# Case Study

Weiss Technik designs custom freezer with clean room environment for semiconductor supplier

**WHY**
A semiconductor supplier required an industrial freezer with elevated temperature accuracy that maintains a clean room environment by mitigating the dust from fabricated metals.

**HOW**
Through collaborative engineering between both companies, Weiss Technik designed a custom Xceed chamber with integrated filtration and precise temperature control.

**WHAT**
A self-contained, clean room compliant Xceed Temperature Chamber that maintains environmental integrity while providing consistent low-temperature testing conditions with seamless integration to the customer's existing cart system.

## WHY - the challenge.

A semiconductor supplier needed an industrial Xceed Temperature Chamber with exceptional temperature accuracy for testing materials that generate dust at low temperatures. The primary challenge was designing a system that could interface seamlessly with their existing wheeled cart transportation system while simultaneously mitigating dust contamination to maintain clean room standards. The solution needed to prioritize environmental control without compromising on testing capabilities or workflow efficiency critical to semiconductor manufacturing support.

## HOW - the idea.

Weiss Technik's approach centered on collaborative engineering, bringing together experts from both companies to understand the customers test requirements.

The team focused on developing a custom Xceed Temperature Chamber that would integrate perfectly with the supplier's existing cart system while incorporating specialized filtration technology. By carefully calibrating airflow patterns and implementing appropriate filtration, they could create an environment that would handle the dust-generating properties of the tested materials without compromising the strict clean room standards essential to semiconductor production.



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### WHAT - the solution.

After analysis and consultation, Weiss Technik delivered a custom Xceed Temperature Chamber featuring a cascade refrigeration system capable of reaching -70°C. The system incorporated filtered airflow with carefully calculated air speed to prevent excessive dust circulation while maintaining clean room standards.

Key to the design was a precisely engineered interface allowing seamless product transfer from the supplier's wheeled cart directly into the Xceed chamber. The entire system was constructed as a self-contained unit with a small footprint relative to its workspace, making installation straightforward and minimizing disruption to existing operations.

### Special Features

- Built-in filtration system specifically designed to capture particulates from metal fabrication
- TEFC (Totally Enclosed Fan Cooled) motors to prevent dust dispersion in customer's cleanroom environment
- Cascade refrigeration system capable of -70°C
- Energy-efficient LEEF™ system with WEBSeason and Simpati control systems
- Viewing window for real-time monitoring of tested products
- Precision-engineered height alignment with supplier's cart system for seamless transfer
- Protective sheath heating elements to prevent dust accumulation and product damage
- Stainless steel construction compatible with semiconductor clean room requirements
- All-in-one design with minimal footprint for easy installation and transportation