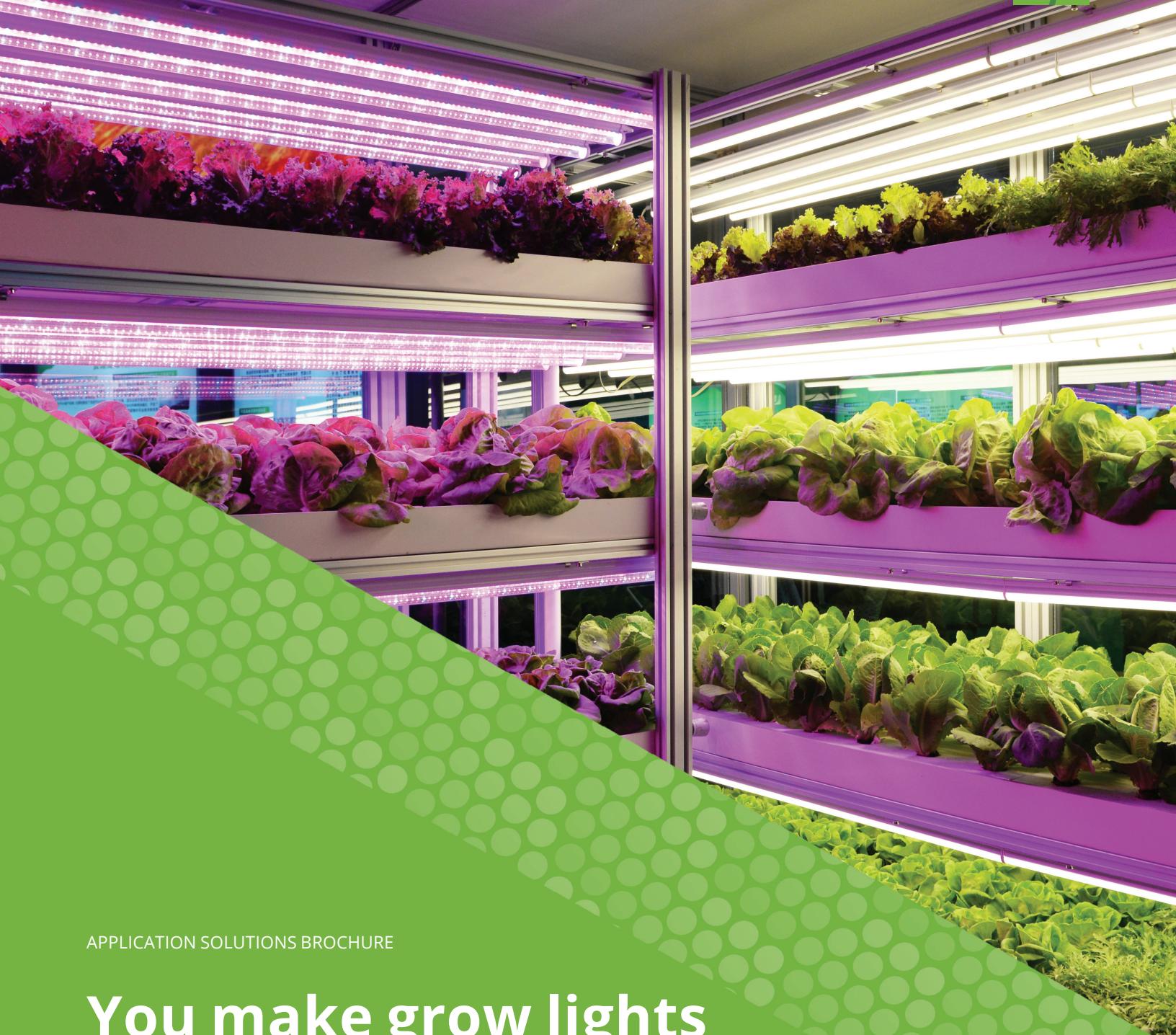




LUMILEDS



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.



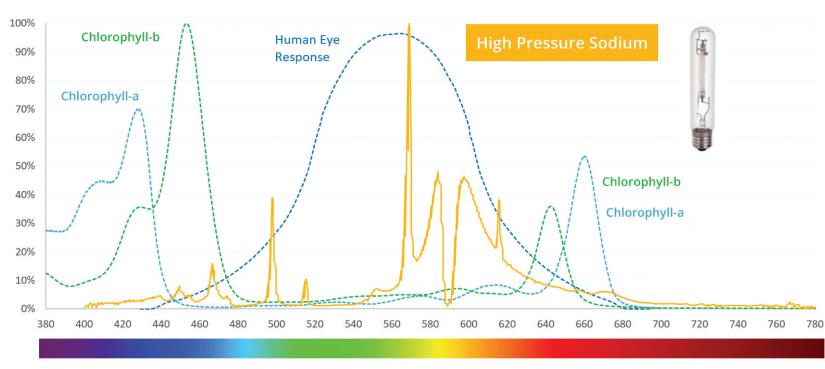
"LED horticultural luminaires are forecast to experience astronomical growth over the next 5 years"¹

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



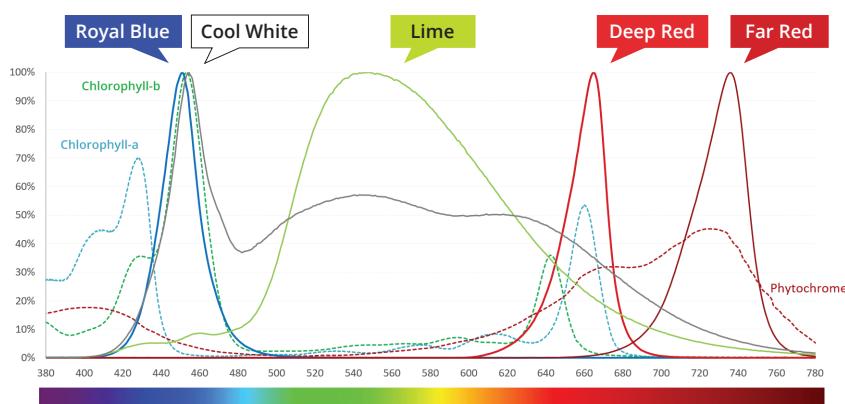
PPF
Photosynthetic Photon Flux
is used by plants for growth and
vital activities



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

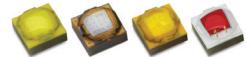
Phytochrome (for photoperiodism)
Far Red

Full Spectrum (for accessory pigments)
Cool White - Lime

LUXEON SunPlus Series LEDs

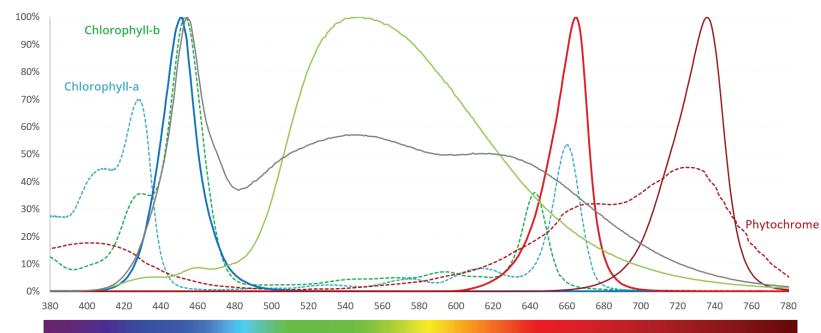
Delivering precise light to improve crop yield

LUXEON SunPlus 20 Line



Best for Spectral Control and High Photon Density

- Discrete colors to create your own light recipes
- Small source size, excellent for directional applications
- High PPF per LED enables compact designs

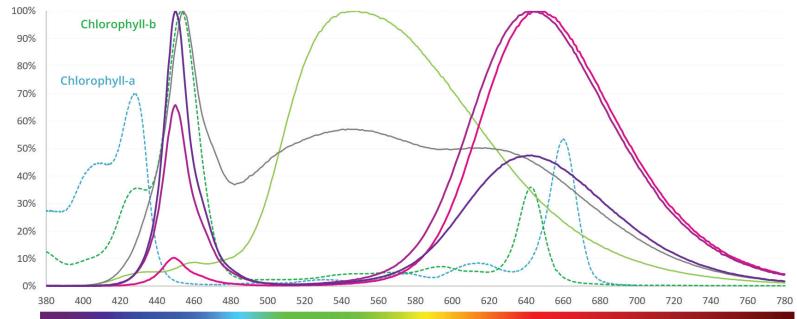


LUXEON SunPlus 35 Line



Best for Vertical Farming and Linear Applications

- Fixed spectra for quick designs (Purple)
- High uniformity at short distances
- The right light output enables vertical farming



LUXEON SunPlus Matrix Platform

Best for Ease of Design and Fast Time to Market

- Fully assembled LED arrays on flexible or rigid substrates
- Turnkey solution with full flexibility to fit existing fixtures
- Proprietary Oberon Technology for consistent growth performance



Built-to-Spec

Why LUXEON SunPlus LEDs?

Better Crops:

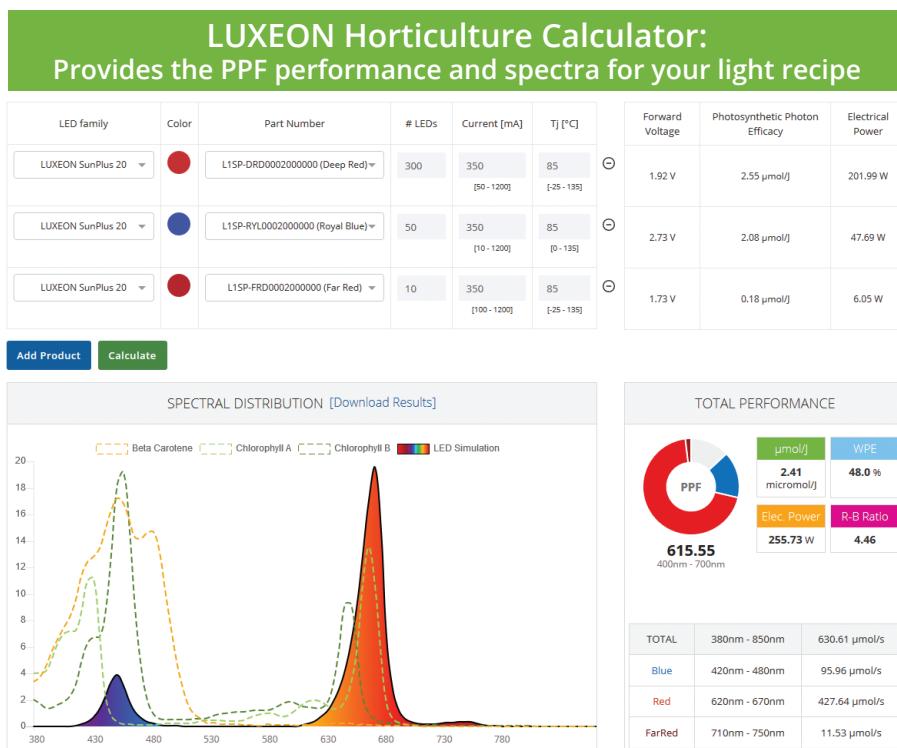
- Optimized LEDs that perfectly match the chlorophyll absorption peaks to drive intense photosynthesis and obtain greater yield, increased crop quality and consistent growth

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

Lumileds is the global leader in light engine technology. The company develops, manufactures and distributes groundbreaking LEDs and automotive lighting products that shatter the status quo and help customers gain and maintain a competitive edge.

With a rich history of industry "firsts," Lumileds is uniquely positioned to deliver lighting advancements well into the future by maintaining an unwavering focus on quality, innovation and reliability.

To learn more about our portfolio of light engines, visit lumileds.com/horticulture.



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