# PREMIUM PREHEAT 300 A

Datasheet

## Product description

Premium Preheat 300 A is an air-air heat recovery ventilation heat pump which is equipped with the following: An aluminum counter current heat exchanger, a heat pump with cooling function, preheater integrated in the heat pump, supply and extract air fans, F7 supply air filter, M4 extract air filter, and complete Optima 301 automatics with a control panel.

**Premium Preheat 300 A can be delivered with the following accessories:**

- Electrical reheater for Ø200 mm duct

For the Optima 301/312, a control panel called Optima Design can be purchased. Optima Design is a stylish white control panel that provides access to the most important functions via a simple user interface with push buttons.

**Please note that displays are sold separately.**

## Application

Premium Preheat 300 A is suitable in dwellings where a combination of heat recovery ventilation and supply of comfort heating or cooling with the supply air is desired.

Before the fresh air is drawn into the house, heat is supplied to it in the counter current heat exchanger - heat recovered from the extract air. Then additional heat is supplied to the supply air by the heat pump and thereby it contributes to the home heating. If it is desired that cooling is supplied to the air instead, this is also possible.

The supply air filter ensures that dirt and pollen is not brought into the house.

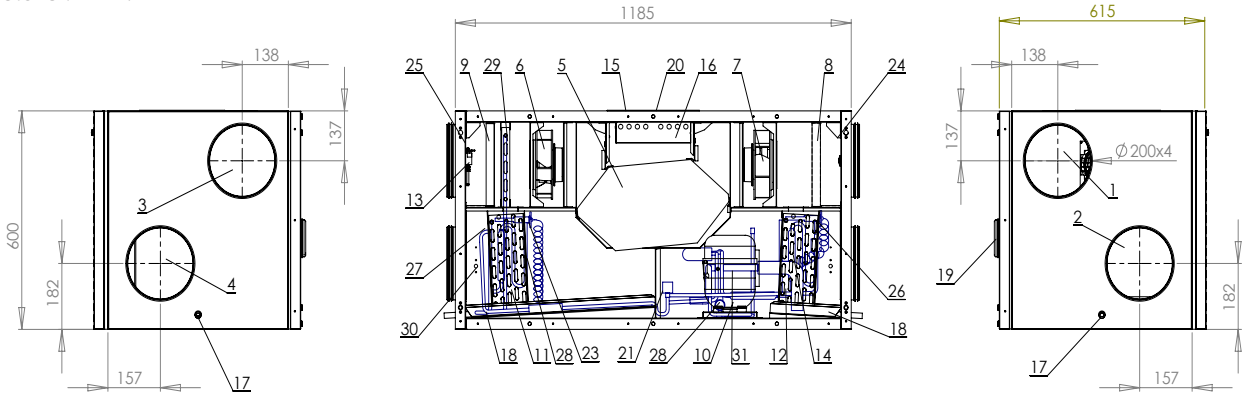
Premium Preheat 300 A can deliver an air volume of up to appr. 375 $m^3/h$ at an external pressure of 100 Pa.

## Types

Premium Preheat 300 A is available in a right- or left-handed version.

## Dimensions

Premium Preheat 300 A (right-handed)
Dimensions in mm.




01. Fresh air Ø200
02. Exhaust air Ø200
03. Extract air Ø200
04. Supply air Ø200
05. Counter current heat exch.
06. Supply air fan
07. Extract air fan
08. Extract air filter
09. Supply air filter
10. Compressor
11. Evaporator
12. Condenser
13. High pressure switch
14. Process valve
15. Cable entry
16. Electrical box
17. Condensate drain Ø15
18. Condensation tray
19. Supply air connection Ø100 at the back
20. Switch
21. Magnetic valve, defrosting
22. Thermo valve, condenser
23. Thermo valve, evaporater
24. Sensor, extract air
25. Sensor, fresh air
26. Sensor, supply air
27. Sensor, evaporator
28. Sensor, before evaporator
29. Preheater
30. Sensor, exhaust air
31. Four ways valve

## Technical data

**Electrical connection without electrical reheater**
1 x 230 V + N + PE,10 A, 50 Hz

**Electrical connection with electrical reheater**
Max. 2.2 kW
1 x 230 V + N + PE,16 A, 50 Hz

**Fans with direct drive motor**
R3G 190

**Motor**
EC motor with integrated electronics

**Isolation class, fans**
B

**Protection class, fans**
IP 44

**Fan speed (max. per fan)**
3320 rpm

**Power consumption (max. per fan)**
71 W

**Current consumption (max. per fan)**
0.50 A

**Fan speed control**
The fans can be adjusted individually in 3 different speeds

**The working area of the heat pump**
-15°/+35°C

**Compressor**
NEK 6213 GK

**Min. air volume:**
180 $m^3/h$

**Power consumption (max., heat pump)**
513 W

**Current consumption (max., heat pump)**
2.2 A

**Heating perform. / COP @ 300 $m^3/h$ / 2°C fresh air temp.**
2840 W / 5.1

**Cooling cap. @ 26°C supply air temp. / 24°C extract air temp.**
1430 W

**Refrigerant / filling**
R407c / 1000 g

## Automatics

Premium Preheat 300 A is delivered with complete Optima 301 automatics and a control panel with a display showing the operation mode of the unit and on which the settings are easy to change.

## Control panel

**Speed**
Here the fan speed is adjustable in steps 0-1-2-3-4.

**Extended operation**
Here the timer to extended operation can be set between 0 to 9 hours.

**Reheater**
Here you can switch on and off the supplementary reheater.

**Main menu**
Here you can enter the main menu, in which the submenus are available.

**Filter**
Here you can reset the filter alarm.

**Information**
Here you can get a good overview of the current operating condition of the unit.

**Temperature**
Here you can set the room temperature.

## Sound data

| Measuring point | 1 m in front of the unit | | | Extract duct | | | Supply duct | | |
|---|---|---|---|---|---|---|---|---|---|
| Air volume | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | Lp dB | | | Lwu dB | | | Lwi dB | | |
| 63 Hz | 48 | 48 | 65 | 90 | 92 | 94 | 89 | 93 | 94 |
| 125 Hz | 50 | 51 | 58 | 87 | 94 | 97 | 87 | 97 | 98 |
| 250 Hz | 42 | 47 | 53 | 82 | 90 | 94 | 84 | 93 | 94 |
| 500 Hz | 31 | 34 | 45 | 65 | 78 | 84 | 74 | 79 | 83 |
| 1000 Hz | 22 | 27 | 38 | 60 | 71 | 77 | 64 | 73 | 77 |
| 2000 Hz | - | 22 | 32 | 59 | 70 | 75 | 61 | 71 | 74 |
| 4000 Hz | - | - | 25 | 44 | 63 | 68 | 51 | 64 | 68 |
| 8000 Hz | - | - | - | 31 | 49 | 57 | 38 | 50 | 55 |
| Sum | Lp dB(A) | | | Lwu dB(A) | | | Lwi dB(A) | | |
| (A-weighted) | 40 | 41 | 41 | 31 | 49 | 57 | 76 | 86 | 88 |

1. Measured at 40% of max. speed with compressor on: 134 $m^3/h$
2. Measured at 70% of max. speed with compressor on: 265 $m^3/h$
3. Measured at 100% of max. speed with compressor on: 365 $m^3/h$

## Construction

**Size**
(h x l x d) excl. connecting pieces:
600 x 1185 x 615 mm

**Cabinet construction**
Sandwich construction consisting of hot galvanized plate with 30 mm insulation. Powder coated white RAL 9010.

**Duct connection**
Ø200 mm (male end) with rubber sealing ring
Ø100 mm (male end) supply air connection pieces (pointing backwards)

**Front cover**
Right and left cover with snap locks for filter service

**Counter current heat exchanger**
Aluminium

**Condensation trays**
Stainless steel

**Condensate drain**
Stainless steel Ø15 mm (exterior)

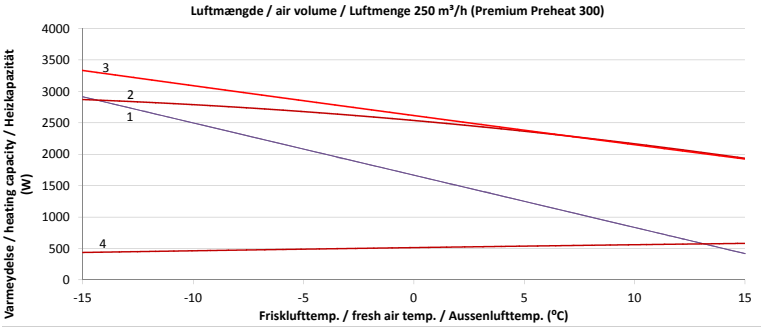
**Supply air filter**
F7

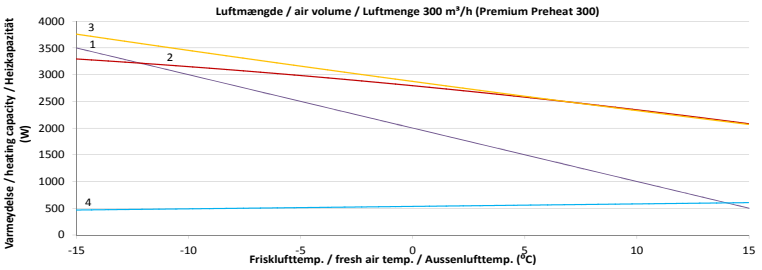
**Extract air filter**
M4

**Weight**
116 kg

## Capacity

The capacity of Premium Preheat 300 A varies with air volume and the outdoor air temperature.

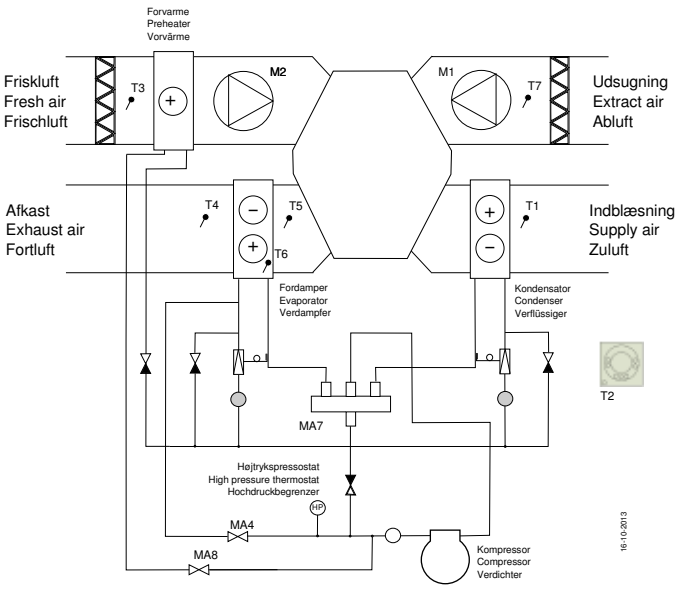



1. Energy consumption for heating supply air from outdoor air temperature to a room temperature of 20°C.
2. Total heating capacity of the unit with preheater OFF.
3. Total heating capacity of the unit with preheater ON.
4. Power consumption with the compressor running.

**Cooling capacity**
With an outdoor air temperature of 26°C, relative humidity of 50% and max. air volume, the total cooling capacity is 1430 W.

## Flow diagram




**Sensors**
T1: Supply air
T2: Room
T3: Fresh air
T4: Exhaust air
T5: Before the evaporator
T6: Evaporator
T7: Extract air

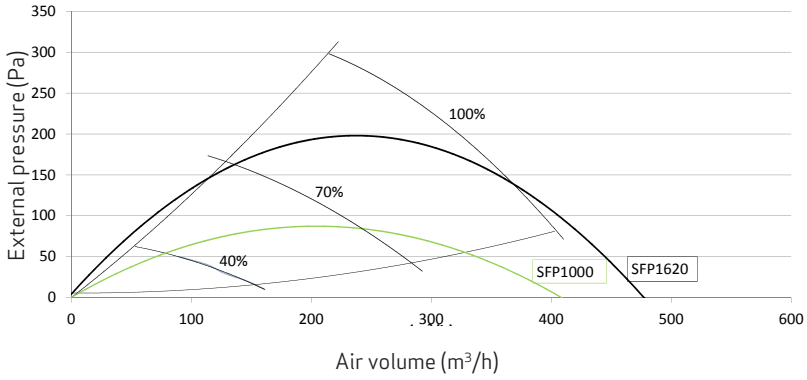
**Magnetic valves**
MA4: Defrosting
MA7: Heating/cooling
MA8: Preheater

## Capacity

**Air volume:**
The capacity lines are based on an average of the supply and extract mass flow in a unit.

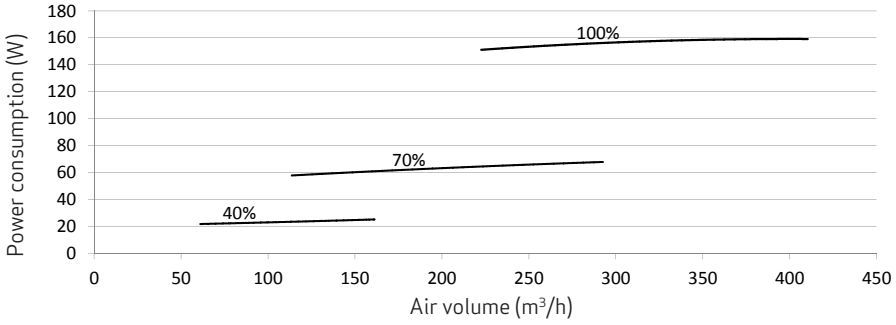
The black line in the chart indicates a total power consumption for both fans and the control of 1620 J/m³ (PHI).

The curve shows the average external pressure, which is available at a given air volume.




## Total power consumption
For both fans and control.

1 = 100 %
2 = 70 %
4 = 40 %




## Heat recovery rate
Heat recovery rate, mass flow $m_{in} = m_{out}$

Icing of the heat exchanger at low outdoor air temperatures has been left out of account.

01. Outdoor temp.: -12°C
RH: 50%

02. Outdoor temp.: 4°C
RH: 50%