



GENOPTIC

Maximize Your Yields: Custom Lighting for Plant Growth

Introduction

The application is a horticultural growth solution for indoor produce.

Utilizing Genoptic's IC Smart Power Chip Technology to lower energy consumption and maximize plant growth.

The project aims to achieve this using a web-based application that enables online control of Genoptic's LEDs.

Successfully monitoring and adjusting the lighting levels remotely will allow for efficient scalability of indoor farming techniques.

By improving efficiency and reducing waste, growers can reduce their operating costs and increase their profitability.

01

Motivations

Our goal was to create an intelligible web application that allows users to control different lighting profiles.

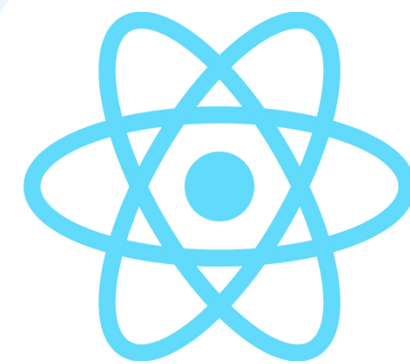
With the expansion of the world's demand on horticultural growth, more efficient solutions are required to keep up with the demand of cultivation.

Custom lighting profiles can be tailored to specific plants and their growth stages, which can result in more efficient use of energy and resources, and ultimately, higher yields.

With the ability to control lighting remotely and adjust the intensity and duration of light exposure, users can easily adapt to different plant species and environmental conditions to ensure optimal growth and development.

02

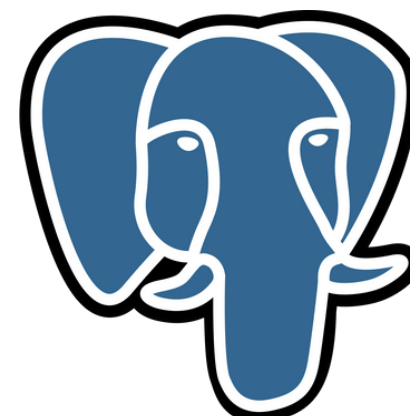
Program Stack



React



Docker



PostgreSQL



Amazon Web Services

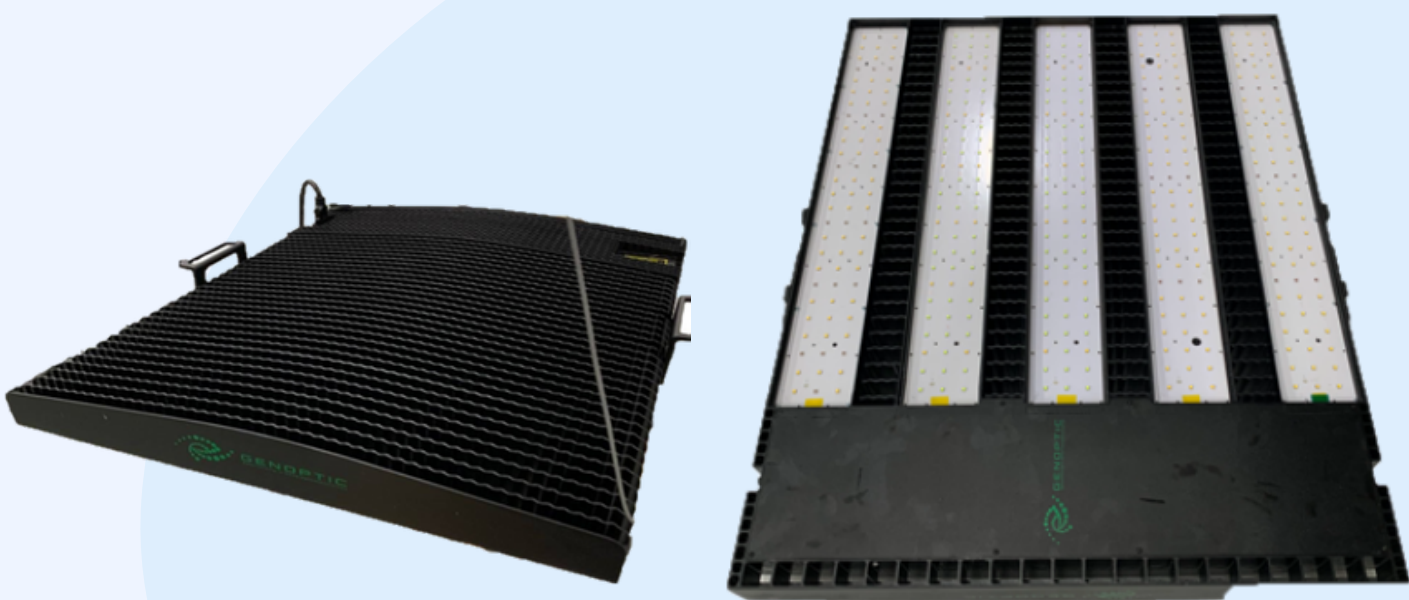


.NET



Mantine.dev

03



Results

Users can create optimal growing conditions for their plants with the following results:

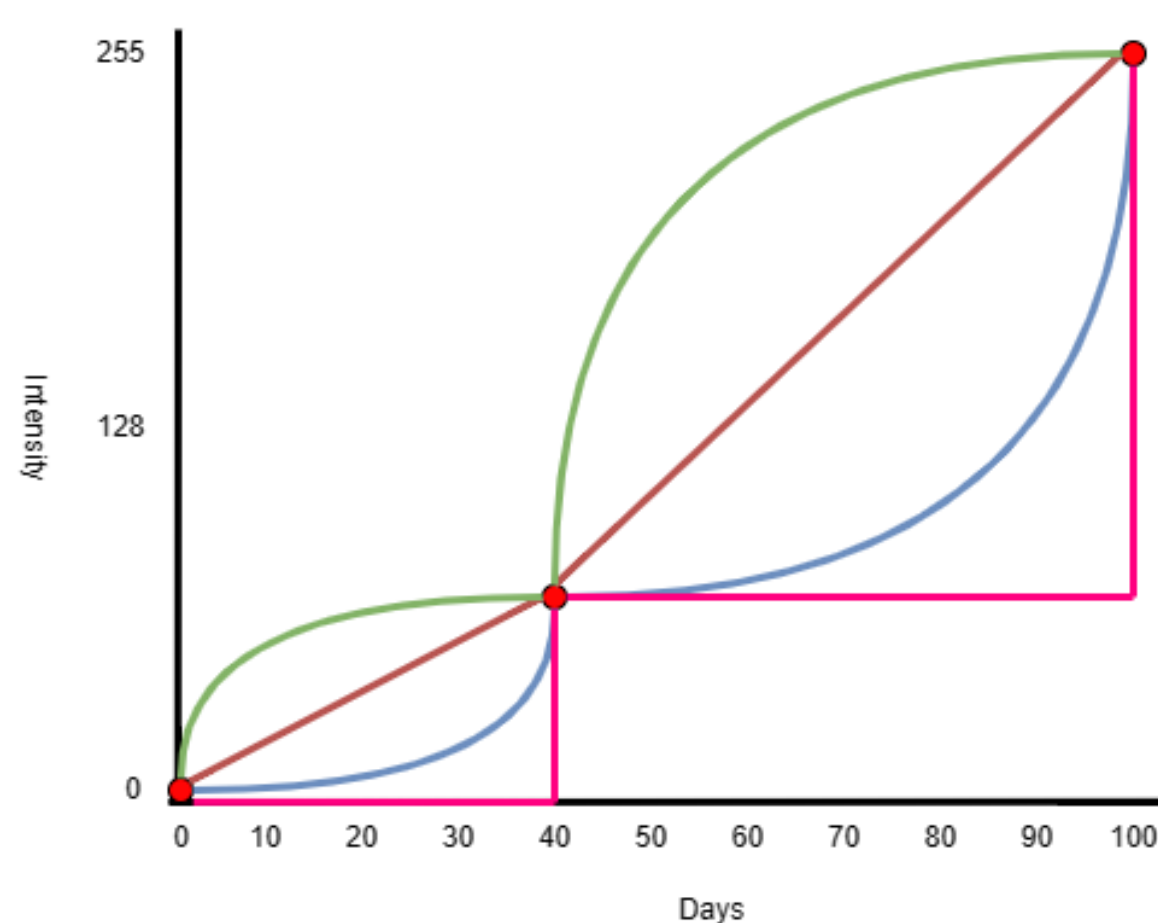
40% increase in yield

20% energy reduction

Users have full control over spectrum and intensity

04

Interpolation



Legend	
1	Logarithmic Interpolation
2	Linear Interpolation
3	Exponential Interpolation
4	Step Interpolation

05