

# Grow Lights for Agriculture Market Shares, Strategies, and Forecasts, Worldwide, 2014 to 2020

<https://marketpublishers.com/r/G22E191F776EN.html>

Date: April 2014

Pages: 459

Price: US\$ 3,900.00 (Single User License)

ID: G22E191F776EN

## Abstracts

WinterGreen Research announces that it has published a new LED Grow Lights study. The 2014 study has 459 pages, 221 tables and figures. Worldwide markets are poised to achieve significant growth as the food supply for the world starts to adopt automated process. Grow lights have become more sophisticated and less expensive to run as solar and wind energy are adopted by greenhouses and plant factories. LED grow lights offer quality for growing, homogenous light distribution at precisely the right wavelengths.

LED grow lights are more powerful and efficient than the older generation high-pressure sodium and metal halide bulb grow lights. They lower the electricity bill and produce less heat. Less heat allows putting the light closer to plants, they do not get burned. The quality of light is better for growing with LED specialized grow lights. LED specialized grow lights offer homogenous light distribution. Light distribution at precisely the right wavelengths is made possible. LED light sources offer light distribution for good photosynthetic response. Vendors are able to stimulate plant growth. Flora series LEDs provide accelerated photosynthesis and energy savings.

Food factories produce organic vegetables. This represents a next step in the application of automated process to everyday life. Automated process for farming provides immediate help for food stores. Plant factories support farming practices that are not dependent on the climate. Food factories produce organic vegetables 24 hours a day. With the land available for farming depleting quickly, new types of farming are evolving.

## Grow Lights Market Driving Forces

- Demand for ability to grow food consistently
- Demand for ability to grow food locally
- Can grow food in warehouses
- Can grow food in the home
- Dedicating space that is efficient for producing food
- Fresh, sanitary food available consistently
- Food factories
- Ability to produce organic vegetables
- Ability to produce vegetables 24 hours a day
- Land available for farming depleting quickly
- New types of farming are evolving
- Growing of vegetables indoors all year round

A plant factory allows the growing of vegetables indoors all year round using LED lights that minimize power consumption. It is a system that artificially creates the environment necessary for plants to grow by controlling the amount of culture solution, air, and light from light-emitting diodes (LED). Because the amount of light, temperature, humidity, and carbon dioxide (CO<sub>2</sub>) concentration levels can be optimized without being affected by the weather, the growth rate of vegetables is two to four times faster than those grown in open-air fields, and yields are ten to twenty times higher.

Visible natural light has a spectrum different from grow lights. Visible light is measured by lux or energy. Plant factory grow lights are different. Grow lights provide artificial light used for plant growth. The spectrum of growth lights is tuned to the plant growing task. Plant light has photons from the blue and red (400 and 700 nm) part of the spectrum. This is called growth light with different spectrums good for different parts of the plant growth process.

Horticulture lamps address the role of light in the growth and development of plants. Plant growth is a function of photosynthesis. The plant growth lights work in three different ways:

To provide all the light a plant needs to grow

To supplement sunlight, especially in winter months when daylight hours are short

To increase the length of the "day" in order to trigger specific growth and flowering

Because the amount of light, temperature, humidity, and carbon dioxide (CO<sub>2</sub>) concentration levels can be optimized without being affected by the weather, the growth rate of vegetables is two to four times faster than those grown in open-air fields, and yields are ten to twenty times higher.

According to Susan Eustis, lead author of the study, "Plant factories and plant factory appliances use grow lights to automate and control shifts in technology that makes indoor farming possible. The ability to grow food consistently, locally, without pesticides represents a major breakthrough for humanity." Grow lights permit people to grow food in warehouses and in the home, dedicating previously unused space to a purpose and in a manner that is efficient for producing food. Solar energy makes this possible.

LED grow light modules markets at \$395 million in 2013 are anticipated to reach \$3.6 billion by 2020. Rapid growth is anticipated to come in part from home and restaurant market segments as people, particularly affluent people, become more health conscious and try to avoid the deleterious effects of pesticides in their food.

## **Companies Profiled**

### **Market Leaders**

Everlight Electronics

Shenzhen Sanxinbao Semiconductor Lighting

Iwasaki EYE Hortilux

Nihon Advanced Agri

LEDHydroponics

## **Market Participants**

Advanced Lighting Technologies

Black Dog LED

Daystar

Delta Group

Everlight Electronics

General Electric (GE)

General Hydroponics

Genesis Photonics (GPI)

Hon Hai

Hon Hai Precision Industry Ltd / Foxconn

Hydrofarm

Iwasaki Electric

Iwasaki EYE Hortilux

Nihon Advanced Agri

Ozu Corporation

Philips Horticulture Lamps

Rockwool® Group

Grodan Rockwool Grow Blocks

Ringdale ActiveLED®

Siemens

Siemens / Radium

SolarMax

Sunleaves Garden

Sunlight Supply

Sun System

Taiwan Floriculture Exports Association

USALight

### **Check Out These Key Topics**

Grow Lights

LED Grow Lights

Grow Lights LED

High Output :LED Grow Lights

Plants

Super LED grow lights

Blue LED lights

LED hydroponic grow lights, plant lights

LED grow bulbs

300w Tri Band Led Grow Light

Tri Band LED Grow Light

Tri Band LED Grow Light For Tomatos Year Round

Moving Light

Plant Factory

CEA

Phalaenopsis

Cermaic Metal Halide System

High Pressure Sodium (HPS) System

Plant Technology Advances

Plant Factory Growing

Plant Factory Server Controls

Light Farming

Green Flooring

Vegetation

Safe Food

Organic Vegetables

Plant Factory Vegetables

Plant Factories

Grow Light Plantations

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Growth Light Spectrum Positioning

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