

Novus 300

Technical specification for comfort ventilation unit



General

The Novus 300 comfort ventilation unit was developed for use in demanding residential and commercial buildings. It guarantees comfort ventilation paired with user-friendly operation and the highest energy efficiency.

The various installation options and different models allow it to be flexibly incorporated into building services. The comfort ventilation unit moves a maximum of 300 m³/h at an external pressure of 150 Pa.



Novus 300



TFT control panel



LED control panel

Benefits

- Maximum energy efficiency due to EC centrifugal fans regulated to a constant volume and with balancing
- Optimum climate comfort achieved due to automatic bypass control with motorised 100% bypass shutter, frost protection and optional pre-heater
- Quiet and efficient operation due to EPP interior lining with excellent thermal and acoustic insulation properties
- Quick and secure installation due to universal installation options

- Intelligent and user-friendly control with filter replacement indicator and clock- or sensor-controlled automatic functions
- Expandable options due to interface for analogue and digital I/O signals and connection of electrical and hot water post-heater.

Technical specifications

Novus 300	
Height (mm)	952 mm
Width (mm)	792 mm
Depth (mm)	591 mm
Weight	50 kg
Cross-counterflow heat exchanger	Plastic / PCBs polystyrene
Cross-counterflow enthalpy exchanger	Plastic / membrane polymer
Housing	Galvanized sheet steel, powder-coated
Interior lining material	Expanded polypropylene (EPP)
Installation	Upright/ lying, hung vertically/horizontally
Temperature range	-20 °C up to +40 °C
Condensate drain	32 mm/ DN 32 external thread
Nominal size of drain connection	160 mm
Weight	50 kg/ 52 kg (without/ with defroster)
Supply voltage	230 VAC, 50-60 Hz, connection cable 2 m ready-to-plug
Current draw without/with defroster	0,14 kW / 1,44 kW
Protection class	I, IP 40

Energy figures

DIBt (preliminary data)

Product	Novus 300
Approval number	Z 51.3-273
Extract air volume flow V_{ab} [m ³ /h]	119 ≤ V_{ab} ≤ 189
Waste heat recovery η_{WRG} [-]	93%
Specific electric power consumption p_{el} [W/(m ³ /h)]	-

“Passivhaus” certification

Novus 300 / Novus 300 enthalpy

Component ID	0302vs03 / 0304vs03
Range of application [m ³ /h]	121 – 231
Waste heat recovery η_{WRG} [-]	93% / 84%
Specific electric power consumption $p_{el,spec}$ [W/(m ³ /h)]	0.24 / 0.26
Humidity recovery η_X [-]	- / 73%

EU Energy Consumption Label

Energy efficiency class	A+*
Maximum air volume flow [m ³ /h]	300
Sound power level L_{WA} [dB]	43

* Depending on the control unit/sensor technology chosen. Detailed information on page.

Article numbers

Description	Article number
Novus 300 SL	527 003 730
Novus 300 SR	527 003 750
Novus 300 LL	527 003 810
Novus 300 LR	527 003 830
Novus 300 VSL	527 003 740
Novus 300 VSR	527 003 760
Novus 300 VLL	527 003 820
Novus 300 VLR	527 003 840
Novus 300 SL enthalpy	527 003 770
Novus 300 SR enthalpy	527 003 790
Novus 300 LL enthalpy	527 003 850
Novus 300 LR enthalpy	527 003 870
Novus 300 VSL enthalpy	527 003 780
Novus 300 VSR enthalpy	527 003 800
Novus 300 VLL enthalpy	527 003 860
Novus 300 VLR enthalpy	527 003 880

All models with bypass function, excl. control panel

V = pre-heater, S/L = upright/lying model, L/R = left-hand/right-hand supply air

Accessories	Article number
LED RD control panel	521 014 130
TFT RD touch control panel	521 014 140
Novus floor stand	527 002 140
Dry siphon 5/4	990 201 330
Filter set for Novus 300 / 450, ISO coarse \geq 70% (G4), contents 2 pieces	527 004 250
Filter set for Novus 300 / 450, ISO coarse \geq 70% / ISO ePM10 \geq 60% (G4 / F7), contents 2 pieces	527 003 440

Level of efficiency

The ventilation units in the Novus 300 enthalpy series are equipped with a cross-counterflow enthalpy exchanger with humidity recovery and achieve a waste heat recovery of 84% as certified for humidity-transferring ventilation units according to passive house regulations.

Humidity recovery

Because of its physical characteristics, the optional enthalpy exchanger can transfer not only heat but also up to 73% of the ambient humidity, making it the perfectly hygienic solution to the problem of overly dry winter air. Supply and extract air flows are kept completely separate: no transfer of odours or germs.

Fans

The quiet, highly energy-efficient EC centrifugal fans with integrated controllers can be adjusted to the required volume flow in 1% increments and are also regulated to a constant volume. The air volumes of the selectable speeds for the Novus 300 are between 45 and 300 m³/h at an external pressure of 150 Pa.

Frost protection

The Novus 300 comfort ventilation unit is equipped with automatic frost protection, which prevents the heat exchanger from freezing should the outdoor air temperature drop to a very low level. The frost protection setting switches off the fans if the temperature falls below the temperature limit specified for frost protection mode and the unit type.

In order to ensure reliable operation even at extreme outside temperatures, an optional, integrated electric pre-heater is available. This guarantees safe, continuous, frost-free operation even at temperatures below freezing.

Bypass

The function of the bypass is to bypass the heat exchanger so that, for instance, cooler outdoor air can be directed into the living areas via "free cooling". For this purpose, the Novus 300 comfort ventilation unit is equipped with an automatic, sensor-controlled bypass with a completely sealing bypass shutter as standard.

Filters

The Novus 300 ventilation unit is equipped with ISO coarse \geq 70% (G4) filters as standard. An optional ISO ePM10 \geq 60% (F7) pollen filter is available for outdoor air. This protects the room air from pollen and reduces contamination from fine particulate matter, spores and germs.

Installation

The Novus 300 comfort ventilation unit is characterised by its highly compact design. All air connections are located on the top of the unit. The various installation positions – upright or lying on the floor bracket (optional) or hung vertically or horizontally on the wall using a mounting rail – provide flexible mounting options. Both left-hand and right-hand supply versions are available to optimise the routing of the ventilation tubes to the comfort ventilation unit.

With inappropriate walls, it is recommended that the height-adjustable floor stand be used to mount the unit on the floor to keep any structure-borne noise transfer to an absolute minimum.

Operation

The comfort ventilation unit is controlled via a control panel that is usually positioned in living areas. The standard model of the Novus 300 comfort ventilation unit is controlled by the TFT RD touch control panel. The text- and icon-based menu navigation on the colour display facilitates user-friendly operation. The optional customised LED RD control panel allows the Novus 300 comfort ventilation unit to be operated using seven preset fan speeds and a mode for “supply air only” and “extract air only”.

Functions with TFT RD control panel

- Standby (darkened display), power consumption < 1 W
- Fan speeds 1 – 3 (programmable in 1% increments)
- Away mode (interval-controlled fan speed 1)
- Intermittent ventilation (duration between 15 and 120 min, individually adjustable)
- Clock-controlled automatic operation (weekly programme that can be individually programmed in 15-min increments for weekdays)
- Automatic sensors, optionally with external sensors (CO₂, humidity, air quality) for a demand-based ventilation
- Menu (Information, Settings and Setup menus)
- Context-sensitive help text
- Password-protected keylock for inactive display

Indicators with TFT RD control panel

- Text- and icon-based menu navigation
- Filter replacement indicator (remaining filter life in days)
- Fault notification with notification icon
- Clear text fault indicator in “Information” menu

Functions with LED RD control panel

- Standby (fan speeds not indicated by LED), power consumption < 1 W
- Fan speeds 1 to 7 (fixed settings)
- Intermittent ventilation (duration 15 min, speed 7, fixed setting)
- “Supply air only” / “Extract air only” mode (for cooling in summer)
- Reset for filter replacement

Indicators with LED RD control panel

- Filter replacement indicator (LED indicator over “Filter replacement reset” button)
- Fault notification using LED codes

Maintenance

Maintenance on the Novus 300 comfort ventilation unit is limited to regular replacement of the filter integrated in the front of the unit. The heat exchanger should be inspected for dust and dirt every two years and cleaned as necessary. This can be done by simply removing the front panel, pulling the heat exchanger out of the unit and rinsing it with lukewarm, soapy water. Please refer to the user manual for additional maintenance tips and tasks.

Equipment

Equipment	Novus 300	Novus 300 V	Novus 300 enthalpy	Novus 300 V enthalpy
Bypass	X	X	X	X
Pre-heater		X		X
Enthalpy exchanger			X	X
Left-hand/right-hand model	X	X	X	X
DN160 connector	X	X	X	X
Ready to plug in design	X	X	X	X
TFT RD control panel*	X	X	X	X
LED RD control panel*	X	X	X	X

* Not in standard scope of delivery. To be ordered separately

Tender specification

Novus 300 comfort ventilation unit with maximum air volume of 300 m³/h at 150 Pa

- 792 x 952 x 591 mm (W x H x D)
- Housing made from galvanised powder-coated sheet steel, RAL 7016 anthracite, maintenance flap RAL 3020 traffic red
- High-quality EPP interior lining
- Novus 300 with cross-counterflow heat exchanger, passive house-certified waste heat recovery of up to 93%
- Novus F 300 with cross-counterflow enthalpy exchanger, passive house-certified waste heat recovery of up to 84% and humidity recovery of 73%
- EC centrifugal fans with integrated controllers, regulated to a constant volume, adjustable in 1% increments
- Sensor-controlled summer bypass with a completely sealing bypass shutter
- Optionally available with integrated pre-heater
- Outdoor and extract air filters with filter class ISO coarse \geq 70% (G4), optional pollen filter with filter class ISO ePM10 \geq 60% (F7)
- Left and right unit versions
- Vertical or horizontal wall mounting or mounting on optional floor bracket
- Communication interface for analogue and digital I/O signals, control of post-heater and sub-soil heat exchanger shutter with additional module

Sound specifications

Sound, supply air (at the supply air connector at a distance of 0 m)

Speed level	Air volume m ³ /h	Pressure Δ P st Pa	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1000 Hz dB(A)	2000 Hz dB(A)	4000 Hz dB(A)	8000 Hz dB(A)	Total dB(A)
68%	200	100	53.9	56.7	52.8	57.6	61.0	54.0	47.6	42.1	64.9
100%	300	100	56.2	59.8	59.4	62.6	65.9	61.5	55.7	51.6	69.9

Sound, extract air (at the extract air connector at a distance of 0 m)

Speed level	Air volume m ³ /h	Pressure Δ P st Pa	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1000 Hz dB(A)	2000 Hz dB(A)	4000 Hz dB(A)	8000 Hz dB(A)	Total dB(A)
68%	200	100	42.1	36.2	42.1	36.7	31.0	21.6	17.3	15.3	46.1
100%	300	100	47.1	42.1	50.1	37.8	36.8	28.3	21.3	16.0	52.3

Sound, unit emission (at unit at a distance of 0 m)

Speed level	Air volume m ³ /h	Pressure Δ P st Pa	63 Hz dB(A)	125 Hz dB(A)	250 Hz dB(A)	500 Hz dB(A)	1000 Hz dB(A)	2000 Hz dB(A)	4000 Hz dB(A)	8000 Hz dB(A)	Total dB(A)
68%	200	100	52.8	48.0	45.5	43.7	35.1	27.5	24.1	25.0	43.0
100%	300	100	55.2	51.8	48.8	51.4	38.0	32.2	28.6	30.8	48.5

Performance data

Switch setting, factory setting (speed level)	Speed %	Air volume Qv m ³ /h	Pressure ΔP st Pa	Power consumption W
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Novus 300

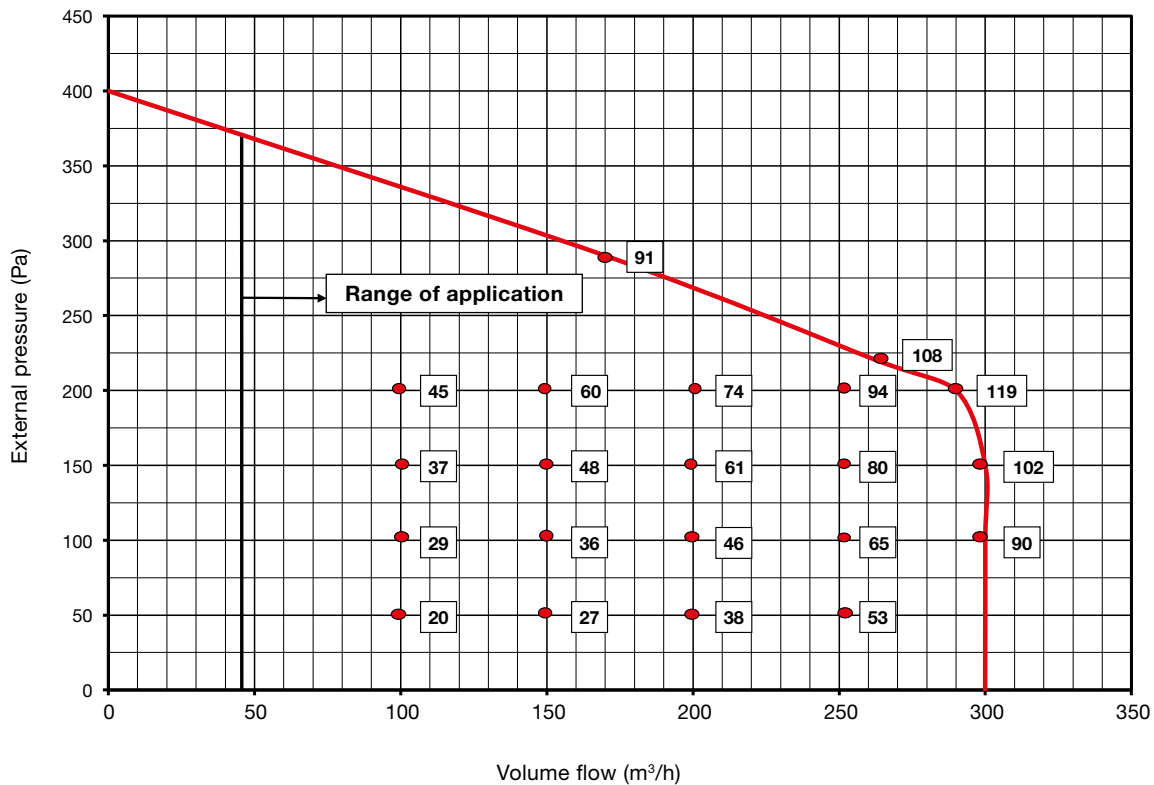
(1)	35	100	100	29
(2)	50	150	100	36
(3)	67	200	100	46
(4)	83	250	100	65
(5)	100	300	100	90

Novus 300 enthalpy

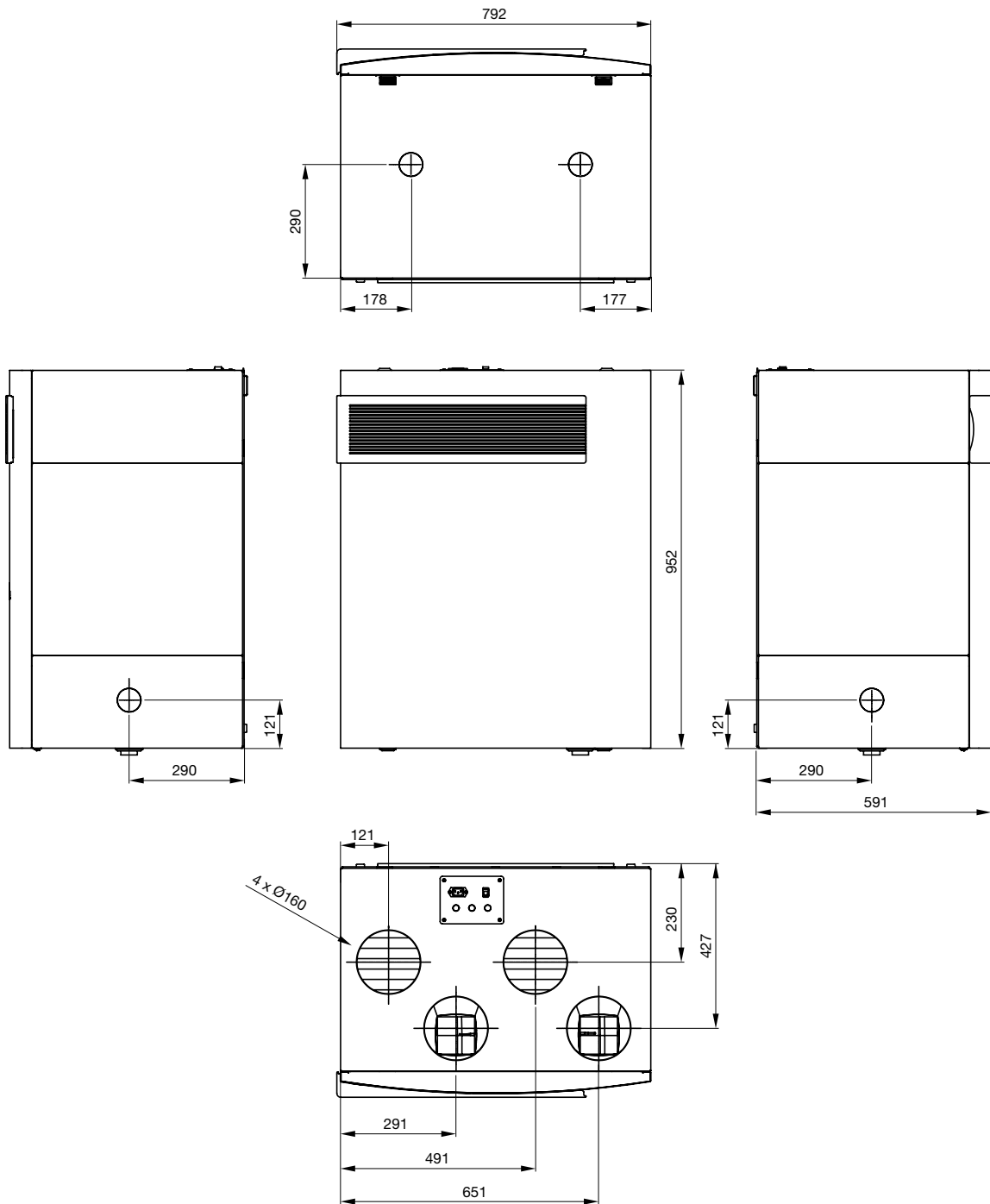
(1)	35	100	150	37
(2)	50	150	150	48
(3)	67	200	150	61
(4)	83	250	150	80
(5)	100	300	150	102

Novus 300 V, pre-heater switched on

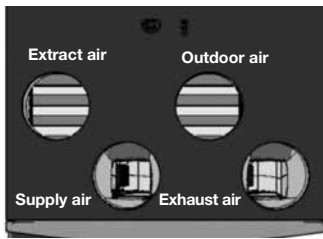
(-)	100	300	(-)	1440
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Dimensional drawing



Air directions



Version with supply air on left (L)



Version with supply air on right (R)

**Connections right:
only right-hand model
possible**



Lying, right;
air direction as viewed from
above

**Connections left:
only left-hand model
possible**



Lying, left;
air direction as viewed from
above

Energy efficiency classes

Energy efficiency classes in accordance with EU Regulation no. 1254/2014

Energy efficiency classes					
Comfort ventilation unit	Article numbers	Control according to site requirements	Central demand control	Clock control	Manual control
		2 x CO ₂ sensors 528 007 250 and Expansion set 528 007 290			
		Humidity sensor 659 000 330 and Expansion set 528 007 290			
		2 x humidity sensors 659 000 330 and Expansion set 528 007 290	CO ₂ sensor 528 007 280 or Humidity sensor 659 000 330 and Expansion set 528 007 290	TFT RD 521 014 140	LED RD 521 014 130
Novus 300	527 003 730 527 003 750 527 003 810 527 003 830 527 003 740 527 003 760 527 003 820 527 003 840				
		A+	A	A	A
Novus 300 enthalpy	527 003 770 527 003 790 527 003 850 527 003 870 527 003 780 527 003 800 527 003 860 527 003 880				
		A+	A	A	A

Novus 300 Declaration of Performance

Product data sheet for RVUs as per EU Regulation No. 1254/2014
Contains information required for RVUs as per EU Regulation No. 1253/2014
Room ventilation unit Zehnder Novus 300 (V)

Supplier's name or trademark	Zehnder Group			Zehnder Group			Zehnder Group			Zehnder Group		
Supplier's model identifier	Novus 300 (V)			Novus 300 (V)			Novus 300 (V)			Novus 300 (V)		
SEC [kWh/(m²a)] specific energy consumption (cold, average, warm)	-79.4	-39.8	-14.4	-80.1	-40.4	-15.0	-81.9	-42.0	-16.4	-84.7	-44.4	-18.7
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
Type of ventilation unit	Bidirectional RVU			Bidirectional RVU			Bidirectional RVU			Bidirectional RVU		
Type of drive installed	Multi-speed drive			Multi-speed drive			Variable speed drive			Variable speed drive		
Type of heat recovery system	Recuperative			Recuperative			Recuperative			Recuperative		
Thermal efficiency [%]	94			94			94			94		
Maximum air volume flow rate [m³/h]	300			300			300			300		
Electric power input [W]	90			90			90			90		
Sound power level [dB(A)]	43			43			43			43		
Reference air volume flow rate [m³/h]	210			210			210			210		
Reference pressure difference [Pa]	50			50			50			50		
SPI [W/(m³/h)]	0.22			0.22			0.22			0.22		
Control factor and control typology	1 Manual control			0.95 Clock-controlled			0.85 Central demand control			0.65 Local demand control		
Declared maximum internal and external leakage rates [%]	Internal: 2.0 External: 1.5			Internal: 2.0 External: 1.5			Internal: 2.0 External: 1.5			Internal: 2.0 External: 1.5		
Mixing rate	-			-			-			-		
Position and description of visual filter warning	Warning on the unit display			Warning on the unit display			Warning on the unit display			Warning on the unit display		
Internet address for assembly and disassembly instructions	www.zehnder-systems.de www.international.zehnder-systems.com			www.zehnder-systems.de www.international.zehnder-systems.com			www.zehnder-systems.de www.international.zehnder-systems.com			www.zehnder-systems.de www.international.zehnder-systems.com		
Airflow sensitivity to pressure variations [%]	-			-			-			-		
Indoor/outdoor air tightness [m³/h]	-			-			-			-		
AEC [kWh/a] annual electricity consumption (cold, average, warm)	858	321	276	837	300	255	781	244	199	698	161	116
AHS [kWh/a] annual heating saved (cold, average, warm)	9213	4709	2129	9231	4719	2134	9269	4738	2142	9344	4776	2160

Novus 300 enthalpy Declaration of Performance

Product data sheet for RVUs as per EU Regulation No. 1254/2014
Contains information required for RVUs as per EU Regulation No. 1253/2014
Room ventilation unit Zehnder Novus 300 enthalpy (V)

Supplier's name or trademark	Zehnder Group			Zehnder Group			Zehnder Group			Zehnder Group		
Supplier's model identifier	Novus 300 enthalpy (V)			Novus 300 enthalpy (V)			Novus 300 enthalpy (V)			Novus 300 enthalpy (V)		
SEC [kWh/(m²a)] specific energy consumption (cold, average, warm)	-73.5	-37.2	-13.8	-74.5	-37.9	-14.3	-76.7	-39.7	-15.8	-80.6	-42.5	-18.1
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
Type of ventilation unit	Bidirectional RVU			Bidirectional RVU			Bidirectional RVU			Bidirectional RVU		
Type of drive installed	Multi-speed drive			Multi-speed drive			Variable speed drive			Variable speed drive		
Type of heat recovery system	Recuperative			Recuperative			Recuperative			Recuperative		
Thermal efficiency [%]	83			83			83			83		
Maximum air volume flow rate [m³/h]	300			300			300			300		
Electric power input [W]	90			90			90			90		
Sound power level [dB(A)]	43			43			43			43		
Reference air volume flow rate [m³/h]	210			210			210			210		
Reference pressure difference [Pa]	50			50			50			50		
SPI [W/(m³/h)]	0.19			0.19			0.19			0.19		
Control factor and control typology	1 Manual control			0.95 Clock-controlled			0.85 Central demand control			0.65 Local demand control		
Declared maximum internal and external leakage rates [%]	Internal: 2.0 External: 1.5			Internal: 2.0 External: 1.5			Internal: 2.0 External: 1.5			Internal: 2.0 External: 1.5		
Mixing rate	-			-			-			-		
Position and description of visual filter warning	Warning on the unit display			Warning on the unit display			Warning on the unit display			Warning on the unit display		
Internet address for assembly and disassembly instructions	www.zehnder-systems.de www.international.zehnder-systems.com			www.zehnder-systems.de www.international.zehnder-systems.com			www.zehnder-systems.de www.international.zehnder-systems.com			www.zehnder-systems.de www.international.zehnder-systems.com		
Airflow sensitivity to pressure variations [%]	-			-			-			-		
Indoor/outdoor air tightness [m³/h]	-			-			-			-		
AEC [kWh/a] annual electricity consumption (cold, average, warm)	820	283	238	802	265	220	754	217	172	683	146	101
AHS [kWh/a] annual heating saved (cold, average, warm)	8527	4359	1971	8580	4386	1983	8686	4440	2008	8898	4548	2057

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