



PHILIPS

Horticulture
LED Solutions

Case study
Melrow Salads /
Flavourfresh Salads

Landsdale Nursery, United Kingdom



Philips GreenPower LED toplighting and LED interlighting

A unique approach to lighting **with** **specific light recipes**

Philips' horticultural lighting solutions are based on years of experience and close co-operation with the horticultural world.



“

This lighting installation will allow us to extend the UK season, **improving consistency in flavour and increasing the yield of specialty tomatoes.**”

Andy Roe, Grower Manager, Flavourfresh Salads



Background

Lancashire-based Melrow Salads has a recognized track record of varietal development and trialling of crop production technologies. They are recognized as a leading supplier of protected salads to the retail and processing industries. There has been contact between Philips and the Flavourfresh Salads Landsdale Nursery site in Lancashire for several years. Two years ago some initial experiments with LED interlighting were conducted, but the involvement of Melrow took this to another level. After visiting the 3 ha project of Jami in Bergschenhoek, Netherlands, they were convinced about the potential benefits of LED interlighting. As far as toplighting is concerned, most of the greenhouses in the UK have lower ceilings than those in the Netherlands, so HPS lighting is not always an option.


The challenge

The challenge that growers in the UK face is to be able to deliver healthy and tasty locally grown tomatoes to the supermarkets all year round. With the cost of energy ever increasing, it is important that the correct source of light

energy is selected to provide the maximum return in terms of crop yield and quality per kW of energy. Addressing this issue, Melrow Salads is trialling the Philips hybrid LED top/interlighting system on a small cherry-type tomato cultivar (30–35 gr fruit weight) at Flavourfresh Salads' Lansdale Nursery site this winter. This is the first tomato trial using 100% LED lighting (both top and interlighting) and daylight in the UK. By utilizing the expertise offered by Philips, Cambridge HOK and the Flavourfresh production team led by Growing Manager Andy Roe, Melrow are hoping to take the outcome of their research into the commercial environment.

The solution

Philips' horticultural lighting solutions are based on years of experience and close co-operation with the horticultural world. Successful field tests with growers and breeders around the globe have provided unparalleled knowledge of the growth effects of lighting on different crops throughout their growth cycle. This has allowed Philips to create a unique approach to lighting with specific 'light recipes' that



can be tailored to meet the unique needs of every grower. The solution installed at Landsdale Nursery consists of Philips GreenPower LED interlighting modules in two rows (delivering 110 $\mu\text{mol}/\text{m}^2/\text{s}$) and Philips GreenPower LED toplighting modules (delivering 112 $\mu\text{mol}/\text{m}^2/\text{s}$). Installation was carried out by Philips' LED Horti Partner in the UK, Cambridge HOK.

Benefits

The solution of using LED interlighting and two rows of toplighting combines the benefits of having efficient light and heat within the crop and having efficient light in the spectrum that is used efficiently by the plant from above. After two days of lighting the plant already looked stronger, with darker leaves, more purple anthocyanin in the head, and a stronger truss. The hybrid LED top/interlighting system also makes it possible for growers with low-ceiling greenhouses to keep the lighting on during the season without the negative effect of heat radiation, thus retaining more CO_2 in the greenhouse, which will lead to higher production.

“

The aim is to learn about the opportunities and potential to extend the season, improve consistency in flavour and increase the yield of specialty tomatoes.”



Facts

Horticulturalist / grower

Melrow Salads / Flavourfresh Salads

Sector

Vegetables & fruits

Crop

Tomato

Location

Landsdale Nursery, United Kingdom

Solution

Philips GreenPower LED toplighting and interlighting

Philips LED Horti Partner

Cambridge HOK

Objective

To achieve a high production of healthy and tasty locally grown tomatoes using energy-efficient LED lighting



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