

APPLICATION SOLUTIONS BROCHURE

You make grow lights for horticulture.

We'll make your business grow with LEDs
optimized for horticulture, enabling you to
design your ideal solution.



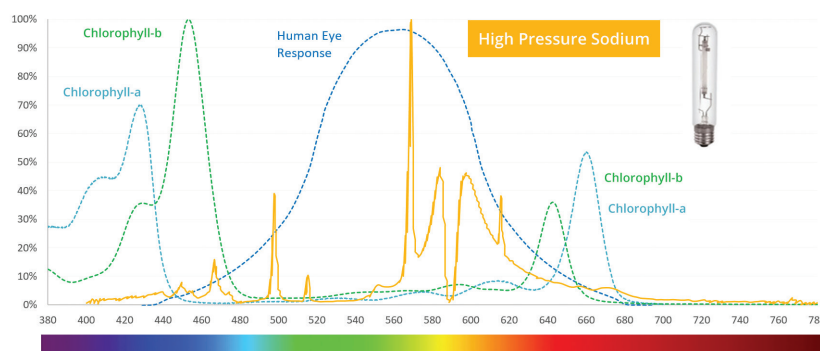
“LED horticultural luminaires are forecast to experience astronomical growth over the next 5 years”¹

Industry experts predict that LEDs for horticulture applications will experience dramatic growth, with fixture sales expected to increase at an astounding 83.3% CAGR between 2015 and 2020.

Fueling this expansion is the fact that the economics of LEDs now make sound fiscal sense for growers, and will increasingly become the only practical solution for large-scale deployments.

Conventional lamps were designed for the human eye response, not for plants

HPS lamps miss the chlorophyll absorption peaks, the wavelengths that drive photosynthesis



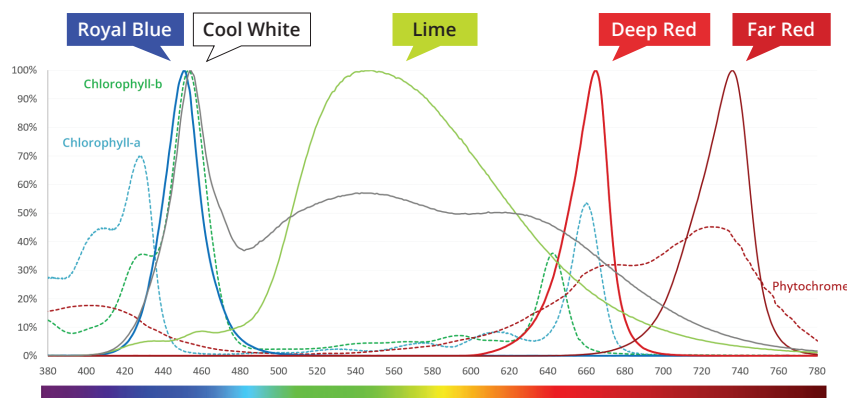
Lumen
For illumination
used by humans

PPF
Photosynthetic Photon Flux
is used by plants for growth and
vital activities

PAR
Photosynthetically Active Radiation
Spectra from 400nm to 700nm

LUXEON SunPlus LEDs are optimized for horticulture

Engineered to target the right wavelengths and binned to maximize growth in the most efficient way



**LUXEON SunPlus delivers PPF
in the key wavelengths for plants**

Chlorophyll (for photosynthesis)
Royal Blue - Deep Red

Phytochrome (for photoperiodism)
Far Red

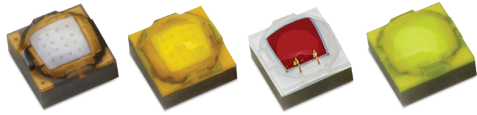
Full Spectrum (for accessory pigments)
Cool White - Lime

¹Navigant Research 2015

LUXEON SunPlus Series LEDs

Delivering precise light to improve crop yield

LUXEON SunPlus 20 Line



- Targets the key wavelengths where plants absorb photons (450nm & 660nm)
- High PPF to maximize the photon output of the system
- Optical design optimal for directional applications



LUXEON SunPlus 35 Line



- Unique Purple LED enabling a fixed spectra for quick designs
- Perfect uniformity at short distances
- Photon output per LED enables vertical farming



LUXEON SunPlus CoB Line



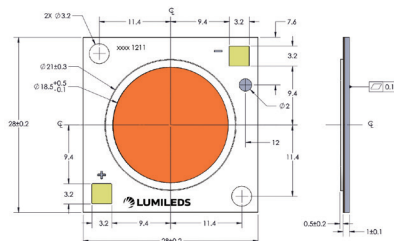
Best for Directional High Lumen PPF

- Fixed spectra for quick designs
- Optimal design for directional applications
- 200W single emitter solution in 32mm LES

Available Spectra

Purple
12.5% Blue

- Binned in PPF
- Package sizes
 - 20mm x 24mm
 - 28mm x 28mm
 - 38mm x 38mm



- Typical viewing angle: 115°

LUXEON SunPlus Matrix Platform

(Fully Assembled Light Engine)



Best for Ease of Design and Fast Time to Market

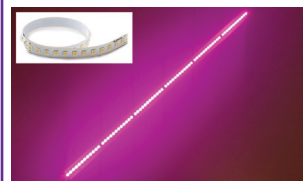
- Fully assembled light engine on a flexible or rigid substrate, enabling leading luminaire solutions and accelerating time to market
- Turnkey solution with full flexibility to fit existing fixtures
- Oberon Intelligent assembly for consistent growth performance. Can also be provided as a tailored solution per customer's spectral requirement

NEW

LUXEON XF-SunPlus
35 (P)

LUXEON XR-SunPlus
35 (P+L)

Perfect uniformity enables very short distances



Why LUXEON SunPlus LEDs?

Better Crops:

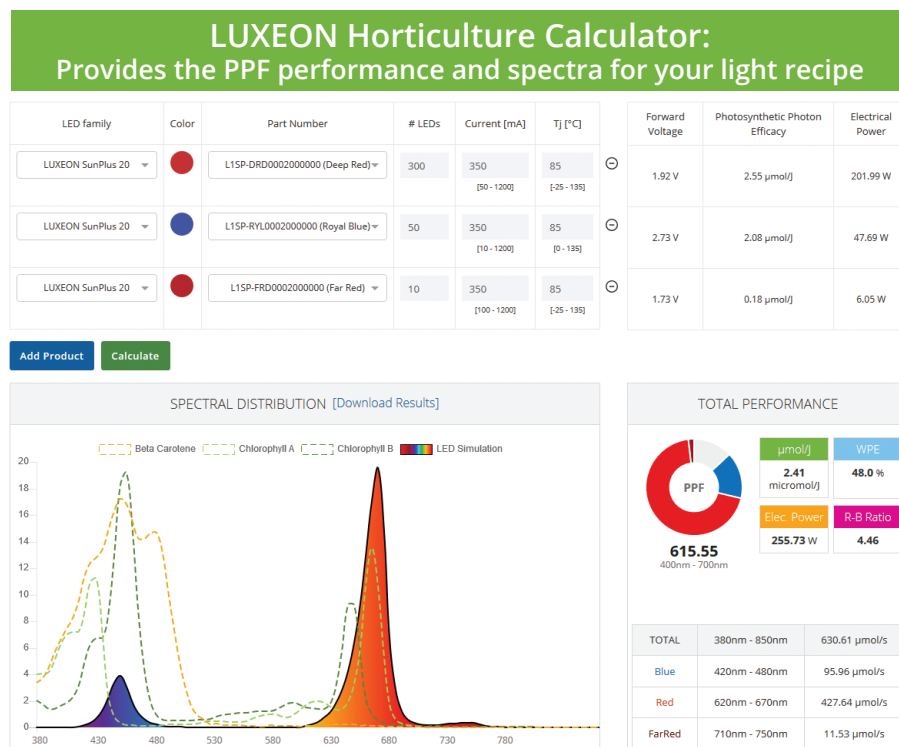
- Optimized LEDs that perfectly match the chlorophyll absorption peaks to drive intense photosynthesis and obtain greater yield, increased crop quality and consistent growth

Lower Cost of Ownership:

- High efficiency to reduce energy consumption, water usage and A/C costs
- Leading PPF maintenance and reliability reduces or eliminates fixture/lamp replacements

Better for Growers:

- Higher quality of light and reduced heat for a better working environment
- LEDs do not break like lamps, saving the greenhouse from poisonous chemicals or broken glass



About Lumileds

Companies developing automotive, mobile, IoT and illumination lighting applications need a partner who can collaborate with them to push the boundaries of light. With over 100 years of inventions and industry firsts, Lumileds is a global lighting solutions company that helps customers around the world deliver differentiated solutions to gain and maintain a competitive edge. As the inventor of Xenon technology, a pioneer in halogen lighting and the leader in high performance LEDs, Lumileds builds innovation, quality and reliability into its technology, products and every customer engagement. Together with its customers, Lumileds is making the world safer, better and more beautiful—with light.

To learn more about our lighting solutions, visit lumileds.com.



©2017 Lumileds Holding B.V. All rights reserved.
LUXEON is a registered trademark of the Lumileds Holding B.V. in the United States and other countries.
lumileds.com

BR28 Horticulture Application
Solutions Brochure 20171003

Neither Lumileds Holding B.V. nor its affiliates shall be liable for any kind of loss of data or any other damages, direct, indirect or consequential, resulting from the use of the provided information and data. Although Lumileds Holding B.V. and/or its affiliates have attempted to provide the most accurate information and data, the materials and services information and data are provided "as is," and neither Lumileds Holding B.V. nor its affiliates warrants or guarantees the contents and correctness of the provided information and data. Lumileds Holding B.V. and its affiliates reserve the right to make changes without notice. You as user agree to this disclaimer and user agreement with the download or use of the provided materials, information and data. A listing of Lumileds product/patent coverage may be accessed at lumileds.com/patents.