



HORTILED

# HLFC-series lamps for industry and home



## WHY HLFC-SERIES LAMPS

Created through years of advanced scientific research



Tested for efficiency at industrial greenhouses



Provide optimal lighting intensity using at least 2.5 times less energy than HPS lamps



Produce stronger and better-developed plant roots



Better fertilizer utilization rates



Suitable for the majority of plants, with custom spectral solutions also available

## Technical Specifications

<b>Application</b>	LED-based plant lighting system for greenhouses
<b>Functionality</b>	<ul style="list-style-type: none"> <li>• Universal light spectrum suitable for most plants</li> <li>• Forced convection</li> <li>• Overheating control</li> <li>• On/Off indicator</li> </ul>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Extreme energy efficiency</li> <li>• Fast and convenient mounting</li> <li>• Optimal lighting intensity</li> <li>• 24-month warranty</li> </ul>
<b>Options</b>	<ul style="list-style-type: none"> <li>• Customized spectral composition</li> <li>• Optimization of spectrum for specific plant species</li> <li>• Lens dispersion angle (60°; 90°; 120°)</li> </ul>

<b>Length/Width/Height</b>	
<b>Weight</b>	
<b>Input voltage</b>	
<b>Power consumption</b>	
<b>Operating temperature</b>	
<b>Operating humidity</b>	
<b>Photosynthetic photon flux density (lamp height)</b>	
<b>Illuminated area (lamp height)</b>	

### HLFC06

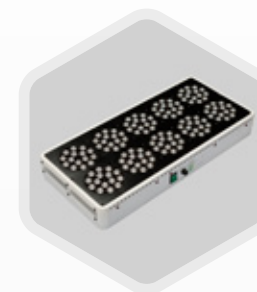
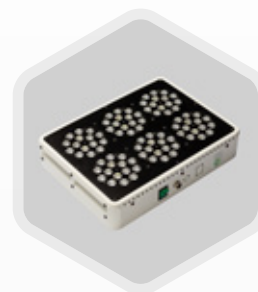
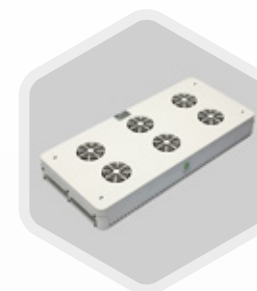
Length/Width/Height	385/285/85 mm
Weight	4.8 kg
Input voltage	110–240V, 50/60 Hz
Power consumption	176W
Operating temperature	0 – + 50 °C
Operating humidity	< 90 %
Photosynthetic photon flux density (lamp height)	60 – 120 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (150 cm)
Illuminated area (lamp height)	1.50 m <sup>2</sup> (150 cm)

### HLFC08

Length/Width/Height	500/285/85 mm
Weight	6.1 kg
Input voltage	110–240V, 50/60 Hz
Power consumption	230W
Operating temperature	0 – + 50 °C
Operating humidity	< 90 %
Photosynthetic photon flux density (lamp height)	100 – 160 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (150 cm)
Illuminated area (lamp height)	2.70 m <sup>2</sup> (150 cm)

### HLFC10

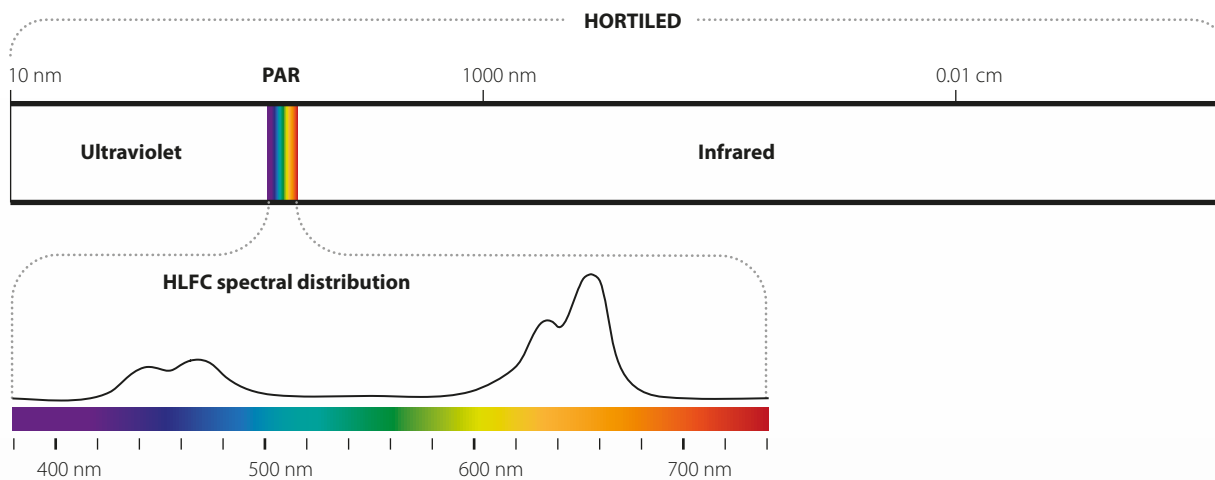
Length/Width/Height	610/285/85 mm
Weight	7.4 kg
Input voltage	110–240V, 50/60 Hz
Power consumption	288W
Operating temperature	0 – + 50 °C
Operating humidity	< 90 %
Photosynthetic photon flux density (lamp height)	125 – 210 $\mu\text{mol m}^{-2} \text{s}^{-1}$ (150 cm)
Illuminated area (lamp height)	3.20 m <sup>2</sup> (150 cm)



## WHY LED

Electric lamps have been used to grow plants for nearly 150 years. They've followed a development paths from incandescent lighting, open arc lighting and enclosed gaseous discharge lamps to the high-pressure sodium (HPS) lamps which are still the most common choice for supplemental lighting in greenhouses. These lamps emit light in the visible (400-700 nm) and the invisible (700-850 nm) ranges, but with peak emission in the yellow/orange light (~589 nm) region. The high amount of yellow light, along with a deficiency of blue light, causes stem elongation in plants and worsens transplant quality.

Solid-state lighting using light-emitting diodes (LEDs) represents a fundamentally different technology from the HPS-type lamps currently used in horticulture. It offers many advantages over traditional forms of lighting. These optoelectronic devices feature excellent energy efficiency, high photo-biological efficacy, long life, a cool emitting temperature, a relatively narrow emission spectrum, and a short switching time. And unlike most conventional light sources, they contain no mercury. One of the main benefits of LEDs is the ability to control the spectral output of a lighting system. LEDs are already available in the entire relevant spectral range from near infrared (IR) to near ultraviolet (UV). They can be customized for specific crops and optimized for maximum production to avoid wasting energy and non-productive wavelengths.



## WHY HORTILED

- More than 8 years of R&D experience in LED lighting for plants
- Close work with scientists in the fields of physics and plant photophysiology
- Successful transfer of R&D experience to industry
- Numerous scientific experiments at industrial greenhouses
- Applications for research and industry
- High-quality engineering and components
- Qualified technical support

