

LED HORTICULTURE LIGHTING

LED Lighting Solutions
Professional, Innovation, Customization



ABOUT US

Foshan Hortilite Optoelectronics Co., Ltd. is a joint venture of two public listed lighting manufacturers, FSL (stock code: 000541) and NATIONSTAR (stock code: 002449), a LED innovative lighting solution supplier integrating R&D, manufacturing, sales and customer service.

The purpose to establish this joint company is for a better future growth and development of our lighting business. We are based on the same team of the LED Lighting Division of NATIONSTAR, which has more than 15 years experience in OEM and ODM service for customers in Germany, Italy, Spain, Russia, US, Canada etc., mainly focusing on LED panel, LED batten, LED flexible strips and LED horticulture lighting.

With excellent R&D team and supreme manufacturing standard, we are offering precise and top performance LED products with industry leading technology.

Our goal is not only to meet your requirements, but exceed your expectations.

FSL

Founded in 1958, FSL is one of the most competitive lighting brands across China, providing clients with full-range professional lighting solutions. It owns five production bases in Guangdong Province, Henan Province, Jiangsu Province, etc. A complete supply chain system from R&D, manufacturing, sales, services, enabling FSL to produce on a mass scale covering residential lighting, commercial lighting and outdoor lighting.



NATIONSTAR is a national level high-tech enterprise with professional capability in manufacturing LED components (White, RGB and non-visual LED). Founded in 1969, Nationstar ranks the 8th. globally in the list of revenue and market shares for LED packages in 2018 (IHS Markit).



Background Support

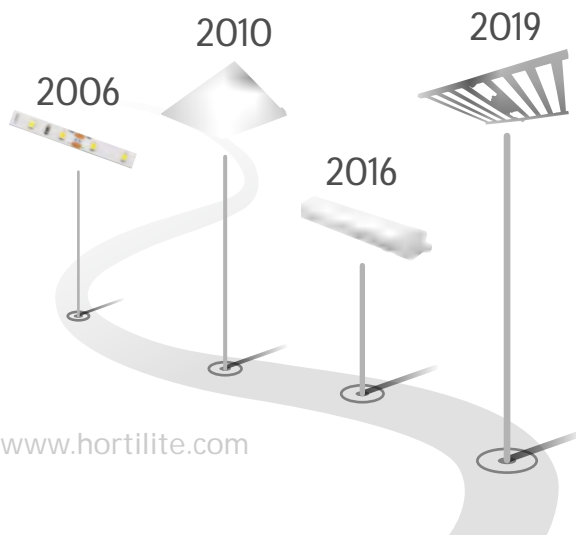
Supported by the mature supply chain system, large-scale production capacity of FSL and leading LED technical advantages of NATIONSTAR.



Manufacturing Experience

One of the earliest LED lighting products manufacturer in China.

LED flexible strips since 2006, LED panel since 2010, LED batten since 2016, LED horticulture lighting since 2019.

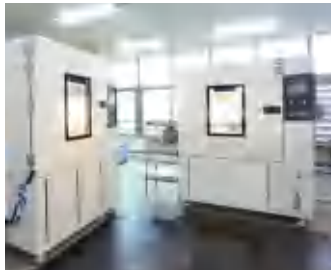




▲ Integrating Sphere

R & D Strength

More than 30 excellent and professional engineers in electronics, optics, structure, industrial design and other related fields. Professional laboratory (UL&CNAS) are equipped.



▲ Reliability



▲ Lighting Distribution

Precise and Flexible Manufacturing Mode

Equipped with SMT lines, automatic soldering machines, automatic screw machines, automatic silicone extrusion equipment, automatic aging equipment, etc. to guarantee excellent performance of each product. Offer standard products as well as customized service.



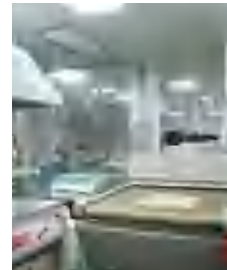
▲ Rolling and Cutting



▲ Bending



▲ Powder Spraying



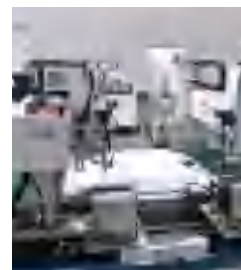
▲ LGP Silk Screen Printing



▲ Assembling



▲ Semi-automatic Assembling



▲ Automatic Screw

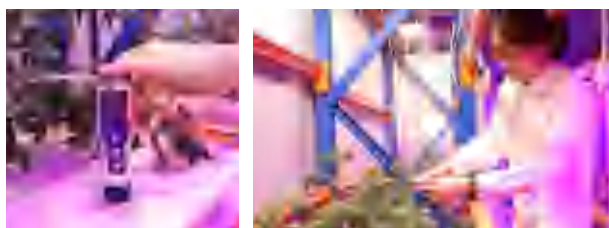
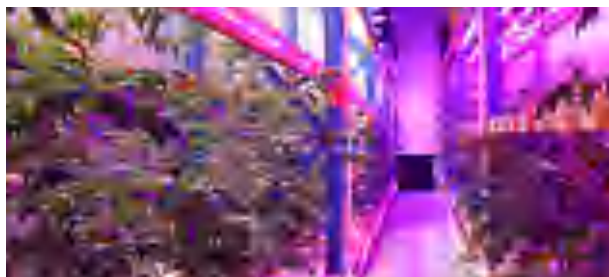


▲ Aging

WHY CHOOSE US

Strong points

- R&D, LED technology, mature supply chain system and professional laboratory (UL&CNAS) support by FSL and NATIONSTAR.
- 100sqm controlled environment plant laboratory, collecting and analyzing data from real growth cycles with leafy greens, tomato, hemp etc.
- We offer you custom-tailored lighting strategy with consideration all aspects of your cultivation facility and growing style, so you can be assured to meet your growth goals with higher ROI.
- Our products complied with different market lighting regulations, CE / RoHS / FCC / UL / ETL / DLC etc.
- Automatic production facility and smart warehouse system base in FSL production base (330,000sqm)
- Professional team at your service to make sure you get the suitable and profitable solution



Plants and Light



Light is essential for plant growth through the process of photosynthesis and other regulating processes.

The latest technical and scientific advances allow the delivery of artificial light to the plants to be controlled, allowing you to illuminate with the spectrum and photo-periods best adapted to the applications.

To understand how your crops are going to react on different wavelengths and colors, you have to keep in mind that every crop and every growth stage requires an individual approach.

Wavelength(nm)		Typical Uses
UV-A ▶	315-400(UV-A)	Promote the formation of anthocyanins, make leaves turn purple.
BLUE ▶	400-500(Bule-Purple)	The absorption wavelength of chlorophyll photosynthesis; Typical 450 nm
GREEN ▶	500-600(Yellow-Green)	High penetration promoting photosynthesis of lower leaves in the canopy
RED ▶	600-700(Red)	Absorption wavelength for photosynthesis of Chlorophyll ; Typical 660nm
IR (Far-Red) ▶	700-760(Far-Red)	One hour's exposure per day can help improve leaf vegetables'yield by more than 30%; Typical 730nm.



The amount of light affects the photosynthesis process in the plant.

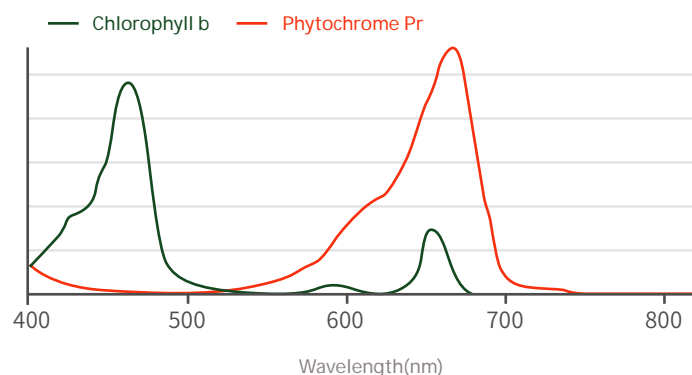
This process is a photochemical reaction within the chloroplasts of the plant cells in which CO₂ is converted into carbohydrate under the influence of the light energy.

The spectral composition of the different wavelength regions (blue, green, yellow, red, far red or invisible e.g. UV or IR) is important for the growth, shape, development and flowering (photomorphogenesis) of the plant.

For the photosynthesis, the blue and red regions are most important. The timing / light duration which is also called photoperiod is mainly affecting the flowering of the plants. The flowering time can be influenced by controlling the photoperiod.



Absorption curves of plants



LIGHT SPECTRUM

The mix of colors in light strongly influences plant development. The blue, green and red spectral range (400-700 nm) is referred to as PAR (photosynthetically active radiation). The most effective and efficient areas of the spectrum for driving photosynthesis are highest in the red region (600-700 nm), followed by blue (400-500 nm) and then green (500-600 nm).

PAR lies along the wave band from 400 to 700nm and it represents the range of light that plants use for photosynthesis. Light outside of PAR, including far-red (700-800 nm), is also of importance to plant development, from plant architecture to flowering and perfecting texture.



Blue

The blue part of the spectrum is typically associated with strong vegetative growth, including compact growth and strong root development. Blue light can also influence finish or color and contributes to the production of vitamins and antioxidants.

Green

Green light increases light penetration into canopy and may reach the lower leaves, which is helpful for larger plant species. Green light is also known for promoting natural growth and preventing poor leaf coloration and texture.

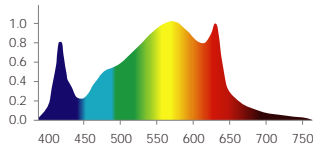
Red

The red part of the spectrum is associated with very strong photosynthesis, high absorption and robust biomass accumulation. It stimulates stem and shoot development and is also important for flowering.

Far-red

Far-red is a wavelength at the edge of what the human eye can perceive. It is typically associated with a plant's extension growth, such as stem elongation and leaf expansion. It also regulates flowering and has a very positive effect on biomass accumulation.

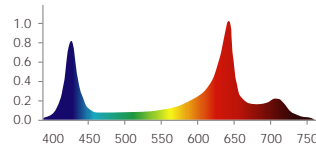
S001



Full spectrum

Complete spectra for stimulating plant growth.
For all stages of growth.

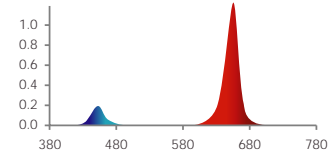
S002



R+B+IR spectrum

This spectrum has an enhanced blue region and provides the fastest vegetative growth results. It is also used for stimulating flowering and an more open plant architecture.

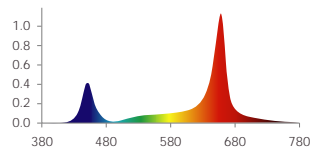
S003



R+B spectrum

This spectrum is suitable for a variety of plant species throughout their growth cycle. It contains a high proportion of red light, which spurs photosynthesis during the vegetative growth stage and facilitates the flowering stage.

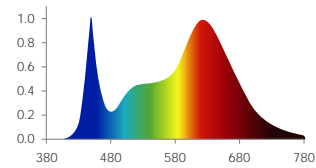
S004



Pink light spectrum

This spectrum produces the fastest germination for plant species whose germination requires light. It also gives the best flowering results among spectra. Recommended for use in germination chambers and for flower production.

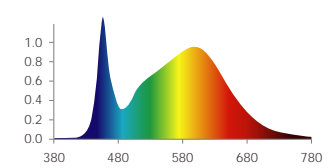
S005



Pink purple light spectrum

This full spectrum maximizes red and blue lights to allow for chlorophyll A and B absorption with a balance of green wavelengths to allow much deeper canopy penetration. Specifically formulated for indoor grow environments, this spectrum fosters photosynthesis in all stages, from propagation to flowering.

S006

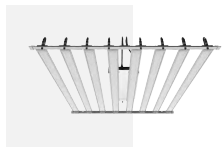


Customized spectrum

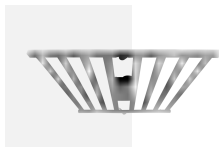
A tailored spectrum for your grow system, it's possible to speed up flowering times, improve your plant's biochemistry, or customize your plants' structure to root better.

Indoor/vertical

Indoor/vertical



1-2
LED Modular Grow Light
GEN4



3
LED Foldable Grow Light
GEN3



4
LED Bar Grow Light



5
LED Tube Grow Light

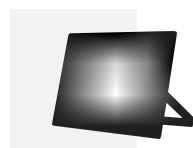


6
LED Triproof Grow Light

Greenhouse



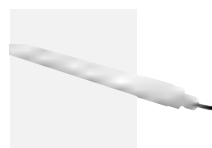
7-8
LED Linear Grow Light



9
LED Flood Grow Light



10
LED UFO Grow Light

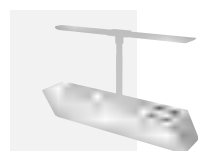


11
LED Intercanopy Grow
Light GEN1



12
LED Intercanopy Grow
Light GEN2

Home grow / residential



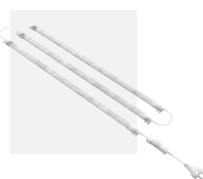
13-14
Indoor Hydroponics
Growing Garden



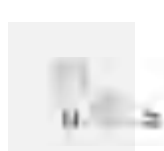
15
LED Quantum Board
Grow Light



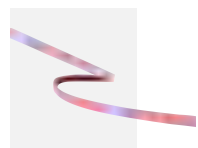
16
LED T5 Grow Light



17
LED Rigid Strip
Grow Light



18
LED Bulb Grow Light



19
LED Strip Grow Light



20
LED Clamp Grow Light

Indoor/vertical

LED Modular Grow Light GEN4



NEW | GEN4



Rapid assembly design

Save up to 40% on shipping space

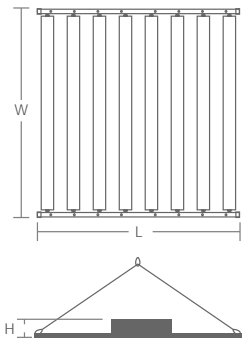
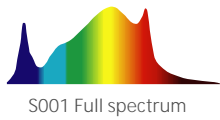
Additional UV/IR spectrum

Easy to install and maintain

High PPE 2.7umol/J

5 years warranty

The modular LED grow lights with quick installation light bars and quick connector system are easy to install and maintain, saving 40% of packaging space and shipping costs compared with the foldable version.



Modular design can load 1000pcs in a 40HQ (foldable version 600pcs), saving shipping cost.

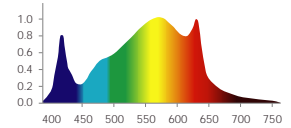
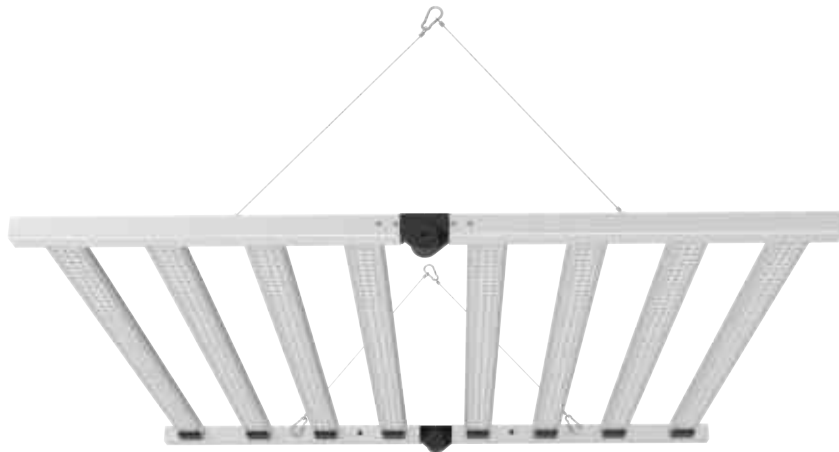
- Aluminum 66mm wider light bar with uniform light distribution
- With additional UR/IR bars for flowering
- Integrated dimming knob and RJ port on driver, easy to use
- Full spectrum high performance PPF 2700 $\mu\text{mol/s}$ PPE 2.7 $\mu\text{mol/J}$
- Quick installation with patented design cable system, easy to maintain



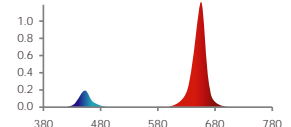
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLS-640A04	L1109*W1106*H117mm	640W	1728 $\mu\text{mol/s}$	2.7 $\mu\text{mol/J}$	AC100-277V
HLS-800A04	L1109*W1106*H117mm	800W	2160 $\mu\text{mol/s}$		
HLS-103A04	L1351*W1106*H117mm	1000W	2700 $\mu\text{mol/s}$		

Indoor/vertical

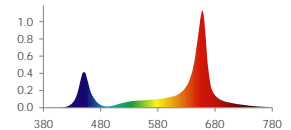
LED Foldable Grow Light GEN3



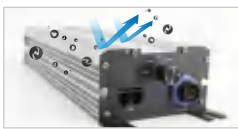
S001 Full spectrum



S003 R+B spectrum



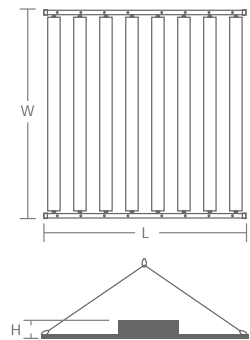
S004 Pink light spectrum



Waterproof & dimmable



Foldable design



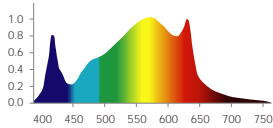
- Remarkable thermal performance
- High performance
- Foldable design
- Smart control



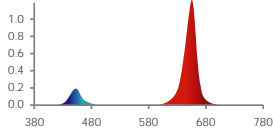
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLS-640A03	L1107*W1104*H110mm	640W	1728 μ mol/s	2.7 μ mol/J	AC100-277V
HLS-800A03	L1107*W1104*H110mm	800W	2160 μ mol/s		
HLS-103A03	L1245*W1104*H110mm	1000W	2700 μ mol/s		

Indoor/vertical

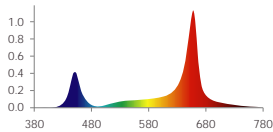
LED Bar Grow Light



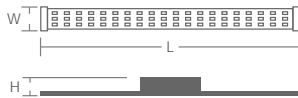
S001 Full spectrum



S003 R+B spectrum



S004 Pink light spectrum

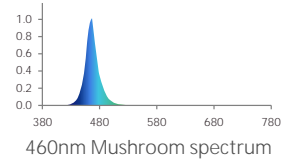
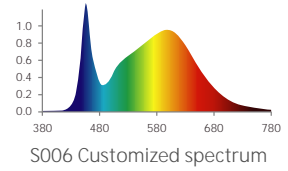


- Remarkable thermal performance ■
- Adaptable ■
- Slim ■
- Customized spectrum ■



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLS-080A05	L1032*W53*H86mm	80W	200µmol/s	2.5 µmol/J	AC100-240V
HLS-100A05	L1032*W53*H86mm	100W	250µmol/s		

Indoor/vertical LED Tube Grow Light

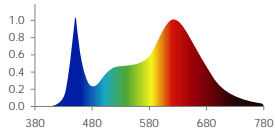


- Instant external wiring with fast connector
- Hermetically sealed IP65 rated
- Target spectrum for mushroom cultivation
- Slim, light and bright, high uniformity and no heat when placed right above canopy.

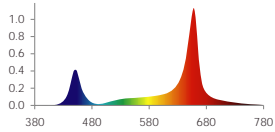


Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLS-010A06	L1200*W26*H16mm	10W	14µmol/s	1.4µmol/J	AC220-240V

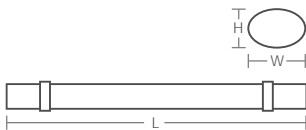
Indoor/vertical LED Triproof Grow Light



S005 Pink purple light spectrum



S004 Pink light spectrum



The tri-proof grow light radiates little heat, allowing it to approach the leaf, ■
obtaining greater control over growing conditions.



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLS-018A07	L600*W64*H40mm	18W	25.2μmol/s	1.4 μmol/J	AC220-240V
HLS-036A07	L1200*W64*H40mm	36W	50.4μmol/s		
HLS-045A07	L1500*W64*H40mm	45W	63μmol/s		

Greenhouse

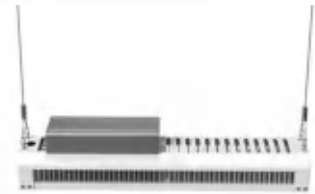
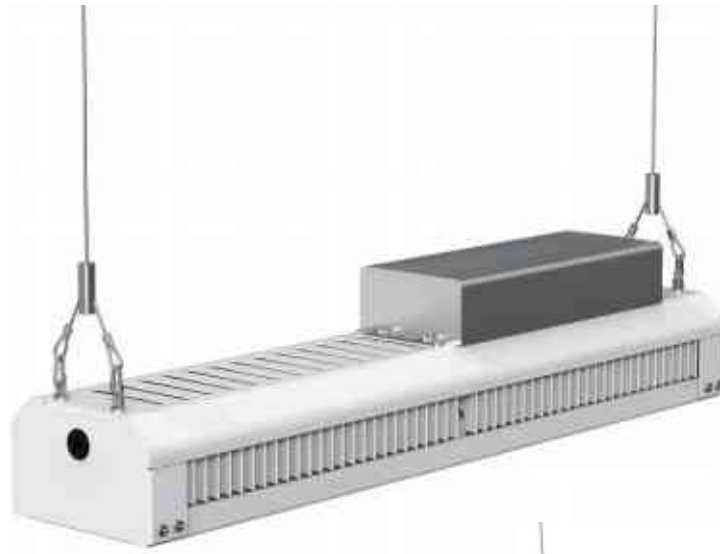
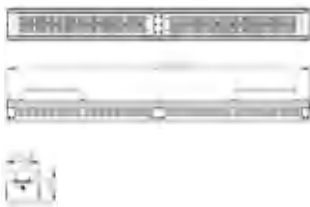
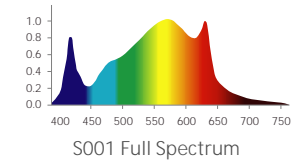
LED Linear Grow Light



0-10V dimming
100-277VAC input
Ideal for greenhouses and warehouses
IP65, ETL listed for damp locations
5 year warranty



The 300/600W linear LED grow light is a versatile and energy-efficient horticulture cultivation LED fixture. Low profile can avoid shadow and easy to install. Perfect for both greenhouse supplemental lighting and warehouse single-level indoor cultivation.



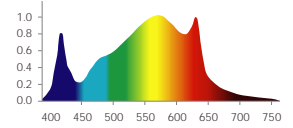
- Low profile versatile linear LED grow light
- Aluminum housing with excellent heat dissipation
- Uniform light distribution, 120° beam angle
- 2.7 $\mu\text{mol}/\text{J}$ high PPE full-spectrum for all grow stages
- 0-10V dimming
- Ideal for greenhouses and warehouses
- IP65, ETL listed



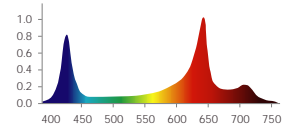
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLB-300A01	L600*W145*H136mm	300W	780 $\mu\text{mol}/\text{s}$	2.7 $\mu\text{mol}/\text{J}$	AC100-277V
HLB-600A01	L1177*W145*H136mm	600W	1560 $\mu\text{mol}/\text{s}$		

Greenhouse

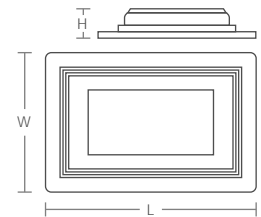
LED Flood Grow Light



S001 Full Spectrum



S002 R+B+IR spectrum



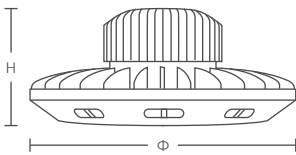
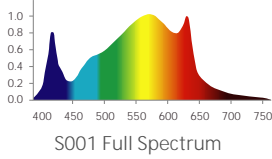
- Ultra thin shell design, with a metal handle on the back, easy to install
- IP65 classification
- Suitable for stimulating grow of plants that are cultivated with either soil or hydroponic method



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLB-100A02	L275*W210*H35mm	100W	140/180 μ mol/s	1.4/1.8 μ mol/J	AC220-240V
HLB-200A02	L385*W282*H39mm	200W	280/360 μ mol/s		

Greenhouse

LED UFO Grow Light



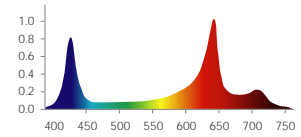
- Even coverage ■
- High efficiency more than 2.6 μ mol/J ■
- IP65 classification ■



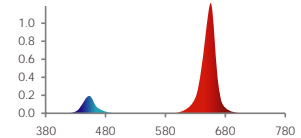
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLB-100A03	D260*H145mm	100W	260 μ mol/s	2.6 μ mol/J	AC220-240V
HLB-200A03	D350*H145mm	200W	520 μ mol/s		

Indoor/vertical

LED Intercanopy Grow Light GEN1



S002 R+B+IR spectrum



S003 R+B spectrum



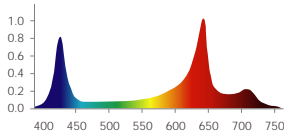
- Low heat, can apply close to the plant
- 360 degree light distribution for mid and lower canopy
- For greenhouse high wire plants e.g. tomato, cucumber, sweet pepper etc.



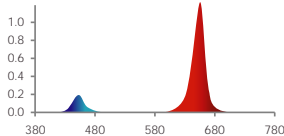
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLB-020A04	φ30*L 1200mm	20W	32μmol/s	1.6 μmol/J	AC220-240V
HLB-030A04	φ30*L 1200mm	30W	48μmol/s		

Indoor/vertical

LED Intercanopy Grow Light GEN2



S002 R+B+IR spectrum



S003 R+B spectrum



- Integrated extrusion housing, better sealing effect
- Housing and end caps made of shockproof polycarbonate



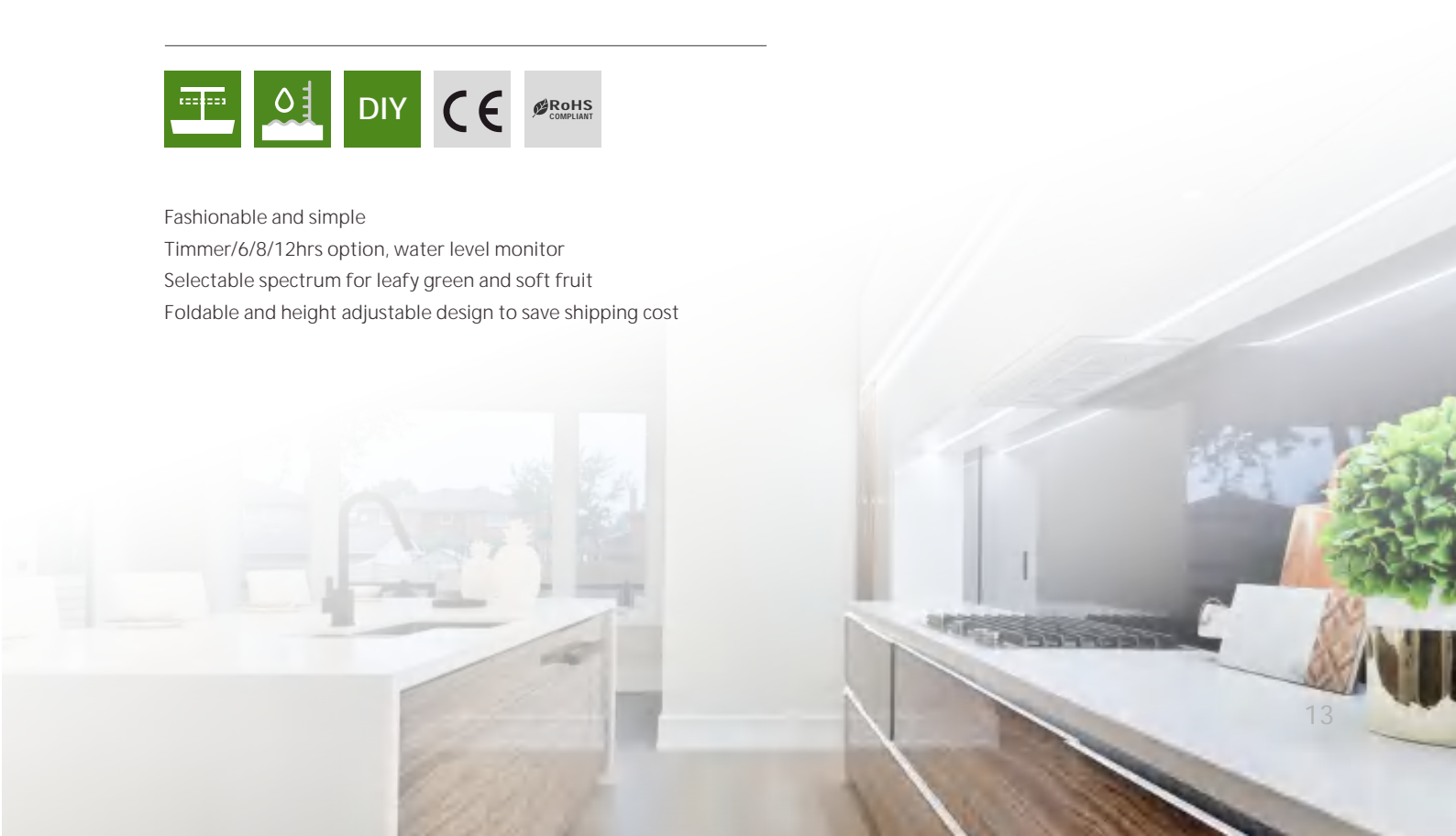
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLB-040A05	L1200*W75*H75mm	40W	80 μ mol/s	2.0 μ mol/J	AC220-240V
HLB-060A05	L1500*W75*H75mm	60W	120 μ mol/s		

Home grow/residential

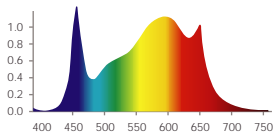
Indoor Hydroponics Growing Garden



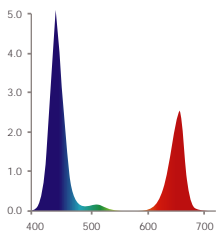
- Fashionable and simple
- Timmer/6/8/12hrs option, water level monitor
- Selectable spectrum for leafy green and soft fruit
- Foldable and height adjustable design to save shipping cost



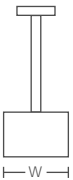
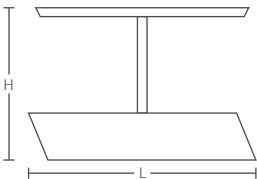
Grow plants all year round with this Indoor Hydroponics Growing Garden. Selectable spectrum for leafy greens or soft fruits, intelligent water level monitoring and timer settings to ensure that the plants get enough light. A very environmentally friendly and sustainable alternative to a real garden.



Vegetable spectrum



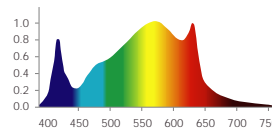
Fruit spectrum



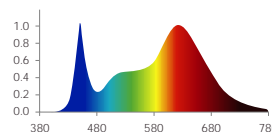
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLO-024A02	L600*W130*H450mm	24W	24µmol/s	1.0µmol/J	DC24V

Home grow/residential

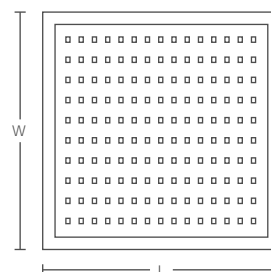
LED Quantum Board Grow Light



S001 Full Spectrum



S005 Pink purple light spectrum



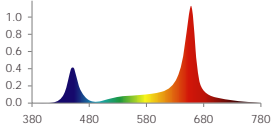
- IC integrated
- High efficacy spectrum for precise grow, PPE up to 3.0 μ mol/J.
- Light weight
- Customized spectrum



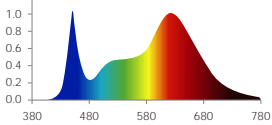
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLO-100A01	L305*W305*H30mm	100W	180 μ mol/s	1.8 μ mol/J	AC120V/220V
HLO-150A01	L305*W610*H30mm	150W	270 μ mol/s		
HLO-200A01	L305*W610*H30mm	200W	360 μ mol/s		
HLO-300A01	L610*W610*H30mm	300W	540 μ mol/s		
HLO-400A01	L610*W610*H30mm	400W	720 μ mol/s		

Home grow/residential

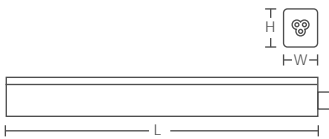
LED T5 Grow Light



S004 Pink light spectrum



S005 Pink purple light spectrum



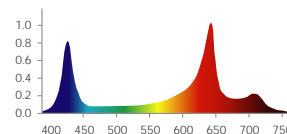
- Grow lights for starting seeds
- Made from polycarbonate
- Longlife span rated 50000hrs
- Linkable design easy to install



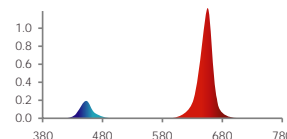
Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLQ-009A03	L573*W21.5*H24.4mm	9W	14 μ mol/s	1.6 μ mol/J	AC220-240V
HLQ-014A03	L873*W21.5*H24.4mm	14W	22 μ mol/s		
HLQ-016A03	L1173*W21.5*H24.4mm	16W	25 μ mol/s		

Home grow/residential

LED Rigid Strip Grow Light



S002 R+B+IR spectrum



S003 R+B spectrum

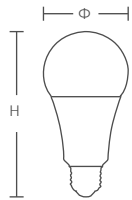
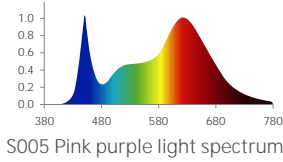


- Easy and flexible installation
- Safe for indoor plants
- Three optional spectra



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLQ-038A04	L502xW21xH14mm	3x8W	38.4μmol/s	1.6 μmol/J	AC220-240V
HLQ-039A04	L502xW21xH14mm	3x9W	43.2μmol/s		

Home grow/residential LED Bulb Grow Light



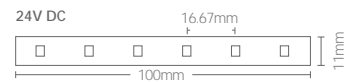
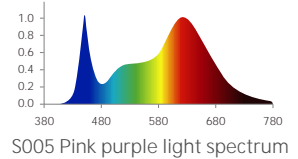
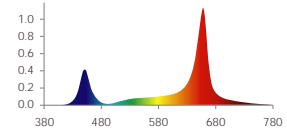
- Low heat emission and low energy consumption
- Rated for high humidity use
- Ideal for all phases of indoor plant growth
- Suitable for soil or hydroponic gardens



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLO-009A06	φ60*113mm	9W	12.6μmol/s	1.4 μmol/J	AC220-240V
HLO-012A06	φ65*125mm	12W	16.8μmol/s		

Home grow/residential

LED Strip Grow Light

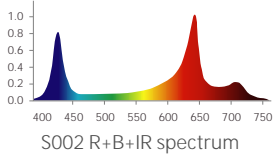


- Suitable for most plants. Ideal lighting for hobby growers.
- Just simply stick the flexible grow light strips under somewhere you want, plug and play.
- 3M adhesive backing
- DIY Design : cuttable flexible strip grow light



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLO-005A05	4.5*11*5000mm	4.8W/M	6.7 μ mol/s	1.4 μ mol/J	DC24V
HLO-010A05	4.5*11*5000mm	9.6W/M	13.4 μ mol/s		

Home grow/residential LED Clamp Grow Light




- Dual-head LED clip-on plant lamp for indoor plants
- 3 Modes & 5-Level dimmable, auto On/Off timer 4H/8H/12H
- 360° gooseneck & easy to use



Model No.	Size	Wattage	PPF	Efficacy	Input voltage
HLC-005A07	Φ26*328*350mm	5W	3μmol/s	0.6 μmol/J	DC5V



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