

HEFL® lighting unit

Plant and seedling cultivation system



Simple experiment cultivation system
Pre-mass production cultivation system

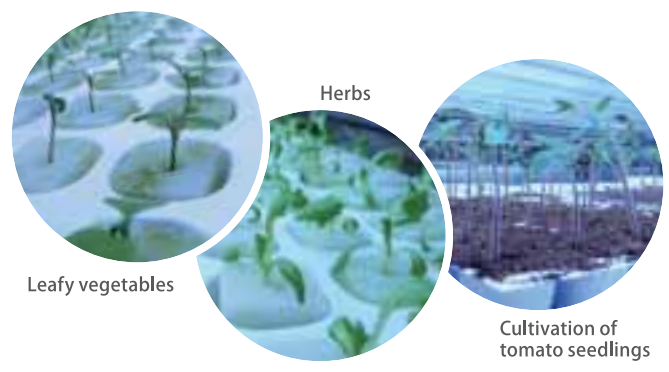
- ◆ Accumulated know-how of cultivation under artificial light at low cost and with space-saving design! HEFL, LED and fluorescent lamps can be used.
- ◆ From verification of test cultivation to application to mass production scale!
- ◆ Proximity lighting of the system allows seedling cultivation. Evenly delivered strong light allows stable production of healthy and quality seedlings irrespective of the season.
- ◆ The system can be equipped with multiple nutrient solution circulating systems, which allows nutrient solution control according to crops. *1
- ◆ Allows both water and soil cultivation!
- ◆ Since various kinds of cultivation accessories are already included, you can start cultivation right from the day you procure the system! *2



| Specifications (for reference) | 3-tier shelf simple experiment cultivation system | 4-tier shelf pre-mass production cultivation system | 3-tier shelf simple experiment cultivation system (fluorescent tube type) | 4-tier shelf pre-mass production cultivation system (fluorescent tube type) |
|---------------------------------------|---|---|---|---|
| Width (mm) | 980 | 1,916 | 1,380 | 1,380 |
| Depth (mm) | 700 | 700 | 650 | 650 |
| Height (mm) | 1,780 | 2,050 | 1,720 | 2,150 |
| Number of HEFL lighting units (units) | 3 | 8 | 12 | 16 |
| Number of pumps (units) | 1~3 | 1~4 | 1~3 | 1~4 |
| Power consumption (w) | 390~480 | 965~1,100 | 381~471 | 493~628 |

Customized specifications are available according to your experimental purpose, contents and budget, in addition to the above specifications. Please feel free to contact us.

*1 Multiple nutrient solution circulating systems are optional.
 *2 A set of cultivation accessories and consumable goods to last approx. 6 months are included at system delivery. However, a lump-sum payment for the system is required.
 *3 EC meter, pH meter, PPF meter for environmental control are optional.



System with an environmental control unit

Compact cultivation system with an environmental control unit

Suitable when air conditioning control is difficult and when elaborate cultivation condition settings are required. As an option, CO₂ level (concentration) can be controlled.

Blue wavelength is effective in flower bud forming!



<Reference size>
 External size (D1,300 x W850 x H2,450 [mm])

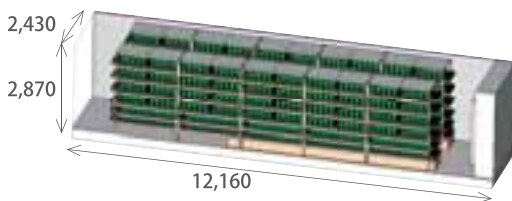
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Mass production system

Container type HEFL plant cultivation unit

- ◆ A container unit with good thermal insulation allows plant cultivation in a completely enclosed plant factory at any place.
- ◆ Sowing, seedling development and harvesting can be completed with our original cultivation know-how.
- ◆ The system's footprint is only approx. 30m².
- ◆ Low-heat HEFL lighting unit can increase the number of shelves to 6.
- ◆ Equipped with a whole set of internal facilities needed for plant cultivation! *1



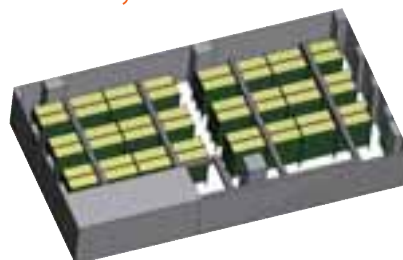
*1 The internal facilities include HEFL lighting units, cultivation rack, nutrient solution circulating system, internal power supply system, internal water supply and drainage facilities as standard. Costs of construction of primary power supply facilities and installation for the mains, etc., water supply works and workrooms are needed separately.



Cultivation system for mass production

- ◆ Cultivation system available for middle scale to large scale production
- ◆ We propose the cultivation system in response to specific customer needs.
- ◆ We propose the most suitable cultivation system based on our accumulated accomplishments.

We can also offer advice on construction and cultivation rooms.

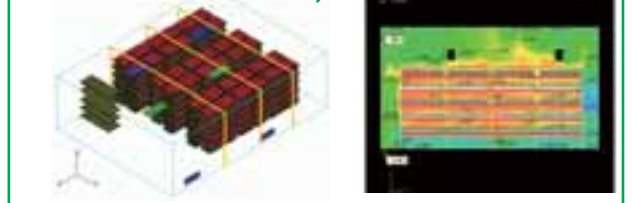


Cultivation system for mass production



Cultivation scene

Cultivation room airflow analysis



We will support plant factory startup with our long-accumulated cultivation technology and know-how

- 1) **Research on effective cultivation environment control**
(Research on EC values, pH values, dissolved oxygen concentration, CO₂ concentration, temperature and humidity, light quantity, light quality control, mineral composition, etc.)
- 2) **Cultivation system construction technology**
(Field-proven durability of assets with rust prevention measures, measures to prevent leakage of nutrient solution, intensity calculation, measures against high humidity, etc.)
- 3) **IT management of the inside of a cultivation room**
(Environment control to grow plants efficiently, storage of data on conditions in the cultivation room)

Customized specifications available according to crops and cultivation scale. Please feel free to contact us.

