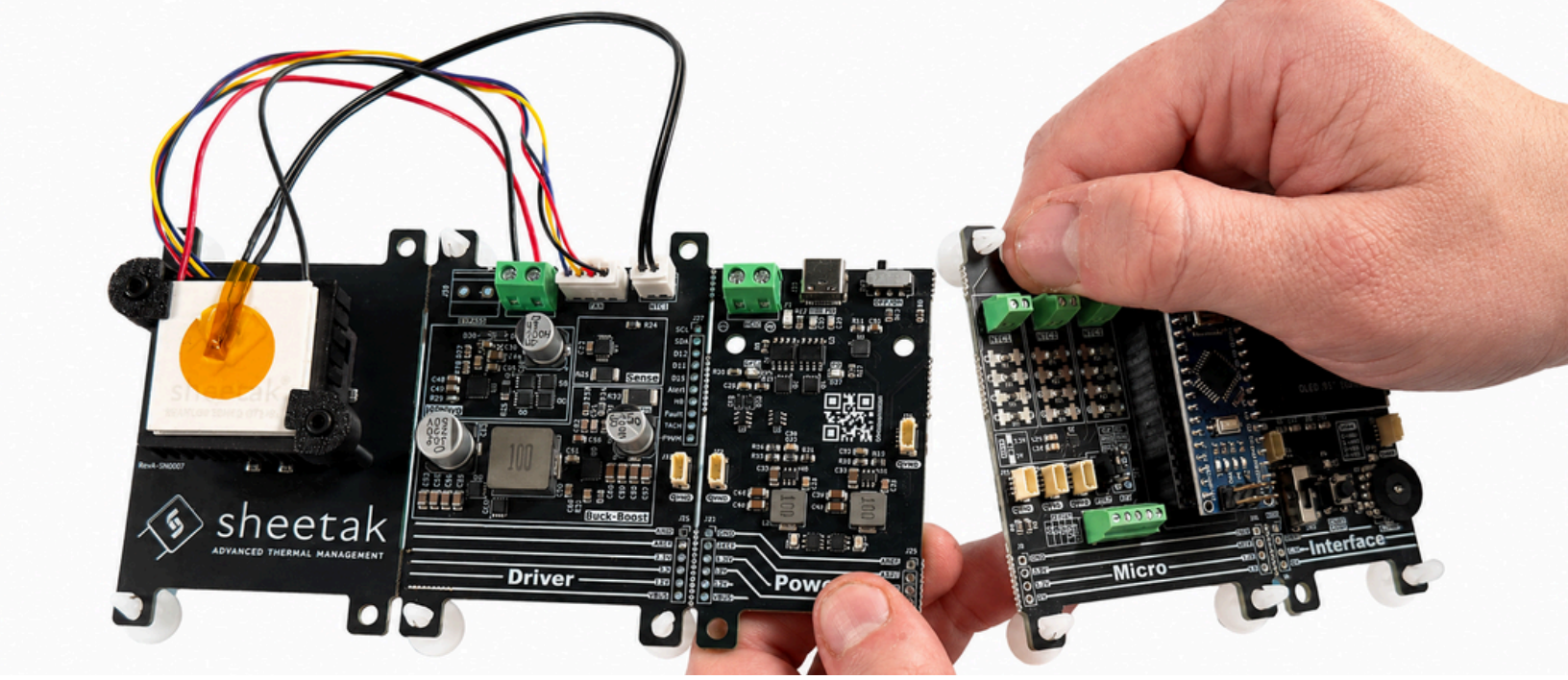

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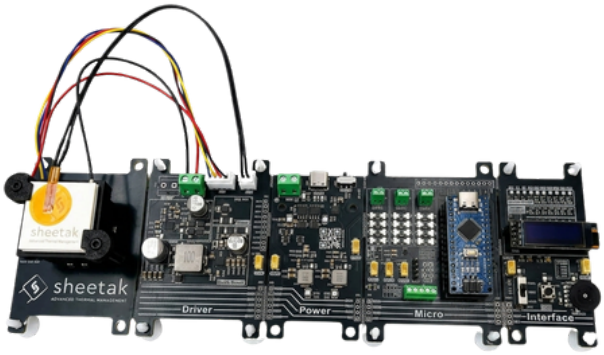
CryoSnap™

Thermoelectric Dev Kit



What is CryoSnap™?

Cryosnap™ is a modular thermoelectric development kit designed to help engineers, researchers, and hands-on builders quickly prototype and test thermoelectric cooling systems. Instead of sourcing and assembling individual components yourself, Cryosnap™ provides a pre-integrated platform with accessible electrical, thermal, and mechanical interfaces for experimentation.

The kit includes a complete thermoelectric cooling module assembly giving you a practical starting point for evaluating TEC performance under real operating conditions. Users can pair the system with their own power supplies, controllers, heat sinks, liquid cooling loops, and data acquisition equipment to explore cooling performance, temperature control, heat transfer, and system efficiency without designing a setup entirely from scratch.

For product support, sales or technical support, please contact info@sheetak.com or visit sheetak.com.

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Features

- Integrated thermoelectric cooling module (CENTUM® based)
- Easy electrical access for custom control and instrumentation
- Modular, snap-apart design for sub-system use in prototypes
- Built-in temperature sensing
- Compatible with standard lab or USB-C laptop power supplies
- Quick setup with minimal tooling
- Designed for repeatable experiments
- Compact benchtop footprint

What You Can Explore

Temperature vs. power relationships

Cooling capacity under load

Transient thermal response

Efficiency optimization

Impact of heat sinking methods

Applications

- Early-stage thermal design
- Electronics cooling validation
- Optoelectronics experiments
- Academic and lab research
- Hands-on thermoelectric learning

For

- Outdoor Enclosure Cooling
- Laser Diode Stabilization
- Electronics Spot Cooling
- Cloud Chamber
- Sensor Stabilization
- Thermal Cycling Test

And more...

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Why use CryoSnap™?

CryoSnap™ is built for engineers and hands-on users who want to move past theory and actually work with thermoelectric systems. Instead of a closed box, it gives you direct access to the core components so you can build, modify, and test your own cooling setups. Whether you're validating a concept or exploring how thermoelectrics behave under real conditions, CryoSnap™ gives you a fast starting point.

CryoSnap vs. Alternatives

	Roll your own	Benchtop TEC controller	CryoSnap
Time to first data	2 to 6 weeks	Hours, after setup	**10 minutes**
Driver electronics	You design	Included	**Included**
Thermal stack	You source and assemble	Sold separately	**Included**
Firmware	You write	Vendor-locked	**Open, modify freely**
Reusable in your own product	Yes (your design)	No	**Yes (snap apart and reuse modules)**
Path to production	Start over	Start over	**Direct: same Sheetak parts**

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Modular Design

Thermal

Peltier module, heatsink, fan, and mounting hardware. Assembled and ready to run.

TEC Driver

H-bridge with current and voltage sensing for bidirectional Peltier control.

Power

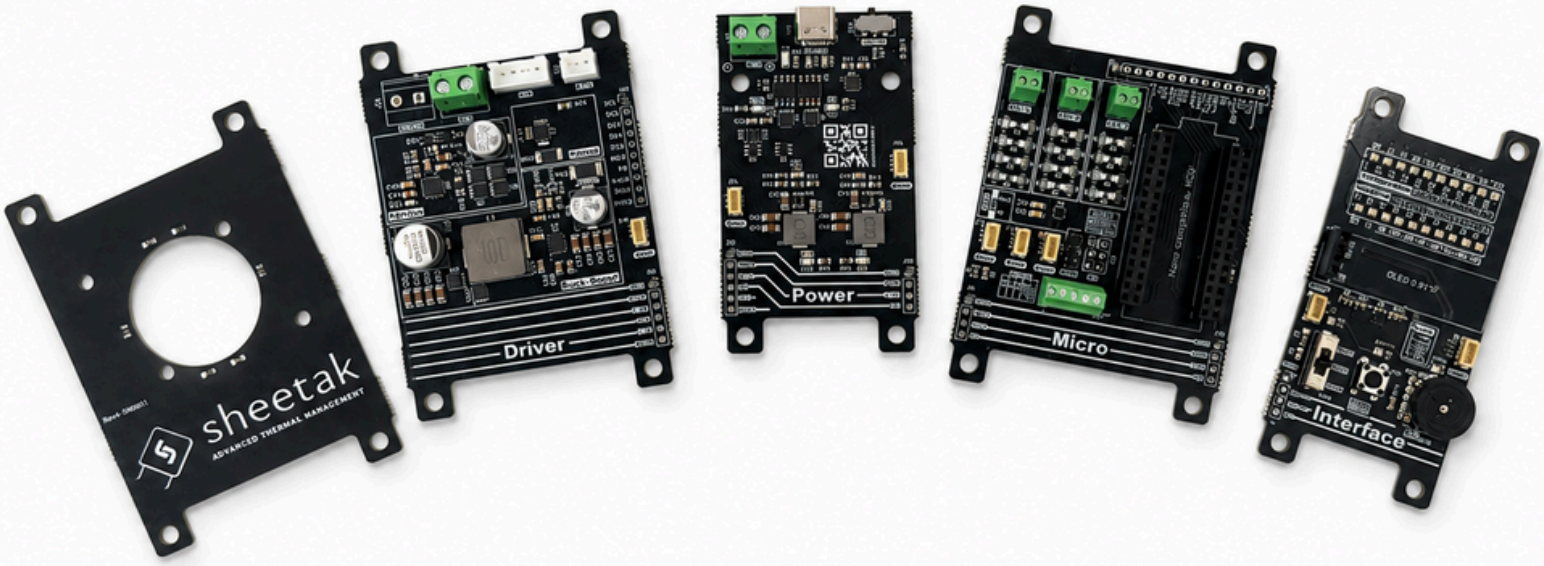
USB Power Delivery negotiation and input protection up to 24V.

Micro

Arduino-compatible microcontroller, swappable for your own.

Interface

Knob, button, addressable LEDs, and OLED header.



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Specs

Power	Direct supply up to 32V	7A max input current	~100 W class	USB-PD (USB-C compatible)	Reverse polarity protection
Control	Bidirectional (heating + cooling)	PWM fan control with tach feedback	<1 V capable	TPS55288 + DRV8701 + INA226	Constant current
Sensing	3x NTC sensors	Real-time TEC current and voltage sensing			
Architecture	260 mm × 85 mm	5-module snap-apart system (Thermal / TEC Driver / Power / Micro / Interface)	Arduino Nano (included)	Serial, I2C, SPI, GPIO	Sheetak single-stage 71-couple thermoelectric cooler
Software	Serial control protocol, Arduino IDE compatible, plotting via Arduino Serial Plotter or any UART terminal	Open firmware with reference designs			

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What's in the Box?

Thermoelectric Cooler: CENTUM®-based TEC that drives cooling performance and responds directly to your input power.

Cold Plate Interface: Flat mounting surface for your device or thermal load. Easy to attach, modify, and test.

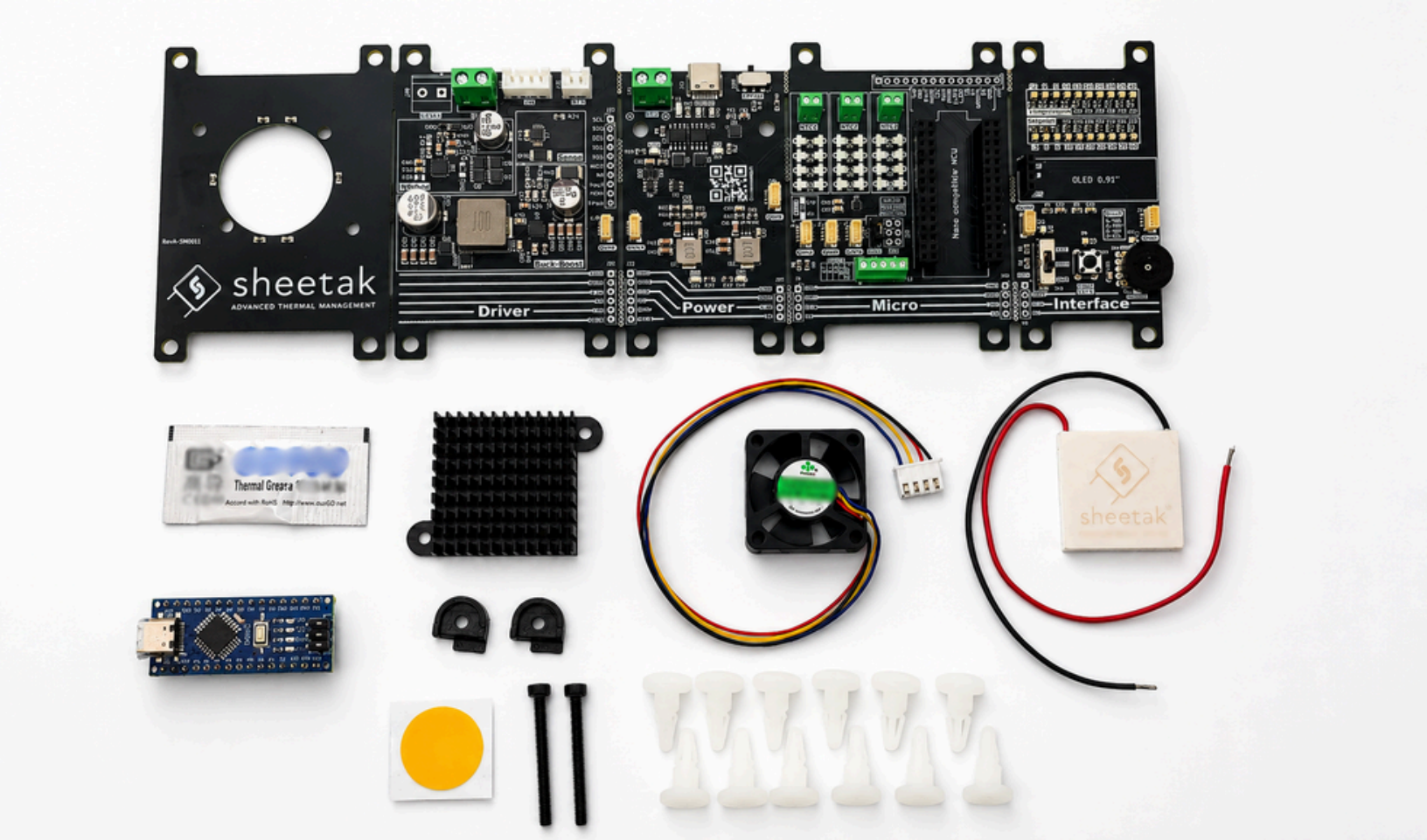
Mounting Hardware: Supports quick setup and reconfiguration as you iterate on different designs.

Heat Rejection Interface: Works with standard air or liquid cooling solutions. No custom integration needed.

Electrical Connection Points: Accessible terminals for TEC power and sensor connections using your own equipment.

Temperature Sensing Access: Measurement points for monitoring temperature and validating performance.

Base Platform / Structural Frame: Keeps the system stable while maintaining full access to components.



CryoSnap ships as a complete system. Upgrade for higher cooling capacity, expand for parallel testing, or add accessories that fit your bench setup. Configure everything on this page. Everything ships together.

Additional Thermal Stacks

General Testing

127-couple Peltier module

Higher cooling capacity for everyday characterization work.

Extended Range

199-couple Peltier module

Greater performance envelope and higher heat-pumping capability.

Deep Cooling

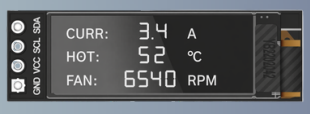
CENTUM® C3 Two-Stage Peltier module

Delta-T beyond 110°C for sub-ambient and deep-cooling applications.

Accessories

100W USB-C Power Supply

Delivers full CryoSnap performance over USB Power Delivery. Recommended if you don't already have a compatible high-power USB-C source.



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Start Building with CryoSnap™

CryoSnap™ gives you a practical way to understand thermoelectric cooling by working directly with it. Whether you're validating a design or exploring new ideas, it provides a flexible starting point without locking you into a fixed system.

You can buy CryoSnap™ now at cryosnap.sheetak.com or reach out to us directly.

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