# Development, assembly and testing of an innovative LiDAR collimator

**Project Type: Master Project**

**Duration**: 6 months

**Location**: Institut für Produktentwicklung und Gerätebau (Gebäude 8143)

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SCRAMBLUX is a German Startup company. We want to deliver key technology for Advanced Driver Assistance System (ADAS) and Autonomous Driving markets.
Our patented solutions allows for testing of LiDARs in a new type of instrument, which saves the customer a lot of costs.
LiDAR is one of the most important sensors for automated driving. A LiDAR is a laser sensor, which can produce a 3D (point cloud) image of whatever is in front of it. This is very important for AI and Automated Driving. It allows AI to make better and faster decision than only with a Camera or a Radar.
To advance our technology and deliver excellent solutions to our customers, we are looking for ambitious Master students, to participate in our product development.

## Project Description

Join us in developing the world's first LiDAR Field of View (FoV) collimator. Using SCRAMBLUX's patented technology, you will design and build a collector based on segmented curved mirrors. This project involves comprehensive optical and mechanical design, followed by manufacturing and assembly of the collimator. You will conduct extensive testing to ensure the system's performance and validate it using the SX-L instrument and at two off-the-shelf LiDARs. The goal is to create a well-behaved, collimated bundle that significantly enhances LiDAR accuracy and efficiency in autonomous driving.

## Skill Requirements

You should have excellent knowledge of optical modeling and mechanical engineering, feel comfortable with 3D printing, and have experience with experimentation in a lab. An eye for detail in literature and standards is essential. An interest in working with LiDARs, testing, and ADAS is crucial.

*The project will be conducted at IPeG in Garbsen and jointly supervised with an IPeG employee.*