PlantMaster®
CLF Plant Climatics

A Selection of Installations

Installed July 2007 & Dec. 2011

CZ-Brno Masaryk University

Four PlantMaster Rooms built in the basement of the Plant Genetics Building. These rooms contain 16 GroBanks with a total of 52 independently programmable tiers. The total growth area exceeds 72m². All the tiers can be controlled and programmed from a remote PC.

Installed Nov. 2006

DE-Erlangen Nürnburg University

Three PlantMaster Rooms built on the roof of the car park building. Two rooms are fitted with GroBanks, the third is a high-light room with four adjustable lamp banks with stainless steel work benches.

Installed April 2010

CH-Neuchatel PMI Research & Development

The two PlantMaster Tandem Rooms shown here are sub-divided. The front rooms are fitted with GroBanks, the two back rooms are fitted with high-light lamp banks. The GroBanks in the front rooms are equipped with automatic ebb & flood watering systems.

Installed July 2009

FR-Colmar RITTMO

Two PlantMaster Rooms designed for research in compost. The room on the left is fitted with PAR high-intensity lamp banks, the room on the right with GroBanks.

PlantMaster, GroBanks & GroLEDs are Registered Names
The GroBanks are patented technology Patent № 1020 0402 3639

Installed May 2011

DE-Bochum Ruhr University

The Control Cabinets of four PlantMaster Rooms. The rooms have different sizes and specifications. The control cabinets are equipped with remote-control operation and SMS messaging systems.

Installed May 2011

DE-Bochum Ruhr University

The Control Cabinets of a second suite of four PlantMaster Rooms. Two of the rooms are fitted with BB GroBanks, one room with EB GroBanks and the fourth with high-light intensity lamp banks and stainless steel work benches.

Installed May 2011

DE-Bochum Ruhr University

A PlantMaster Room (PM4) fitted with four high-light lamp banks, each separately programmable. The lamp banks and stainless steel work benches are motorized for easy height adjustment. The room has a fully programmable additive CO_2 system.

Installed May 2011

DE-Bochum Ruhr University

A PlantMaster Room (PM8) with four high-light lamp banks, each separately programmable. PM4 and PM8 can be operated at +5°C without de-frost periods with four lamp banks each with 850µmols/m²/S[1].

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Installed May 2011

DE-Bochum Ruhr University

Two of four high-light lamp banks in PM4 and PM8 with VHO fluorescent lamps and GroLEDs. The lamp banks are separately programmable and can produce up to 1.340µmols/m²/S[1].

Installed May 2011

DE-Bochum Ruhr University

The ControlCommander controller provides for simple Day/Night programming as well as up to 50 user-written programs. It can be set to run either 24-hour or non-Circadian periods with step or gradient increments.

Installed May 2011

DE-Bochum Ruhr University

Close-up of a high-light lamp bank in PM4. Both the fluorescent lamps and GroLEDs are dimmables and separately programmable in intensity and photo-periods.

Installed November 2011

DE-Dortmund TU

A PlantMaster Room (PM2) with four PAR high-light lamp banks. The light intensity of each lamp bank is 1.100µmols/m²/S[1]. Each lamp bank can provide up to 23 different spectra.

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Installed October 2012

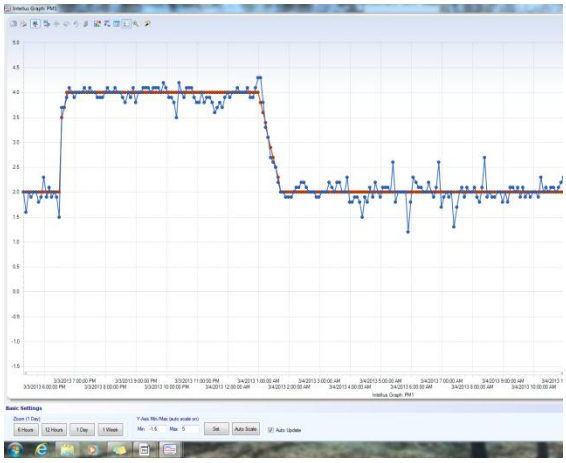
LT-Dotnuva LIA

One of three PlantMaster Rooms at the Lithuanian Institute of Agriculture designed to operate at constant low temperatures for the vernalisation of winter wheat.

Installed October 2012

LT-Dotnuva LIA

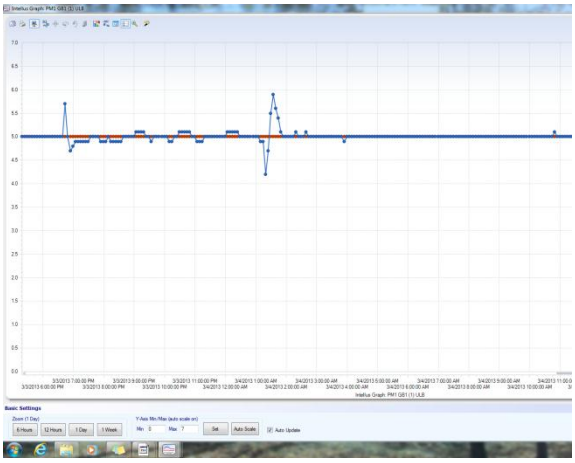
The PlantMaster Room ***(left)*** can provide very high light intensities. The cooling capacity can manage the temperature of four such lamp banks



Installed October 2012

LT-Dotnuva LIA

This is the temperature profile of PlantMaster Room 1 over a 24-hour period with settings of 4°C Night (lights off) and 2°C Day (lights on). The greatest deviation from the set points was 0,6°C.



Installed October 2012

LT-Dotnuva LIA

This is the temperature profile of one of the six tiers in three GroBanks BB-XXL.2 over a 24 hour period at a constant 5°C. The Day period (lights on) was 16 hours at 200µmols/m²/S1. Apart from the lights off/lights on junctions the greatest temperature deviation was 0,1°C

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Installed May 201

DE-Bochum Ruhr University *)

Four GroBanks BB-XXL.3+ in PlantMaster PM1. Each GroBank has three tiers each independently programmable between 4 – 40°C

Installed May 2011

DE-Bochum Ruhr University

Two of four GroBanks BB-XXL.3+ in PlantMaster PM3 shown with stainless steel trays and automatic tensiometric watering systems.

Installed November 2011

DE-Dortmund TU

Four GroBanks, 2x BB-XXL.4 (left) and 2x BB-XXL.3+ (right) in a PlantMaster Room (PM1). Each of the BB-XXL.4 GroBanks has 5,6m² growth area, 35cm growing height and 250µmols/m²/S[1] light intensity. This model was chosen for cell-culturing and traditionally has no GroLEDs.

Installed November 2011

DE-Dortmund TU

A close-up of the upper and middle lamp banks of a BB-XXL.3+. It shows the optimised lamp arrangement to achive the best light uniformity with both fluorescent lamps and GroLEDs.

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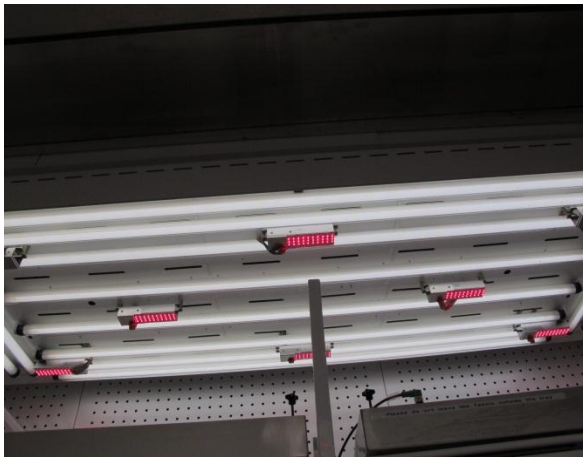

Installed May 2011

DE-Bochum Ruhr University

This is a typical GroBank lamp bank. This one is one from a BB-XXL.3+ with 400µmols/m²/S[1]. The fluorescent lamps and the GroLEDs are separately programmable in intensity and photo-periods. The temperature of each tier is programmable from 12°C to 35°C.

Installed May 2011

DE-Bochum Ruhr University *)*

A close-up of a high-power GroLED made up of red (675nm) and far-red (740nm) selected LEDs. They provide an essential enrichment to the PAR-spectrum of fluorescent lamps, and can be dimmed and programmed separately.

Installed October 2012

LT-Dotnuva LIA

One of three GroBanks BB-XXL.2 each with two separately programmable tiers in a PlantMaster Room (PM1) shown with high-output fluorescent lamps providing up to 850µmols/m²/S[1]. The light intensity is controlled in real-time, typical deviations from set point are ± 3µmols/m²/S[1]. Each tier has a growth area of 1,4m² and a growing height of 100cm.

Installed October 2012

LT-Dotnuva LIA

One of lamp banks in a GroBank BB-XXL.3+ with the fluorescent lamps turned off. The careful arrangement provides uniformity of better than ± 10% across the growth area.

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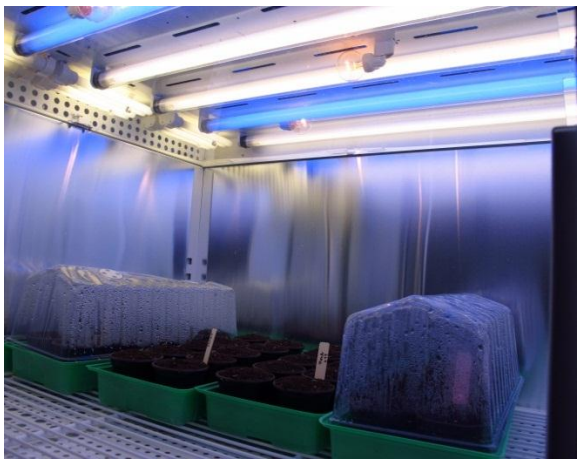

Installed July 2007

CZ-Brno Masaryk University

One of four GroBank BB-XXL.3 in a PlantMaster Room (PM1), shown with additional UV-B fluorescent lamps. This GroBank has three separately programmable tiers, a total 4,2m² growth area, 50cm growing height and up to 550µmols/m²S^1 light intensity.

Installed May 2011

DE-Bochum Ruhr University

One of eleven PlantMaster Rooms (PM2) used for growing *Arabidopsis*. The EB GroBanks shown here have dimmable fluorescent lamps and variably adjustable lamp banks and shelves. The stainless steel trays are especially usful for easy watering of the plants.

Installed May 2011

DE-Bochum Ruhr University

The simplest way to program a lamp bank, shown here on an EB GroBank in PlantMaster 2 ***(above right)***.

Installed May 2011

DE-Bochum Ruhr University

This is PlantMaster 2 (PM2- ***shown above***) with the fluorescent lamps turned off. Although in this picture all the GroLEDs are on, each lamp bank is separately programmable in light intensity from 0-350µmols/m²/S^1 and photo-periods.

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