HORTICULTURE CASE STUDY

OAO DorORS

About OAO DorORS

OAO Dorors is a multifaceted business, with a portfolio that stretches from restaurants and cafes through to a number of grocery and convenience stores across Belarus. As well its numerous retail locations, Dorors also operates a major agricultural business.

Rose growing comes at a rising cost

Headquartered in Minsk, Dorors is one of Belarus's largest grocery retailers. One of the major differences between Dorors and other chains, however, is that it also creates many of the items that line its shelves: the company has an expansive agricultural arm that produces fruit, vegetables, and meats.

Dorors is also the country's largest producer of roses, with a wide variety of the flowers grown at its 3.5 hectare greenhouse in Minsk. Before working with Midstream, Dorors had been reliant on a vast number of 1,000W high pressure sodium (HPS) lamps to provide the requisite heat and light that those roses needed to grow. But with energy costs rising, Dorors was determined to find a more efficient alternative.

Having trialled a range of solutions from local and international lighting companies, when testing showed that its luminaires outperformed the others, Dorors made the decision to move ahead with Midstream.

Location: Minsk, Belarus

Products and services provided:

- Design of a highly specialised grow lighting solution.
- Manufacture and installation of 165 Flare series luminaires.

Key achievements:

- Custom light spectrum delivers optimal conditions for rose production.
- Significant improvements to crop quality, with related commercial benefits.
- Energy savings of 40% over existing lighting setup.
- Robust and reliable system with minimal requirement for maintenance.

Midstream bespoke light spectrum solution

As well as looking to reduce the amount of power consumed when growing its roses, Dorors had another good reason to explore an alternative lighting solution: quality.

The market value of a rose is dependent on many things, but the length of the stem and the quality of the petals have a major impact on the price of a flower. With that in mind, Dorors was also keen to see how a different spectrum of light might be able to improve the quality of its roses. Here, Midstream's technical capabilities came to the fore.

Using its Flare luminaires as the basis, the Midstream team created "SFLO" – a customised spectrum optimised to the needs of a germinating rose. Combining high amounts of photo- and far-red light, this spectrum was used to create a tailored LED board, one of which was fitted in each of the 165 Flare units installed at Dorors' facility. At a height of two metres above the grow area, the luminaires delivered an average of 159 µmol/m2/s.

In order to test the effectiveness of this bespoke solution, Dorors implemented a hybrid installation that replaced 50% of the HPS lamps in one of its greenhouses with the Midstream Flares. With the remaining HPS lamps retained primarily for heat purposes, the Flares helped to drive a 40% reduction in power consumption – while also delivering significant improvements to the length of the flowers' stems.