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TARK THERMAL SOLUTIONS

Recirculating Chillers for Low-Power Lasers

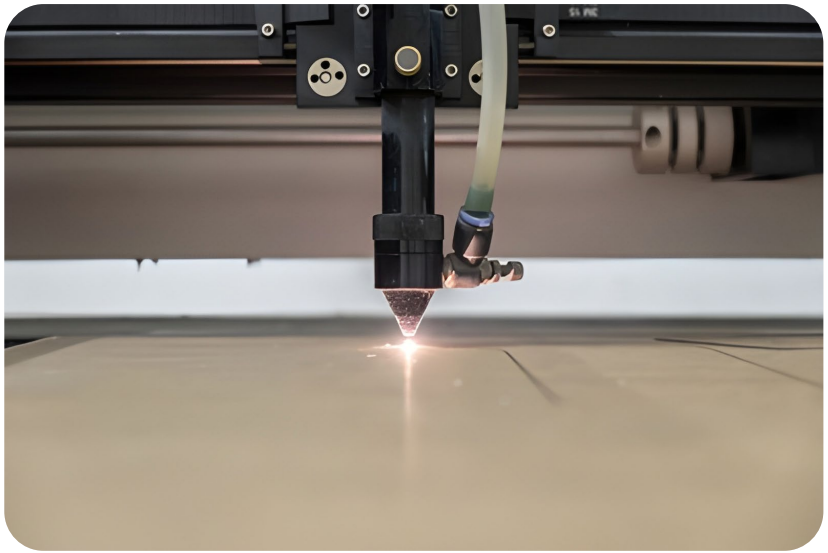
Introduction

Temperature stability maximize laser performance and ensure long life operation of optoelectronic components

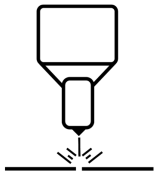
The NRC400 efficiently cools lower power laser systems with a **+0.05°C** accuracy

Application Overview

Industrial laser systems ranging from 10 to hundreds of Watts typically require a chiller to pump away heat from sensitive laser components



Low-Power Laser Applications



- Printing
- Marking
- Soldering
- Laser Powder Remelting
- Plastic Welding

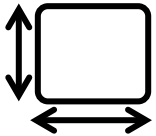
Application Challenges

TEMPERATURE CONTROL

Maintain stable temperature between 20 to 35°C with ±0.1°C stability

PORTABILITY

Thermoelectric-based chillers can be moved with ease

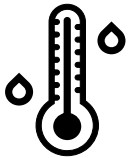


SPACE CONSTRAINTS

Miniaturization of equipment increases heat flux density

NOISE

Thermoelectric chillers offer quieter operation



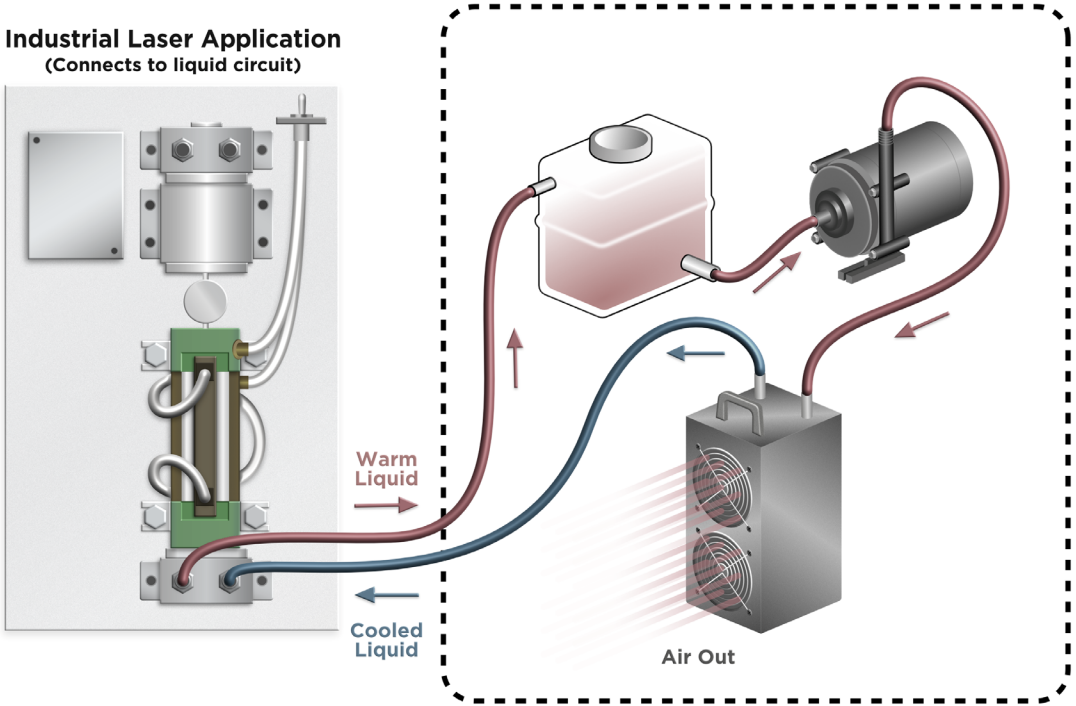
CONDENSATION

Surfaces that go below dew point require sealants with good thermal insulation properties

ENVIRONMENTAL RESTRICTIONS

HFC refrigerants to be phased out

Thermoelectric Cooling Solutions



Thermoelectric-based chillers offer **high reliabilty** and **superiour temperature stability** for industrial laser applications

Performance Chiller NRC400

- Premium Components
- Temperature Stability of ±0.05°C
- High Coefficient of Performance (COP)
- Low Maintenance
- User-friendly LCD Display
- Environmentally Friendly

400

Watts of Cooling Power

0

Global Warming Potential

Conclusion

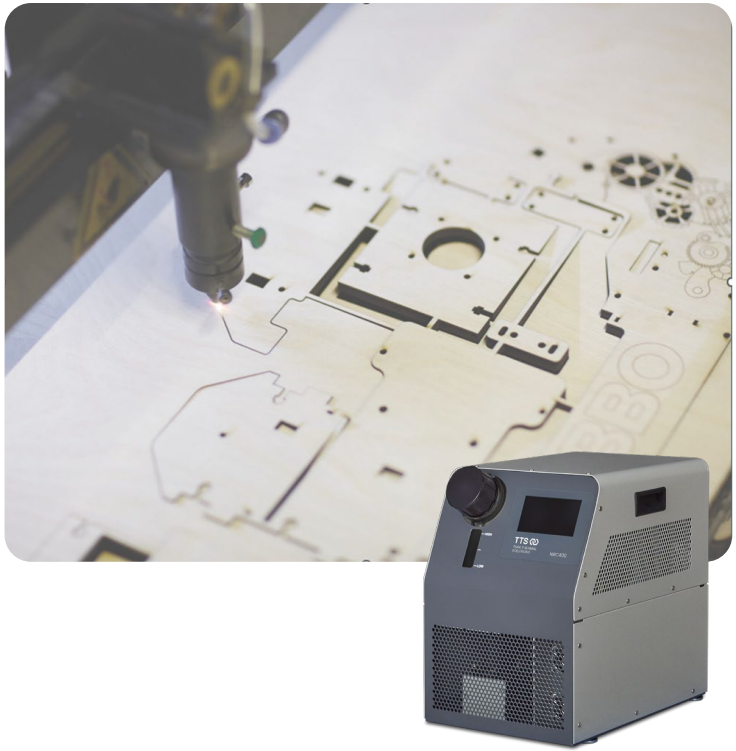
Industrial laser systems require active cooling to **maximize performance** and extend **operational life of components**

Temperature instability distort laser wavelength and beam quality, heat must be dissipated to protect sensitive electronics

Modern thermoelectric-based chillers offer high reliability, recise temperature control and low maintenance

The high-performance NRC400 delivers 400 Watts of cooling capacity, a temperatre accuracy of ±0.05°C – all in a compact form factor.

For More Information



More information on the NRC400 Chiller can be found by visiting Tark Thermal Solutions' **website**.

Read more about **cooling solutions for laser applications**

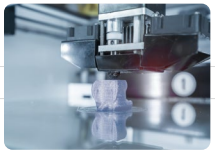
NRC Thermoelectric
Chiller efficiently cools
industrial lasers

About Tark Thermal Solutions

Tark Thermal Solutions develops thermal management solutions for demanding applications


Medical


Analytical


Industrial


Transportation


Telecom

DIVERSE PRODUCT PORTFOLIO
Thermoelectric Coolers, Thermoelectric Cooler Assemblies, Temperature controllers and Liquid Cooling Systems

SOLVING COMPLEX ISSUES
Our engineers use advanced thermal modeling and management techniques to solve complex heat and temperature control problems

ACCELERATING TIME-TO-MARKET
We partner closely with our customers across the entire product development lifecycle.

MAXIMIZING PERFORMANCE
Our global manufacturing and support resources help customers maximize productivity, uptime, performance and product quality

Visit our website and full service hub under **tark-solutions.com**

Visit our website and full
service hub under **tark-solutions.com**

Chat directly with our service-team via the Tool on our Website

Contact us for a personal consultation at:
sales@tark-solutions.com

Tark Thermal Solutions is the optimum choice for standard or custom thermal systems

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