembly instructions			

### Specifications item

	<p>Ventilation and dehumidification unit with very high efficiency heat recovery, compact dimensions for ceiling installation. Specific unit for ventilation in single residential buildings and collective apartments with low energy requirements in combination with systems requiring dehumidification and room air treatment. Tested and classified according to the European Ecodesign regulation ref. 1253/2014 and 1254/2014</p> <p><b>CONSTRUCTION FEATURES</b></p> <p>lateral structure in double paneling in Alu-galvanized sheet metal pre-painted externally and with insulation interposed, 20 mm thick, compact dimensions and reduced height for simplified installation with lower panel easily accessible for maintenance and inspection.</p> <p>Circular inlets with sealing gasket for connection to the air ducts</p> <p>Quick filter inspection, without tools and double side drain for condensate evacuation</p> <p>Refrigeration circuit with high efficiency hermetic compressor, heat exchange coils, lamination device and safety devices. Electrical panel, excluded from the air flow with management cards and terminal blocks for controlling centrifugal fans of the radial type with backward blades with EC motors with electronic speed control and low consumption Static heat exchanger in polypropylene with counter-current flows for very high efficiency Sensible heat recovery ePM1 class filters with low pressure drop outside air and stale air, Coarse on recirculation.</p> <p>Electrical panel on board the unit with microprocessor and dedicated regulation. Management of the fans, display of the internal temperature probes of the machine, management of timed dirty filters, management of recirculation and renewal air. Wide graphic interface with configuration menu and multilingual user menu. Predisposition for MODBUS RTU RS 485 communication with the most varied home automation systems.</p>
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## DIMENSIONAL AND FUNCTIONAL SPACES



<b>Template</b>	<b>HRD</b>	<b>30/15</b>
<b>Width A</b>	mm	1220
<b>Depth B</b>	mm	820
<b>Height C.</b>	mm	255
<b>Recirculation air inlet DN1</b>	mm	160
<b>Stale air inlet DN2</b>	mm	125
<b>Fresh air inlet DN3</b>	mm	125
<b>Stale air expulsion DN4</b>	mm	125
<b>Delivery bxh</b>	mm	350x180
<b>A1</b>	mm	30
<b>B1</b>	mm	30
<b>C1</b>	mm	300
<b>Delivery / return water connections</b>	OR	1/2" - 1/2"
<b>Condensation</b>	OR	20
<b>Weight version D</b>	kg	72

## HRD 40-20

### Fans

Type of Fans		Reverse blade radials - directly coupled electronic motor - 0/10 V signal
Number of fans	Nr	2
Air flow ventilation	m <sup>3</sup> / h	199
Integration air flow	m <sup>3</sup> / h	391
Useful pressure	Pa	100

### Heat exchanger

Type of exchanger		Counter-current plates - polypropylene material
Number of Exchangers	Nr	1
Recovery efficiency	%	81.2

### Data Thermal and cooling capacities / dehumidification capacity

Useful dehumidification capacity (net of the enthalpy content of the external air) (1)	l / 24h	30.5
Cooling capacity yield of hydronic coil (2)	kW	0.7
Water flow in summer operation	m <sup>3</sup> / h	0.25
Pressure drop in summer operation	Kpa	8.5
Summer compressor cooling capacity	kW	1.55 (DC VERSION ONLY)
Compressor absorbed power	kW	0.47
Thermal power output (3)	kW	0.86
Water flow for winter operation	m <sup>3</sup> / h	0.25
Pressure drop in winter operation	Kpa	8.5
Refrigerant gas		R134a

(1) External air temperature 30 °; relative humidity 60%. ambient temperature 25 ° C; relative humidity 50%, nominal air flow

(2) Ambient temperature 25 ° C; relative humidity 60%, nominal air flow; Water in 16 ° C

(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C

### Filters

Type of filters		Flat Filters
Filtration class		Coarse + PM1 + PM1

### Acoustic data

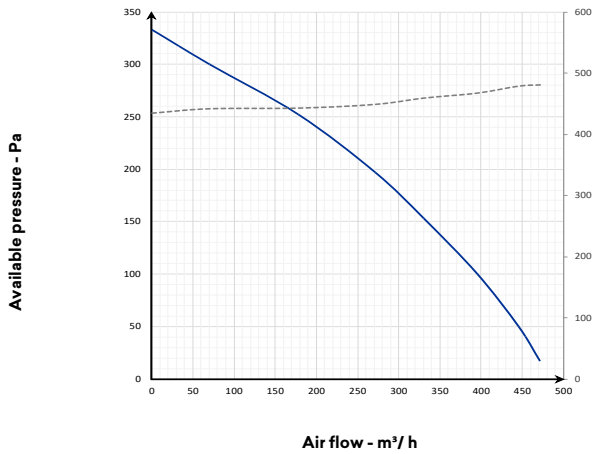
Sound power Lw transmitted by the structure	dB (A)	64.2
Sound power Lw radiated into the canal	dB (A)	67.8
Average sound pressure Lp to 1 m	dB (A)	49.8
Average sound pressure Lp to 3 m	dB (A)	41.5

### Electrical Data

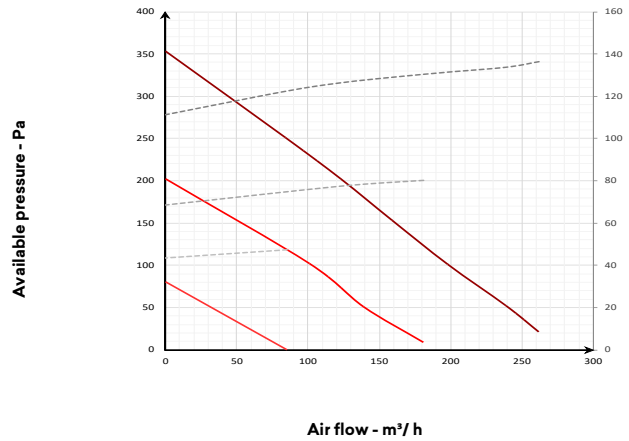
Supply voltage	V.	230/1/50 Hz.
Current consumption	TO	5.5
Degree of protection	IP	44

## HRD 40/20 CURVES

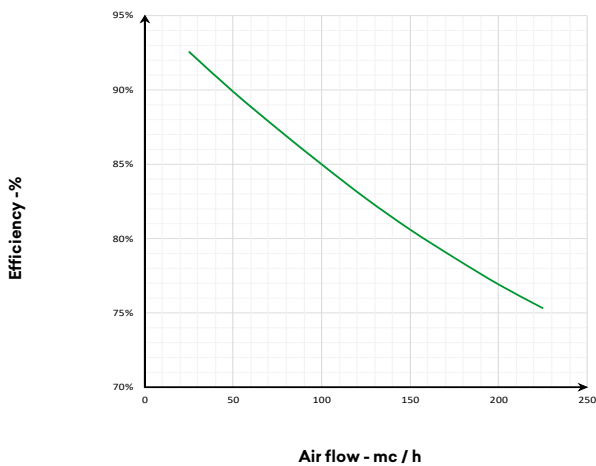
### AEREAULIC PERFORMANCE INTEGRATION / DEHUMIDIFICATION



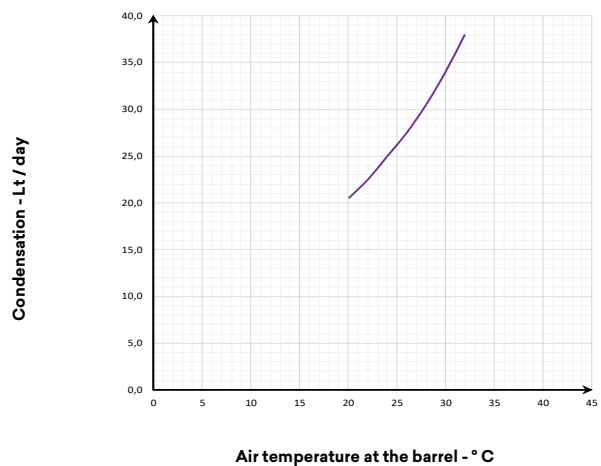
### AEREAULIC PERFORMANCE VENTILATION



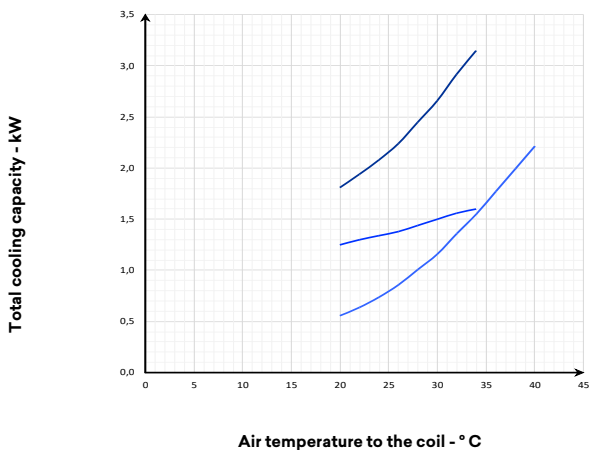
### THERMAL EFFICIENCY (1)



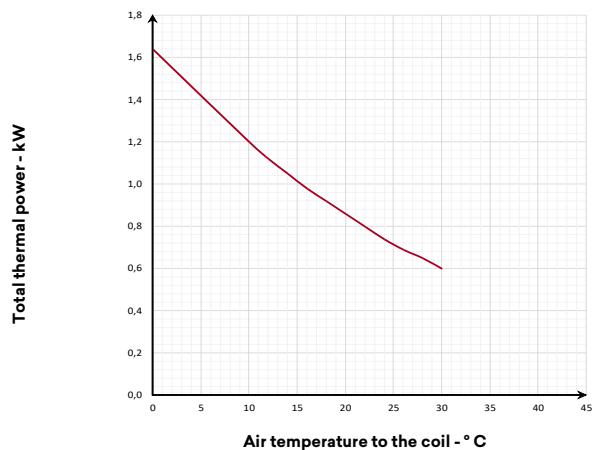
### DEHUMIDIFYING CAPACITY (2)



### REFRIGERANT YIELD (3)



### THERMAL OUTPUT (4)




- 1) - External air temperature 7 °; relative humidity 72%. ambient temperature 20 ° C; relative humidity 28%,
- 2) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 3) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 4) - Ambient temperature 20 °; relative humidity 60%, nominal external air flow, water inlet temperature 35 ° C



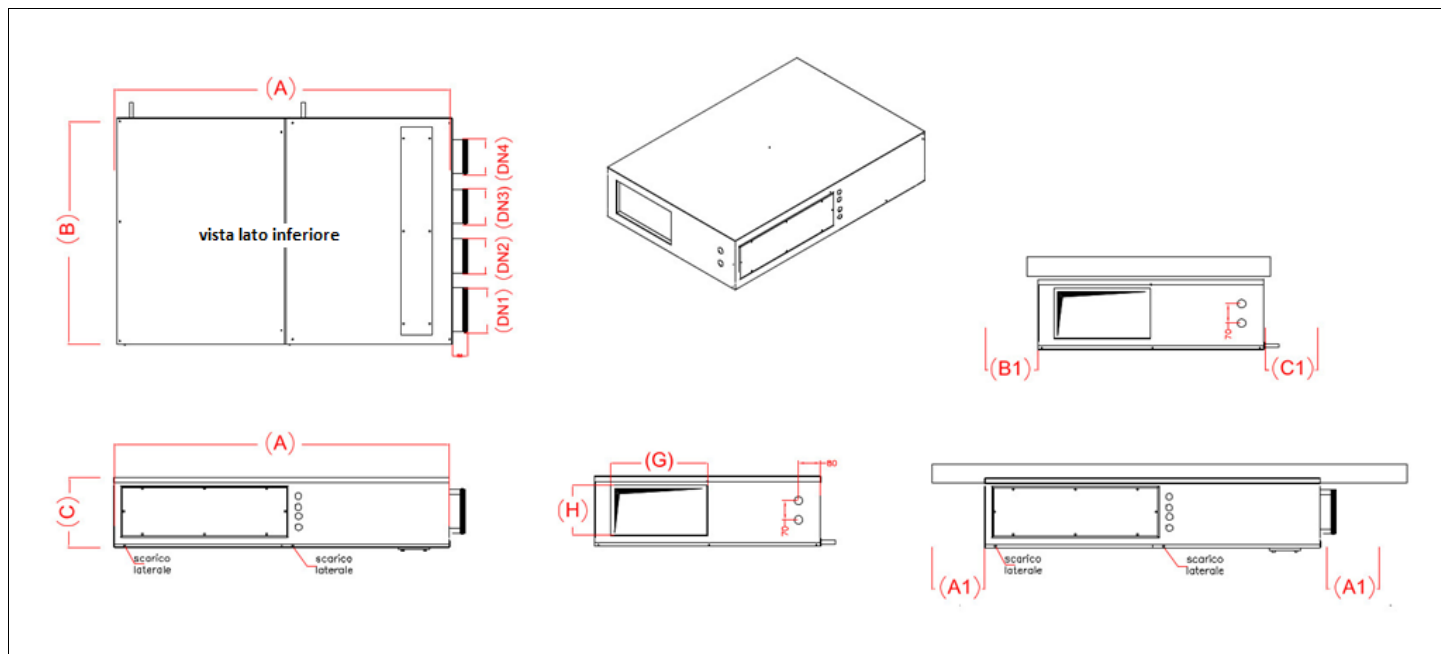
## ECODESIGN HRD 40-20 ERP DATA

TO	Supplier's name or brand			
B.	Model identifier			
C.	Version		Standard unit / Central demand control	
	SEC	Kwh / mQ	COLD	-67.4
			AVERAGE	-30.8
			WARM	-7.2
SEC CLASS			<b>B</b>	
D.	Type declared		UVR - Bidirectional	
AND	Drive type installed		Speed variator	
F.	Heat recovery system		In recovery	
G.	Thermal efficiency of heat recovery	%	81.2	
H.	Maximum capacity	Mc / s	0.06	
THE	Electric power absorbed at maximum flow rate	W / h	130	
J	Sound power level	Lwa	64.2	
K	Reference range	Mc / s	0.04	
L	Reference pressure	Pa	50	
M.	SPI	W / m <sup>3</sup> / h	0.55	
No.	Control factor	CLTR	0.65	
OR	Maximum percentages of leakage declared	%	4.6ext. / 5.0nt.	
Q	Location and description of the signal related to the filter		Displayed on the unit and remote control display e on the instruction manual	
S.	Internet address for disassembly instructions			

### Specifications item

	<p>Ventilation and dehumidification unit with very high efficiency heat recovery, compact dimensions for ceiling installation. Specific unit for ventilation in single residential buildings and collective apartments with low energy requirements in combination with systems requiring dehumidification and room air treatment. Tested and classified according to the European Ecodesign regulation ref. 1253/2014 and 1254/2014</p> <p><u>CONSTRUCTION FEATURES</u></p> <p>lateral structure in double paneling in galvanized sheet metal internally and painted externally with interposed insulation, thickness 23 mm, compact dimensions and reduced height for simplified installation with lower panel easily accessible for maintenance and inspection.</p> <p>Circular inlets with sealing gasket for connection to the air ducts</p> <p>Quick filter inspection, without tools and double side drain for condensate evacuation</p> <p>Refrigeration circuit with high efficiency hermetic compressor, heat exchange coils, lamination device and safety devices. Electrical panel, excluded from the air flow with management cards and terminal blocks for controlling centrifugal fans of the radial type with backward blades with EC motors with electronic speed control and low consumption Static heat exchanger in polypropylene with counter-current flows for very high efficiency Sensible heat recovery ePM1 class filters with low pressure drop outside air and stale air, Coarse on recirculation. Electrical panel on board the unit with microprocessor and dedicated regulation. Management of the fans, display of the internal temperature probes of the machine, management of timed dirty filters, management of recirculation and renewal air.</p> <p>Predisposition for MODBUS RTU RS 485 communication with the most varied home automation systems.</p>
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## DIMENSIONAL AND FUNCTIONAL SPACES



Template	HRD	40/20
Width A	mm	1220
Depth B	mm	820
Height C.	mm	255
Recirculation air inlet DN1	mm	160
Stale air inlet DN2	mm	125
Fresh air inlet DN3	mm	125
Stale air expulsion DN4	mm	125
Delivery bxh	mm	350x180
A1	mm	30
B1	mm	30
C1	mm	300
Delivery / return water connections	OR	1/2" - 1/2"
Condensation	OR	20
Weight version D	kg	77

## HRD 50-25

### Fans

Type of Fans		Reverse vane radials - directly coupled electronic motor - 0/10 V signal
Number of fans	Nr	2
Air flow ventilation	mc / h	265
Integration air flow	mc / h	520
Useful pressure	Pa	100

### Heat exchanger

Type of exchanger		Counter-current plates - polypropylene material
Number of Exchangers	Nr	1
Recovery efficiency	%	86

### Data Thermal and cooling capacities / dehumidification capacity

Useful dehumidification capacity (net of the enthalpy content of the external air) 1	l / 24h	40
Cooling capacity yielded by hydronic battery 2	kW	1.25
Water flow in summer operation	m <sup>3</sup> / h	0.3
Pressure drop in summer operation	Kpa	9
Summer compressor cooling capacity	kW	2.02 (DC VERSION ONLY)
Compressor absorbed power	kW	0.65
Thermal power output 3	kW	1.3
Water flow for winter operation	m <sup>3</sup> / h	0.3
Pressure drop in winter operation	Kpa	9
Refrigerant gas		R134a

(1) External air temperature 30 °; relative humidity 60%. ambient temperature 25 ° C; relative humidity 50%, nominal air flow

(2) Ambient temperature 25 ° C; relative humidity 60%, nominal air flow; Water in 16 ° C

(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C

### Filters

Type of filters		Flat Filters
Filtration class		Coarse + ePM1 + ePM1

### Acoustic data

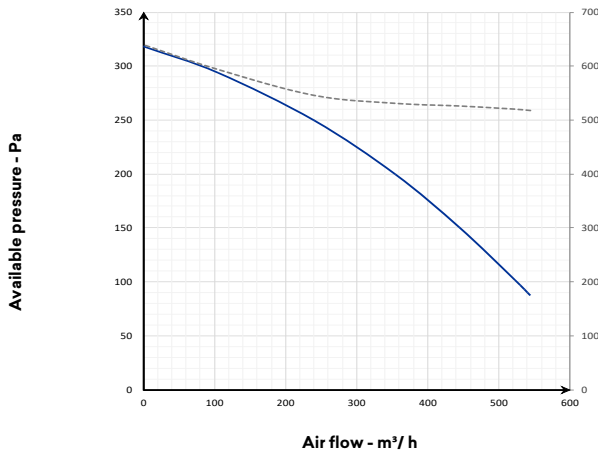
Sound power Lw transmitted by the structure	dB (A)	66.5
Sound power Lw radiated in the channel	dB (A)	68.2
Average sound pressure Lp ad 1	dB (A)	52.7
Average sound pressure Lp to 3 m	dB (A)	45

### Electrical Data

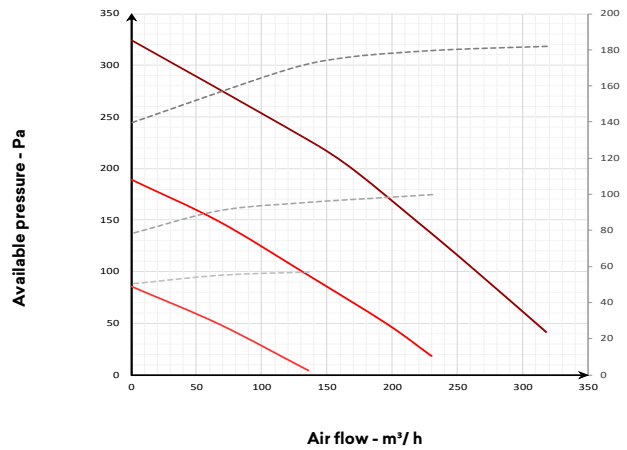
Supply voltage	V.	230/1/50 Hz.
Current consumption	TO	5.9
Degree of protection	IP	44

## HRD 50/25 CURVES

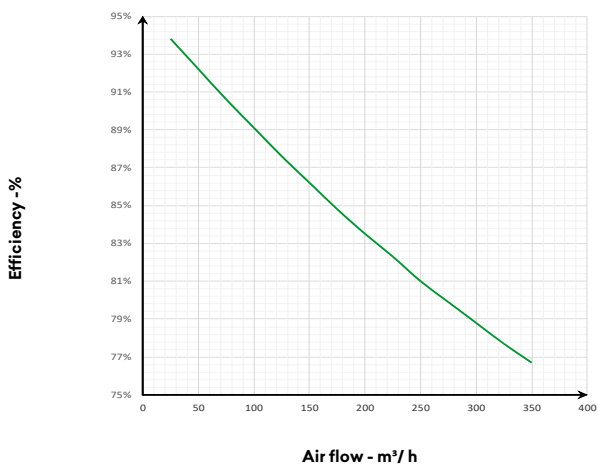
AEREAULIC PERFORMANCE INTEGRATION / DEHUMIDIFICATION



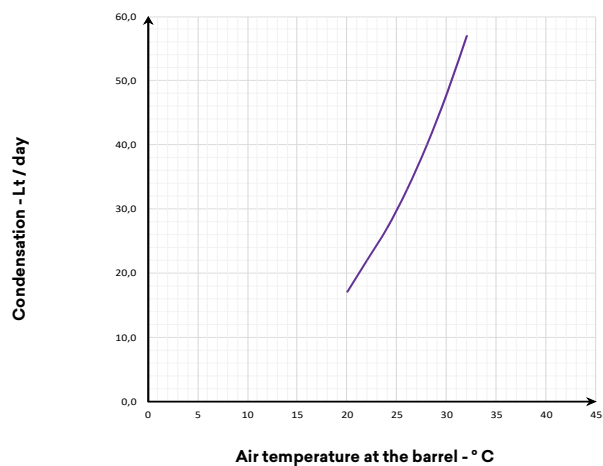
AEREAULIC PERFORMANCE VENTILATION



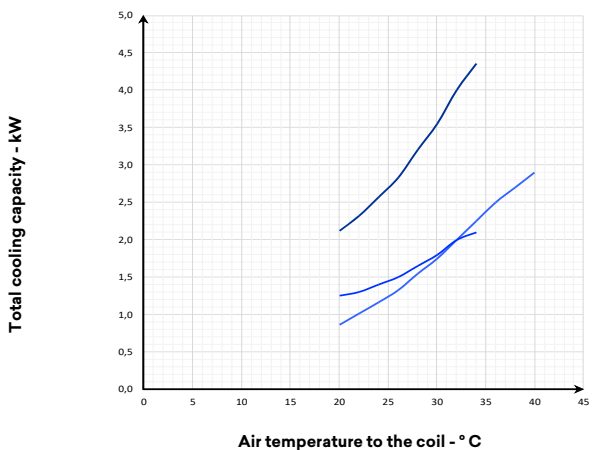
THERMAL EFFICIENCY (1)



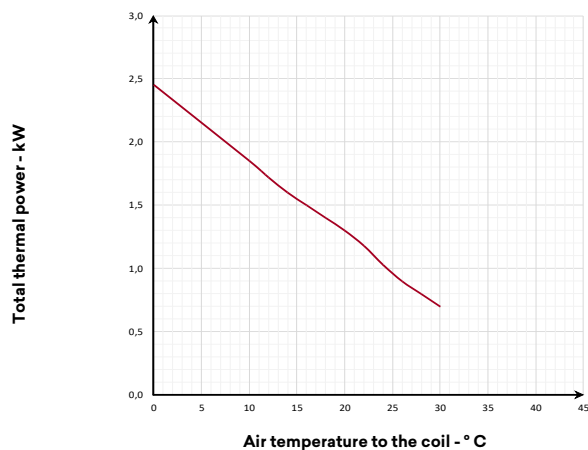
DEHUMIDIFYING CAPACITY (2)



REFRIGERANT YIELD (3)




THERMAL OUTPUT (4)




- 1) - External air temperature 7 °; relative humidity 72%. ambient temperature 20 ° C; relative humidity 28%,
- 2) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C.
- 3) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 4) - Ambient temperature 20 °; relative humidity 60%, nominal external air flow, water inlet temperature 35 ° C

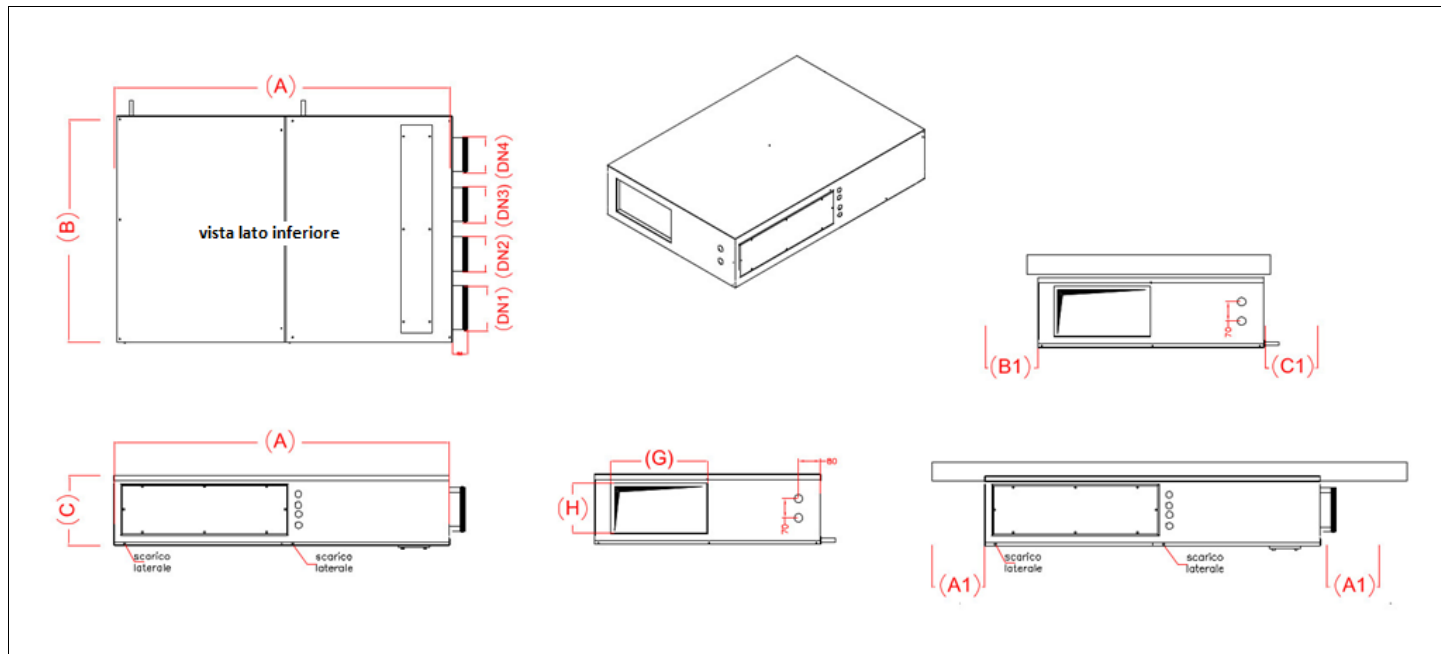
## ERP DATA ECODESIGN HRD 50-25

TO	Supplier's name or brand			
B.	Model identifier			
C.	Version		Standard unit / Central demand control	
	SEC	Kwh / mQ	COLD	-72.2
			AVERAGE	-34.2
			WARM	-9.8
SEC CLASS				
D.	Type declared		UVR - Bidirectional	
AN D	Drive type installed		Speed variator	
F.	Heat recovery system		In recovery	
G.	Thermal efficiency of heat recovery	%	86	
H.	Maximum capacity	Mc / s	0.073	
THE	Electric power absorbed at maximum flow rate	W / h	230	
J	Sound power level	Lwa	62.2	
K	Reference range	Mc / s	0.0544	
L	Reference pressure	Pa	50	
M.	SPI	W / mc / h	0.47	
No.	Control factor	CLTR	0.65	
OR	Maximum percentages of leakage declared	%	5.1 ext. / 5.5int.	
Q	Location and description of the signal related to the filter		Displayed on the unit and remote control display e on the instruction manual	
S.	Internet address for disassembly instructions			

### Specifications item

	<p>Ventilation and dehumidification unit with very high efficiency heat recovery, compact dimensions for ceiling installation. Specific unit for ventilation in single residential buildings and collective apartments with low energy requirements in combination with systems requiring dehumidification and room air treatment. Tested and classified according to the European Ecodesign regulation ref. 1253/2014 and 1254/2014</p> <p><u>CONSTRUCTION FEATURES</u></p> <p>lateral structure in double paneling in galvanized sheet metal internally and painted externally with interposed insulation, thickness 23 mm, compact dimensions and reduced height for simplified installation with lower panel easily accessible for maintenance and inspection.</p> <p>Circular inlets with sealing gasket for connection to the air ducts</p> <p>Quick filter inspection, without tools and double side drain for condensate evacuation</p> <p>Refrigeration circuit with high efficiency hermetic compressor, heat exchange coils, lamination device and safety devices. Electrical panel, excluded from the air flow with management cards and terminal blocks for controlling centrifugal fans of the radial type with backward blades with EC motors with electronic speed control and low consumption Static heat exchanger in polypropylene with counter-current flows for very high efficiency Sensible heat recovery ePM1 class filters with low pressure drop outside air and stale air, Coarse on recirculation. Electrical panel on board the unit with microprocessor and dedicated regulation. Management of the fans, display of the internal temperature probes of the machine, management of timed dirty filters, management of recirculation and renewal air. Wide graphic interface with configuration menu and multilingual user menu. Predisposition for MODBUS RTU RS 485 communication with the most varied home automation systems.</p>
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## DIMENSIONAL AND FUNCTIONAL SPACES



<b>Template</b>	<b>HRD</b>	<b>50/25</b>
<b>Width A</b>	mm	1220
<b>Depth B</b>	mm	960
<b>Height C.</b>	mm	330
<b>Recirculation air inlet DN1</b>	mm	200
<b>Stale air inlet DN2</b>	mm	160
<b>Fresh air inlet DN3</b>	mm	160
<b>Stale air expulsion DN4</b>	mm	160
<b>Delivery bxh</b>	mm	490x255
<b>A1</b>	mm	30
<b>B1</b>	mm	30
<b>C1</b>	mm	300
<b>Delivery / return water connections</b>	OR	1/2" - 1/2"
<b>Condensation</b>	OR	20
<b>Weight version D</b>	kg	91

## HRD 60-30

### Fans

Type of Fans		Reverse vane radials - directly coupled electronic motor - signal / 10 V
Number of fans	Nr	2
Air flow ventilation	m <sup>3</sup> / h	316
Integration air flow	m <sup>3</sup> / h	619
Useful pressure	Pa	100

### Heat exchanger

Type of exchanger		Counter-current plates - polypropylene material
Number of Exchangers	Nr	1
Recovery efficiency	%	81.8

### Data Thermal and cooling capacities / dehumidification capacity

Useful dehumidification capacity (net of the enthalpy content of the external air) 1	l / 24h	56
Cooling capacity yielded by hydronic battery 2	kW	1.56
Water flow in summer operation	mc / h	0.35
Pressure drop in summer operation	Kpa	10.5
Summer compressor cooling capacity	kW	2.4 (DC VERSION ONLY)
Compressor absorbed power	kW	0.77
Thermal power output 3	kW	1.4
Water flow for winter operation	m <sup>3</sup> / h	0.35
Pressure drop in winter operation	Kpa	10.5
Refrigerant gas		R134a

(1) External air temperature 30 °; relative humidity 60%. ambient temperature 25 ° C; relative humidity 50%, nominal air flow

(2) Ambient temperature 25 ° C; relative humidity 60%, nominal air flow; Water in 16 ° C

(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C

### Filters

Type of filters		Flat Filters
Filtration class		Coarse + ePM1 + ePM1

### Acoustic data

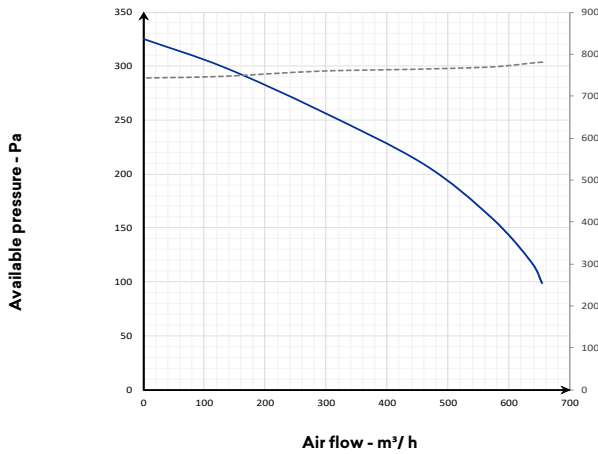
Sound power Lw transmitted by the structure	dB (A)	68.1
Sound power Lw radiated into the canal	dB (A)	69.5
Average sound pressure Lp at 1 m	dB (A)	54.2
Average sound pressure Lp at 3 m	dB (A)	47.6

### Electrical Data

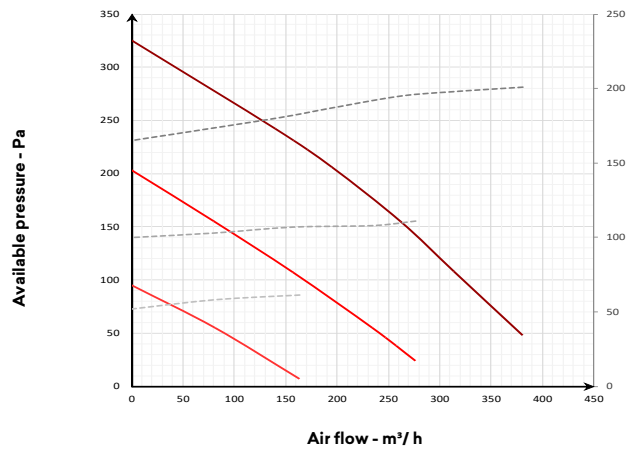
Supply voltage	V	230/1/50 Hz.
Current consumption	TO	7
Degree of protection	IP	44

## HRD 60/30 CURVES

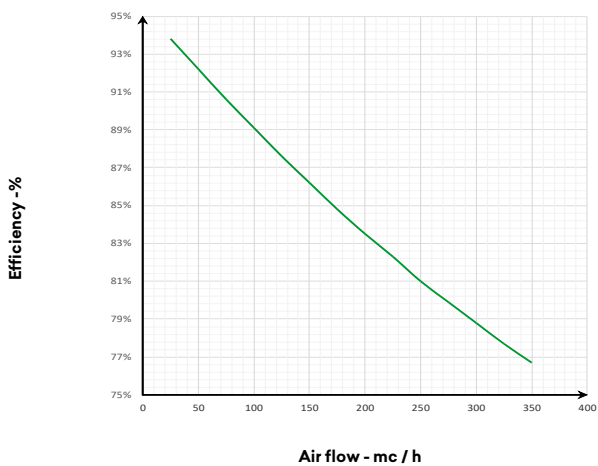
AEREAULIC PERFORMANCE INTEGRATION / DEHUMIDIFICATION



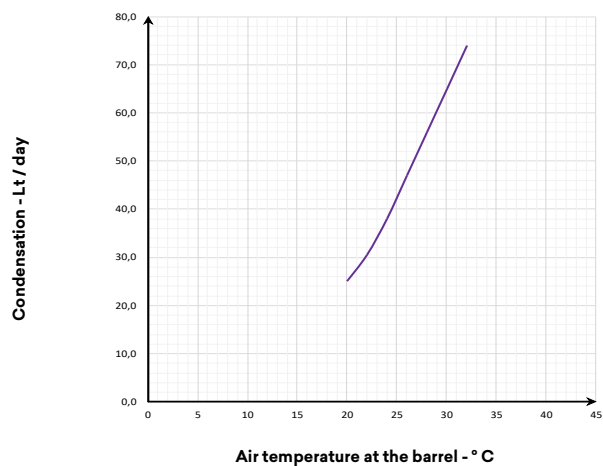
AEREAULIC PERFORMANCE VENTILATION



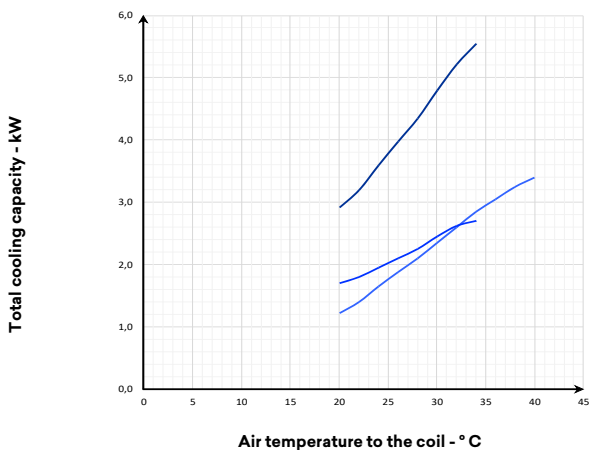
THERMAL EFFICIENCY (1)



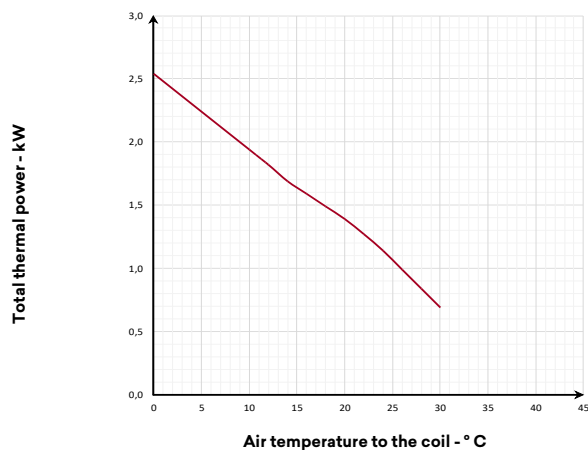
DEHUMIDIFYING CAPACITY (2)



REFRIGERANT YIELD (3)




THERMAL OUTPUT (4)




- 1) - External air temperature 7 °; relative humidity 72%. ambient temperature 20 ° C; relative humidity 28%,
- 2) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 3) - Ambient temperature 25 °; relative humidity 60%, nominal external air flow, water inlet temperature 16 ° C
- 4) - Ambient temperature 20 °; relative humidity 60%, nominal external air flow, water inlet temperature 35 ° C



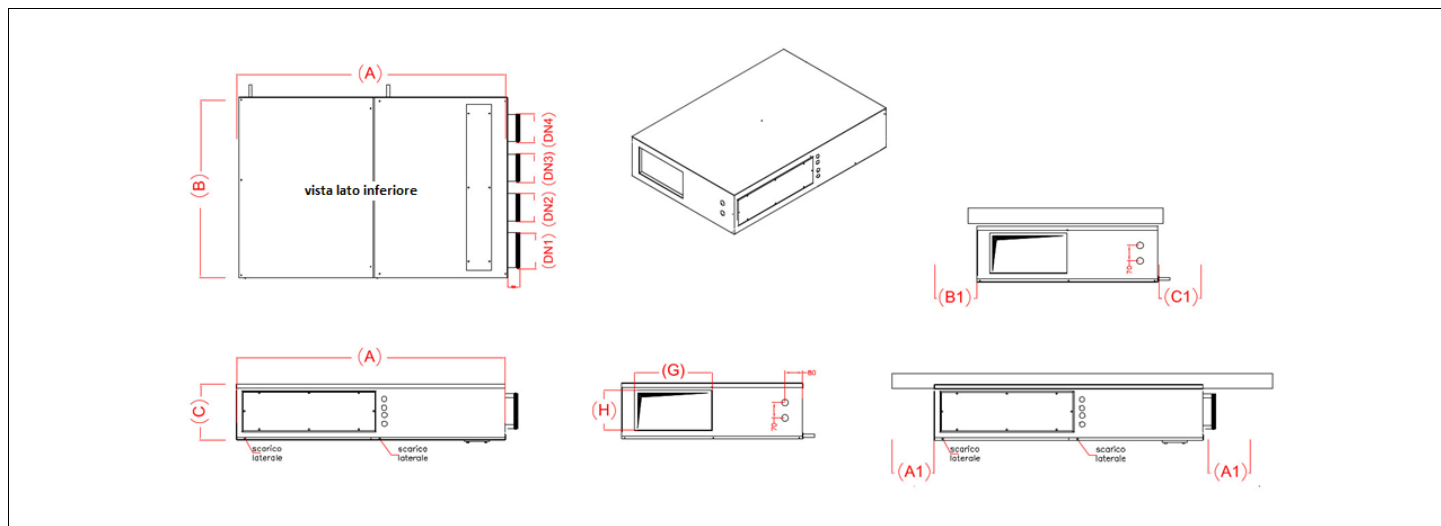
## ECODESIGN HRD 60-30 ERP DATA

TO	Supplier's name or brand			
B.	Model identifier			
C.	Version		Standard unit / Central demand control	
	SEC	Kwh / mQ	COLD	-70.9
			AVERAGE	-34.1
			WARM	-10.4
SEC CLASS				
D.	Type declared		UVR - Bidirectional	
AN D	Drive type installed		Speed variator	
F.	Heat recovery system		In recovery	
G.	Thermal efficiency of heat recovery	%	81.8	
H.	Maximum capacity	Mc / s	0.09	
THE	Electric power absorbed at maximum flow rate	W / h	230	
J	Sound power level	Lwa	62.2	
K	Reference range	Mc / s	0.07	
L	Reference pressure	Pa	50	
M.	SPI	W / mc / h	0.41	
No.	Control factor	CLTR	0.65	
OR	Maximum percentages of leakage declared	%	5.0 ext. / 5.3nt.	
Q	Location and description of the signal related to the filter		Displayed on the unit and remote control display e on the instruction manual	
S.	Internet address for disassembly instructions			

### Specifications item

	<p>Ventilation and dehumidification unit with very high efficiency heat recovery, compact dimensions for ceiling installation. Specific unit for ventilation in single residential buildings and collective apartments with low energy requirements in combination with systems requiring dehumidification and room air treatment. Tested and classified according to the European Ecodesign regulation ref. 1253/2014 and 1254/2014</p> <p><u>CONSTRUCTION FEATURES</u></p> <p>lateral structure in double paneling in galvanized sheet metal internally and painted externally with interposed insulation, thickness 23mm, compact dimensions and reduced height for simplified installation with lower panel easily accessible for maintenance and inspection.</p> <p>Circular inlets with sealing gasket for connection to the air ducts</p> <p>Quick filter inspection, without tools and double side drain for condensate evacuation</p> <p>Refrigeration circuit with high efficiency hermetic compressor, heat exchange coils, lamination device and safety devices.</p> <p>Electrical panel, excluded from the air flow with management cards and terminal blocks for controlling centrifugal fans of the radial type with backward blades with EC motors with electronic speed control and low consumption Static heat exchanger in polypropylene with counter-current flows for very high efficiency Sensible heat recovery ePM1 class filters with low pressure drop outside air and stale air, Coarse on recirculation. Electrical panel on board the unit with microprocessor and dedicated regulation. Management of the fans, display of the internal temperature probes of the machine, management of timed dirty filters, management of recirculation and renewal air. Wide graphic interface with configuration menu and multilingual user menu.</p> <p>Predisposition for MODBUS RTU RS 485 communication with the most varied home automation systems</p>
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## DIMENSIONAL AND FUNCTIONAL SPACES



<b>Template</b>	<b>HRD</b>	<b>60/30</b>
<b>Width A</b>	mm	1220
<b>Depth B</b>	mm	960
<b>Height C.</b>	mm	330
<b>Recirculation air inlet DN1</b>	mm	200
<b>Stale air inlet DN2</b>	mm	160
<b>Fresh air inlet DN3</b>	mm	160
<b>Stale air expulsion DN4</b>	mm	160
<b>Delivery bxh</b>	mm	490x255
<b>A1</b>	mm	30
<b>B1</b>	mm	30
<b>C1</b>	mm	300
<b>Delivery / return water connections</b>	OR	1/2" - 1/2"
<b>Condensation</b>	OR	20
<b>Weight version D</b>	kg	101

## OPERATING LIMITS

Size		HRD 30/15 - 40/20 - 50/25 - 60/30	
WARM UP		Internal Air	Outdoor Air
	° C - U%	15 ° / 30 ° - 40% / 90%	-20 ° / 20 °
COOLING		Internal Air	Outdoor Air
	° C - U%	18 ° / 30 ° - 40% / 90%	20 ° / 40 °

## LIST OF ACCESSORIES

### **DIGITAL REMOTE CONTROL WITH T / H SENSOR for K electronics**

Remote panel for placing on horizontal or wall-mounted 503 box with graphic interface and various unit control functions.  
Maximum connection length 15 m with power supply from the unit while 50 m with external 12 Vac power supply;



### **2-WAY VALVE**

2-way zone valve operated directly by the unit to allow the hydronic battery to be powered. It is equipped with a micro-auxiliary contact for possible circulator control.



### **3-WAY VALVE**

3-way zone valve operated directly by the unit to allow the hydronic battery to be powered. It is equipped with a micro-auxiliary contact for possible circulator control.



## AERAUICS

### **DIRECT DELIVERY PLENUM FLEXIBLE HOSES SIZE 30/15 - 40/20**

Delivery plenum with 3 circular inlets Dn125mm  
Flanges for fixing to the unit.  
Internal polyethylene insulation.



### **DIRECT DELIVERY PLENUM FLEXIBLE HOSES SIZE 50/25 - 60/30**

Delivery plenum with 5 circular inlets Dn125 mm  
Flanges for fixing to the unit.  
Internal polyethylene insulation.



### **DIRECT DELIVERY PLENUM CORRUGATED PIPES SIZE 30/15 - 40/20**

Delivery plenum with 8 front inlets + 8 side inlets for DN75 / DN90 mm connection



***DIRECT DELIVERY PLENUM 12 CORRUGATED PIPES SIZE 50/25 - 60/30***

Delivery plenum with 12 front inlets + 8 side inlets for DN75 / DN90 mm connection



***DIRECT DELIVERY PLENUM FOR MANIFOLD REMOTE SIZE 30/15 - 40/20***

Delivery plenum with 1 circular inlets Dn200 mm for remote control of the delivery manifold  
Flanges for fixing to the unit.  
Internal polyethylene insulation.



***DIRECT DELIVERY PLENUM FOR MANIFOLD REMOTE SIZE 50/25 - 60/30***

Delivery plenum with 1 circular inlets Dn200 mm for remote control of the delivery manifold  
Flanges for fixing to the unit.  
Internal polyethylene insulation.



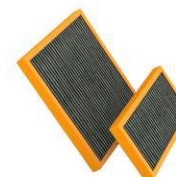
***SPARE FILTERS PM1***

***Kit consisting of three spare filters (2 PM and a Coarse) for unit maintenance;***  
The filters are easily removable through the dedicated inspectionable ports;



***ACTIVATED CARBON FILTER PM1***

Active filter consisting of an activated filter media with mini activated carbon granules;  
Recommended for areas with a high rate of contaminating gases in the outdoor air (VOC, PAC, OZONE, SO2, NOX)  
The activated carbon filter must be replaced regularly to ensure its effectiveness.



## UNIT ORDER CODES

### Unit codes

Code	Description
<b>HRD HD - Horizontal installation</b>	
<b>VRVD30OC3II</b>	HRD 30/15 HD ON-OFF - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>VRVD40OC3II</b>	HRD 40/20 HD ON-OFF - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>VRVD50OC3II</b>	HRD 50/25 HD ON-OFF - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>VRVD60OC3II</b>	HRD 60/30 HD ON-OFF - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>HRD H DC - Horizontal installation</b>	
<b>VRVI30OC2II</b>	HRD 30/15 H DC INVERTER - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>VRVI40OC2II</b>	HRD 40/20 H DC INVERTER - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>VRVI50OC2II</b>	HRD 50/25 H DC INVERTER - Unit with recovery + recirculation + dehumidification. Horizontal installation
<b>VRVI60OC2II</b>	HRD 60/30 H DC INVERTER - Unit with recovery + recirculation + dehumidification. Horizontal installation

## ACCESSORIES ORDERING CODES

### Remote control panel

Template	All models
Description	SMART TOUCH wall-mounted control panel with thermostat and probe for temperature, relative humidity and ambient air quality. Black color / White color
Code	EQA649II / EQB649II

### Remote control panel

Template	All models
Description	SMART TOUCH wall-mounted control panel with thermostat and temperature, relative humidity and air quality probe in the room with integrated WiFi module, InnovAPP. Black color / White color
Code	ERA649II / ERB649II

### Remote control

Template	All models
Description	Digital remote control with sensor
Code	GR1156II

### Motorized 2-way valve ON OFF

Template	All models
Description	2-way ON / OFF zone valve for water flow regulation. 3/4 "valve diameter
Code	GR0848II

### Motorized 3-way valve ON OFF

Template	All models
Description	3-way ON / OFF zone valve for water flow regulation. 3/4 "valve diameter
Code	GR0849II

### Air delivery plenum - 3 inlets Dn 125 -

Template	HRD 30/15 - HRD 40/20
Description	Delivery plenum for flexible pipes with 3 circular inlets, DN 125 mm. Flanges for fixing the unit. Internal insulation in propylene
Code	GR0850II

### Air delivery plenum - 5 inlets Dn 125 -

Template	HRD 50/25 - HRD 60/30
Description	Delivery plenum for flexible pipes with 5 circular inlets, DN 125 mm. Flanges for fixing the unit. Internal insulation in propylene
Code	GR0852II

### Air delivery plenum - 8 inlets Dn 75/90

Template	HRD 30/15 - HRD 40/20
Description	Delivery plenum for flexible pipes with 8 front inlets and 8 side inlets for DN 75 / DN 90 mm connection
Code	GR0854II

### Air delivery plenum - 12 inlets Dn 75/90

Template	HRD 50/25 - HRD 60/30
Description	Delivery plenum for flexible pipes with 12 front inlets and 8 side inlets for DN 75 / DN 90 mm connection
Code	GR0856II

### Air delivery plenum - 1 inlets Dn 200

Template	HRD 30/15 - HRD 40/20
Description	Single duct delivery plenum 1xDN 200mm. Dimensions 315x200mm. Flanges for fixing the unit. Internal insulation in propylene
Code	GR1091III

### Air delivery plenum - 1 inlets Dn 200

Template	HRD 50/25 - HRD 60/30
Description	Single duct delivery plenum 1xDN 200mm. Dimensions 500x200 mm. Flanges for fixing the unit. Internal insulation in propylene
Code	GR1092II

### Kit Activated carbon filter

Template	HRD 30/15 - 40/20	HRD 50/25 - 60/30
Description	Activated carbon filter	Activated carbon filter
Code	GR0861III	GR0862II

### Replacement filters

Template	HRD 30/15 - 40/20	HRD 50/25 - 60/30
Description	Kit of 2 spare filters (ePM1 80% and Coarse filter)	Kit of 2 spare filters (ePM1 80% and Coarse filter)
Code	GR0863II	GR0864II

### Acoustic silencer

Template	HRD 30/15 - 40/20
Description	Silencer module for coupling between the air inlet plate and the main plenum body. Silencer module and extension / 3x DN 125 mm - 8x DN 75/90 mm
Code	GR0835II

### Acoustic silencer

Template	HRD 50/25 - 60/30
Description	Silencer module for coupling between the air inlet plate and the main plenum body. Silencer module and extension / 5x DN 125 mm - 12x DN 75/90 mm
Code	GR0836II

## CE marking

The CE marking (present on each machine) certifies compliance with the following Community standards:

- Low Voltage Directive 2014/35 / EC
- Electromagnetic Compatibility Directive 2014/30 / EC
- Ecodesign 2009/125 / EC

**Rev.00 01-2022**



The data contained in this technical catalog can be changed by the manufacturer without prior notice.