

# MobyLox<sup>®</sup> GroBanks



## **The most flexible system for your individual application**

The modular multi-tier GroBank Concept offers you the possibility to grow different plants under different light and temperature conditions in a single temperature-controlled room.

CLF GroBanks are research grade equipment providing precisely controlled growth conditions. Each tier is equipped with its individual digital controller and can be programmed separately.



Photoperiods and temperature, the maximum growing height and the watering regime can be defined individually for each tier.

In just one GroBank you can have cell cultures, seedlings and flowering plants at the same time – each one under optimal conditions.

### Technical Data BrightBoy® GroBanks

Model Features	BB--XXL <sup>1</sup>	BB--XXL <sup>2</sup>	BB--XXL <sup>2LH</sup>	BB--XXL <sup>3</sup>	BB-XXL <sup>3+</sup>	BB-XXL <sup>4</sup>
Lamp banks	1	2	2	3	3	4
Standard light intensity (μmol)	600	450	1 x 300 and 1 x 450	300	300	250
Optional max. light intensity (μmol)	1000	650	2 x 650	450	450	300
Shelf dimensions (W x D, in mm)	870 x 790 (x2)					
Grow. area (m <sup>2</sup> )	1,37	2,74	2,74	4,11	4,11	5,48
Growing height (mm)	1450	780	1 x 1070 and 1 x 500	470	500	315
Height (mm)	1980				2050	1980
Width (mm)	2140					
Depth (mm)	825					
Sample Applications	Tobacco, Maize, Tomato	Cereals, Rice, Soybean	Tobacco, Maize, Cereals	Arabidopsis, Melilotus, Potato	Cereals, Soybean, Melilotus	Cell cultures, Algae, Physcomitrella

## Multiply your existing growth space

Multi-tier GroBanks multiply the available growth space in each climatized room.

CLF GroBanks offer an economic solution for existing temperature-controlled rooms without the need of construction work. The modular concept allows different growing heights and shelf-layouts for each tier.

The vertical arrangement of two, three or four tiers together with the concertina doors result in a remarkable large growth area on a very small footprint – therefore CLF GroBanks are simply perfect for accelerating research work.

Each GroBank is installed on castors for easy mobility.

## Many different applications in one instrument

Some of our customers grow different plants like Arabidopsis, Maize and Cereals in different tiers of the same GroBank.

CLF GroBanks offer an optimal solution for plant tissue cultures – the unique air-flow system reduces the unwanted condensation on the lids of Petri-Dishes significantly.

A thermal barrier for each lampbank makes it possible to control the temperature on each shelf precisely and guarantees for constant light intensities.



**Existing applications in CLF GroBanks are plants and cell cultures of:**

**Tobacco,  
Arabidopsis,  
Maize, Cereals,  
Melilotus, Algae,  
Physcomitrella ...**



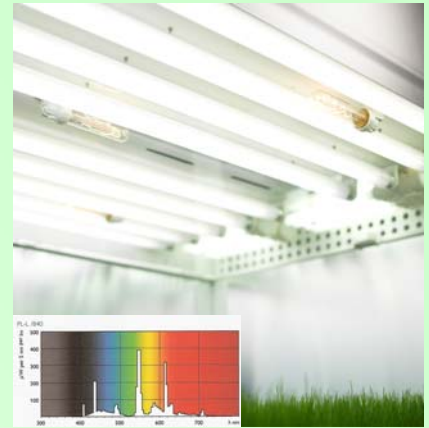


**The thermal barrier between the growth area and the lampbank can be easily removed without tools for exchanging the lamps**

### Energy-Efficient and Cost-Effective

The light-yield of CLF GroBanks is 30 % higher compared to open-shelf-systems. GroBanks offer a completely contained growth space with highly reflective panels so that all radiation can be used for plant growth without any losses due to stray light. As a result, much higher light intensities can be reached with the same number of lamps.

Special fluorescent lamps with internal reflectors provide a superior light efficiency.



**The dimmable fluorescent lamps offer the ideal light spectrum and intensity for almost every plant growth application**

### Light System

CLF GroBanks are equipped with dimmable (10 – 100 %) fluorescent lamps. The combination of fluorescent lamps with internal reflectors and compact fluorescent lamps provides excellent light uniformity over the whole work area.

Incandescent lamps or optionally GroLED complement the fluorescent spectrum and provide an extra portion of red and far red light. Fluorescent and incandescent lamps can be programmed separately for Dawn / Dusk photoperiods. Reflective panels on the inner walls and doors spread the light evenly for an excellent light uniformity all the way into the corners and along the sides. High light intensity lampbanks with up to  $1000 \mu\text{mol m}^{-2} \text{s}^{-1}$  are available.

Each tier is light tight and can be programmed separately. Tiers which are temporarily not in use, can simply be turned off to save energy.

The independent control of each tier is ideal for “long day/long night” applications.

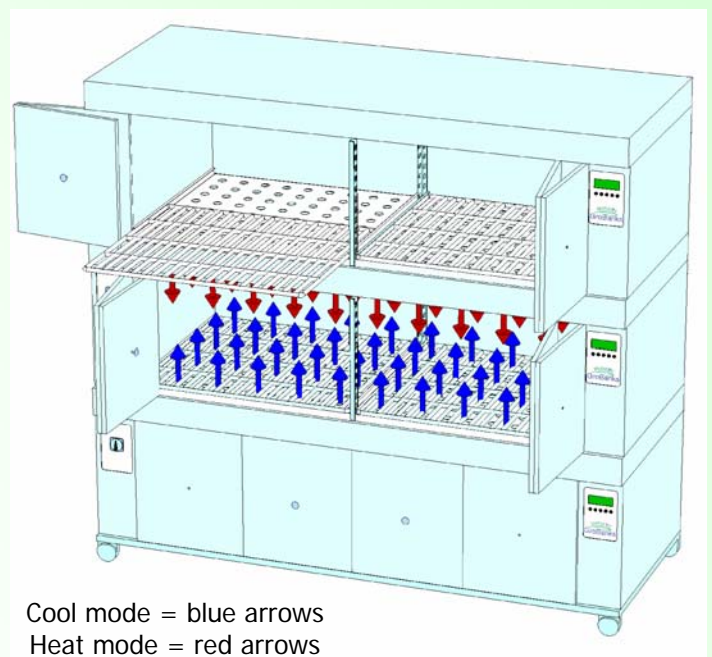
### The air flow system

The air flow system was designed to simulate natural conditions for your plants - it assures, that the plant roots always remain cooler than the leaves. The forced air flow eliminates temperature gradients and provides homogenous growing conditions.

In the heating mode the lamp heat is actively used for temperature control to reduce energy costs. In the cooling mode the lamp heat is directly conducted out of the growth space.

This upward air-flow through perforated diffusers reduces significantly unwanted condensation on the lids of Petri-dishes.

A thermal barrier between the growth area and the lampbank allows low temperatures and high light intensities at the same time.



Cool mode = blue arrows  
Heat mode = red arrows

### Adjustable, slide-out shelves

The shelves in each GroBank can be easily adjusted in height for the different stages of plant growth.

The slide-out non-tilt shelves allow for convenient inspection or loading of plants and cell culture vessels.

The slide-out non-tilt shelves allow for the convenient loading of plants, the low-velocity air flow assures an excellent temperature homogeneity



The CMJ is both, a high capacity controller and easy to understand

### The CMJ controller

offers diurnal day/night programs and circadian rhythm programming of temperature and light intensities.

All GroBanks are equipped with adjustable over and under temperature safeties to protect the plants reliably.

### Options

In addition to our standard models, the **EcoBoy** is a low budget solution. The **FlexiBoy** range stands for individually customised GroBanks. Please contact us to find the best solution for your individual application.

CLF GroBanks can be equipped with fully **automated watering systems**. Surface-Tensiometers constantly monitor the soil moisture and regulate the high-precision watering system.

The optional **ControlCommander** offers a ramping mode for temperature and light intensity, a data logging function and real time control. All GroBanks can be equipped with remote alarm contacts or autodial systems.

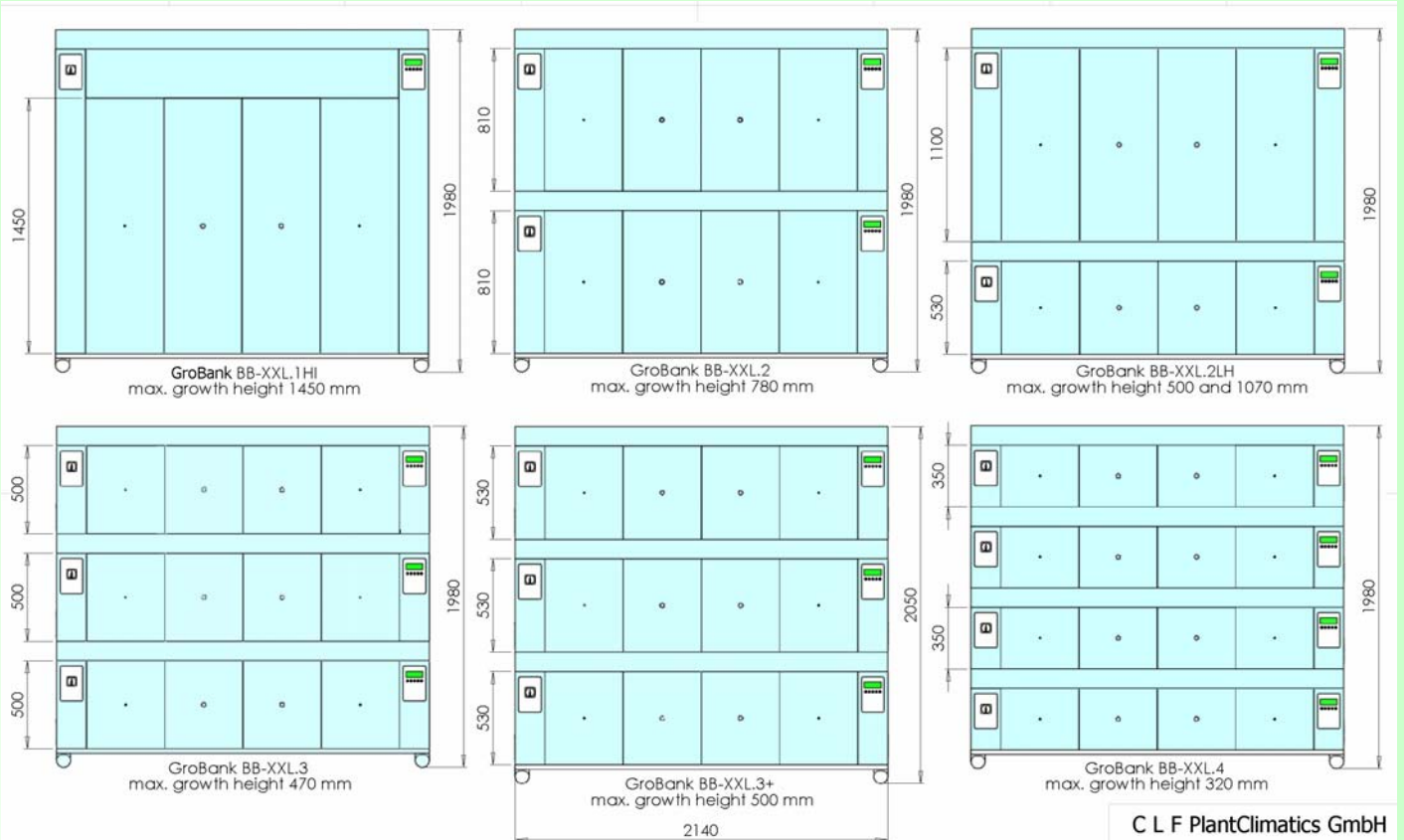
### PlantMaster temperature-controlled rooms

CLF Plant Master rooms provide the ideal environment for CLF GroBanks. They can be designed to optimise every available space from the cellar to the roof. A PlantMaster room assures a maximum in effective growth area with efficient energy management.



## Available Models

CLF GroBanks are designed to meet your individual application. The modular system can be adapted to many different growth condition in terms of light intensity, temperature range or soil moisture levels. The clearance between the shelves can be adapted to cell culture applications or plants, requiring more growing height like tobacco, wheat or rice.



## Full technical support

- which does not end with the guarantee period! For all CLF products you can rely on our qualified technical advice and our highly skilled service engineers. This applies to the whole of Europe – from Umeå to Lisboa. If you are interested in CLF GroBanks or if there is anything else we can do for you - please do not hesitate to contact us:

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## Quality Made in Germany

With your new CLF GroBank you can rely on a high-quality product Made in Germany. Design and function are patented under Patent No. 102004023639.

