

Plant Factory and Grow Lights Market Shares, Strategies, and Forecasts, Worldwide, 2012 to 2018

<https://marketpublishers.com/r/P8455C81E7AEN.html>

Date: May 2012

Pages: 386

Price: US\$ 3,700.00 (Single User License)

ID: P8455C81E7AEN

Abstracts

WinterGreen Research announces that it has published a new Plant Factory Grow Lights study. The 2012 study has 386 pages, 169 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.

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.

PLANT FACTORIES 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. 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 (CO₂) 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 to red (400-700 nm) part of the spectrum. This is called growth light.

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 (CO₂) 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 use growth light to automate and control growing. The ability to grow food consistently, locally 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.

Plant factory grow light markets at \$741.6 million in 2011 are anticipated to reach \$4 billion by 2018. Growth is driven by the need to provide inexpensive, safe and consistent food supplies. Automated process provides more efficient production of fruits and vegetable crops.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software. The company has 35 distributors worldwide, including Global Information Info Shop, Market Research.com, Research and Markets, Bloomberg, and Thompson Financial.

Contents

PLANT FACTORY GROW LIGHTS AND CONTROL SYSTEMS EXECUTIVE SUMMARY

Plant Factories Market Driving Forces
Growth Light Spectrum Positioning
Growth Light
Plant Factory Lighting Market Shares
Plant Factory Lighting Market Forecasts

1. GROW LIGHT PLANT FACTORY MARKET DESCRIPTION AND DYNAMICS

1.1 Visible Light
 1.1.1 Growth Light Positioning
 1.1.2 Light For The Human Eye Is The Visible Part Of Electromagnetic Radiation
1.2 Photosynthesis
1.3 High-Power LED Illumination System For Photosynthetic Plants
 1.3.1 LED Wavelength of Light Impact On Plants
1.4 Light Reactions Increase Plant Yield
1.5 Japanese Plant Factory
 1.5.1 Plant Factories
1.6 Organic Farming
 1.6.1 Size Fan For Traditional Lighting System
 1.6.2 LED Lighting System
1.7 Hydroponics

2. PLANT FACTORY GROW LIGHTS AND CONTROL SYSTEMS MARKET SHARES AND FORECASTS

2.1 Plant Factories Market Driving Forces
 2.1.1 Growth Light Spectrum Positioning
 2.1.2 Growth Light
2.2 Plant Factory Lighting Market Shares
 2.2.1 Iwasaki Revenue
 2.2.2 Iwasaki EYE Hortilux
 2.2.3 Philips Plant Sensitivity For Colors Of Light
 2.2.4 Philips Agrosun Gold
 2.2.5 Advanced Lighting Technologies/Venture Lighting PAR Watts for Plants

- 2.2.6 Venture Lighting International/Sunmaster
- 2.2.7 Venture Lighting International/Sunmaster
- 2.2.8 Philips Embraces Light In The Growth And Development Of Plants
- 2.2.9 Philips Horticulture Lamps
- 2.2.10 Philips Plant Sensitivity For Colors Of Light
- 2.2.11 GE
- 2.2.12 Rambridge Gavita Light Spectrum
- 2.3 Plant Factory Lighting Market Forecasts
 - 2.3.1 Plant Factory Grow Light Market Forecasts, Units
 - 2.3.2 Metal Halide Grow Lamp Forecasts
 - 2.3.3 Plant Factory Grow Light High-Pressure Sodium (HPS) Light
- 2.4 Plant Factory Market Control Systems
 - 2.4.1 Plant Factory Construction Market
 - 2.4.2 Ubiquitous Environment Control Systems
 - 2.4.3 HPS
 - 2.4.4 MH
 - 2.4.5 Operating Cost Per Hour For A Light
- 2.5 SOA Middleware Application Framework Approach For Plant Factory Solutions
 - 2.5.1 SOA Frameworks for Plant Factories
 - 2.5.2 Services Oriented Architecture SOA Market Shares
 - 2.5.3 IBM SOA Response to Complex Plant Factory Challenges
 - 2.5.4 IBM SOA Business Integration Foundation Systems
- 2.6 Plant Factory Regional Analysis
 - 2.6.1 Plant Factory Operations in Japan

3. PLANT FACTORY PRODUCT DESCRIPTION

- 3.1 Philips Horticulture Lamps
 - 3.1.1 Light For The Human Eye Is The Visible Part Of Electromagnetic Radiation
 - 3.1.2 Philips Plant Sensitivity For Colors Of Light
 - 3.1.3 Philips Light Sensitivity Curve
 - 3.1.4 Philips Embraces Light In The Growth And Development Of Plants
 - 3.1.5 Philips Embraces Growth Light
 - 3.1.6 Philips Grow Yo-Yo
 - 3.1.7 Philips MasterColor Ceramic Metal Halide 250 Watt
 - 3.1.8 Philips MasterColor Ceramic Metal Halide 400 Watt
 - 3.1.9 Philips Energy Advantage CDM AllStart Lamp 205 Watt
 - 3.1.10 Philips Energy Advantage CDM AllStart Lamp 330 Watt
 - 3.1.11 Philips Energy Advantage CDM AllStart Lamp 830 Watt

- 3.1.12 Philips Master GP T EL 1000 Watt 400 Volt Electronic
- 3.1.13 Philips Master GP T EL 600 Watt 400 Volt
- 3.1.14 Philips Agro-Lite XT 1000 Watt HPS
- 3.1.15 Phillips Horticulture
- 3.2 Iwasaki EYE Hortilux
 - 3.2.1 Iwasaki Electric, Ltd
 - 3.2.2 Iwasaki Electric EYE Hortilux Super Blue Specifications
 - 3.2.3 Iwasaki Eye Hortilux Super Blue
- 3.3 GE Grow Lights
 - 3.3.1 GE 42W Grow Light Bulb CFL 2700K | 901885
 - 3.3.2 G.E. Gro & Sho Fluorescent Plant Light - 6 Pack
 - 3.3.3 GE 400 Watt Mogul Base Metal Halide Ge Mvr400/u Grow Light
 - 3.3.4 GE Lighting 20996 Gro & Sho Reflector Spot Plant Light Bulb 65 Watt
 - 3.3.5 GE Lighting Lucalux PSL 600W HPS Bulb - BUSD600P
 - 3.3.6 GE 400 Watt Hps Grow Lamp Bulb 400w W Super Light Sodium Digital X
 - 3.3.7 GE Lighting Gro & Sho Reflector Spot Plant Light Bulb 65 Watt 20996
- 3.4 Solarmax One
 - 3.4.1 SolarMax Grow Lights
 - 3.4.2 SolarMax Enhanced Metal Halide and Super High Pressure Sodium Technologies
 - 3.4.3 Solarmax 1000 W Hps Super Enhanced Grow Light Bulb | 902810
 - 3.4.4 Solarmax mh 1000w gold
 - 3.4.5 SolarMax HPS Grow Lamps - SolarMax HPS 400W Super
 - 3.4.6 SolarMax Dual Arc Tube Lamp Burns MH HPS In One Lamp
 - 3.4.7 Solarmax - Solarmax Mh 600W Veg Conversion Lamp
 - 3.4.8 Solarmax super hps 1000w
 - 3.4.9 400W High Pressure Sodium SolarMAX
 - 3.4.10 SolarMax HPS Grow Lamps - SolarMax HPS 1000W Super
 - 3.4.11 SolarMax 600 W HPS Super Enhanced Performance Lamps | 902805
 - 3.4.12 SolarMax Veg 7200K Blue Enhanced - 1000 Watt MH
 - 3.4.13 SolarMax Super High Pressure Sodium 1000W
 - 3.4.14 SolarMax Super High Pressure Sodium 600W
 - 3.4.15 SolarMax Super High Pressure Sodium 400W
 - 3.4.16 SolarMax Metal Halide 1000W Gold
 - 3.4.17 SolarMax Metal Halide Vegetating 1000W
 - 3.4.18 SolarMax Metal Halide Vegetating 400W
 - 3.4.19 SolarMax Metal Halide 1000W (HPS to MH) Veg Conversion
 - 3.4.20 SolarMax 'ONE' 1000 Watt Lamp
 - 3.4.21 SolarMax

3.5 Venture/SunMaster

3.5.1 Venture Lighting International SUNMASTER Warm Deluxe Grow Lamps

3.5.2 Venture lighting International SUNMASTER Neutral Deluxe Grow Lamps

3.5.3 Venture Lighting International SUNMASTER Cool Deluxe Grow Lamps

3.5.4 Venture lighting International SUNMASTER Super High Output HPS Grow Lamps

3.5.5 Super High Output HPS Deluxe

3.5.6 SunMaster Grow Lamps

3.5.7 Sunmaster Rambridge Lighting High Output Horticultural Lamps

3.5.8 Sunmaster Rambridge Gavita Light Spectrum Horticultural Reflector Lamps

3.5.9 Sunmaster Plantmax

3.6 Agrosun Full Spectrum Fluorescent Lights

3.6.1 Agrosun Standard T12 Fluorescent Horticultural Tubes

3.6.2 Agrosun Gold Halide Bulbs

3.6.3 Argosun Red Sodium Bulbs

3.6.4 AgroSun Gold Metal Halide Lamp

3.7 Sunleaves Comet Compact

3.7.1 Sunleaves VitaLUME Compact Fluorescent Bulbs

3.7.2 SunLeaves

3.8 SunPulse

3.9 High Pressure Sodium - HPS Plant Grow Light

3.10 Daystar

3.10.1 Daystar Standard Reflector

3.10.2 DayStar Reflector

3.10.3 Daystar Powerhouse Remote Ballast Enclosure

3.10.4 DayStar Reflector 3-Way Convection Air Cooling

3.10.5 Daystar Metal Halide (MH) Grow Lights, High Pressure Sodium (HPS) Lamps

Comparison

3.11 Hydrofarm'

3.12 Sunlight Supply

3.13 LED Grow Lights

3.14 Ultrasun

3.15 Sunmaster

3.16 Philips Agro-Lite Xt C10000552 1000 Watts HPS TE-25 (6/Case)

3.17 Super Grow Wing Hood Reflector

3.17.1 Super Grow Wing Hood Reflector Specifications

3.18 Huis Ten Bosch

3.19 Grow Lights LED

3.19.1 USA LED Light Systems Comet Magenta 150 LED Grow Light \$149.99

- 3.19.2 Sunshine Systems SSLGP198567 45wt LED Grow Light
- 3.19.3 LED Grow Lights
- 3.19.4 LED Brightness: Grow Lights LED USA Systems
- 3.19.5 Grow Lights by LED USA Systems Three Light Bands:
- 3.19.6 USA LED Light Systems Balanced Lighting
- 3.19.7 USA Grow LED Lights Peak Targeting
- 3.19.8 USA LED Light Systems LEDs Increase Indoor Plant Growth
- 3.19.9 USA LED Improves Indoor Garden Performance
- 3.19.10 USA LED Indoor Garden
- 3.19.11 USA LED Optimal for Plants
- 3.19.12 USA LED Colors And Light Spectrums
- 3.19.13 USA LED Light Spectrum For Plant Growth
- 3.19.14 USA LED Red Light
- 3.19.15 USA LED Blue Light
- 3.19.16 USA LED Size Fan Needed for LED Lighting Systems
- 3.19.17 USA LED Size Carbon Filter
- 3.19.18 USA LED Temperature For Plants
- 3.19.19 USA LED Grow Lights for Indoor Gardens
- 3.19.20 LED Plant Grow Lighting
- 3.20 Grow light Accessories

4. PLANT FACTORY GROW LIGHT TECHNOLOGY

- 4.1 Metal Halide – MH
 - 4.1.1 Venture Lighting International Metal Halide
- 4.2 High Pressure Sodium – HPS
 - 4.2.1 HID Lighting
 - 4.2.2 Led Grow Lamps
- 4.3 Plant Grow Lights for Indoor Gardening/Supplemental Greenhouse Lighting
- 4.4 Solar Powered LED Lamps
 - 4.4.1 Solar Lighting Eliminates the Need for Electricity in Rural Areas.
- 4.5 Light Spectrum Toxicity Analysis
- 4.6 Photoperiod Flowering Plants Night Sensing
- 4.7 Aquaponic Garden
 - 4.7.1 .Drip Irrigation Garden
 - 4.7.2 Temperature Control
 - 4.7.3 .Ventilation Control
 - 4.7.4 .Humidity Control
 - 4.7.5 .Water Requirements

- 4.7.6 Colors In a Garden
- 4.8 Growing from Germination
- 4.9 Selected Plant Factory Light Distributors Worldwide
 - 4.9.1 EYE Lighting International of North America, Inc. Global Affiliates
- 4.10 Rambridge Distributors

5. PLANT FACTORY GROW LIGHT COMPANY PROFILES

- 5.1 Advanced Lighting Technologies
 - 5.1.1 APL Engineered Materials
 - 5.1.2 Advanced Lighting Technologies/Venture Lighting International/Sunmaster
 - 5.1.3 Venture Advanced Lighting Technologies Company
 - 5.1.4 Venture Lighting/Sunmaster Light & Plants
 - 5.1.5 Venture Lighting/Sunmaster Hydroponic Product Support
 - 5.1.6 Venture Lighting/Sunmaster PAR and Plant Response Curve
 - 5.1.7 Sunmaster Comprehensive Supply of HID Lamps
 - 5.1.8 Venture Lighting PAR Watts for Plants
 - 5.1.9 Venture Lighting Photons
 - 5.1.10 Venture Lighting
 - 5.1.11 Venture Lighting Global Perspective
 - 5.1.12 Venture Lighting Metal Halide Innovator
 - 5.1.13 Venture Lighting International/Sunmaster
- 5.2 Daystar
- 5.3 General Electric (GE)
 - 5.3.1 General Electric (GE) Operating Segments
 - 5.3.2 General Electric (GE) Energy Infrastructure
 - 5.3.3 GE Home Appliances, Lighting, Consumer, & Industrial
 - 5.3.4 GE Supports Innovation
 - 5.3.5 GE Energy –
 - 5.3.6 General Electric Company Energy Infrastructure Revenues
 - 5.3.7 GE Total Revenue
 - 5.3.8 General Electric Geographic Revenues
 - 5.3.9 GE and Göteborg Energi
 - 5.3.10 GE's 4.1-113 Wind Turbine
 - 5.3.11 General Electric Offers Wind Turbine Customers Clean Energy From Solar Panels
 - 5.3.12 GE U.S. Wind Crash
 - 5.3.13 GE Technology to Boost the Output of NextEra Energy Resources' U.S. Fleet of Wind Turbines

- 5.3.14 GE Energy Financial Services
- 5.4 General Hydroponics
- 5.5 Hydrofarm
 - 5.5.1 Hydrofarm Manufacturer Of Hydroponics Equipment And High-Intensity Grow Lights
 - 5.5.2 Hydrofarm AgroSun Gold Halide
- 5.6 Iwasaki Electric
 - 5.6.1 Iwasaki Revenue
 - 5.6.2 Iwasaki's Quality Oriented Culture
 - 5.6.3 Iwasaki EYE Hortilux
 - 5.6.4 EYE Lighting International of North America
- 5.7 Ozu Corporation
- 5.8 Philips Horticulture Lamps
 - 5.8.1 Philips Lighting Positioning
 - 5.8.2 Royal Philips Electronics of the Netherlands
 - 5.8.3 Philips Enables Consumer Lifestyle
 - 5.8.4 Philips Lighting
 - 5.8.5 Philips Market Opportunity Philips Visicu
 - 5.8.6 Philips Addresses Healthcare Landscape
 - 5.8.7 Philips/Respiroics Monitoring Solution Powered By Cinterion TC65i
 - 5.8.8 Royal Philips Revenue
 - 5.8.9 Philips Healthcare Revenue
 - 5.8.10 Philips Healthcare Revenue
 - 5.8.11 Philips Lighting Revenue
 - 5.8.12 Philips Partnerships and Acquisitions
 - 5.8.13 Philips Accelerate! Positioning
- 5.9 Rockwool Group
 - 5.9.1 Grodan Rockwool Grow Blocks
- 5.10 Rambridge
- 5.11 Ringdale ActiveLED
- 5.12 Siemens
 - 5.12.1 Siemens Energy Sector
 - 5.12.2 Siemens/Radium
- 5.13 SolarMax
- 5.14 Sunleaves Garden Products
- 5.15 Sunlight Supply
 - 5.15.1 Sun System The #1 Leading Brand Of Grow Lights For Indoor And Greenhouse Gardening
- 5.16 Taiwan Floriculture Exports Association

5.17 USALight

5.18 Selected Grow Light Companies

5.19 Selected Grow Light Companies

List Of Tables

LIST OF TABLES AND FIGURES

Table ES-1 Plant Factories Market Driving Forces
Table ES-2 Plant Factories Market Positioning
Table ES-3 Plant Factory Environmental Controls
Figure ES-4 Growth Light Spectrum Positioning
Figure ES-5 Visible Light Positioning
Figure ES-6 Plant Factory Lighting Market Shares, Dollars, Worldwide, 2011
Figure ES-7 Grow Light Environments
Figure ES-8 Plant Factory Grow Light Market Forecasts, Dollars, Worldwide, 2012-2018
Figure 1-1 Philips Horticulture Light Positioning
Figure 1-2 Philips Growth Light Positioning
Figure 1-3 Ozu Corporation Plant Factory In Japan
Table 1-4 Plant Factory Control Aspects
Table 1-5 Plant Factory Systems Controlled
Figure 1-6 Ozu Corporation Lettuce Plant Factory In Japan
Figure 1-7 Ozu Corporation Harvesting Lettuce In Japan
Table 1-8 Calculations Of The Size Of Farming Fan Required Using Measurements
Table 1-9 LED Plant Growth Lighting System Target Markets
Table 1-10 LED Diode-Based Lighting Advantages:
Table 2-1 Plant Factories Market Driving Forces
Table 2-2 Plant Factories Market Positioning
Table 2-3 Plant Factory Environmental Controls
Figure 2-4 Growth Light Spectrum Positioning
Figure 2-5 Visible Light Positioning
Figure 2-6 Plant Factory Lighting Market Shares, Dollars, Worldwide, 2011
Figure 2-7 Plant Factory Lighting Market Shares, Dollars, Worldwide, 2011
Figure 2-8 Philips Grow Lights
Figure 2-9 Philips Growth Light Photosynthesis Process
Figure 2-10 Philips Horticulture Lamps
Figure 2-11 Philips Grow Lights
Figure 2-12 GE 15 Enhanced Performance HPS Lamps
Figure 2-13 GE Grow Lamps
Figure 2-14 Rambridge Gavita Light Spectrum
Figure 2-14 Grow Light Environments
Figure 2-15 Plant Factory Grow Light Market Forecasts, Dollars, Worldwide, 2012-2018
Table 2-16 Plant Factory Grow Lamp Market Forecasts Dollars, Worldwide, 2010-2016

Figure 2-15 Plant Factory Grow Light Market Forecasts, Units, Worldwide, 2012-2018

Table 2-16 Plant Factory Grow Lamp Market Forecasts Units, Worldwide, 2010-2016

Figure 2-17 Plant Factory Grow Light Ceramic Metal Halide Market Forecasts, Dollars, Worldwide, 2012-2018

Figure 2-18 Plant Factory Grow Light High-Pressure Sodium Market Forecasts Dollars, Worldwide, 2012-2018

Figure 2-19 Philips Agrolite XT High Pressure Sodium Lamps

Table 2-20 Philips Agrolite XT High Pressure Sodium Lamps Features

Table 2-21 Philips GreenPower High Pressure Sodium Lamps Features

Figure 2-22 Plant Factory Products Market Size Forecast in Japan

Figure 2-23 Plant Factory And Greenhouse Cultivation Control Systems

Table 2-24 Services Oriented Architecture SOA Market Shares, Dollars, Worldwide, 2011

Table 2-25 SOA Leveraging of Business Integration Systems

Figure 2-26 Plant Factory Grow Light Regional Market Segments, Dollars, 2011

Table 2-27 Plant Factory Grow Lamp Regional Market Segments, 2011

Figure 3-1 Philips Visible Light Positioning

Figure 3-2 Philips Growth Light Positioning

Figure 3-3 Philips Growth Light Photosynthesis Process

Figure 3-4 Philips Grow Lights

Figure 3-5 Philips Green Power and Agrolite XT lamps

Figure 3-6 Philips Agrolite XT High Pressure Sodium Lamps

Table 3-7 Philips Agrolite XT High Pressure Sodium Lamps Features

Table 3-8 Philips GreenPower High Pressure Sodium Lamps Features

Table 3-9 Philips MasterColor Ceramic Metal Halide Bulbs Specifications:

Figure 3-10 Iwasaki Electric Plant Factory And Greenhouse Cultivation

Figure 3-11 Iwasaki Electric Plant Factory Lights

Figure 3-12 Iwasaki Electric, Ltd Enhanced Spectrum Super Blue Horticultural Light

Figure 3-13 Iwasaki Electric, Ltd Enhanced Spectrum Light Percent of Relative Energy

Table 3-14 Iwasaki Eye Hortilux Super Blue Lamps

Figure 3-25 SOLARMAX 1 DUAL ARC TUBE MH/HPS Combination Bulb

Figure 3-26 Relative Energy Absorbed By Plants During Photosynthesis, As Compared To The Sensitivity Of The Human Eye

Figure 3-27 SolarMax Wavelength Intensity Targets Photosynthesis

Figure 3-28 SolarMax Plant Spectra

Figure 3-29 SolarMax Spectra Description

Table 3-30 Venture lighting International SunMaster Warm Deluxe Grow Lamps Features

Figure 3-31 Venture lighting International SunMaster Warm Deluxe Lamps Spectral

Output

Figure 3-32 Venture lighting International SunMaster SUNMASTER Warm Deluxe Lamp Products

Figure 3-33 Venture lighting International SunMaster Neutral Deluxe Lamps Spectral Output

Table 3-34 Venture Lighting International SunMaster Neutral Deluxe Lamps Functions

Figure 3-35 Venture lighting International SunMaster Neutral Deluxe Lamp Products

Table 3-36 Venture Lighting International Cool Deluxe Functions

Figure 3-37 SunMaster Cool Deluxe Grow Lamps

Figure 3-38 Venture lighting International SunMaster Cool Deluxe Lamps Spectral Output

Figure 3-39 Venture Lighting International SunMaster Super High Output HPS Deluxe Lamps Spectral Output

Figure 3-40 Venture Lighting International SunMaster Super High Output HPS Deluxe Lamps Description

Figure 3-41 Venture Lighting International SunMaster Super High Output HPS Lamps Spectral Output

Table 3-42 Venture Lighting International Super High Output HPS Deluxe Functions

Figure 3-43 Sunmaster Grow Lamps

Figure 3-44 Sunmaster Plantmax Grow Lights

Table 3-45 Sunmaster Rambridge Hydroponic Gardening Advantages:

Figure 3-46 Sunmaster Rambridge Gavita Light Spectrum

Figure 3-47 Rambridge, Lighting, Horticultural Lamps Photometry

Figure 3-48 Sunmaster Plantmax 1000W Hetal Halide Conversion Bulb (HPS Ballast)

Figure 3-49 Agrosun Gold Growth Light

Figure 3-50 Agrosun Halide Typical Spectrum

Figure 3-51 Agrosun Full Spectrum Fluorescent Lights

Figure 3-52 Agrosun Hortilux HPS Bulbs

Figure 3-53 Sunleaves Comet 125W Fluorescent Fixture

Table 3-54 Sunleaves Compact Fluorescent Fixture Features

Figure 3-55 Sunleaves VitaLUME Compact Fluorescent Bulbs

Figure 3-56 DayStar Powerhouse Grow Light Systems

Figure 3-57 DayStar Powerhouse Grow Light Systems

Figure 3-58 Flora Hydroponics 1000 Watt HPS Daystar Garden Pro Grow Light System & PH Control Kit Bundle Pack

Figure 3-59 DayStar Powerhouse Standard Reflector

Figure 3-60 DayStar Powerhouse Grow Light Systems Functions

Figure 3-61 DayStar Powerhouse Grow Light Systems Air Flow for Cooling

Figure 3-62 Power House Ballast Enclosure

- Figure 3-63 Daystar Powerhouse Remote Ballast Enclosure
- Figure 3-64 Daystar Powerhouse Remote Ballast Features
- Figure 3-65 Hydrofarm's Sunburst Classic Compact Convertible MH/HPS High Intensity Plant Grow Lights
- Figure 3-66 Sunlight Supply High Power HP Sodium Light
- Figure 3-67 Sun System 2 Compact Switchable High Intensity Plant Grow Lights
- Figure 3-68 SuperNova LED Grow Light
- Figure 3-69 Super Grow Wing Grow Light
- Figure 3-70 LED USA Systems 90W Tri-Band UFO
- Figure 3-71 LED USA Systems UFO Grow Light Specifications
- Figure 3-72 LED USA Systems
- Figure 3-73 LED USA 600 W Tri-Band Grow Light Systems
- Figure 3-74 USA LED Light Systems Comet Magenta 150 LED Grow Light
- Figure 3-75 LED Grow Lights
- Table 3-76 USA LED Quick Reference Growing Guide
- Table 3-77 USA LED Vegetative for Hydroponics
- Table 3-78 USA LED Flowering for Hydroponics
- Table 3-79 USA LED Phases Of Plant Growth
- Figure 3-80 USA LED Efficiency
- Figure 3-81 LED Plant Grow Lighting
- Figure 3-82 Soalr Max and Plantmax Horticultural Bulbs
- Figure 3-83 Solar Max, Sylvania, and Gavita Bulbs
- Figure 3-84 Solar Max, Eye Hortilux, and Plantmax Horticultural Bulbs
- Figure 3-85 Solar Max, SunMaster, and Plantmax Horticultural Bulbs
- Figure 3-86 Solar Max, SunMaster, and Sylvania Horticultural Bulbs
- Figure 3-87 Solar Max Horticultural Bulbs
- Figure 3-88 Grow light Accessories
- Table 4-1 HID Light Output and Accompanying Growing Area
- Table 4-2 LED Grow Lamps
- Table 4-3 Plant Grow Lights for Indoor Gardening
- Figure 4-4 Solar Powered LED Grow Lamp Architecture
- Figure 5-1 Venture Lighting International Human Eye Response Curve
- Figure 5-2 Venture Lighting/Sunmaster Plant Response Curve
- Figure 5-3 Venture Lighting Efficiencies of Light Sources Used in Plant Growth
- Table 5-4 Hydrofarm One-Stop Solutions
- Table 5-5 Hydrofarm Locations
- Table 5-6 Hydrofarm Profile
- Figure 5-7 Iwasaki Electric, Ltd New Generation Dimmable High-Bay Fixture
- Figure 5-8 Iwasaki Electric, Ltd Commercial Lighting Examples

Figure 5-9 Iwasaki Electric, Ltd High Speed Capture Lighting

Figure 5-10 Iwasaki Electric, Ltd Light Source for Image Operation

Figure 5-11 Iwasaki Electric, Ltd Halogen Heater

Figure 5-12 Iwasaki Electric, Ltd Halogen Lamp

Figure 5-13 Iwasaki Electric, Ltd Insect Repelling Lamp

Figure 5-14 Iwasaki Electric, Ltd Plant Factory Light For Cultivation

Figure 5-15 Iwasaki Electric, Ltd Light Source for Image Processing

Figure 5-16 Iwasaki Electric, Ltd Infrared LED Board

Figure 5-17 Iwasaki Electric, Ltd EYE Black Lamp

Figure 5-18 Philips Global Presence

Figure 5-19 Philips Global Trends And Challenges

Table 5-20 Philips Positions To Simplify Global Healthcare Delivery For The Long Term

Table 5-21 Philips Healthcare Delivery Product Positioning

Figure 5-22 Philips Healthcare Equipment Order Intake Trends

Figure 5-23 Philips Delivering Margin Improvement and Decreasing Manufacturing Overhead

Figure 5-24 Philips Healthcare Information Systems Market Shares

Figure 5-25 Philips Lighting Revenue

Figure 5-26 Philips Sector Revenue Change

Figure 5-27 Rambridge Brands

Figure 5-28 Siemens Map Overview Of Revenue And Employees

Figure 5-29 Siemens Revenue by Region

Figure 5-30 Solarmax HPS Lamps

Figure 5-31 SolarMax HPS Lamps Radiation From The 'Red' Portion Of The Spectrum

Figure 5-32 Sunleaves Product Stacks

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