

Sirius-GN2 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 spacecraft and flight hardware in the micro to mini size classes.

Dynavac's Sirius-GN2 thermal vacuum use our proprietary thermal control units (TCUs) delivering gaseous nitrogen to heat and cool a thermal shroud and active platen.

These standard platforms are highly configurable with a range of standard options. Dynavac also offers fully custom systems to meet unique test requirements.

Dynavac is the leader in thermal vacuum systems for space simulation and a trusted partner of aerospace companies, universities, and government agencies.



Eight-foot Sirius-GN2 system with optional loading cart

System specifications

Chamber

- Cylindrical chambers
 - 4 to 8 feet diameter
 - 4 to 10 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 (see chart below)
 - Custom port selection and locations available as option
- Port for dry nitrogen repressurization included

Pressure

- Base pressure $< 1 \times 10^{-6}$ Torr
- Pumping system fully integrated into operator controls
- High vacuum cryopump(s)
 - Turbomolecular pump available as option
- Cryopanel option for enhanced water vapor pumping speed

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Thermal

- Dynavac Thermal Control Unit (TCU) delivers gaseous nitrogen to heat and cool thermal shroud and platen
- Temperature range -180 to +150C
- Temperature ramp rate > 1C/minute
- Thermal shroud standard; coated with optically dense paint

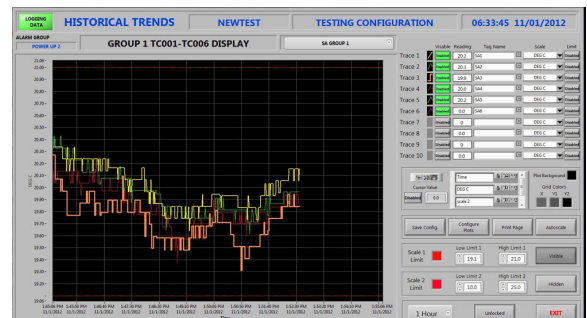
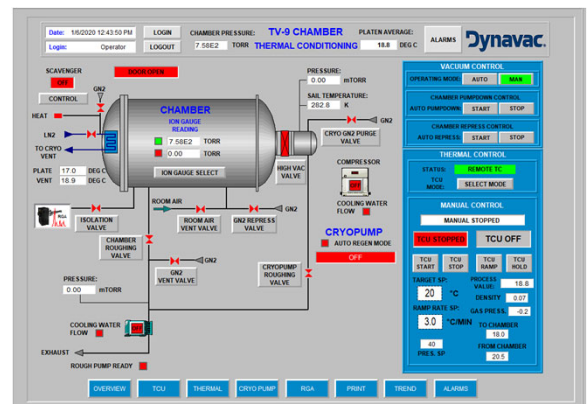
Platen

- Actively controlled platen is fully integrated into thermal system
- Aluminum construction
- Platen mounted on sliding rails to aid test article loading and unloading
- 1/4x20 threaded Nitronic inserts on 4" grid



System control

- Comprehensive and intuitive user interface hosted on PC running LabVIEW with 24" HD LCD monitor
- 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
- Type-T thermocouples available for user as option
 - 1 samples/ second minimum sample rate
- Chamber pumping and thermal systems controlled by embedded PLC to protect equipment and operator; provides fail-safe operation
- Remote diagnostic capability included
- No ongoing license or subscription fees



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Standard User Ports

		Chamber length (feet)						
		3	4	5	6	7	8	10
Chamber diameter (feet)	4		CF2.75 3x NW50 2x ISO320 4x	CF2.75 3x NW50 2x ISO320 4x	CF2.75 3x NW50 2x ISO320 4x			
	5		CF2.75 3x NW50 2x ISO320 4x	CF2.75 3x NW50 2x ISO320 4x	CF2.75 3x NW50 2x ISO320 6x			
	6			CF2.75 3x NW50 2x ISO320 4x	CF2.75 3x NW50 2x ISO320 4x	CF2.75 3x NW50 2x ISO320 6x		
	7				CF2.75 3x NW50 2x ISO320 6x	CF2.75 3x NW50 2x ISO320 6x	CF2.75 3x NW50 2x ISO320 8x	
	8					CF2.75 3x NW50 2x ISO320 8x	CF2.75 3x NW50 2x ISO320 8x	CF2.75 3x NW50 2x ISO250 4x ISO320 4x

- User port selection and location can be configured to meet customer requirements
- Port for dry nitrogen repressurization included

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