

INNOVATOR SPOTLIGHT

HortiPolaris | Beijing, China



Looking to the Future – How HortiPolaris is feeding one of the largest cities in the world.

Located in Beijing, China—the most populous national capital in the world, with more than 21 million residents—HortiPolaris stands on the cutting edge of farming and education amid a background of booming growth. Since 2000, Beijing has doubled in population and continues to grow, promising an even higher demand for fresh, quality produce. HortiPolaris is a science and technology leader in the region, delivering more than 20 types of tomatoes and 8 different crops of lettuce through online and offline channels.

Stepping into a HortiPolaris greenhouse feels more like walking into the future of what's possible in controlled environment agriculture. A high ceiling overlooks 2000 square meters of lettuce and 520 square meters of tomatoes, all grown with state-of-the-art technology and research inspired by best practices from Dutch greenhouses. A primary focus of HortiPolaris is exploration, which led operational decision-makers to switch from HPS lighting to LED solutions through Fluence, implementing several LED systems based on crop and preferences, such as AnthoSpec to improve the anthocyanin expression of red lettuce varieties.

“We can use LEDs not only in the winter period, but also the spring, autumn and even summer to increase yield and stabilize quality. We are carrying out trials together with Fluence to figure out the best combination of light intensity and light spectrum in order to increase the neutral level to maximize margin and to differentiate ourselves in the market.”

DAN XU
FOUNDER AND GENERAL MANAGER

To learn more about how HortiPolaris is transforming tomato and lettuce production, visit fluence.science/hortipolaris/



FARMING FOR THE FUTURE

Dan Xu, the founder and general manager of HortiPolaris, studied horticulture at Wageningen University & Research in the Netherlands. There, he was introduced to the types of greenhouses that make growing possible in every season despite severe weather differences. He was impressed by the quality and quantity of produce in a controlled environment, inspiring him to bring that knowledge and passion for cultivation back to Beijing. HortiPolaris is not only a state-of-the-art farm, but also a center of research and learning—as more than 20,000 students visit the facility each year.

Originally equipped with HPS lighting, Dan found the exorbitant costs of energy to be unsustainable, particularly because the market valued quality over yield. The goal was to find a lighting option that cut energy costs, provided more consistent quality and morphology, and allowed more flexibility for growers to achieve desired traits. In its search, HortiPolaris discovered that Fluence's diverse lighting solutions resolved many of their issues: lower energy consumption, stable quality and shorter winter grow cycles.

SALAD OF SOLUTIONS

Since 2016, HortiPolaris has grown a plethora of tomatoes and lettuces in high-tech greenhouses, distributing popular varieties to local and regional markets. The company switched to LED solutions to improve quality and margins, leveraging broad-spectrum VYPR LED lighting in their greenhouse and RAZR LED lighting in their vertical propagation racks. Tactically, AnthoSpec lighting is leveraged to improve the color and desirability of red lettuce, a crucial factor in consumer purchase behavior.

Through close cooperation with seed companies, HortiPolaris grows more than 20 varieties of tomatoes and 8 types of lettuce, which cannot be grown in the winter without a controlled environment. Fluence LED solutions have several key advantages: growers can control temperature, light uniformity and light intensity during different stages of development, as well as CO2 levels and humidity, eliminating once-crucial concerns about overheating as a result of growing under HPS lighting.

Because LED lighting is 50 percent more efficient, HortiPolaris was able to increase light intensity by 50 percent, yielding more produce and higher quality fruit and vegetables following the first harvest with Fluence. Lighting uniformity has improved both growing and grafting, while a flexible light intensity schedule has enhanced morphology and coloration. Altogether, HortiPolaris is proving that the combination of art and science in horticulture can overcome great challenges and provide lasting solutions to current markets and future generations.



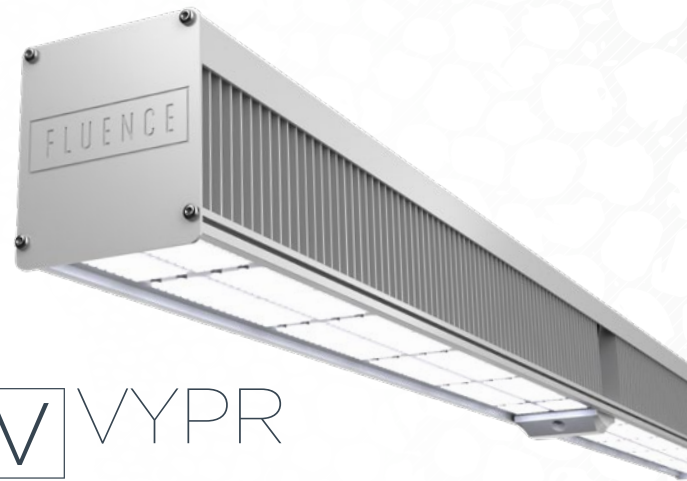
50 % INCREASE IN LIGHT INTENSITY WITH FLUENCE'S LEDS



GREATER CROP YIELDS FOLLOWING FIRST HARVEST



LARGER, MORE FLAVORFUL, HEALTHIER CROPS



V VYPR



R RAZR

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