

Title:	Innovative Lighting for Parks
TU/e supervisors:	Dr. Rajendra Dangol, Prof. Dr. Alexander Rosemann
Location:	Eindhoven
Period:	Flexible start date, envisioned duration: 9 months
Project:	Graduation Project
Collaboration with	Zumtobel Group, van de Wetering projects

In collaboration with


Background

Intelligent Lighting for smart cities offers many fields of application. Next to the base functionalities of illuminating or laminating, luminaires can also communicate with their surrounding within a given context. Instead of static lighting, the lighting will be dynamic and interact with users. Lighting in the public space has to work in the presence and absence of daylight in order to provide the added value it is designed for.

Description

In this project we would like to check how luminaires intended for outdoor use will perform and will address research in the early innovation phase. The project will be divided in three phases:

During Phase I, the candidate will do some theoretical research and rough engineering estimates to assess the lighting design requirements. Based on this, he/she will help to derive a luminaire specification - a set of characteristics that the luminaire must have extended by a list of “nice to have” options. This will lead to a formulation of requirements that can be considered in the development of an early functional mock-up.

In Phase II, this mock-up will be constructed by the industrial partner and shipped to Eindhoven for performance testing. The candidate will define a testing scheme to check if and how well the performance requirements are being met.

Phase III will consist the execution of the performance tests under different outdoor conditions (night, daytime with overcast sky conditions and clear sky conditions) and viewing directions. It also consists of the data analysis and conclusions indicating strong and weak points of the mock-up.

During the entire project, there will be close contact with the industrial partners to align the suggestions with expectations. It is critical to keep active communication and clear agreements on next steps. The candidate is not only required to be excellent in the required technical skills but also a good project manager with advanced communication skills.

Deliverables

- List of requirements for such a luminaire
- Design of scientific experiments and measurement setups
- Measurement data
- Project report with recommendations

The successful completion of the course **7S880 Lighting Technology with good result** is a requirement for this project.

The successful completion of the course *7LL7M0 Capita Selecta Lighting Technology is beneficial* for this project.