



40-Foot Growbox Solution

QuantoTech has teamed up with **Kingpeng Canada** to develop an inexpensive grow system that produces fresh, local, leafy greens at lower costs than imports. On top of competitive pricing, QuantoTech offers financing packages to reduce financial strain on enterprising growers. Automation removes the guesswork out of commercial growing while nearly eliminating the number one operating cost, labour. The second highest operating cost, energy, is greatly reduced through the use of premium LED technology.

Growbox Profile

The Growbox Solution adopts a modular design for the growing of leafy greens and vegetables. The modular aspect of the solution enables growers to customize their grow spaces based on varied needs. The advantages of this include flexible module arrangements, easy transportation and relocation, and mass production scalability.

The Growbox can be used both in open air and self-contained environments. However, it is suggested that the Growbox be placed in a setting with existing ventilation systems for temperature and humidity control, such as a pre-constructed warehouse facility, in order to reduce operational costs and energy consumption. The suitable working temperature of the container based Growbox is -20°C - 40°C . When exceeded, the energy consumption will increase significantly and may cause damage to the components. Humidity should not breach 99% (without dew) in order to avoid corrosion of the container body reducing the unit's lifetime.



Founded in 1959, Kingpeng Canada is a leading hi-tech greenhouse manufacturer. The company has gained over 40 patents, completed 328 technical research projects, and received 116 different awards. The company's products include Growboxes, greenhouses, and energy-saving solar greenhouses. It serves clients in Canada, China, and internationally.



Energy-Saving Design

On top of the container housing sits two electric exhaust fans for ventilation. The exhaust volume of each fan is 4600 m³ / h. By running the fans, the protective rain cover, situated above them, automatically rises due to airflow. The function of these fans is to ventilate (by cooling air temperature and increasing CO₂ volume) and dehumidify the container when humidity reaches unsuitable levels. To balance the exhaust fans, there are three sets of air intake devices installed at the bottom of the the container's two side walls. These air intake devices are positioned near the outside door which is controlled by an electric push rod, and early detection air filter (quick-change) cartridges. The electric push rod opens the door based on feedback from the automatic environmental control system, which coordinates with the exhaust fans for ventilation and cooling.

Resource Reutilizing Design

All of the remaining nutrient solution can be reused after sterilization and all condensate, created through air conditioning, is collected to refill the humidifier tank. These recycling techniques maximize the utilization of available resources while reducing waste.

Performance Indicators & Technical Parameters

Type of vegetable	Leafy greens
Range of adjustable temperature inside the container	15-30°C (average)
Range of adjustable humidity inside the container	30%-90%Rh
Range of luminance inside the container	0-280μmol m ⁻² s ⁻¹
Range of adjustable nutrient solution parameters	EC=1.0 ms/cm -3.0ms/cm PH=5-6.5
Production capacity	Seeding: 21600 pieces/crop Vegetable matures: 3000 pieces/crop
Power supply	Standard: 200V/380V 50HZ (3PH, 5 wiring system) Can be customized according to customer
Water supply	Water pressure 0.05-0.3Mpa Flow is no less than 1.5m ³ /hr
Equipment installed power consumption (kW)	19kW

Note: the above parameters are only for reference. The manufacturers have the rights to modify this table without notice advanced notice.

Growbox Configuration

- Cultivation system
- Nutrient solution circulation system
- Supplementary lighting system
- Air conditioning system (including ventilation and dehumidification fan)
- Humidifying system
- CO₂ supply system
- Water supply and drainage system
- Automatic environment control system
- Automatic fertilization system
- Power distribution system

The Growbox cultivation system utilizes a proprietary PVC extruded, cultivation gutter with upper-lower split structure allowing debris to be cleaned easily from the system. The system was developed by KingPeng, a manufacturer of greenhouse products since 1959.

The assembly accessories (connectors, end caps, and brackets) which simplify construction and allow for an extremely convenient installation.

Growbox Container Dimensions

- The Growbox is contained in a 40HQ container
- External container dimensions (mm): 12192*2438*2900
- (This figure does not include air-conditioning supporter and exhaust fans)
- Internal container dimension (mm): 11800*2190*2590
- Effective area inside the container (□): 25.84
- External dimension of mature vegetable cultivation frame (mm): 5400*720*2510 (4 sets in total)