

## DEH + horizontal built-in

Residential dehumidifiers for applications with radiant panels  
with EC motors in horizontal version



## GENERAL FEATURES

### STRUCTURE

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



### FANS

The unit is equipped with EC centrifugal fans  
With high efficiency Brushless motor



### COMPRESSOR

High efficiency reciprocating compressor



### FILTRATION

Flat filters with Coarse filtration class;

## TECHNICAL FEATURES

DEH + horizontal built-in is an air conditioning unit designed for specific dehumidification / air conditioning needs in low energy consumption environments.

The unit is particularly suitable for single family units, apartments, offices where there is a radiant air conditioning system

### VENTILATION:

Fans with double suction brushless EC motor.  
Very high efficiency and low noise levels Compliant with Erp legislation.

### AIR TREATMENT SECTION:

The unit is 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;

### FILTRATION:

Coarse filter with low pressure drop, easily removable on the recirculation air

### STRUCTURE:

Self-supporting perimeter structure in galvanized sheet metal. The insulation of the panels is made with 10 mm thick polyethylene insulation.

### REFRIGERANT CIRCUIT:

Made of brazed copper complete with: High efficiency compressor, filter drier, finned coils, water exchanger, solenoid valves, lamination device, liquid receiver, high pressure switches.

### ADJUSTMENT:

Electrical panel on board the unit with microprocessor and dedicated regulation. Fan management, timed dirty filter management, recirculation and renewal air management. Possibility of controlling the unit with these three solutions:

- 1: Management through external commands;
- 2: Management via remote panel with integrated T / H sensor
- 3: MODBUS RTU RS 485 communication

## UNIT CONFIGURATION

	-1-	-2-	-3-
DEH +	30	H.	D.

(1) Defines the total flow rate

2) Type of installation

H: horizontal

4) Type of construction

D: Version for dehumidification with neutral air (isothermal)

DC: Version for dehumidification and integration

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

Unit for the only dehumidification 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;

**COMPOSITION OF THE UNIT**

	<b>Version-D</b>	<b>Version-A.D</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	●	●
Post-cooling / heating hydronic coil	●	●
Hydronic pre-cooling / heating coil	●	●
Ec brushless centrifugal fan with forward blades	●	●
Coarse recirculation air filters	●	●
Microprocessor	●	●

● = Installed as standard  
/ = Not available

# HIGH EFFICIENCY DEHUMIDIFIER

## DATA SHEET



### PERFORMANCE UNIT

#### GENERAL TECHNICAL DATA

Size		DEH + 30 H	DEH + 50 H
Supply	V / Ph / Hz	230/1/50	230/1/50
IP protection degree	IP	20	20
Air flow	m <sup>3</sup> / h	300	500
Useful pressure	Pa	150	98

#### VERSION D-

Useful dehumidification capacity	l / 24h	18.9	36.2
Cooling capacity yielded by hydronic battery 2	kW	0.58	1.22
Thermal power output 3	kW	0.62	1.3
Water flow	m <sup>3</sup> / h	0.15	0.3
Loss of pressure	Kpa	4.5	9.0
Sound pressure Lp at 3 m	dB (A)	36	38
Power supply	V / Ph / Hz	230/1/50	230/1/50
Maximum absorbed current R versions	TO	3.2	5.3

(1) Ambient temperature 26 ° C; relative humidity 65%, nominal air flow; Water in 16 ° C;

(2) Ambient temperature 26 ° C; relative humidity 65%, 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	18.9	36.2
Cooling capacity made sensible	kW	0.77	1.44
Total cooling capacity	kW	1.27	2.39
Thermal power output 3	kW	0.62	1.3
Water flow	m <sup>3</sup> / h	0.15	0.3
Loss of pressure	Kpa	4.5	9.0
Sound pressure Lp at 3 m	dB (A)	36	38
Power supply	V / Ph / Hz	230/1/50	230/1/50
Maximum absorbed current R versions	TO	3.2	5.3

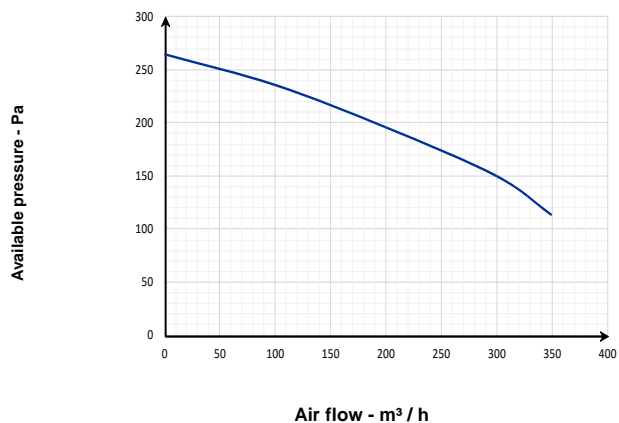
(1) Ambient temperature 26 ° C; relative humidity 65%, nominal air flow; Water in 16 ° C;

(2) Ambient temperature 26 ° C; relative humidity 65%, nominal air flow; Water in 16 ° C;

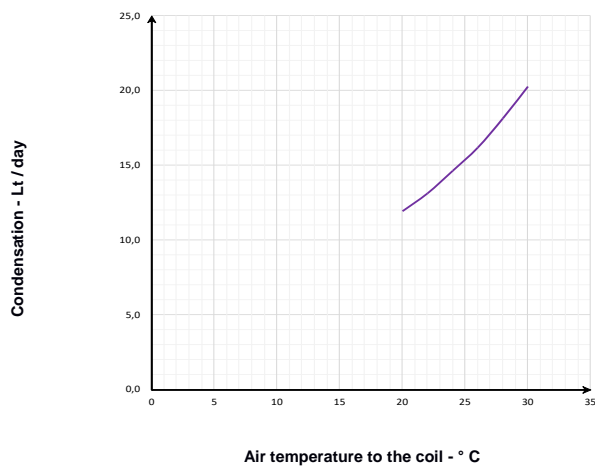
(3) Ambient temperature 20 ° C; relative humidity 60%, nominal air flow; Water in 35 ° C;

## CURVE DEH + 30 D / DC

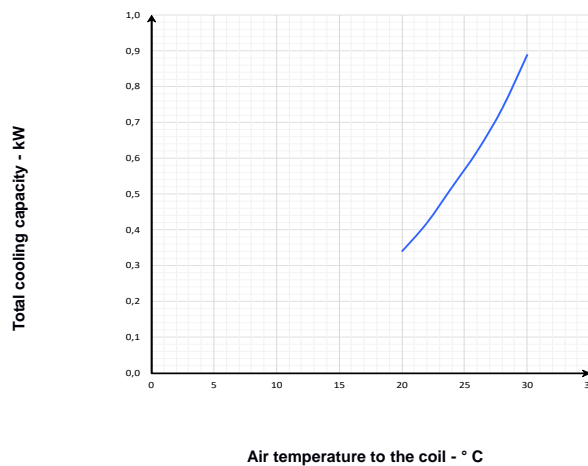
### AERUALIC PERFORMANCE RECIRCULATION FAN



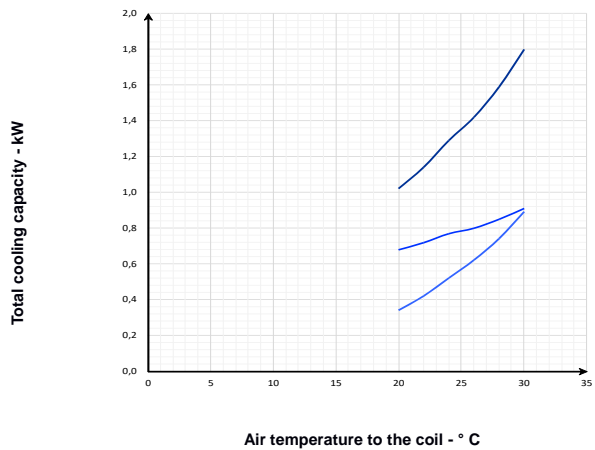
### DEHUMIDIFYING CAPACITY (2)



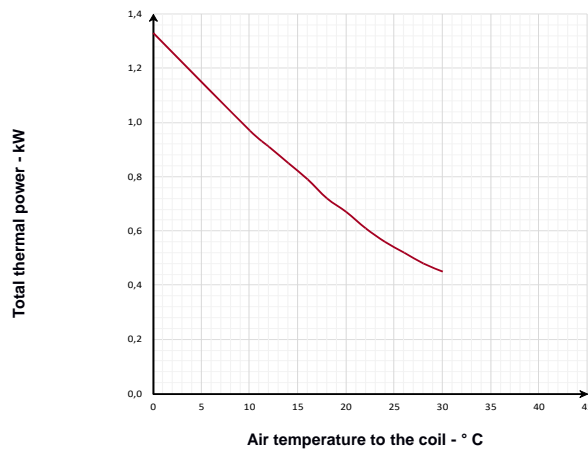
### COOLING OUTPUT Versions D (3)



### COOLING OUTPUT DC versions (3)



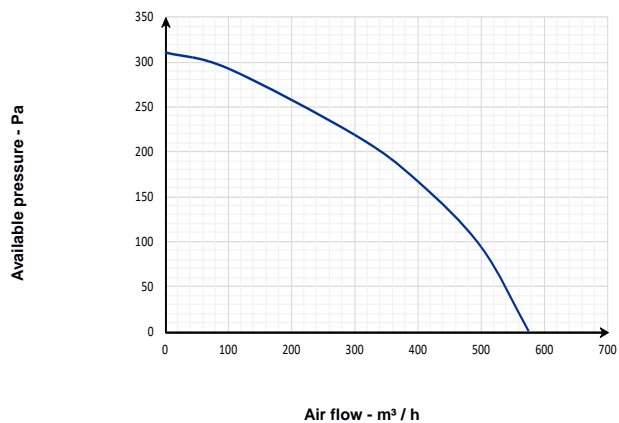
### THERMAL OUTPUT (4)



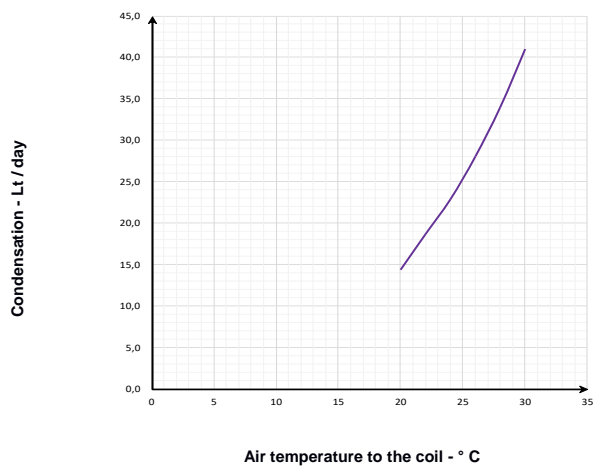
2 - 3) Relative humidity 50%, nominal external air flow, water inlet temperature 16 ° C  
 4) - Ambient temperature 20 °; relative humidity 50%, nominal external air flow, water inlet temperature 35 ° C

### CURVE DEH + 50 D / DC

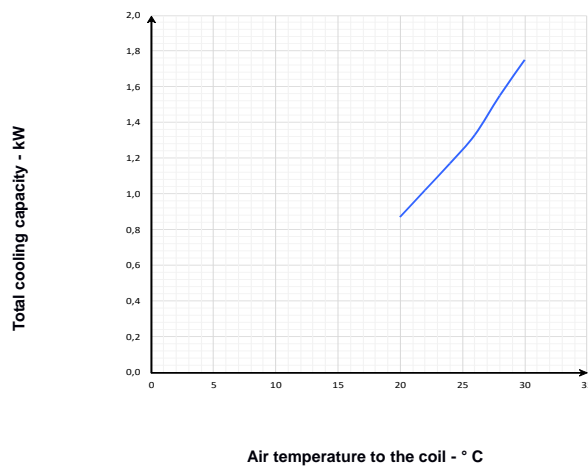
#### AERUAIC PERFORMANCE RECIRCULATION FAN



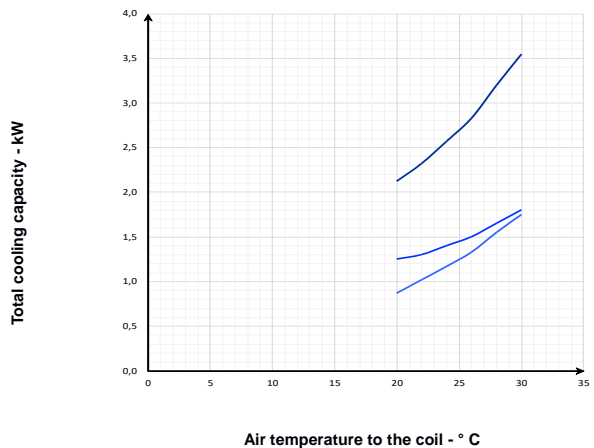
#### DEHUMIDIFYING CAPACITY (2)



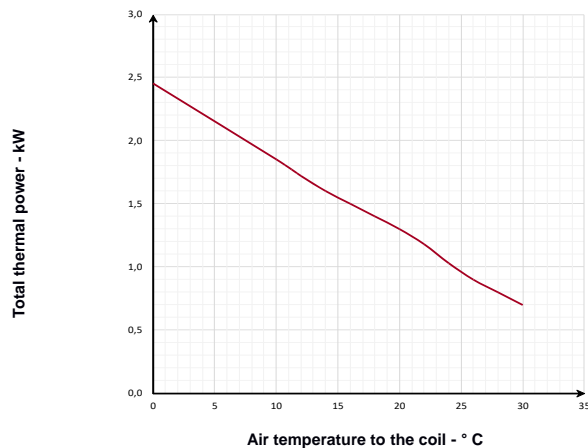
#### COOLING OUTPUT Versions D (3)



#### COOLING OUTPUT DC versions (3)



#### THERMAL OUTPUT (4)




2 - 3) - Relative humidity 50%, water inlet temperature 16 ° C

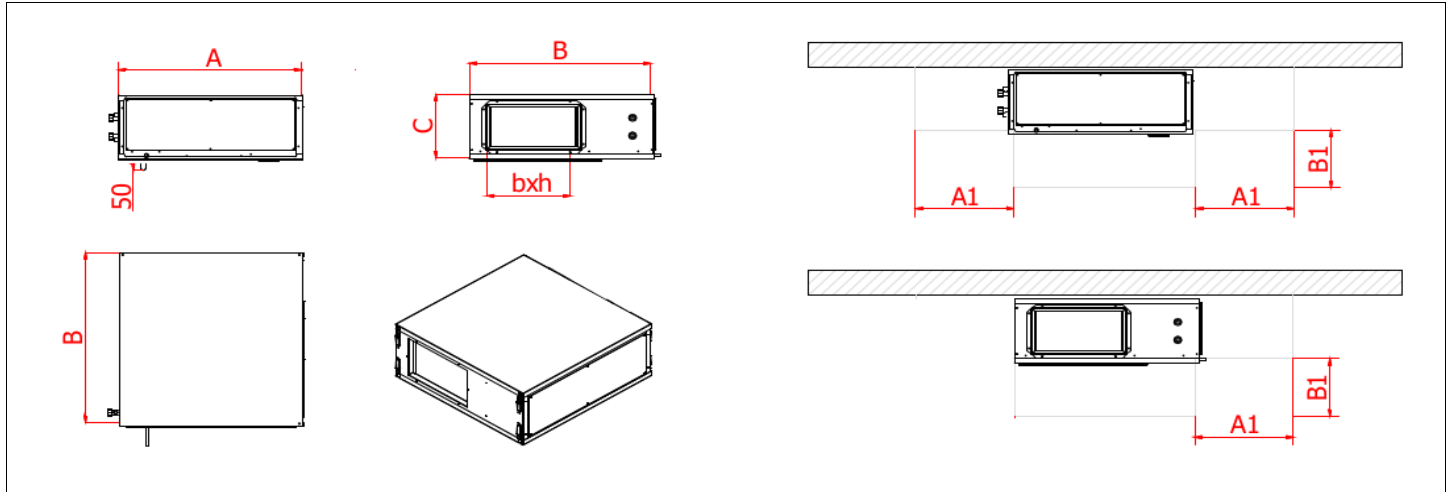
4) - Ambient temperature 20 °; relative humidity 50%, nominal external air flow, water inlet temperature 35 ° C



## TENDER SPECIFICATIONS

	<p>Dehumidifier for radiant air conditioning systems with air treatment 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.</p> <p>The unit is made up of a monobloc including each component for correct operation and allows operation with wide external temperature ranges and in combination with radiant systems;</p> <p><u>CONSTRUCTION FEATURES</u></p> <p>Self-supporting perimeter structure in galvanized sheet metal. The insulation of the panels is made with 6 mm thick polyethylene insulation.</p> <p>D.compact size and reduced height for simplified installation with easily accessible lower panel for maintenance and inspection.</p> <p>Rectangular inlets with connection to ducts or combinable with plenums of various types as an accessory;</p> <p>Quick filter inspection, and lateral condensate drain for condensate evacuation;</p> <p>Refrigeration circuit with high efficiency hermetic compressor, heat exchange coils, lamination device and safety devices.</p> <p>Electric panel, excluded from the air flow with management cards and control terminal blocks</p> <p>Fans with double suction brushless EC motor; Very high efficiency and low noise levels Compliant withErp legislation.</p> <p>Coarse filter with low pressure drop, easily removable on the recirculation air</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. Possibility of controlling the unit with these three</p> <p>solutions: 1. Management through external commands; 2: Management via remote panel with integrated T / H sensor 3: MODBUS RTU RS 485 communication</p>
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## DIMENSIONAL DATA



Template	DEH +	30	50
Width A	mm	690	690
Depth B	mm	690	800
Height C.	mm	250	310
Delivery bxh (valid for delivery and suction)	mm	350x180	520x250
A1	mm	300	300
B1	mm	270	320
Delivery / return water connections	OR	1/2" - 1/2"	1/2" - 1/2"
Condensation	OR	16 mm	16 mm
RD version weight	kg	40	53
R DC version weight	kg	42	55

**UNIT VIEW FROM ABOVE**

## LIST OF ACCESSORIES

### ADJUSTMENT

#### **CND**

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.



#### **VDZ2 - 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.



### AERAUICS

<p><b>PL3 - DIRECT DELIVERY PLENUM FOR FLEXIBLE HOSES SIZE 30</b></p> <p>Delivery plenum with 3 circular inlets Dn125mm                  Flanges for fixing to the unit.                  Internal polyethylene insulation.</p>	
<p><b>PL5 - DIRECT DELIVERY PLENUM FOR FLEXIBLE HOSES SIZE 50</b></p> <p>Delivery plenum with 5 circular inlets Dn125mm                  Flanges for fixing to the unit.                  Internal polyethylene insulation.</p>	
<p><b>PL8 - DIRECT DELIVERY PLENUM FOR CORRUGATED PIPES SIZE 30</b></p> <p>Delivery plenum with 8 front inlets + 8 side inlets for DN75 / DN90 mm connection</p>	
<p><b>PL12 - DIRECT DELIVERY PLENUM 12 CORRUGATED PIPES SIZE 50</b></p> <p>Delivery plenum with 12 front inlets + 8 side inlets for DN75 / DN90 mm connection</p>	
<p><b>PL1 - DIRECT DELIVERY PLENUM FOR REMOTE MANIFOLD SIZE 30</b></p> <p>Delivery plenum with 1 circular inlets Dn200mm for remote delivery manifold                  Flanges for fixing to the unit.                  Internal polyethylene insulation.</p>	
<p><b>PL1 - DIRECT DELIVERY PLENUM FOR REMOTE MANIFOLD SIZE 50</b></p> <p>Delivery plenum with 1 circular inlets Dn200mm for remote delivery manifold                  Flanges for fixing to the unit.                  Internal polyethylene insulation.</p>	

# UNIT OF VENTILATION AND AIR TREATMENT

## DATA SHEET



### **FDR - COARSE REPLACEMENT FILTER**

***Kit consisting of Coarse replacement filter;***

The filters are easily removable through the dedicated inspectionable doors;



**UNIT ORDER CODES**

Code 2021	Description
<b>DRY ONLY VERSIONS</b>	
DHSD30HC1II	DEH + 30 HD - dehumidifier for false ceiling installation. Horizontal installation only version with dehumidification.
DHSD50HC1II	DEH + 50 HD - dehumidifier for false ceiling installation. Horizontal installation only version with dehumidification.
<b>DEHUMIDIFYING AND INTEGRATION VERSIONS</b>	
DHSI30HC1II	DEH + 30 H DC - dehumidifier for false ceiling installation. Horizontal installation only version with dehumidification and integration.
DHSI50HC1II	DEH + 50 H DC - dehumidifier for false ceiling installation. Horizontal installation only version with dehumidification and integration.

# AIR TREATMENT UNIT FOR VMC SYSTEMS

## DATA SHEET



### Wall control panel

Template	All
Description	Smart touch electronic wall control panel with thermostat and ambient probe. Black colour.
Code	ECA033II

### Wall control panel

Template	All
Description	Smart touch electronic wall control panel with thermostat and ambient probe. White color.
Code	ECB033II

### Motorized 2-way valve ON OFF

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

### Motorized 3-way valve ON OFF

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

### Air delivery plenum for flexible pipes - 3 DN 125 inlets -

Template	DEH + 30 HD / DEH 30 H DC
Description	Delivery plenum for flexible pipes with 3 circular inlets.
Code	GR0850II

### Air delivery plenum for flexible pipes - 5 DN 125 inlets -

Template	DEH + 50 HD / DEH + 50 H DC
Description	Delivery plenum for flexible pipes with 5 circular inlets.
Code	GR0851II

### Air delivery plenum for corrugated pipes - 8 DN 75/90 inlets

Template	DEH + 30 HD / DEH + 30 H DC
Description	Delivery plenum for flexible pipes with 8 front inlets and 8 side inlets.
Code	GR0854II

# AIR TREATMENT UNIT FOR VMC SYSTEMS

## DATA SHEET



### Air delivery plenum for corrugated pipes - 12 DN 75/90 inlets

Template	DEH + 50 HD / DEH + 50 H DC
Description	Delivery plenum for flexible pipes with 12 front inlets and 8 side inlets
Code	GR0856II

### Air delivery plenum for corrugated pipes - 1 DN 200 inlets

Template	DEH + 30 HD / DEH + 30 H DC
Description	Single duct delivery plenum 1xDN200 mm. Dimensions 315x200 mm.
Code	GR1091II

### Air delivery plenum for corrugated pipes - 1 DN 200 inlets

Template	DEH + 50 HD / DEH + 50 H DC
Description	Single duct delivery plenum 1xDN200 mm. Dimensions 500x200 mm.
Code	GR1092II

### Replacement filter kit

Template	DEH + 30 H DC	DEH + 50 H DC
Description	Kit of 2 replacement filters ePM1 80%	Kit of 2 replacement filters ePM1 80%
Code	GR0863II	GR0864II

### Acoustic silencer

Template	DEH + 30 HD / DEH + 30 H DC
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	DEH + 50 HD / DEH + 50 H DC
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

### Corrugated pipe departure

Template	All
Description	Male / female adapter for direct connection between manifold for round pipes and flat round pipes. Corrugated pipe outlet / DN 75 mm. Attack: M / F
Code	GR0971II



# AIR TREATMENT UNIT FOR VMC SYSTEMS

DATA SHEET



## Corrugated pipe departure

Template	All
Description	Male / female adapter for direct connection between manifold for round pipes and flat round pipes. Corrugated pipe outlet / DN 90 mm. Attack: M / F
Code	GR0972II





***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

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