



**FOOD
AUTONOMY**
Horticultural lighting

SMART LIGHTING SOLUTIONS

Tailored to your needs



2023

foodautonomy.org



FOOD AUTONOMY

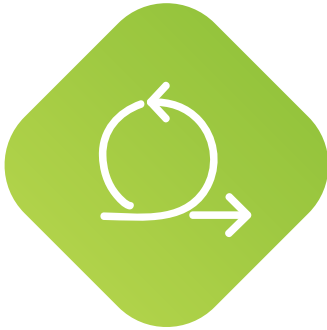
LIGHTING THE WAY TO A BETTER TOMORROW

We are in the middle of a global change, and food security has been and will continue to be a key priority.

As an innovative company, Food Autonomy is convinced that the key to success is the application of new technologies. Having in-depth knowledge in the field of lighting techniques, we are focusing specifically on greenhouse lighting and vertical farms.

Our aim is to offer world-class quality LED lighting and smart-solutions to growers and farmers for use in their precision indoor farming operations.

WHAT WE OFFER TO OUR CUSTOMERS



Customized LED solutions

Light tailored to your needs
Design and develop together
Well-designed lighting plan
Simple installation



High quality from Europe

Compliance with EU standards
Highest quality components
Outstanding product service
Long term warranty, after-sales



Expertise & Research

Qualified engineers, designers
Extensive plant care knowledge
Partnership in research projects
Opportunity to use R&D Vertical Farm



SMART LED SOLUTIONS

offered by Food Autonomy

Several important factors need to be considered when selecting the lighting system for your crop. We are highlighting the main advantages of our smart solutions, but our experts are always available to explain and tell you more.

NEW FEATURES



**Multi-channel
option**



**Wireless
dimming**



High luminous efficiency



Unlimited spectral variations



Energy efficiency



Long lifetime



Effective heat management



Uniform illumination



Durability



SMART GREENHOUSE SOLUTIONS

by Food Autonomy

Food Autonomy products are designed for installations in new or already established greenhouses.



**Flexi-Grow
Toplight**



Research Module



**LEDFan
Toplight**



Interlight





Flexi-Grow Toplight

The Flexi-Grow with its outstanding PPF reaching up to $3650 \mu\text{mol/s}$, and $3.8 \mu\text{mol/J}$ efficacy is the ideal choice for the replacement of the traditional 1000W High Pressure Sodium lamp. Similarity in the mounting and cabling options allow smooth transition from the existing HPS lighting system into LED based solution offered by Food Autonomy.

KEY BENEFITS

- multi-channel & wireless dimming option
- flexible spectrum, output and efficiency
- reaches $4.0 \mu\text{mol/J}$ when dimmed to 50%
- light level up to $3650 \mu\text{mol/s}$
- fewer luminaires - double the light output of an HPS
- wide beam - outstanding uniformity
- up to 1040W





LEDFan Toplight

LEDFan's revolutionary design provides better heat management for greenhouses. Owing to the built-in fans, cold air is drawn from the top and gets warmed up by the heat loss of the LED chips and drivers. LEDFan directs this warm air downwards, towards the crop, meanwhile blocking the rising heat from the heat pipes, thus creating a warm air blanket above the plants. Besides saving on lighting and heating costs, it increases plant growth and yield by lowering humidity, which reduces CO₂ loss, nutrient deficiencies, and the risk of plant diseases.

KEY BENEFITS

- multi-channel & wireless dimming option
- better climate control - lower heating costs
- efficacy up to 3.8 $\mu\text{mol/J}$ - lower lighting cost
- improved photosynthesis by lower humidity
- reduced CO₂ loss and risk of plant diseases
- up to 1200W & PPF 4060 $\mu\text{mol/s}$



HORTICON CONTACT



NOMINEE

FRUIT LOGISTICA

INNOVATION
AWARD '23
NOMINEE



Toplight Research Module

Our Research Toplight allows users to experiment with different mix of wavelengths and light intensity to define and finetune the most optimal light for given phenophases of all kinds of autotroph organisms to achieve the targeted quantity and quality of primary and secondary metabolites.

KEY BENEFITS

- 4-5 channel options with 0-100% dimmability
- experimenting with different mix of wavelengths and light intensity
- real time & pre-defined growing recipe management
- remote control
- uniform light distribution





Interlight

The Interlight LED solutions serve as a supplementary light source in greenhouses to light the lower, shadowed parts of the canopy. Growers can choose from PPF 141-420 $\mu\text{mol/s}$ modules, supplying the high wired plants' entire surface with proper amount of light to maximize yields and ultimately improve taste and nutritional value of horticultural produces.

KEY BENEFITS

- lighting the lower parts of the canopy
- uniform sideways light distribution
- PPF 141 - 420 $\mu\text{mol/s}$ modules
- efficacy up to 3.5 $\mu\text{mol/J}$
- low installation costs with pluggable daisy-chain connection
- ease of maintenance



SMART VERTICAL FARM SOLUTIONS

by Food Autonomy

The LED VF lightbar is a very flexible and highly efficient modular solution specifically designed for indoor multilayer growing facilities.



Flexible lengths



Customized spectrum



Various light intensity



Stable production, high quality crops



Long lifetime



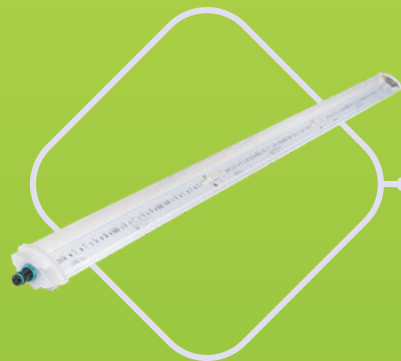
High energy efficiency



Simple to install



Low maintenance cost



**Vertical Farm
Lightbar**





Vertical Farm Lightbar options

Fixed spectrum or 4-channel controllable lightbars

Food Autonomy's LED lightbar solution was designed for indoor multilayer growing facilities. The highly efficient modular system is customizable to provide the most suitable amount of photosynthetically active photons and light uniformity to ensure the best results.

KEY BENEFITS

- wide beam optics for high uniformity
- various lengths up to 2.5 m
- customizable spectrum & output
- high efficacy up to 3.5 $\mu\text{mol/J}$
- advanced control system
- 0-100% dimmability





Vertical Farm Lightbar options

Research module up to 8-channel variable spectrum

For research purposes, Food Autonomy offers lightbars up to 8 channels. These controllable units allow users to mix the wavelengths within the 400-750nm range, and dim each channel 0-100% to set the most versatile spectral variants and PPF density. The software can operate the lightbars remotely, which enables growers or researchers to manage the growing recipe in real time or via pre-defined programs and timed dimming to provide the most optimal light conditions in the different growth phases of the crops.

KEY BENEFITS

- controllable spectrum and light intensity
- creates the most versatile spectral variations
- high system efficacy $>3 \mu\text{mol/J}$
- wireless control
- data collection & analysis
- equipped with pure color high power LEDs



CULTIMESH

Smart Wireless Control Solution by Food Autonomy

CultiMesh is a great enhancement to our LED luminaires offering practical functions with the growers' needs in mind. The affordable system is easy to install and operate, while it offers numerous features to assist the daily operations of indoor growing facilities.

USING OUR SYSTEM OFFERS THE ABILITY TO:



control multiple channels to adjust the spectrum according to the growth phases of the crop



dim to provide much better uniformity than half light being operated in checkerboard layout



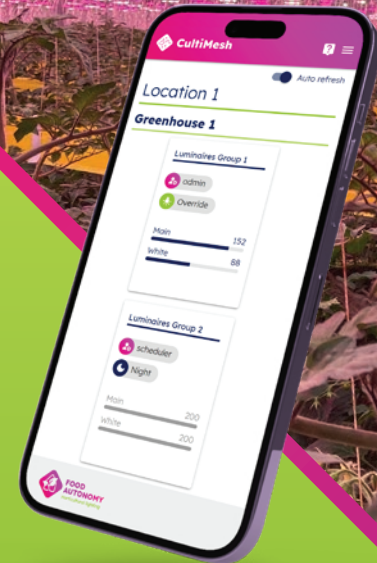
dim to improve LED efficiency, which results in increased energy saving



have lower installation costs versus wired solutions



adjust the spectrum to create better worklight for employees



Large-scale wireless mesh network capable of controlling thousands of luminaires

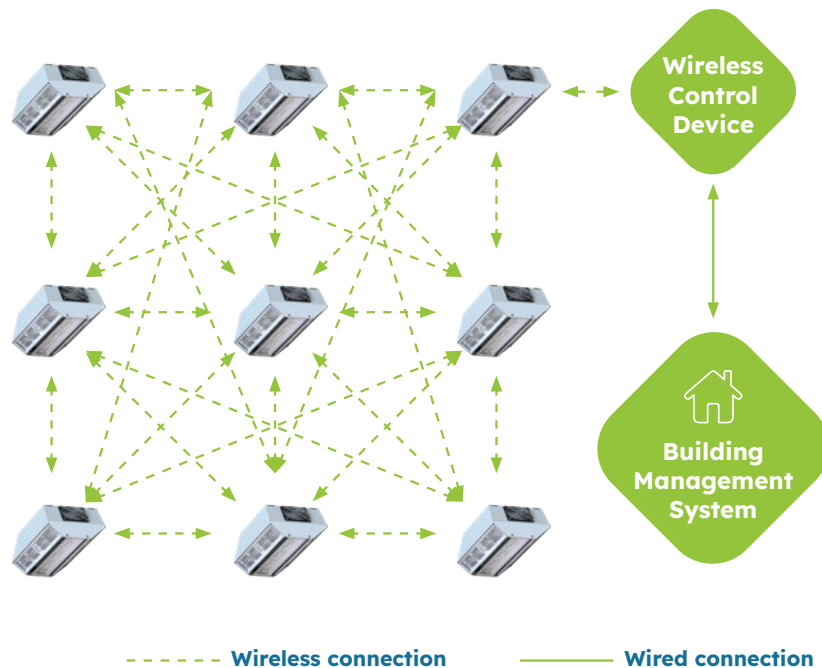
KEY FEATURES

integration
with climate
computers

super-fast
communication

monitors,
logs,
notifies

- remote control: dim or adjust the spectral distribution of your lighting groups
- high reliability without single-point-of-failure
- independent operation is also possible
- rapid commissioning



CultiMesh

Wireless mesh platform

Multi-channel lighting control
(enables independent light control per channel)

Lighting schedule
with multiple recipes & grow cycles for the full harvesting period

Maximized lamp output using existing power on the operated channel

KEY FEATURES

- detailed logs on system operation
- email-based notifications of lighting malfunction with exact positions
- monitoring of driver temperature, consumption, working hours

ADDITIONAL: HIGH-PRECISION “GPS”-POSITIONING SYSTEM

- control with employee tags - lighting in the surrounding area will automatically adjust to human friendly work light
- tracking robots with portable tags for a more efficient operation





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