



During time of sun light deficiency,



HPS grow lights.

Picture taken from Stuttgart

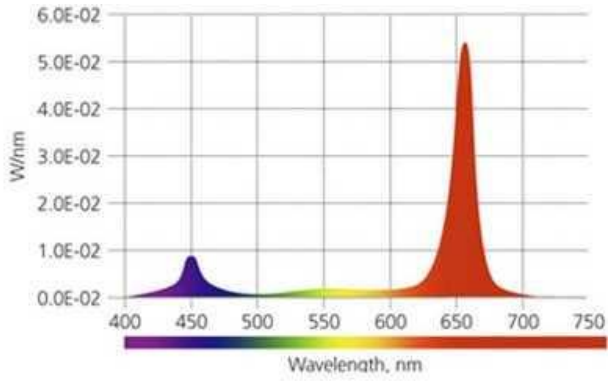
How to select the right grow light?

Plant life thrives in sunlight. It is essential for photosynthesis and allows plants to grow, bloom and bear fruit, both in nature and in greenhouses. In horticultural production it is recommended to use lamps which emit light waves of length 400 - 460nm and 600 - 660nm, because they supplement lacking light, necessary for photosynthesis process.

But not all HPS can be used as grow lights. We must know how much useful waves they contain for photosynthesis, so we measure them by PAR light.

What is PAR light?

Research by McCree (1972) among others has shown that plants use a broader light spectrum for photosynthesis, from 400 to 750 nm. Relatively they are less sensitive to green light but more sensitive to blue and especially red light than humans. The spectrum that aids photosynthesis is known as PAR light (Photosynthesis Active Radiation). The intensity of this growth light is expressed in the number of light particles or photon that reaches a surface per time unit ($\mu\text{mol/s}$).



Blue (400-499nm)	11.0%
Green (500-599nm)	7.7%
Red (600-699nm)	81.0%
Far Red (700-780nm)	0.3%

The McCree curve shows the sensitivity of plants to light colours.

The striking factor shown by the McCree curve is that plants use red light more efficiently for photosynthesis than other light colours. This means that grow lamps that emit relatively high quantities of red light will achieve higher levels of photosynthesis than lamps of the same intensity that emit less red light. Our lamps have been developed with this in mind; they efficiently convert the electricity used into growth light in the most useful spectrum.



Our LAMPS

We spent 2 years to improve the PAR light, with our efforts our HPS grow lights deliver high quantities of PAR light and have a long average service life.

The double ended construction was chosen so as to maximize optical efficiency in the luminaire, because unlike for single ended lamps there is no frame support wire running alongside the arc tube, which may cast a shadow in the beam. The position of the arc tube with respect to the pinch-seals is also tightly controlled, which permits optimal positioning within the luminaire's optics.

We use a metal disk as arc tube holder, it is not a simple holder. It stops the lighting emitting to two ends to reduce temperature, and also reflect lighting back at the same time to enhance the output. This is our special design.



Specification:
Base: K12x30s
Tube: T-32.5
Power: 1000W
Input voltage: 380 – 400V
Working voltage ballast: 230V
Current: 4.8A
PAR light: 2.100 $\mu\text{mol/s}$
Lifespan: 24.000 hours



Our 1000w double ended HPS grow light used in Denmark greenhouse.

600W HPS grow light is widely used in greenhouse and family garden all over the world. According to customers demand, we have 230V and 400V for choice.



Our 400W HPS grow light with our IP65 fixture in German greenhouse.

