

Super Hydroponic LED System

Growing Strawberries



World's first high-powered LED

The super LED drives at 400mA, 10times current compared with conventional LED, which normally drives at around 40mA.

Silicon Lens that concentrate light

LED covered with silicon lens concentrates light to 40 degree, giving high-intensity lighting to replicate sunlight.

Remarkable Heat Resistance

Heat resistance for our system stands for 100°C against the conventional system at around 85°C.

Low Power Consumption

Power consumption for LED is a half of fluorescent lamp. In addition, our movable LED system is reduced to a half of LED installation cost, allowing 50 % cut down for operating electric power.

One thousandth fraction defective

Compared with LED made in Taiwan and China, our LED keeps one thousandth fraction defective.

Durability

Our LED is 7 years long-lived, which keeps high performance for heat production over 70% output.

LED Technology

The key development of our hydroponic system is LED technology, which stand for high powered lighting output similar to sunlight. In order to accomplish the requirement, the super silicon lens have been developed to concentrate lighting to 40 degree, achieving 4 times as brighter as conventional LED .

LED panel was made by stainless body to stand for the heat resistance, while maintaining the low radiation heat .



Introduction

Our Super Hydroponic LED System combined with the high-powered LED and Dome Type House provide opportunities to produce strawberries in a sustainable manner.

Our system is fully controlled environment agriculture(CEA), which aerial and root zone can be maintained in the optimum range to maximize the productivity of strawberries, and nutrient solution can be recycled to save water and reduce fertilizer use, making more efficient utilization of limited resource. Use of hydroponics eliminates the necessity of soil fumigation. Dome Type Plant House excludes insect pests, reducing or eliminating the necessity of pesticide application.

Our system produces strawberries with richer in Vitamin C and polyphenol, and more luscious in taste at anywhere in the world.

The proposal of our project is to establish sustainable off-season hydroponic strawberry production in the desert, where there currently is very limited production of strawberries but there are strong plant house industries that successfully conduct year-round production of high quality crop yet experience ever-increasing pressure for product diversification due to the aggressive price competition for the current products.

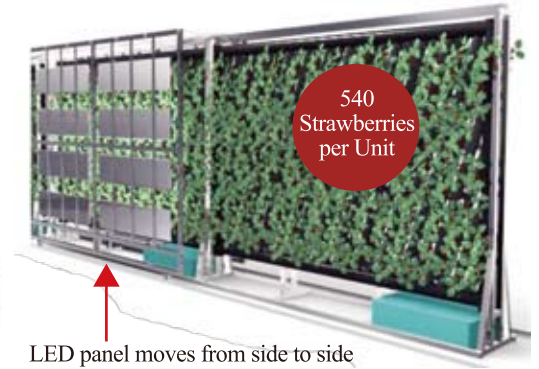
Movable LED Panel

Nutrient translocation is taken place at night, which is no lighting condition for 12 hours. Understanding the natural phenomena, our LED system is developed to move LED panel to left and right for each 12 hours interval, resulting not only over 50 % less power consumption compared with fluorescent lamp, but also initial cost of LED panel as well as operating electric power.

About Super Hydroponic LED System

The Super Hydroponic LED System was designed for strawberries, which have a very high value. Strawberries are susceptible to soil pathogens and leaf diseases. However, with the unique vertical hydroponic system, strawberries are less likely to get such root disease because plants will all be grown in soilless by the nutrient solutions, and root rot is solved by the vertical system. This is a premium system for strawberries.

Unique Vertical Hydroponic System

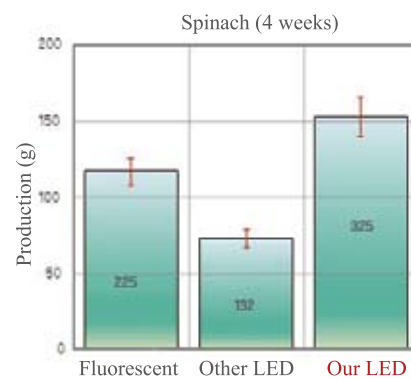


LED panel moves from side to side at each 12 hours' intervals

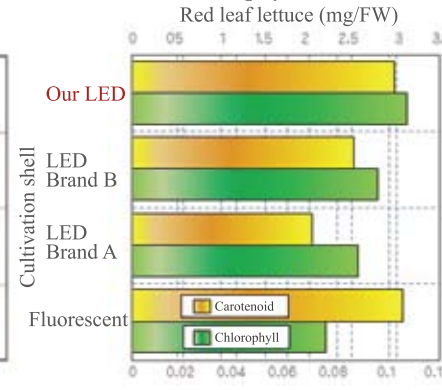
- Cut down 50% of electricity consumption
- Cut down 50 % of LED installation cost

Super LED compared with other brands

Differential growth by light source



Differential Chlorophyll/Carotenoid



- Faster Growth
- Higher Yield
- More Luscious
- Richer in Vitamin C
- Plentiful Polyphenol
- Stronger in Antioxidation

Comparison Testing for Sugar Content



Brand A
10.1(Brix)



Brand B
9.6(Brix)



Our LED
13.6(Brix)

Super LED combined with Dome Type Strawberry Plant House

