# Dossier: ADVANCED COOLING TECHNOLOGIES INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $249,999.00

**Award Date:** 2024-06-14

**Branch:** DHA

## AI-Generated Intelligence Summary

**Company Overview:**

Advanced Cooling Technologies, Inc. (ACT) specializes in advanced thermal management solutions, focusing on designing, manufacturing, and testing heat pipes, vapor chambers, thermosyphons, pumped liquid loops, and custom thermal management systems. Their primary mission is to provide innovative and reliable thermal solutions to address challenging heat dissipation problems in various industries, including aerospace, defense, electronics, and energy. They aim to solve issues related to overheating, performance degradation, and system reliability caused by high-power density and demanding environmental conditions. ACT's unique value proposition lies in its comprehensive engineering expertise, vertically integrated manufacturing capabilities, and a strong track record of developing custom solutions that meet stringent performance requirements for critical applications.

**Technology Focus:**

* Heat Pipes and Vapor Chambers:\*\* Design and manufacturing of standard and custom heat pipes and vapor chambers ranging from miniature heat pipes for electronics cooling to large-scale devices for power generation applications. They offer copper/water, aluminum/ammonia, and other material combinations optimized for specific temperature ranges and performance requirements.
* Pumped Liquid Loops (PLLs):\*\* Development of single-phase and two-phase PLLs for high-power electronics cooling and space-based applications. Specific performance metrics, such as cooling capacity (e.g., Watts) and temperature stability (e.g., +/- 0.1°C), are often tailored to customer needs.

**Recent Developments & Traction:**

* January 2023: Awarded SBIR Phase II contract from the U.S. Navy:\*\* ACT was awarded a Small Business Innovation Research (SBIR) Phase II contract from the U.S. Navy to continue developing and commercializing a two-phase mechanically pumped loop (MPL) cooling system. (Source: ACT website, Press Releases)
* Ongoing: Participation in DARPA Programs:\*\* ACT has been involved in multiple DARPA programs focused on advanced thermal management for electronics and power systems. Specific program details and deliverables are often proprietary, but their involvement signifies continued R&D efforts in cutting-edge cooling technologies. (Source: General web searches combining "Advanced Cooling Technologies" and "DARPA" and referencing related articles.)
* Product expansion: Thermal Ground Plane (TGP) solutions:\*\* Enhanced product portfolio of Thermal Ground Plane (TGP) solutions using vapor chamber technology to improve heat spreading in high-power density applications. (Source: Industry trade publications and ACT's product offerings online)

**Leadership & Team:**

* Dr. Jens Pfretzschner (President):\*\* Holds a Ph.D. in Mechanical Engineering and has extensive experience in thermal management and heat transfer.
* Dr. Michael Ellis (VP of Engineering):\*\* Responsible for leading the engineering team and overseeing the development of new thermal management solutions.

**Competitive Landscape:**

* Boyd Corporation:\*\* A global provider of thermal management and environmental sealing solutions. ACT differentiates itself through its strong focus on custom engineering and specialized solutions for high-reliability applications, whereas Boyd often focuses on broader market segments.
* Aavid, Thermal Division of Boyd Corporation:\*\* Aavid also specializes in thermal management and serves as a close competitor to Advanced Cooling Technologies.

**Sources:**

1. [https://www.1-act.com/](https://www.1-act.com/)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (Searched for ACT's SBIR awards)

3. [https://www.thermacore.com/](https://www.thermacore.com/)

4. [https://www.boydcorp.com/](https://www.boydcorp.com/)