GE Premium 3

Description

This is a heat recovery ventilation appliance consisting counter-current heat exchanger, an integral heat pump with heating and cooling, supply and extract air fans, F7 pollen supply air filter, G4 extract air filter and Optima 300 Design controller.

The GE Premium 3 can be supplied with the following options:
- Water frost sensor
- Fresh air and extract air damper with motor for Ø200 mm duct
- Water and electrical heating element for Ø200 mm duct
- Thermostat and motor valve
- Fan Guard

Suitability

The GE Premium 3 is used when mechanical balanced ventilation is needed. Energy from the extract air is recovered and delivered to the supply air.

At first the energy is recovered in the counter-current heat exchanger and then further heat is supplied to the air by the heat pump, providing comfort heating for the residence.

The heat pump can also cool the supply air during the summer.

It is suitable for homes with an area up to 430m² at an average room height of 2.4m but with a minimum air change of 230m³/h at 125Pa.

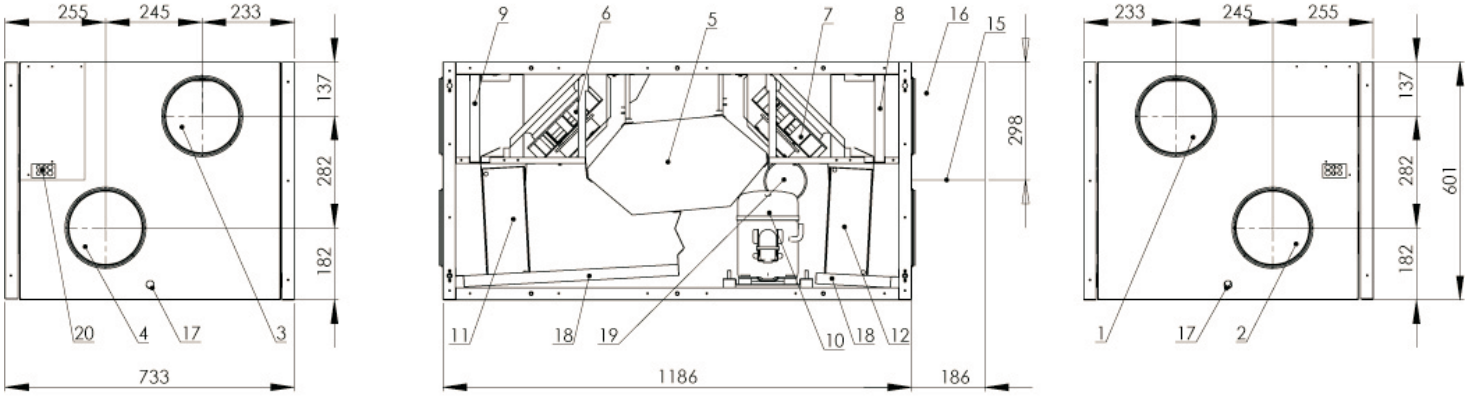
Air exchange/h	Max. capacity m³/h	Living area m² *
0.5	520	430

* The power consumption is not included when calculating the living area

Dimensions

GE Premium 3

Dimensions in mm



Types

GE Premium 3 - H (Righthand- shown)
GE Premium 3 - V (Lefthand)

1 Fresh air
2 Exhaust air
3 Extract air
4 Supply air
5 Counter current heat exch.
6 Supply air fan
7 Extract air fan
8 Extract air filter
9 Supply air filter
10 Compressor
11 Evaporator
12 Condensor
13 High pressure gov.
14 Process valve
15 Cable entry
16 Electrical box
17 Condensat.conn Ø15
18 Condensation tray
19 Supply boss at back
20 Switch
21 Magnetic valve defrosting
22 Thermovalve condenser
23 Thermovalve evaporator
24 Extract air sensor
25 Fresh air sensor
26 Supply air sensor
27 Before cooling air sensor
28 Cooling coil sensor
29 Exhaust air sensor
30 Four-way valve

GE Premium 3

Technical data

Electrical connections:
Without electrical heating and preheating coil
1 x 230V + N + PE + 10 A, 50 Hz
With electrical heating and preheating coil
Max 1.2 + 1.0 kW
1 x 230V + N + PE + 16 A, 50 Hz

Fans:
R3G 220 AE 50

Motor:
EC motor with integrated electronics

Insulation class
B

Protection class
IP 44

Fan speed (Max. per motor):
3,510 Rpm

Fan power input (Max. per motor):
157 W

Fan current (Max. per motor):
1.10 A

Speed regulation:
Individually the fans can be set to 3 different speeds

Temperature working range of the heat pump:
-15°/+35°C

Compressor:
NE 6220 GK

Min. air volume:
230m³/h

Max. compressor power input:
1,104W

Average Cooling power output:
2,385W

Max. compressor current:
5.1A

Average compressor power output:
2,690W

Average compressor power input:
910W

Refrigerant:
R407c

Refrigerant weight:
1,300g

Automation

The GE Premium 3 is delivered with an Optima 300 Design controller with factory settings, so that the appliance can be started without setting-up the menu. The settings are standard and can be changed to the specific needs and demands of your living area.

Control panel

Speed (1)
This sets the fan speed to levels 0-1-2-3-4.

Extended operation (2)
This sets the timer to forced operation from 0 to 9 hours.

After-heat (3)
This turns the supplementary after-heat on or off.

Temperature (7)
This sets the room temperature.

Information (6)
This gives a good overview of the appliance's current operating condition.

Filter (5)
Use this function to reset the filter alarm.

Sound data

Measuring point	1 m in front of the unit			Extract duct			Supply duct		
Airflow	1	2	3	1	2	3	1	2	3
	Lp dB			Lwu dB			Lwi dB		
63 Hz	55	55	51	85	94	99	92	95	97
125 Hz	45	49	55	76	89	96	76	89	95
250 Hz	51	50	53	70	81	86	71	85	92
500 Hz	-	37	42	59	79	88	61	83	90
1000 Hz	-	32	38	57	73	81	57	72	83
2000 Hz	-	-	36	52	64	74	57	68	77
4000 Hz	-	-	32	46	60	66	49	52	63
8000 Hz	-	-	-	39	58	63	43	43	51
Average	Lp dB(A)			Lwu dB(A)			Lwi dB(A)		
	41	43	48	66	80	88	69	83	90

1: Measured at 40% of max. speed with compressor on
2: Measured at 70% of max. speed with compressor on
3: Measured at 100% of max. speed with compressor on

Capacity

The capacity lines are based on an average of the supply and extract air volume in an appliance with filters.

Max. Capacity:
At 150 Pa the max. capacity is: 520m³/h.
With an average room height of 2.4 m, the living area is calculated as follows:

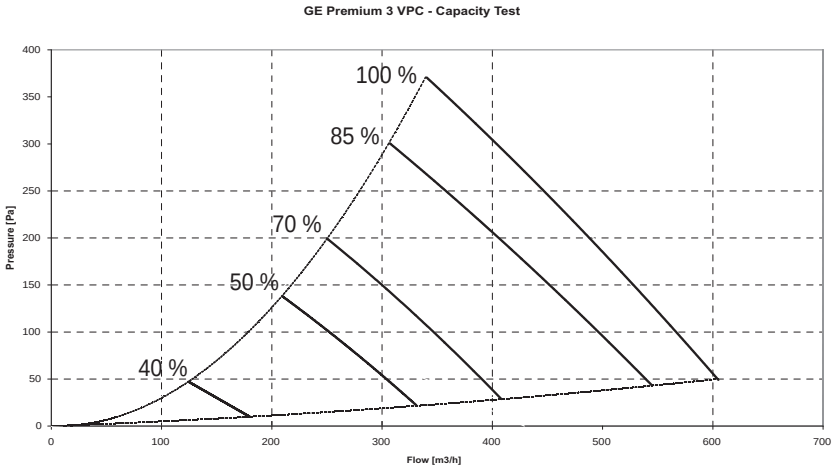
Living area (m²) x Room height (m) x Air-change/h = Max. capacity

$$\text{Living area (m}^2\text{)} = \frac{\text{Max. capacity (m}^3\text{/h)}}{\text{Room height (m) x Air-change}}$$

Example:

$$\text{Living area (m}^2\text{)} = \frac{520\text{m}^3\text{/h}}{2.4 \times 0.5\text{/h}} = 430\text{m}^2 *$$

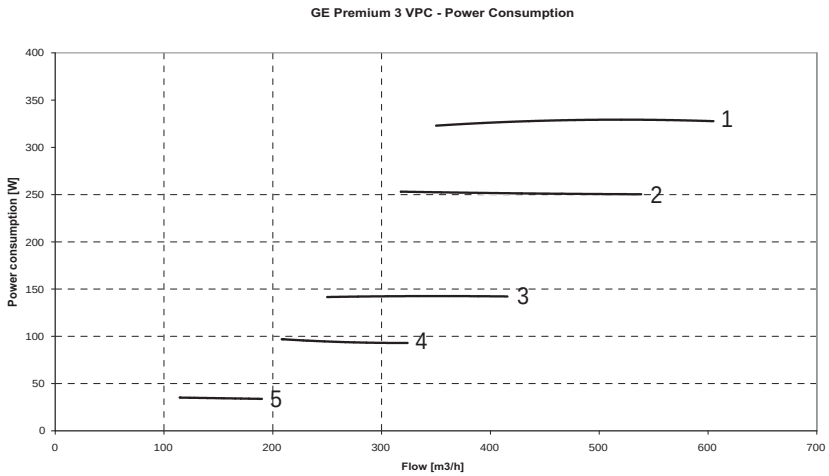
* The power consumption is not included when calculating the living area



Total power consumption:

For both fans and controller.

1 = 100%
2 = 85%
3 = 70%
4 = 50%
5 = 40%

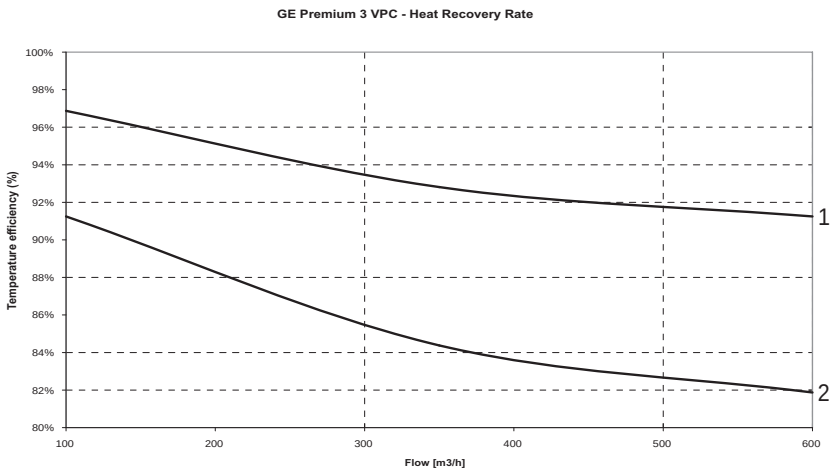


Heat recovery rate

Heat recovery rate, flow $m_{in} = m_{out}$
There has been no consideration taken for any freezing of the heat exchanger at low outdoor temperatures.

1 = Temp.: -12 °C
RF: 50%

2 = Temp.: 4 °C
RF: 50%



GE Premium 3

Construction

Size:
(h x l x d) ex. connecting pieces and electric box
600 x 1,186 x 735mm

Cabinet:
Fully closed hot galvanised plate with 30mm insulation.
Plastic-coated white RAL 9010.

Duct connection:
Ø200mm with rubber ring seal

Front:
Front with quick locks for filter service

Heat exchanger:
Salt-water resistant aluminium

Condensation tray:
Stainless steel

Condensation connection:
Stainless steel Ø15mm

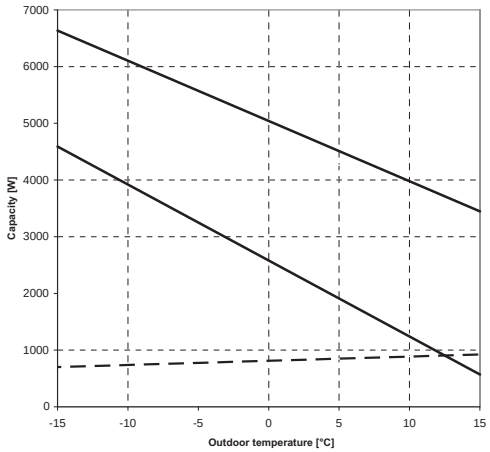
Filters:
Fresh air
F7 filter
Exhaust air
G4 filter

Weight:
143kg

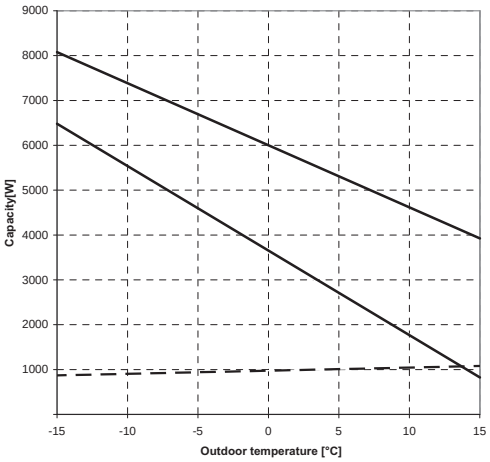
Capacity

The GE Premium 3's capacity varies with air quantity and outdoor air temperature.

Airflow 395m³/h.



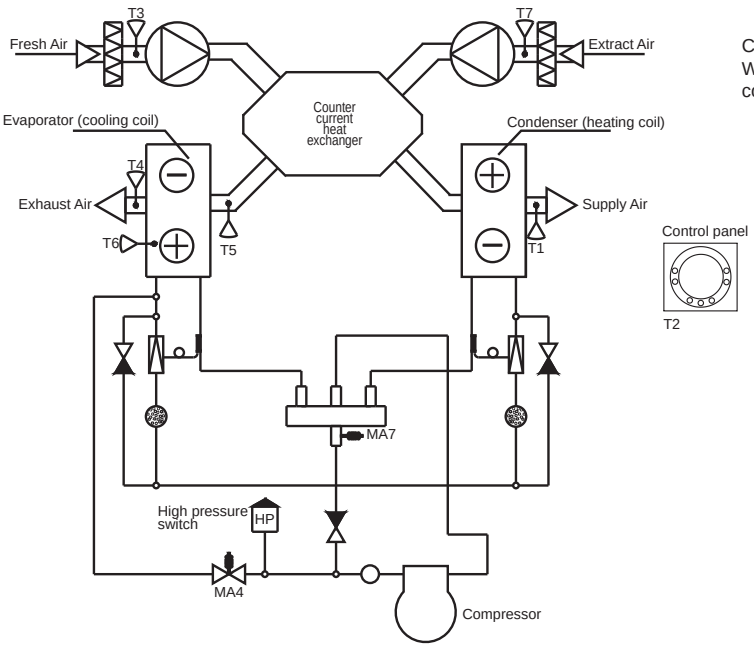
Airflow 568m³/h



1) Energy consumption for heating incoming fresh air to room 20°C temperature.
2) Total capacity of the appliance
3) Power input with compressor running

Cooling capacity:
With an outside temperature of 26°C, relative humidity of 45% and full speed, the cooling power output is 2,385 W.

Flow diagram



Sensors:
T1: Supply air
T2: Room
T3: Fresh air
T4: Extract air
T5: Before the cooling coil
T6: Cooling coil
T7: Exhaust air
T8: Water freezing (for the water-afterheating surface)

Magnetic valve:
MA4: Defrosting
MA7: Heat/cooling