

The Philips logo is displayed in a white rounded rectangle on a purple background. The background of the entire page is a photograph of a man in a blue polo shirt and glasses, looking up at a cucumber plant in a greenhouse. The plant has large green leaves and a prominent yellow flower. Above the man, a row of red and white LED lights is visible, mounted on a metal structure. The overall scene is brightly lit, suggesting a controlled greenhouse environment.

Horticulture
LED Solutions

Case study
Gerja BV

Elsendorp, the Netherlands

Philips GreenPower LED interlighting

Vital and strong cucumber plants

Improved quality and production in a 7,500 m² cucumber greenhouse



“

LED interlighting results in a **more vital and stronger plant...**”

Jac Dings, Owner, Gerja BV



Background

The family Dings has been a family run vegetable growing business since 1959. Now owner Jac Dings, manages the daily operations of this innovative enterprise with three hectares of greenhouses and has been growing cucumbers for over 25 years. In 2008, Dings started to grow on the high wire system. His results in producing very high yields and excellent quality fruits have been regularly published in the trade press. Not only is Dings a pioneer in high wire cultivation, he is also an innovator in the area of grow light systems. He has carried out trials with high pressure sodium (HPS) lights on his crops and is always looking for new ways to improve his cultivation methods.

The challenge

For many years, Dings and other members of the growers' cooperative Kompany have been looking at adding extra light within high wire crops to improve results. Dings says, "We grow in an older greenhouse that

is actually just too low (4.5 meters) to use HPS. The HPS lamps heat the crop too much, the fixtures come too close to the plants and spreading of the light is not good enough. "So installing HPS lights above the cucumber crop is not an option." Another option would have been increasing the height of the greenhouse by lifting it – but that's a serious investment. To get further inspiration, Dings visited a cucumber customer in Poland with Philips, and saw the good results his fellow cucumber growers are achieving with LED interlighting. This laid the foundation for an ambitious idea of using LED interlighting. Dings worked with a Philips LED plant specialist to develop and calculate the LED scenarios.

The solution

"It turned out that LED interlighting was the best solution," says Dings. The deciding factor for him was the added value for the plant. "LED interlighting results in a more vital and stronger plant, something I have seen for myself at fellow

growers in Poland” The Philips GreenPower LED interlighting installation spans 7,500 square meters of high-wire cultivation area. Two lines of LED interlighting have been installed in between the crop, and count for 88 micromol/m²/s. The LED interlighting modules will be maximally used for 18 hours per day, partly to extend the day. “This is equal to a weekly addition of 2500 – 3000 Joules/cm² (comparable to natural daylight),” says Dings in growers’ jargon. Philips plant specialist adds that the LEDs will be integrated in the complete cultivation strategy to realize maximum profit. “For example, the grower can use them to ‘activated’ the crop a bit in the early morning, instead of turning on the heat.” Electricity from the grower’s 1.6 mW CHP (Combined Heat and Power) unit is used for the LEDs. Dings says, “The 7,500 m² requires approximately 300 kW. The CHP has sufficient capacity to deliver power to install the LEDs on our entire three hectares in the future and we even have some energy left over.”

Benefits

Dings says, “With the LED interlighting we will be able to improve the quality of our cultivation practices. We will not use it to start our production earlier, but rather as a support tool to improve the quality and the production. It brings more balance in the crop and a more consistent production. Furthermore, the extra light from the LEDs will also have a positive impact on the shelf life of the fruits and will possibly also contribute to the taste experience. Above all, the extra light guarantees continuous production within the high-wire cultivation concept. Even on a (dark) summer day I will use the installation to keep the balance in the growth. “ Thanks to extensive trials in various countries, Philips has already gathered a lot of information on the use of LEDs, and the ultimate light recipe in cucumber cultivation. Philips will support Gerja in growing a high qualitative crop and raising their production levels. Dings is able to ‘read a plant’ like no one else, and his experience will play a crucial role in the development and use of LED technology in cucumber cultivation in the world.”

“

With the LED interlighting we will be able to improve the **quality and production of our cultivation practices.**”



Facts

Horticulturalist/grower

Gerja BV, Jac Dings

Sector

Vegetables

Crop

High-wire cucumbers

Location

Elsendorp, the Netherlands

Solution

Philips GreenPower LED interlighting

Philips LED Horti Partner

Cogas-Zuid

Benefits

Largest LED interlighting system for cucumbers. Allows the grower to further improve quality of fruits, production yields and production consistency



© Philips Lighting Holding B.V. 2016. All rights reserved. Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.

Document order number: 3222 635 70320
01/2016
Data subject to change

For more information about Philips Horticulture LED Solutions visit:
www.philips.com/horti

Write us an e-mail:
horti.info@philips.com

Or tweet us:
[@PhilipsHorti](https://twitter.com/PhilipsHorti)