

Istituto Nazionale di Astrofisica
Radio Astronomia



Bologna, 18 e 19 Maggio 2018

SRITAC 2 - 2018 Officine orbitali, primo livello di espansione civile nello spazio



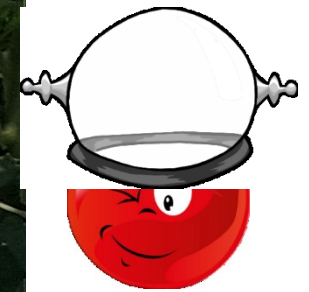
Hydroponic Farming: Everywhere on Earth and Above

*GIORGIA PONTETTI, FERRARI FARM SOCIETA
AGRICOLA S.R.L.*

WHO I AM

GIORGIA
CLASS '77

ELECTRONIC &
ASTRONAUTICAL
ENGINEER





13 ha @ 700 meters height, on Salto Lake (RI)

AGRITURISMO

Locanda Colle Cerqueto®

LUXURY COUNTRY HOUSE

Ferrari
Farm®



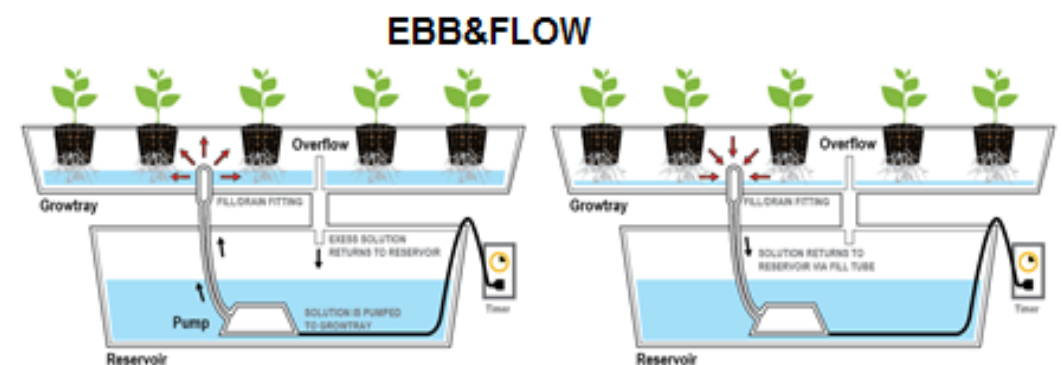
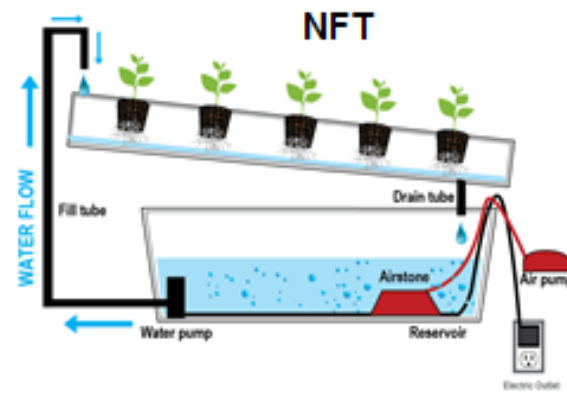
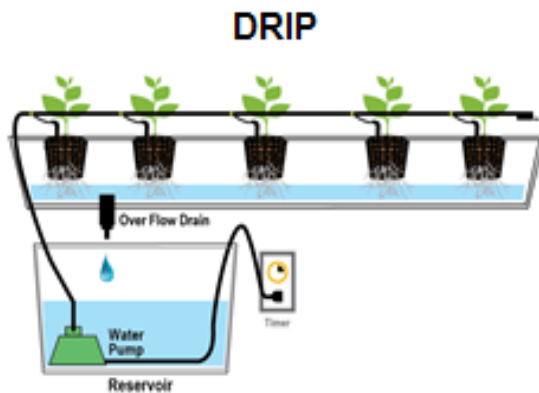
- Organically Different Cultivations: 100% open field, orchard, garden, spices & herbs, NO treatments
- Hydroponic Cultivations in sterile, sealed, fully computerized, new generation greenhouses, unique in Europe!
- Food Processing Line under vacuum for high quality products
- Agriturismo Locanda Colle Cerqueto
- Educational Farm



HYDROPONIC PLANTS



- A completely sealed environment, sterile, fully computer controlled and totally LED lighted
- Able to cultivate all over the world... and above!
- Standardized Design
- Indiscriminate use of the most common hydroponic techniques



HYDROPONIC PLANTS



CHARACTERISTICS



- NO exchanges with the external environment
- NO emissions into the atmosphere
- NO contamination and pollution in the Cultivation Area

Cultivation under sterile conditions without need of chemical treatments.



TECHNOLOGY



Highly Technological Control System able to real-time command and control: T, RH, CO₂, as well as to sterilize the incoming air, without exchanging with the outside.

Else, it is able to command and control the proprietary LED lamps in order to provide, for the entire cultivation, the needed light quality and intensity.







All parameters are real-time controlled and adjusted, allowing pesticides free cultivations.



FEATURES



- Electronic Cultivation Recipe
- Closed-Cycle Irrigations, with total recovery a  ,  after sterilization
- Fully PC management and automatic report of any malfunction/deviation to the operators. 
- Restricted Access with sterile garments. 



CLOSED SYSTEM



All the resources are used with the maximum efficiency:

- Waters: recovered and recycled
- Air: always the same, being treated and cleaned
- Building Thermal Insulation: minimum effort for the clima
- New Generation Proprietary LED lamps: minimization of the thermal load inside the Cultivation Area

ADVANTAGES



- Food Security
- 80% Water Saving & Recovery
- Air And Substrate High Quality
- No Herbicides
- Vegetative Time Optimization
- Phenological Phases Reduction
- Cultivation all-the-year





This technological tool can be used to cultivate everywhere, from the North to the Equator, underground or aboveground, outdoor or indoor and WHY NOT on other Planets!

HYDROPONIC TOMATO



HYDROPONIC TOMATO



HYDROPONIC TOMATO



HYDROPONIC TOMATO



HYDROPONIC TOMATO



HYDROPONIC BASIL



HYDROPONIC BASIL



HYDROPONIC BASIL

Ferrari
Farm[®]
Nature & Technology





OUR LED CEILING



OUR TOMATOES

FUTURE IMPROVEMENTS

For the future we are planning to set up the phytotron with a Vertical Farm, made with proprietary shelves and proprietary LED lamps, to grow micro-greens, baby-leaves and salads and to experiment with other varieties not grown today, as well as new varieties and dwarf species.



FOOD PROCESSING LINE



- Washing
- Sorting
- Blanching
- Pitting
- Vacuum Concentration
- Putting-into-Jar
- Capping
- Sterilization

NO Thickeners
NO Preservatives



I-FARM PRODUCTS



ROBOTFARM



In order to disseminate a new way of indoor growing, we have designed and manufactured a new appliance... a small automatic hydroponic greenhouse able to cultivate directly in the people's home.

□ Indoor cultivation” accessible to all



□ Salads, spices, micro-greens and baby-greens @ 0 meters, directly @ HOME!

Just open the door and collect, at the rest thinks RobotFarm®.

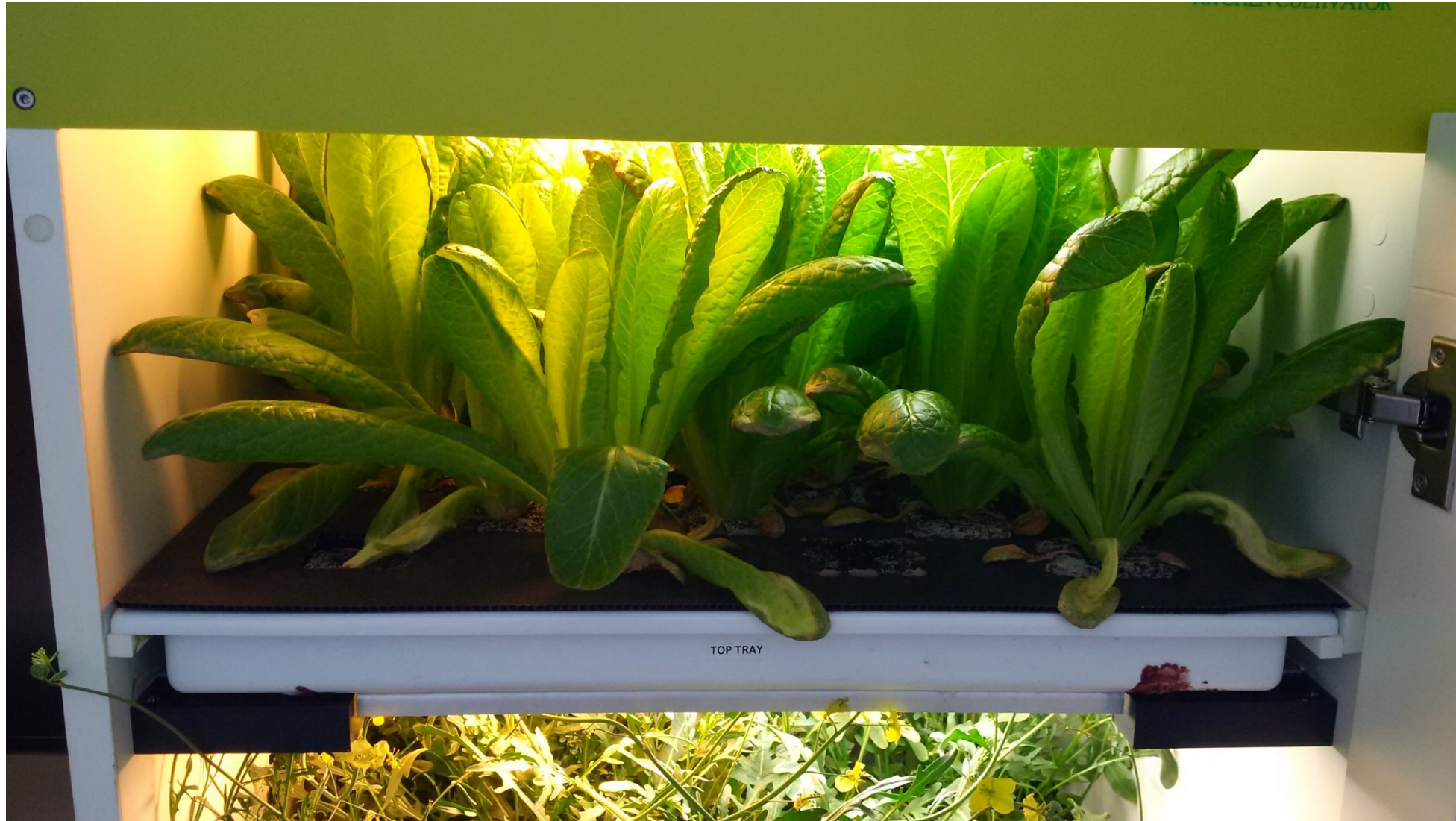
ROBOTFARM



ROBOTFARM

Robot Farm®

Ferrari Farm®
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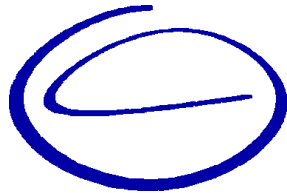
ROBOTFARM



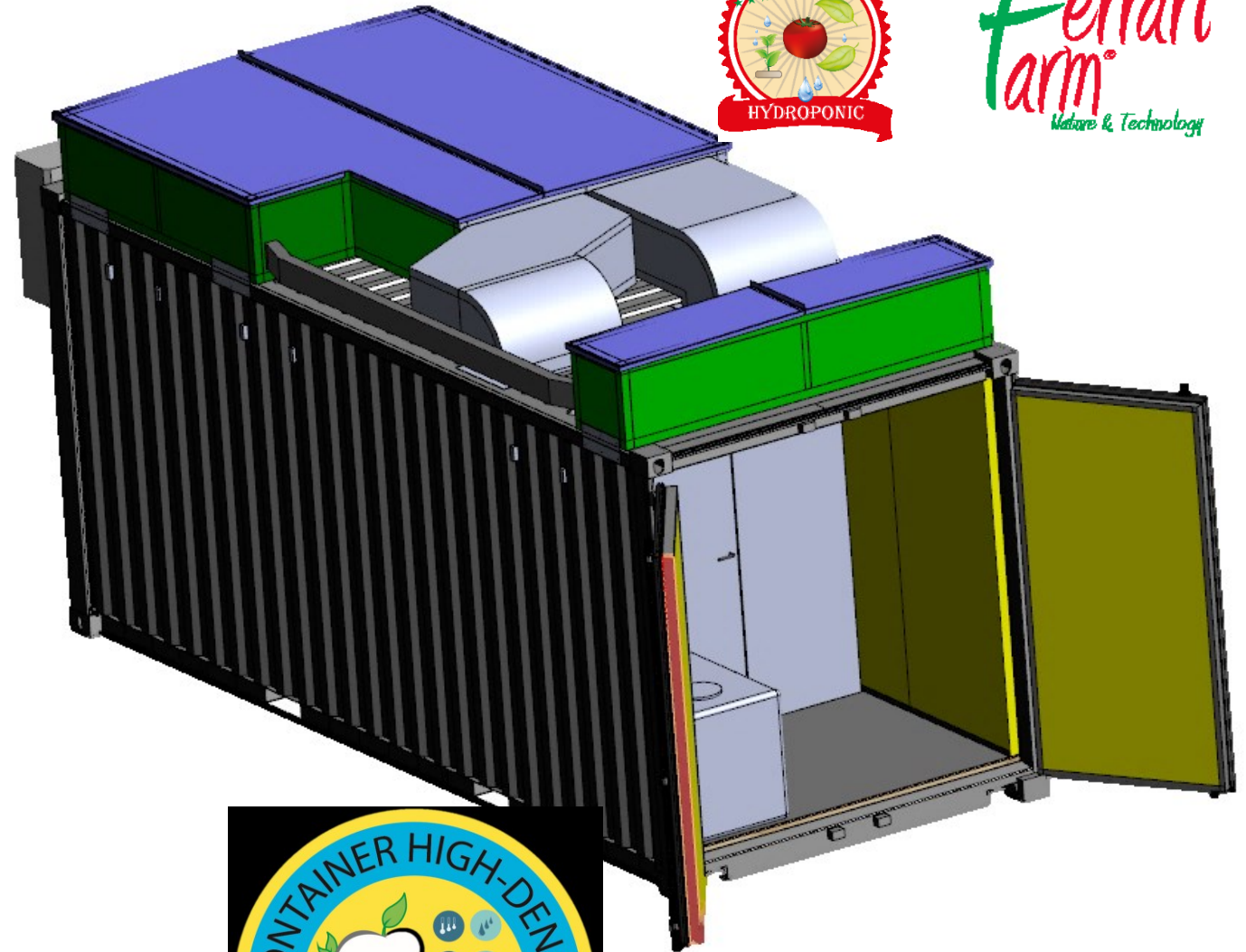
CHEF PROJECT

Design & Development of a Vertical Farm:

- Hydroponic Cultivation
- ISO 20 shelter
- Sterile: ISO 8 Clean Class
- Closed Cycle
- Fully Automated from seed to harvest



Partnership G & A Engineering/ENEA SSPT-BIOAG



Co-financed by Lazio Region

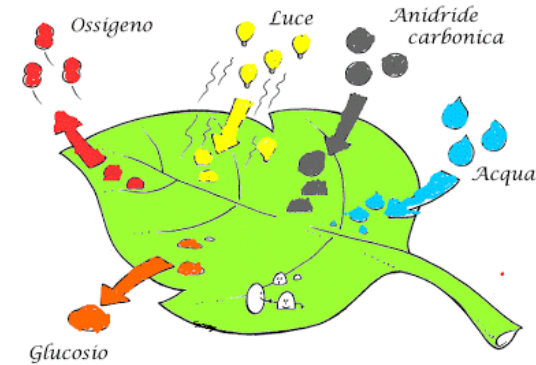
CHEF PROJECT



CHEF PROJECT

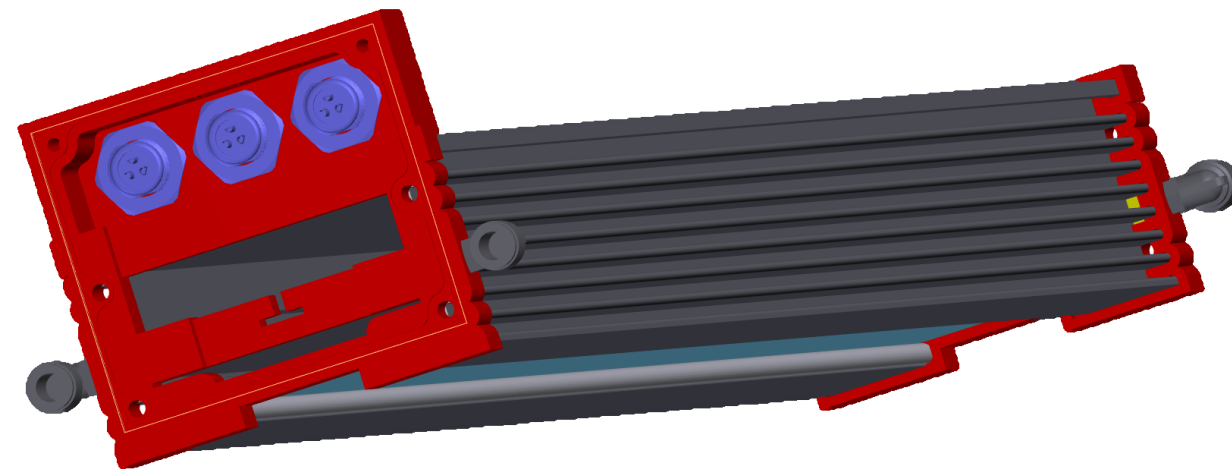
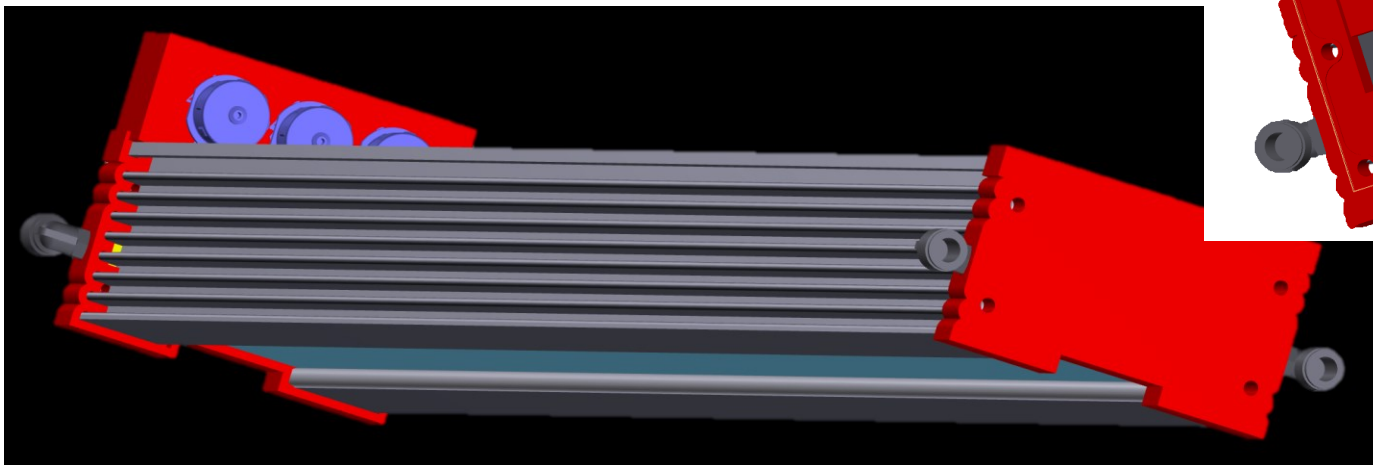


NEW LED LAMPS

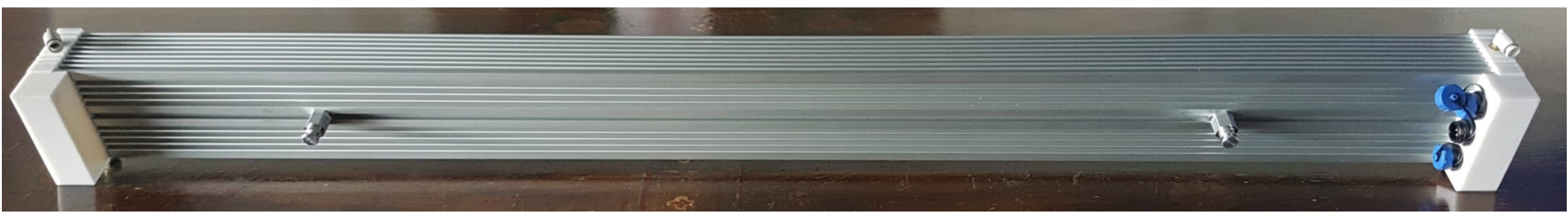


New generation LED lamps:

- ✓ Multi-spectral light
- ✓ Single Wavelength command & control
- ✓ Air and Liquid Thermal Dissipation. with selectable water temperatur
- ✓ > 850 PAR @ 200 mm H



NEW LED LAMPS



SPACE FARMING



IBIS GROUP MEMBER

Member of the working group instituted by the Italian Space Agency concerning bio-regenerative systems.

The only Farm reality in an interdisciplinary working group.



SPACE FARMING



65TH INTERNATIONAL CONGRESS OF AVIATION AND SPACE MEDICINE
Rome, 10-14 September 2017



65° ICASM

INTERNATIONAL CONGRESS OF AVIATION AND SPACE
MEDICINE

Ferrari Farm selected for the educational path “GREEN” for the international delegation of the International Congress of Aerospace Medicine.

<http://www.icasm2017.it/home.asp>

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agriturismo
italia



LOCANDA COLLE CERQUETO



OUR FUTURE

FUNCTIONAL
FOOD



INDOOR
FARMING



THANK YOU!

www.ferrarifarm.com

www.locandacollecercueto.com

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