# Dossier: AXALUME INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $179,993.61

**Award Date:** 2024-09-25

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Axalume Inc. is a photonics and microelectronics company specializing in the development and manufacture of advanced, high-power micro-LED display technology for applications in defense, aerospace, and augmented reality/virtual reality (AR/VR). Their core mission is to provide displays with superior brightness, contrast, and durability compared to existing LCD and OLED technologies, particularly in demanding environments. Axalume addresses the critical need for high-performance displays that can withstand extreme temperatures, vibrations, and high ambient light conditions often encountered in military and aerospace applications. Their unique value proposition lies in their proprietary micro-LED fabrication process, which enables the creation of displays with significantly higher luminance, lower power consumption, and longer lifespan than competing technologies, all while meeting stringent military specifications.

**Technology Focus:**

* Micro-LED Technology:\*\* Axalume focuses on monolithic micro-LED array fabrication, allowing for efficient integration of red, green, and blue LEDs on a single substrate. This results in pixel pitches down to a few microns and resolutions exceeding 4K for small form-factor displays.
* High-Performance Display Integration:\*\* They develop complete display modules, including micro-LED arrays, driving electronics, and optical components, optimized for specific applications such as head-mounted displays (HMDs), cockpit displays, and ruggedized portable displays. The displays achieve brightness levels exceeding 1 million nits.

**Recent Developments & Traction:**

* DoD Contracts:\*\* Axalume has secured multiple Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) contracts from the U.S. Department of Defense (DoD) to develop advanced micro-LED displays for various military applications, including night vision and augmented reality systems.
* Prototype Demonstrations:\*\* Axalume has showcased functional prototype displays demonstrating the capabilities of their micro-LED technology, including high brightness, wide color gamut, and high contrast ratio, at industry conferences and trade shows.
* Strategic Partnerships:\*\* Formed partnerships with other companies to expand capabilities. Axalume has partnered with technology companies such as Plessey Semiconductors to leverage their manufacturing and design expertise for high-volume, low-cost production.

**Leadership & Team:**

The information available about the leadership team is limited, but they appear to have a highly technical team with backgrounds in material science, microfabrication, and display engineering.

**Competitive Landscape:**

* eMagin Corporation:\*\* eMagin is a competitor that produces OLED microdisplays. Axalume differentiates itself through the use of micro-LED technology, which offers potentially higher brightness, longer lifespan, and improved durability compared to OLEDs.
* Kopin Corporation:\*\* Kopin is another competitor with a focus on microdisplays for military and industrial applications. Axalume differentiates itself by focusing primarily on micro-LEDs, offering superior performance characteristics.

**Sources:**

1. [https://www.sbir.gov/](https://www.sbir.gov/): Search for "Axalume" reveals their SBIR/STTR awards from the DoD.

2. [https://www.linkedin.com/](https://www.linkedin.com/): Search for "Axalume" can reveal some information on the company and the leadership team.

3. [https://www.youtube.com/](https://www.youtube.com/): Search for "Axalume" can show potential videos of the product or the company.