NILAN®
- outstanding indoor climate

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."

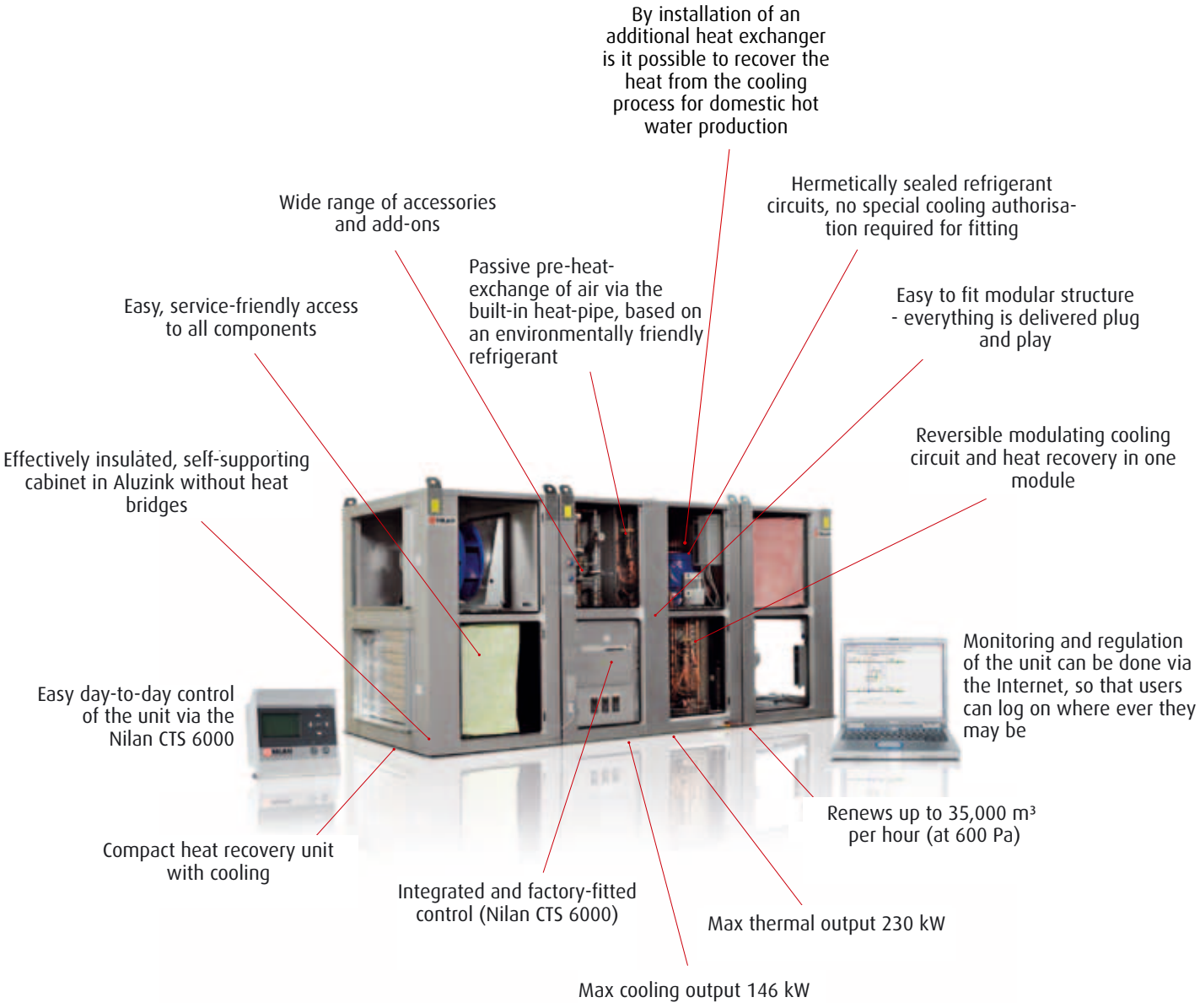
How do you combine ventilation, heat recovery and cooling in one unit?
Modern industrial buildings with large areas of glass make substantial demands on a ventilation unit. The unit must actively contribute to both heating and cooling of the building. In all Nilan's industrial ventilation units, heat 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^3/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 tempererture 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.

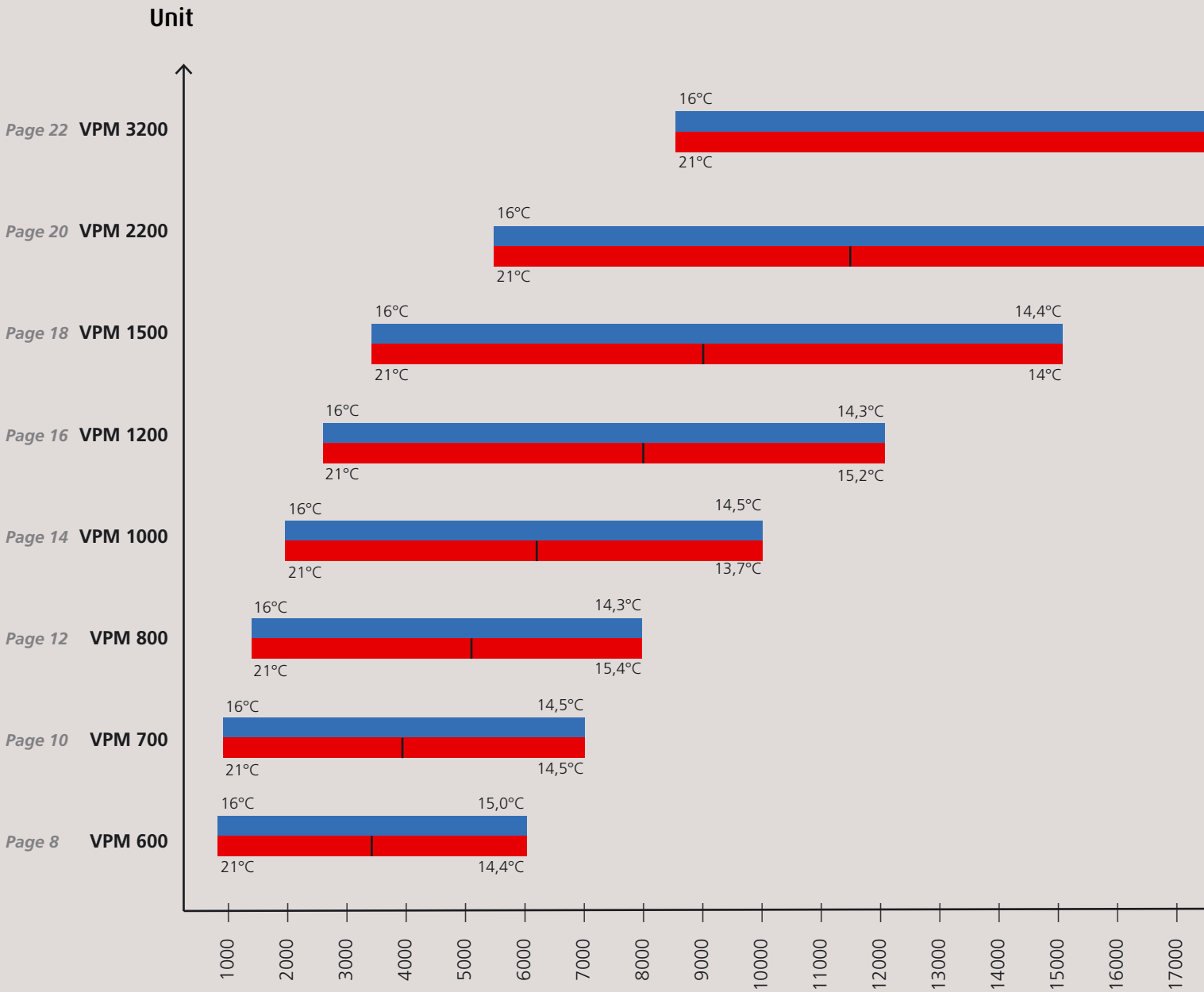
Obtain a precise calculation of operational economy

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.

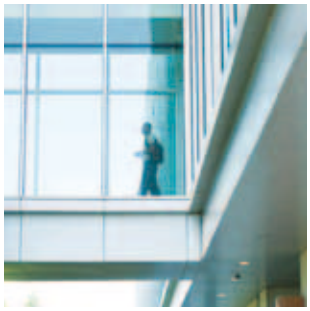
Nilan's new calculation software ensures a precise and truthful basis for decision making when it comes to choosing the most economical ventilation unit. The program has been thoroughly tested to achieve the greatest possible user-friendliness and its development will continue in dialogue with users. 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 calkulator@nilan.dk

VPM capacity diagram



Nilan brings fresh air and well-being into every room



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

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

Incoming air temperature at nominal air volume and nominal output at heat pump/cooling circuit.

Air volume at an air temperature of 21°C is achieved without after-heat and maximum compressor power.

Max. air volumes m³/h

Nilan VPM 600

Technical Data

Specifications

Air volume	m³/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

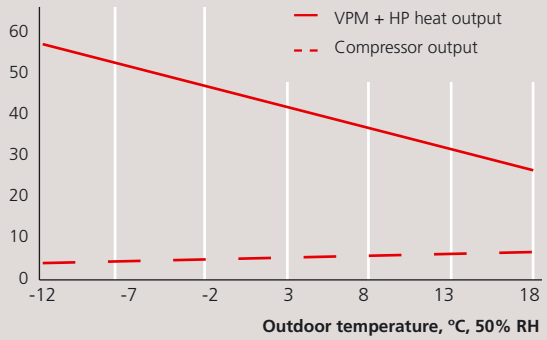
Resulting sound level, Lw (dB)

Air volume 6.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
63	76	69	76	68	59
125	81	72	80	72	63
250	85	77	85	76	57
500	85	74	85	73	48
1.000	82	67	81	66	41
2.000	78	55	77	53	38
4.000	73	43	73	40	35
Lw total	90	80	90	79	65

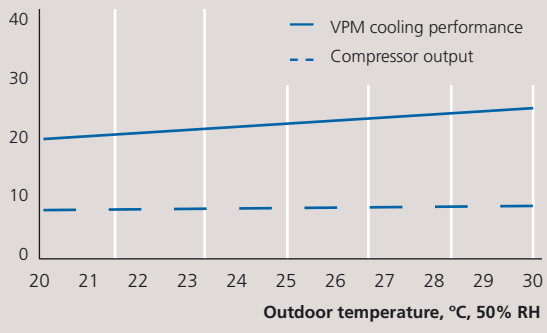
Heating

21° indoor temperature, 50% RH, air volume 6.000 m³/h.



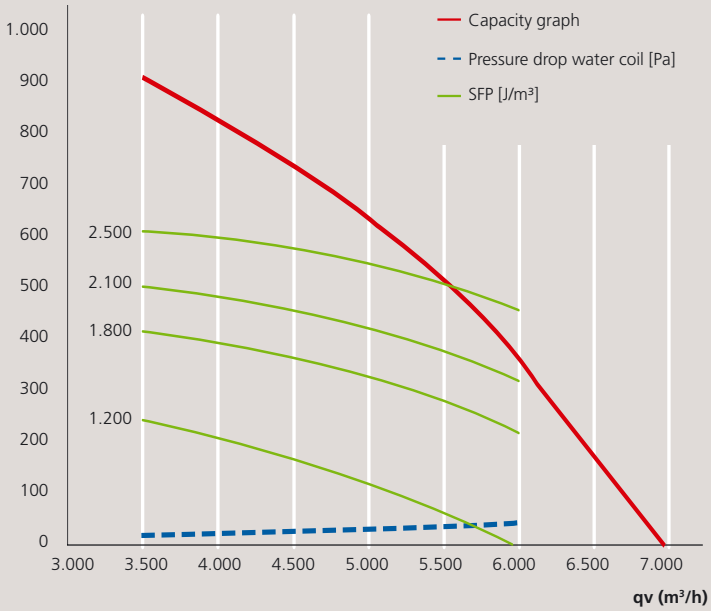
Cooling performance

21° indoor temperature, 50% RH, air volume 6.000 m³/h.

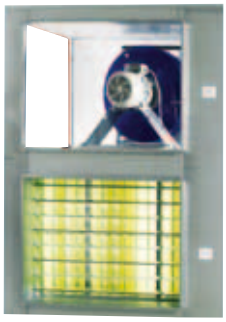


Capacity graph

Pt External pressure drop [Pa]

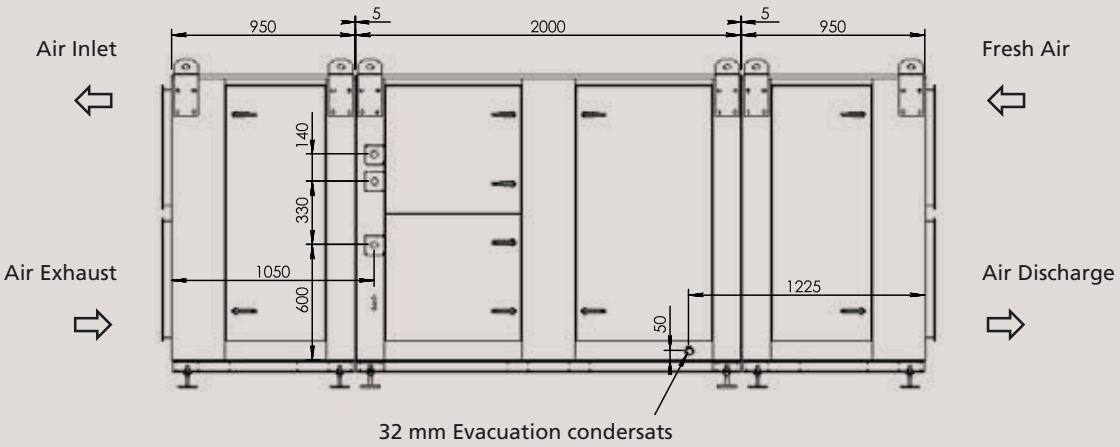


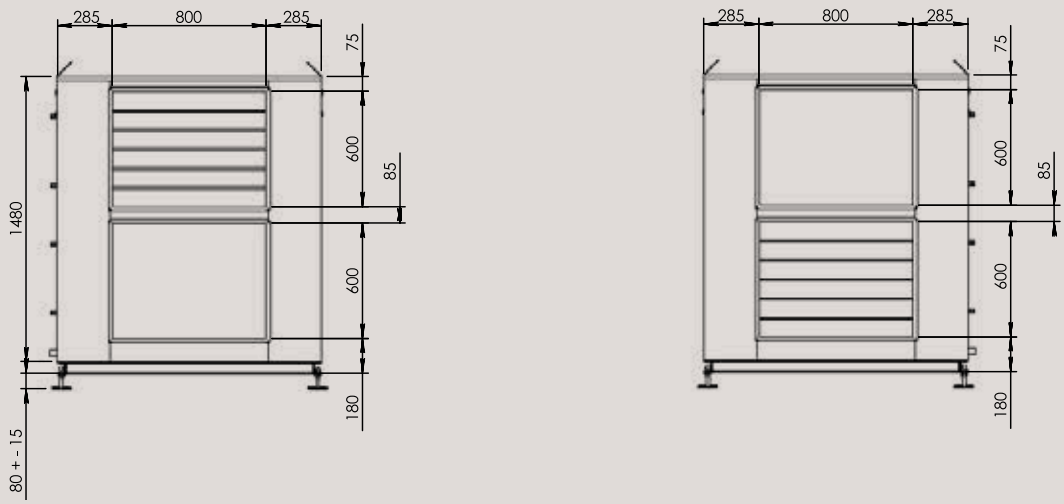
Nilan VPM 600

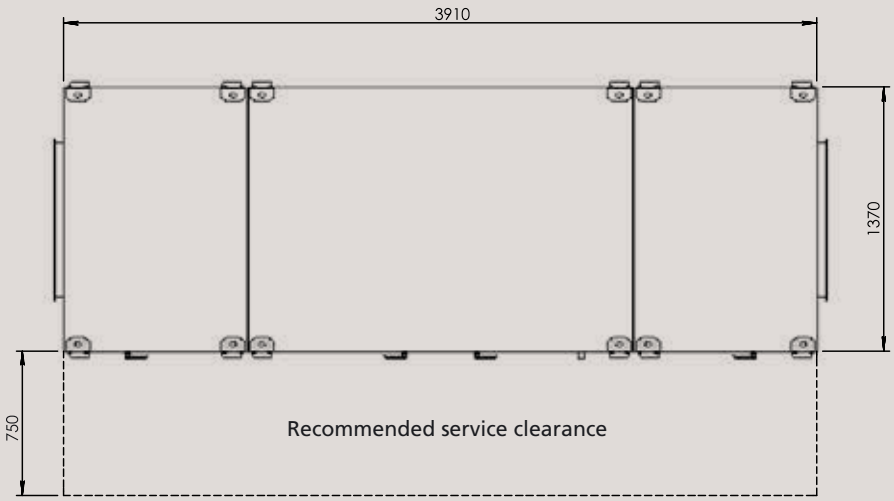


Gable end with a filter and fan

Dimensional sketch







Nilan VPM 700

Technical Data

Specifications

Air volume	m³/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

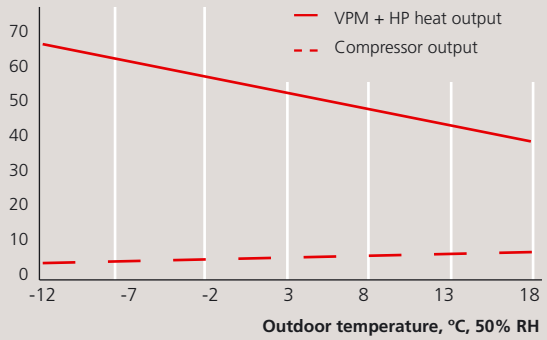
Resulting sound level, Lw (dB)

Air volume 7.000 m³/h 250 Pa, + Tolerance +/- 3 dB

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

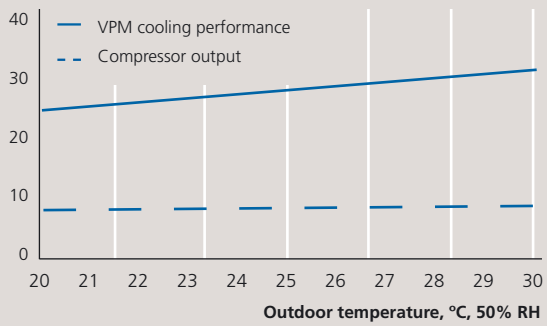
Heating

21° indoor temperature, 50% RH, air volume 7.000 m³/h.



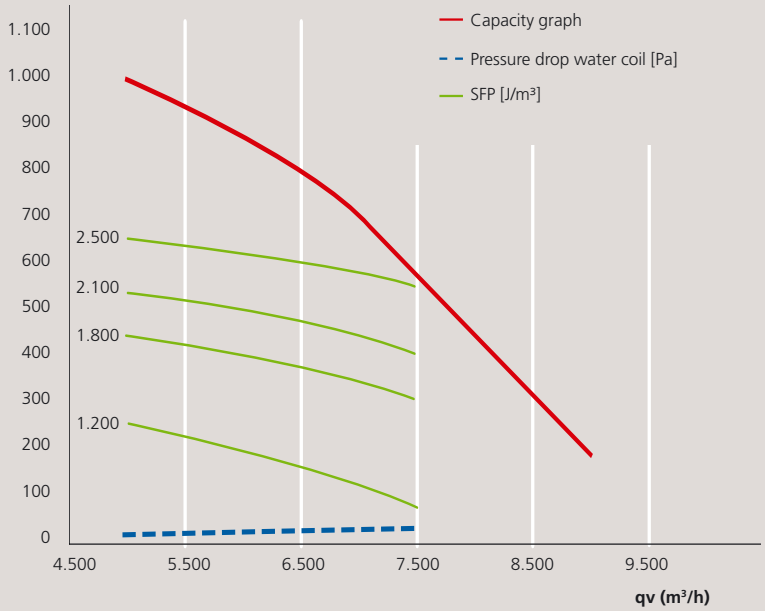
Cooling performance

21° indoor temperature, 50% RH, air volume 7.000 m³/h.



Capacity graph

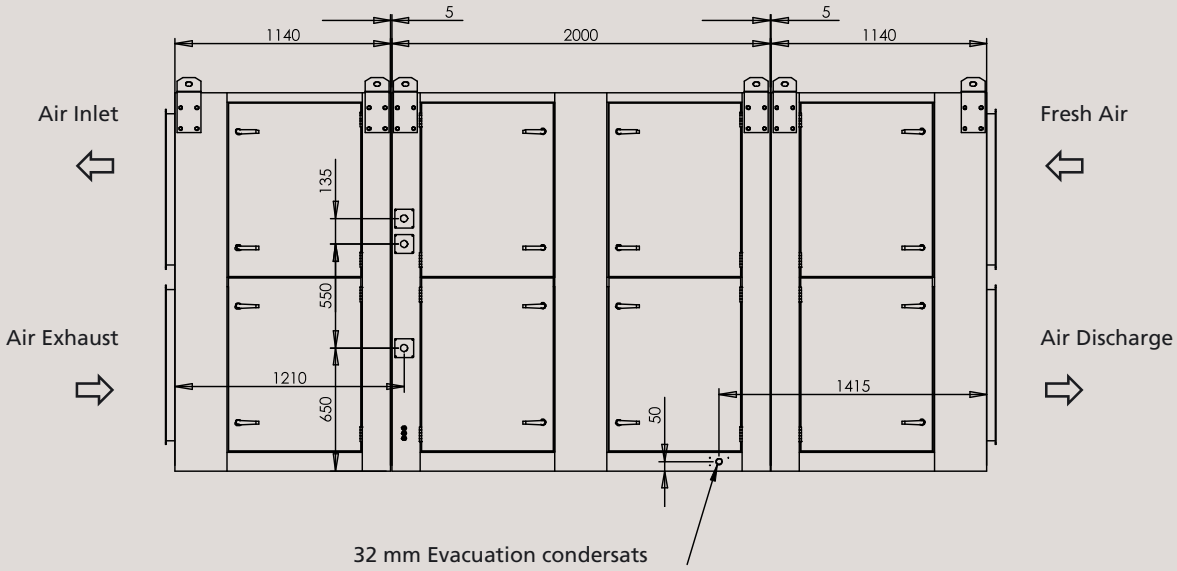
Pt External pressure drop [Pa]

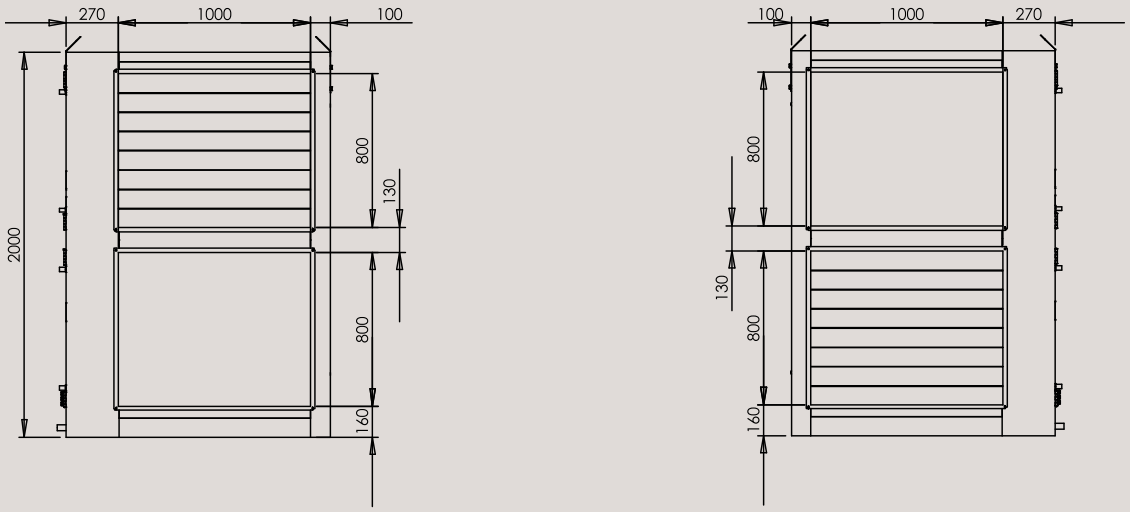


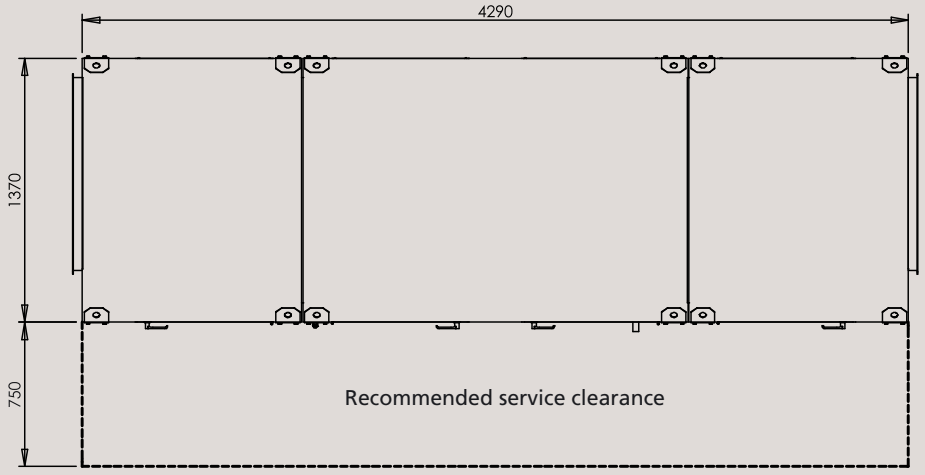
Nilan VPM 700

Built-in evaporator and heat pipe

Dimensional sketch







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

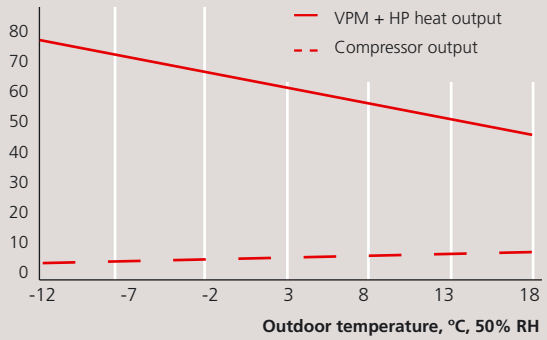
Resulting sound level, Lw (dB)

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

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
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
Lw total	88	78	88	77	64

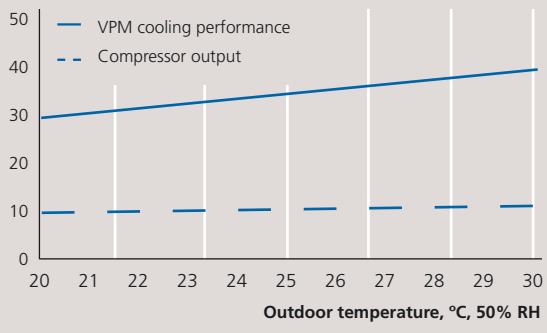
Heating

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



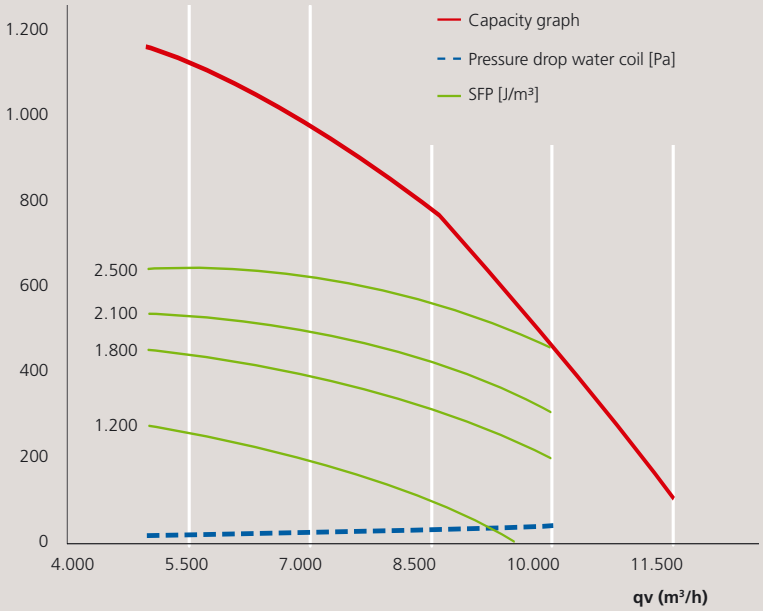
Cooling performance

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



Capacity graph

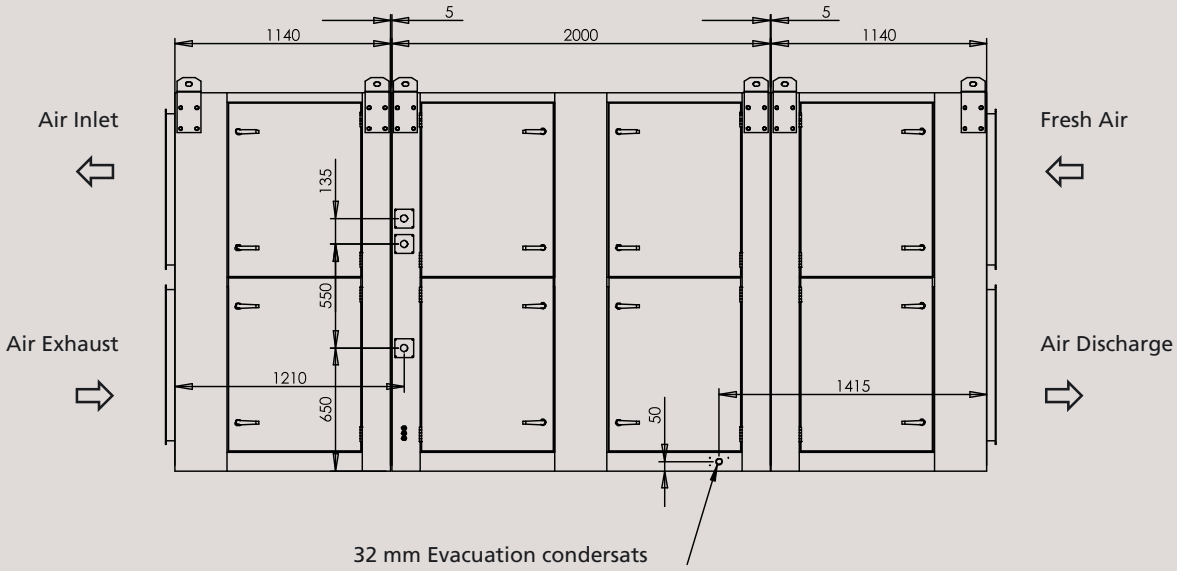
Pt External pressure drop [Pa]

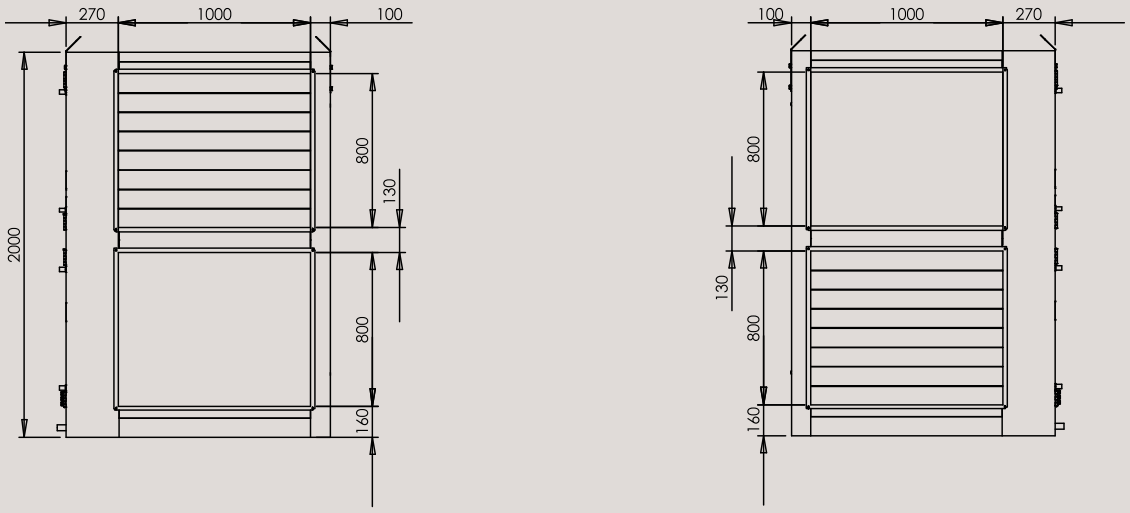


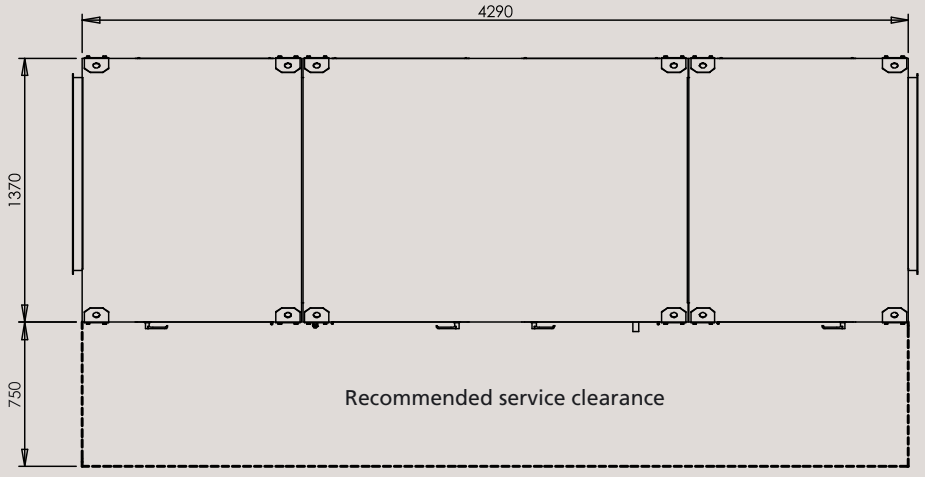
Nilan VPM 800

Accented low energy fan

Dimensional sketch







Nilan VPM 1000

Technical Data

Specifications

Air volume	m³/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

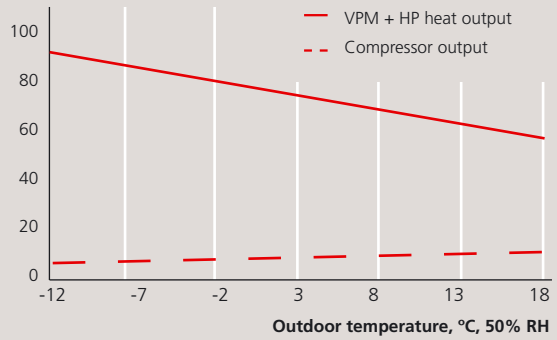
Resulting sound level, Lw (dB)

Air volume 10.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
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
Lw total	92	82	92	81	68

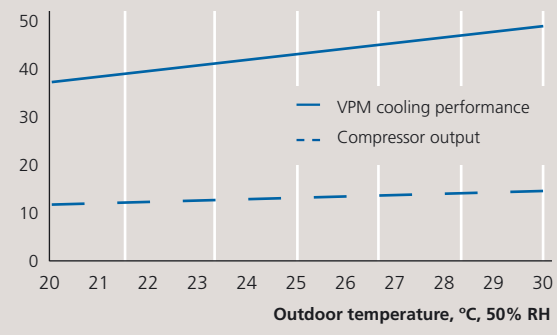
Heating

21° indoor temperature, 50% RH, air volume 10.000 m³/h.



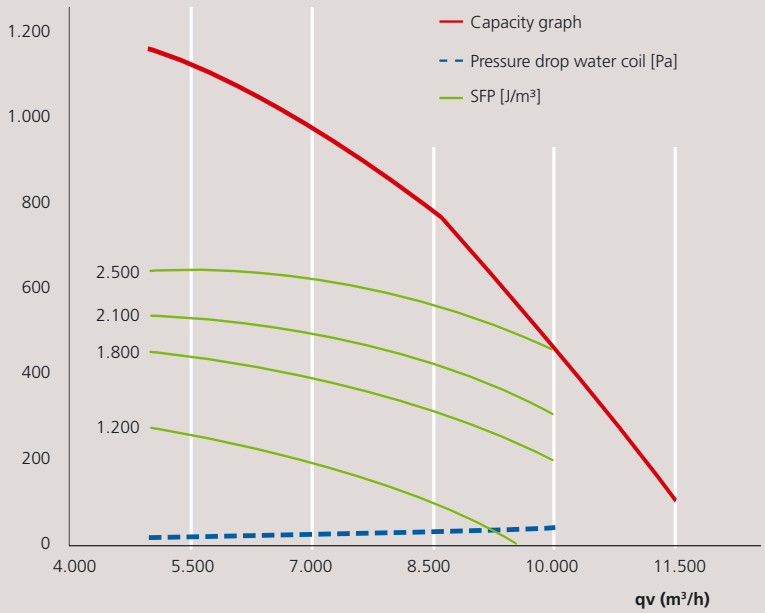
Cooling performance

21° indoor temperature, 50% RH, air volume 10.000 m³/h.



Capacity graph

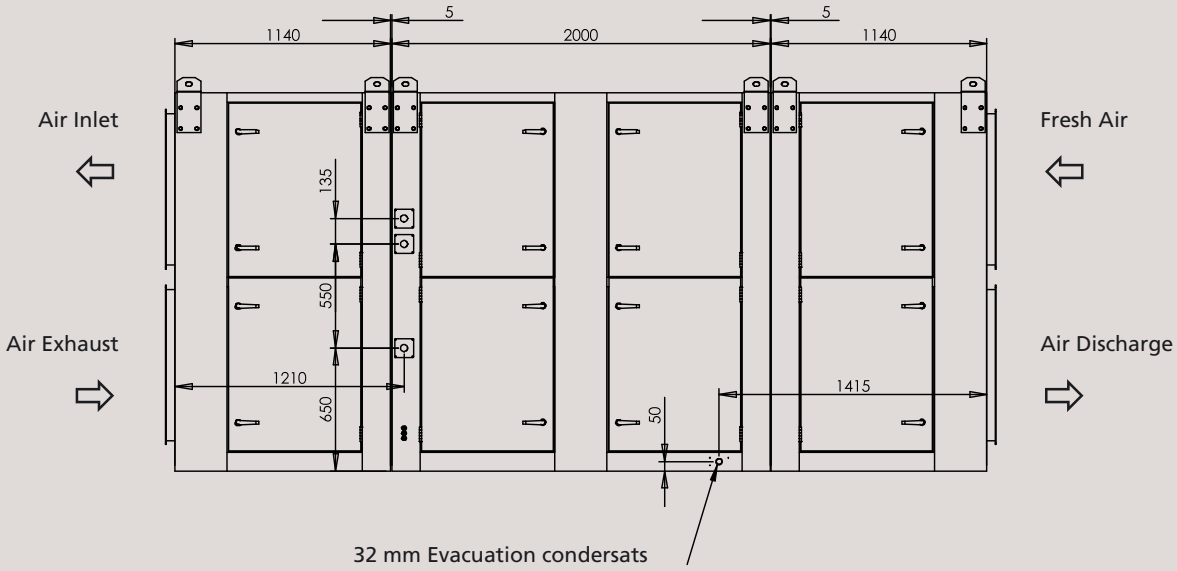
Pt External pressure drop [Pa]

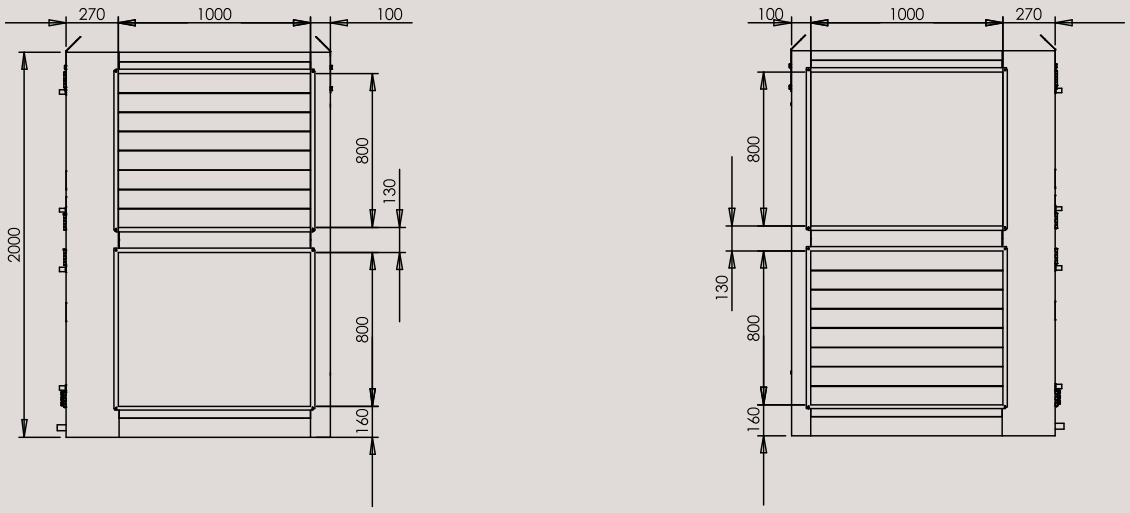


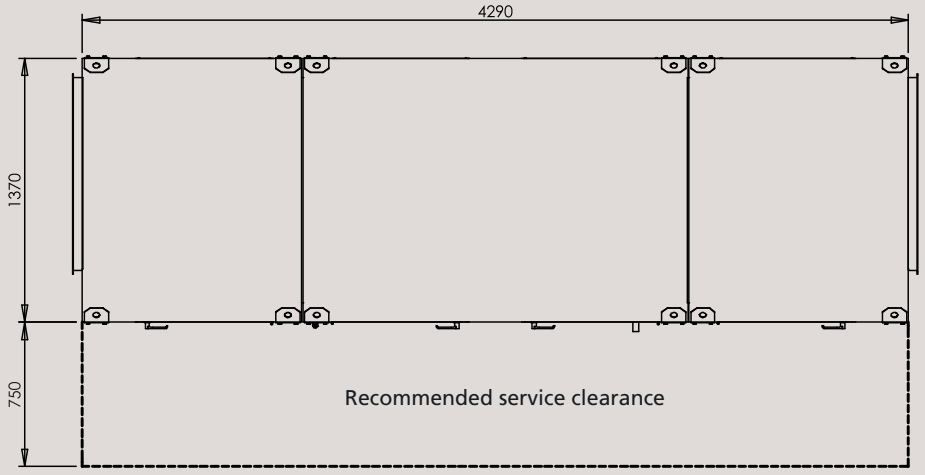
Nilan VPM 1000

Hermetic closed cooling circuit

Dimensional sketch







Nilan VPM 1200

Technical Data

Specifications

Air volume	m³/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

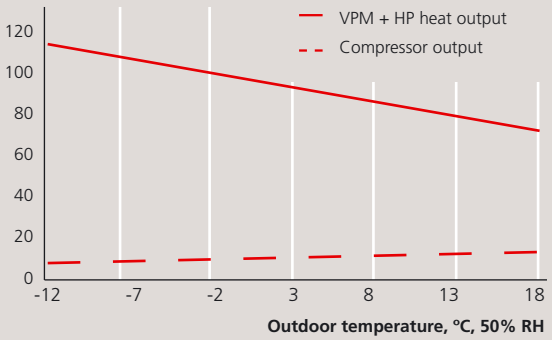
Resulting sound level, Lw (dB)

Air volume 12.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
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
Lw total	92	82	91	81	68

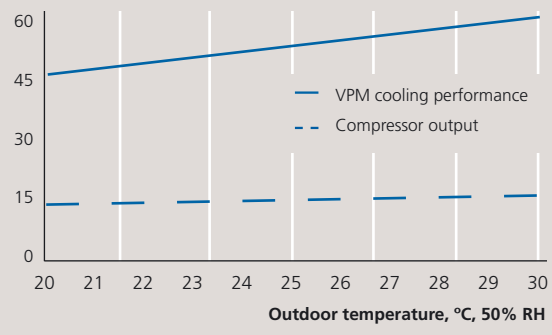
Heating

21° indoor temperature, 50% RH, air volume 12.000 m³/h.



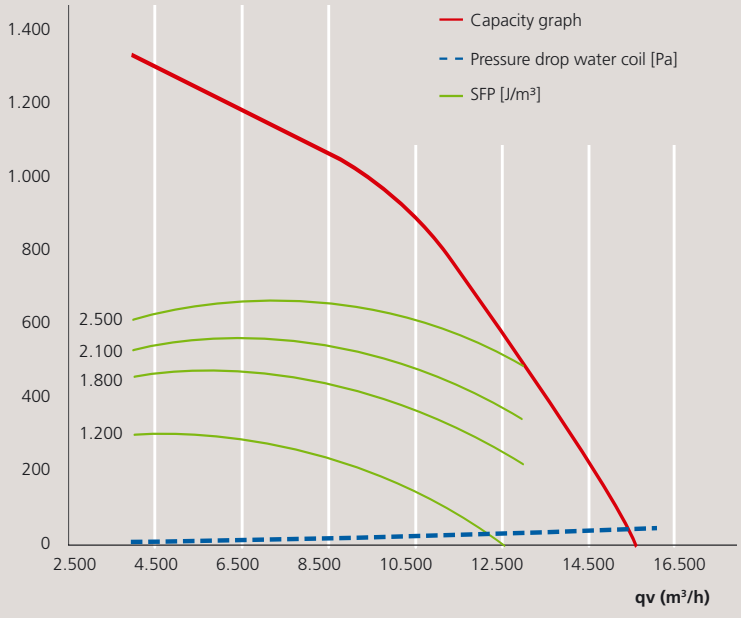
Cooling performance

21° indoor temperature, 50% RH, air volume 12.000 m³/h.



Capacity graph

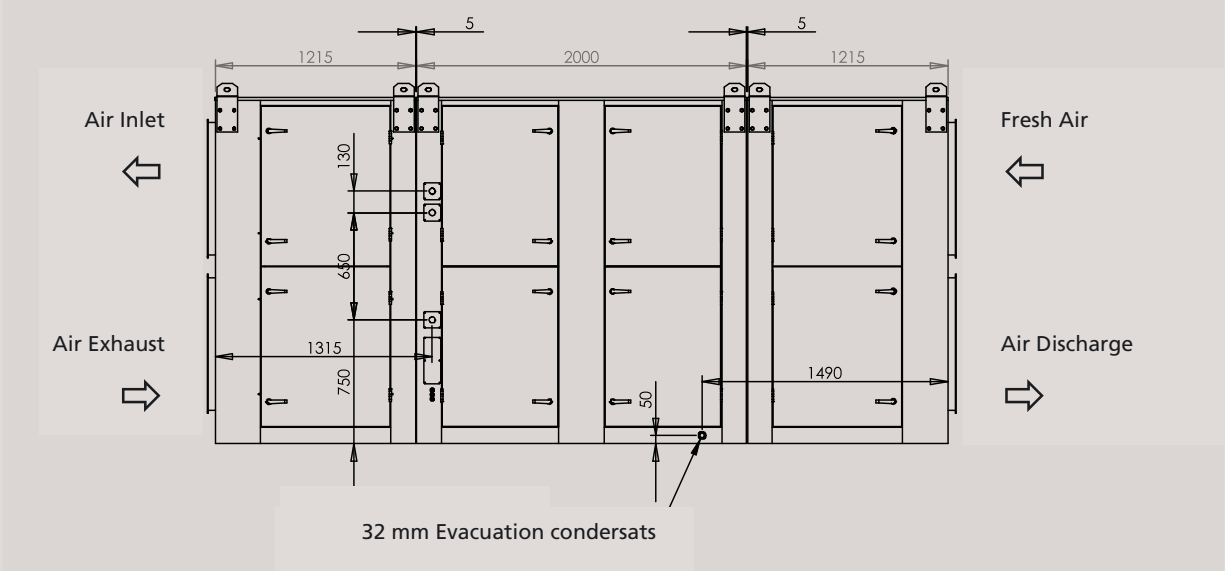
Pt External pressure drop [Pa]

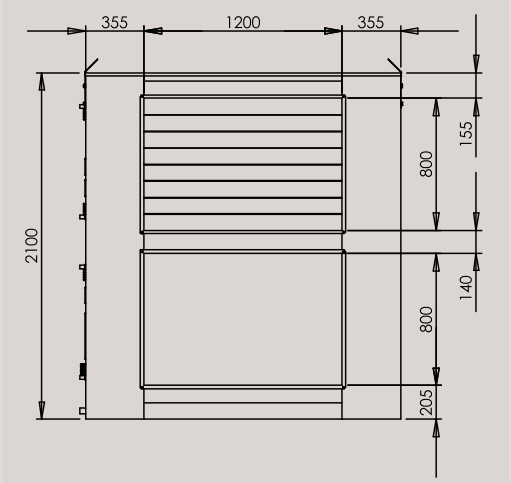


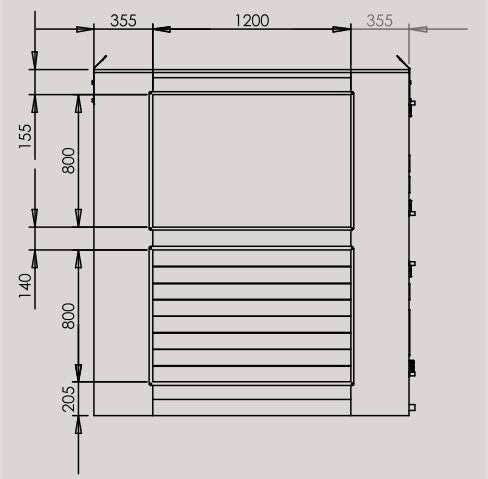
Nilan VPM 1200

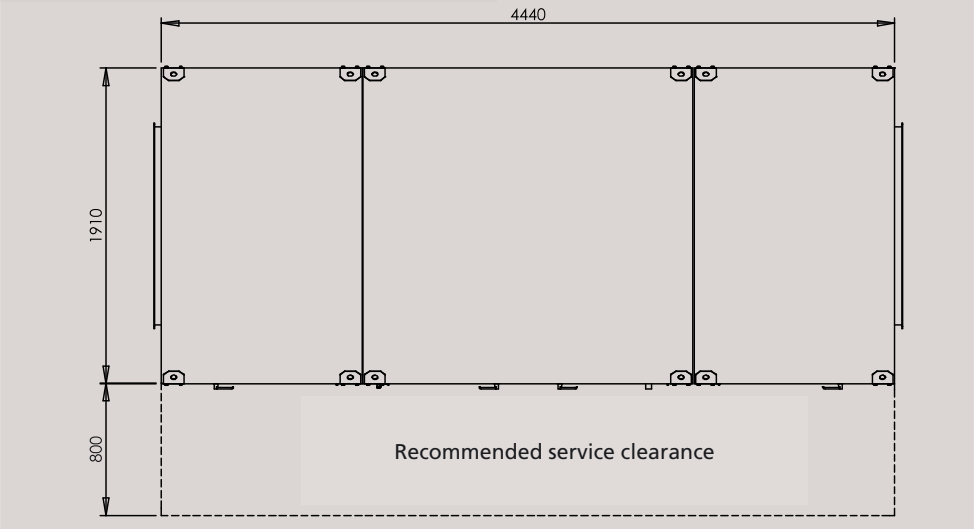
Built-in VPM control (CTS 6000)

Dimensional sketch









Nilan VPM 1500

Technical Data

Specifications

Air volume	m³/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

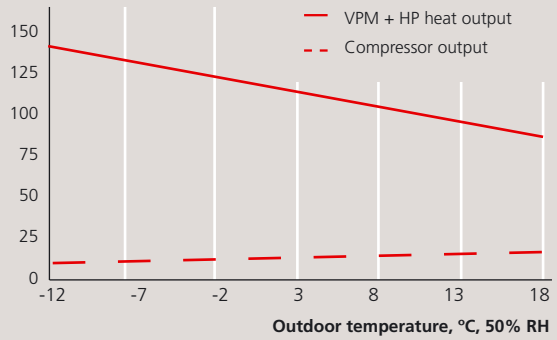
Resulting sound level, Lw (dB)

Air volume 15.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
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
Lw total	93	83	92	82	69

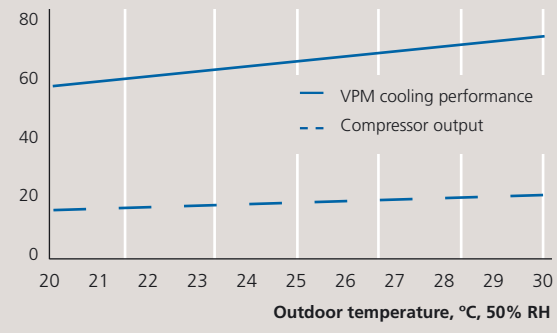
Heating

21° indoor temperature, 50% RH, air volume 15.000 m³/h.



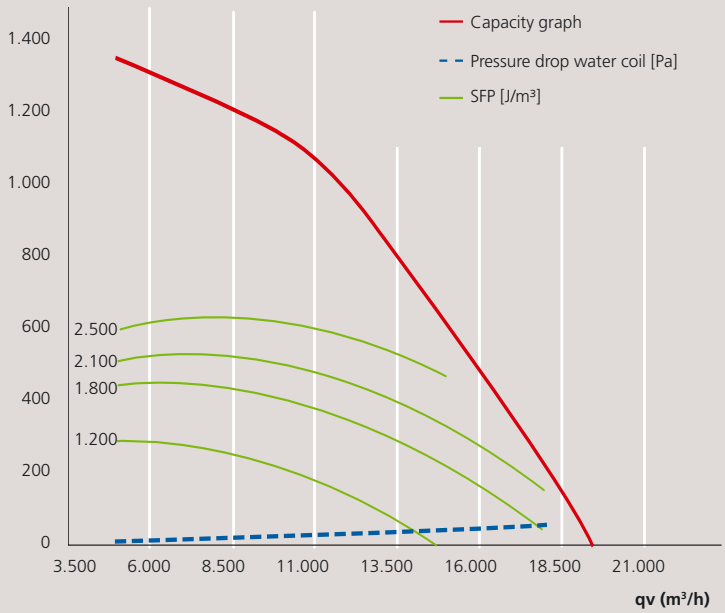
Cooling performance

21° indoor temperature, 50% RH, air volume 15.000 m³/h.



Capacity graph

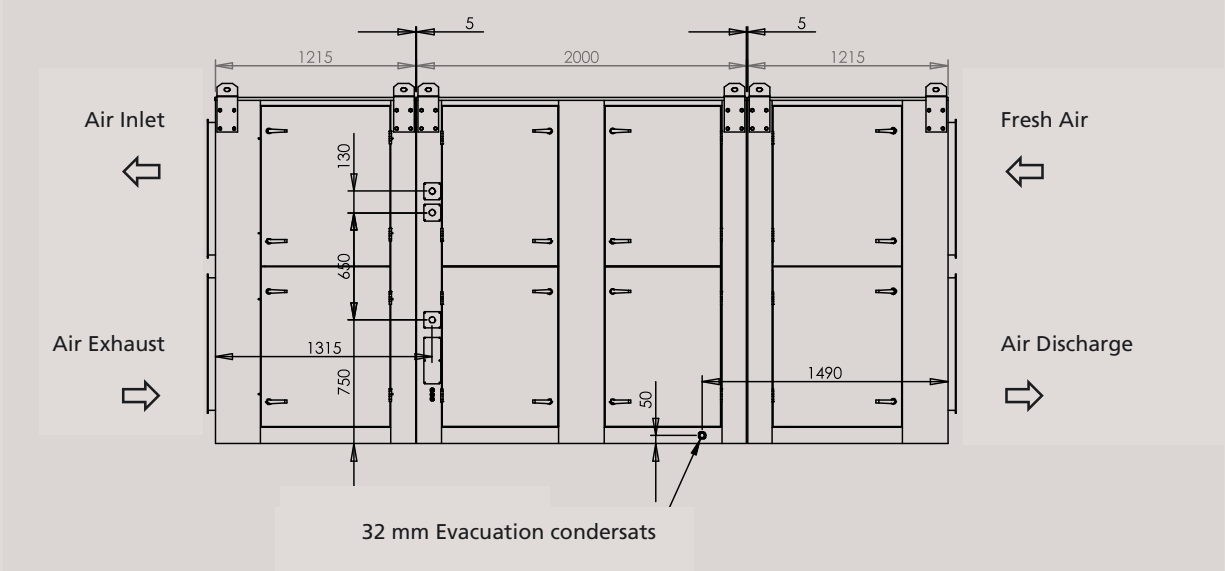
Pt External pressure drop [Pa]

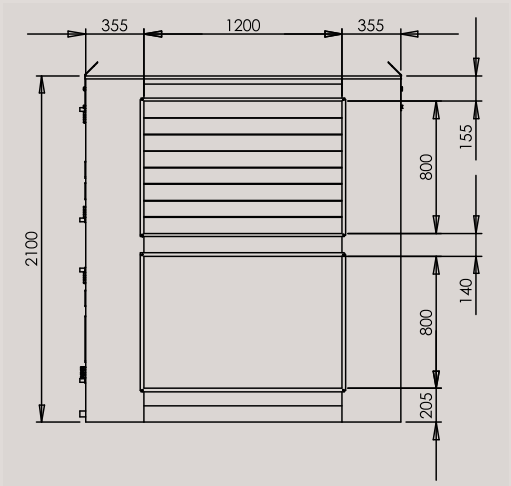


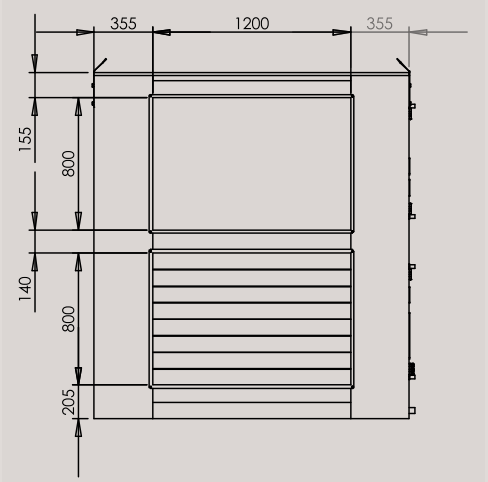
Nilan VPM 1500

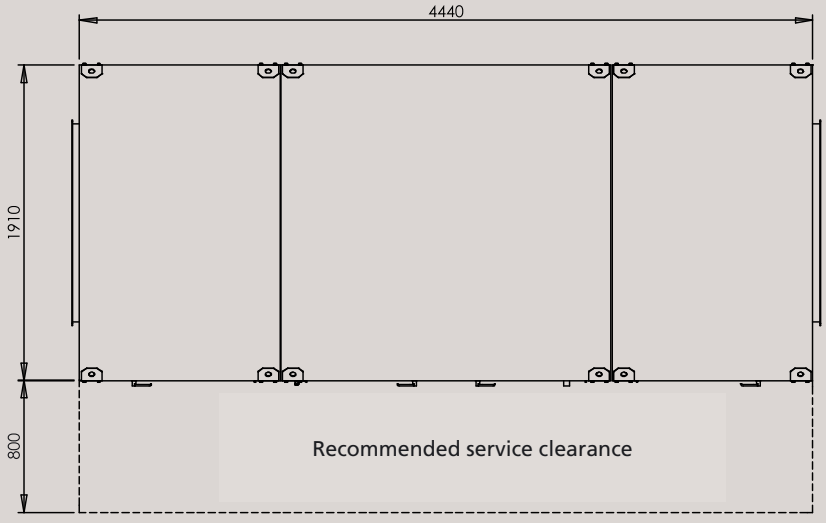
Built-in mixing circuit for water heating surface

Dimensional sketch









Nilan VPM 2200

Technical Data

Specifications

Air volume	m³/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

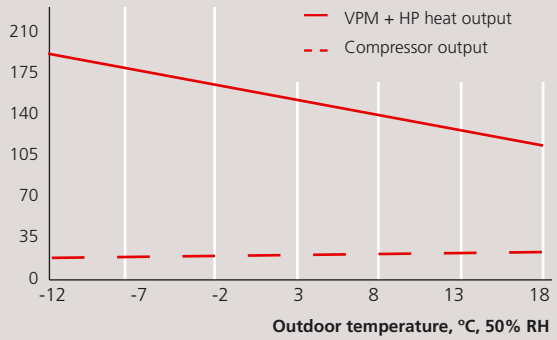
Resulting sound level, Lw (dB)

Air volume 22.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
63	84	76	83	76	67
125	87	79	87	78	69
250	91	83	91	82	63
500	91	79	90	79	54
1.000	87	72	86	71	46
2.000	83	60	82	58	43
4.000	78	48	78	45	40
Lw total	96	86	96	85	72

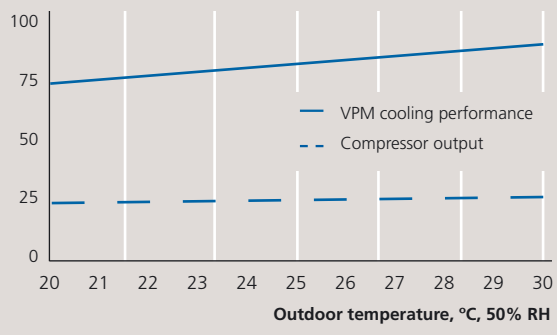
Heating

21° indoor temperature, 50% RH, air volume 22.000 m³/h.



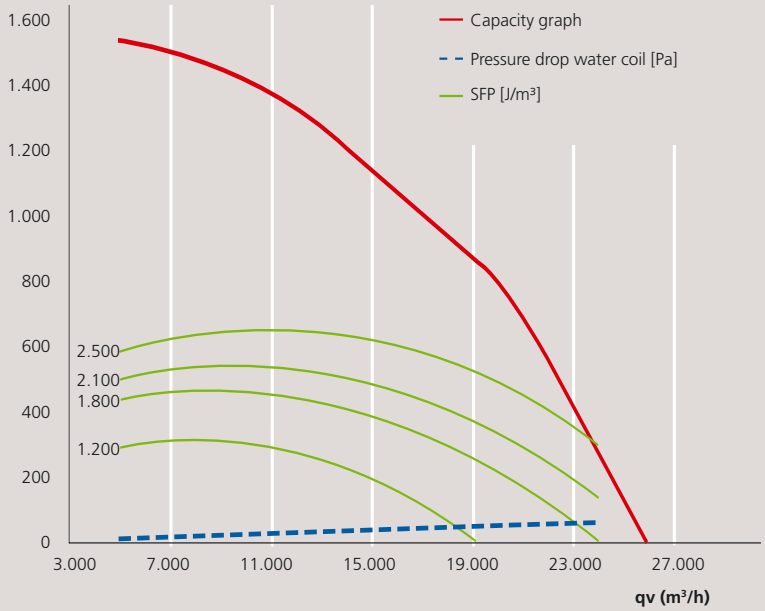
Cooling performance

21° indoor temperature, 50% RH, air volume 22.000 m³/h.



Capacity graph

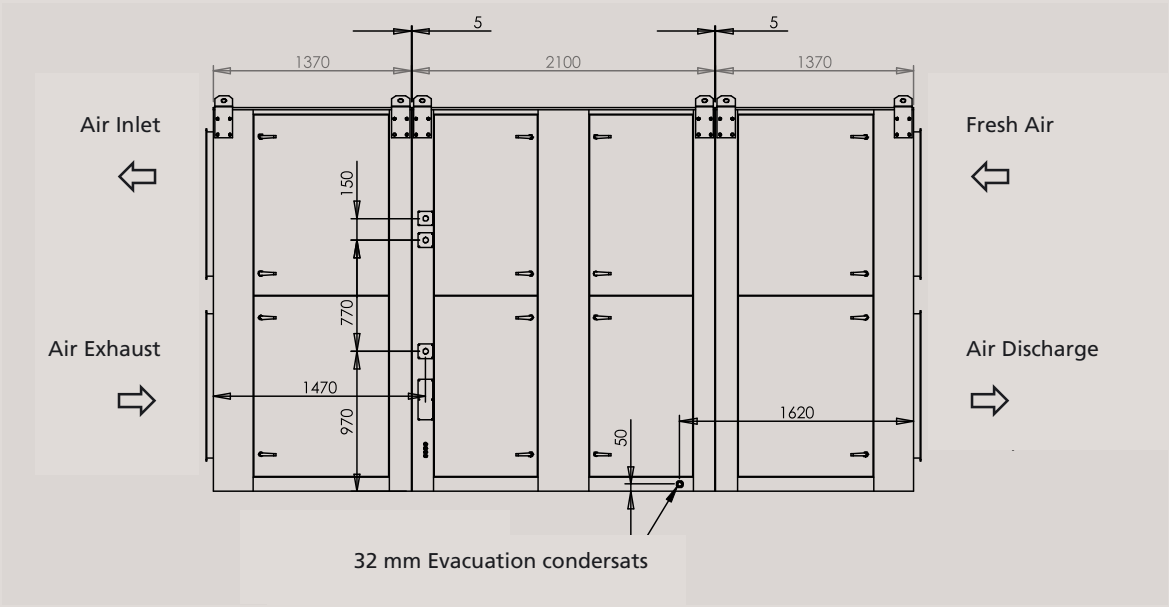
Pt External pressure drop [Pa]

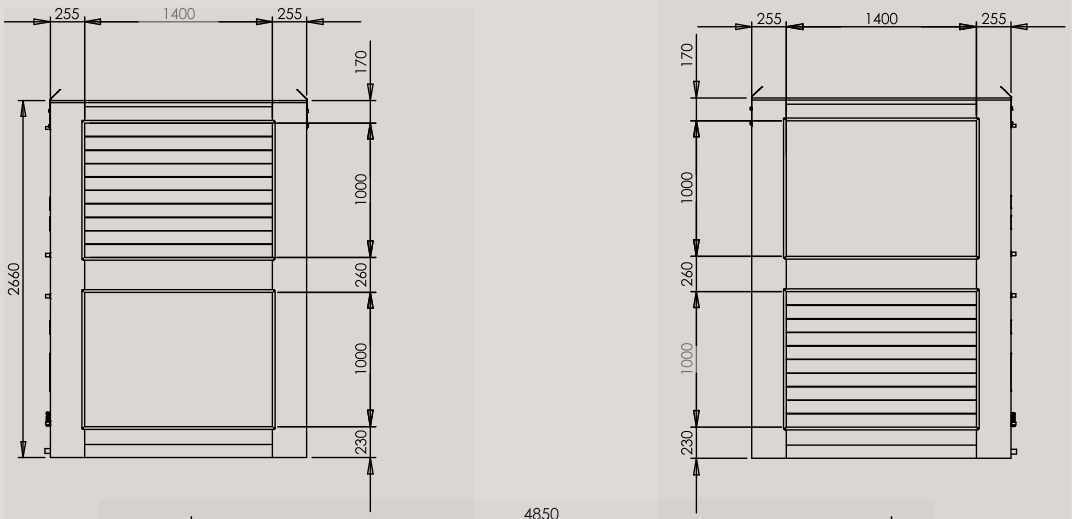


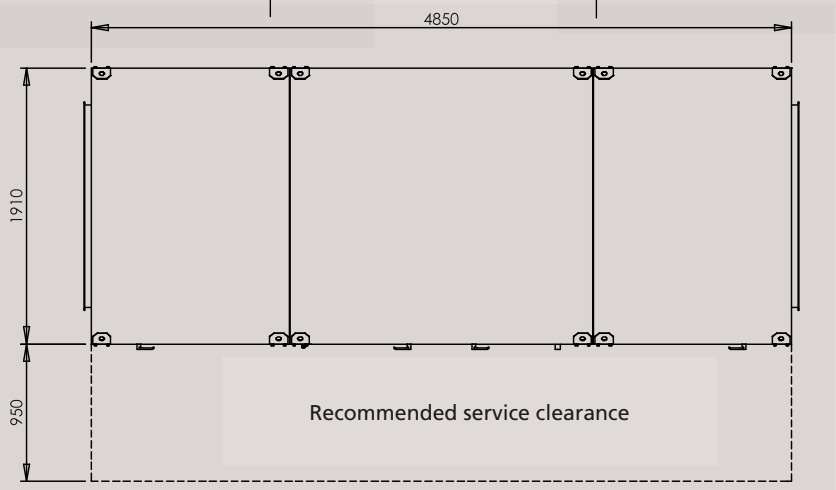
Nilan VPM 2200

Insulated corner profiles

Dimensional sketch







Nilan VPM 3200

Technical Data

Specifications

Air volume	m³/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

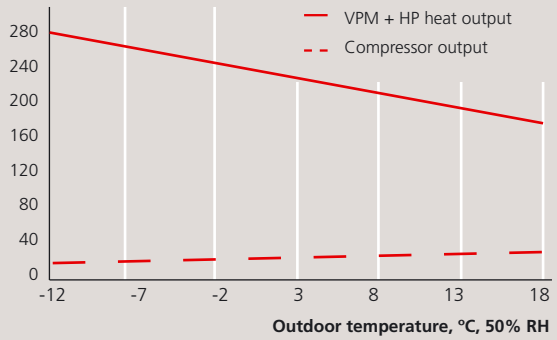
Resulting sound level, Lw (dB)

Air volume 32.000 m³/h 250 Pa, + Tolerance +/- 3 dB

Freq. Hz	Inlet air	Exhaust air	Discharged air	Outside air	Sur-roundings
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
Lw total	96	85	95	85	72

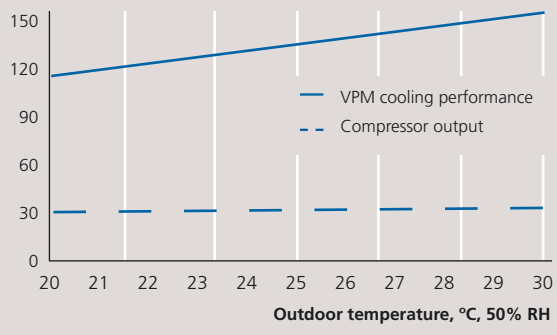
Heating

21° indoor temperature, 50% RH, air volume 32.000 m³/h.



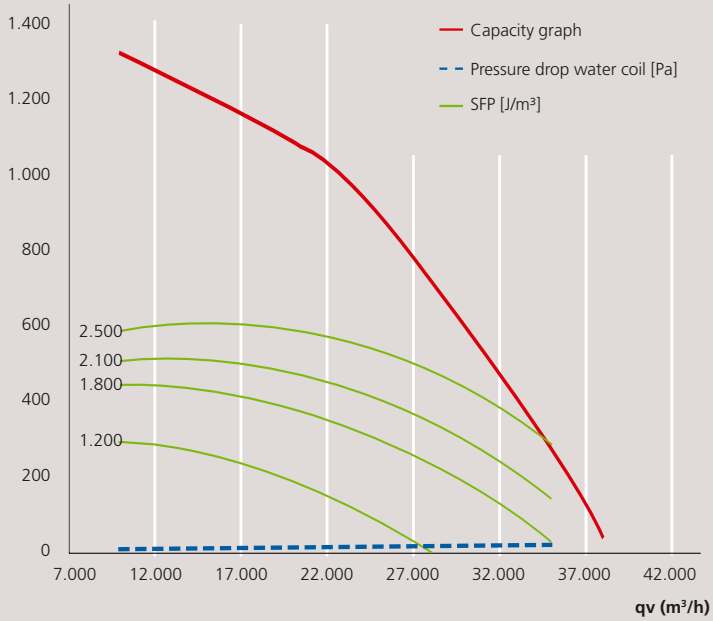
Cooling performance

21° indoor temperature, 50% RH, air volume 32.000 m³/h.



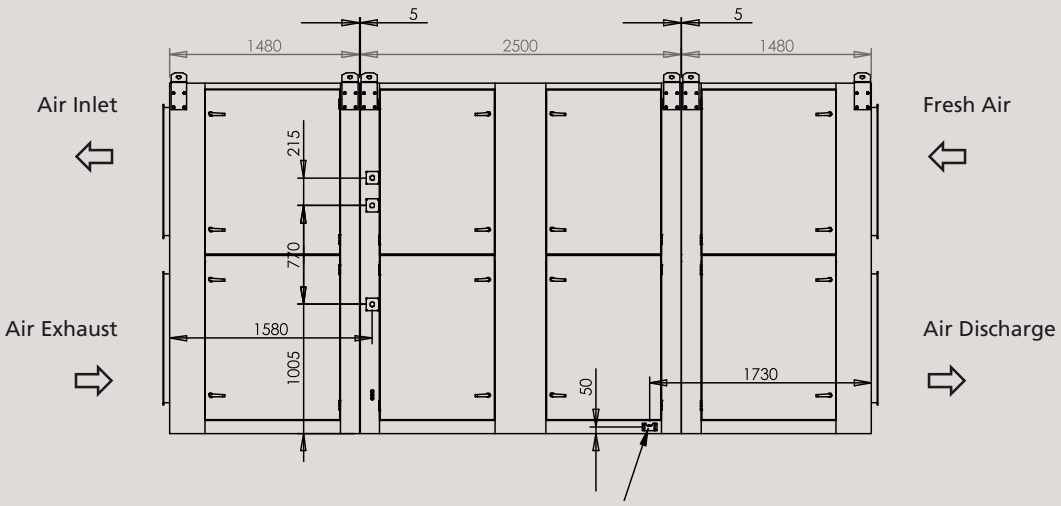
Capacity graph

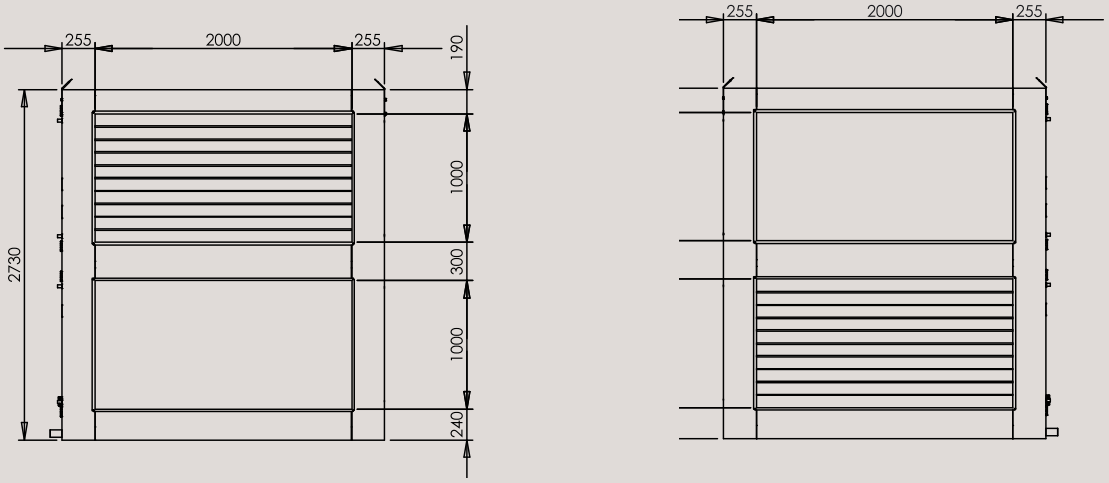
Pt External pressure drop [Pa]

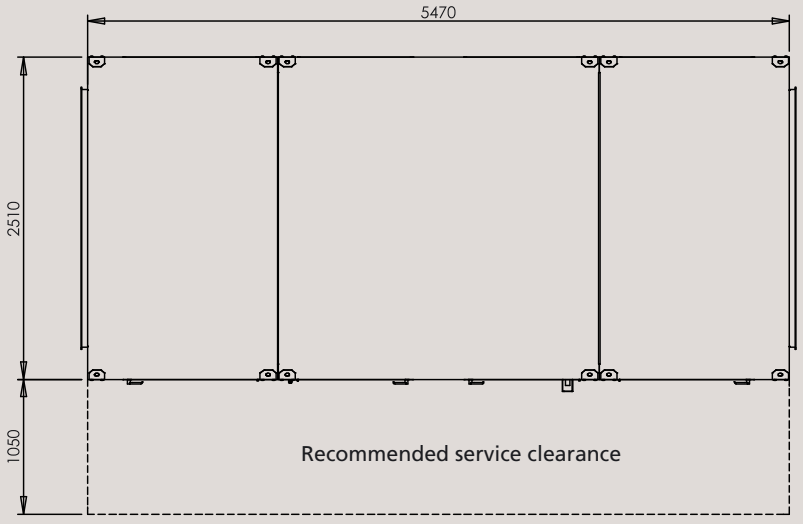


Nilan VPM 3200

Dimensional sketch

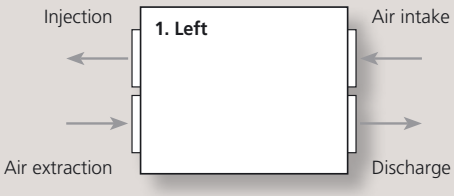


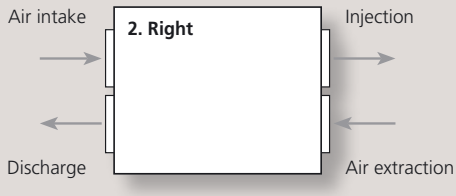




NILAN®
- outstanding indoor climate

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

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