

PHILIPS

Horticulture LED Solutions

GreenPower LED
toplighting force dynamic



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Providing adjustable far-red light when you need it

For growers looking for precision steering in their crop, Philips GreenPower LED toplighting force dynamic with adjustable far-red light is the perfect choice. By combining the toplighting force dynamic with a GrowWise control system, you have the flexibility to adjust the level of PAR light and far-red light in the spectrum. You can either choose to use the full power of the module to maximize the PAR light or use some of its energy to turn on 250 $\mu\text{mol/s}$ of far-red light. This gives you the opportunity to optimize your light intensity and spectrum for optimal control on the crop development and morphology of your plants and energy use.

With the toplighting force dynamic, you are able to add additional far-red light to give the plants a boost only when they need it the most. For example, adding far-red light to your full LED chrysanthemum or lisianthus crops in the winter period at the end of the day when the PAR light is turned off, adds additional stem length. You are able to switch back to the most energy efficient spectrum when the far-red light is no longer needed. For some crops like strawberries or young plants, stretching can also be a challenge in the darker season when growing with full LED. Adding far-red light during the day would help optimize the elongation of the stems.

Additionally it gives you the flexibility to easily switch between crops that may or may not need far-red light. In other words, the toplighting force dynamic will give you the flexibility to apply far-red light when the crop needs it or go for the most energy efficient spectrum when it does not.

Key benefits

- Steer crop development and morphology when needed
- Flexible spectrum adjustment allowing you to switch crops
- Realize significant energy-savings by using far-red only when needed
- Replace existing HPS light utilizing max. plug power
- Maximum light output of 3250 $\mu\text{mol/s}$ and an efficacy of up to 3.2 $\mu\text{mol/J}$

Increase light level or lower energy consumption

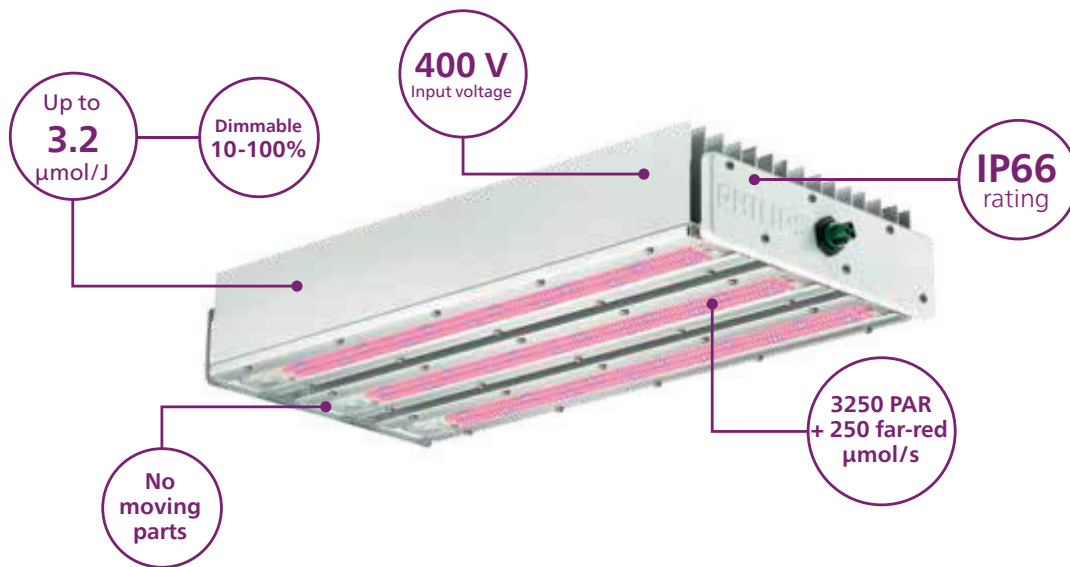
The Philips GreenPower LED toplighting force dynamic is the ultimate LED grow light for light-loving crops due to its high output. It creates summer light levels all year round, but without the heat dissipation of high-pressure sodium lights. Higher light levels can significantly increase yield. You can achieve a maximum light output of 3250 $\mu\text{mol/s}$ at an efficiency up to 3.2 $\mu\text{mol/J}$. This allows for 1-to-1 HPS replacement utilizing the same connection, while significantly increasing the light level compared to the newest generation HPS lights. A second option would be to stick to the existing light level and lower your energy consumption.

The efficacy of the Philips GreenPower LED toplighting force dynamic increases when dimmed. The result is a powerful asset with which you will get the best results for your greenhouse, including lower energy consumption, optimally predictable growth, better crop quality and higher yield.

Optimizing growth predictability, and improving crop quality

When you want to generate the highest light level (photosynthetic photon flux) using the fewest grow lights possible, toplighting force dynamic is a smart LED investment, whether you're replacing HPS lights on a 1:1 basis or building an installation from scratch. Additionally, Philips GreenPower LED toplighting force dynamic will give you steering opportunities to improve your crop quality and reduce energy consumption.

By using the Philips GrowWise control system growers are given the possibility to dim the PAR light and far-red light to as little as 10% of the maximum output. The control system operates stand-alone as well as integrated with a climate computer or greenhouse management system. Dimming boosts light efficacy, allows sunset-to-sunrise mimicking for a smoother light build-up and responds to energy management-related load shifts. Our plant specialists, application engineers and account managers will work with you to customize light solutions tailor-made for your growing conditions.



Product specifications

		Deep red/white/low blue	Far-red	Deep red/white/low blue	Far-red
Typical photon flux	$\mu\text{mol/s}$	3250	250	tbd	tbd
Power consumption (max.)	W	1020	90	tbd	tbd
Efficacy	$\mu\text{mol/J}$	3.2	2.8	tbd	tbd



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