Industry Internship with Lumartix: A solar simulation lighting system for the AM0 spectrum

Contact information

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Lumartix SA

At Lumartix, we design and manufacture advanced testing equipment for the space, defense, and photovoltaic industries, with a strong focus on solar radiation technologies. Our core expertise lies in the development of high-performance solar simulators and specialized lighting systems that reproduce AM0 and AM1.5G spectra.

Our solutions are used in demanding environments such as climate chambers, altitude chambers, and thermal shock systems, enabling our customers to simulate extreme conditions and validate the reliability of cutting-edge technologies.

By joining Lumartix, you will have the opportunity to work on innovative, real-world projects at the intersection of optics, energy, and aerospace—within a dynamic and highly technical environment.

Context of the project / internship

As part of this internship, you will contribute to the development of a next-generation solar simulator designed to reproduce the AM0 spectrum for high-efficiency triple-junction (3J) and quadruple-junction (4J) solar cells.

You will be actively involved in the full development cycle of the system, with a strong focus on the optical design and implementation. Your responsibilities will include the design and optimization of the optical components, as well as the complete characterization and performance validation of the system through advanced measurements.

A key aspect of this internship is the hands-on development of a functional prototype, giving you the opportunity to apply your theoretical knowledge to a real industrial project and gain practical experience in a high-tech environment.

Objectives

The primary objective of this project is to develop and deliver a solar simulation lighting system capable of reproducing the AM0 spectrum, with a partially tunable spectral output. This will involve

the combination and optimization of a plasma light source—provided as a fully operational unit—and complementary LEDs. The student will be responsible for selecting and integrating the appropriate LEDs to complete and fine-tune the AM0 spectrum. A secondary objective is the complete mechanical and optical design of the equipment, for which CAD software tools will be provided, enabling the development of a fully integrated and functional system.

Required skills

The student is expected to have a solid foundation in electricity and electronics, including experience in PCB design and manufacturing. Knowledge of mechanical design and basic optics is also required to successfully contribute to the development of the system.

For the optical and photometric aspects of the project, training will be provided. The student will have access to advanced measurement equipment and will be trained in its proper use for system characterization and validation.

Deliverables

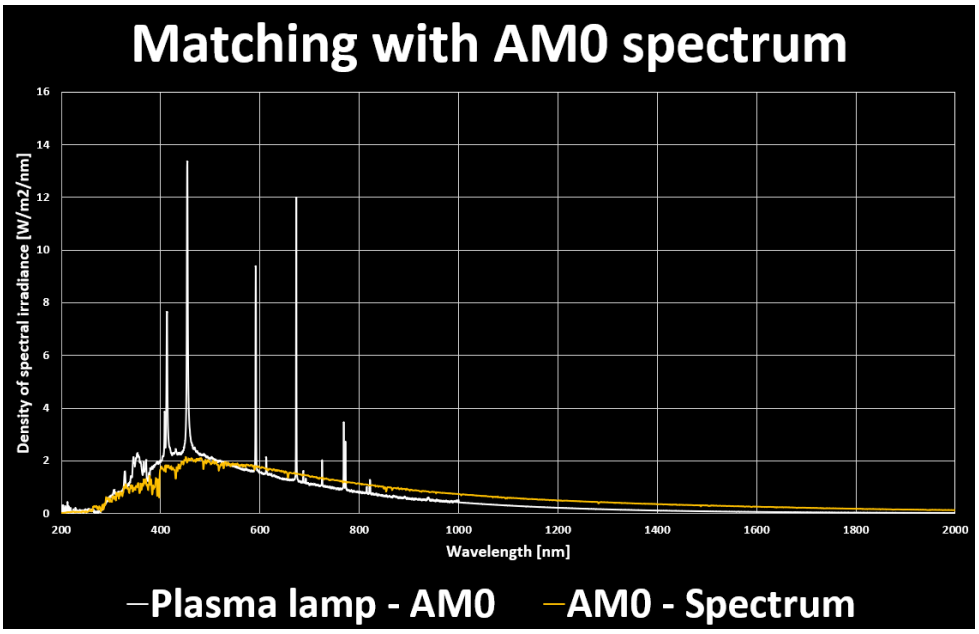
The main deliverable of this project is the development and fabrication of a complete functional prototype of the system, enabling full characterization of its performance. The second deliverable consists of a comprehensive characterization report, detailing the system's optical performance, measurements, and validation results.

Place of work

Lumartix SA, Rue de l'Ouriette 131, 1170 Aubonne, Switzerland

Preferred timeframe

Any time from the 1st July to the 31 December 2026



The Space Innovation team hopes that this can advance your goals whilst fostering the next generation of space professionals.