PHILIPS

Horticulture
LED Solutions

Case study
Scheers
Rose Nursery
Kontich, Belgium

Philips GreenPower LED toplighting

Increasing lighting capacity **for top quality roses**

There are fewer temperature variations and there is more CO_2 available for the roses

For years, we've been searching for ways to increase lighting capacity without increasing energy costs."

Wim Scheers, Co-owner, Scheers Rose Nursery BVBA

Background

Wim Scheers and his partner Annelies are the third generation working in the family business, Scheers Rose Nursery, in Kontich, Belgium. In the mid 1970's the company switched from growing vegetables to cut roses. Father Karel retired in 2014 and the company is now being run by new, young, and enthusiastic managers. Today this nursery spans 36,000 m^2, divided over two locations, making it one of the largest players in the Belgian market. Scheers grows a range of large-flower roses, including well-known varieties like Red Naomi, Avalanche, and Talea that are sent to the Flowers and Plants Auction (Euroveiling) in Brussels. The company also makes and sells flower arrangements to consumers from its own flower shop.

The challenge

It became time to replace a 15 year-old Philips HPS lighting installation at one of the locations. This greenhouse has an 8 meter wide roof and is divided into cells of 4.5 meters. It is equipped with a toplighting system of 600 Watt magnetically attached fixtures that hang over pots that are 4.5 meters high. When these fixtures were last measured, they were producing an output of 90 µmol/m^2/s instead of the original 100 µmol/m^2/s. Since Scheers was growing very high quality roses with this system, he did not want the greenhouse to become too warm. That meant turning off the lights more frequently than desired or venting the waste heat out skylights. That reduced energy efficiency and wasted CO_2. It was not possible to bring the lighting system up to current standards or increase its intensity using HPS lights alone. The limiting factor is the capacity of the Combined Heat and Power (CHP) System. It is also not an option to buy more electricity. Scheers says, "For years I've been looking for a way to buy as little electricity as possible, because this energy comes at a high price due to the transport and distribution costs." The only way to increase the lighting capacity was to install energy-efficient LEDs.

The solution

Scheers has been a Philips customer for ten years. In the summer of 2015, Philips Key Accountmanager Wim Steeghs proposed doing a small trial with LEDs. “After a few discussions it was clear to us that we should increase the size of this trial to the entire greenhouse of 1.5 hectares,” says Scheers. “If you want to do a trial, you have to do it right.” The nursery purchased a new lighting installation consisting of two lines of Philips GreenPower LED toplighting with an output of 520 µmol/s per module, supplemented with 1,000 watt GreenVision HPS fixtures. Seventy percent of the lighting capacity comes from the LEDs (100 µmol/m^2/s) and 30 percent from the HPS lighting (50 µmol/m^2/s). Together they produce 150 µmol/m^2/s. Using just the LEDs, Scheers can now achieve a higher light capacity than his entire old system. “It took a while to see how intense the output of the LED’s would be without the HPS lights, but it has really been a success,” says Scheers. “Now we are one of the few rose nurseries in Belgium that has to turn off the lights for five hours per night, but that does not limit us. I think it benefits the shelf life of the roses.”

Benefits

The capacity of the new lighting system is over one-and-a-half times higher than the old system. Despite this, much less heat is produced. Scheers can use the LEDs and HPS lights separately from each other. When just the LEDs are on, there is 50% less heat produced compared to the old system. That means he can now turn on the lights at moments that were not possible before. “So far we really like how the new installation works. The climate in the greenhouse is very pleasant,” says Schreers. In addition, he does not have to vent the greenhouse as often which maintains a more balanced climate in the greenhouse. There are fewer temperature variations and more CO_2 is available for the roses. Scheers expects that he can turn on the lights for 500 to 750 hours more per year thanks to the ‘cool’ advantages of the LED toplighting. By installing this system, Scheers has not had to adapt the power supply of the company

> “The climate in the greenhouse **is very pleasant.”**

Wim Scheers, Co-owner, Scheers Rose Nursery BVBA

Facts

Horticulturalist/grower
Francine Scheers, Wim Scheers en partner Annelies Hens

Sector
Floriculture

Crop
Roses

Location
Kontich, Belgium

Solution
Philips GreenPower LED toplighting

Philips LED Horti Partner
B-E De Lier bv

Results
Producing high quality roses and increasing lighting capacity using the same amount of energy

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