



# VORT HRI PHANTOM RANGE

HEAT RECOVERY UNITS FOR FALSE CEILING MOUNTING

A

CENTRALIZED VENTILATION

FOR FALSE CEILING

UP TO 240 M<sup>2</sup>

Centralized dual-flow ventilation units with heat recovery for false ceilings, ideal for ventilation of homes and residential and commercial premises with a surface area of up to 90 m<sup>2</sup> (VORT HRI 200 PHANTOM) or 240 m<sup>2</sup> (VORT HRI 350 PHANTOM), characterized by high levels of thermal insulation.

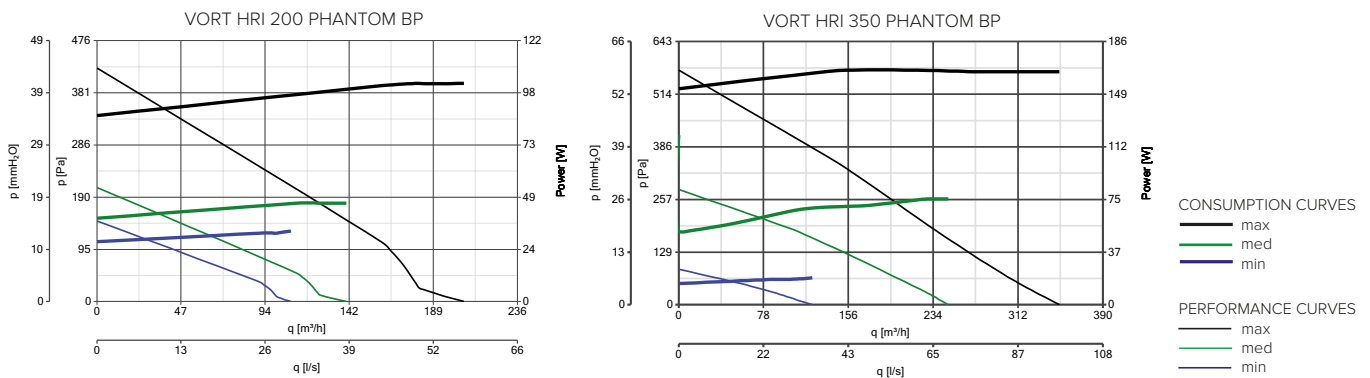


- Suitable for false ceiling installation
- Self-supporting casing in galvanized sheet metal (10/10), with internal fire-resistant sound-absorbing coating, lower cover in ABS.
- Connection spigots to pipes with a nominal diameter of 125mm (PHANTOM 200) and 150mm (PHANTOM 350), backward curved centrifugal fans directly coupled to EC motors.
- High efficiency counter flow heat exchanger in plastic material (PS).
- Automatic thermodynamic bypass, based on the temperature probes present in the machine.
- Automatic mechanical bypass, based on the temperature probes present in the machine (BP MODELS)
- Pair of filters Class ePM10 (M5) 50% (F5)
- Wired remote LCD control panel supplied as standard.

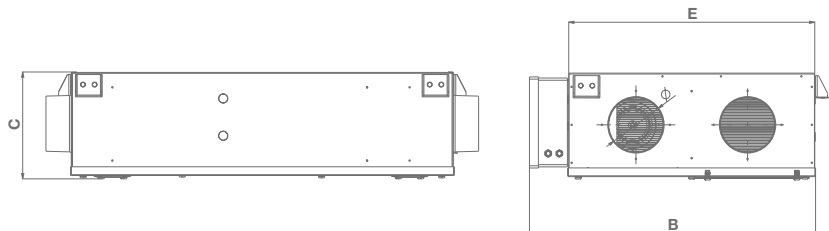
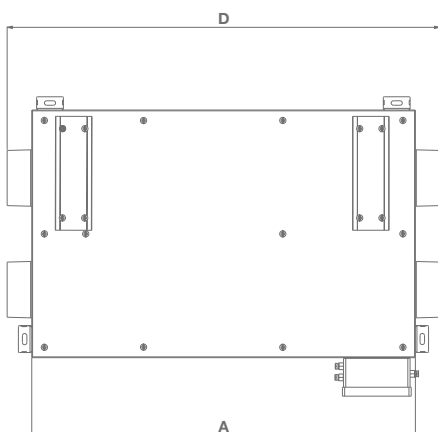
## PERFORMANCE AND ABSORPTION

### TECHNICAL DATA

| PRODUCTS                | CODE  | Nom. Ø (mm) | (m <sup>3</sup> /h) | (W) | (PA) | Lp [dB (A)] 3m |
|-------------------------|-------|-------------|---------------------|-----|------|----------------|
| VORT HRI 200 PHANTOM BP | 11291 | 125         | 206                 | 102 | 426  | 22.8           |
| VORT HRI 350 PHANTOM BP | 11293 | 150         | 350                 | 165 | 568  | 16.7           |



## DIMENSIONS



| PRODUCTS                | CODE  | A    | B   | C   | D     | E   | Ø   |
|-------------------------|-------|------|-----|-----|-------|-----|-----|
| VORT HRI 200 PHANTOM BP | 11291 | 868  | 643 | 248 | 963.5 | 551 | 125 |
| VORT HRI 350 PHANTOM BP | 11293 | 1183 | 740 | 288 | 1287  | 650 | 150 |

Dimensions in mm



**SOUND LEVELS**

| VORT HRI 200 PHANTOM BP |          | Lw dB (A) |        |        |         |         |         |         | Lw dB (A) | Lw dB (A) |
|-------------------------|----------|-----------|--------|--------|---------|---------|---------|---------|-----------|-----------|
|                         |          | 125 Hz    | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | 3m*       |           |
| MIN. SPEED              | Delivery | 22.7      | 31.4   | 17.4   | 14.9    | 10.1    | na**    | na**    | 43.3      | 22.8      |
|                         | Intake   | 24.2      | 36.8   | 23.0   | 15.4    | 14.0    | 7.3     | na**    | 36.5      | 16.0      |
|                         | Casing   | 35.7      | 36.9   | 29.2   | 22.2    | 17.0    | 9.8     | na**    | 43.1      | 22.6      |

| VORT HRI 350 PHANTOM BP |          | Lw dB (A) |        |        |         |         |         |         | Lw dB (A) | Lw dB (A) |
|-------------------------|----------|-----------|--------|--------|---------|---------|---------|---------|-----------|-----------|
|                         |          | 125 Hz    | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | 3m*       |           |
| MIN. SPEED              | Delivery | 16.7      | 27.4   | 24.3   | 17.1    | 16.9    | 7.1     | na**    | 37.2      | 16.7      |
|                         | Intake   | 16.3      | 32.1   | 22.2   | 11.3    | 15.5    | 6.2     | na**    | 37.8      | 17.3      |
|                         | Casing   | 33.4      | 35.6   | 41.6   | 38.0    | 37.2    | 30.4    | 27.3    | 51.0      | 30.5      |

\* Acoustic pressure measured at 3 m in free field with the intensimetric method in a semi-anechoic cabin at maximum speed in accordance with ISO 9614. \*\* Data not available.

**ENERGY DATA**

|  | UNIT OF MEASURE             | VORT HRI 200 PHANTOM BP | VORT HRI 350 PHANTOM BP |
|--|-----------------------------|-------------------------|-------------------------|
| MANUFACTURER'S NAME OR TRADE NAME                                  | -                           | VORTICE                 | VORTICE                 |
| CLASS OF SPECIFIC ENERGY CONSUMPTION FOR TEMPERATE CLIMATE         | -                           | A                       | A                       |
| SPECIFIC ENERGY CONSUMPTION SEC (TEMPERATE CLIMATE)                | kWh/m <sup>2</sup> year     | -36.3                   | -38.0                   |
| SPECIFIC ENERGY CONSUMPTION SEC (COLD CLIMATE)                     |                             | -74.7                   | -77.0                   |
| SPECIFIC ENERGY CONSUMPTION SEC (WARM CLIMATE)                     |                             | -11.7                   | -13.0                   |
| DECLARED TYPE OF THE VENTILATION UNIT                              | -                           | UVR-B**                 | UVR-B**                 |
| DRIVE TYPE   | -                           | VSD***                  | VSD***                  |
| HRS TYPE HEAT EXCHANGER  | -                           | recovery                | recovery                |
| THERMAL EFFICIENCY OF HEAT RECOVERY AT THE HRS REFERENCE FLOW RATE | %                           | 87.8                    | 90.4                    |
| MAXIMUM FLOW RATE  | m <sup>3</sup> /h           | 163                     | 280                     |
| TOTAL ELECTRIC POWER ABSORBED BY THE FAN AT MAXIMUM FLOW RATE      | w                           | 100.0                   | 165.0                   |
| Sound LEVEL  | LWA [dB(A)]                 | 43                      | 51                      |
| REFERENCE FLOW RATE  | m <sup>3</sup> /s           | 0.0317                  | 0.0544                  |
| REFERENCE PRESSURE DIFFERENCE                                      | Pa                          | 50                      | 70                      |
| SPI****  | W/(m <sup>3</sup> /h)       | 0.39474                 | 0.35204                 |
| CTRL CONTROL FACTOR  | -                           | 0.85                    | 0.85                    |
| CONTROL TYPE   | -                           | centralized env.        | centralized env.        |
| MAXIMUM PERCENTAGE OF INTERNAL LEAKAGE                             | %                           | 8.5                     | 8.7                     |
| MAXIMUM PERCENTAGE OF EXTERNAL LEAKAGE                             | %                           | 8.5                     | 5.2                     |
| MIXING RATE  | -                           | NA*                     | NA*                     |
| POSITION AND DESCRIPTION OF THE VISUAL FILTER SIGNAL               | -                           | see instruction booklet | see instruction booklet |
| AIR FLOW SENSITIVITY AT PRESSURE VARIATIONS OF ± 20 PA             | -                           | NA*                     | NA*                     |
| INDOOR/OUTDOOR AIR SEALING   | m <sup>3</sup> /h           | NA*                     | NA*                     |
| AEC ANNUAL ELECTRICITY CONSUMPTION                                 | kWh of electricity/year     | 402                     | 364                     |
| TEMPERATE AHS ANNUAL HEATING SAVINGS                               | kWh of primary energy /year | 4570                    | 4641                    |
| COLD AHS ANNUAL HEATING SAVINGS                                    |                             | 8940                    | 9078                    |
| WARM AHS ANNUAL HEATING SAVING                                     |                             | 2067                    | 2098                    |

\* NA: Not applicable. \*\* UVR-U: Residential Ventilation Unit - Uni-directional. \*\*\* VM: Multiple speeds. VSD: Variable Speed Drive.

\*\*\*\* SPI: Specific power input.



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## TECHNICAL CHARACTERISTICS

- **4 models**, different in size and performance, equipped with thermodynamic or mechanical by-pass.
- **Casings in galvanized sheet steel** integrating support brackets for false ceiling mounting; internal shell covered in sound-absorbing, heat-insulating and fire-resistant material (DIN EN 13501). Tie rods for suspended installation included in the standard equipment.
- **Plastic resin bottom covers** (PP) thermoformed, integrating the panels for direct access to the air filters.
- **Intake and delivery spigots** compatible with pipes with a nominal diameter of 125 mm (VORT HRI 200 PHANTOM) and 150 mm (VORT HRI 350 PHANTOM).
- **Pair of motor fans driven by EC motors** (brushless) of the external rotor type, with shafts mounted on ball bearings, directly coupled to backward curved centrifugal impellers to guarantee high aerodynamic efficiency. 3 operating speeds, independently settable at installation.
- **High efficiency heat exchanger**, of the cross-flow type with counterflow, made of plastic resin (PS).
- **Automatic activation frost protection**, to prevent the formation of frost at the heat exchanger.
- **By-pass, thermodynamic or mechanical (BP models), automatic and 100% filtered**, to guarantee the comfort of the occupants of the rooms in mid seasons, or whenever the outside temperature does not require the action of the heat exchanger.
- **Remote control unit with LCD display**, of the wired connection type, for:
  - turning the product on and off;
  - the initial configuration of the product;
  - selecting the minimum, average or maximum speed of operation;
  - programming the operation;
  - displaying the time and room temperature;
  - monitoring the correct operation of the product (any malfunctions are highlighted through error messages shown on the display);
  - signaling the saturated filters condition on the display.
- **Pair of M5 filters** (F7 filter available as an option for the delivery duct), easily accessible for periodic maintenance.
- **Condensate collection tray** with drain devices.
- **Possibility of interlocking** with external environmental sensors (optional), for the automatic control of the operating mode.
- **Degree of dust and water protection**: IPX2.
- **Electrical insulation class**: II (grounding not required).

## TECHNICAL DATA

| PRODUCTS                  | CODE  | V~50HZ | W<br>max | A<br>max | MAX FLOW RATE |      | MAX PRESSURE       |     | °C*<br>MAX | KG |
|---------------------------|-------|--------|----------|----------|---------------|------|--------------------|-----|------------|----|
|                           |       |        |          |          | m³/h          | l/s  | mmH <sub>2</sub> O | Pa  |            |    |
| VORT HRI 200 PHANTOM      | 11290 | 230    | 102      | 1.0      | 206           | 57.2 | 43.5               | 426 | 40         | 24 |
| VORT HRI 200 PHANTOM B.P. | 11291 | 230    | 102      | 1.0      | 206           | 57.2 | 43.5               | 426 | 40         | 24 |
| VORT HRI 350 PHANTOM      | 11292 | 230    | 165      | 1.4      | 350           | 97.0 | 58.0               | 568 | 50         | 33 |
| VORT HRI 350 PHANTOM B.P. | 11293 | 230    | 165      | 1.4      | 350           | 97.0 | 58.0               | 568 | 50         | 33 |

\* Maximum temperature with continuous operation of the product.



## DETAILS



Condensate drain nozzles.



Side profile, versions with by-pass.



Full version lcd display supplied as standard (see operating detail on page 76).



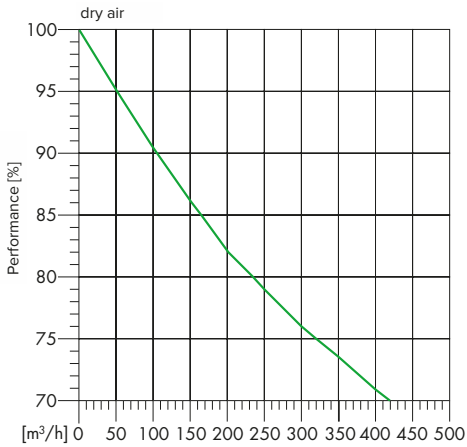


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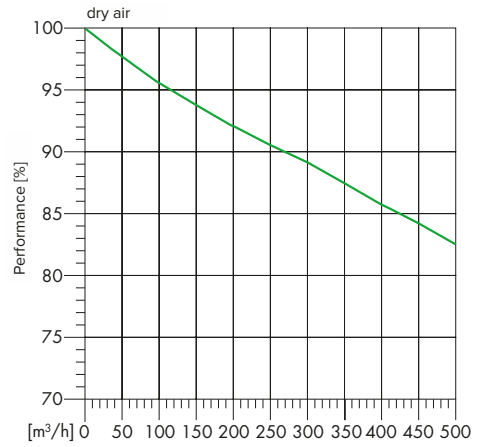
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## EFFICIENCY CURVES

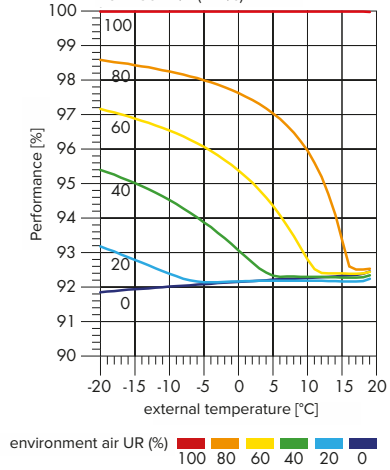
Efficiency in accordance with flow rate  
VORT HRI 200 PHANTOM



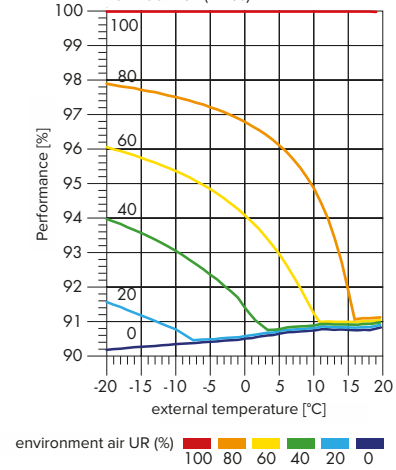
Efficiency in accordance with flow rate  
VORT HRI 350 PHANTOM




Efficiency in accordance with condensation heat  
environment air +20°C  
flow 150 m³/h (42 l/s)








Efficiency in accordance with condensation heat  
environment air +20°C  
flow 150 m³/h (42 l/s)





## FILTERS

| MODELS  | DESCRIPTION | DIMENSIONS | CODE  | VORT HRI 200<br>PHANTOM<br>code 11290 | VORT HRI 200<br>PHANTOM BP<br>code 11291 | VORT HRI 350<br>PHANTOM<br>code 11292 | VORT HRI 350<br>PHANTOM BP<br>code 11293 |
|---|-------------|------------|-------|---------------------------------------|--|---------------------------------------|--|
|  | F7 FILTER   | 228X224X24 | 22625 | ✓                                     | ✓  |                                       |  |
|   | F7 FILTER   | 230X250X48 | 22628 |                                       |  | ✓                                     | ✓  |
|   | FM5 FILTER  | 230X250X48 | 22646 |                                       |  | ✓                                     | ✓  |
|   | FM5 FILTER  | 212X227X24 | 22647 | ✓                                     | ✓  |                                       |  |

## REGULATORS

| MODELS  | DESCRIPTION                                     | DIMENSIONS  | CODE  | VORT HRI 200<br>PHANTOM<br>code 11290 | VORT HRI 200<br>PHANTOM BP<br>code 11291 | VORT HRI 350<br>PHANTOM<br>code 11292 | VORT HRI 350<br>PHANTOM BP<br>code 11293 |
|---|---|-------------|-------|---------------------------------------|--|---------------------------------------|--|
|  | <b>C TEMP</b><br>Temperature detector           | 144x54x55.8 | 12992 | ✓                                     | ✓  | ✓                                     | ✓  |
|  | <b>C SMOKE</b><br>Polluted air detector         | 144x54x55.8 | 12993 | ✓                                     | ✓  | ✓                                     | ✓  |
|  | <b>C HCS</b><br>Humidity detector               | 144x54x55.8 | 12994 | ✓                                     | ✓  | ✓                                     | ✓  |
|  | <b>C PIR</b><br>Presence detector               | 144x54x55.8 | 12998 | ✓                                     | ✓  | ✓                                     | ✓  |
|  | <b>SKP10 INSTALLER PANEL</b><br>Installer panel | -           | 22629 | ✓                                     | ✓  | ✓                                     | ✓  |

## ACCESSORIES

| MODELS  | DESCRIPTION   | CODE  | VORT HRI 200<br>PHANTOM<br>code 11290 | VORT HRI 200<br>PHANTOM BP<br>code 11291 | VORT HRI 350<br>PHANTOM<br>code 11292 | VORT HRI 350<br>PHANTOM BP<br>code 11293 |
|---|---|-------|---------------------------------------|--|---------------------------------------|--|
|  | <b>500W HEATER</b><br>Pre-heater to prevent the formation of frost in correspondence of the heat exchanger, also in the presence of particularly harsh climates | 22734 | ✓                                     | ✓  |                                       |  |
|   | <b>750W HEATER</b><br>Pre-heater to prevent the formation of frost in correspondence of the heat exchanger, also in the presence of particularly harsh climates | 22735 |                                       |  | ✓                                     | ✓  |
|  | <b>DCW 250 D.150</b><br>Cold battery  | 24146 | ✓                                     | ✓  | ✓                                     | ✓  |



# VORT HRI PHANTOM RANGE

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## LCD DISPLAY - SUPPLIED AS STANDARD



TIMER

TEMPERATURE

The LCD display controls the electronics of the product. Among the various functions, the control panel can be used for:

- turning the machine on and off,
- the initial configuration,
- the manual setting of the operating mode,
- the selection of the 3 speeds,
- the automatic management of the free-cooling function (only models with

### SOME ICONS SHOWN ON THE PANEL

| ICONS   | FUNCTIONS                 |
|---------|---------------------------|
|         | No-Frost                  |
| P1 - P2 | Time profiles             |
|         | Speed                     |
|         | OFF                       |
|         | Alarm                     |
|         | By-pass                   |
|         | Time schedule programming |
| FILT    | Filter replacement notice |
| HA      | Antibacterial function    |

Please note: For a complete and in-depth explanation of the icons and the associated functions, please refer to the instruction booklet.

- By-pass),
- setting the time slots and the room temperature,
- the display of the time or outside temperature,
- continuous monitoring of correct operation (any problems are signaled by error messages displayed on the control panel),
- constant monitoring of the filter status (need for maintenance highlighted on the control panel display).

System components (description and data from page 96).  
Regulators (description and data from page 152).