

Horticulture LED Solutions

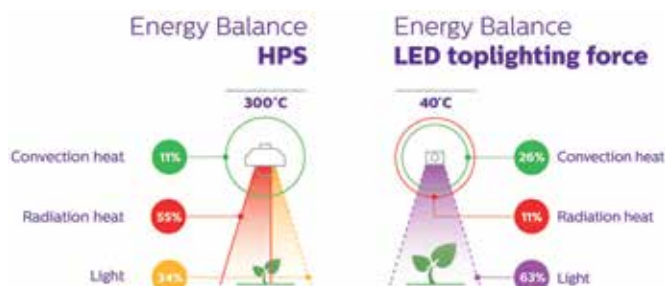
GreenPower LED
toplighting force



Providing maximum light all year round

Cutting down on energy costs used to be a grower's most important goal. Now growers are aware that higher light levels can significantly increase yield—and they require a solution that can provide that. The Philips GreenPower LED toplighting force (TLF), the ultimate LED grow light for light-loving crops. It creates summer conditions all year round, but without the heat dissipation of high-pressure sodium lights (HPS). Utilizing an existing plug power of 1040 W, growers can achieve a maximum light output of 3650 $\mu\text{mol/s}$ at an efficiency up to 3.7 $\mu\text{mol/J}$. This allows for 1-to-1 HPS replacement utilizing the same connection, while almost doubling the light level compared to the newest generation HPS lights. In addition, toplighting force achieves 4.1 $\mu\text{mol/J}$ efficiency when dimmed to 50% of its power and functions with minimal light interception.

The result is a powerful asset with which you will get the most out of today's horticultural market, including optimally predictable growth, better crop quality and higher yield.



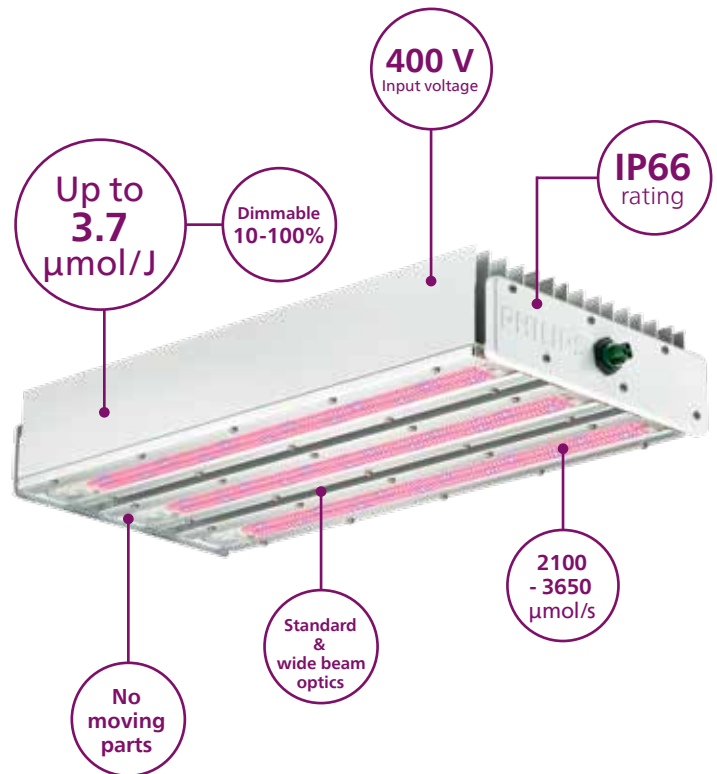
Key benefits

- Replace existing 1040 W HPS light utilizing max. plug power
- Maximum light output of 3650 $\mu\text{mol/s}$ and an efficacy of up to 3.7 $\mu\text{mol/J}$
- Two beam shapes ensure desired optimal uniformity or highest efficacy
- Dim to 50% and increase efficiency up to 4.1 $\mu\text{mol/J}$
- Minimal light interception

Optimizing growth predictability, improving crop quality and increasing yield

When you want to generate the highest light level (photosynthetic photon flux) using the fewest grow lights possible, toplighting force is a smart LED investment, whether you're replacing HPS lights on a 1:1 basis or building an installation from scratch. Philips Greenpower LED toplighting force is available in two beam shapes: a wide beam for optimal uniformity in case of limited height to the crop and a standard beam that offers highest efficacy.

By using the Philips GrowWise control system, growers can dim the lights to as little as 10% of the maximum output, 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 temperature build-up and responds to energy management-related load shifts. Signify plant specialists, application engineers and account managers will work with you to customize light solutions tailor-made for your growing conditions.



Philips Greenpower LED toplighting force 400 V specifications

Beam	Spectral version		Deep Red/Blue types (DRB)		Deep Red/White types (DRW)				Vision White		Deep Red/White/Far Red types (DRWFR) ¹					
	Spectral code		LB		LB		2_LB	MB		VSN2	EBW	FR_1		FR_RSE		FR_5
Standard beam	Typical photon flux	μmol/s	3650	2850	3450	2800	3050	3250	2800	2100	2500	3100	2750	3100	3100	2750
	Power consumption (max)	W	1040	780	1020	800	910	1000	820	790	840	950	820	950	950	820
	Efficacy	μmol/J	3.5	3.7	3.4	3.5	3.4	3.3	3.4	2.7	3.0	3.3	3.4	3.3	3.3	3.4
	Efficacy at 50% (dimmed)	μmol/J	4.0	4.1	3.8	3.9	3.7	3.7	3.8	2.9	3.2	3.7	3.7	3.7	3.7	3.7
Wide beam	Typical photon flux	μmol/s	3600	2800	3400	2750	3000	3200	2750			3000	2700		3000	2700
	Power consumption (max)	W	1040	780	1020	800	910	1000	820			950	820		950	820
	Efficacy	μmol/J	3.5	3.6	3.3	3.4	3.3	3.2	3.4			3.2	3.3		3.2	3.2
	Efficacy at 50% (dimmed)	μmol/J	3.9	4.0	3.7	3.8	3.7	3.7	3.7			3.7	3.7		3.7	3.7

Light distribution		Wide beam - beam angle 150° Standard beam - beam angle 120°
Dimmable ²		10% - 100%
Input voltage (50-60Hz)	VAC	400V
Dimensions	cm inch	L: 69 27.2 W: 31 12.2 H: 11.2 4.4
Weight	kg lb	10.5 23.1
Power factor		0.98
Total Harmonic Distortion	%	< 15
Rated Average Lifetime ³	hrs	36.000 - L95
Ingress protection rating		IP66/ wet locations
Cooling		Passively cooled
Approval marks		CE, ENEC, RCM, PSE, EAC (UL/CSA)
Connector		Wieland RST20i3 Green

Legend

LB = Low Blue
2_LB = White 2_Low Blue
MB = Medium Blue
VSN2 = Vision - White spectrum
EBW = Efficient Broad White
FR_1..5 = Far Red recipe 1..5
FR_RSE = Rose Module

- The published value represents the total photon flux from 400-800nm.
- All TLF products are prepared to work with GWCS (Coded Mains) protocol CMv1 / CMv2. This means that no control wires are needed. The modules will operate in combination with Standard and High Output GWCS transformers and transmitters.
- Lifetime and maintenance values are given at an ambient temperature of 25°C / 77°F. All measured lifetimes are industry standard measurements indicating average length of operation and not a performance claim specific to any individual product.



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Document order number: 4422 957 13239 D-400
06/2023 | Data subject to change

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