

AGRICULTURAL LIGHTING

SmartGrow - LED Grow Light

GROW LIGHTING

75W = 1000W HPS



- cULus listed product
- 75W = 1000W HPS (high pressure sodium)
- Bluetooth mechanism for easy and convenient control
- Waterproof design with IP66 rating
- Configurable spectrum and wavelength for various plants and different growing stages
- Extractable installation gadgets for various height and orientation requirement
- Perfect for vertical farming
- Super slim design

Model No	SRPGG175W-P
Power	75W
Input Voltage	100V-277V AC, 50-60HZ
Control	Bluetooth
LED Color	RB COB 50W 3Pcs
SMD Type	COB/Laser/UV
UV Option	365nm - 370nm
Laser Red	800nm - 850nm
Mounting Option	Adjustable suspending wire and hooks
Thermal Solution	Passive Heat Dissipation
Air Ionizer	Crystal Slat Mold - Inhibiting Air Ionizer
Other Ingredients	Integrated CO2 Generator
IP Level	IP66
Ambient Humidity	10% - 85%
Operating Temperature	-40~80C
LED Life Time	>35,000 hrs

SmartRay's LED Grow Light is a new revolutionary LED lighting product that is capable of producing the intended lighting specific to various plants and growing stages including wavelength, spectrum, and quantum intensity control. It's Bluetooth wireless control feature makes it easy and convenient to control and configure. The IP66 waterproof design makes it suitable in damp and wet locations. The adjustable installation mechanism caters for various greenhouse and horticulture requirements.

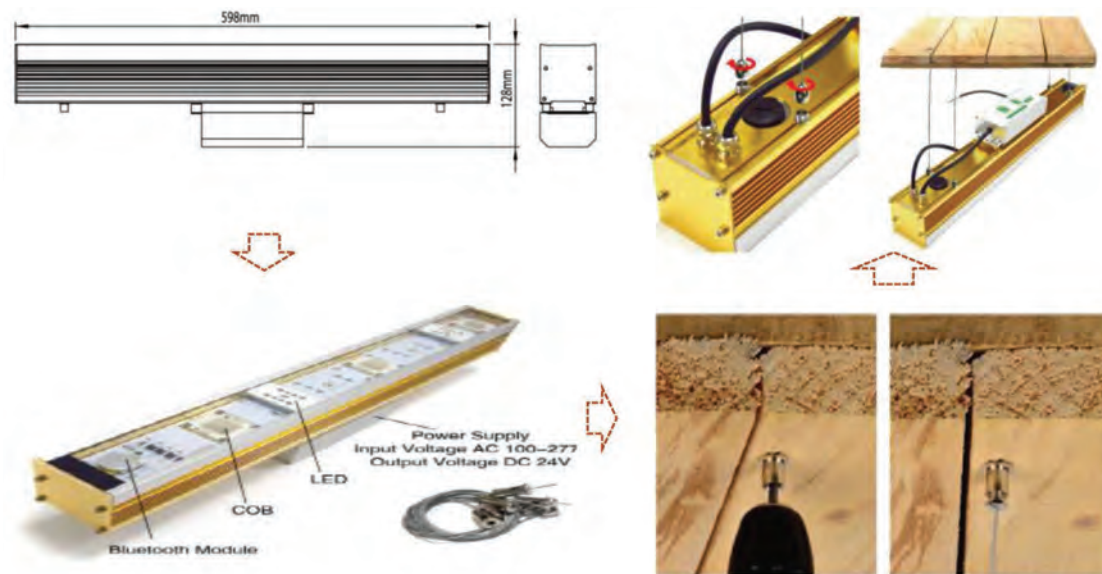
The perfect plant growing lighting solution for greenhouse, agriculture, vegetables, medicinal plants, etc. Improve production and save energy significantly compared to traditional solutions.



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Dimensions & Installation



1. Using a screw to nail the nut of the wire to ceiling
2. Adjust the wire length, followed by fixed wires
3. Connect the nut on the other end of the wire
4. Repeat the above for other end of the lamps

Technical Aspect

As SmartGrow is a new type of light source for plant production, high-power and high electrical-to-optical power conversion efficiency laser-diode lamps with the continuous wave output power of 800 mW x 2 that have peak emission of 660 nm have been developed.

To confirm the possibility of growing plants under this new light source, the effects of laser-diode light on growth of lettuce plants were studied.

In experiment 1, lettuce plants were grown under 350 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ photosynthetic photon flux (PPF) of the laser-diode light with a 12-hour photoperiod, the total energy correctly dispersed for longer periods of exposure.

In experiment 2, lettuce plants were grown under laser-diode light supplemented with blue light with a total PPF of 350 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$. The lettuce plants were able to grow even under the 660 nm laser-diode light.

However, the leaves of the lettuce plants grown under the laser-diode light were long and thin, and their dry weight was low compared to lettuce plants simultaneously grown under high-pressure sodium lamps. By supplementation with the blue light, the

shape of the leaves was much improved and the dry weights much increased. These results indicate that red laser-diode lamps combined with blue LED light have a possibility for efficient plant production, including transplant production, the research is ongoing. We have also done similar tests on other plants with different programs and fine tuning the end result. In all cases we noticed an increase in production and growth speed.

It is important to note that the SmartGrow system is fully programmable to incorporate multiple programs in its run cycle and can be adjusted according to the growers needs. Laser, RB/COB, with

a small part of the green spectrum at 510nm, all these technologies are combined to optimize growth speed and blooming vases for maximized yield.

