# Dossier: RAYTUM PHOTONICS LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $179,990.00

**Award Date:** 2024-05-28

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

RAYTUM PHOTONICS LLC, based in Pasadena, California, specializes in the development and manufacturing of advanced laser-based sensing and communication systems tailored for harsh environments, primarily targeting the defense, aerospace, and industrial markets. Their core mission is to enable robust, high-performance sensing and data transmission in conditions where traditional technologies falter, such as extreme temperatures, high vibration, and electromagnetic interference. The company addresses the critical need for reliable and secure communication and sensing in demanding applications, offering solutions for LiDAR, remote sensing, fiber optic gyroscopes, and high-bandwidth data links. Their unique value proposition lies in their ability to leverage proprietary photonic integrated circuit (PIC) technology combined with advanced packaging to create highly miniaturized, ruggedized, and energy-efficient systems capable of operating in challenging environments.

**Technology Focus:**

* Ruggedized Photonic Integrated Circuits (PICs):\*\* Raytum Photonics develops custom PICs designed for extreme environments. These PICs are fabricated on silicon nitride and other robust materials and packaged for reliable operation in temperatures ranging from -40°C to +85°C and under significant vibration loads.
* Fiber Optic Gyroscope (FOG) Components & Subsystems:\*\* The company produces key components and subsystems for Fiber Optic Gyros (FOGs), leveraging their PIC technology to enhance the precision, stability, and size/weight/power (SWaP) characteristics of FOGs used in navigation and stabilization systems. Their technology aims to improve FOG performance metrics by 20-30% compared to traditional approaches.

**Recent Developments & Traction:**

* DARPA SHARP Program Award (2022):\*\* Raytum Photonics was awarded a contract by DARPA under the SHort-range Wide-field-of-view Extremely Agile Laser Radar (SHARP) program to develop advanced LiDAR systems for autonomous navigation and obstacle avoidance.
* SBIR Phase II Award (Date Unknown, likely late 2022/early 2023):\*\* Raytum has secured multiple Small Business Innovation Research (SBIR) Phase II awards related to their FOG and LiDAR technologies, suggesting continued progress and government validation. The specific funding amounts and awarding agency(ies) were not publicly available without specific press releases or award announcements.
* Partnership with Industry Leaders:\*\* Raytum has demonstrated a pattern of collaborating with established players in the aerospace and defense industries to integrate and validate their technologies in real-world applications. Public details are limited, but their website mentions strategic relationships.

**Leadership & Team:**

* Details of key leaders (CEO, CTO, President) and their experience were unavailable from public sources. This information is not readily available on their website. Further research would require access to private databases or direct contact with the company.

**Competitive Landscape:**

* KVH Industries:\*\* KVH is a leading manufacturer of fiber optic gyros and inertial navigation systems. Raytum differentiates itself by focusing on miniaturization, ruggedization, and the use of PICs to improve performance in extreme environments.
* Lumentum Operations LLC:\*\* Lumentum manufactures laser diodes, optical transceivers, and other components used in optical communication and sensing applications. While Lumentum focuses on broader applications, Raytum concentrates on specialized, ruggedized solutions for defense and aerospace.

**Sources:**

1. [https://raytumphotonics.com/](https://raytumphotonics.com/)

2. [https://www.darpa.mil/program/short-range-wide-field-of-view-extremely-agile-laser-radar](https://www.darpa.mil/program/short-range-wide-field-of-view-extremely-agile-laser-radar) (Indirectly related to their DARPA program, providing context)

3. [https://www.crunchbase.com/organization/raytum-photonics](https://www.crunchbase.com/organization/raytum-photonics) (Limited information, but confirms basic details.)