



## Nilan Calculator





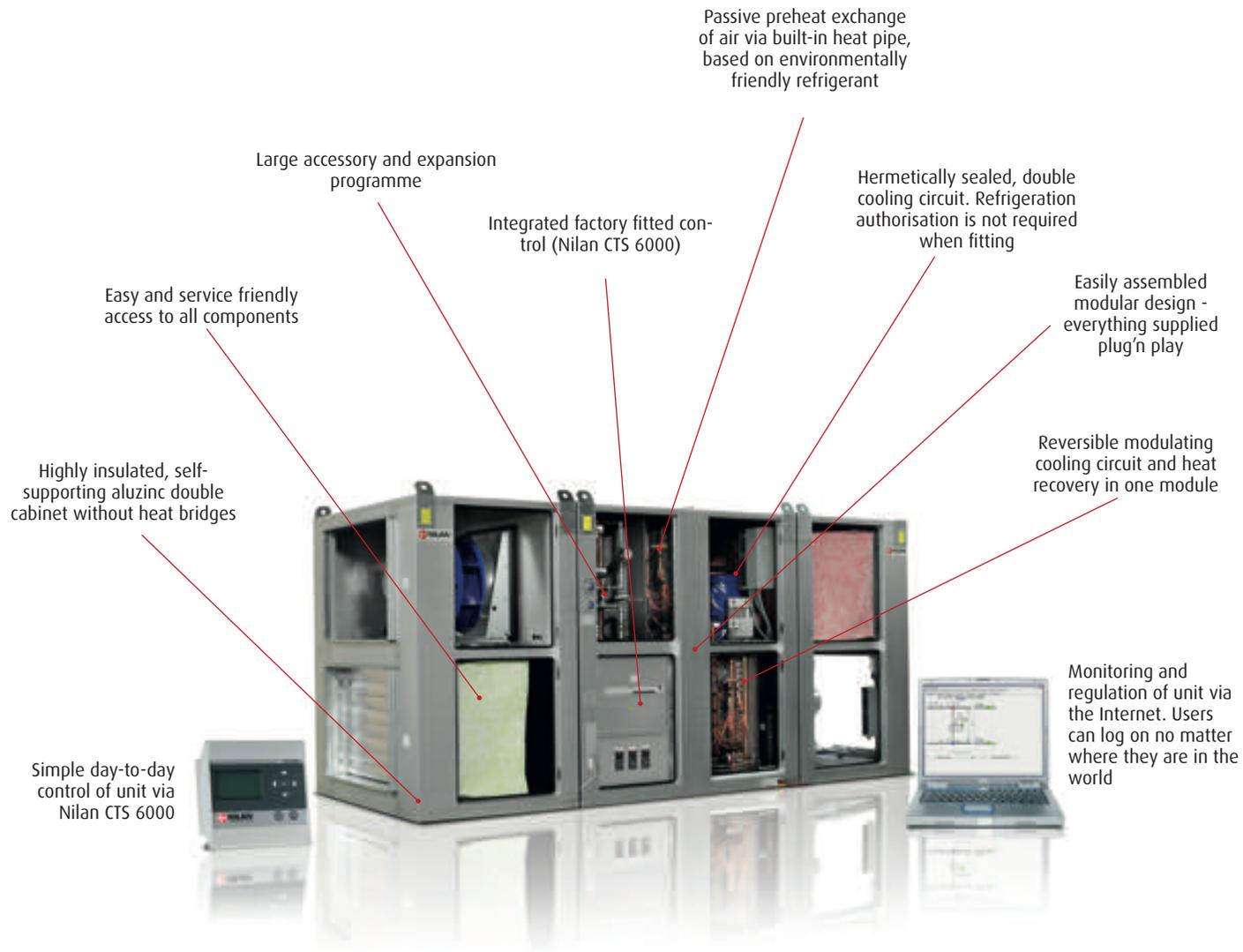
## Incorporating ventilation, heat recovery and cooling into just one system

Modern commercial buildings with large glass areas place high demands on ventilation systems. A system should actively contribute to both the heating and cooling of a building. Heat recovery and cooling functions are incorporated into the design of Nilan's commercial ventilation systems right from the start. Our intelligent systems interact with diurnal, seasonal and weather related variations to ensure that a healthy and stable indoor climate is achieved at minimum operating cost and in compliance with increasingly stringent environmental legislation requirements.

Nilan's VPM series is an all-in-one solution in which the three functions are designed to work optimally together. An active heat recovery unit with cooling removes warm damp air and adds tempered air to the building. Particles, smell and moisture are removed and a comfortable indoor climate is achieved. The energy in the exhaust air is recovered and is transferred to the inlet air

via a combination of passive heat recovery and a heat pump which extracts energy directly from the air. The VPM series is supplied as standard with a reversible cooling/heating system, with capacities of up to 35,000 m<sup>3</sup>/h.

The machinery can be regulated and day-to-day monitoring can be carried out via a web-based program. The simple and user-friendly web control provides approved users with the ability to control operation from any PC, no matter where the user is in the world. The web control ensures that malfunctions, alarms and maintenance messages are automatically reported via e-mail to the correct users. Web Control also allows the company's service partner to provide remote support and quickly diagnose any conflicts.



Passive preheat exchange of air via built-in heat pipe, based on environmentally friendly refrigerant

Large accessory and expansion programme

Integrated factory fitted control (Nilan CTS 6000)

Hermetically sealed, double cooling circuit. Refrigeration authorisation is not required when fitting

Easily assembled modular design - everything supplied plug'n play

Easy and service friendly access to all components

Reversible modulating cooling circuit and heat recovery in one module

Highly insulated, self-supporting aluzinc double cabinet without heat bridges

Monitoring and regulation of unit via the Internet. Users can log on no matter where they are in the world

Simple day-to-day control of unit via Nilan CTS 6000



Nilan's heat pipe and heat pump combination results in efficiencies of almost 100% being achieved.

# How to achieve an efficiency of 98 per cent?

Nilan's unique heat recovery units have particularly high efficiencies. Nilan's medium-sized industrial VPM ventilation systems have a temperature efficiency between 94 and 98 per cent. These high efficiencies allow much better operating economies to be achieved than with conventional systems. Heat supply requirements during winter are therefore reduced to a minimum, which results in significant building energy consumption savings and reductions in CO2 emissions.

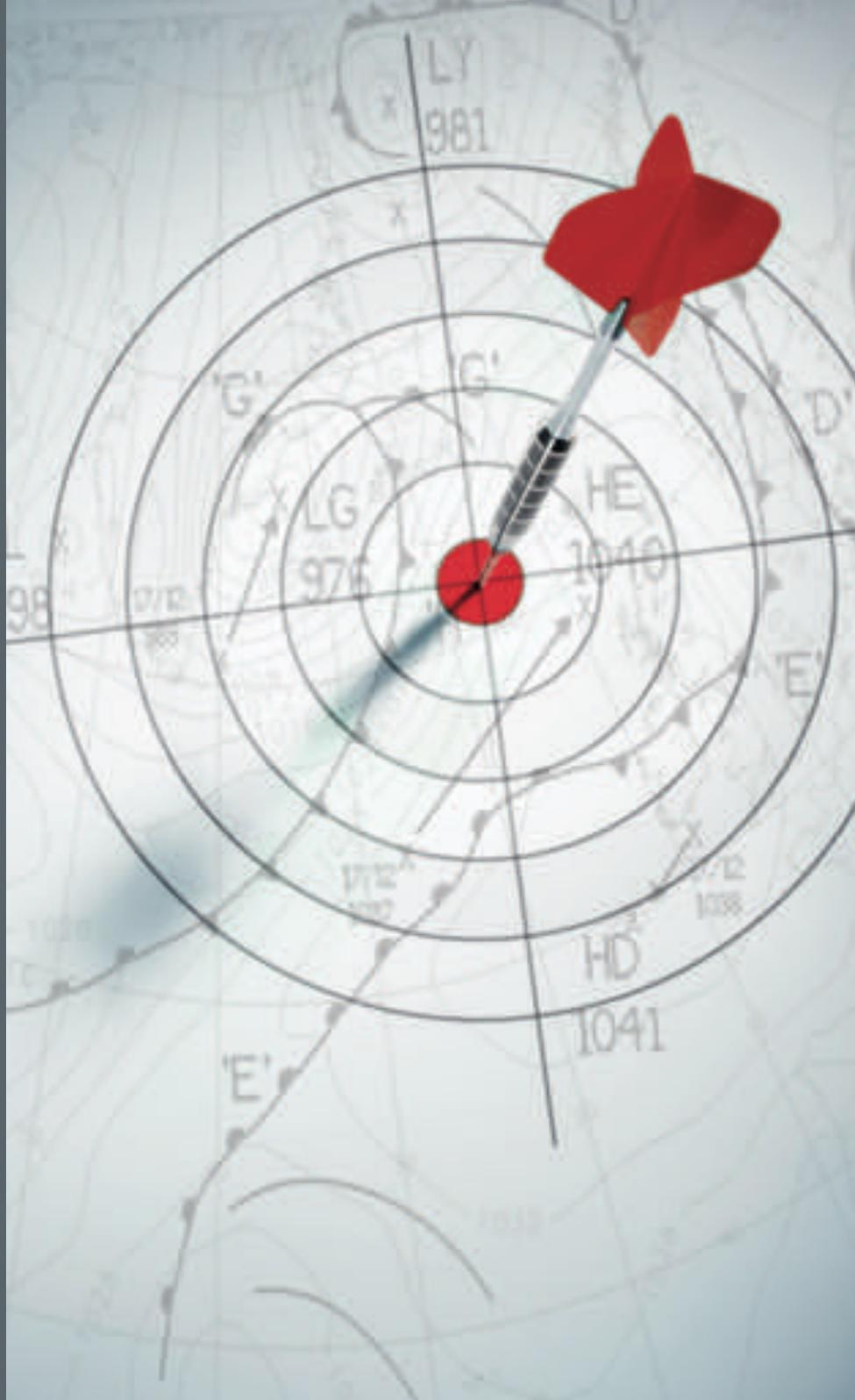
The high efficiencies of the VPM series are due to a unique design, which combines the best of two technologies: Heat pumps and heat pipes. Combining heat pipes and heat pumps improves efficiency significantly, resulting in efficiencies of almost 100%.

The condensation of the refrigerant in the heat pipe transfers energy from the exhaust air to the inlet air, without the two air flows being inter-mixed. The circuit continues to operate whilst

the exhaust air is warmer than the fresh air. The larger the temperature difference between the exhaust air and the fresh air, the higher the efficiency of the heat pipe.

The VPM series reversible heat pump furthermore provides building cooling in the summer months, so ensuring that room temperatures are always comfortable. The heat pipe is supplied with the natural refrigerant R744 which, unlike HFC gases, has no negative impact on the ozone layer or promotes global warming.





Nilan's unique calculation program provides access to precise, updated metrological measurements for the local area in which the system is to be used.

# How to **correctly** calculate operating economy?

Precise weather conditions and geographical position analysis are crucial elements in the selection of an efficient and economical ventilation system.

Nilan has developed a unique calculation program which allows realistic and extremely precise calculations, in which all factors are included, to be carried out. The program uses DRY data, which are based on extensive meteorological measurements for the local area in which the system is to be used.

Conventional calculation methods only take into consideration the system's efficiency at extreme temperatures. Nilan's calculation program is however based on data which provide a true and exact picture of the normal climatic conditions under which the system would typically work. Daily, weekly and holiday plans, which provide a detailed picture of when and how the system is to be used, can also be entered.

Nilan's new calculation program provides a precise and true basis on which the selection of the most economical ventilation system can be based. The program has been thoroughly tested to ensure it achieves the highest user friendliness levels and is continuously developed through dialogue with users. We appreciate all feedback, as this would give us the means to secure optimal development of future versions of the program.



You can order Nilan Calculator by sending an email to [calculator@nilan.dk](mailto:calculator@nilan.dk)

# Nilan A/S

- energy efficient solutions since 1974

Good indoor climate and low levels of energy consumption. These have always been the goals of Nilan.

We have developed energy saving heating solutions for commercial buildings and private homes since 1974. Our Danish produced heat pumps and ventilation systems are today among the most advanced and modern technologies in the low energy market.

You are very welcome to contact us if you have questions or would like to find out more about Nilan's energy efficient solutions.



**Nilan A/S**  
Nilanvej 2  
DK-8722 Hedensted  
Tel. +45 7675 2500  
Fax +45 7675 2525  
nilan@nilan.dk  
www.nilan.dk