

# Nanovac - Galaxy Thermal Vacuum Chamber Solutions





Nanovac AB

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IVC LT

# Philosophy

## **Nanovac ABs Thermal Vacuum Chambers (TVCs)**

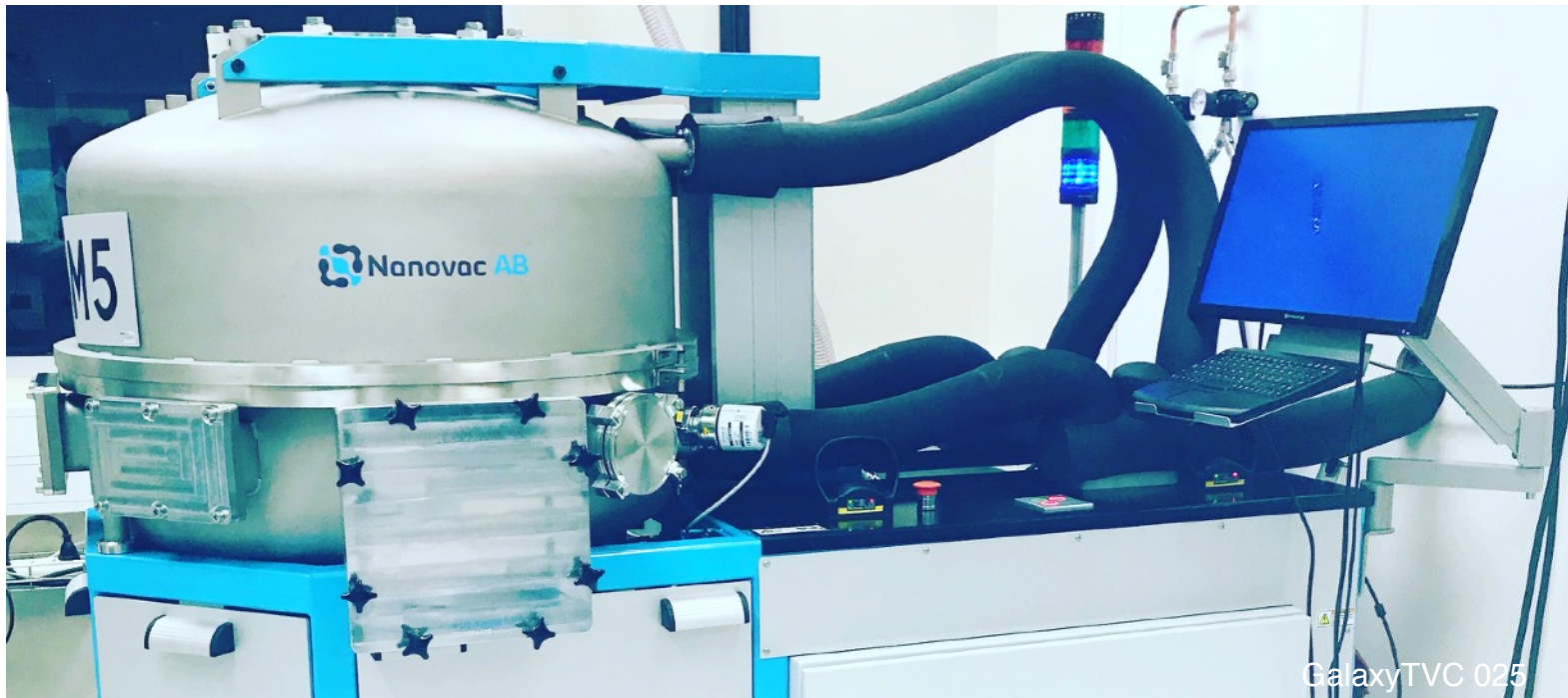
are state of the art advanced thermal vacuum chambers. Nanovac AB have worked in the high vacuum industry since 1993 and has become a leading

systems is to make no compromise on quality or components used. We only use the best solutions with parts from the best OEM manufacturers.

In our systems we employ the latest

maximum repeatability and reliability.

Our solutions are cost effective, and we do not only supply custom solutions but we also have a comprehensive suite



GalaxyTVC 025

manufacturer of advanced vacuum systems, ranging from central vacuum plants to plasma processing systems. We have also manufactured and delivered some of the worlds most advanced thermal vacuum solutions. Our philosophy when building and designing

technology when it comes to control and data logging ensuring that our customers have full traceability when operating our systems.

Our thermal vacuum chambers use patent pending technology to ensure maximum performance with

of standard thermal vacuum systems available with short delivery times.

# Innovation

**Our Thermal Vacuum Chambers** are packed with innovation and several patent pending solutions. All designed to improve thermal performance and vacuum performance.

Regardless if we

control ensures extremely accurate temperature control not only during steady state, but also during ramp cycles. We have proven precise control of 16 independent temperature zones in a temperature range ranging from 83K up to

quadratic controller with patent pending real-time adaptable mathematical arrays.

This also allows for precise simulation of the actual cycle behavior within the same software package, allowing

$$= \int_0^{t_f} \Delta \vec{T}(\tau)^T \mathbf{Q} \Delta \vec{T}(\tau) +$$

designing a custom chamber for a specific requirement, or if we are supplying one of our standard solutions we provide state-of-the-art control solutions with unprecedented thermal control and performance.

Our software algorithms for thermal

580K. If all temperature panels are set to the same set point with identical ramp the temperature variation during the actual ramp is smaller than  $\pm 2\text{K}$  and can be as small as less than 1K (with further optimization). This is achieved by a unique software algorithm combining a linear

You to simulate the run before actually executing it.

# Performance

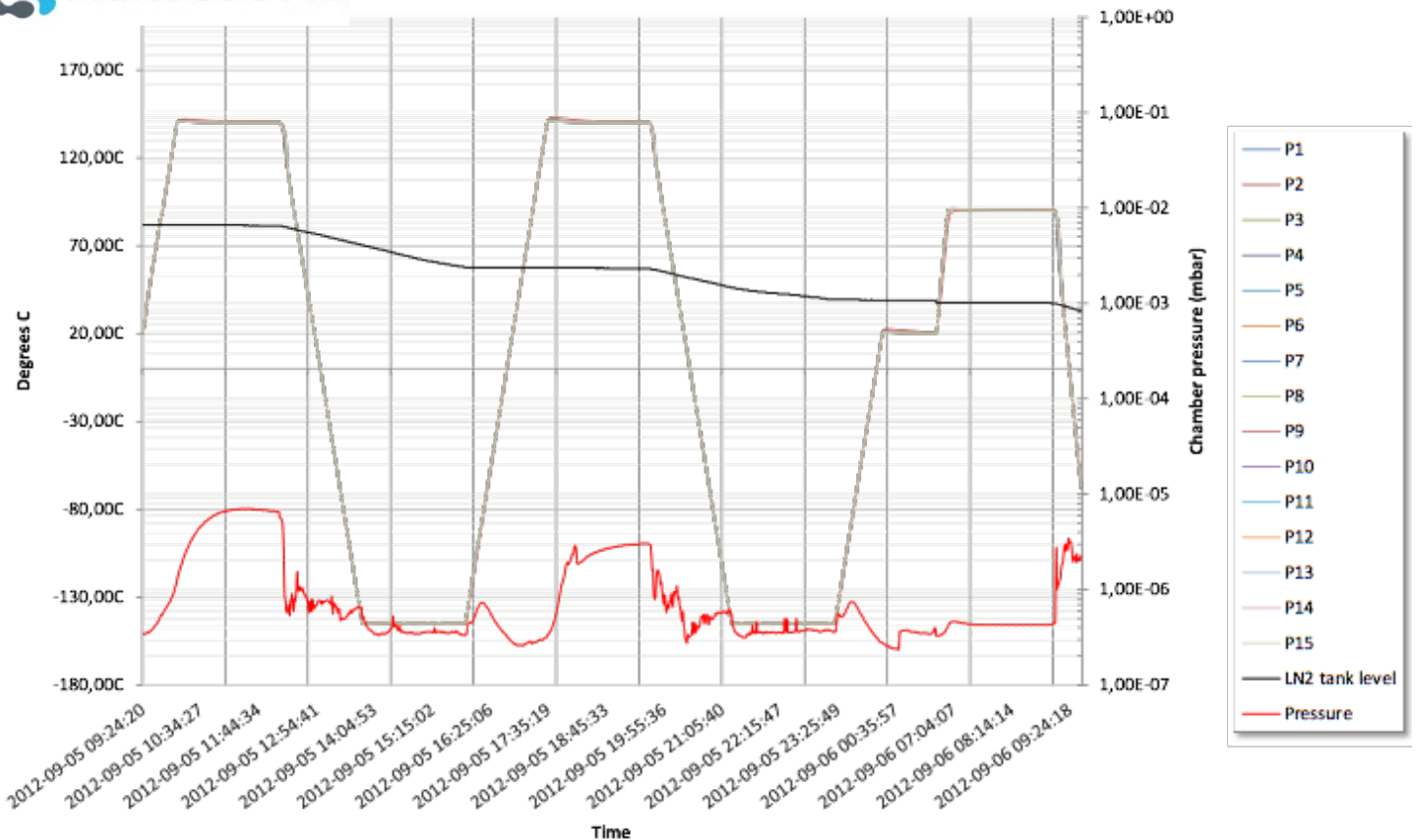
**Our Thermal Vacuum Chambers** offer unprecedented performance. Both in regard with vacuum performance as well as in temperature performance.

ANSI-ISA 88 standard, which ensures full traceability throughout the lifetime of the system. Our bayRecipe cycle designer allows for easy design of advanced thermal

format architecture allowing our users to access and retrieve data in real time from the database for use in their own data acquisition efforts.



**System temperature (TVC225) 24 hr**



In order to meet the strict requirements of the industry all our systems are equipped with an on-board SQL server, which houses all the data for each run. The database format adheres to the strict

cycles and generates a complete run report for each cycle run. Any relevant data can be included in the report.

The SQL database is provided with an open

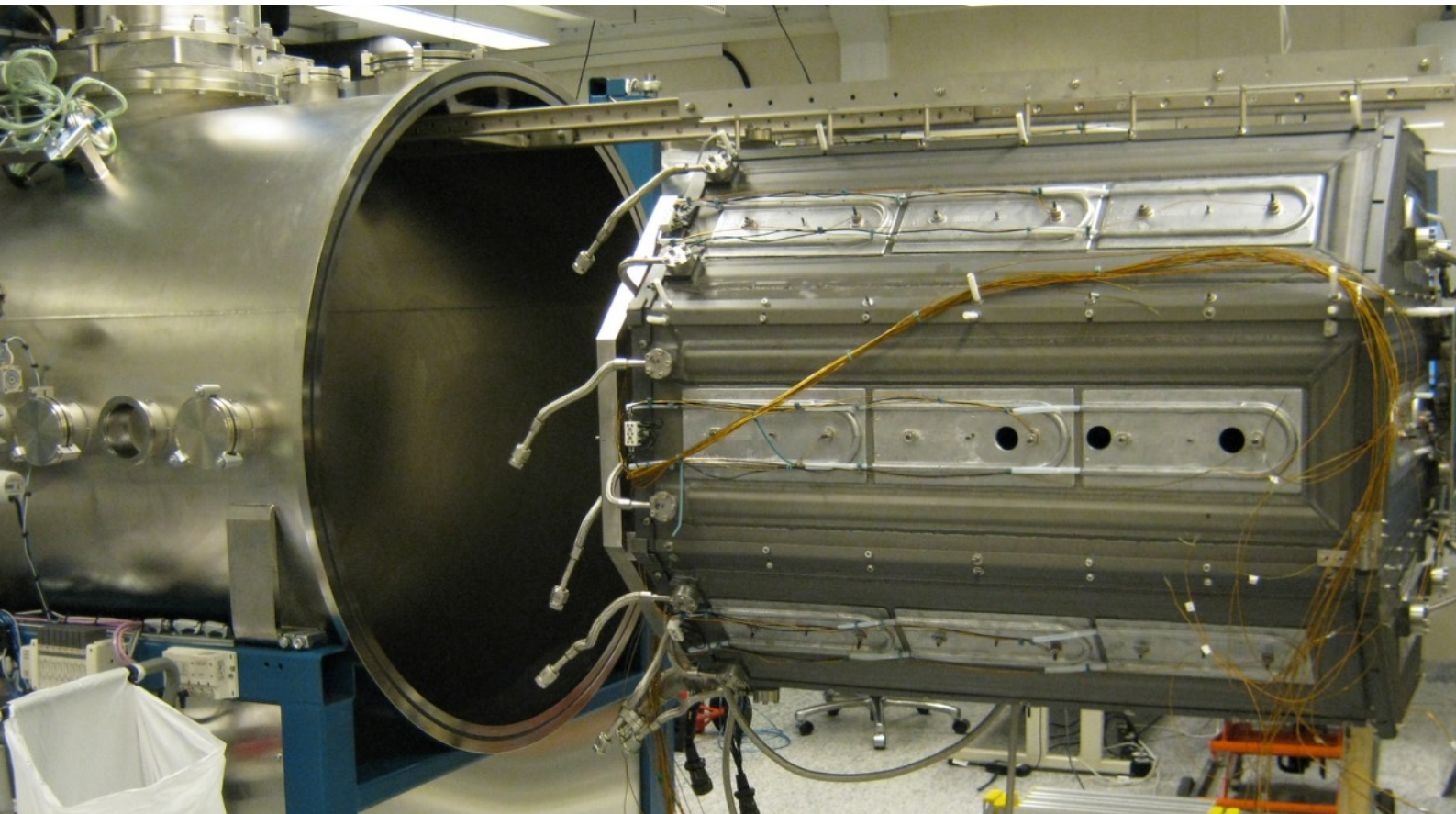
# Reliable

**Reliability** and reproducibility are key when we design and build our vacuum systems. Ease of use is another key aspect that we work to achieve in all our

The materials and components used throughout the system are designed to withstand the harsh testing environment for long periods without any reduction in

required. All in the interest of reducing down time and increasing the availability of the testing environment.

Our remote-router



solutions. With all of these features built into our solution we offer a very reliable, robust and user friendly thermal vacuum system solution that will perform reliably over the lifetime of the system.

vacuum or thermal performance.

Built in service scheduling ensures that the system will let the operator know well ahead of time when a scheduled preventive maintenance is

(eWON) solutions allow for immediate support and monitoring remotely if required.



Nanovac AB

elisi-tech  
THERMAL VACUUM TEST CHAMBER  
Chamber size: 1400 x 1700 mm  
Working space: 800 x 500 x 400 mm  
Vacuum: < 1 mPa, 400 l/s  
Temperature: 40°C to -100°C

TVCL2

# Locally. Globally.



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