



# HORTICULTURE ARTICLE

## PPFD — A Grower's Best Friend

Written by  
Gretchen Heber



NeoSol NS LED grow light

In your search for LED grow lights, you may have encountered the acronym “PPFD.” An abbreviation for photosynthetic photon flux density, PPFD is a measure of the number of photons in the 400-700nm range of the visible light spectrum (photosynthetic active radiation or PAR) that fall on a square meter of target area per second. Why do you need to know this? Any light manufacturer can brag about the vast amount of light a fixture produces. But if that light isn’t getting to the target (i.e., the plant canopy), all that light is wasted. You flip the switch on your light source and much of the generated light will hit its intended target. However, a percentage of the light photons never make it to the target due to optical losses. Lost light is lost dollars, because you’re burning energy to send light photons off in directions you don’t want them to go.

Illumitex LED grow lights are built with breakthrough LED optics that extract and direct photons at the die level, delivering more usable light to the intended target, with considerably less light spillage than the lights of other manufacturers. We’ve created an LED package that emits light in a uniform, highly precise beam directly from the source.

Many lamp manufacturers still specify the output of their fixtures (flux) in lumens, though this just specifies how humans perceive the intensity of the light. Plants “see” a much different spectrum of light than do humans, so to accurately assess grow light LEDs, one must understand the amount of plant-usable light (photosynthetic photon flux or PPF) your fixture emits, the distance from the light to your plants, and your growing area.

To calculate the amount of usable light that is reaching your plant canopy you must first know the LED fixture’s PPF. Then you can use a PPFD calculator — inserting your particular growing parameters — to determine how much light your plants are actually getting from your fixture. Different plant species have different PPFD requirements, so compare your results to the PPFD your crop needs. Before you buy a light, learn about its PPF output. For example, Illumitex’s NeoSol DS emits a PPF of 720 $\mu$ mol. You want an LED grow light that uses the least amount of energy to generate the most amount of light that gets to your plant canopy and makes your plants grow. Illumitex’s patented LED optics will not disappoint.