



Light4Food



City Farming

Greenhouses



Mobile Climate Chambers



LED

The World in a different light

Light4Food

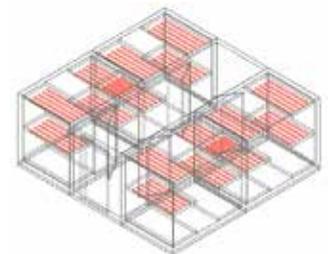
Light4Food is an innovative enterprise that designs, produces and mounts sustainable closed cultivation systems for horticulture. This mode of cultivating crops is also called 'City Farming' or multiple layer cultivation. Our cultivation system enables daylight-free cultivation of crops in closed rooms. In Light4Food's system, the ideal climatic conditions, combined with LED lighting mixes and a minimal input of resources, are able to realize optimal growth 24 hours a day, 365 days a year. The use of LED lighting on crops indirectly boosts their substance and shelflife.

By cultivating indoors, the production is less dependent on weather conditions and other disruptive factors. Therefore, it is possible for them to reach the same crop quality all year round without the use of pesticides, making Light4Food's cultivation systems very environmentally-friendly. In addition, the reduction of the use of water and fertilizers and the possibility to recycle heat flows make Light4Food's cultivation systems energy efficient and contribute even more to the systems' sustainability. Yet, the predictability of the cultivation process and the cleanness of the crops are the main advantages of these cultivation systems.

Light4Food has developed its sustainable closed cultivation systems based on longstanding experience in the mushroom sector and 5 years of preliminary research led by specific market demands. Creating the ideal conditions for crops in closed rooms is the ultimate challenge for achieving the optimal results.

Design and development:

The careful design and development of closed cultivation system according to the wishes of the customer by skilled staff, is our commitment.



Production and mounting:

Supplying and mounting products of consistently high quality is our goal.



Advice and Start-Up assistance:

After mounting, advice and/or Start-Up assistance will warrant the quality of our cultivation systems.



City Farming - Plant Factory

Light4Food's City Farm / Plant Factory is a closed cultivation system containing multiple growing layers. This concept is also called 'Urban Farming'. In this facility crops can be cultivated on multiple vertically stacked layers. The size of the cultivation system depends on the desirable production. It can be used to conduct larger practical cultivation research or for full- production cultivation. The irrigation system is equipped with a tides mechanism. The desirable light intensity and spectra are attained through the use of LED lighting. The climate control system and the accompanying technology is installed externally of the cultivation space in order to achieve a higher level of climate control.

With the cultivation of leaf crops and herbs on cultivation nets, Light4Food offers a revolutionary and unique cultivation system. Seeds are sown on a cultivation net, beneath which feed-water enables nutrients to be transferred to the leaf crops.



 The combination of the City Farming Facility with a cultivation net system has been developed for Fossa Eugenia: member grower of Van Dijck Vegetable Production in Meterik, the Netherlands.

Mobile Climate Chambers

Light4Food's Mobile Climate Chamber is a cultivation facility existing of modular components. As the system is built in a modular way, it is possible to adjust both the number of climate chambers and the size of the cultivation surface. The climate, irrigation and lighting can be regulated in every separate chamber. By installing LED production or Research Modules every desirable light spectrum can be created. Furthermore, the facility is suited for cultivation on both a smaller and larger scale.

Particularly for this application, Light4Food has introduced a new air treatment concept, with which optimal conditions for plants are achieved. The plant itself is taken as the basis for the air treatment concept. Better and faster climate conditions for the plant are created through this concept. An internally developed climate computer can make desirable adjustments easily.



Four "Mobile Climate Chambers" are specially developed and build on 'Clean Room' level for Bayer Crop Sciences in Nunhem.

Greenhouses

Light4Food supplies and mounts Top- & Interlighting modules for the greenhouse horticulture. The Toplighting modules are durable replacers of the currently used SON-T Natriums lights and are mounted at the top of the greenhouse. The Toplighting modules are perfectly suitable to increase light intensity and steer the crops. The Interlighting modules are LED modules that are attached amidst the crops to increase light intensity. These LED modules are adjustable; therefore, the height of the modules can be adjusted during the crop's cultivation process.

The Top- & Interlighting modules can be regulated and steered by a climate computer already available in the greenhouse. Specific options can be provided by Light4Food's internally developed software.



 At Hortus Regius in Maasbree, the Netherlands, a testing field with top- & Interlighting modules has been equipped for cucumber and tomato production. In this project the feasibility for all year round cucumber production is tested.



 At Rheinland Blaubeeren (a B-Berry initiative) in Straelen, Germany, a part of a greenhouse has been equipped with Toplighting modules for the cultivation of blueberries. The yield of blueberries is advanced through lighting. In addition, the feasibility of all year round production of blueberries is researched.

Light Salad Bar

Light4Food's Light Salad Bar is a climate chamber the size of a refrigerator. The customer is able to grow his/her own herbs and cress. Herbs such as basil, coriander, parsley and dill are utterly suitable for cultivation in this facility. The herbs can be grown on multiple layers beneath LED lighting. The light intensity, light spectrum, climate and nutrients can be regulated accurately. This system creates the optimum circumstances for the cultivation of those herbs and cress.



green
techlab

has
hogeschool

The light Salad Bar is a concept of Light4Food which has been developed in association with students of HAS university of applied sciences and Fontys university of applied sciences.



Project assistance and own research

In closed cultivation systems with LED lighting or LED applications in greenhouses it is possible to control virtually all factors. Thus, one can steer towards a constant climate that is equally distributed among multiple cultivation layers. During the development of a closed cultivation system, the crop is regarded as the base: the climate cell is built around the crop. By doing so, the optimum climate for that crop can be created. This is regulated by a self-developed climate computer. In order to make this combination a success, Light4Food employs technical engineers, software engineers and plant experts.



Lettuce on gutters



Basil in a LED Research Chamber



Rooting chrysanthemums



Basil cultivation beneath different light spectra

Light4Food has test facilities in which research on the effects of LED lighting on crops and climate can be conducted. So far there have been numerous enquiries into various leaf crops, herbs and propagation material for pot plants. Besides conducting its own research activities, Light4Food also provides cultivation assistance for clients.

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Winner Jo Janssen Award 2015

The workgroup of the Entrepreneur Prize Horst aan de Maas Foundation, consisting of entrepreneurs from the Dutch municipality Horst aan de Maas, has awarded Light4Food with the Jo Janssen Award. This prize is awarded to entrepreneurs that stand out and distinguish themselves.

The workgroup has set its choice on Mr. Christiaens, Mr. La Crois and Mr. Van Haeff, because the cooperation between these three initiators, all three having a different expertise (horticulture, the mushroom sector and technology), has resulted in an innovative mode of cultivation.

It is the workgroup's opinion that these entrepreneurs have converged their expertise and sincere engagement with horticulture into an unique innovative product. This testifies of boldness, willingness to cooperate and engagement with the horticultural sector.

ONDERNEMERSPRIJS
HORST AAN DE MAAS

Light4Food



High Efficiency

- Reduction of water and fertilizers
- Control of plant substances
- Increased yield



Sustainability

- Re-use of heat flows
- Minimal low-grade residual
- Clean product



365 days a year

- Better planability
- Uniform and better plant quality
- Complete controlled cultivation system

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