

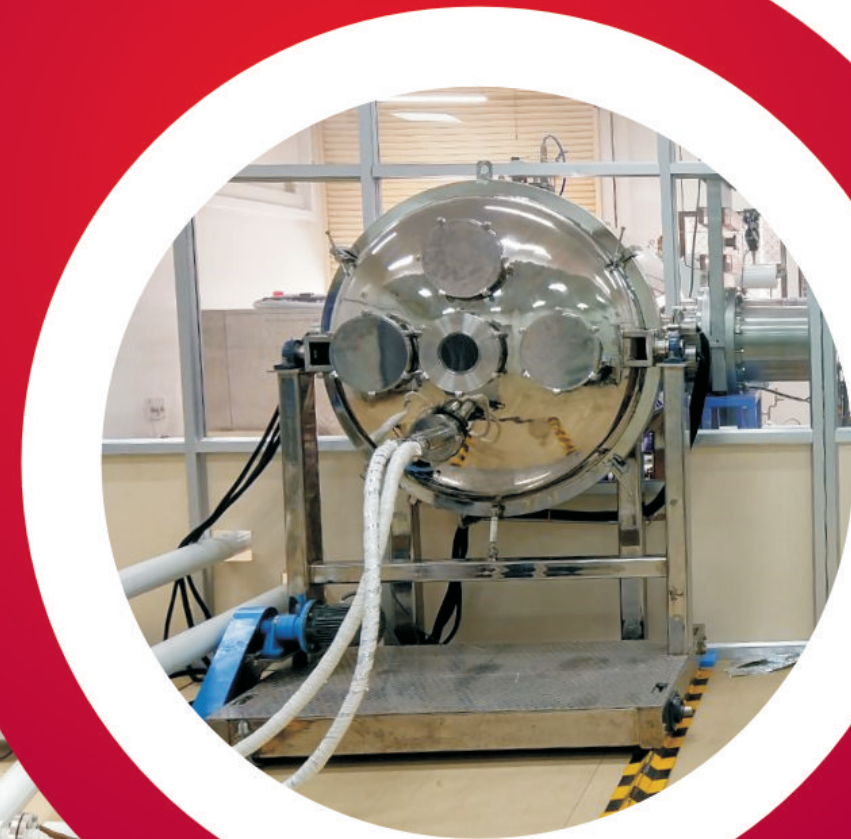
TECHNICAL SPECIFICATIONS

Material of Construction	: SS 304L /SS 316L	
Dimensions	: Customizable as per user	
Vacuum Chamber	: Horizontal/Vertical	• Design code ASME Sec VIII, Div-I/Bs5500/IS2825
Vacuum	: 10^{-6} mbar	• Stress analysis of chamber using FEA software
Leak Rate	: Less than 1×10^{-8} mbar ltr/sec individual	• Front and rear dished end motorized movement
Sealing	: Viton O ring	• Thrid part inspection
Ports	: As per customer requirement	• RGA for monitoring contamination level under high vacuum
Vacuum Pumping System	: Roots Rotary, Turbo/cryo with dry/rotary backing with reduancy	• QCM for monitoring contamination level under high vacuum
Thermal Shrouds	: SS 304 Double embossed blister type	• Black thermal painting on inner surface of the thermal shrouds
Temperature	: 80K to 400K	• Electro polishing on outer surface
Operating Pressure	: 10 bar (g) max	• Thermal condition unit/Thermal circulator
View Port	: Quartz Crystal	• Integrated heat exchanger
Electrical Feedthroughs	: 50/78 pin electrical feedthroughs	• GN2 Blower
Thermocouple Feedthroughs	: T type 50 pin	• Data acquisition
RF Feedthroughs	: N type SS/gold plated	• PLC based automatic controller with IPC
Control Panel	: 19 inch	

Vacuum Techniques is a leader in vacuum equipment, and components for academia, research, and industrial markets. With over 30 years of engineering experience and innovation, we continue to develop customer-specific solutions and products.



THERMO VACUUM CHAMBER





VT make thermo vacuum chambers offer an integrated system solution for chamber environments where both vacuum pressure and temperature are crucial to a customer's process or test. Test chambers (Vacuum chambers) contains thermal plates and thermal shrouds which are isolated from the chamber wall. For cooling and heating these shrouds LN2/ thermal transfer fluid and GN2/Cartridge heaters/IR lamps are provided.

These chambers are used to expose the test package to high vacuum pressure as well as extreme temperatures via the electrically heated and refrigerant cooled Thermal Shroud. This thermal vac chambers is controlled by a Vacuum Cycle Controller (VCC), used to integrate temperature and vacuum level monitoring and automate many of the process control functions via panel-mounted touch screen PC with a user-specific customized programming and Graphical User Interface (GUI).



KEY FEATURES

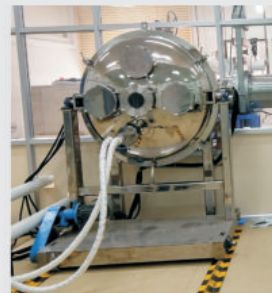
- Compact in design
- Cylindrical/rectangular as per customer requirement
- Vacuum level upto 10^{-4} mbar
- Redundancy Options for Vacuum pumping system and Temperature
- Thermal Plate and Shroud temperature up to -70°C with Thermal condition Unit/ Thermal circulators/ LN2 open loop
- Heating up to 250°C with built in Heating System(Hot air/GN2/IR lamps
- Multi Level Data Acquisition for Vacuum and Temperature
- Fully automated and SCADA based control Systems



VACUUM CHAMBERS & PUMPING SYSTEMS

We offer test designs and pumping configurations to support an array of test article sizes and shapes as well as performance criteria.

- Standard and custom-engineered chambers
- Payload support structures and carts
- Vibration isolation options
- Solutions for efficient, contamination-free pumping



THERMAL SHROUDS

- Copper Shrouds
- SS 304L double embossed blister shrouds
- Water vapor panels
- Thermal base plate of Al with flow channels of AL/Copper tubing embedded at bottom side.



THERMAL CONDITION UNIT

Flooded Liquid Nitrogen	: -190°C
Circulating Gaseous Nitrogen	: -180°C to 150°C
Mechanical Refrigeration	: -50°C to 125°C
Gaseous Helium	: As low as 20K
Radiant heating options	: Up to 200°C



THERMAL CIRCULATOR

- Fast heating and cooling
- -125°C to $+425^{\circ}\text{C}$
- Thermal fluid
- TFT touch screen

LN2 /GN2 TRANSFER LINES

Super insulated lines



CONTROL AND INSTRUMENTATION

We design and build advanced control systems and instrumentation to enable full monitoring & control at every step of your test program.

- Automated control system architecture manages system functions and Data logging
- Contamination control and monitoring equipment
- Thermal Data Acquisition Systems
- Auxiliary Thermal Control Systems