

Sirius - Mechanical Chiller Thermal Vacuum Systems

Turnkey thermal vacuum systems to subject your spacecraft, systems, and components to the rigors of space

Dynavac distills forty years of space simulation expertise into our Sirius line of thermal vacuum systems optimized for testing micro and mini class spacecraft and flight hardware.

Dynavac's Sirius mechanically chilled thermal vacuum systems deliver Dynavac's performance and reliability to facilities that lack a liquid nitrogen supply. Robust chillers deliver tightly-controlled thermal fluid to cool and heat the active platen.

This platform is highly configurable with a range of options. Dynavac also offers fully custom systems to meet unique test requirements.



System specifications

Chamber

- Cylindrical chambers
 - 3 ft diameter in 3 and 4 foot lengths
 - 4 and 5 ft diameters in 4, 5, & 6 foot lengths
- Type 304 stainless steel; #4 finish
- Leak tested to $< 1 \times 10^{-9}$ std/cc/sec
- Full opening door with optional 6" viewport
- Standard selection of user ports
 - 2.75" CF: Quantity 3
 - NW50: Qty 2
 - ISO250: Qty 4
- User port selection and location can be configured to meet customer requirements
- Port for dry nitrogen repressurization included

Pressure

- Base pressure $< 1 \times 10^{-6}$ Torr
- Dry mechanical roughing pump
- High vacuum cryopump
 - Turbomolecular pump available as option
- Cryopanel option for enhanced water vapor pumping speed

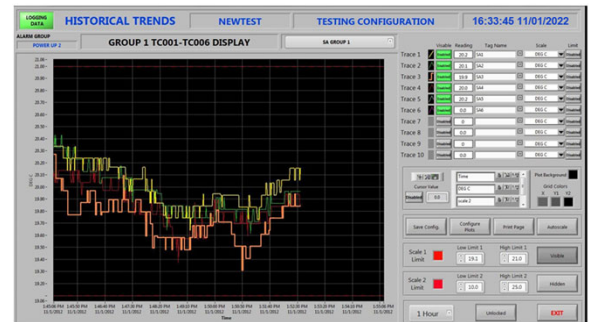
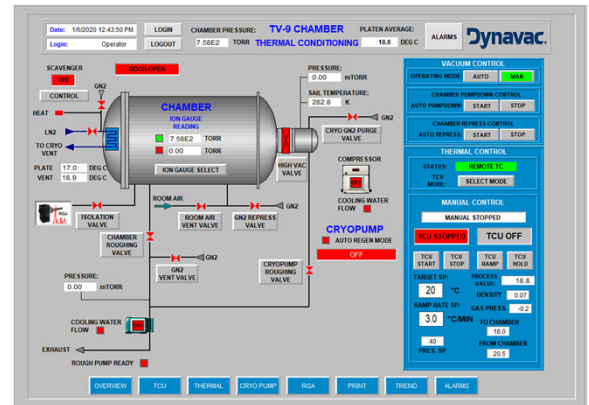
Thermal

- Mechanical chiller fully integrated into system controls
- Temperature range -60 to +125C; other ranges available as options
- Temperature ramp rate $> 1\text{C}/\text{minute}$
- Active platen; aluminum; mounted on sliding rails
- 1/4x20 threaded Nitronic inserts on 4" grid
- Thermal shroud available as option

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System control

- Comprehensive and intuitive user interface hosted on PC running LabVIEW
 - 24" HD LCD monitor; 9" touchscreen optional
- User interface located adjacent to chamber or in remote control room
- User can define and store test profiles
- System and component states displayed and controlled through status screens
- Optional Type-T thermocouples available for user
 - 1 sample/ second minimum sample rate
- Chamber pumping and thermal systems controlled by embedded PLC to protect equipment and operator; provides fail-safe
- Remote diagnostic capability included
- No ongoing license or subscription fees



Accessories

- A wide range of accessories are available, including:
 - Cryopanel, cold plates, and cold fingers
 - User signal and power feedthrough plates
 - Thermal data acquisition system (TDAS)
 - Auxiliary thermal control system (ATCS) delivers controlled power to test article
- Contact Dynavac for a full list of accessories

Dynavac support

- Systems are fully tested prior to shipping
- System documentation includes Operation and Maintenance Manual, as-built mechanical drawings, and electrical schematics
- Covered by standard one-year Dynavac warranty
- On-site installation and start-up service available
- Annual maintenance contracts available

Custom sizes, configurations, and performance available on request

Dynavac- creating the environment for your mission success