

Horticulture | Microcosm

LED it grow!



1. Essence of Light

Light is the visible part of the electromagnetic spectrum and is essential for plant growth. Each plant responds differently to different wavelengths and intensities of light. Effective light recipes are important to obtain optimal plant growth, development and quality.

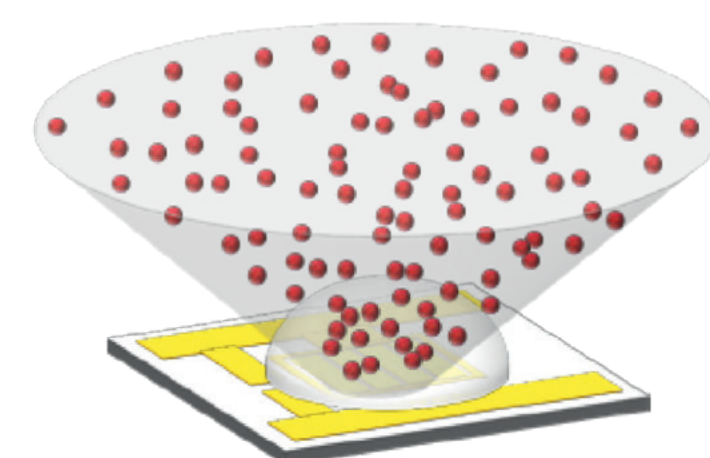
2. Why does a plant need light?

Light can be used to control:

- Photosynthesis
- Morphology
- Flowering
- Secondary metabolites
- Flavor and aroma

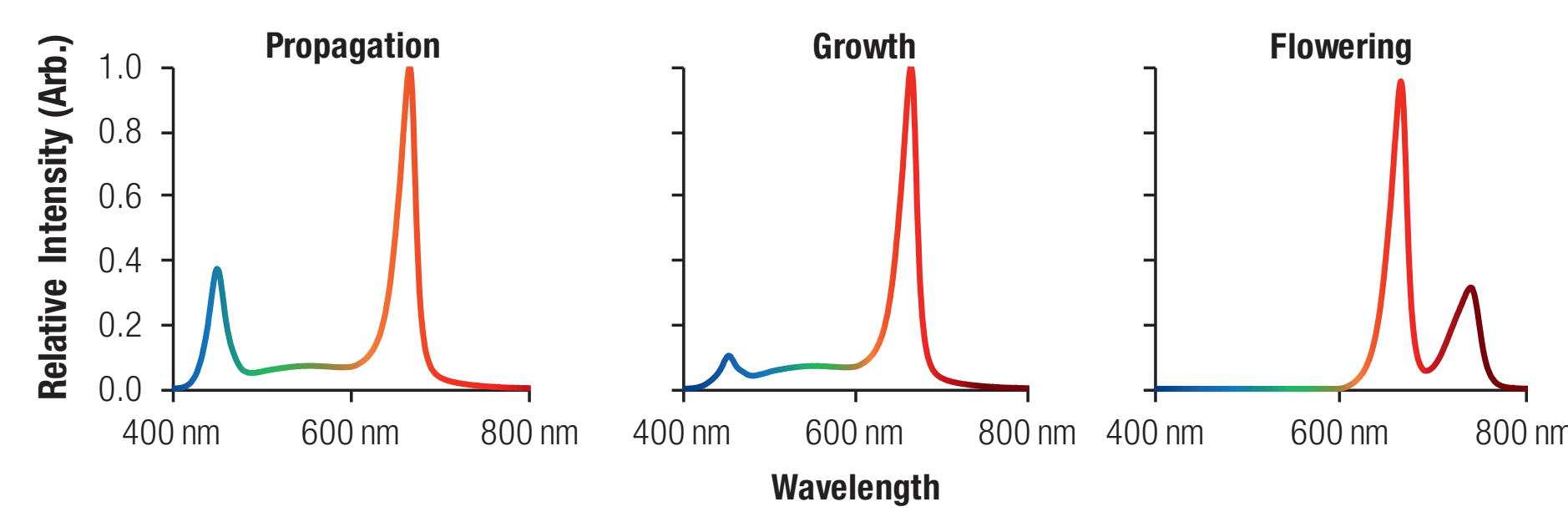
3. What does a plant need?

The important parameter is Photosynthetic Photon Flux or PPF. The PPF value indicates the amount of all photons emitted from a light source in all directions.

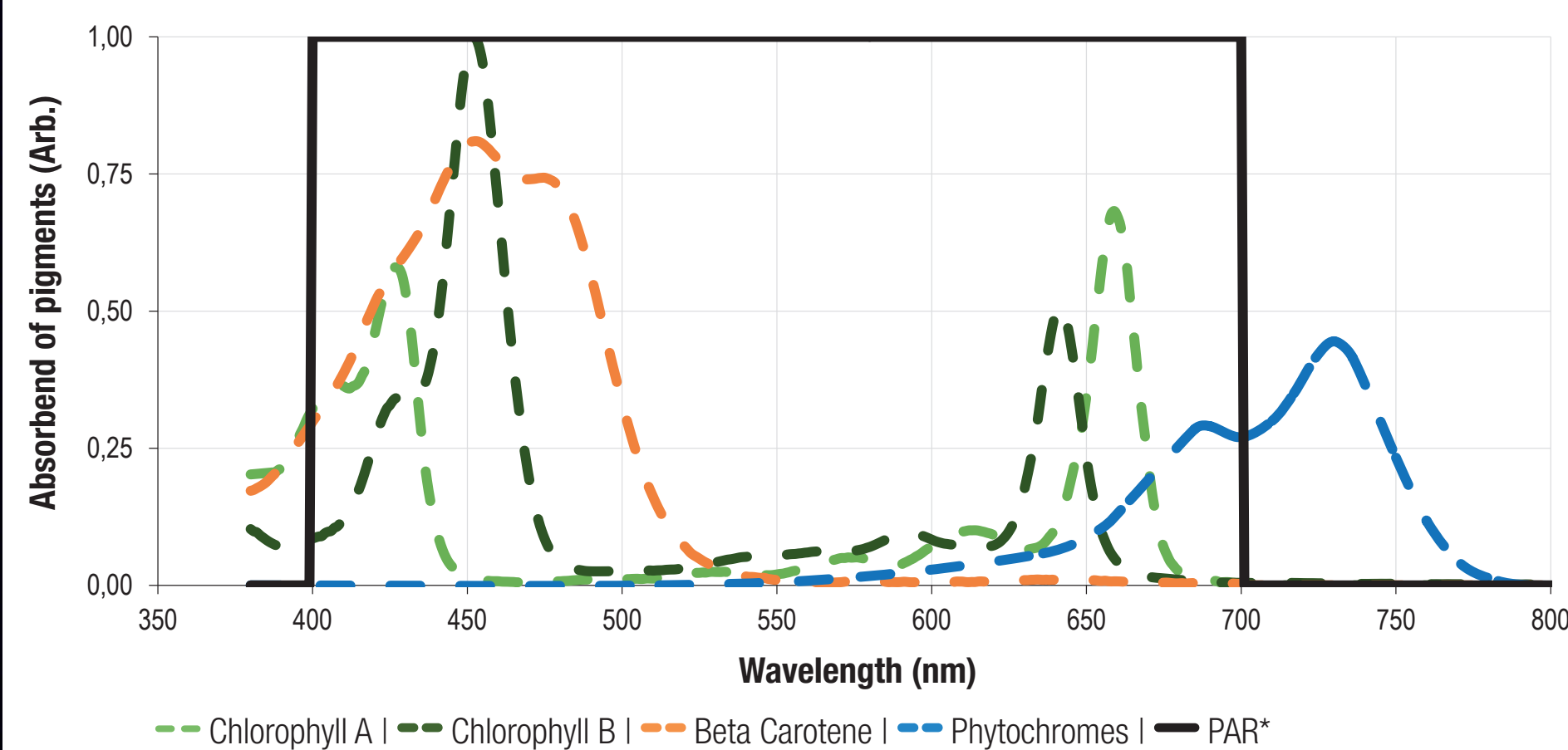


***PPF: Photosynthetic Photon Flux**
Rate of flow of photons within PAR. The amount of all photons emitted from a light source in all directions per second.

Light recipes for different developmental phases of plants



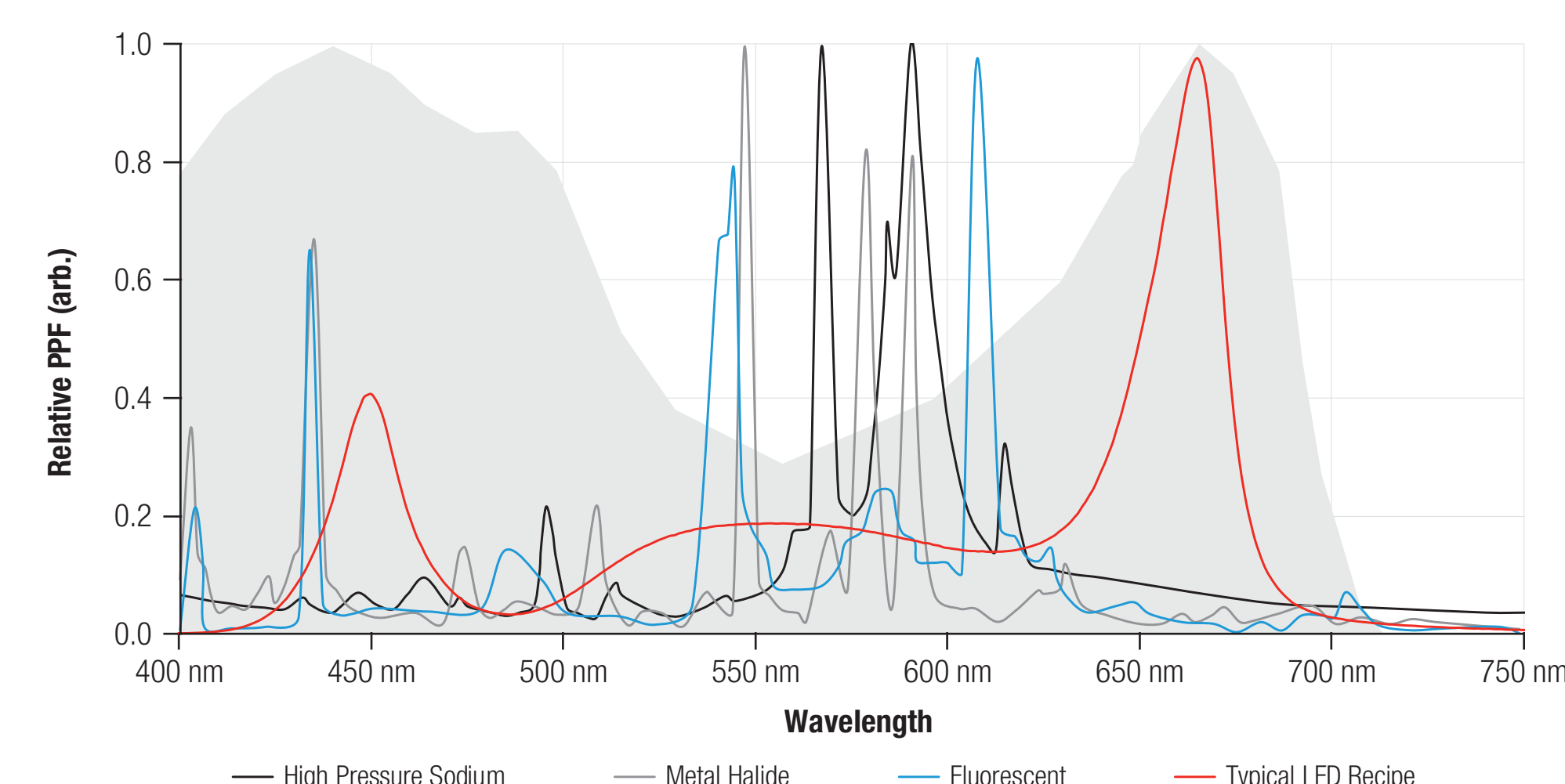
Photosynthetic Active Radiation (PAR)



There is a particular part of the radiation spectrum that is required by plants (spectral range 400–700 nm), called Photosynthetically Active Radiation or PAR.

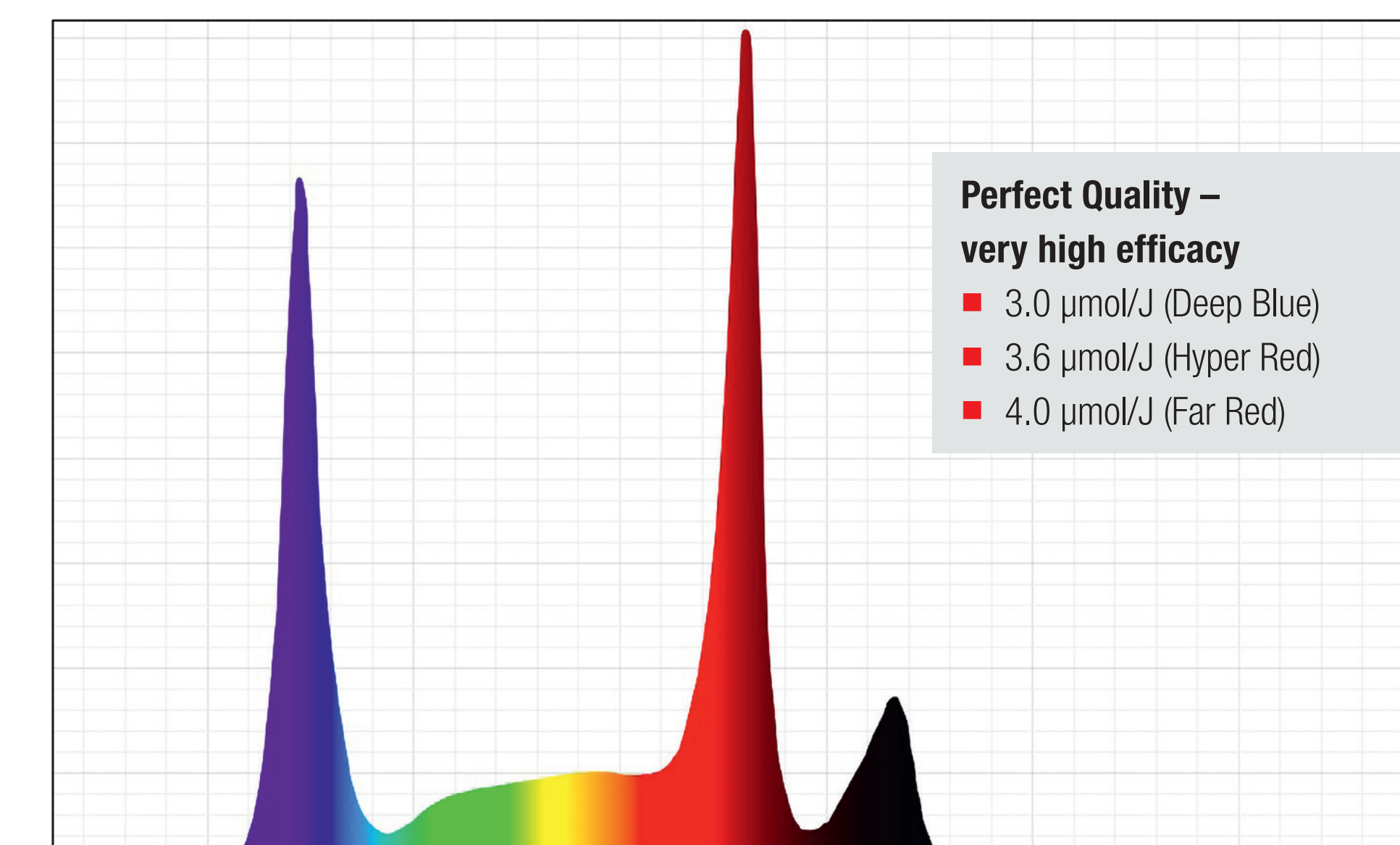
The PAR region is traditionally used to represent the wavelengths of light used by plants. However, it is now known that plants also respond to wavelengths outside of this region.

Different light sources in comparison

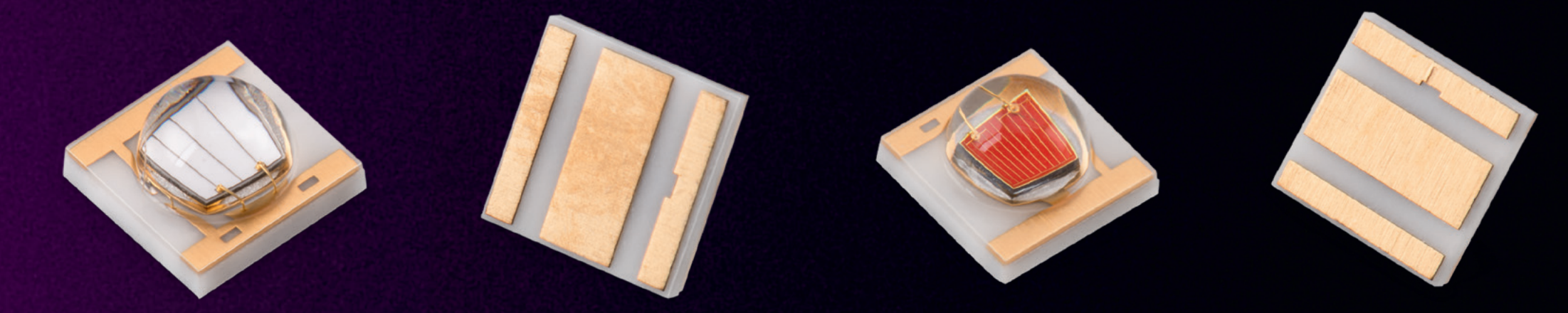


The shaded area represents the action spectrum of photosynthesis meaning any peak outside of this is wasted energy.

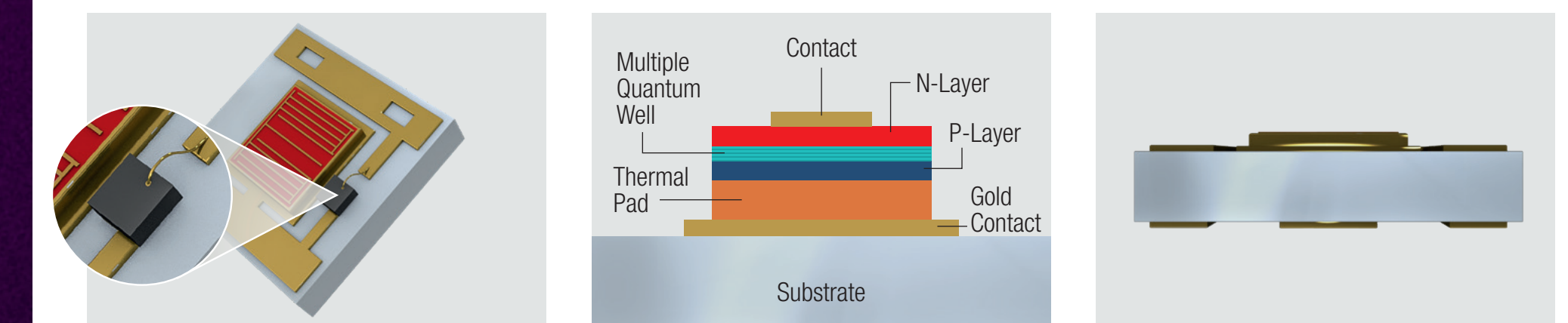
REDEXPERT – Horticultor



Make your own light recipe with all available colors.



Technology – Innovative structure



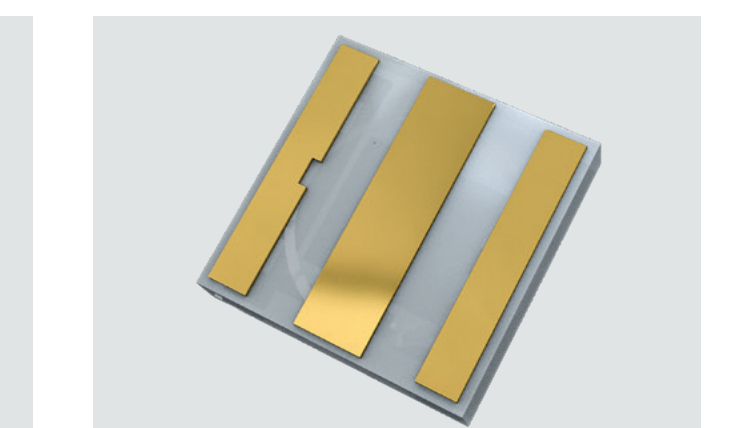
Zener diode for ESD protection

Vertical chip for perfect thermal stability and current control

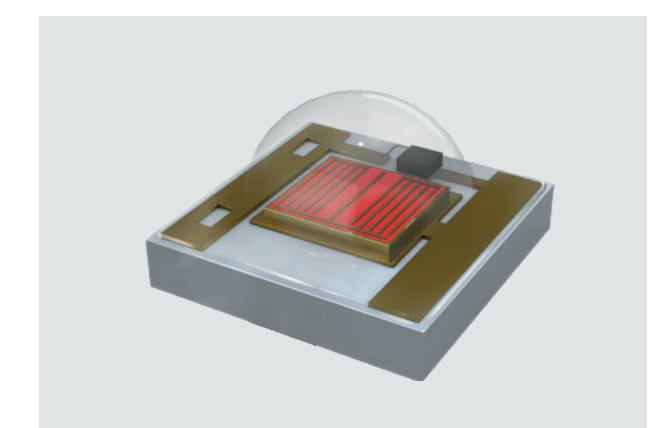
Ceramic substrate for low thermal resistance



Nonabsorbent material – MSL level 2



Gold contacts – low corrosion, perfect solderability



Small footprint – High emission power

Added values of light for your crop

- Increased production
- Improved plant quality
- Better plant consistency
- Shortening of the total growth cycle
- Better plant uniformity
- Better germination rate
- Energy savings

Competitive advantages

- Adjustable spectrum
- One footprint for all color
- Plant adapted spectrum
- Full spectrum
- Low thermal resistance

Our LEDs have been developed for customized light solutions for each grower.

Applications

- Vertical farming
- Indoor farming
- Grow box
- Intercanopy lighting
- Floriculture
- Aquarium lighting

