

H-Uni air-conditioning units



- ✳ Integrated dehumidification, cooling, heating
- ✳ Reversible heat pump
- ✳ High recuperation efficiency
- ✳ Measuring and control system
- ✳ Easy installation – Plug & Play

H-Uni air-conditioning units

Usage and working conditions

H-Uni air-conditioning units are compact units that provide complex optimization of air in one unit suitable for dehumidification in swimming pool areas and for energetically balanced installations where a high efficiency plate exchanger and heat pump is used. Furthermore they are suitable in places where it is necessary to cool space but it is not possible to place the condensation unit outside, or for any other applications where easy assembly and quick placement into operation is important.

The units are produced in a design suitable for inner spaces.

Structure

H-Uni units are made of frameless sandwich panels.

The shell of the panel consists of two steel zinc plates with a thickness of 0.8 mm, peripherally connected by single cap rivets. The outer cover of the unit is finished in shade RAL9002 – elephant bone.

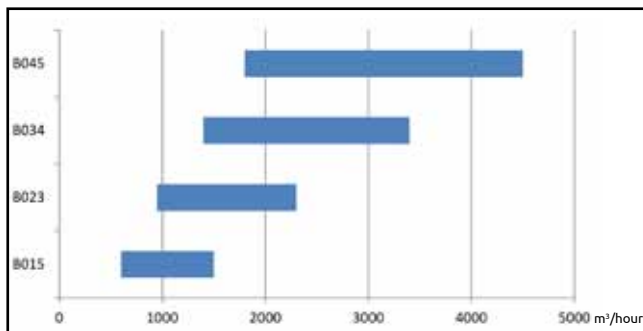
Inside the panel is mineral wool insulation with volume weight 50 kg/m³, inflammability level A1. The thickness of the panel is 50 mm.

The strength of the chamber is ensured by special joints registered with the Industrial Property Office in its database of industrial designs.

Advantages of frameless structure

- excellent strength of the structure
- reduced loss of heat transmission through the shell of the unit
- clear inner area of the unit
- easy installation and maintenance of units

Fig. 1 Air performance

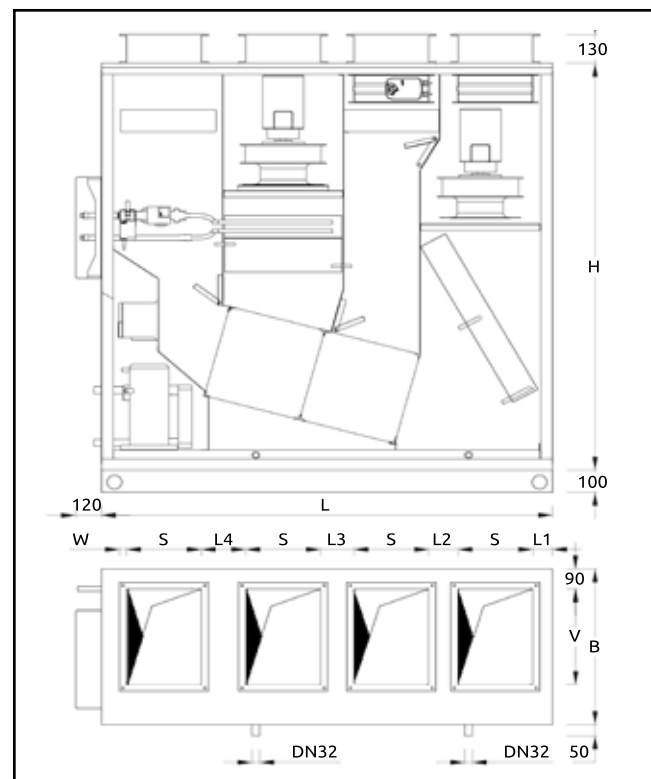


H-control system of measurement and regulation

The units are equipped with the MaR H-Control autonomous controlling system. This system is easy to operate by PC and web browser. Furthermore it is possible to control the unit with a remote control via LCD display or BMS systems.

Controlling and action components are assembled, connected and tested during production. The system thus enables:

Fig. 2 Dimensions of unit



Size [mm]	B015	B023	B034	B045
L	1875	1875	2076	2410
B	700	1000	1190	1290
H	1678	1743	1920	2200
S	315	315	315	415
V	430	730	920	1020
L1	84	84	84	134
L2	98	98	167	170
L3	141	141	185	176
L4	187	187	214	202
W	20	20	30	30

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- regular flow of ventilators
- control and protection of water heating
- control and protection of plate heat exchanger
- control of flaps
- signalization of air filter clogging
- control heat pump compressor, including reverse operation

Description

These air conditioning units are made as one complex unit. The units are designed for installation on the floor, and are delivered with a base frame. Suction and

exhaust holes are located on the upper side of the chamber and are equipped with flexible adapters with end flanges for connection to pipes.

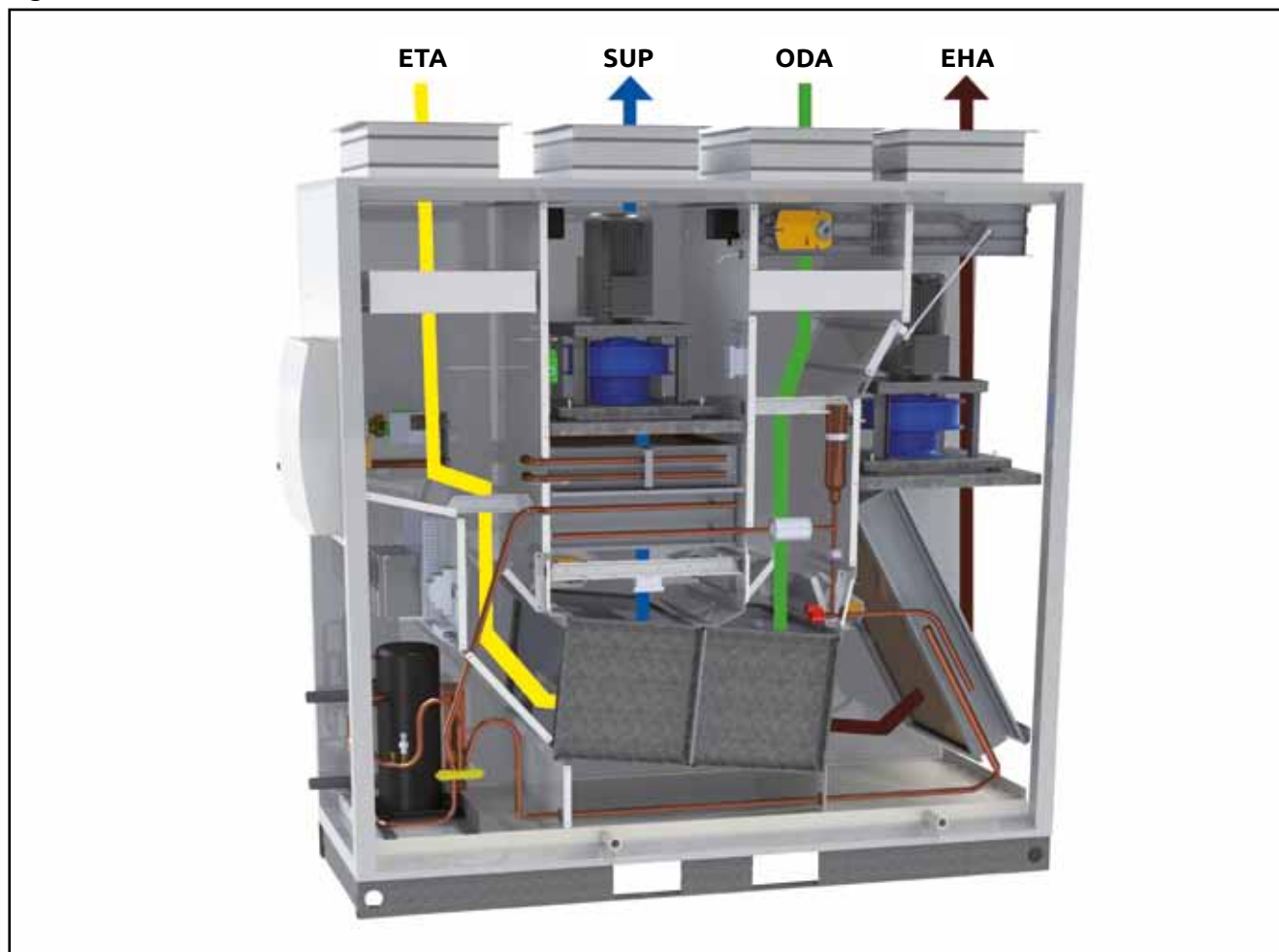
The output pipes of exchangers, service holes and fittings are located on the front and side parts of the unit.

Access to ventilators, filters and frequency chargers is provided by demountable panels.

It is necessary to leave a free service space in front of the unit in an area equal to 1.15 % of the depth of the unit. In front of the electricity distribution panel place on the side it is necessary to leave free space 800 mm.

Size of the unit		B015	B023	B034	B045
Area of swimming pool					
private swimming pool	[m ²]	50	76	115	160
swimming pool with depth greater than 1.35 m	[m ²]	37	57	86	120
swimming pool with waves	[m ²]	21	32	48	67
Dehumidification					
with 30% of fresh air in compliance with VDI 2089/1	[kg/h]	8.0	12.3	18.5	25.8
min. nominal air volume flow V	[m ³ /h]	600	950	1400	1800
air flow	[m ³ /h]	1500	2300	3400	4500
external pressure loss	[Pa]	300	300	300	300
filtration category according to ČSN EN 779		M5-F7	M5-F7	M5-F7	M5-F7
heat requirement for HVAC at 30% of fresh air -15 °C	[kW]	1.8	2.6	3.7	5.1
max. heating performance of the heater at 20 °C	[kW]	12.0	18.4	27.2	36
water flow 70/50 °C	[l/s]	0.15	0.23	0.33	0.44
dP on water	[kPa]	4	6.2	7.6	8.5
connecting size of heater		1/2"	1/2"	1/2"	3/4"
Efficiency of heat recovery at 30 % of fresh air -15 °C	[%]	74	75	76	75
Ventilator supply	[kW]	0.75	1.1	1.1	1.5
Ventilator exhaust	[kW]	0.75	1.1	1.1	1.5
Compressor	[kW]	1.57	2.37	3.35	4.81
Water condensator	[kW]	4.0	6.1	9.3	14.4
flow	[m ³ /h]	0.07	0.10	0.16	0.25
dPw	[kPa]	0.2	0.5	1.1	2.6
Electricity connection 3×400 V, 50 Hz, TN-S	[kW]	4.0	7.0	9.0	11.0
In	[A]	7.1	10.1	12.4	16.9
protection	[A]	25	32	32	40
Peripheral conductors section	[mm ²]	4	6	6	10
Weight incl. distribution panel	[kg]	415	550	700	800

Fig. 3 Functional scheme of H-Uni unit



The units are produced in right or left-hand versions.

ETA – extract air, **SUP** – supply air, **ODA** – outdoor air, **EHA** – exhaust air

@ Envi Group Romania

Country Romania

City: Bucharest

Address: 15 Tudor Vladimirescu Boulevard

Postal code: 050881

Website: www.envi-group.ro

Email: office@envi-group.ro

Landline: +40 31 421 11 16