Grow Green lamps

In light of profitable growing

LGH Leuchten-Großhandel GmbH
Mühlenstrasse 10
85567 Grafing bei München
Tel.: +49 8092 8507940
Email: kontakt@LGH-Licht.de

AUVL
ADVANCED UV LIGHT



High quality light for horticulture

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.

Bend the climate to your will

Greenhouses allow growers to bend the climate largely to their will. By adjusting temperature, humidity and CO2 concentration - the key factors for healthy growth - to the plants' needs, they can develop faster and better, they yield more and are less susceptible to disease. As a result, even tropical and sub-tropical plants can be grown in relatively cool regions.

Light is the limiting factor

At higher latitudes over 40 degrees north or south, the light during winter is a limiting factor. The shorter days and lower-intensity light mean that the level of photosynthesis is usually too low to maintain production and quality at the desired level.

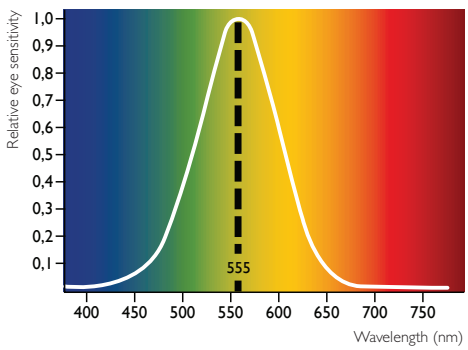
This problem can be resolved with artificial light, which enables growers to produce crops profitably all year round. That is why more and more growers are investing in high-quality supplemental light systems.

Grow Green lamps

To meet this increasing demand, the specialist German lamp manufacturer Advanced UV Light (AUVL) has developed ideal lamps for horticulture. Grow Green lamps emit light in the right spectrum, they are highly efficient and their low sensitivity to interference and long service life set them apart from other alternatives. In short, these grow lamps perform better and give a greater yield.

Light sensitivity of humans and plants

Light is, for the human eye, the visible part of the electromagnetic spectrum, covering roughly the 450 to 700 nanometre frequency range (spectrum). The human eye is most sensitive to light in the green/yellow range with a wavelength of around 550 nanometres, with much lower sensitivity to red and blue. The intensity of light in the range visible to the human eye is expressed in Lux.

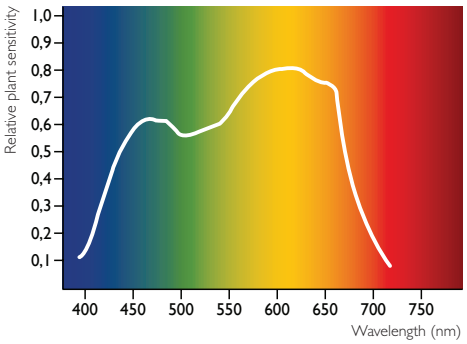


The human eye is most sensitive to green light.

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 reach a surface per time unit (µmol/s).



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

Efficiency

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. Grow Green lamps have been developed with this in mind; they efficiently convert the electricity used into growth light in the most useful spectrum.

Light frequencies and their effect on plants

Infrared light
- stimulates upward plant growth
- slows branching
- larger, thinner leaf
- promotes flowering and setting of fruit

Red light
- stimulates photosynthesis
- slows upward plant growth
- stimulates branching
- gives a smaller leaf surface with a thicker leaf

Red/infrared ratio
- plants are longer at a ratio of < 1

Blue light
- stimulates photosynthesis
- promotes translocation of assimilates
- stimulates the formation of chloroplasts and chlorophyll
- opens the stomata
- compact plant structure
- small, thick leaf

UV light
- promotes strength
- intensifies flower colour
- less chlorophyll

Source: Wageningen University and Research.

GROW GREEN lamps - a clear choice

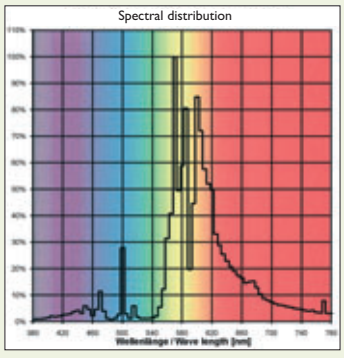
AUVL supplies four types of grow lamp, three of which are high-pressure sodium lamps. The undisputed flagship lamp is the Grow Green NH 1000 Watt 400 Volt high-pressure sodium lamp. Grow Green lamps deliver high quantities of PAR light and have a long average service life. Combined with a high-quality ballast and fittings, maximum yield is guaranteed.

GROW GREEN NH 1000 W, 400 V high-pressure sodium lamp

- Ideal for cultivation with a (high) light demand
- High proportions of red and blue light guarantee efficient photosynthesis
- Highest output of PAR light (1850 µmol/s) promotes photosynthesis
- Lots of red light for more photosynthesis and good plant development
- Blue light for a robust, compact plant structure

Specification:

Output	1000 W
Current	4.8 A
Voltage	230 V
Ignition voltage	2.8 kV
PAR light	1850 µmol/s
Expected service life	10.000 hours
Art. No.	16000250

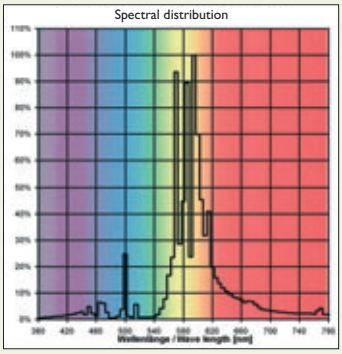


GROW GREEN NH 600 W, 400 V high-pressure sodium lamp

- Ideal for cultivation with a light demand
- Slimline E40 fitting for faster installation and replacement
- High proportions of red and blue light guarantee efficient photosynthesis
- High output of PAR light (1150 µmol/s) promotes photosynthesis
- Lots of red light for more photosynthesis and good plant development
- Blue light for a robust, compact plant structure

Specification:

Output	600 W
Current	3.8 A
Voltage	190 V
Ignition voltage	4 kV
PAR light	1150 µmol/s
Expected service life	12.000 hours
Art. No.	16000252

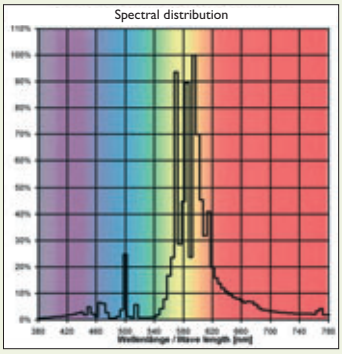


GROW GREEN NH 600 W, 230 V high-pressure sodium lamp

This grow lamp is ideal for less heavy-duty installations operation on the 230 V mains network. The lower lamp voltage and the current mean that the light yield of 1100 µmol/s is lower than that of the 600 W, 400 V lamp.

Specification:

Output	600 W
Current	6.3 A
Voltage	115 V
Ignition voltage	4 kV
PAR light	1100 µmol/s
Expected service life	12.000 hours
Art. No.	16000254



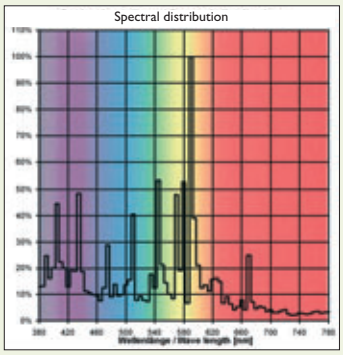
GROW GREEN HM 600 W, 230 V

The HM 600 W, 230 V metal halide lamp has been specially developed for cultivation with a relatively high requirement for blue and UV light. These lamps stimulate leaf growth in compact plant development that follows a period of upward growth and promote strength.

- High proportions of blue and UV light make the lamp ideal for compact plant structure and strength
- Slimline E40 fitting for faster installation and replacement
- High output of PAR light (710 µmol/s) promotes photosynthesis
- Energy-saving lamp
- Long service life of approx. 8000 hours

Specification:

Output	600 W
Current	5.7 A
Voltage	120 V
Ignition voltage	4 kV
PAR light	710 µmol/s
Expected service life	8.000 hours
Art. No.	16000255

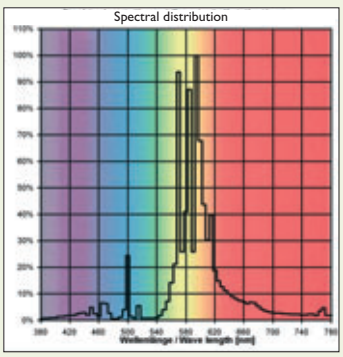


GROW GREEN NH 400 W, 230 V

- Ideal for cultivation with a moderate light demand
- Slimline E40 fitting for faster installation and replacement
- High proportions of red and blue light guarantee efficient photosynthesis
- High output of PAR light (660 µmol/s) promotes photosynthesis
- Lots of red light for more photosynthesis and good plant development
- Blue light for a robust, compact plant structure

Specification:

Output	400 W
Current	4.2 A
Voltage	100 V
Ignition voltage	4 kV
PAR light	660 µmol/s
Expected service life	12.000 hours
Art. No.	16000256

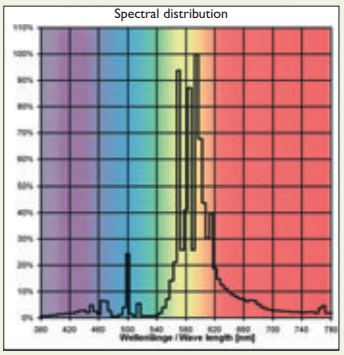


GROW GREEN NH 250 W, 230 V

- Ideal for cultivation with a moderate light demand
- Slimline E40 fitting for faster installation and replacement
- High proportions of red and blue light guarantee efficient photosynthesis
- High output of PAR light (310 µmol/s) promotes photosynthesis
- Lots of red light for more photosynthesis and good plant development
- Blue light for a robust, compact plant structure

Specification: NH 250 NEW

Output	250 W
Current	3.0 A
Voltage	100 V
Ignition voltage	4 kV
PAR light	310 µmol/s
Expected service life	8.000 hours
Art. No.	16000291



Product overview:

NH 1000 W, 400 V | NH 600 W, 400 V | NH 600 W, 230 V | HM 600 W, 230 V | NH 400 W, 230 V | NH 250 W, 230 V

Output	1000 W	600 W	600 W	600 W	400 W	250 W
Current	4.8 A	3.8 A	6.3 A	5.7 A	4.2 A	3.0 A
Voltage	230 V	190 V	115 V	120 V	100 V	100 V
Ignition voltage	2.8 kV	4 kV	4 kV	4 kV	4 kV	4 kV
PAR light	1850 µmol/s	1150 µmol/s	1100 µmol/s	710 µmol/s	660 µmol/s	310 µmol/s
Expected service life	10,000 hrs	12,000 hrs	12,000 hrs	8,000 hrs	12,000 hrs	8.000 hrs
Art. No.	16000250	16000252	16000254	16000255	16000256	16000291