

NEW

VORT NRG EVO RANGE

High efficiency heat recovery units equipped with static exchangers



Regulations and Standards

Relevant regulations & Machinery Directive

- EN 60204-1
- EN 12499
- EN 1886
- EN 12100
- EN 13857
- EN 13053+A1

Relevant regulations & EMC Directive

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

European Directives and relevant regulations for CE marking

- Machinery Directive: Nr. 2006/42/EC
- EMC Directive: Nr. 2014/30/EU
- Energy Related Products (ErP) Directive: Nr. 2009/125/EC
- Electric Motor Efficiency Regulation: Nr. 640/2009/EC
- Motor-fans Regulation: Nr. 327/2011/EU
- Ventilation Units Regulation: Nr. 1253/2014/EU



Marking and Certifications

The heat exchangers utilised on all models are Eurovent certified.



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Double flow, centralised ventilation unit with heat recovery for horizontal (on the ceiling) and vertical installation, equipped with aluminium plate exchangers of the counter cross flow type and EC electric fans (brushless).

VORT NRG EVO are heat recovery systems that guarantee high levels of efficiency and heat exchange with reduced energy consumption (all models fully meet the requirements of the new ErP N° 1253/2014/EU Regulation, 2nd Tier, in force since January 2018). Distinctive elements like the reduced height and the proportionally small dimensions make these products easy to install in false-ceilings; the plug-and-play type conception makes them particularly suitable for installation in residential, commercial and industrial environments, such as condominiums, villas, meeting rooms, classrooms, shops, bars, restaurants, etc... The possibility to configure air flows directly on site, by easily modifying the position of the chassis external panels, makes the VORT NRG EVO range extremely versatile.

The main distinctive features of the VORT NRG EVO range are:

- The independent adjustment of the fans via potentiometers housed in the control unit separate from the product.
- The automatic management of the by-pass valve for "free-cooling" function.
- The defrosting function.
- Monitoring of the degree of clogging of the filters.
- Operation to -5°C outdoor temperature without pre-heating devices of the delivery air.

In particular, every model in the VORT NRG EVO series, offers as per standard:

- A general alarm switch to stop the product in the event of faults or malfunctioning.
- An external air temperature sensor.
- A pair of differential pressure switches to control the status of clogging of the filters.
- A wired remote control unit, including potentiometers, for adjustment of the fan speed (0-10 vdc signal), summer/winter selector for activation of the free-cooling and luminous LED for indicating saturated filters.



CONSTRUCTION FEATURES

CONSTRUCTION

- Structure in 40 mm anodized aluminium profiles.
- Double panelling (sandwich), thickness 23 mm.
Internal parts in expanded polyurethane, density 40 kg/m³
- External sheet, thickness 6/10", in pre-painted steel, coated with protective film
- Galvanised steel internal sheets, thickness 6/10"
- Automatic 100% filtered internal by-pass.
- Feet and brackets for floor or false-ceiling installation respectively.
- Removable panels for direct access to the filters and internal components.

HEAT EXCHANGER

The appliances of the VORT NRG EVO range are equipped with aluminium air-to-air, counter cross-flow heat exchangers, whose efficiency - certified by Eurovent - at nominal flow rate is between 85% and 92% depending on the model, when measured in the following conditions:

Outside air: - 5°C - 80% RH

Indoor air: +20°C- 50% RH

Automatic defrosting of the heat exchanger at low temperatures is assured, when necessary, by opening of the by-pass.

FILTERS

Every heat recovery system in the VORT NRG EVO series is equipped with a pair of filters: **Filter (G4)**, in correspondence with the stale air extraction duct.

Filter (F7), positioned in the outdoor ventilation air flow.

Both the filters are mounted on guides with lip seals to guarantee effective sealing. Their position, upstream from the internal components, also guarantees their protection.

FANS

Independently adjustable via potentiometers, they are constructed from backward-curved centrifugal impellers, directly coupled to electronic switch-over, external rotor motors with bearings (**EC brushless**), single-phase or three-phase (depending on the model), incorporating heat protectors and able to adapt performance to requirements of the moment (adjustment of the air flow from 10% to 100%), ensuring low consumption and reduced noise emissions.

CONTROLS AND SAFETY DEVICES

The models in the VORT NRG EVO range are supplied complete with wired remote control unit, which incorporates two potentiometers for adjustment of the EC fan speed, the control for setting summer/winter mode and a clogged filter alarm LED. The control box is locked to prevent undesired modifications to previously-set machine settings.

Note:

A local switch, mounted externally on all models, allows the unit to be stopped in the case of breakdown.





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STRONG POINTS

- Wide range of performance.
- Flexible installation thanks to easy configuration of the air flows in the installation phase, exchanging the position of the external closing panels of the casing.
- Reduced height to facilitate ceiling installation.
- High heat exchange efficiency (exceeding 85% on all sizes and 90% on the bigger sizes); at the respective nominal flow rates, all models exceed the strictest limitations set out by the second phase (2nd Tier), of the ErP Nr. 1253/2014/EU Regulation, in force since January 2018.
- Low consumption, thanks to the brushless EC motors couples to centrifugal impellers with backward-curve blades, which limit turbulence and noise.
- By-pass damper for integrated free-cooling and with automatic drive.
- Excellent heat insulation (to prevent heat loss) and acoustic insulation guaranteed by the criteria used in the design and realisation of the casings, which incorporate an internal polyurethane core.
- High performance (nominal flow rates up to 4,000 m³/h) to meet most market requirements.
- Quick and simplified installation and setting ("plug-and-play" technology); the control box, wall mounted in a position at a distance from the product, facilitates the initial setting of the product.



RANGE COMPOSITION

The new range of VORT NRG EVO heat recovery systems is made up from 6 models, with nominal air flow rates, respectively equal to 500, 1000, 1500, 2000, 3000 and 4000 m³/h, referring to the residual static pressure of 150 Pa Each model is available in the horizontal variant (H), in the versions for ceiling or floor-standing installation (on request) and vertical variant (V), in the versions with inspection panels on the right and left (on request).

HORIZONTAL		VERTICAL	
Model	Code	Model	Code
VORT NRG EVO 500 H1	45620	VORT NRG EVO 500 V1	45621
VORT NRG EVO 1000 H1	45622	VORT NRG EVO 1000 V1	45623
VORT NRG EVO 1500 H1	45624	VORT NRG EVO 1500 V1	45625
VORT NRG EVO 2000 H1	45626	VORT NRG EVO 2000 V1	45627
VORT NRG EVO 3000 H1	45628	VORT NRG EVO 3000 V1	45629
VORT NRG EVO 4000 H1	45630	VORT NRG EVO 4000 V1	45631

TECHNICAL DATA

Products	Codes	W max	V	Hz	Phases	Max. flow rate m ³ /h	Efficiency of heat exchange*	Duct diam. mm**	Temp. of use °C	Kg
VORT NRG EVO 500 H1	45620	130	230	50/60	1	560	85%	200	-5/+40	93
VORT NRG EVO 500 V1	45261									
VORT NRG EVO 1000 H1	45622	300	230	50/60	1	1200	89%	250	-5/+40	137
VORT NRG EVO 1000 V1	45623									
VORT NRG EVO 1500 H1	45624	340	230	50/60	1	1550	88%	315	-5/+40	190
VORT NRG EVO 1500 V1	45625									
VORT NRG EVO 2000 H1	45626	510	230	50/60	1	2300	89%	355	-5/+40	224
VORT NRG EVO 2000 V1	45627									
VORT NRG EVO 3000 H1	45628	610	400	50/60	3	2870	92%	355	-5/+40	298
VORT NRG EVO 3000 V1	45629									
VORT NRG EVO 4000 H1	45630	1100	400	50/60	3	4500	92%	400	-5/+40	412
VORT NRG EVO 4000 V1	45631									

*At nominal flow range in the following conditions: Indoor +20°C, 50% RH - Outdoor -5°C, 80% RH

** Using NPK rectangle-round adapters, available as an option

ENERGY DATA

Model	Unit of measurement	VORT NRG EVO 500 H1	VORT NRG EVO 1000 H1	VORT NRG EVO 1500 H1
		VORT NRG EVO 500 V1	VORT NRG EVO 1000 V1	VORT NRG EVO 1500 V1
Code		45620 - 45621	45622 - 45623	45624 - 45625
Manufacturer's name or brand name	-	Vortice	Vortice	Vortice
Type of ventilation unit declared	-	UVNR-B**	UVNR-B**	UVNR-B**
Type of drive	-	VSD***	VSD***	VSD***
Type of heat exchanger system HRS	-	altro	altro	altro
Heat efficiency of the heat recovery	%	81.5	81.6	82.7
Nominal flow rate	m ³ /s	0.13	0.29	0.38
Effective electric power input	kW	0.33	1.06	1.4
SFPint ****	W/(m ³ /s)	934	1134	1159
Face velocity at nominal flow rate	m/s	4.16	6,00	4,89
Nominal external pressure (Δp_s , ext)	Pa	150	150	150
Internal pressure drop of the ventilation components (Δp_s , int)	Pa	231	319	313
Internal pressure drop of the non-ventilation components (Δp_s , add)	Pa	NA	NA	NA
Static efficiency of the fans used according to the 327/2011/EU Regulation	%	42.8	56.4	54.0
Maximum percentage of internal leakage of the case	%	4.1	4.2	4.3
Maximum percentage of external leakage of the case	%	8.1	8.2	8.3
Description of the visual filter warning	-	See instruction book	See instruction book	See instruction book

* NA: Not Applicable. ** UVNR-B: Non- Residential Ventilation Unit - Bidirectional. *** VSD: Multiple Speed. **** SFPint: Specific internal power of the ventilation components.



VORT NRG EVO RANGE

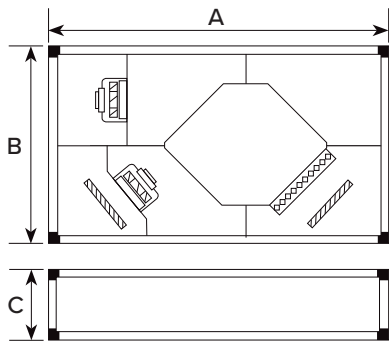
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ENERGY DATA

Model Code	Unit of measurement	VORT NRG EVO 2000 H1 VORT NRG EVO 2000 V1 45626 - 45627	VORT NRG EVO 3000 H1 VORT NRG EVO 3000 V1 45628 - 45629	VORT NRG EVO 4000 H1 VORT NRG EVO 4000 V1 45630 - 45631
Manufacturer's name or brand name	-	Vortice	Vortice	Vortice
Type of ventilation unit declared	-	UVNR-B**	UVNR-B**	UVNR-B**
Type of drive	-	VSD***	VSD***	VSD***
Type of heat exchanger system HRS	-	other	other	other
Heat efficiency of the heat recovery	%	82.8	85.4	83.5
Nominal flow rate	m ³ /s	0.57	0.72	1.11
Effective electric power input	kW	1.38	2.48	3.00
SFPint ****	W/(m ³ /s)	1148	1020	953
Face velocity at nominal flow rate	m/s	5.78	7.33	3.00
Nominal external pressure (Δp_s , ext)	Pa	150	150	150
Internal pressure drop of the ventilation components (Δp_s , int)	Pa	333	304	355
Internal pressure drop of the non-ventilation components (Δp_s , add)	Pa	NA	NA	NA
Static efficiency of the fans used according to the 327/2011/EU Regulation	%	58.0	59.6	70.3
Maximum percentage of internal leakage of the case	%	4.5	4.7	4.9
Maximum percentage of external leakage of the case	%	8.3	8.4	8.5
Description of the visual filter warning	-	See instruction book	See instruction book	See instruction book

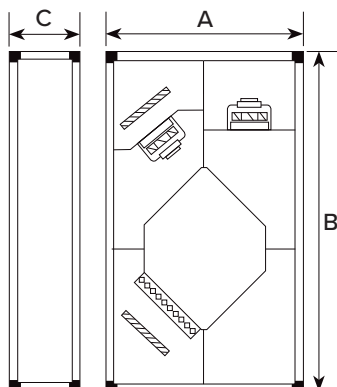
* NA: Not Applicable. ** UVNR-B: Non- Residential Ventilation Unit - Bidirectional. *** VSD: Multiple Speed. **** SFPint: Specific internal power of the ventilation components.

DIMENSIONS



Products	A	B	C
VORT NRG EVO 500 H1	1400	970	400
VORT NRG EVO 1000 H1	1900	1100	400
VORT NRG EVO 1500 H1	1980	1200	470
VORT NRG EVO 2000 H1	2200	1400	550
VORT NRG EVO 3000 H1	2400	1550	680
VORT NRG EVO 4000 H1	3000	1900	680

Heights in mm

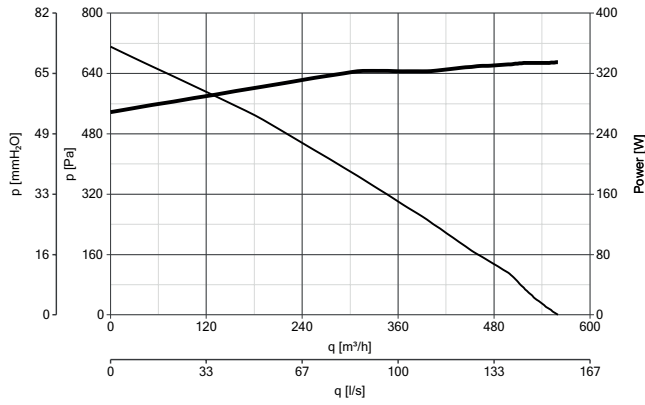


Products	A	B	C
VORT NRG EVO 500 V1	970	1400	400
VORT NRG EVO 1000 V1	1100	1900	400
VORT NRG EVO 1500 V1	1200	1980	470
VORT NRG EVO 2000 V1	1400	2200	550
VORT NRG EVO 3000 V1	1550	2400	680
VORT NRG EVO 4000 V1	1900	3000	680

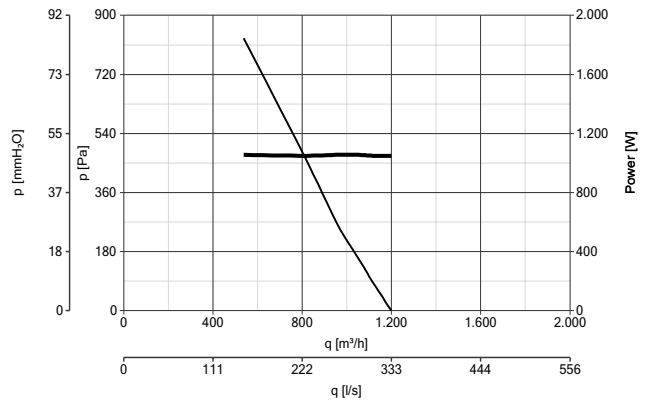
Heights in mm

PERFORMANCE AND ABSORPTION

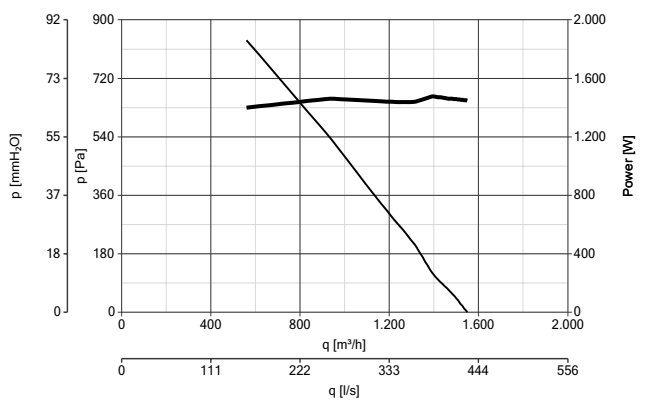
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VORT NRG EVO 500 V1 code 45621



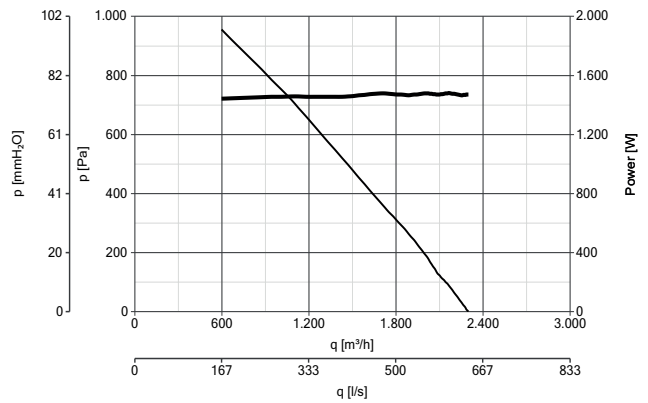
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VORT NRG EVO 1000 V1 code 45623



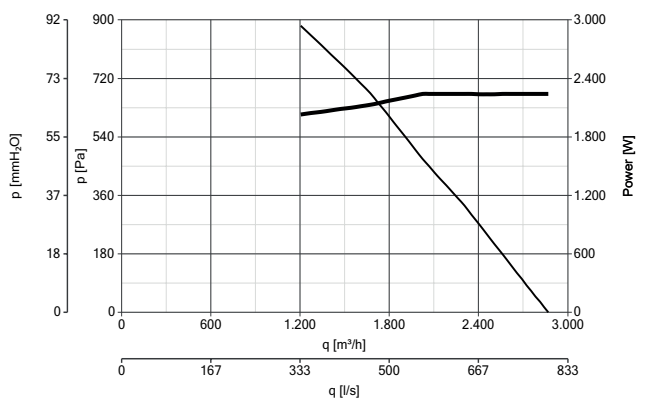
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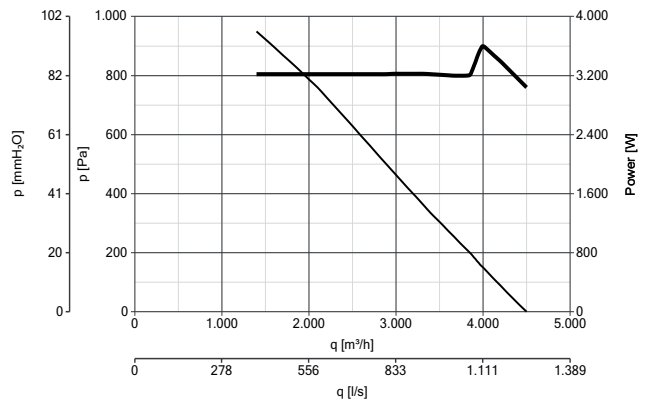
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VORT NRG EVO 2000 V1 code 45627



VORT NRG EVO 3000 H1 code 45628
VORT NRG EVO 3000 V1 code 45629



VORT NRG EVO 4000 H1 code 45630
VORT NRG EVO 4000 V1 code 45631

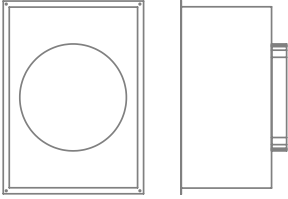




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ACCESSORIES



Rectangle-round adapters for connection to circular piping

NRG EVO 500 NPK -
code 79874
for code 45620 - 45621

NRG EVO 1000 NPK -
code 79875
for code 45622 - 45623

NRG EVO 1500 NPK -
code 79876
for code 45624 - 45625

NRG EVO 2000 NPK -
code 79877
for code 45626 - 45627

NRG EVO 3000 NPK -
code 79878
for code 45628 - 45629

NRG EVO 4000 NPK -
code 79879
for code 45630 - 45631



Rain canopy

NRG EVO 500 RCC -
code 68825
for code 45620 - 45621

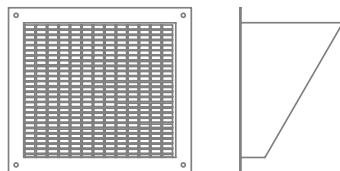
NRG EVO 1000 RCC -
code 68826
for code 45622 - 45623

NRG EVO 1500 RCC -
code 68827
for code 45624 - 45625

NRG EVO 2000 RCC -
code 68828
for code 45626 - 45627

NRG EVO 3000 RCC -
code 68829
for code 45628 - 45629

NRG EVO 4000 RCC -
code 68830
for code 45630 - 45631



Galvanised steel sheet hood with anti-bird mesh

NRG EVO 500 ABC -
code 68581
for code 45620 - 45621

NRG EVO 1000 ABC -
code 68582
for code 45622 - 45623

NRG EVO 1500 NPK -
code 68583
for code 45624 - 45625

NRG EVO 2000 NPK -
code 68584
for code 45626 - 45627

NRG EVO 3000 NPK -
code 68585
for code 45628 - 45629

NRG EVO 4000 NPK -
code 68586
for code 45630 - 45631

NRG EVO 500 SPK - code 79830
Extra sound-proofing kit for code 45620 - 45621

NRG EVO 2000 NPK - code 79833
Extra sound-proofing kit for code 45626 - 45627

NRG EVO 1000 SPK - code 79831
Extra sound-proofing kit for code 45622 - 45623

NRG EVO 3000 SPK - code 79834
Extra sound-proofing kit for code 45628 - 45629

NRG EVO 1500 SPK - code 79832
Extra sound-proofing kit for code 45624 - 45625

NRG EVO 4000 SPK - code 79835
Extra sound-proofing kit for code 45630 - 45631