

# HORTURION HPS

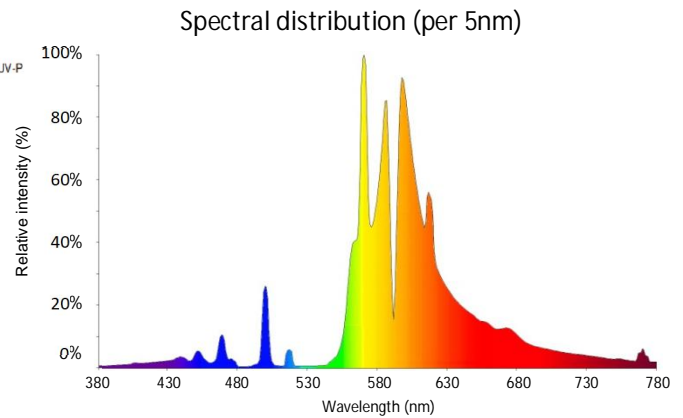
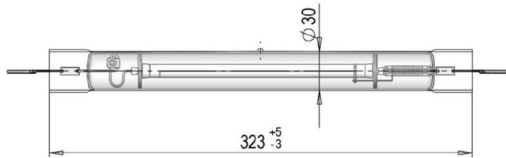
## HORTURION HPS 1000 W DE EL 2.2

High pressure sodium lamp for plant growth

**Application**                      **Efficient grow lighting for professional greenhouses and turf lighting.**

- Description**
- Spectral distribution optimized for photosynthesis efficiency
  - High red light ratio and blue output for healthy plant growth and robustness
  - Superior  $\mu\text{mol}$  output within the PAR spectral range (Photosynthesis Active Radiation)
  - High PAR maintenance over lifetime
  - Easy lamp change

### 1. Specifications

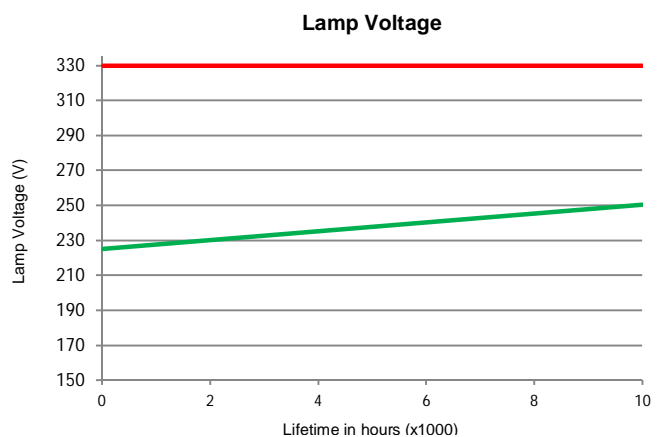
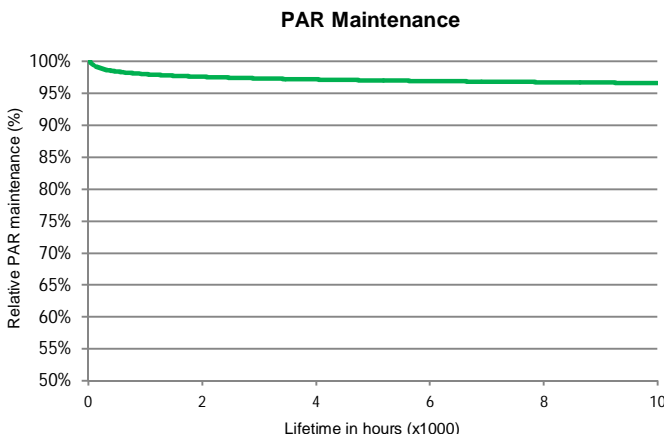


Designation                      HPS 1000 W DE EL 2.2  
 Part number                      103403 (216310)  
 ILCOS-Code                      ST-1000-E230/S-Litze-33,5/330

Lamp power                      1 000 W  
 Lamp current                      4.35 A  
 Lamp voltage                      230 V  
 Ignition voltage                      3.2 kV (peak to earth)

PAR                                      2 100  $\mu\text{mol/s}$   
 Service lifetime                      10 000 h  
 Power supply (PS)                      1 000 W electronic / 100-150 kHz  
 PS output power                      1 015 W

Base                                      cables for lamp holder K12x30S  
 Bulb contour                      tubular  
 Bulb type                              clear



HORTURION HPS 1000 W DE EL 2.2 (the trend line is based on tests under defined and stable laboratory conditions. Measurements are performed on naked lamps in an Ulbricht sphere with a Licor LI 190)

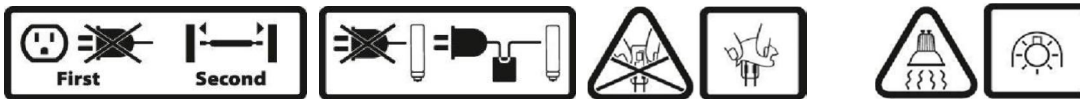
— Electronic Control gear safety switch off  
 — HORTURION HPS 1000 W DE EL 2.2 (the measurements are performed in an Ulbricht sphere with a Net frequency of 50Hz and a configured lamp power of 1000 W)

All data are nominal values and subject to the usual tolerances. Ushio Germany reserves the right to make technical changes at any time without prior notice.

## 2. Intended use

- HORTURION® HPS lamps are intended for the use in professional greenhouses and for turf lighting.
- Ushio has a strict policy that these lamps must not be used for any illegal purpose or activity in any country and/or jurisdiction and disclaims any association with illegal growing activities. **For U.S. and Canadian customers:** Prior to each sale of any lamps to any particular end-user, it is the distributor's responsibility to take commercially reasonable steps to independently verify that all end-users of the lamps (1) have valid and current licenses and/or permits from the applicable state and local jurisdictions for such end-user's horticultural (including cannabis) operations, (2) are utilizing the lamps in compliance with such state and local jurisdiction's regulations regarding commercial cannabis operations, and (3) are not otherwise operating in violation of U.S. federal enforcement priorities related to cannabis.
- Only use lamps in open luminaires as a closed luminaire will overheat the lamp.
- The power supply needs to comply with the specifications set out in the datasheet.
- Only operate the lamp in its designated operating position p4.
- The lamp must be ignited at specified ignition voltage and operated at rated lamp power (+/- 3%). Dimming or boost operation beyond the nominal power tolerances are not permitted.
- Do not operate the lamp beyond its rated service life. The risk of a lamp bursting increases with lamp age, temperature, improper operation and mishandling. Group re-lamping is always recommended at or before the end of the rated lamp life.
- The lamp must be operated with switching cycle intervals which are longer than 180 minutes.

## 3. Safety instructions for installation, operation and maintenance



- It is essential to observe the following safety instructions for installation, operation and maintenance.
- Always turn off the electrical power before inserting, removing, or cleaning the lamp
- The lamps must be installed by an expert and operated in accordance with the mounting specifications into fixtures intended for this type of lamp, along with the components intended and suitable for that purpose (see also „Intended use“).
- Wear protective gloves to avoid fingerprints.
- Never bump, drop, apply excessive stress, or scratch the lamp. This could cause the lamp to burst! Do not operate any lamps with any traces of scratches, cracks, or physical damage
- Affix the lamp securely in the lamp holder and make sure that the lamp is correctly positioned.
  - The side of the lamp with the getter and the product stamp has to be inserted into the lamp holder where the ignition voltage is applied.
  - The side with the triple capacitor has to be inserted into the lamp holder connected to the neutral line of the PS.
  - The burner filament has to be on top facing the reflector.



- A PS (power supply)
- 1 Connection to the lamp holder where the ignition voltage is applied
- 2 Getter and product stamp on the outer bulb
- 3 Burner filament
- 4 Triple capacitor
- 5 Connection to the lamp holder connected to the neutral line of the PS

- Make sure that the lamp holders are correctly closed before operation
- Electrical connections should be clean and in good condition. Replace lamp holders when needed.
- Improper installations will cause electrical arcing, overheating and short life to lamp and socket.
- Clean any dirt, oil, or lint away from the lamp with alcohol and a lint-free cloth or tissue. Dirt or other contaminants, like e.g. fertilisers or pesticides, will affect light output and may cause the lamp to overheat, decrease lamp life or cause the lamp to burst.
- Never touch the lamp when it is on, or soon after it has been turned off, as it is hot and will cause serious burns. Lamps should be allowed to cool down for a minimum of 10 minutes after the lamp is switched off.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.
- Do not use the lamp in close proximity of paper, cloth or other combustible material that can cause a fire hazard.

#### 4. Safety instructions for broken lamps



In case of a broken ceramic burner, mercury can be released. Make sure in that case to properly ventilate the area and avoid contact with the substance. If the burner was cold when broken, Mercury can be recognized as small silver/black shining balls.

- Wear plastic gloves, catch the balls using a tissue paper and dispose responsibly.
- Wash your hands thoroughly after this process. It is very unlikely such small concentrations are harmful.