DEH

High performance dehumidifiers for residential applications
with radiant panel systems

DEH - THE HIGH PERFORMANCE DRYING UNIT

DEH is an air conditioning unit designed for specific dehumidification / air conditioning needs in low energy consumption environments.
The unit has a high design finish, which can be easily inserted in any residential context;
The unit is particularly suitable for single family units, apartments, offices where there is a radiant air conditioning system

EFFICIENCY:

Thanks to its construction features and its components, DEH + is able to dehumidify and air-condition using less energy than a conventional appliance.
The new low energy consumption EC fans will ensure the correct air flow without major electrical absorption.

DEHUMIDIFICATION AND COOLING:

The unit can operate in both dehumidification and air conditioning mode (summer and winter)
This allows to have a flexible unit ready to meet the demands of the environment to be air-conditioned.

CONTROL:

The advanced electronics guarantee the possibility of interacting with the operation of the unit.
The BLDC fan, the water and refrigerant temperatures in the two coils are checked;
There are three operating modes:
1 - Slave - System managed by external commands deriving from the system electronics radiant
2 - Master - Using the optional touch panel and making the unit become autonomous both for the measurement of the temperature and of the ambient relative humidity;
3 - Modbus RS485 communication;

PACKAGED:

The unit is supplied ready for operation.
With only the hydraulic and electrical connection the unit will guarantee the desired function.

SILENCETO:

Silent operation is a priority choice in the design and construction of the DEH unit

2 TYPES OF INSTALLATION

VISIBLE VERSIONS:

Version with aesthetics for visible installation;
It is made with RAL9003 painted metal aesthetics,
with finish that can be easily inserted into any architectural context;

VERTICAL BUILT-IN VERSIONS:

Version for recessed installation;
It is made to be completed with accessories,
recessed formwork and aesthetic finishing grid;
The grille is always made of RAL9003 painted metal;

GENERAL FEATURES

STRUCTURE

The unit is made of galvanized sheet, internally insulated, designed to simplify operations of maintenance.

BLDC FANS

The unit is equipped with low consumption fans. Fans compatible with the Erp 2018 regulation

COMPRESSOR

High efficiency rotary or reciprocating compressor with built-in thermal protector

ELECTRONICS

Advanced management electronics with BLDC motor control, dual operating mode management: with digital inputs or with remote panel;

VERSIONS AND CONFIGURATION

	-1-	-2-	-3-
DEH	30	M.	D.

(1) Defines the power size
Size 20/30/50

2) Type of installation
M: aesthetic version with visible installation
N: version with recessed installation

3) Construction version
D: dehumidifier
DC: Dehumidifier and air conditioner (size 30/50 only)

BRIEF DESCRIPTION OF THE VERSIONS

TYPE OF INSTALLATION

V - Installation with visible cabinet
Supplied with aesthetics in exposed RAL9003 painted sheet metal frame;
Direct installation on the wall or floor with special feet;

I - Recessed installation
Version with recessed installation inside walls;
Version can be completed with accessories: Installation formwork and front finishing grille;

Version for dehumidification with neutral air (isothermal) (D)
Unit for the only dehumification of the air coming from the EC recirculation fan, thus allowing the operation of the refrigeration circuit, obtaining dehumidified air during the summer period (compressor active).
Equipped with pre- and post-cooling / heating hydronic coil which, if powered, allows to supply an integration of the cooling / heating capacity to the radiant air conditioning system (connection to the heating / cooling system is optional and does not affect the dehumidification of the air)

Version for dehumidification and integration in cooling / heating (DC)
Unit for dehumidification of the air from the EC recirculation fan allowing the 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:
– Dehumidification: The unit condenses partially in air and partially in water through the plate condenser, obtaining dehumidified air;
– Dehumidification + Cooling integration: The unit condenses totally in water, thus obtaining dehumidified and cooled air.
During the winter period (compressor off) the hydronic coils are fed with hot water from the heating system and behaves like a fan coil;

EXPOSED DEH TECHNICAL FEATURES

Size		**20**	**30**	**50**

DRY unit yields (Data referred to ambient air T 26 ° C and humidity 65% - Water in 16 ° - Nominal water and air flow)

Capacity i dehumidifies	Lt / 24h	**12.2**	**16.5**	**29.8**

Unit yields AIR CONDITIONING - DC VERSION ONLY (Data referred to ambient air T 26 ° C and humidity 65% - Water in 16 ° - Nominal water and air flow)

Refrigeration power	KW	/	1.15	1.84

Unit yields AIR CONDITIONING - BATTERY ONLY (Data referred to ambient air T 26 ° C and humidity 65% - Water in 16 ° - Nominal water and air flow)

Refrigeration power	KW	0.46	0.71	1.06

AIR CONDITIONING unit yields (Data referred to ambient air T 26C and humidity 65% - Nominal water flow rate - Water in 7 °)

Refrigeration power	KW	1.19	1.85	2.75

HEATING unit yields (Data referred to ambient air T 20 ° C and humidity 50% - Water in 35 ° - Nominal water and air flow)

Thermal power	KW	0.54	0.81	1.20

HEATING unit yields (Data referred to ambient air T 20 ° C and humidity 50% - Water in 55 ° - Nominal water and air flow)

Thermal power	KW	1.06	1.66	2.82

Cooling fan

Type of Fans		Tangential with Brushless BLDC motor		
Nominal air flow	m³ / h	220	320	500
Useful pressure	Pa	8	10	10

Compressor

Type of Compressor		Rotary	Alternative	
Max absorbed power	W	340 (1.6A)	544 (3.15A)	813 (4.21A)
Refrigerant gas		R134A		

Air / water heat exchanger. (Data referred to with water T delivery 16 ° C and T return 18 ° C)

Type of exchanger		Finned coil		
Nominal dehumidification water flow	Lt / h	140	190	350
Loss of pressure	Kpa	11	14	22

Filters

Filtration class		Coarse		

Electrical Data

Supply voltage		230/1/50 Hz.		
Absorbed current max	TO	1.76	3.35	4.51
Absorbed power	kW	0.36	0.57	0.85
IP protection degree	IP	20	20	

Sound levels (Data referred to 3m away):

Sound pressure Lp	dB (A)	36	38	40

VERTICAL RECESSED DEH TECHNICAL FEATURES

Size		**20**	**30**	**50**

DRY unit yields (Data referred to ambient air T 26 ° C and humidity 65% - Water in 16 ° - Nominal water and air flow)

Capacity i dehumidifies	Lt / 24h	**12.2**	**16.5**	**29.8**

Unit yields AIR CONDITIONING - DC VERSION ONLY (Data referred to ambient air T 26 ° C and humidity 65% - Water in 16 ° - Nominal water and air flow)

Refrigeration power	KW	/	1.15	1.84

Unit yields AIR CONDITIONING - BATTERY ONLY (Data referred to ambient air T 26 ° C and humidity 65% - Water in 16 ° - Nominal water and air flow)

Refrigeration power	KW	0.46	0.71	1.06

AIR CONDITIONING unit yields (Data referred to ambient air T 26C and humidity 65% - Nominal water flow rate - Water in 7 °)

Refrigeration power	KW	1.19	1.85	2.75

HEATING unit yields (Data referred to ambient air T 20 ° C and humidity 50% - Water in 35 ° - Nominal water and air flow)

Thermal power	KW	0.54	0.81	1.20

HEATING unit yields (Data referred to ambient air T 20 ° C and humidity 50% - Water in 55 ° - Nominal water and air flow)

Thermal power	KW	1.06	1.66	2.82

Cooling fan

Type of Fans		Tangential with Brushless BLDC motor		
Nominal air flow	m³ / h	220	320	500
Useful pressure	Pa	8	10	10

Compressor

Type of Compressor		Rotary	Alternative	
Max absorbed power	W	340 (1.6A)	544 (3.15A)	813 (4.21A)
Refrigerant gas		R134A		

Air / water heat exchanger. (Data referred to with water T delivery 16 ° C and T return 18 ° C)

Type of exchanger		Finned coil		
Nominal dehumidification water flow	Lt / h	140	190	350
Loss of pressure	Kpa	11	14	22

Filters

Filtration class		Coarse

Electrical Data

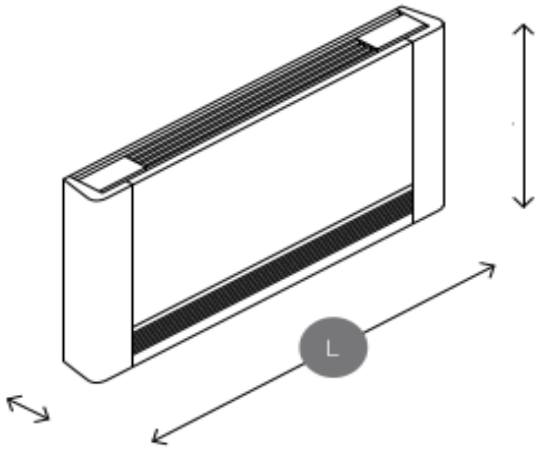
Supply voltage		230/1/50 Hz.		
Absorbed current max	TO	1.76	3.35	4.51
Absorbed power	kW	0.36	0.57	0.85
IP protection degree	IP	20	20	

Sound levels (Data referred to 3m away):

Sound pressure Lp	dB (A)	36	38	40

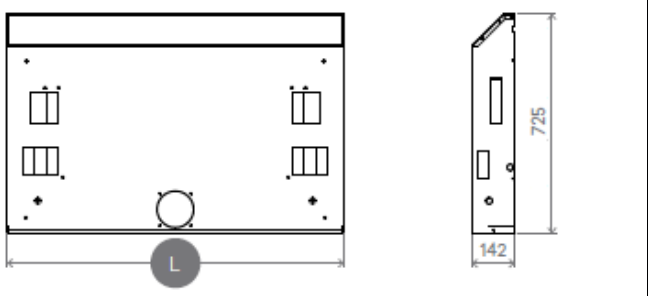
DIMENSIONAL AND FUNCTIONAL SPACES

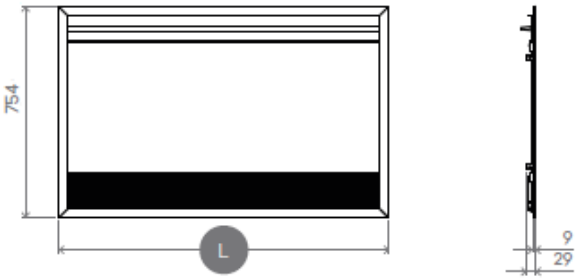
VERSION at sight



Template	DEH	20	30	50
			UNIT	
Width A	mm	900	1140	1340
Depth B	mm	150	190	190
Height C.	mm	650	650	650
Delivery / return water connections	OR		1/2 "- 1/2"	
Condensation	OR		16 mm	
Weight version D	kg	36	43	47
DC version weight	kg	37	44	48

Vertical recessed VERSION





Template	DEH	20	30	50
		FORMWORK		
Width A	mm	915	1115	1315
Depth B	mm	175	210	210
Height C.	mm	725	725	725
		PANEL		
Width A	mm	972	1172	1372
Depth B	mm	9	9	9
Height C.	mm	754	754	754
Delivery / return water connections	OR	1/2 "- 1/2"		
Condensation	OR	16 mm		
Weight version D	kg	36	43	47
DC version weight	kg	37	44	48

LIST OF ACCESSORIES

RECESSED FORMWORK	
Formwork in galvanized steel sheet to be embedded in the masonry for fixing the unit	

AESTHETIC FINISH GRID	
Galvanized steel cover grille with white aesthetic finish	

COMMANDS FOR WALL CONTROL	
Remote panel with temperature and humidity probe for mounting on box 502-503 or on the wall; Speed, temperature and operating modes control; Maximum connection length 50 m if made with 4-wire braided shielded cable.	

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 any pump control.	

VDZ3 - 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.

SPARE FILTERS

Filters with low pressure drop. Efficiency ePM1 70% (F7) on the fresh air, ePM 10 50% (M5) on the extracted air.

UNIT ORDER CODES

Code 2021	Description
EXPOSED DEHUMIDIFY VERSIONS	
DHSD20VC1II	DEH 20 VD - Dehumidifier with visible metal cabinet. Vertical installation only. Version with dehumidification.
DHSD30VC1II	DEH30 VD - Dehumidifier with visible metal cabinet. Vertical installation only. Version with dehumidification.
DHSD50VC1II	DEH 50 VD - Dehumidifier with visible metal cabinet. Vertical installation only. Version with dehumidification.
DRY VERSIONS AND VISIBLE INTEGRATION	
DHSI30VC1II	DEH 30 V DC - Dehumidifier with visible metal cabinet. Vertical installation only. Version with dehumidification and integration.
DHSI50VC1II	DEH 50 V DC - Dehumidifier with visible metal cabinet. Vertical installation only. Version with dehumidification and integration.
BUILT-IN DEHUMIDIFY VERSIONS	
DHSI20WC1II	DEH 20 VD - Dehumidifier for recessed installation. Vertical installation only. Version with dehumidification.
DHSI30WC1II	DEH 30 VD - Dehumidifier for recessed installation. Vertical installation only. Version with dehumidification.
DHSI50WC1II	DEH 50 VD - Dehumidifier for recessed installation. Vertical installation only. Version with dehumidification.
DEHUMIDIFYING VERSIONS AND BUILT-IN INTEGRATION	
DHCI30WC1II	DEH 30 V DC - Dehumidifier for recessed installation. Vertical installation only. Version with dehumidification and integration.
DHCI50WC1II	DEH 50 V DC - Dehumidifier for recessed installation. Vertical installation only. Version with dehumidification and integration.

ACCESSORIES ORDERING CODES

Recessed formwork

Template	Size 20 ID	Size 30 I DC / 30 ID	Size 50 I DC / 50 ID
Description	Recessed formwork in galvanized steel sheet.		
Code	L01034II	L01035II	L01036II

Metal finishing grid / Aesthetic wall panel

Template	Size 20 ID	Size 30 I DC / 30 ID	Size 50 I DC / 50 ID
Description	Aesthetic panel with frame, intake grille and adjustable delivery flap. For vertical recessed installation.		
Code	LC0579II	LC0580II	LC0581II

Remote command

Template	All
Description	Smart touch wall control panel with thermostat and ambient probe. Black colour.
Code	GR1097II

Remote command

Template	All
Description	Smart touch wall control panel with thermostat and ambient probe. White color.
Code	GR1098II

Motorized 2-way valve

Template	All
Description	Motorized 2-way valve ON / OFF. 1/2 "valve diameter
Code	V20032II

Motorized 3-way valve

Template	All
Description	Motorized 3-way valve ON / OFF. 1/2 "valve diameter
Code	V30033II

Replacement filters

Template	All
Description	Filters with low pressure drop. EPM1 efficiency - 70% (F7) on the fresh air, ePM 10 50% (M5) on the extracted air.
Code	GR1153II

Replacement filters

Template	All
Description	Filters with low pressure drop. EPM1 efficiency - 70% (F7) on the fresh air, ePM 10 50% (M5) on the extracted air.
Code	GR1154II

Replacement filters

Template	All
Description	Filters with low pressure drop. EPM1 efficiency - 70% (F7) on the fresh air, ePM 10 50% (M5) on the extracted air.
Code	GR1155II

NOTE:

Rev.2 - 03-2021

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