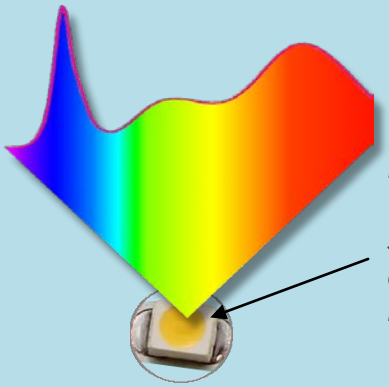
Lumimax
Optoelectronic Technology

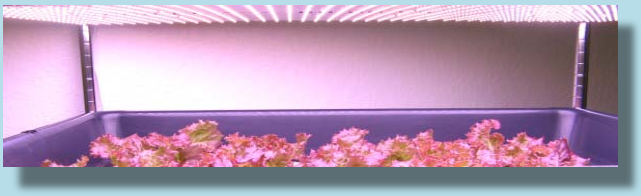
LED Grow Light

Announcing LED Grow Light Technology Breakthrough

Single Chip Wide-band Technology



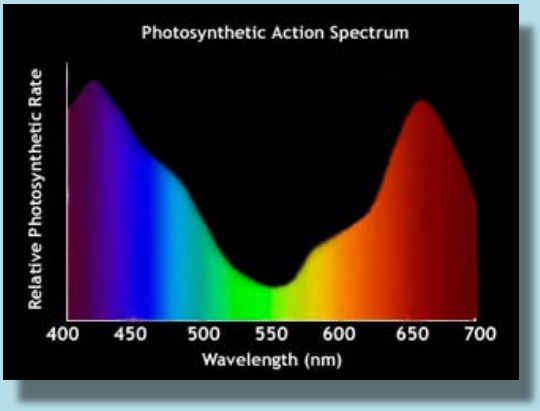
Patented Phosphor Technology allows single LED Chip to emit custom wide-band spectrum.



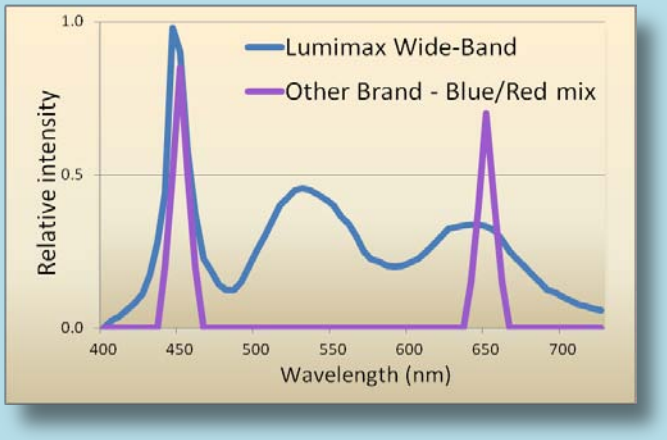
LED Grow Light Panel

Plant Growth Factor: PAR Light

Sunlight contains the complete spectrum of light including the Photosynthetically Active Radiation range (The PAR light spectrum, from red through yellow to blue and violet). Scientists and Researchers all know plants use the full PAR spectrum of light for photosynthesis and Blue/Red light have most effect on plant growth. Blue light promotes vegetative leaf growth and Red light, together with Blue light, promotes flowering and budding. Other colors of light in the PAR spectrum are also being use for Photosynthesis.



Our Technology



Lumimax's LED Grow Lights are built with custom Wide-band LED which is designed with patented Phosphor Technology. Unlike other manufacturer's design, using mix of Blue/Red or Blue/Orange/Red LEDs to make dual/tri band grow light, this new Phosphor Technology allows us to custom single LED chip to emit PAR light with desired intensity for each wavelength. Our Wide-band LED chip can provide a smooth and complete spectrum of PAR light focusing on plant growth as compare to other narrow spectrum mix LED design which can't provide complete PAR light spectrum.

A19 & T5 LED Grow Light Model

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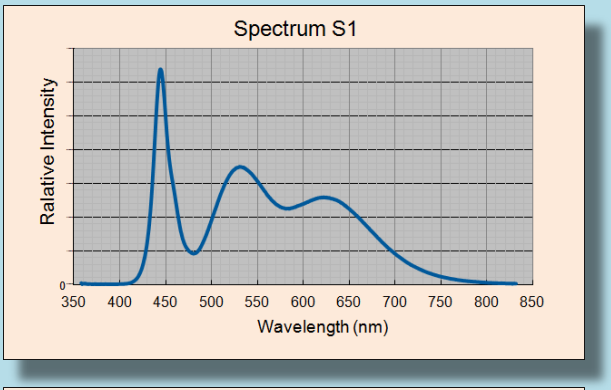
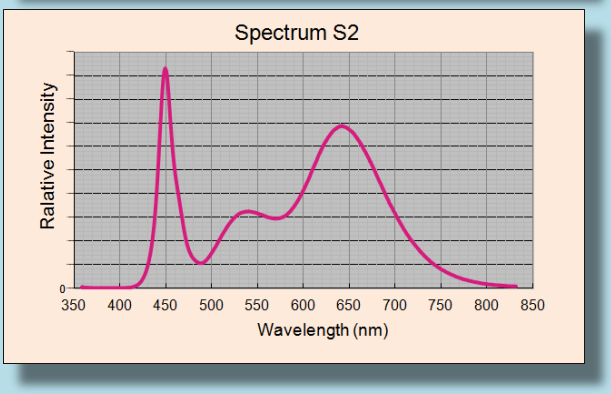
Light Quality – PAR Spectrum

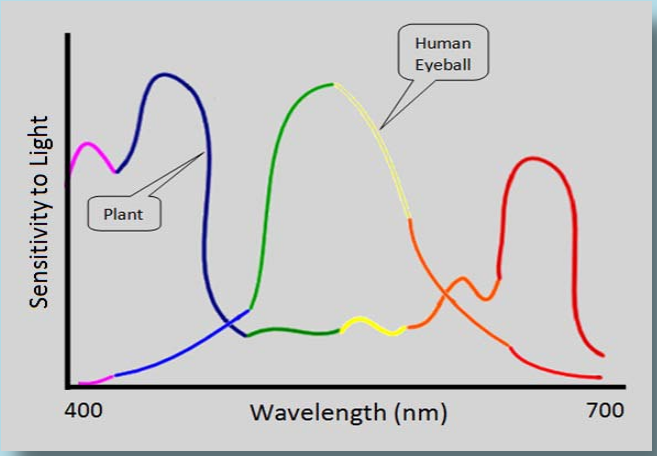
Photosynthetically Active Radiation (PAR) designates the spectral range (wave band) of solar radiation from 400 to 700 nanometers that plants are able to use in the process of photosynthesis. Different stages of plant growth require different spectra. Blue spectrum light will trigger a greater vegetative response in plants and Red spectrum light will trigger a greater flowering response in plants. However plants do not flourish in monochromatic or dichromatic light, they require full PAR spectrum of light to be able to reach their full potential.





All LED Grow Lights with mix Blue/Orange/Red LED design in the market now can only provide a narrow and incomplete PAR spectrum. They all miss out all other important part of the PAR spectrum. Our LED Grow Lights are tailored to rich in Blue/Orange/Red light and with enough light for all other wavelengths within the PAR spectrum, providing all color of light that plants use for in Photosynthesis. Lumimax offers 2 custom spectrums as standard options for our Grow Lights. **Spectrum S1** is custom for Green Plant and **Spectrum S2** is custom for full growth stage.

Light Intensity – Photosynthetic Photon Flux (PPF)



Most lighting products are designed for human application. The intensity of visible light is expressed in Lux (lumen/meter^2), a photometric unit based on the average sensitivity of the human eye. Plants have a completely different sensitivity for light than the human eye. This explains why bright light to human may not be “bright light” to plant. In fact the sensitivity of plant to light is just the opposite of human. For plant growth, it is important to define light as small light particles, called photons or quantum. Scientists and Researchers have demonstrated that the rate of photosynthesis is determined by the amount of Photons between 400-700nm wavelengths. This growth light is called Photosynthetic Photon Flux (PPF). This is the only reliable measure to clarify if a light source is suitable for photosynthesis. PPF is measured in micromoles per meter square per second (µmol/m^2/s) and different plant needs different amount of PPF. Unlike all other manufacturers, only show lumens output, we will show you the total PPF output for all our Grow Light.

Plant Type	µmol/m^2/s Needed
House Plant	>30
Mushroom	100
Green Plant (like Lettuce, Spinach)	150
Cron, Rice	400
Tomatoes & other Fruit Crops	400

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