



THERMAL VACUUM (TVAC) TEST CHAMBER - TORONTVAC™ 2400

Thermal Vacuum (TVAC) Test Chamber - ToronTVAC™ 2400

ToronTVAC™ 2400 is built for large test articles that need repeatable vacuum stability and temperature cycling. The system combines a large vacuum chamber with a heat sink and heater cage to support thermal cycling and “cold-black” style conditions.

Pressure control supports controlled pump-down and setpoint operation across a wide range. This configuration fits aerospace and advanced electronics labs that require stable, documented TVAC conditions.

ToronTVAC™ 2400 is a thermal vacuum (TVAC) test chamber designed for space-environment simulation at a larger scale. The chamber supports high-vacuum operation while the thermal hardware controls the heat transfer boundary around the unit under test.

A heat sink assembly supports low-temperature operation using nitrogen gas cooling, with optional LN2 capability for deeper cold conditions. The heater cage supports elevated temperature exposure and controlled cycling profiles. The system is intended for qualification, acceptance, and investigation testing where repeatability and test confidence matter.

APPLICATIONS

Thermal Vacuum (TVAC) Test Chamber - ToronTVAC™ 2400 Applications

- TVAC verification of aerospace electronics and subsystems under high vacuum
- Thermal cycling to screen for temperature-driven drift, intermittent faults, and assembly variation
- Thermal balance testing to validate thermal interfaces, conduction paths, and design assumptions
- Cold-soak and cold-black condition simulation for space hardware performance checks
- Engineering investigation and failure analysis under controlled vacuum-temperature conditions



FEATURES

Thermal Vacuum (TVAC) Test Chamber - ToronTVAC™ 2400 Key Features

- S30408 stainless steel chamber construction supports corrosion resistance and long service life
- High-vacuum capability supports space-simulation TVAC testing for larger hardware
- Wide pressure control range supports controlled pump-down, stabilization, and backfill sequences
- Heat sink capability supports deep cold conditions using N2 gas and optional LN2 operation
- Tight temperature uniformity supports consistent exposure across the thermal interface region
- Fast temperature change rate supports repeatable cycling profiles for screening and qualification

TECHNICAL SPECIFICATIONS

Thermal Vacuum (TVAC) Test Chamber - ToronTVAC™ 2400 Technical Specification

Specification	Details
Chamber Dimensions	φ 2400 mm × 3000 mm
Heat Sink Dimensions	φ 2000 mm × 3000 mm
Heater Cage Dimensions	φ 1600 mm × 2500 mm
Operating Pressure	≤ 5.0 × 10 ⁻⁴ Pa
Ultimate Pressure	≤ 5.0 × 10 ⁻⁵ Pa
Pressure Control Range	0.01 Pa to 60 kPa

Specification	Details
Heat Sink Temperature Range	-170°C to +170°C (N2 Gas); down to -180°C (LN2)
Heat Sink Temperature Uniformity	$\leq \pm 2^{\circ}\text{C}$
Rate of Temperature Change	$\geq 3^{\circ}\text{C/min}$



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