

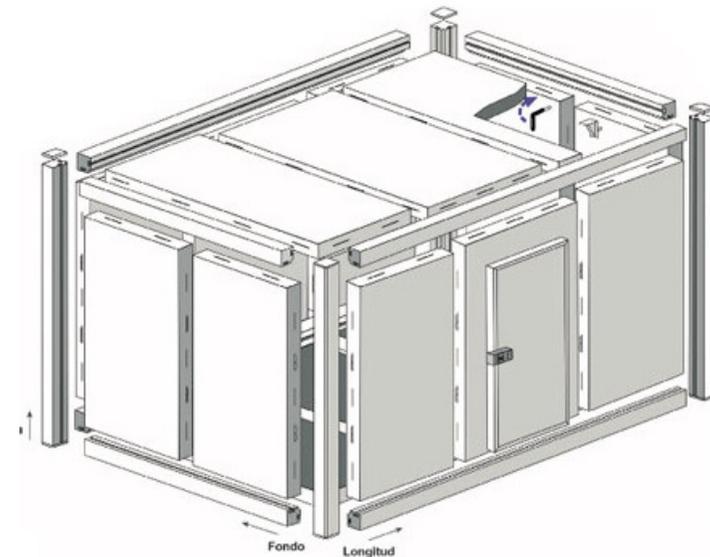


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**WALK-IN  
CHAMBERS**

## FEATURES

- ✓ Interlocked sandwich panels.
- ✓ Insulation with polyurethane CFC free, high pressure injected with density of 45 kg/m<sup>3</sup> and a coefficient of thermal conductivity of 0,021 Kcal/mh°C.
- ✓ Panel Thickness, 80 mm.
- ✓ Interior finished: galvanized steel or stainless steel (AISI 3041 or AISI 316L).
- ✓ Exterior: coating with galvanized metal sheet.
- ✓ Pivoting door with aluminum command.
- ✓ Standard dimensions for door, 800 x 1830 mm (W x H).
- ✓ Observation window.
- ✓ Automatic closing with key lock and interior security opening.
- ✓ Port: 40 mm ø
- ✓ Nonskid Floor of 100 mm in stainless steel AISI 304.
- ✓ Sanitary ratio included in all profiles.



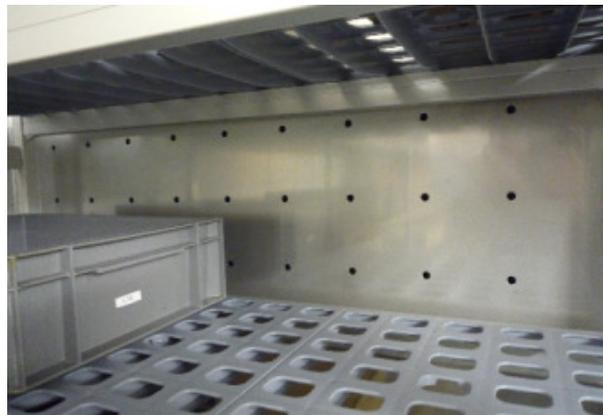
## FEATURES

- ✓Control by Series 4500, 4.3" TFT graphic touch screen.
- ✓Temperature, humidity and light intensity controlled.
- ✓Controlled air flow.
- ✓Humidity generation system by Ultrasound.
- ✓Light type: fluorescent, LED, metal halide...
- ✓Cooling system housed in separate unit or prepared for outdoor conditions.
- ✓Sensors, PT100 for temperature and capacitive humidity sensor.
- ✓CO<sub>2</sub>, O<sub>2</sub>, control units (optional).
- ✓Automatic irrigation system (optional)
- ✓Thermostat for maximum and minimum temperature values.



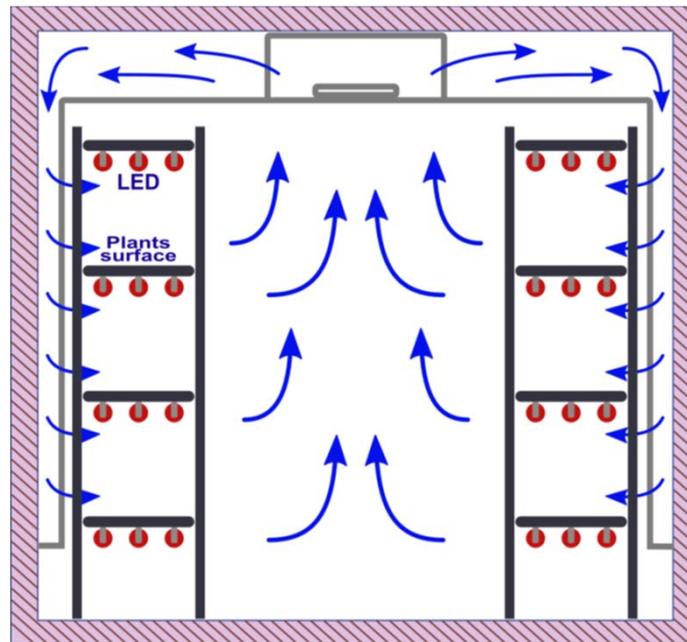
## HORIZONTAL AIRFLOW

- ✓Uniform conditions
- ✓Each shelf is under the same climatic conditions.
- ✓High stability and uniformity
- ✓Option of vertical airflow.

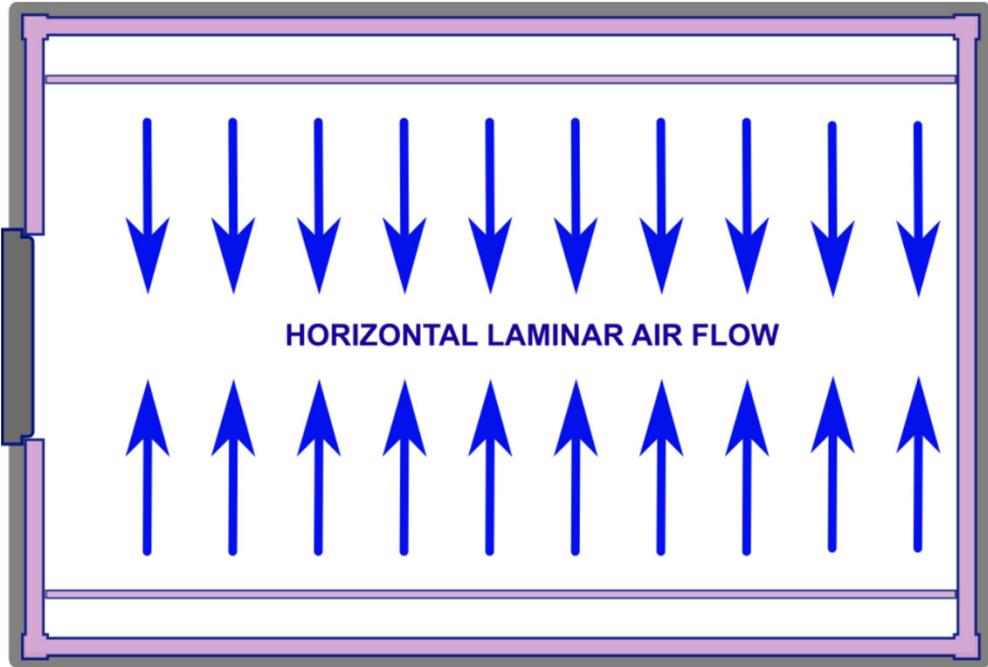


## HORIZONTAL AIRFLOW

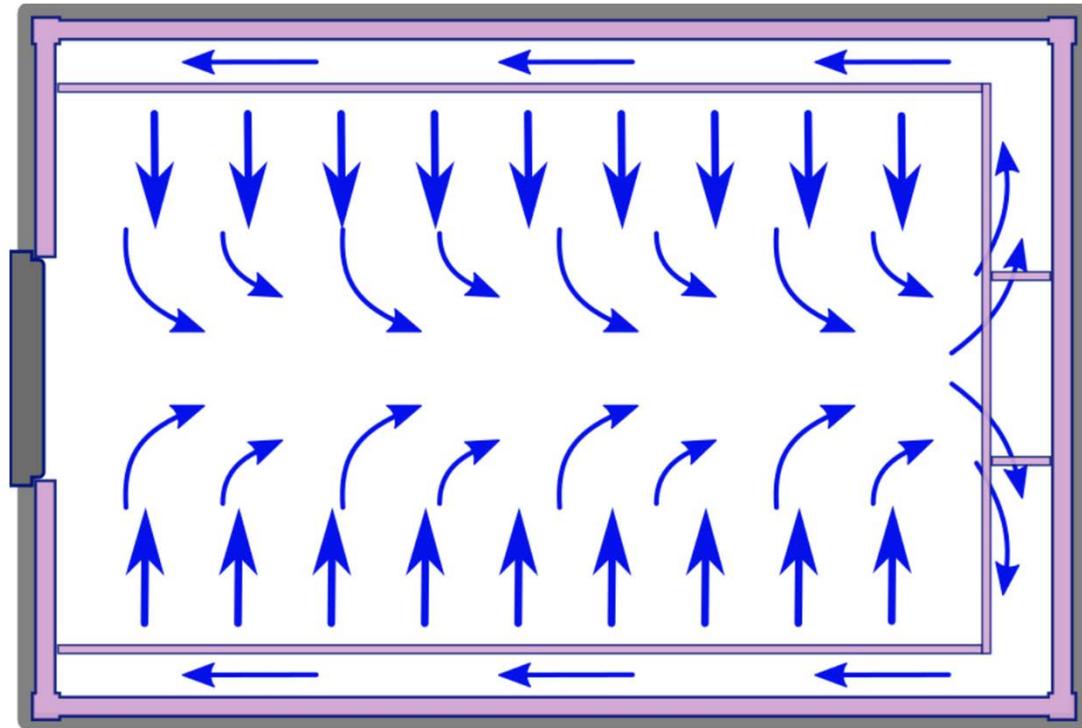
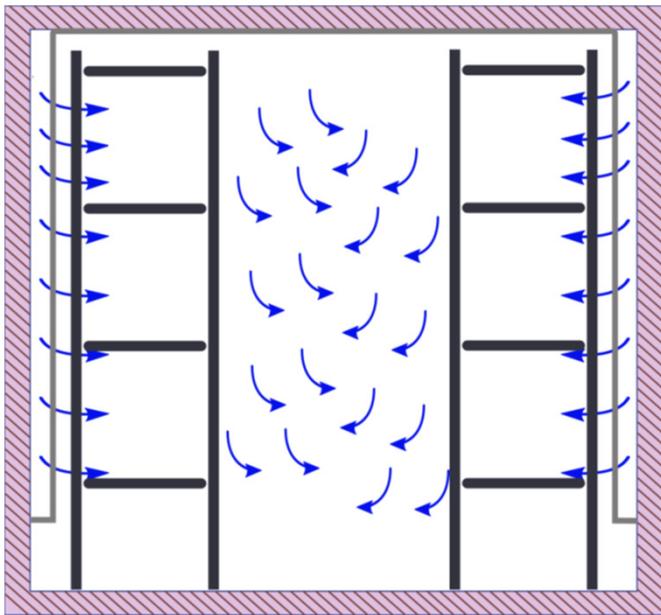
- ✓ **Greater uniformity conditions.**
- ✓ Each shelves will be under the same climatic conditions.
- ✓ **High stability and uniformity.**
- ✓ Optional vertical air flow.



## INTERIOR

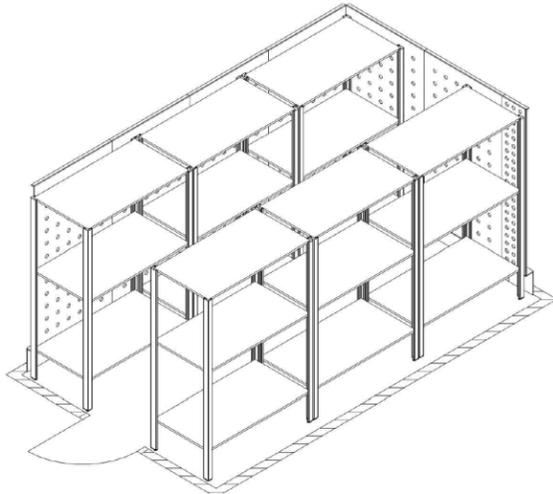


**INTERIOR**



## HORIZONTAL AIRFLOW

- ✓ Possibility to place a plenum on the backside for small height.
- ✓ Maintenance of horizontal airflow for maximum stability.
- ✓ High stability and uniformity.
- ✓ Designs made to measure.



## SHELVES

### ADJUSTABLE LIGHT

- ✓ Automatic or manual
- ✓ The plant will be in a table and the light will zoom in or out to the plants

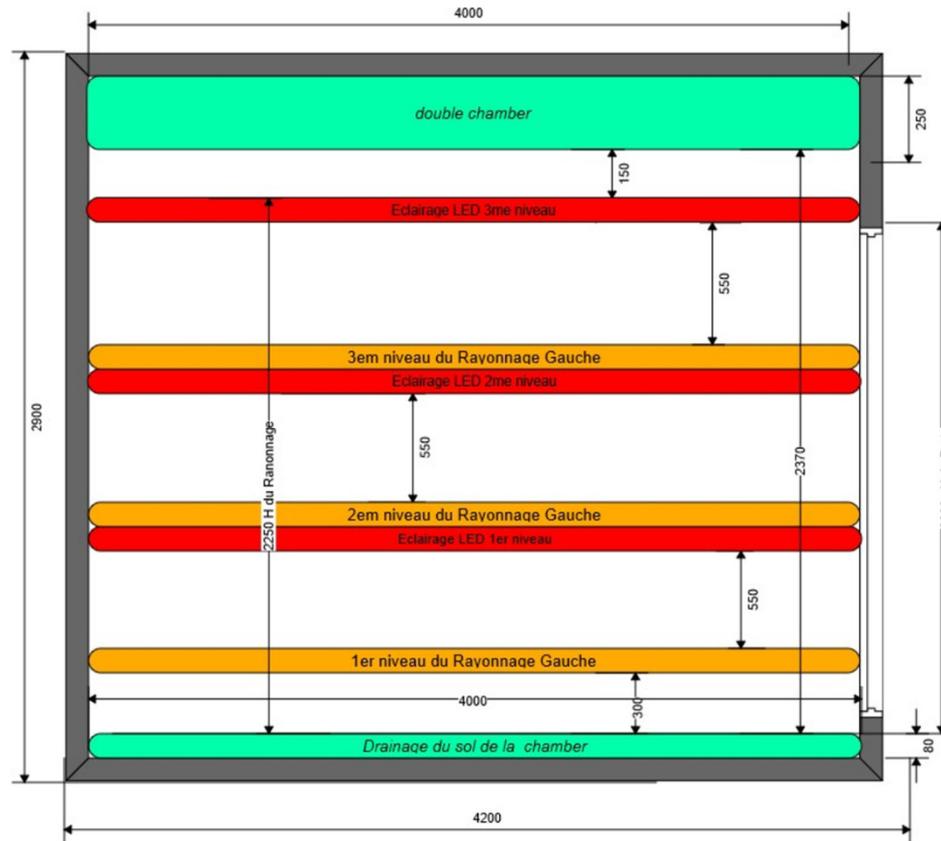


### FIXED SHELVES

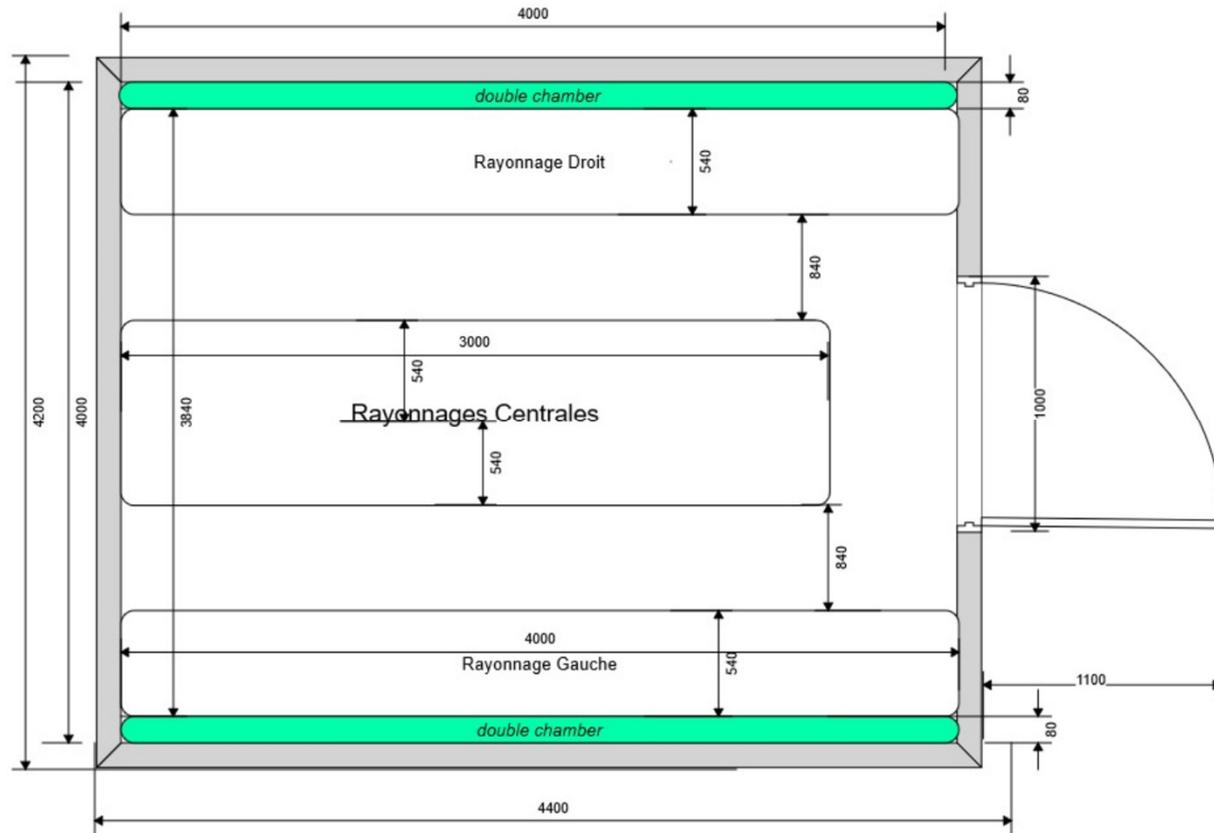
- ✓ The plant could be at the same distance to the light
- ✓ The shelves could be removable and put in a different distance to the light.



**SHELVES**



**SHELVES**



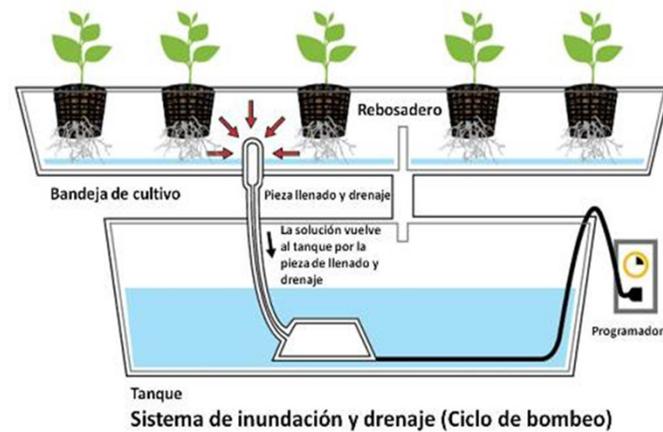
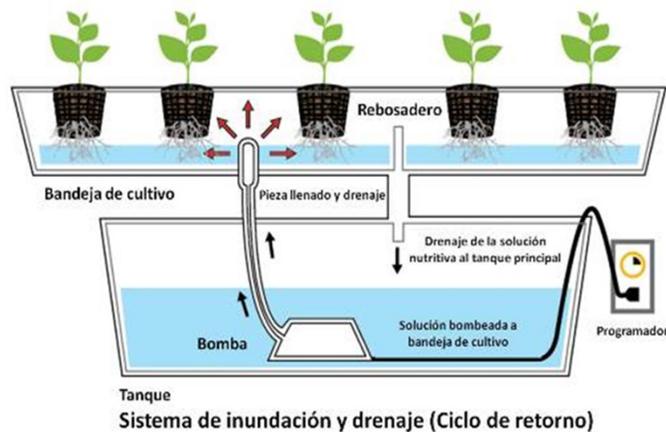
## TROLLEYS

- ✓ Adjustable in height
- ✓ With drainage.
- ✓ With casters to easy movement



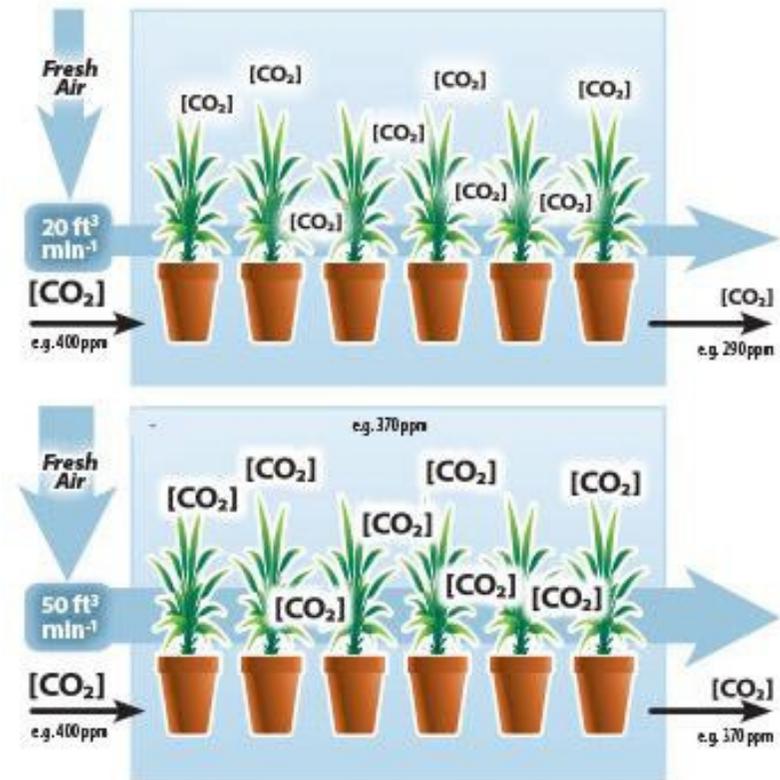
## IRRIGATION SYSTEM (Optional)

- ✓ Systems of flood and drainage (Ebb and Flow).
- ✓ The system of hydroponic culture (culturing) Ebb and Flow with the plants in trays.
- ✓ They serve as container of the nourishing solution.
- ✓ The plants will be in handles with an inert substratum.



## CONTROL OF CO<sub>2</sub> (Optional)

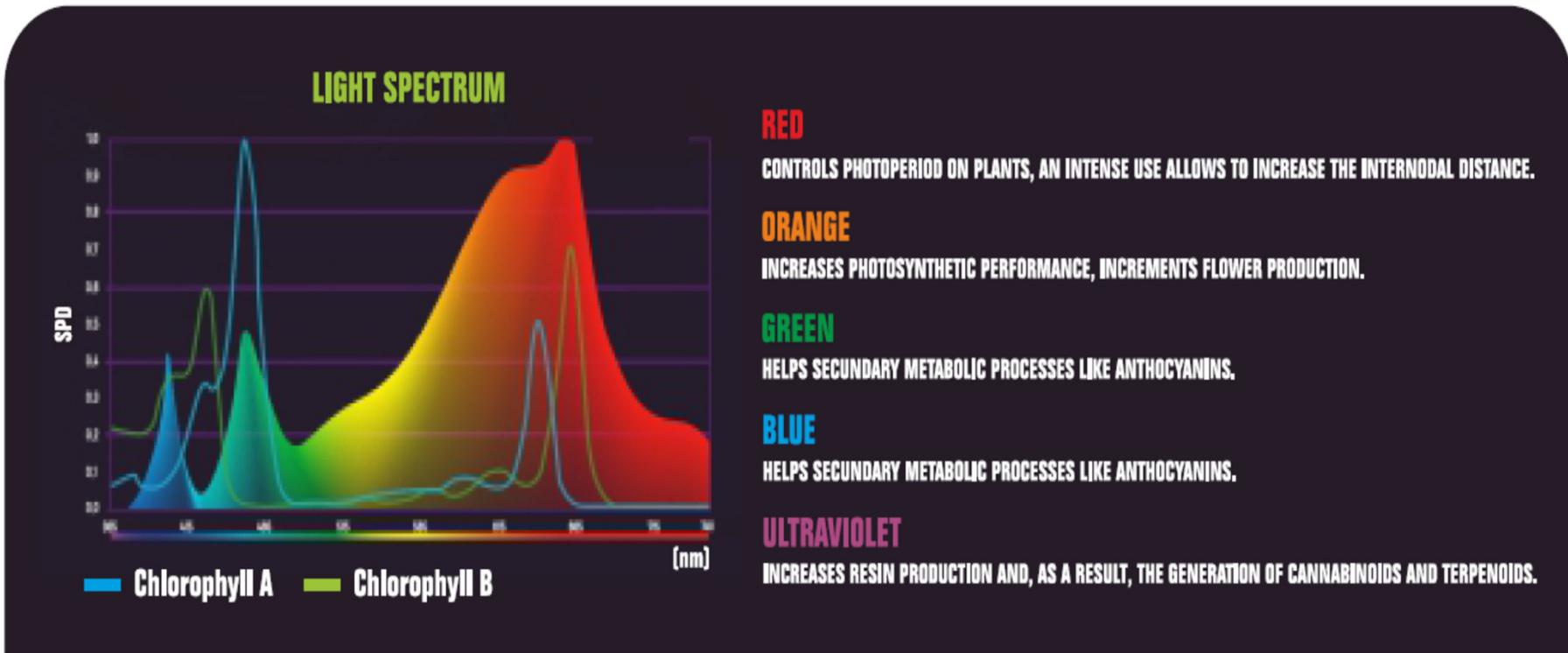
- ✓ This Growth Chamber allows the enrichment of CO<sub>2</sub> inside the chamber.
- ✓ With an infrared sensor type IRGA for the control of the CO<sub>2</sub> inside the growth area, without being affected by the humidity.





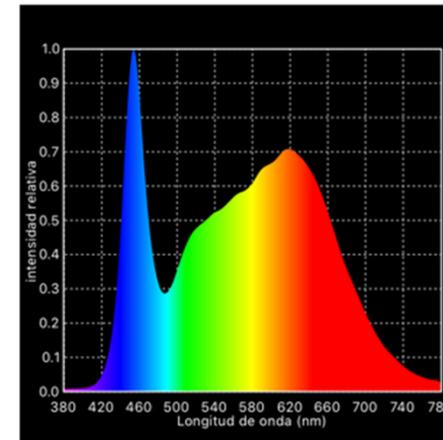
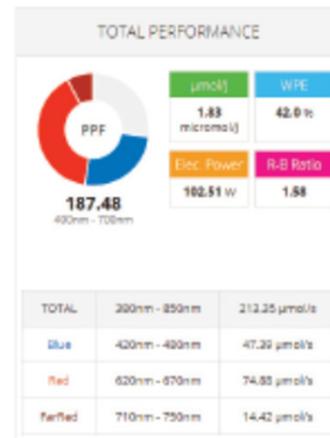
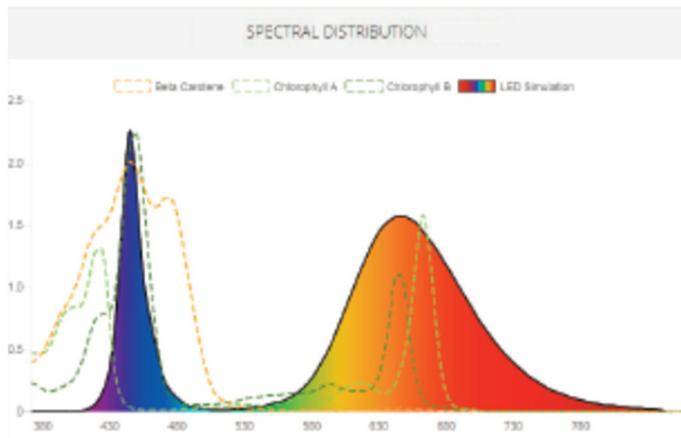
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**LED's  
MODULES**



## ADVANTAGES

- ✓ The LED light is the new light for the future for the plant growth chambers.
- ✓ This light introduce less energy in the chamber than the fluorecent light. Less heat!
- ✓ The energy consumption of the chamber will be lower.
- ✓ It is possible to configure the necessary spectrum for the plant growth

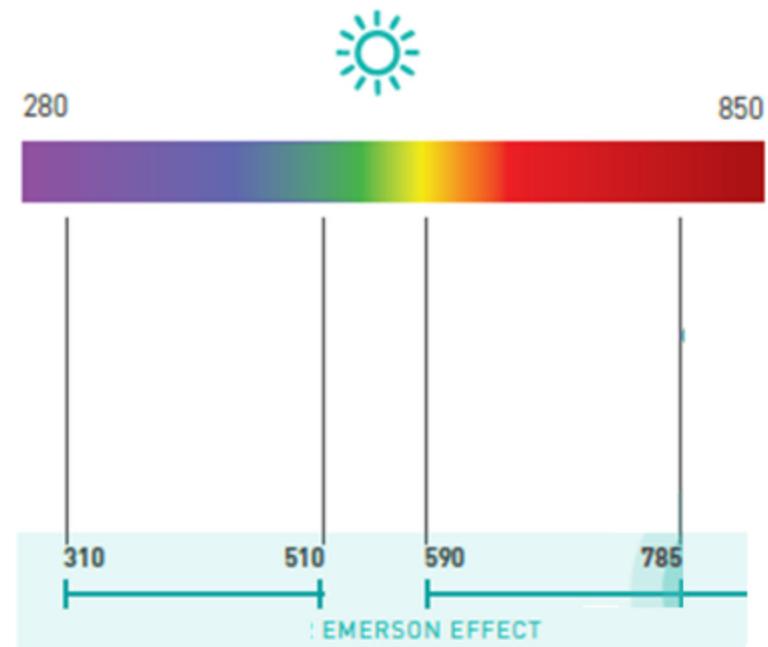


## LIGHTS:

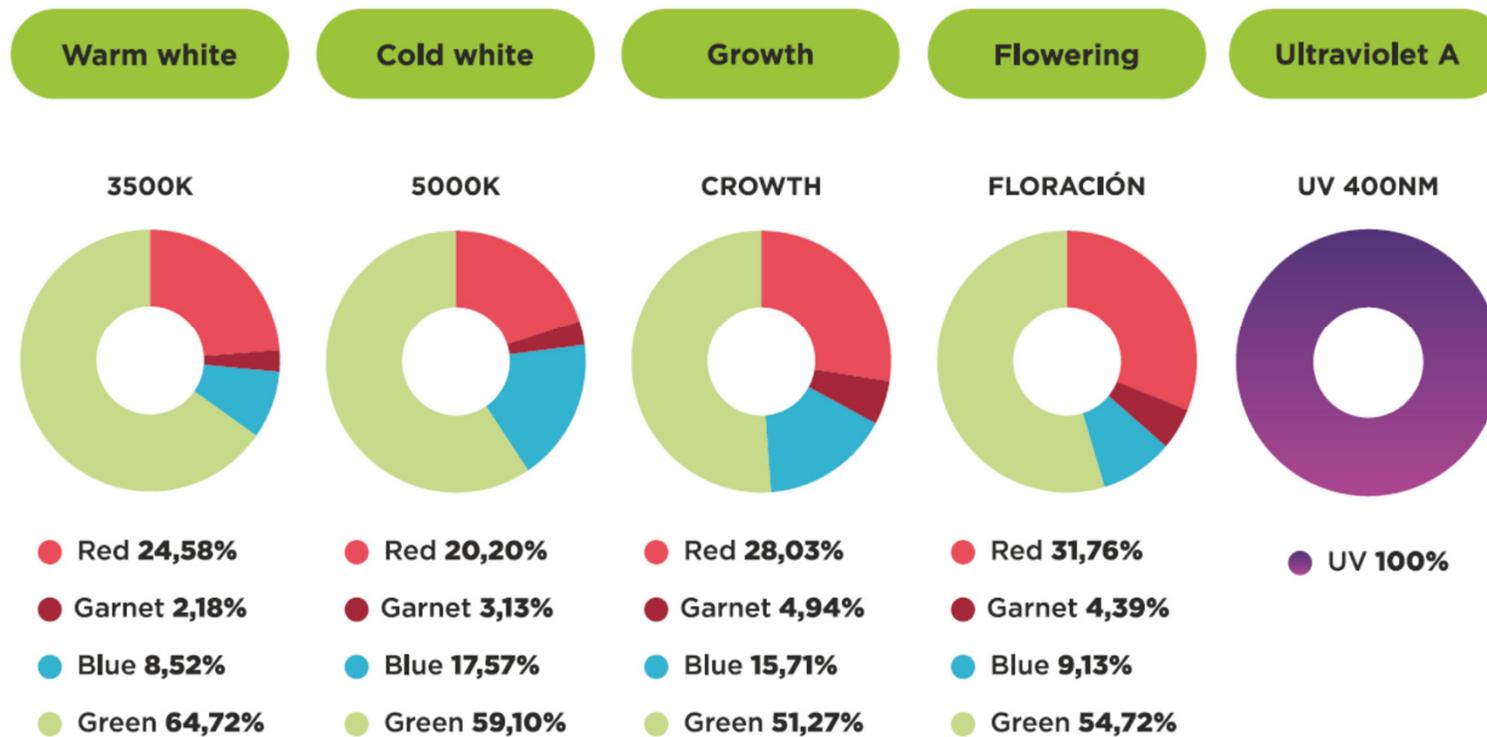
The Emerson effect is the increase in the rate of photosynthesis after chloroplasts are exposed to light wavelengths of 670 nm (red light) and 700 nm ( Infra Red).

When exposed simultaneously to light of both wavelengths, the rate of photosynthesis is much greater than the sum of the red light and far red light effects. This clearly demonstrates that the two photosystems, while processing different wavelengths, cooperate in photosynthesis.

By adding the effect of our laser-diode light it boost the effect by 15% to 20%.



## GUIDE FOR LED TUBES APPLICATIONS

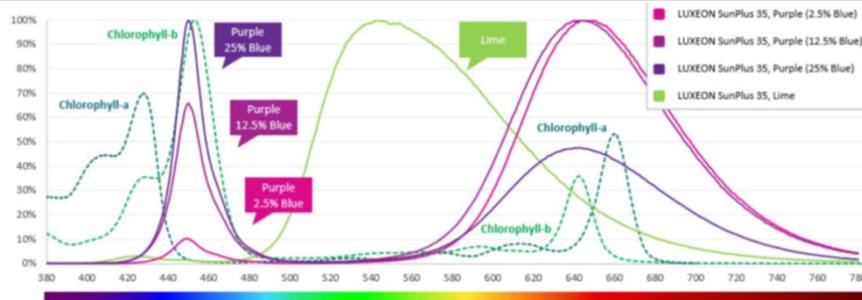


	S 60	M 90	L 120	XL 150
<b>CONSUMPTION</b>	25 W	40 W	50 W	80 W
<b>DIMENSION (MM) (LENGHT/DIAMETER)</b>	595 / Ø 26	895 / Ø 26	1.198 / Ø 26	1.498 / Ø 26
<b>DIMENSION (INCHES) (LENGHT/DIAMETER)</b>	23.4" / Ø 1.02"	35.2" / Ø 1.02"	47.2" / Ø 1.02"	59.0" / Ø 1.02"
<b>CERTIFICATES</b>	Marked CE			
<b>SPECTRUM</b>	Depending on the necessity: adjustable espectrum and intensity			
<b>PPDF INTENSITY</b>	from 5 $\mu\text{mol m/s}$ to 1200 $\mu\text{mol m/s}$			
<b>DISTANCE TO THE PLANT</b>	100 to 400 mm			
<b>DECAY OF LIGHT INTENSITY</b>	Max. 10% at 35.000h in standard applications 50.000 h			
<b>LIGHT EFFICIENCY (380-820 NM)</b>	Up to 2,2 $\mu\text{mol/W}$ [depending on the spectrum]			
<b>AMBIENT WORK TEMPERATURE</b>	0/+ 50°C (32-100° F)			

- Purple** the one LED that covers the vital needs of plants.
- Three versions available with different red/blue ratios to fit the light requirements of different plants and growth stages

- Lime** serves two purposes:
- Fills in the spectrum
  - Lime + purple = white light: good for harvest or visual inspection

% Blue means the amount of PPF ( $\mu\text{mol/s}$ ) that falls in the blue region (420-480 nm) vs the total amount of PPF in the PAR region (400 nm -700 nm)



✓ **Configurable Blue, Red and Far Red wavelength intensities**



## FEATURES

		AP67	AP973L	G2	NS12	Architectural
Ultraviolet	<400 nm	0%	0%	0%	1%/0,5%	0%
Blue	400-500 nm	14%	12%	8%	20%/21%	14%
Green	500-600 nm	16%	19%	2%	39%/38%	31%
Red	600-700 nm	53%	61%	65%	35%/35%	43%
Far-red	700-800 nm	17%	8%	25%	5%/6%	12%
PAR	400-700 nm	83%	92%	75%	94%/94%	88%
CCT	Kelvin	2500	2000	Not applicable	4800/5000	3700
CRI		70	60	Not applicable	80/91	85

**AP67** Strong vegetative and generative growth

**AP973L** Strong vegetative growth

**G2** Enhancing vernalization process

**NS12** Wide sun-like spectrum for research and biotech

**Architectural** Warm white spectrum for architectural applications

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