

Case study:

Desmet lettuce farm, Belgium

Belgium's largest lettuce farm is benefitting from denser, healthier crops after installing Plessey's Hyperion 1000 LED grow lights across 20,000m² of new its greenhouse, explains Jonathan Barton, Business Development Director, Plessey



Johan Desmet with Plessey Hyperion LED grow lights

The challenge

Desmet, a year-round hydroponic lettuce-growing business, was set up in Izegem, West Flanders in 2004 by Johan Desmet and Mirjan Vandoorne. It is now the biggest grower of lettuce in the country.

The company's aim is to get the most out of every square metre of growing space. That means not just the largest yield, but also the highest quality of lettuce. It wanted to use the latest in LED lighting technology to help achieve this.

The solution

Desmet has invested heavily in technologies that increase efficiency, including automated production and a combined heat and power system, as well as LED lighting.

LEDs are around 40% more energy-efficient than traditional high-pressure sodium lamps. They also give off much less unwanted heat, so can be placed closer to crops, be on for longer and don't require additional air conditioning.

The installation of the Hyperion grow lights is not Desmet's first foray into LED lighting – in 2015, the grower introduced 2,610 LED lights from Philips, covering 14,000m².

But thanks to the superior performance of Plessey's Hyperion grow lights, the latest expansion was able to cover a much larger area of 20,000m² using just 1,680 fixtures. This is possible because the light intensity of the Hyperion grow lights was twice that of Desmet's existing LEDs, and they create much less unwanted shading because they are mounted directly on to the greenhouse's existing trellis instead of on additional c-profiles running down each bay.



Hyperion installation, Desmet

Hyperion is the product of six years of work from Plessey's designers, engineers and agronomists, working with universities, horticultural research organisations and growers. Using Plessey's engineering expertise and LED technology, Hyperion provides more photosynthetically active light – the specific wavelengths of light that plants use – making it one of the most productive horticultural lights available in the market. In this regard, Hyperion is more cost-effective than competing LED solutions, and offers a variety of light spectrums fine-tuned to improve crop yield and quality.

Unlike most LED grow lights, Hyperion is designed to be equivalent to the light output of 600W sodium lights – so Hyperion can be planned as a one-for-one replacement, making it simpler than ever to go with LED.

Furthermore, [results from trials](#) conducted this year by Plessey with four major vegetable and flower growers in the Netherlands showed increases in yield of up to 34% – providing further evidence of the productivity that Hyperion LED technology can deliver for growers.

The results

The new LED lighting from Plessey gives Desmet an extra 80 micromoles of light per square metre, resulting in a denser crop with better colouration.

Johan Desmet said: “The new installation of Hyperion lights give much less shading in the greenhouse. The colour and intensity of the light is good and because the fixtures are long-lasting, I can maximise the return on my investment.”

Jonathan Barton, director of grow lighting at Plessey, said: “With an output of 1,000 micromoles, the Hyperion only needs to be installed on an existing trellis to provide good uniformity, just like high-pressure sodium lamps. Moreover, it is a very simple, durable and cost-effective design with a long guarantee, making it ideal for any food producer looking to increase yields and product quality.”

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