



PHILIPS



Horticulture
LED Solutions

Case study
APS Salads

Isle of Wight, United Kingdom

Philips GreenPower LED toplighting
Philips GreenPower LED interlighting

Delicious tomatoes, year-round
with 100% LED lighting

We are growing phenomenal tomatoes right through the winter that taste as good as mid-summer ones.



“

Philips has sent me down a new path. I have had to re-think how we are growing tomato crops, and I'm really impressed with the results.”

Phil Pearson, Group Development Director, APS Salads



Background

APS Salads with its Wight Salads site in the Arreton Valley on the Isle of Wight, is the biggest producer of tomatoes in the UK, and a leading supplier to many of the UK's leading food retailers. Right from the start APS Salads had a mission: to grow high-quality, delicious tomatoes all year round in the most environmentally friendly way possible. Phil Pearson is Group Development Director of APS Salads and Chair of the British Tomato Growers' Technical Committee. In both these roles he has implemented many innovations; including ground source cooling, motorized harvesting systems and anaerobic digestion systems. Back in 1998 APS Salads pioneered Combined Heat & Power (CHP) in UK horticulture, using the waste heat and carbon dioxide from power generation to enrich the glasshouses and feed the tomato plants. APS Salads was the world's first commercial tomato grower to run trials with a hybrid HPS/LED lighting system in 2010 in collaboration with Philips Lighting. The excellent results achieved with this system gave APS Salads the confidence to put in a 100%

LED system in 2015 with the support of Philips business partner, Cambridge HOK.

The challenge

“There is a high demand for British tomatoes,” according to Pearson. “Our customers don't just want British tomatoes in the summer, they also want them in the winter.” Moving to year-round production of tomatoes presents a number of challenges. Pearson: “One big challenge was to improve the light the crops were receiving from HPS grow lights. But because of our strong environmental credentials, we did not want to do that in a wasteful way.”

Pearson: “Growing in a protected environment in winter requires both heat and light. With the hybrid HPS/LED system, we couldn't achieve consistent crops at an affordable cost, and we were also producing too much heat via HPS lighting in the winter. We have been looking at LEDs for the past ten years, but we were just not prepared to take the next step to a 100% system at the expense of the environment.”

The solution

Pearson: “Last year changed my mind. I went to the launch of Philips GrowWise Center, where Philips light recipes are optimized, and visited other high wire tomato growers. I saw that LED technology had taken an enormous leap, and I knew the time was right to make the move to 100% LED.” Philips plant specialist Piet Hein van Baar provided technical crop support to help them understand how to adapt their growing approach with 100% LED grow lights. The goal was to use 100% LED to produce a constant high level of quality tomatoes, improve crop consistency and increase climate control in the greenhouse. Philips Horti LED partner Cambridge HOK worked closely with APS Salads to get the entire installation up and running in just eight weeks after the order was placed. Using a combination of Philips GreenPower LED toplighting and a double row of LED interlighting the facility can produce a total of 220 $\mu\text{mol/s/m}^2$. The interlighting installation can be lifted and lowered to satisfy the needs of the crop and differing varieties in the future.

Benefits

“I’m seriously blown away by this technology,” says Pearson. “You can almost watch the plants growing as you look at them.” Yields have been more consistent because of a better control of the climate. Blind taste panels have rated the winter crop to be as tasty as mid-summer ones. Pearson: “We are using roughly 0.8 Mega Watts, which is two-thirds the power we use in another greenhouse where we are running HPS lighting. We can better control the crop balance because we have total control over the heating and lighting. We have more flexibility in when we plant, because we can now apply high light levels even when the outside temperatures are high.”

“This has been one of the warmest winters I’ve ever experienced, at 13 °C or 14 °C. This is giving us major headaches in our HPS crop, whereas it’s much easier to manage the temperature within the LED crop. All my customers are fighting for my tomatoes – that’s how good the crop is,” concludes Pearson.

“**After 12 months with 100% LED, we are growing consistent quality tomatoes right through the winter that taste as good as mid-summer ones.**”

Phil Pearson, Group Development Director, APS Salads

Facts

Grower

Phil Pearson, APS Salads

Segment

Vegetables

Crop

Tomatoes

Location

Isle of Wight, UK

Solution

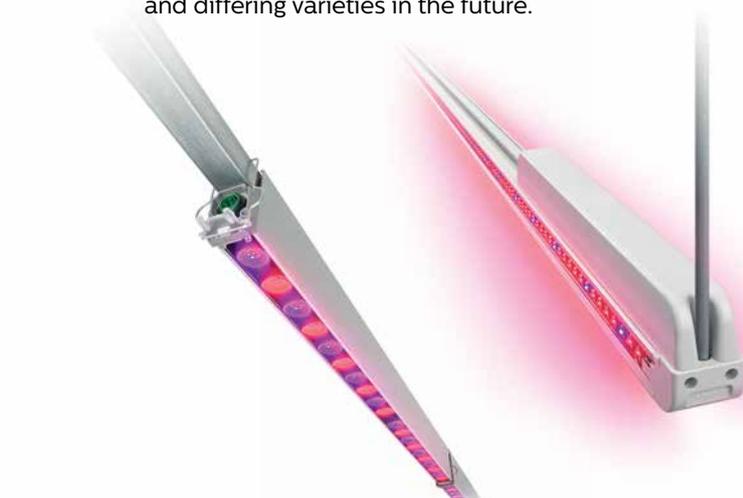
Philips GreenPower LED toplighting and LED interlighting

Philips LED Horti Partner

CambridgeHOK

Results

Delicious tasting British grown tomatoes year round with less energy. Reliable partner for retailers because of consistent quality and longer shelf life.





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Document order number: 3222 635 70653
02/2017
Data subject to change

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