



# VORT INVISIBLE MINI



Heat recovery unit for  
false ceiling mounting





**VORTICE S.p.A.** is part of a multinational group, **VORTICE GROUP**, which operates through its own companies or local distributors in over 90 countries worldwide and has a rich product portfolio that guarantees air quality and climate comfort. The headquarters of VORTICE S.p.A are in Tribiano (Milan).



VORTICE GROUP also includes:

[ 1/2 ]  
**BUSINESS UNIT INDUSTRIAL**, born from the acquisition in 2010 of Loran srl, based in Isola della Scala (VR). 2024 become Vortice's BUSINESS UNIT INDUSTRIAL.

[ 3 ]  
**VORTICE LIMITED**, the UK subsidiary of VORTICE S.p.A., established in 1977 and based in Burton on Trent.

[ 4 ]  
**VORTICE VENTILATION SYSTEM**, a company inaugurated in 2013 with headquarters in Changzhou, China.

[ 5 ]  
**VORTICE LATAM S.A.**, based in Alajuela in Costa Rica, established in 2012.

[ 6 ]  
**CASALS VENTILACIÓN AIR INDUSTRIAL S.L.**, historic Spanish brand, based in Sant Joan de les Abadesses, Girona, acquired in 2019.



With the development and evolution of technology, VORTICE takes a further step towards the future, confirming its commitment to improving the well-being of people through the air they breathe.

## HEAT RECOVERY TECHNOLOGY

Heat recovery or controlled mechanical ventilation is the latest generation technology that through devices equipped with, variable speed, low consumption and low noise fans, guarantees:

- Fully filtered fresh air supplied to the rooms.
- The removal of the stale air from the inside.
- The recovery of the energy contained in the removed air through a high efficiency exchanger, transferring it to the air introduced into the rooms.

Thanks to this technology, we optimise the energy efficiency of the buildings in which we live and reduce heating and air conditioning costs, but above all we guarantee well-being and living comfort. Furthermore, through the correct ventilation and air exchange, we significantly reduce the risk of transferring a virus and pollutants transmitted by air, protecting our health.

# VORT INVISIBLE MINI TOP

**A unique product in its class  
with reliability and performance  
guaranteed by VORTICE  
with over 100 quality checks.**

Centralised dual-flow ventilation unit  
with heat recovery for false ceiling installation,  
specifically designed for the ventilation  
of small apartments, offices and hotel rooms, with a  
surface of up to 80m<sup>2</sup>.

Code 12219



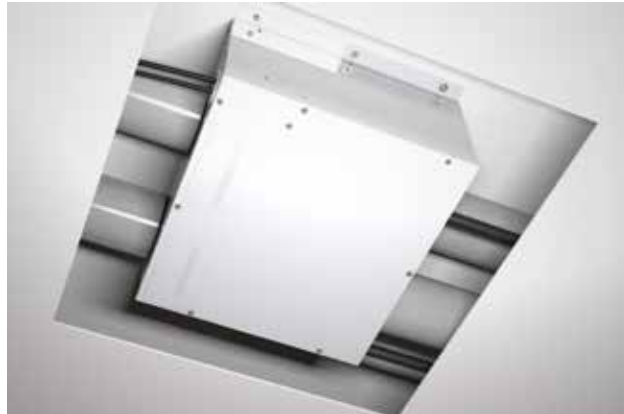


# BENEFITS FOR THE INSTALLER

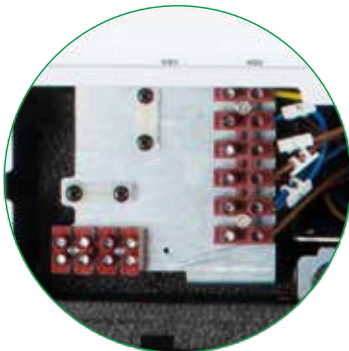
01

## Easily installed in a false ceiling

Low weight: 14kg  
Dimensions:  
484x440.5x218mm  
Universal duct  
connection Ø 100-125mm



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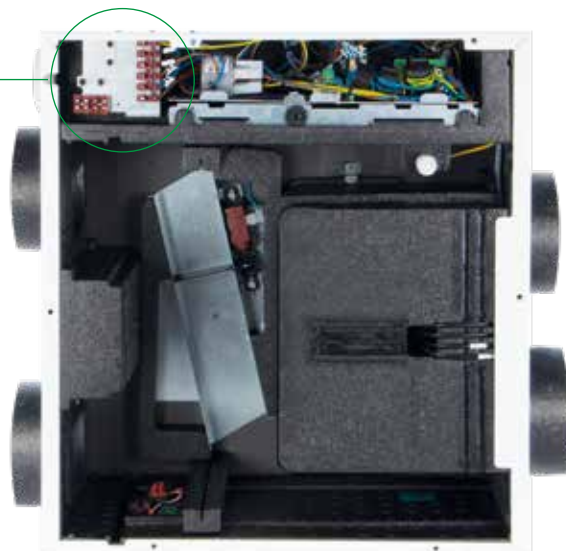


The terminals for  
connection to the  
network are easily  
accessible

02

## Easy wiring

All main components are easily accessible  
from the base of the product



Universal duct  
connection  
Ø 100 and 125



03

## Easy setting

At installation the unit's operating parameters can be set including:

- fan speed
- relative humidity threshold
- time interval of the SLEEP mode
- automatic activation temperatures of the free-cooling mode.

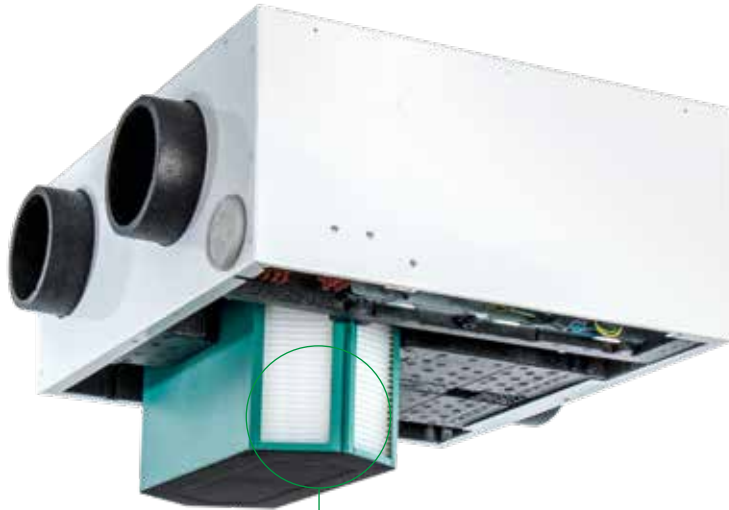
Displays the set operating mode.

Possibility to activate the MAX mode through an optional remote presence sensor (PIR).

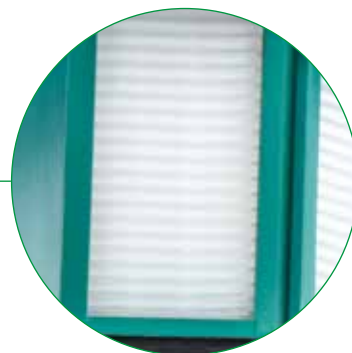
Electronic board mounted on a slide that can be extracted from below, to facilitate electrical connections and maintenance with the appliance installed.



**04** Easy maintenance



Plastic resin  
heat exchanger.  
Easily removable  
for periodic cleaning.







G3 filters with magnetic covers allowing easy access to maintain, no screwdrivers required.



Sealing grommet for a better and safer electrical connection



Access cover for electrical connections.

Through an optical signal the cleaning and maintenance of filters will be shown on the remote-control panel display.





## BENEFITS FOR THE USER

01

### Guarantees good indoor air quality

Reducing mould, high humidity levels, stale air and indoor pollutants.

02

### Energy saving

Low consumption.  
It recovers almost 90% of the thermal energy of the extracted air, which is transferred to the fresh air at zero cost.  
Reduced requirement of existing heating and cooling systems.



RENOVATION



ENERGY  
EFFICIENCY

03

### Contributes to improving the energy rating of buildings

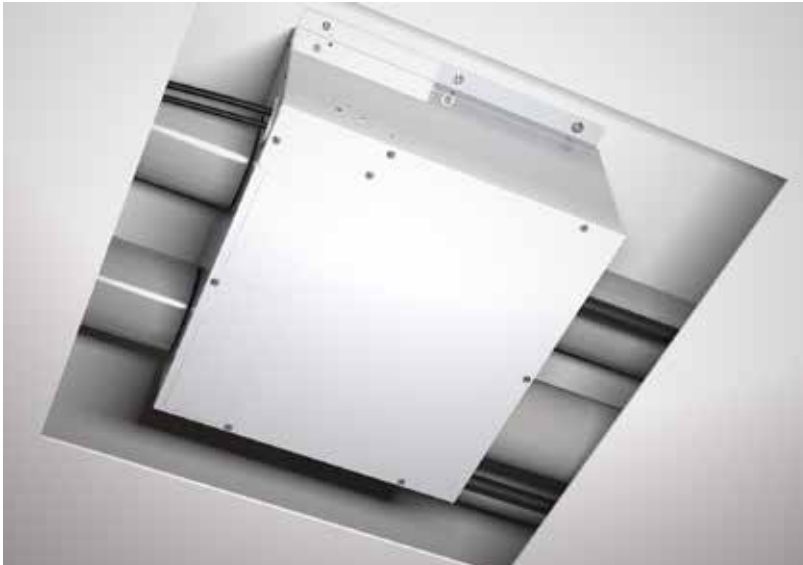
04

### Ease of use

Multiplicity of functions able to satisfy every need  
(for example: QUIET, HOLIDAY, MANUAL, AUTO mode etc.)

## APPLICATIONS

**Ideal for environments  
with a surface of up to 80m<sup>2</sup>**



Easily installed in a false ceiling

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Can be installed in studios, two-room apartments and student accomodation



Hotel rooms, care homes.



Studios and offices



# TECHNICAL FEATURES

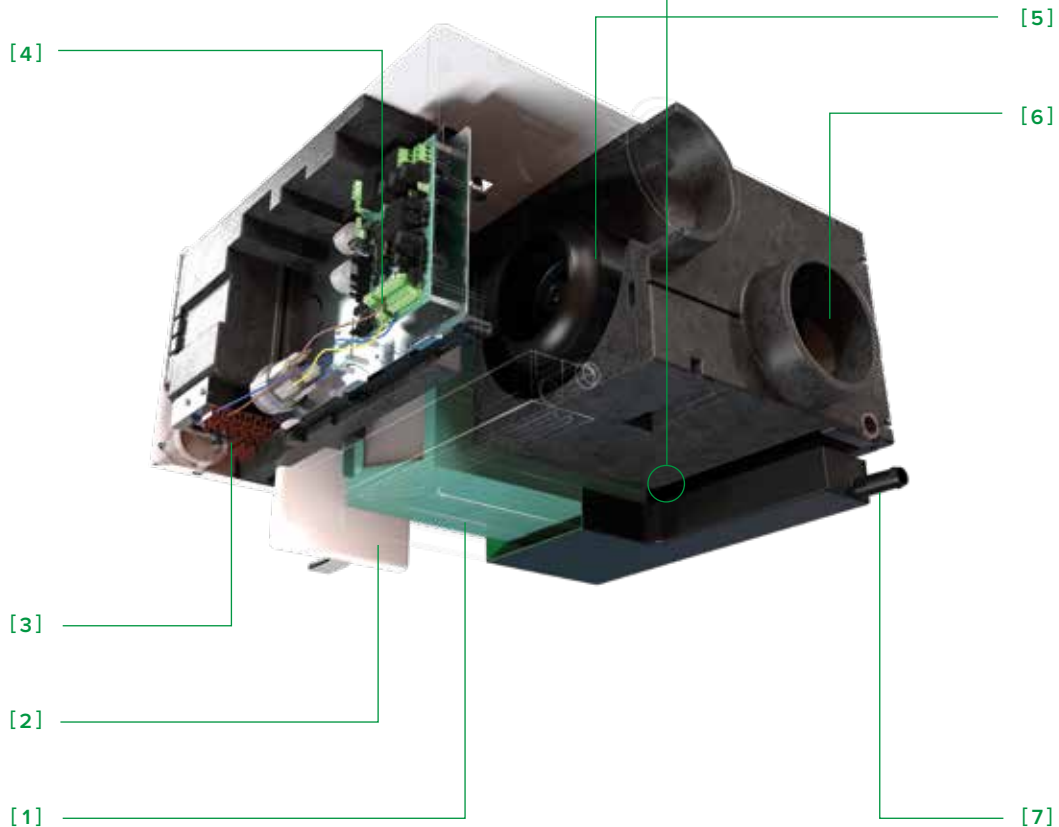


## Basic technical data

Thermal efficiency of heat recovery at the reference flow rate	<b>87%</b>
Maximum flow rate	<b>120 m<sup>3</sup>/h</b>
Max pressure	<b>375 Pa</b>
Power	<b>64 W</b>
Sound pressure level at maximum speed (at 3 mt)	<b>36Lp dB(A)</b>

## Key

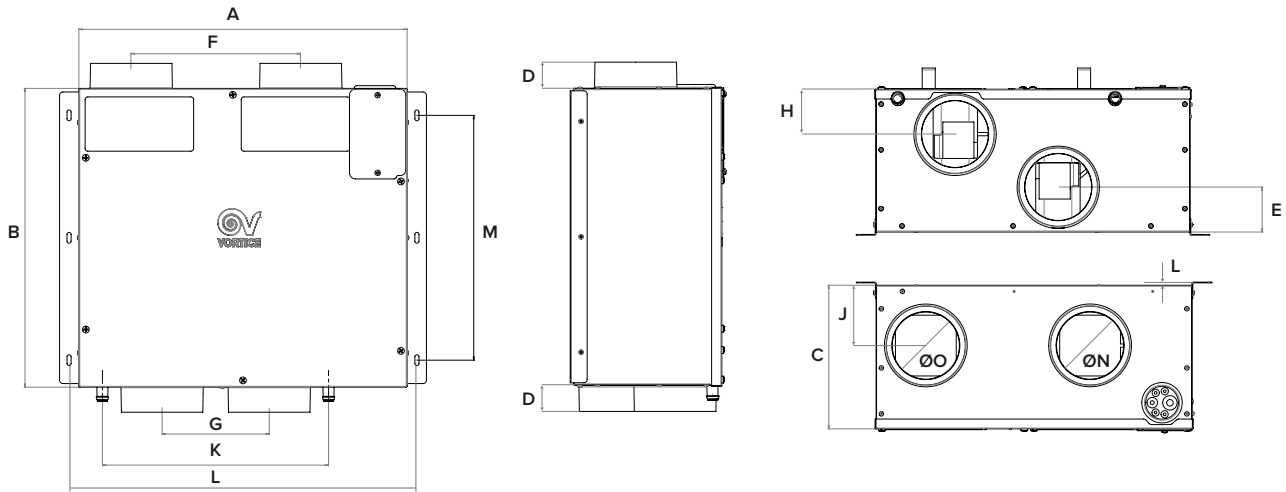
- [1] Heat exchanger
- [2] Filter
- [3] Terminal
- [4] Electronic board
- [5] EC Brushless motors (low consumption)
- [6] Duct connection
- [7] Condensate drain
- [8] HCS sensor





**VORT INVISIBLE MINI**  
HEAT RECOVERY UNIT FOR FALSE CEILING MOUNTING

**Basic technical data**



PRODUCTS	A	B	C	D	E	F	G	H	J	K	L	M	ØO	ØN
VORT INVISIBLE MINI	484	440.5	218	40	40	250	158	69	92	333	513	361	100	125

Dimensions in mm

Connection ports to the supply and discharge pipes are compatible with nominal diameters of 100mm and 125mm

**Detailed technical data and features**

PRODUCTS	CODE	V~50HZ	W min/ max	A min/ max	RPM min/ max	MAX FLOW RATE		MAX PRESSURE		IP	KG
						m³/h min/max	l/s min/max	mmH <sub>2</sub> O	Pa		
VORT INVISIBLE MINI TOP	12219	220-240	16 64	0.30 0.65	1,830 3,900	50 120	13.9 33.3	38.2	375	X2	14

Casing in galvanized sheet steel painted in white. Brackets, in galvanized and painted sheet steel, necessary for the suspended installation of the appliance, supplied as standard.

Connection ports for supply and discharge pipes with a nominal diameter of 100mm and 125mm.

Condensate collection tank, complete with "overflow" sensor.

Pair of centrifugal fans driven by 3-speed EC brushless motors (low consumption), independently adjustable.

High efficiency cross-flow, counter-current heat exchanger in plastic resin.

Mechanical by-pass, with filters and is automatically operated.

Multiple grommet, in compliance with UNI EN 60335-2-80 international safety standards.

Pair of ISO Coarse class filters 45% (G3) placed at the extraction and delivery ducts.

Relative humidity sensor integrated in the product (adjustable intervention threshold).





## Energy data

	UNIT OF MEASURE	VORT INVISIBLE MINI TOP
MANUFACTURER'S NAME OR TRADE NAME	-	VORTICE
CLASS OF SPECIFIC ENERGY CONSUMPTION FOR TEMPERATE CLIMATE	-	A
SPECIFIC ENERGY CONSUMPTION SEC (TEMPERATE CLIMATE)	-	- 35
SPECIFIC ENERGY CONSUMPTION SEC (COLD CLIMATE)	kWh/m <sup>2</sup> year	- 73
SPECIFIC ENERGY CONSUMPTION SEC (WARM CLIMATE)	-	- 10
DECLARED TYPE OF THE VENTILATION UNIT	-	UVR-B***
DRIVE TYPE	-	VSD
HRS TYPE HEAT EXCHANGER	-	recovery
THERMAL EFFICIENCY OF HEAT RECOVERY AT THE HRS REFERENCE FLOW RATE	%	87
MAXIMUM FLOW RATE	m <sup>3</sup> /h	100
TOTAL ELECTRIC POWER CONSUMED BY THE FAN AT MAXIMUM FLOW RATE	W	63
NOISE LEVEL	LWA [dB(A)]	46
REFERENCE FLOW RATE	m <sup>3</sup> /s	0.0194
REFERENCE PRESSURE DIFFERENCE	Pa	60
SPI****	W/(m <sup>3</sup> /h)	0.457
CONTROL FACTOR	-	0.85
CONTROL TYPE	-	centralized env.
MAXIMUM PERCENTAGE OF INTERNAL LEAKAGE	%	3.0
MAXIMUM PERCENTAGE OF EXTERNAL LEAKAGE	%	3.0
MIXING RATE	-	NA*
POSITION AND DESCRIPTION OF THE VISUAL FILTER SIGNAL	-	see instruction booklet
AIR FLOW SENSITIVITY TO PRESSURE VARIATIONS AT ± 20PA	-	NA*
INDOOR/OUTDOOR AIR TIGHTNESS	m <sup>3</sup> /h	NA*
AEC ANNUAL ELECTRICITY CONSUMPTION	kWh of electricity/year	459
TEMPERATE AHS ANNUAL HEATING SAVINGS	-	4,548
COLD AHS ANNUAL HEATING SAVINGS	kWh of energy /year	8,898
WARM AHS ANNUAL HEATING SAVING	-	2,057



\*NA: Not Applicable

\*\*UVR-U: Residential Ventilation Unit - Unidirectional

\*\*\* UVR-B: Residential Ventilation Unit - Bidirectional

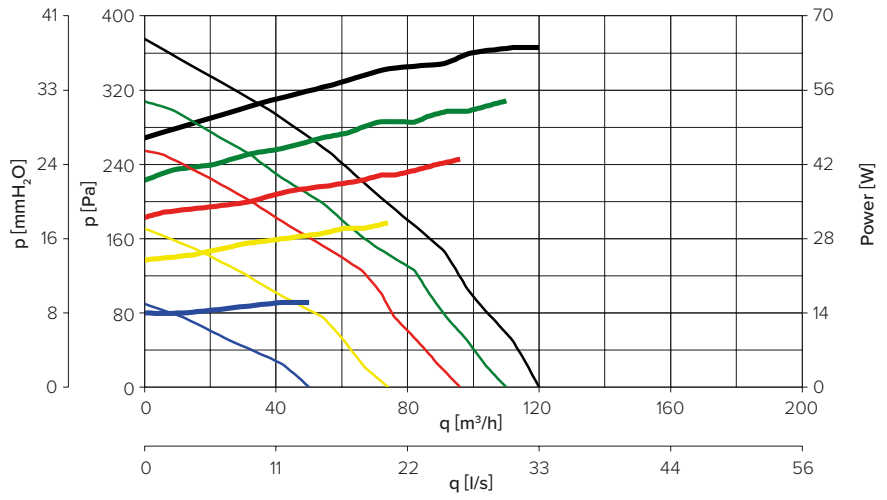
\*\*\*\*VM: Multiple speeds. VSD: Variable Speed Drive

\*\*\*\*\*SPI: Specific power consumption

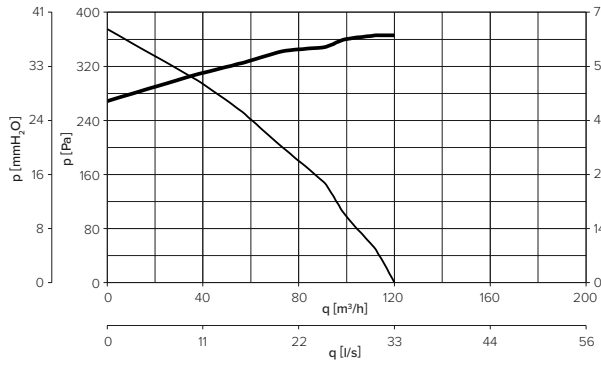
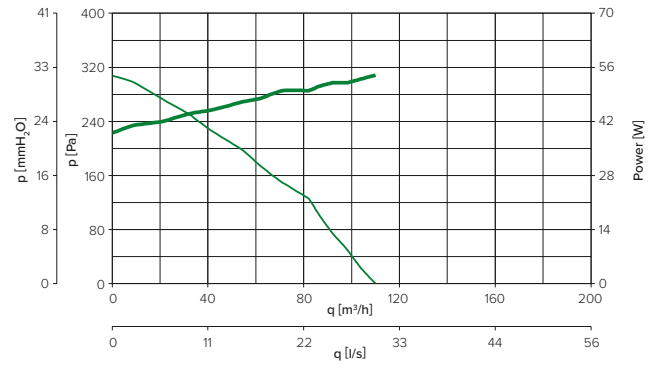
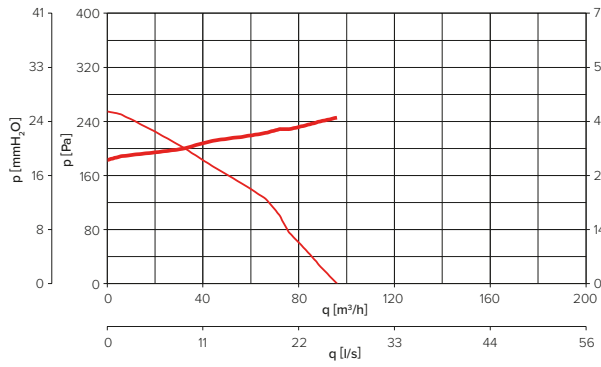
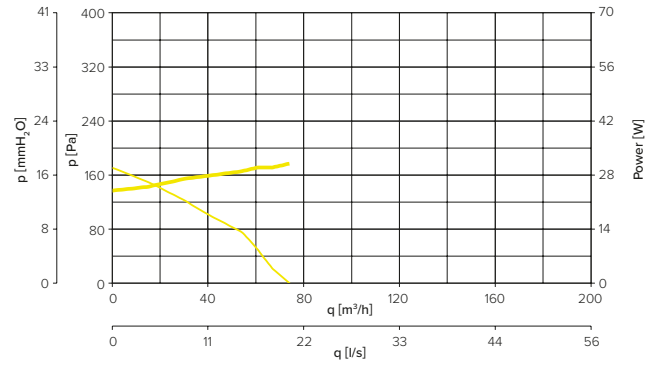
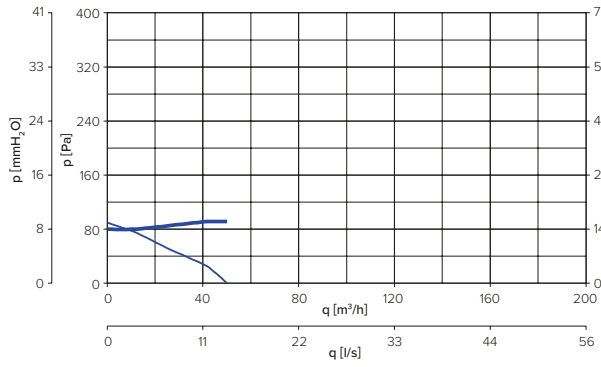
**VORT INVISIBLE MINI**  
HEAT RECOVERY UNIT FOR FALSE CEILING MOUNTING

**Performance and consumption**

- Max speed
- 100% adjustment
- 80% adjustment
- 60% adjustment
- 40% adjustment



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## Noise emission

A D J U S T M E N T R A N G E		NOISE LEVEL LwA dB(A)							SOUND PRESSURE dB(A)*	
		125Hz	250Hz	500Hz	1,000Hz	2,000Hz	4,000Hz	8,000Hz	LwA	LpA 3m
		100%	SUPPLY	37	44	51	42	39	25	8
	EXTRACT	47	58	65	64	61	51	46	69	52
	BREAKOUT	35	45	48	43	46	47	36	53	36
90%	SUPPLY	35	43	51	40	38	24	8	52	34
	EXTRACT	46	56	66	62	59	49	43	69	51
	BREAKOUT	32	44	49	41	44	45	34	53	35
80%	SUPPLY	35	41	53	38	35	8	8	53	36
	EXTRACT	46	56	66	62	59	49	43	69	51
	BREAKOUT	32	42	47	38	41	42	32	50	33
60%	SUPPLY	31	49	37	31	27	7	8	50	32
	EXTRACT	41	55	50	50	47	37	33	58	40
	BREAKOUT	28	44	34	32	34	34	34	46	25
40%	SUPPLY	26	31	30	21	7	7	8	34	17
	EXTRACT	35	45	43	42	37	26	8	49	31
	BREAKOUT	26	34	27	23	22	7	8	36	16

\*calculated at 3m, in free field, hemispherical distribution

## Rules, regulations and certifications

The **VORT INVISIBLE MINI** range complies with the following European Directives and Regulations:

- Low Voltage Directive (2006/95/EC)
- Electromagnetic Compatibility Directive (2004/108/EC)
- Ecodesign Directive (2009/125/EC)
- Regulation 327/2011/EU
- Regulation 1253/2014/EU
- Regulation 1254/2014/EU
- Building Regulations Parts L1 2013 F2013

Electrical safety rules:

- EN 60335-1
- EN 60335-2-80
- EN 60529
- EN 62233

Standards for air performance:

- EN 308
- EN 13141 - 7

Standards relevant to electromagnetic compatibility directive:

- EN 55014-1
- EN 55014-2
- EN 61000-3-2
- EN 61000-3-3

**VORT INVISIBLE MINI**  
HEAT RECOVERY UNIT FOR FALSE CEILING MOUNTING

**Control unit supplied**

- Wired connection
- Compatible with standard DIN flush-mounted box







**LCD display**

Provides the following displays:





- Set relative humidity threshold
- Activation of the defrosting procedure (defrost)
- Saturated filters
- Error codes

**Accessories**


MODELS	DESCRIPTION	DIMENSIONS	CODE
	<b>C SMOKE</b> Smoke detector	144x54x55.8	12993
	<b>C HCS</b> Humidity detector	144x54x55.8	12994
	<b>C PIR</b> Humidity detector	144x54x55.8	12998
	<b>SCP DIN</b> Flush mounting box	-	12898



## Filters

MODELS	DESCRIPTION	DIMENSIONS	CODE
	<u>ISO Coarse 45% (G3)</u>	206x132x5	21805
	<u>ISO Coarse 65% (G4)</u>	206x132x5	21806
	<u>ePM10 50% (M5)</u>	208x127x25	21802
	<u>ePM1 55% (F7)</u>	208x127x25	21803
	<u>ePM1 80% (F9)</u>	208x127x25	21804

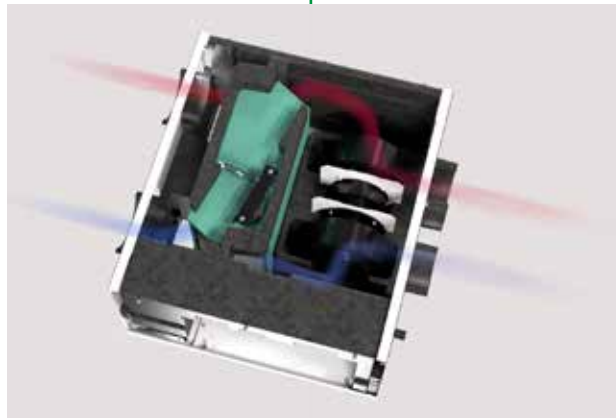
## System components

MODEL	DESCRIPTION	CODE
	<u>Pre-heater</u> "Pre-heater to prevent the formation of frost in collaboration with the heat exchanger, also required in harsh climates. Yield 500W"	21805
	<u>Post-heater</u> "Electric post-heater useful for optimising the efficiency of the controlled mechanical ventilation system. Yield 500W"	21806

## Air flows

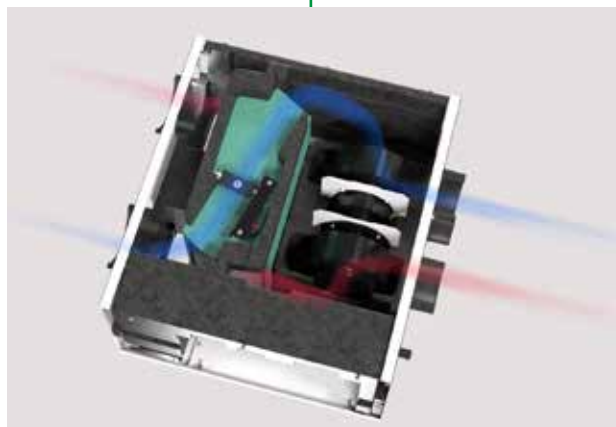
### Winter/Summer mode

The fresh air, passing through the heat exchanger, heats due to the effect of the interaction with the extracted stale air, thus ensuring adequate ventilation without unnecessary energy waste.



### Free cooling mode

The fresh air, passing through the heat exchanger, cools down due to the effect of the interaction with the extracted stale air, thus ensuring adequate ventilation without unnecessary energy waste.



#### **BY-PASS FUNCTION**

When climatic conditions require (for example on cool summer evenings) the introduction of outside air, at the original temperature, the opening of the by-pass damper allows the incoming flow to get around the heat exchanger, ensuring the exchange of air with maximum comfort.



# VORTICE GROUP COMPANIES

## VORTICE S.P.A

Strada Cerca, 2  
District of Zoate  
20067 Tribiano  
(Milan) Italy  
Tel. (+39) 02 906991  
vortice.com  
V.A.T. IT 04474410968

## BUSINESS UNIT INDUSTRIAL

Via B. Brugnoli 3,  
37063 Isola della Scala  
(Verona) Italy  
Tel. (+39) 045 6631042  
vorticeindustrial.com  
V.A.T. IT 04474410968

## VORTICE LIMITED

Beeches House  
Eastern Avenue  
Burton on Trent  
DE13 0BB United Kingdom  
Tel. (+44) 1283-49.29.49  
vortice.ltd.uk

## CASALS VENTILACIÓN AIR INDUSTRIAL S.L.

Ctra. Camprodon, s/n 17860  
Sant Joan de les Abadesses  
(Girona) Spain  
Tel. (+34) 972720150  
casals.com

## VORTICE LATAM S.A.

Bodega #6  
Zona Franca Bes Alajuela,  
Alajuela 20101  
Costa Rica  
Tel. (+506) 2201.6934  
vortice-latam.com

## VORTICE VENTILATION SYSTEM

(Changzhou) Co.LTD  
No. 388 West Huanghe Road  
Building 19, Changzhou  
Post Code: 213000 China  
Tel. (+86) 0519 88990150  
vortice-china.com

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