

## Semiconductor: Fine Temperature Control

Precision heat exchange solutions for next-generation lithography machines — engineered for stability, accuracy, and extended equipment lifespan.

### The Objective

Implement a heat exchanger that precisely controls the temperature within the lithography machine — enhancing process stability, improving accuracy, and maximizing performance.

### The Challenge

- **Temperature uniformity** — precise control through all stages
- **Efficient heat transfer** — adjusting and maintaining temperature while minimizing operational costs
- **Footprint & integration** — careful design within limited space without compromising critical components
- **Contamination control** — minimizing risk of leaks or potential contamination sources



#### Precise Temperature Control

Minimizes variations in the lithography process, reducing the likelihood of errors and defects.



#### Thermal Stress Prevention

Controlling temperature fluctuations prevents thermal stress on machine components, extending equipment lifespan.



#### Energy Efficiency

Optimized heat exchanger design minimizes operational costs while ensuring effective temperature control.



#### Reduced Maintenance

Longer equipment lifespan and reduced maintenance costs through stable thermal management.

### The Solution

Optimizing the heat exchanger design for energy efficiency to minimize operational costs while ensuring effective and precise temperature control throughout every stage of the lithography process.

Implementing an **Exergy heat exchanger system** with precise temperature control enhances the performance of lithography machines — resulting in improved accuracy and extended lifespan.



### Conclusion

The Exergy heat exchanger delivers measurable improvements in lithography machine performance, accuracy, and longevity — backed by a certified quality management system.