

THOR

THERMAL & OPTICAL RESEARCH CHAMBER



Placing the Wide-field Infrared Survey Explorer sun shade in the THOR chamber

THOR is the Space Dynamics Laboratory's largest thermal vacuum environmental testing and space simulation chamber. The THOR chamber provides the capability to simulate the space environment for thermal balance testing, enables sensors to reach in-flight temperatures, and provides a low-IR background for precise calibration testing.



SPECIFICATIONS

- High vacuum chamber with a typical cryogenic operating pressure of 10^{-7} Torr
- Large interior accommodates a variety of sensor sizes
 - 4' wide x 10' long cold bench
 - 6' 10" inside diameter x 12' long cold shroud
 - 5' 7" height from cold bench to top of shroud
- LN_2 shroud provides space thermal environment & low background IR test environment
- Low reflectance interior black paint
- Shrouds can be operated at LN_2 temperatures (77 K) or anywhere from ambient to $100^\circ C$
- Bench can be operated at LN_2 temperatures (77 K) or any temperature that is higher than the shroud temperature (Up to a maximum of $100^\circ C$)
- Heaters for bakeout & rapid turnaround
- Extensive temperature & contamination monitoring capabilities
- Ten ASA connector ports
- Cryogenic temperature optical testing
- Clean tent enables hardware to be installed in THOR in a Class 100 (ISO 5) clean room



Space Dynamics
LABORATORY
Utah State University Research Foundation