



MARKET LEADING COMMERCIAL AND DOMESTIC VENTILATION WITH HEAT RECOVERY



## Nilan VPM 600-3200

**Active heat recovery and cooling  
(air/air)**



# Nilan VPM 600-3200

## Commercial ventilation with heat recovery and cooling (air/air)



### About indoor climate

#### The Danish Working Environment Authority says:

"A poor indoor climate in the workplace can and must be prevented. Several rules, norms and standards have been set out for indoor climate conditions. A poor indoor climate can e.g. result in employees not feeling well, experiencing irritated mucous membranes, headaches and lethargy. These are symptoms which reduce employees' quality of life and increase absence due to illness."

#### How do you combine ventilation, heat recovery and cooling in one unit?

Modern industrial buildings with large areas of glass make substantial demands on a ventilation unit. The unit must actively contribute to both heating and cooling of the building. In all Nilan's industrial ventilation units, heat recovery and cooling have been considered from the outset. Our intelligent units work in harness with changes in the day, season and weather, minimizing operating costs while at the same time ensuring a healthy, stable indoor climate - and living up to increasingly stringent environmental legislation.

Nilan's VPM series is an all-in-one solution, in which all three functions have been developed to work together optimally. An active heat recovery unit with cooling extracts hot, humid air and injects temperate air into the building. Particles, odours and humidity are removed to provide a comfortable indoor climate. The energy in the extracted air is recovered and transferred to the injected air via a combination of passive heat recovery and a heat pump which extracts energy directly from the air. There is also the possibility of installing an additional heat exchanger, which utilizes the excess heat for domestic hot water production when the unit is in cooling mode. The VPM series is delivered as standard with a reversible cooling/heating system and is available with outputs up to 35,000 m<sup>3</sup>/h.

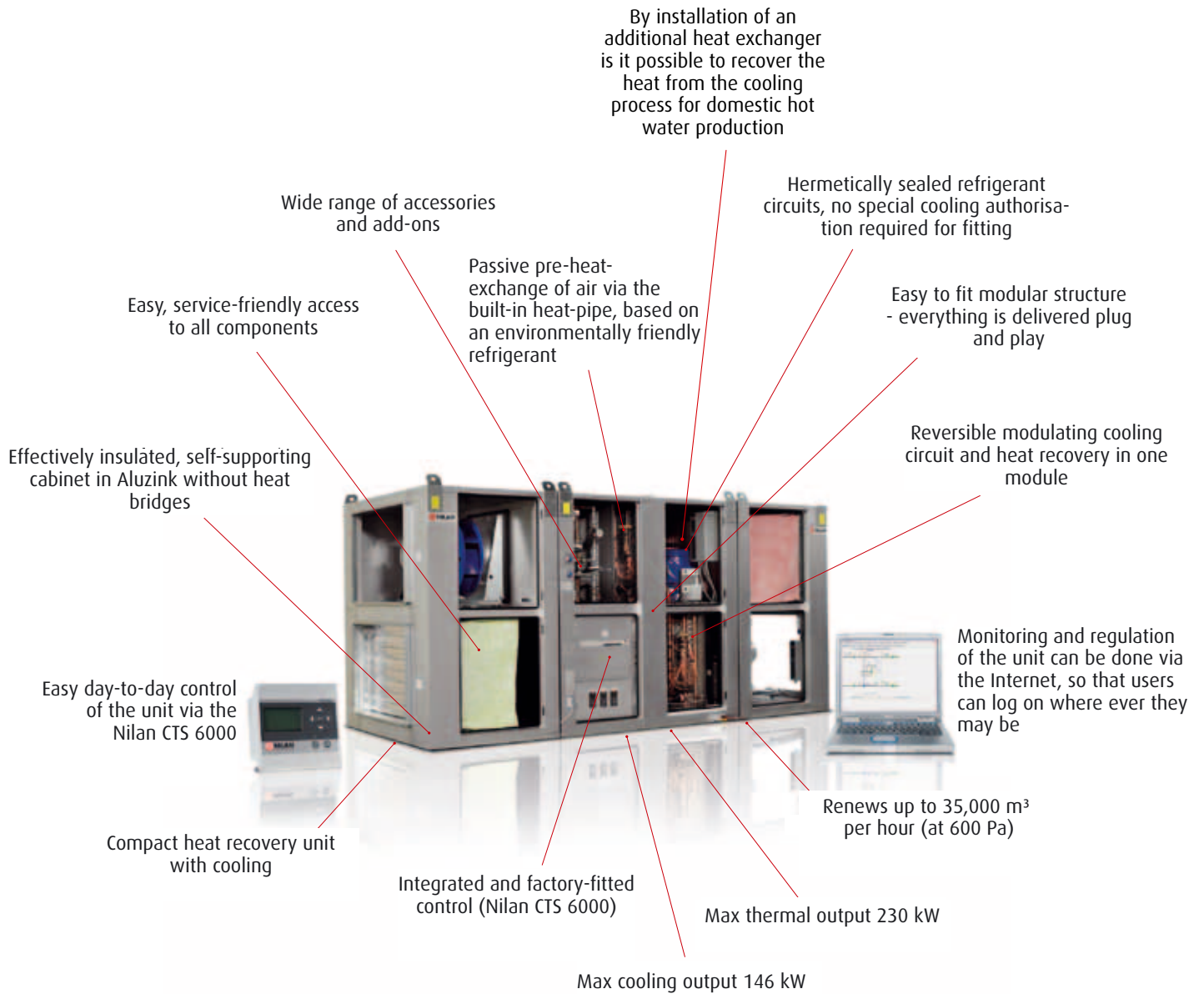
#### Extremely high efficiency ensures greatly improved operating economy

Extremely high efficiency is the hallmark of Nilan's unique heat recovery units. Nilan's medium-sized industrial VPM ventilation units boast a temperature efficiency of between 94 and 98 per cent. The high temperature efficiency of the VPM series is due to the unique construction, which combines the best of two technologies: the heat pump and the heat pipe. Nilan's combination of these two technologies markedly improves efficiency, taking performance close to 100 per cent.

This results in greatly improved operating economy compared to conventional ventilation units. The need for the supply of heat during the cold months of the year are reduced to a minimum, and significant savings can be made on the building's energy consumption and carbon emissions. The heat pipe is delivered with the natural refrigerant R744, which does not damage the ozone layer or contribute to global warming in the same way as other refrigerants.



# VPM 600-3200 BENEFITS





# Online control and monitoring of Nilan VPM 600-3200



**CTS 6000 enables Nilan industrial units to be controlled and monitored online using a computer located anywhere in the world. CTS 6000 has been designed to meet future requirements for optimizing the economy of ventilation units as well as detailed adaptation to the requirements of individual buildings.**

## **Control**

Optimum control of ventilation units assumes simple and user-friendly operation of the most important functions. Using a weekly or annual programme, units can be set for automatic operation to allow for the setting of operating times, room temperatures, ventilation speeds, alarms, etc. The weekly programme can be customised, and extended operation is possible beyond the weekly programme's operating periods. When the unit's functions and weekly programme have been set, it will run automatically without any further need for adjustment. An annual programme also permits programming for public holidays when the unit will not be operating. Using graphic history diagrams it is possible to collect information about the unit's operation and subsequent adjustment and optimisation. Automatic, intelligent control gives you optimal operating economy of the unit and ensures a comfortable indoor climate.

## **Monitoring**

CTS 6000 facilitates monitoring of the ventilation unit via the Internet from a PC located anywhere in the world. The unit can also be hooked up to the building's internal network or have its own dedicated Internet connection. Current operation can be followed by using trend diagrams. CTS 6000 ensures optimum monitoring of the unit's operating status as all forms of operational failures, alarms and maintenance notifications are sent automatically by e-mail to the right users. Immediate action can then be taken in the event of operational failure, but it also makes for optimum maintenance and service visit planning. CTS 6000 also provides the company's service partners with the option of remote control and diagnosis of any faults.

## **Start-up and adjustment of Nilan automatic**

Start-up and adjustment of Nilan automatic is a service that can be purchased. Our service includes:

- Functional testing of the Nilan VPM unit
- Checking the heat pump circuit for defects in connection with transport
- Checking air volume (by measurement in the evaporator)
- Adjustment of CTS in accordance with the customer's requirements

When booking start-up and adjustment of automated functions, the installation of the ventilation unit must be complete, including ducts, baffles and valves. Internal and external electrical work, including the control panel must have been completed as must any plumbing work related to hot water coil.

**Start-up must be booked with Nilan's service department approx. 14 days before desired start-up.**



## **On-site control panel**

Nilan CTS 6000 is a newly designed, thoroughly tested control and monitoring programme. With CTS 6000 Nilan, industrial units can be controlled either online over the Internet or on-site using a control panel. CTS 6000 also provides the option of registering and reporting back on error messages from the control system by e-mail.



# Calculating operational economy



**A precise analysis of weather conditions and geographical location are decisive when choosing the most efficient and economically viable ventilation unit. Nilan has developed unique calculation software, The Nilan Calculator, which allows you to carry out realistic and extremely precise calculations that take every factor into account.**

## **Obtain a precise calculation of operational economy**

Whereas traditional calculation methods only take into account the units efficiency by extreme temperatures, Nilan's software is based on data that presents a straightforward, precise picture of the climatic norms in which the installation is to function. The program uses so-called DRY data which is based on extensive metrological measurements for the locality in which the unit will be used. Variables such as daily and weekly schedules and holidays can be entered to provide a detailed picture of when and how the unit will be used.

Nilan's new calculation software ensures a precise and truthful basis for decision making when it comes to choosing the most economical ventilation unit. The program has been thoroughly tested to achieve the greatest possible user-friendliness and its development will continue in dialogue with users. We will greatly appreciate feedback so that we can ensure optimum development of future versions of The Nilan Calculator software.

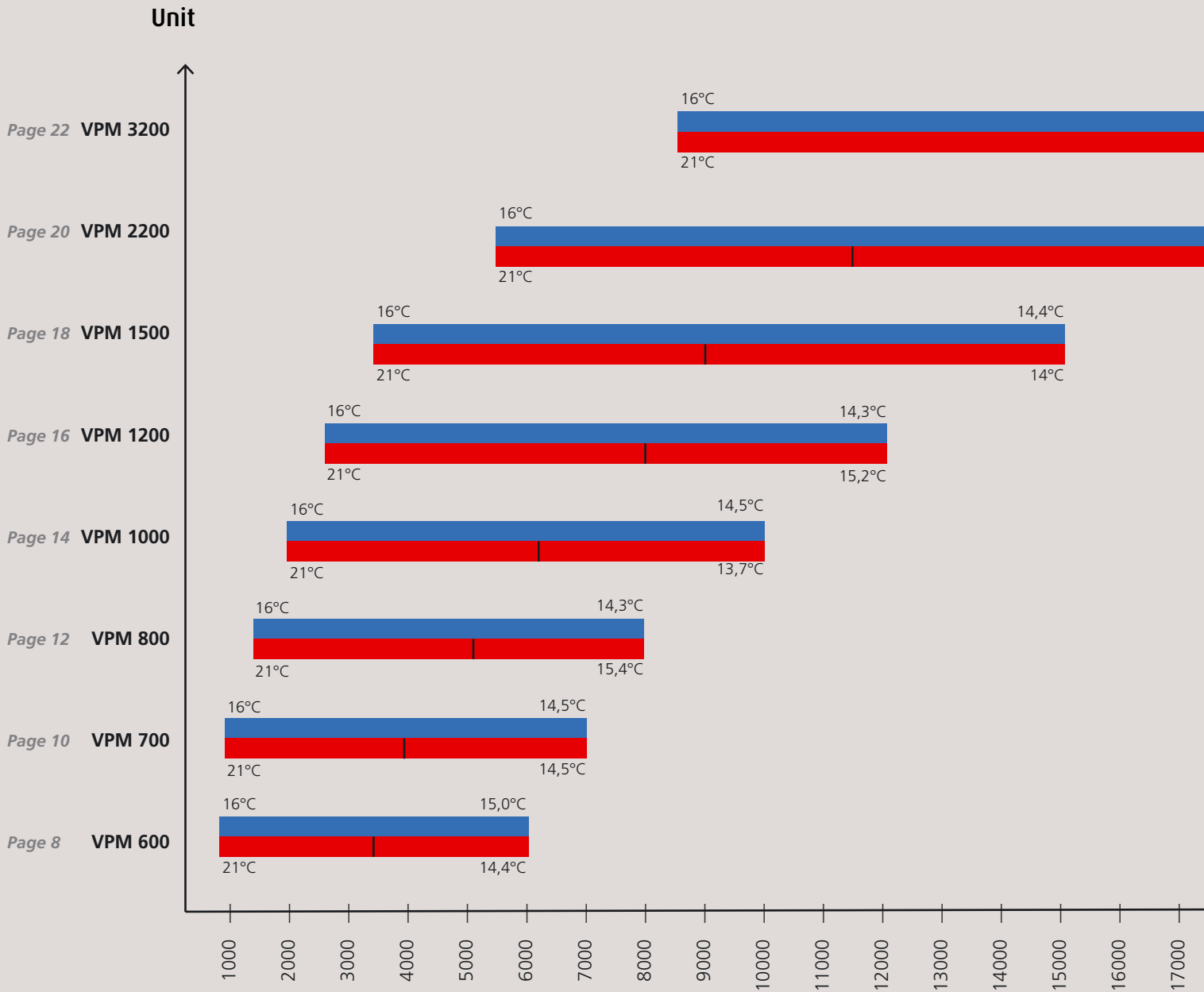


To order Calculator  
send an e-mail to  
[calculator@nilan.dk](mailto:calculator@nilan.dk)

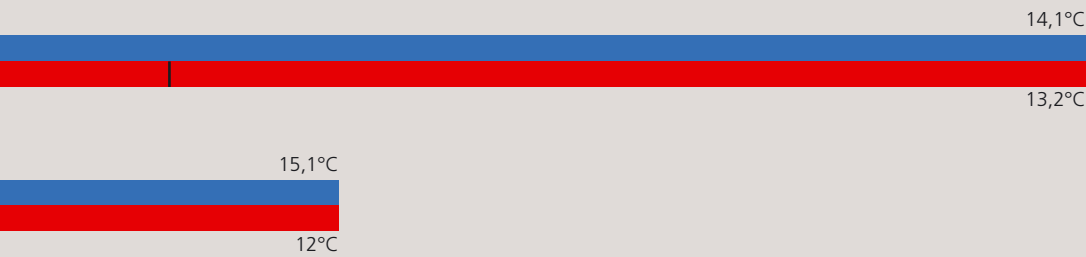




# VPM capacity diagram

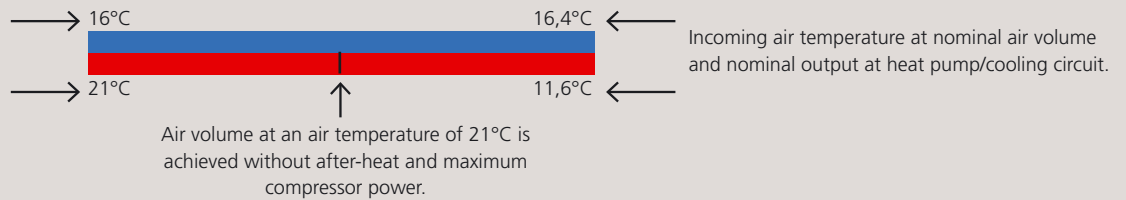


# Nilan brings fresh air and well-being into every room



	<b>Outdoor temperature</b>	<b>Room temperature</b>
<b>Winter:</b>	-12°C / 90% RH	24°C / 45 % RH
<b>Summer:</b>	26°C / 50% RH	24°C / 45 % RH

Air volume of 25 % (relative to the nominal air volume), where the shown incoming air temperature is maintained by capacity regulation of the heat pumps performance.



Max. air volumes m<sup>3</sup>/h





# Nilan VPM 600

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	1.500-6.000
Total weight	Kg	1340
Weight of filter/fan section	Kg	310
Weight of centre module	Kg	720
Supply voltage	V	400
Amperage*	A	3x50
Compressor	type	MTZ 50
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	10.000
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	865
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
\* May differ according to configuration of compressors and fans.

### Sound

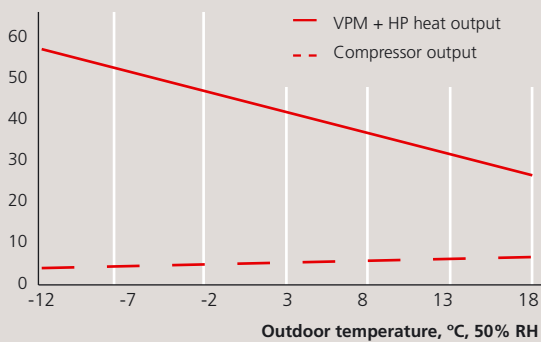
Resulting sound level, L<sub>w</sub> (dB)

Air volume 6.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
<b>63</b>	76	69	76	68	59
<b>125</b>	81	72	80	72	63
<b>250</b>	85	77	85	76	57
<b>500</b>	85	74	85	73	48
<b>1.000</b>	82	67	81	66	41
<b>2.000</b>	78	55	77	53	38
<b>4.000</b>	73	43	73	40	35
<b>L<sub>w</sub> total</b>	90	80	90	79	65

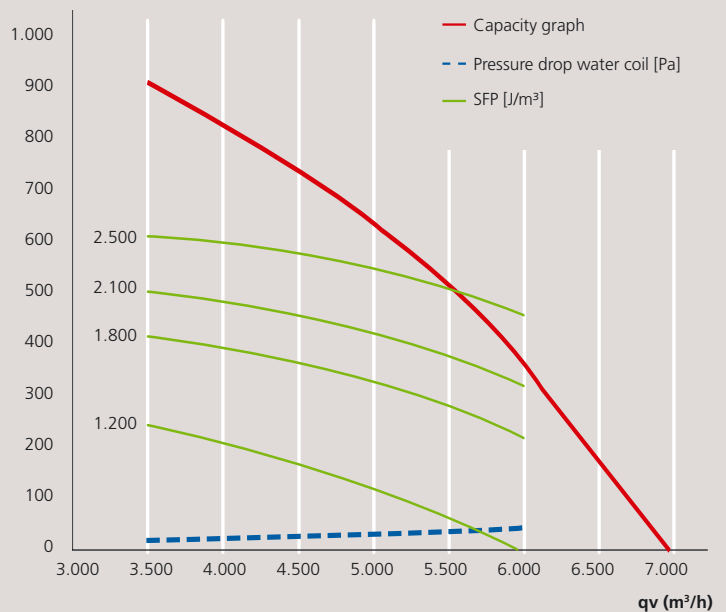
### Heating

21° indoor temperature, 50% RH, air volume 6.000 m<sup>3</sup>/h.



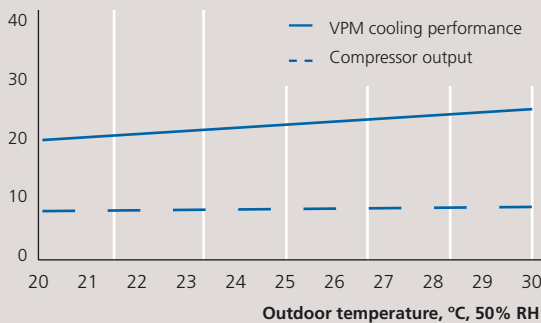
### Capacity graph

Pt External pressure drop [Pa]

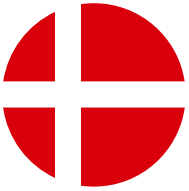


### Cooling performance

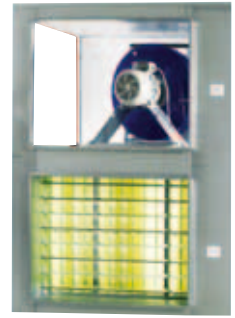
21° indoor temperature, 50% RH, air volume 6.000 m<sup>3</sup>/h.





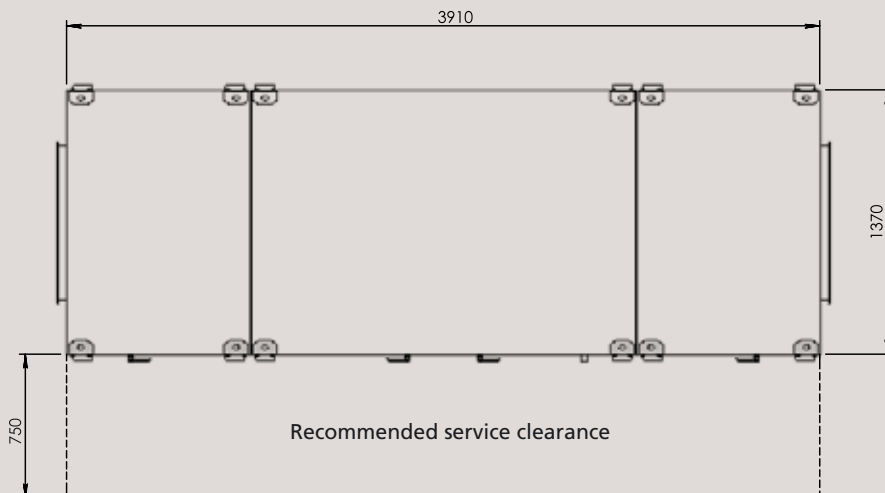
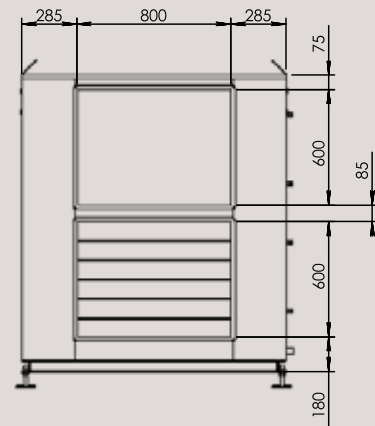
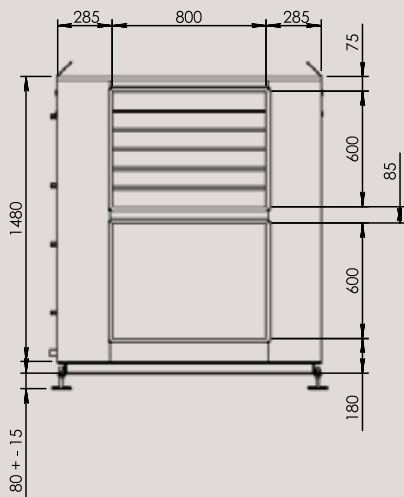
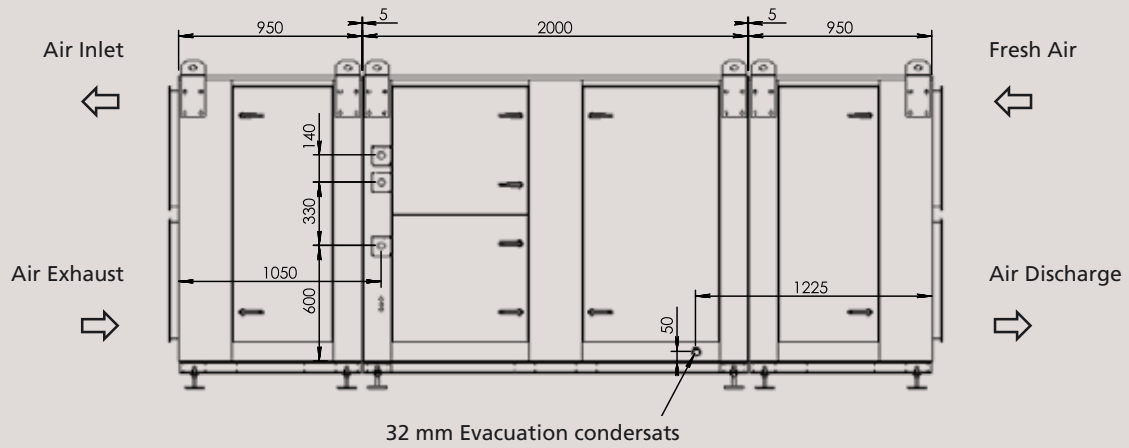


# Nilan VPM 600



Gable end with a filter and fan

## Dimensional sketch





# Nilan VPM 700

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	1.750-7.000
Total weight	Kg	1.750
Weight of filter/fan section	Kg	425
Weight of centre module	Kg	900
Supply voltage	V	400
Amperage*	A	3x50
Compressor	type	MTZ 50
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	14.500
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	925
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
 \* May differ according to configuration of compressors and fans.

### Sound

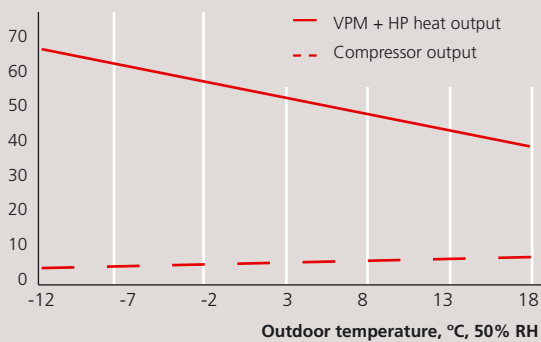
Resulting sound level, Lw (dB)

Air volume 7.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
<b>63</b>	75	68	75	67	58
<b>125</b>	80	71	79	71	62
<b>250</b>	84	75	83	75	56
<b>500</b>	84	72	83	72	47
<b>1.000</b>	80	66	80	64	39
<b>2.000</b>	76	53	75	51	36
<b>4.000</b>	71	41	71	38	33
<b>Lw total</b>	89	78	88	78	64

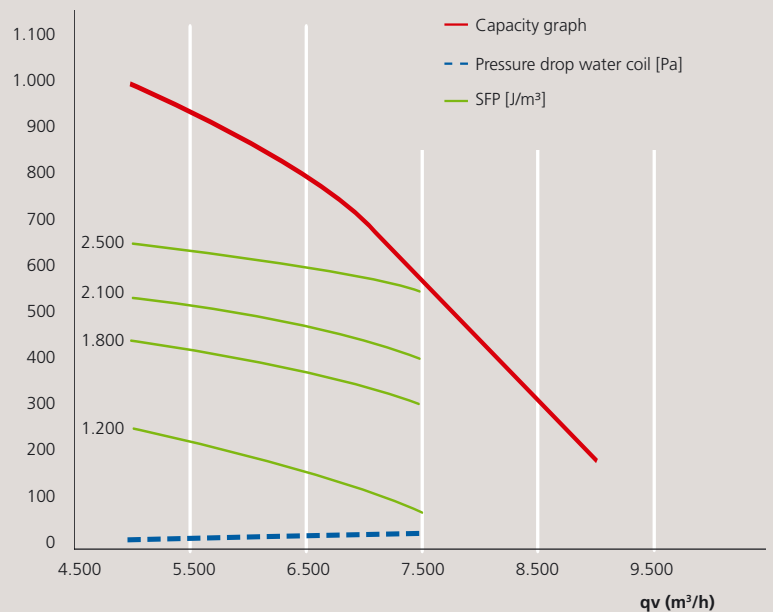
### Heating

21° indoor temperature, 50% RH, air volume 7.000 m<sup>3</sup>/h.



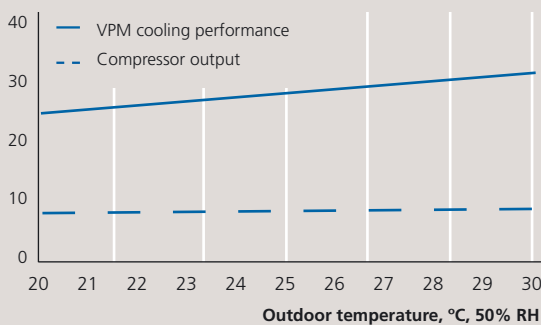
### Capacity graph

Pt External pressure drop [Pa]



### Cooling performance

21° indoor temperature, 50% RH, air volume 7.000 m<sup>3</sup>/h.







# Nilan VPM 800

## Technical Data

### Specifications

Air volume	m³/h	2.000-8.000
Total weight	Kg	1.750
Weight of filter/fan section	Kg	425
Weight of centre module	Kg	900
Supply voltage	V	400
Amperage*	A	3x50
Compressor	type	MTZ 64
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	14.500
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	925
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
 \* May differ according to configuration of compressors and fans.

### Sound

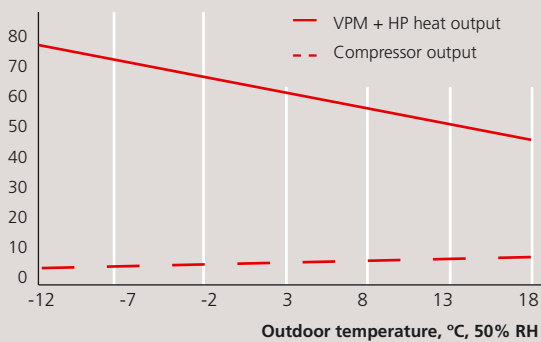
Resulting sound level, Lw (dB)

Air volume 8.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
63	75	68	75	67	58
125	79	71	79	70	61
250	83	75	83	74	55
500	83	72	83	71	46
1.000	79	65	79	63	38
2.000	75	52	74	50	35
4.000	70	40	70	37	32
<b>Lw total</b>	88	78	88	77	64

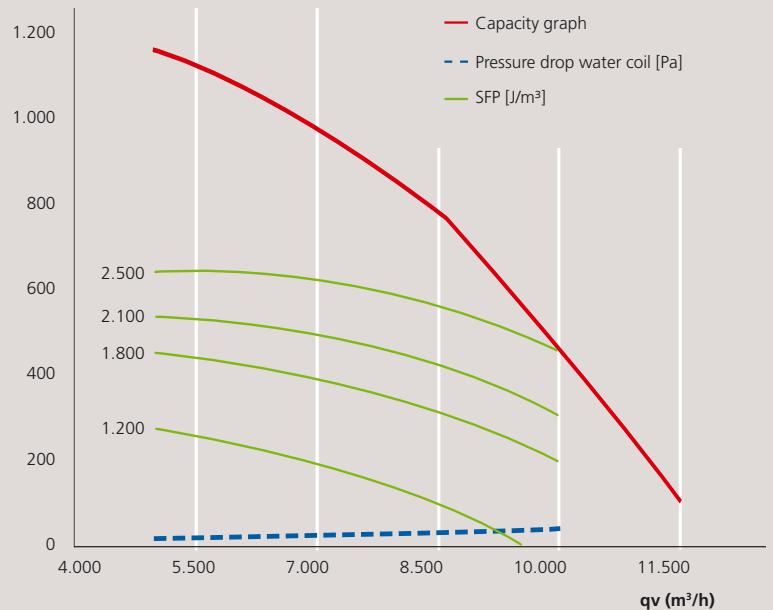
### Heating

21° indoor temperature, 50% RH, air volume 8.000 m³/h.



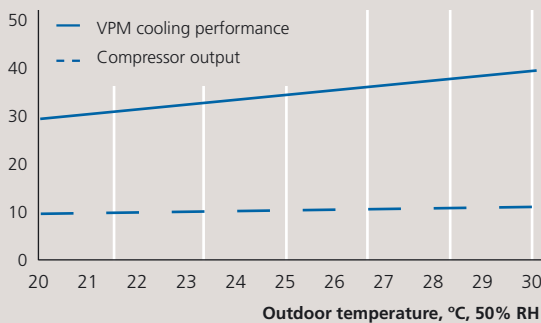
### Capacity graph

Pt External pressure drop [Pa]



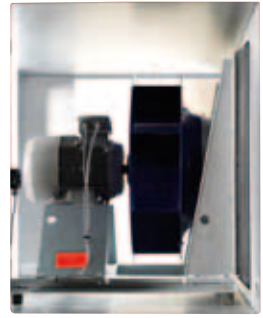
### Cooling performance

21° indoor temperature, 50% RH, air volume 8.000 m³/h.



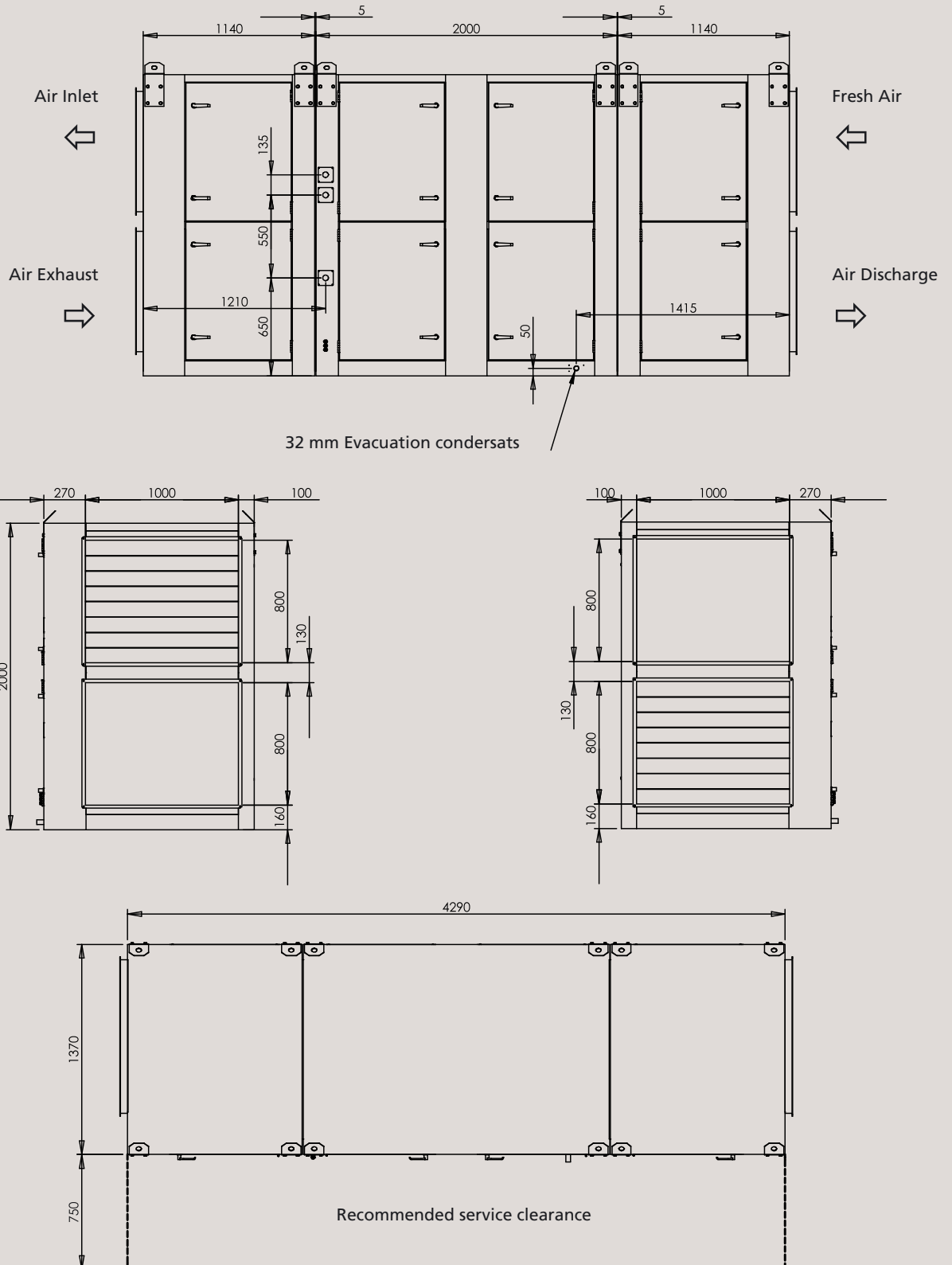


# Nilan VPM 800



Accented low energy fan

## Dimensional sketch





# Nilan VPM 1000

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	2.500-10.000
Total weight	Kg	1.750
Weight of filter/fan section	Kg	425
Weight of centre module	Kg	900
Supply voltage	V	400
Amperage*	A	3x63
Compressor	type	MTZ 80
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	14.500
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	925
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
 \* May differ according to configuration of compressors and fans.

### Sound

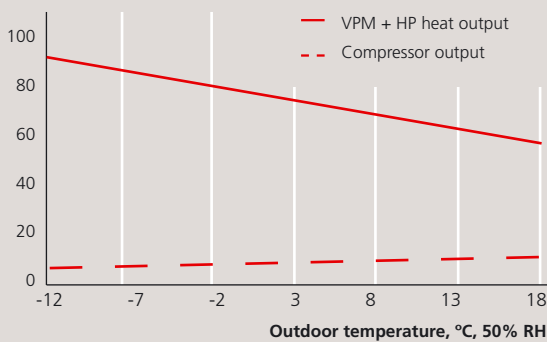
Resulting sound level, L<sub>w</sub> (dB)

Air volume 10.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
63	79	72	79	71	62
125	83	75	83	74	65
250	87	79	87	78	59
500	87	76	87	75	50
1.000	84	69	83	68	43
2.000	79	57	79	54	39
4.000	75	45	75	42	37
<b>L<sub>w</sub> total</b>	92	82	92	81	68

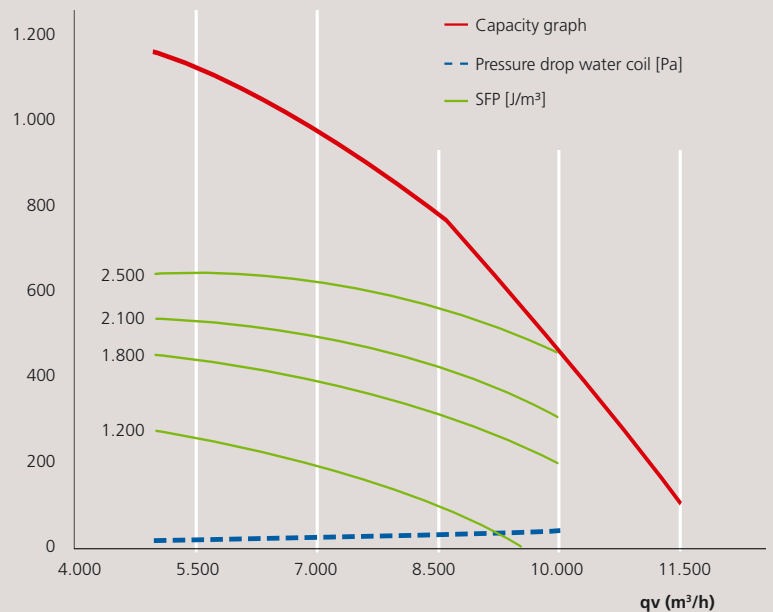
### Heating

21° indoor temperature, 50% RH, air volume 10.000 m<sup>3</sup>/h.



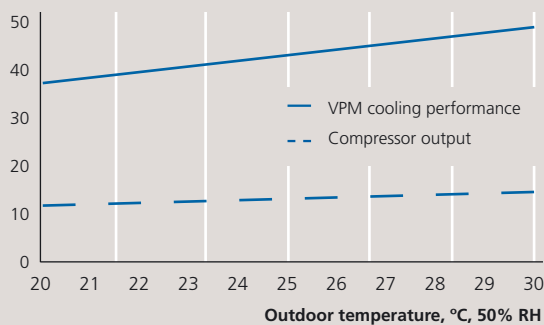
### Capacity graph

Pt External pressure drop [Pa]



### Cooling performance

21° indoor temperature, 50% RH, air volume 10.000 m<sup>3</sup>/h.









# Nilan VPM 1200

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	3.000-12.000
Total weight	Kg	2.400
Weight of filter/fan section	Kg	600
Weight of centre module	Kg	1.200
Supply voltage	V	400
Amperage*	A	3x80
Compressor	type	MTZ 100
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	17.000
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	14.650
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
 \* May differ according to configuration of compressors and fans.

### Sound

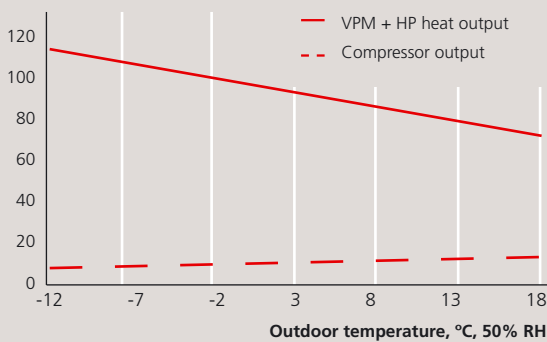
Resulting sound level, L<sub>w</sub> (dB)

Air volume 12.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
63	79	72	79	71	62
125	83	75	83	74	65
250	87	78	86	78	59
500	86	75	86	74	49
1.000	83	68	82	67	42
2.000	78	56	78	53	38
4.000	74	44	74	41	36
<b>L<sub>w</sub> total</b>	92	82	91	81	68

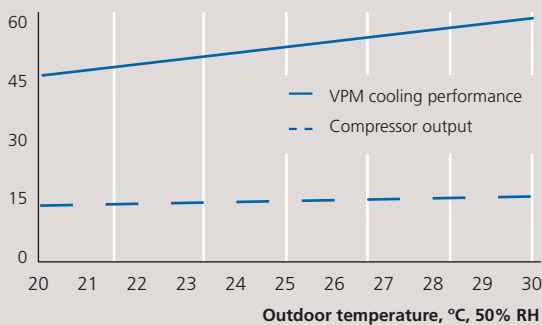
### Heating

21° indoor temperature, 50% RH, air volume 12.000 m<sup>3</sup>/h.



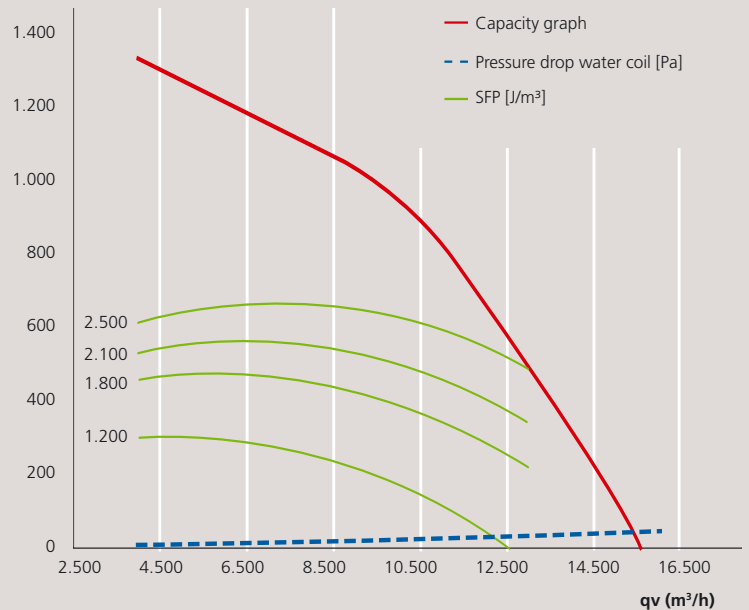
### Cooling performance

21° indoor temperature, 50% RH, air volume 12.000 m<sup>3</sup>/h.



### Capacity graph

Pt External pressure drop [Pa]



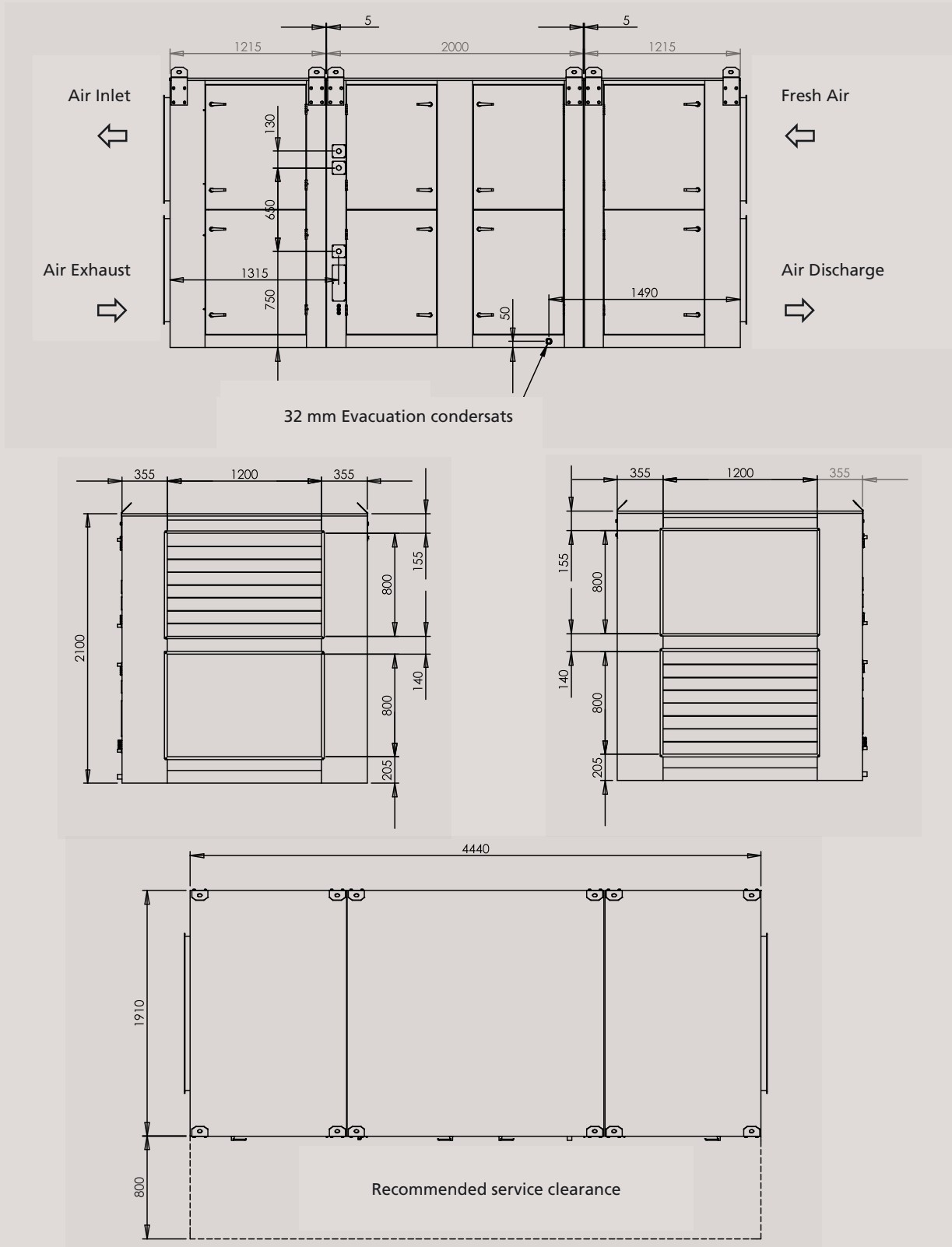


# Nilan VPM 1200



## Dimensional sketch

Built-in VPM control (CTS 6000)





# Nilan VPM 1500

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	3.750-15.000
Total weight	Kg	2.400
Weight of filter/fan section	Kg	600
Weight of centre module	Kg	1.200
Supply voltage	V	400
Amperage*	A	3x100
Compressor	type	MTZ 125
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	17.000
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	14.650
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
 \* May differ according to configuration of compressors and fans.

### Sound

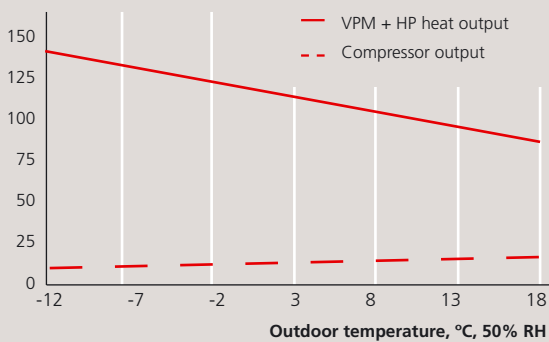
Resulting sound level, L<sub>w</sub> (dB)

Air volume 15.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
63	80	73	80	72	63
125	84	76	84	75	66
250	88	79	87	79	60
500	87	76	87	75	50
1.000	83	69	83	67	42
2.000	79	57	79	54	39
4.000	75	44	74	42	37
<b>L<sub>w</sub> total</b>	93	83	92	82	69

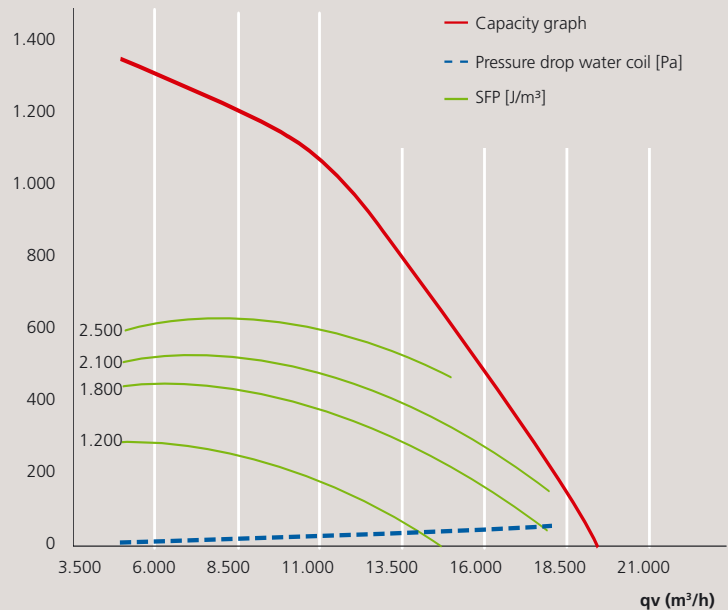
### Heating

21° indoor temperature, 50% RH, air volume 15.000 m<sup>3</sup>/h.



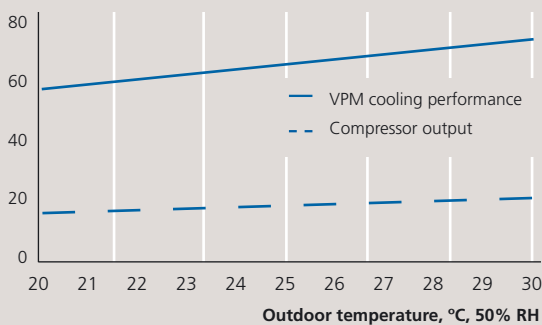
### Capacity graph

Pt External pressure drop [Pa]



### Cooling performance

21° indoor temperature, 50% RH, air volume 15.000 m<sup>3</sup>/h.



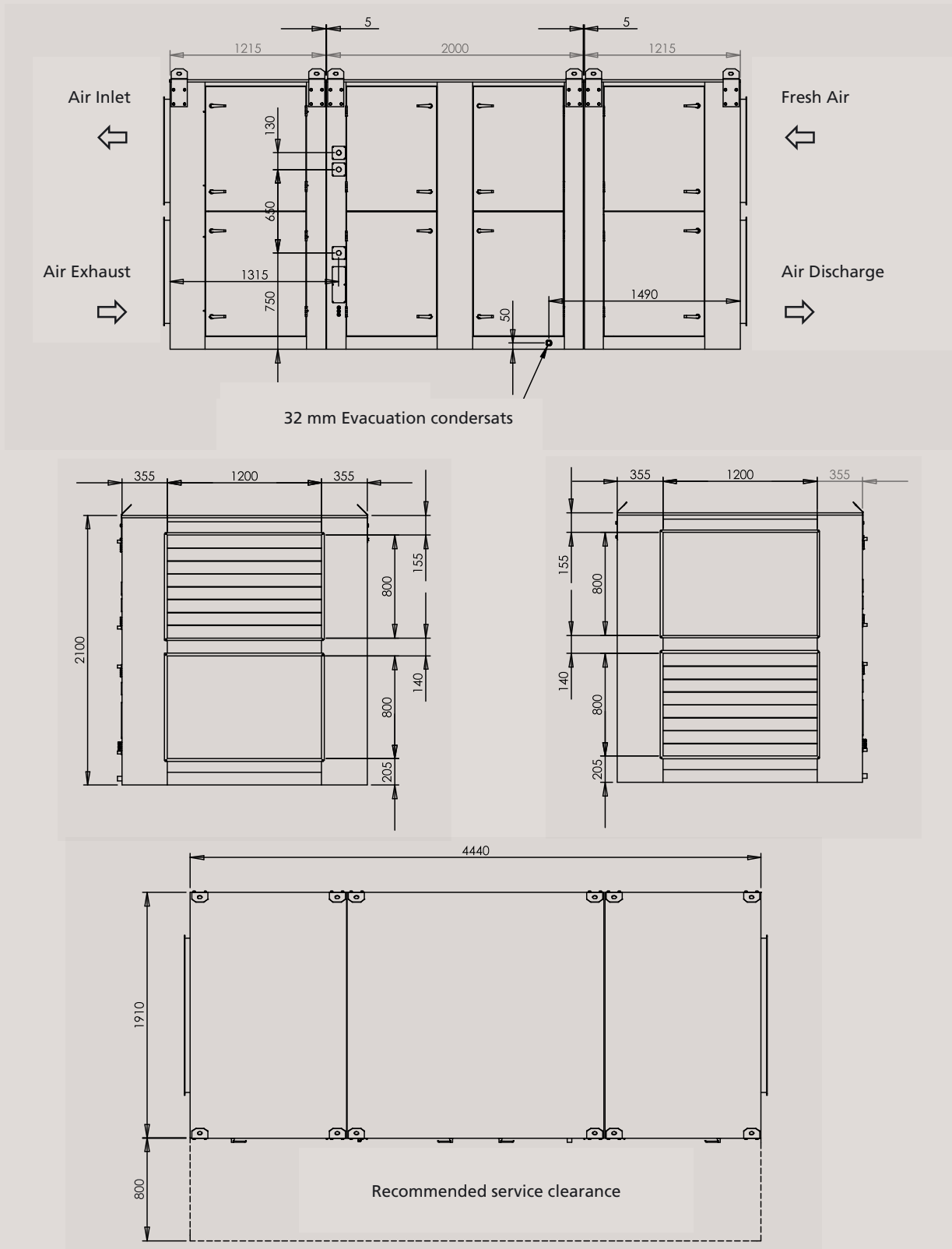


# Nilan VPM 1500



Built-in mixing circuit for water heating surface

## Dimensional sketch





# Nilan VPM 2200

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	5.500-22.000
Total weight	Kg	3.250
Weight of filter/fan section	Kg	750
Weight of centre module	Kg	1.750
Supply voltage	V	400
Amperage*	A	3x125
Compressor	type	MTZ 160
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	26.000
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	19.850
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
 \* May differ according to configuration of compressors and fans.

### Sound

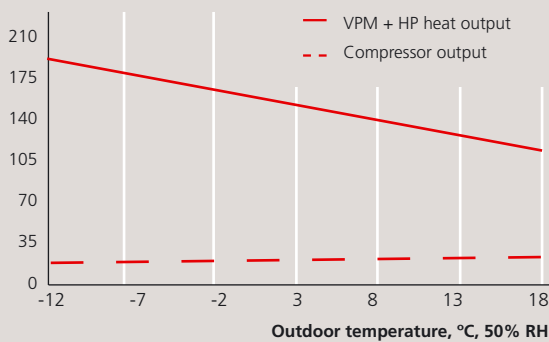
Resulting sound level, L<sub>w</sub> (dB)

Air volume 22.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
<b>63</b>	84	76	83	76	67
<b>125</b>	87	79	87	78	69
<b>250</b>	91	83	91	82	63
<b>500</b>	91	79	90	79	54
<b>1.000</b>	87	72	86	71	46
<b>2.000</b>	83	60	82	58	43
<b>4.000</b>	78	48	78	45	40
<b>L<sub>w</sub> total</b>	96	86	96	85	72

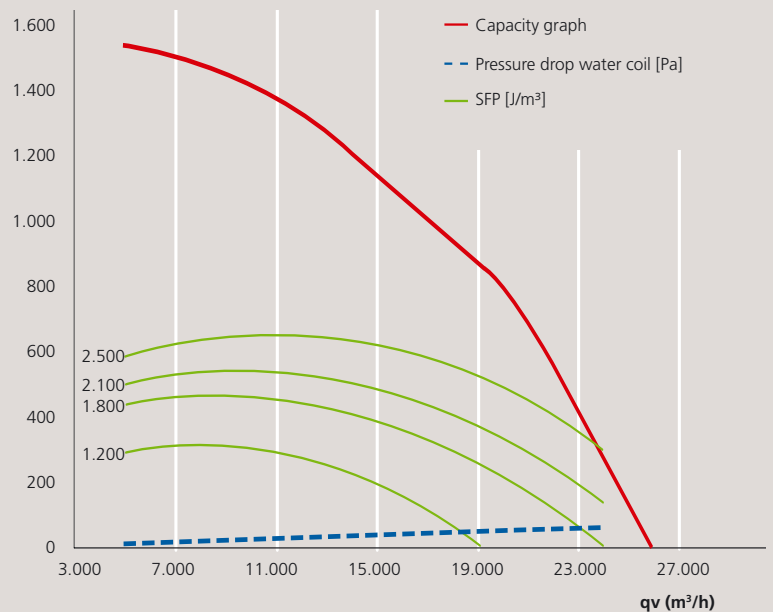
### Heating

21° indoor temperature, 50% RH, air volume 22.000 m<sup>3</sup>/h.



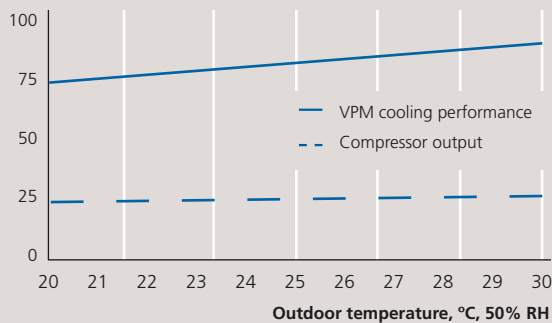
### Capacity graph

Pt External pressure drop [Pa]



### Cooling performance

21° indoor temperature, 50% RH, air volume 22.000 m<sup>3</sup>/h.





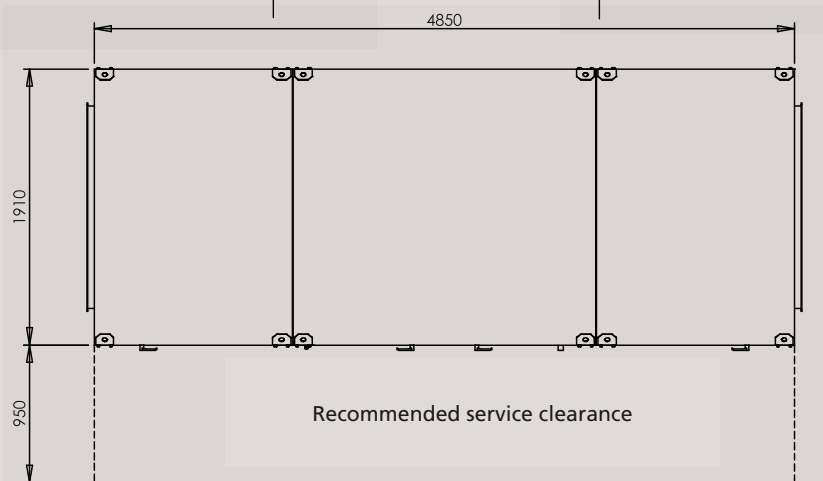
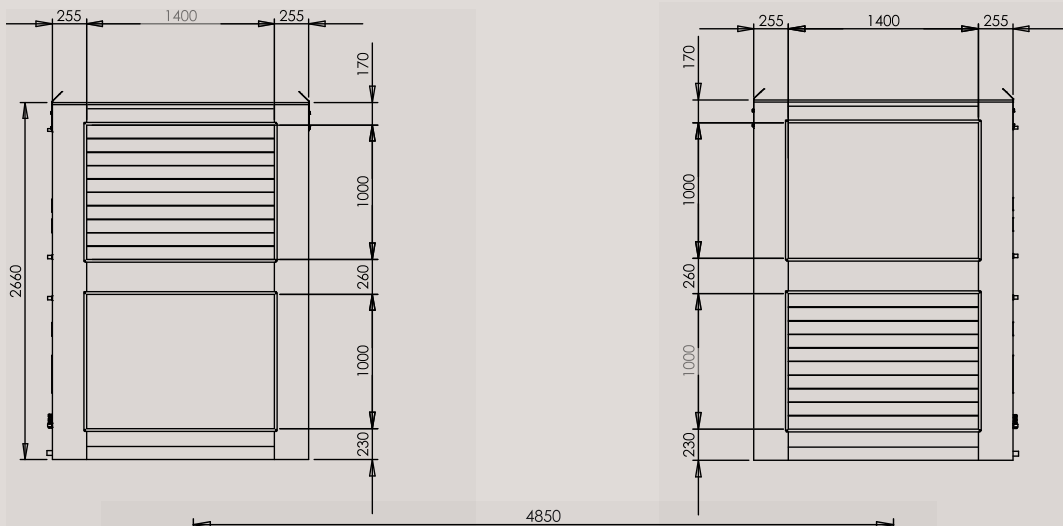
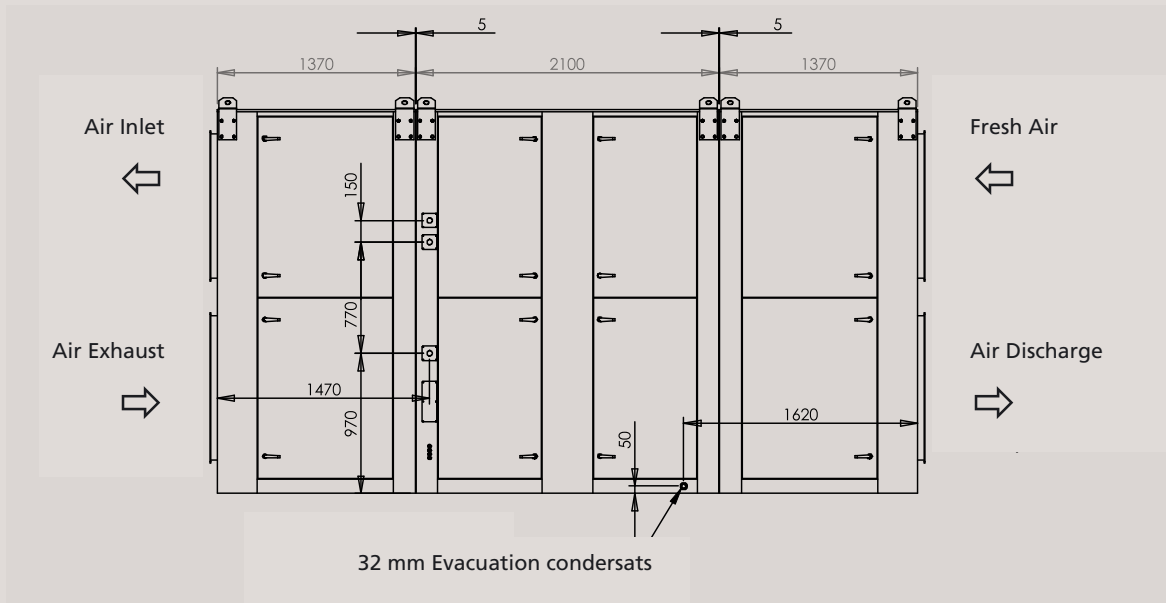


# Nilan VPM 2200



Insulated corner profiles

## Dimensional sketch





# Nilan VPM 3200

## Technical Data

### Specifications

Air volume	m <sup>3</sup> /h	8.000-32.000
Total weight	Kg	3.970
Weight of filter/fan section	Kg	910
Weight of centre module	Kg	2.150
Supply voltage	V	400
Amperage*	A	3x160
Compressor	type	MTZ 160
Compressor	quantity	2
Refrigerant Heat Pump	type	R 407 C
Filler volume Heat Pump	g	45.000
Refrigerant heat pipe	type	R744
Filler volume heat pipe	g	26.000
Isolation thickness	mm	50

Installation with self-supporting structure. Materials: 1 and 1.5 mm Alu-Zink.  
\* May differ according to configuration of compressors and fans.

### Sound

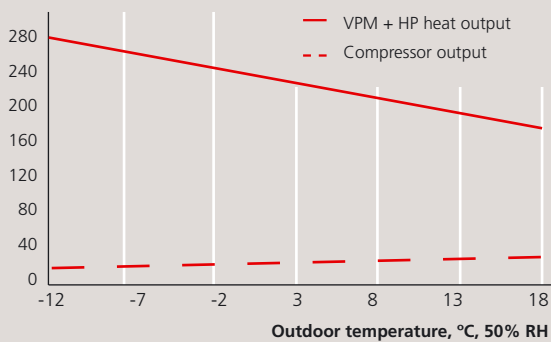
Resulting sound level, L<sub>w</sub> (dB)

Air volume 32.000 m<sup>3</sup>/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Surroundings
63	84	76	83	76	67
125	87	79	87	78	69
250	91	82	90	82	63
500	90	78	89	78	53
1.000	86	71	85	70	45
2.000	81	59	81	56	41
4.000	77	46	76	44	39
<b>L<sub>w</sub> total</b>	96	85	95	85	72

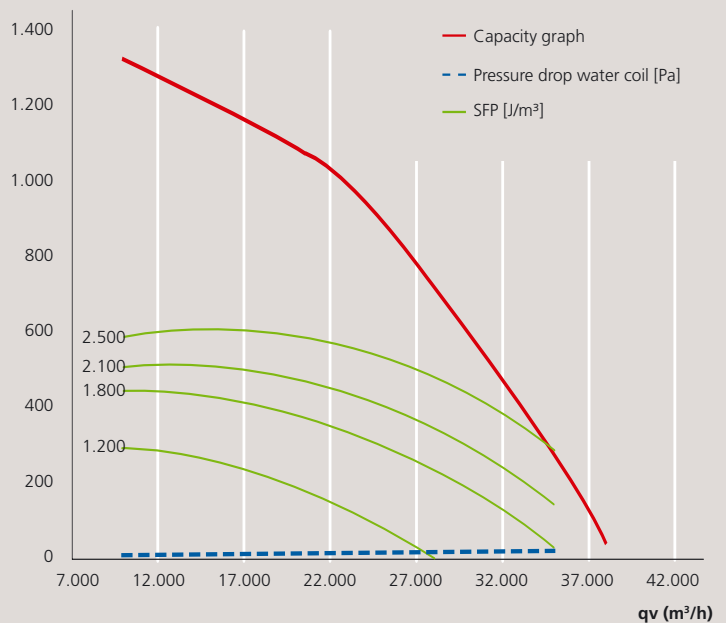
### Heating

21° indoor temperature, 50% RH, air volume 32.000 m<sup>3</sup>/h.



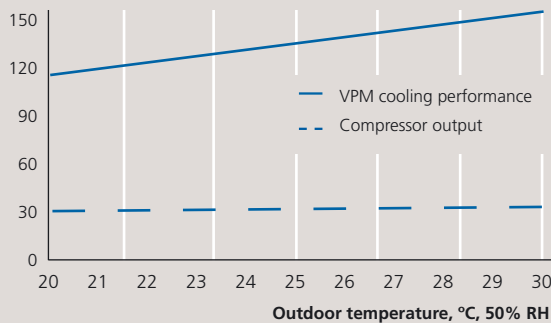
### Capacity graph

Pt External pressure drop [Pa]



### Cooling performance

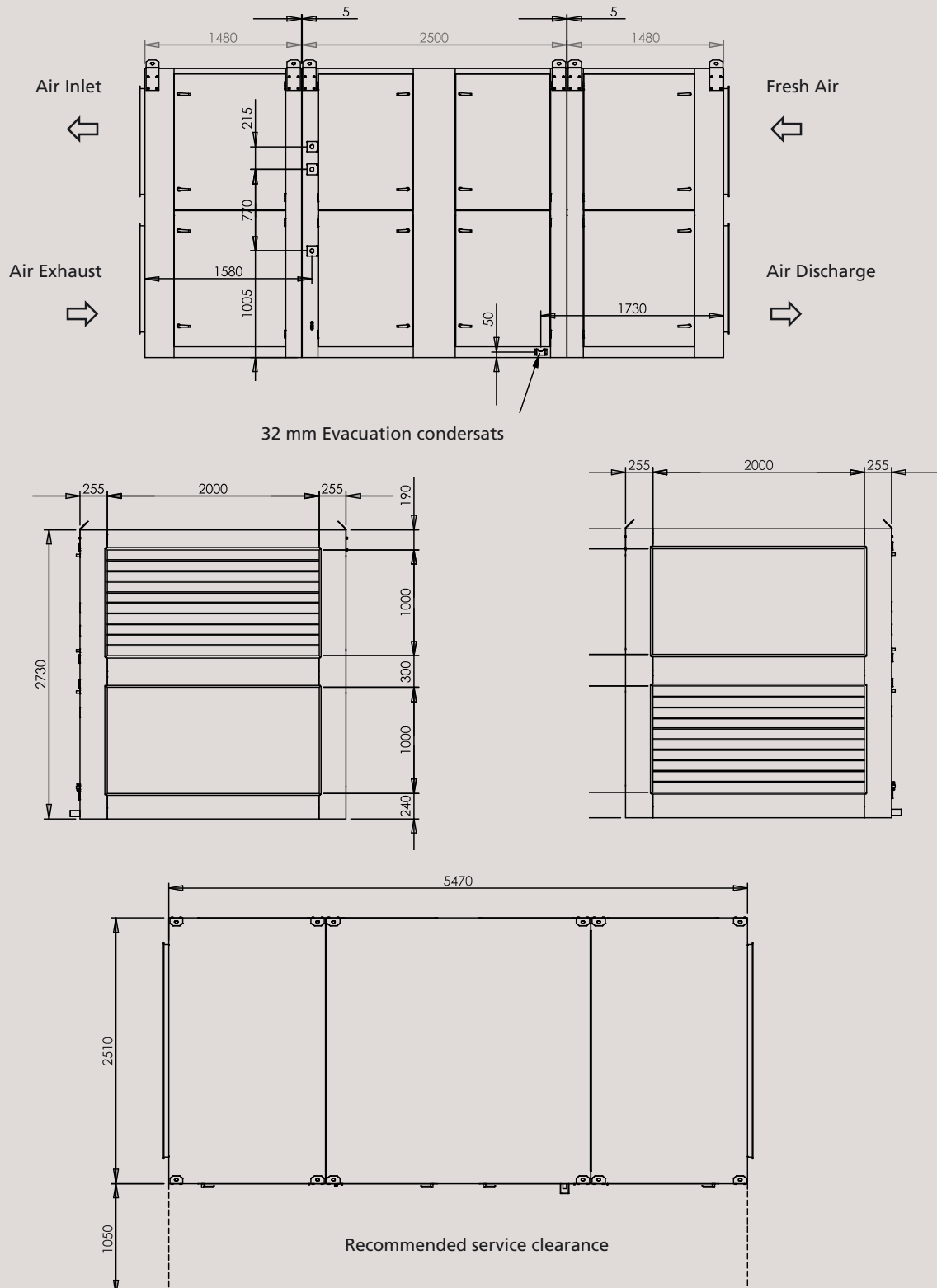
21° indoor temperature, 50% RH, air volume 32.000 m<sup>3</sup>/h.



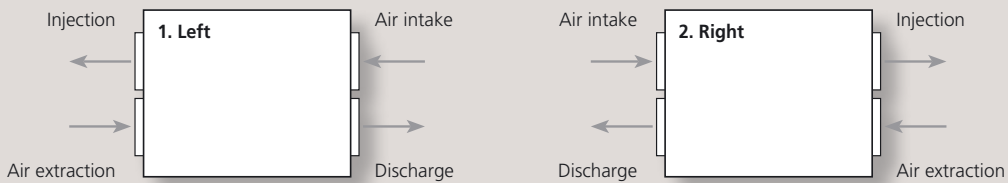


# Nilan VPM 3200

## Dimensional sketch



## Unit design VPM



## Extra services, installation: VPM 600-3200

### The following options are available:

- Filter type (G4, F5, F6, F7)
- Hot water coil (built in)
- Mixing loop (built in)
- Flow regulation valve (built in)
- Variable frequency regulated compressor on heat pump (for improved regulation of heat pump and reduced energy consumption)
- Base
- Vibration dampers
- Drain trap
- Standard fan
- Chamber fan (requires fitting of frequency converters)
- Frequency regulation of fans
- Electric heat coil
- Lon or Modbus

### Nilan A/S

Nilanvej 2

DK-8722 Hedensted

Tel. +45 76 75 25 00

Fax +45 76 75 25 25

nilan@nilan.dk

www.nilan.dk



Dealer: