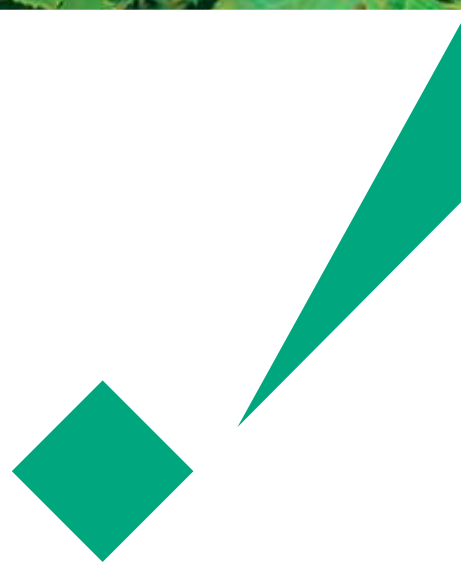




Horticulture lighting

HORTURION® lamp series and power supplies



HORTURION® Series

Your trusted quality label

Ushio Germany has been an established name in the field of horticulture for almost two decades, and its HORTURION® HPS lamp series enjoy a worldwide reputation. In recent years the company further expanded its product portfolio, and has always invested with undiminished intensity in research and development of lamp technologies.

Besides the development, production and sales sites in Germany and Poland, the HORTURION® series is distributed via our Ushio sales office in Oude Meer, the Netherlands, and a global sales force.

Quantum leap through technology

For a long period of time the output of a 1000 W HPS lamp was restricted below 2000 $\mu\text{mol/s}$. The reason for the restriction was the gas pressure inside the burner and the technology used to ignite the lamp.

In 2013, our engineers optimised the gas pressure and developed a novel ignition technology, called HORTURION® triple capacitor. This opened the way for a new lamp generation making the HORTURION® HPS one of the most efficient and most stable HPS lamps currently available.

In-house research & development center

In-house engineering facilities, equipped with latest technology and sophisticated devices for precise measurement and testing allowing for innovations and world premieres like the first 1000 W / 2200 $\mu\text{mol/s}$ HPS lamps.

Production plant at Ushio Poland

Our production facility, inaugurated in 2017, has considerable capacity with a total area of almost 6000 m². At full capacity, 1 million lamps for professional greenhouse lighting can be manufactured here per year.

This signifies that Ushio is not only a trustworthy partner for lamps of highest quality, but is also able to reliably produce and deliver orders with very high quantities for large scale projects.



HORTURION® HPS 1000 W DE EL suprema



Most efficient HPS 1000 W lamp with 2200 $\mu\text{mol/s}$ light output

- ◆ Efficient growth lighting for professional greenhouses and turf lighting
- ◆ Optimised spectral distribution for high photosynthesis efficiency
- ◆ High red light content and blue light output for healthy plant growth and resistance
- ◆ Best-in-class photosynthetically active radiation (PAR): 2200 $\mu\text{mol/s}$ @ 1000 W
- ◆ High PAR value stability over the entire service life
- ◆ Simple lamp change

The HORTURION® HPS 1000 W suprema is the latest innovation of Ushio Germany in the field of plant growth light, introduced in March 2022. It is the world's first HPS 1000 W lamp with a light output of 2200 $\mu\text{mol/s}$ and therefore the most efficient HPS 1000 W lamp ever introduced in the market. The HORTURION® suprema enables greenhouse operators to achieve a significant increase in yield and thus higher income with the same energy input.

HORTURION® HPS 1000 W DE EL supra plus



Efficient HPS 1000 W lamp with 2180 $\mu\text{mol/s}$ light output

- ◆ Growth lighting for professional greenhouses and turf lighting
- ◆ Optimised spectral distribution for high photosynthetic efficiency
- ◆ High red light content and blue light output for healthy plant growth and resistance
- ◆ High PAR value stability over the entire service life
- ◆ Simple lamp change

HORTURION® HPS 1000 W DE EL supra



HPS 1000 W lamp with 2140 $\mu\text{mol/s}$ light output

- ◆ Efficient growth lighting for professional greenhouses and turf lighting
- ◆ Optimised spectral distribution for photosynthetic efficiency
- ◆ High red light content and blue light output for healthy plant growth and resistance
- ◆ High PAR value stability over the entire service life
- ◆ Simple lamp change

HORTURION® HPS 1000 W DE EL 2.2 standard



HPS 1000 W lamp with 2100 $\mu\text{mol/s}$ light output

- ◆ Growth lighting for professional greenhouses and turf lighting
 - ◆ Optimised spectral distribution for photosynthesis efficiency
 - ◆ High red light content and blue light output for healthy plant growth and resistance
 - ◆ High PAR value stability over the entire service life
 - ◆ Simple lamp change
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HORTURION® HPS DE series



Double-ended high-pressure sodium lamps

- ◆ Different power levels: 600 W / 750 W / 1000 W
- ◆ High efficiency (PAR value)
- ◆ High PAR value stability over the entire service life
- ◆ Very long service life, long maintenance intervals
- ◆ Optimised spectral distribution for healthy plant growth
- ◆ Precise positioning in the luminaires for improved light distribution
- ◆ 600 W to 1000 W lamps compatible with luminaires for double-ended lamps
- ◆ Optimum efficiency in combination with HORTURION® power supply units

Over the last 30 years, high-pressure sodium lamps (HPS) have brought proven benefits to horticulture. The colour spectrum is rich in red and far-red light, which stimulates elongation growth and optimises fructification. Therefore, it is best suited to increase yield. Further, the heat emission of the lamps supports assimilation by slightly increasing the leaf temperature. This is especially an advantage during the colder months when low temperatures normally reduce plant growth. In other words: HPS light helps to shorten the harvest cycle.

HORTURION® HPS E40 series



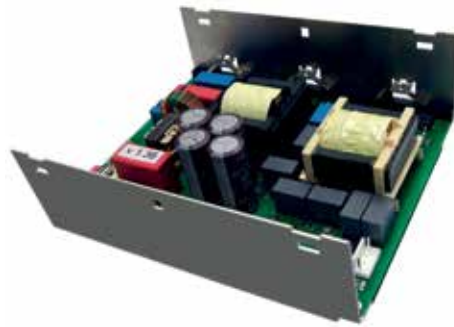
Single-ended high-pressure sodium lamps

- ◆ Different power levels: 600 W / 750 W
- ◆ High efficiency (PAR value)
- ◆ High PAR value stability over the entire service life
- ◆ Very long service life
- ◆ Long maintenance intervals
- ◆ Optimised spectral distribution for healthy plant growth

HORTURION® PS

Electronic power supplies

- ◆ Reliable and efficient power supplies for all HORTURION® HPS lamps up to 1000 W
- ◆ 0-10 V dimmable HPS 1000 W version available
- ◆ High efficiency up to 97% and optimised heat dissipation
- ◆ EMC-compliant and equipped with all necessary safety functions, including a wireless readout system
- ◆ Also ideal for hybrid solutions with interlighting
- ◆ Developed and manufactured in Germany



Like the HORTURION® HPS lamps, the highly efficient HORTURION® PS power supplies are an in-house development and are therefore perfectly matched to these lamps. However, due to their standard design and electrical specification they are also suitable for comparable lamps and luminaires from other manufacturers. Temperature monitoring, lamp detection, and the detection of overvoltage and undervoltage ensure safe operation. An LED status display visually indicates the operating conditions. Status messages and internal data can be determined via an external readout device and made available for further processing.

Article no. (single packaging)*	Designation	Input voltage range / nominal [Vac]	Nominal frequency [Hz]	Nominal system power [W]	Power factor (nominal)	Efficiency (nominal) [%]	Nominal output power [W]	Lamp ignition voltage (min. / max.) [kV]
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HORTURION PS power supplies

104098	PS 600 W 400 V							
116774	PS 600 W 400 V NF "STEP"	360 - 440 / 400	50/60	630	0.99	96.5	610	3.0 / 3.25
104099	PS 750 W 400 V							
116776	PS 750 W 400 V NF "STEP"	360 - 440 / 400	50/60	790	0.99	96.5	760	3.0 / 3.25
108258	PS 1000 W 400 V							
116778	PS 1000 W 400 V NF "STEP"	360 - 440 / 400	50/60	1 035	0.99	96.5	1 000	3.0 / 3.25
112068	PS 1000 W 400 V 0-10 V							
116779	PS 1000 W 400 V 0-10 V NF "STEP"	360 - 440 / 400	50/60	1 035	0.99	96.5	1 000	3.0 / 3.25

Your Ushio sales partner will be happy to advise you on which variant fits best in your greenhouse luminaire.

HORTURION PS accessories

111095	TL CTRL-CBL BL 100CM (control cable for 0-10 V dimmable version)
104097	READ OUT DEVICE KIT

* Larger quantities available in bulk packaging.

Compatible with most standard greenhouse luminaires ◆ Highly efficient with HORTURION® HPS lamps ◆ 0-10 V dimmable version for 1000 W HPS lamps
 ◆ Required input connector (from grid): Neltron 2114H-06; 4 contacts (L, empty, L, empty, 2xPE) ◆ Required output connector (to lamp): Neltron 2114H-04; 2 contacts (HV, empty, empty, neutral) ◆ Ambient temperatures 0-35 °C (25 °C nom.) ◆ Dimensions L x B x H [mm]: 181 x 151 x 58 ◆ Weight [kg]: 0.9

HORTURION® HPS lamps

Article no. (single packaging)*	Designation	Ignition voltage [kV]	Lamp current [A]	Nominal lamp power [W]	PAR [$\mu\text{mol/s}$]	Colour temperature [K]	Colour rendering index Ra / Colour rendering level	Nominal service life [h]
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HORTURION HPS E40

103393	HPS 600 W 230 V E40	4.0	6.3	600	1 000	n.a.	n.a.	12 000
103387	HPS 600 W 400 V E40	4.0	3.8	600	1 150	n.a.	n.a.	12 000
103396	HPS 600 W 400 V E40 EL+	4.0	3.2	600	1 150	n.a.	n.a.	10 000
103412	HPS 750 W 400 V E40 EL	4.0	3.6	750	1 360	n.a.	n.a.	12 000

HORTURION HPS K12x30S

103399	HPS 600 W DE EL	3.2	3.2	600	1 150	n.a.	n.a.	10 000
103415	HPS 750 W DE EL	3.2	3.6	750	1 450	n.a.	n.a.	10 000
103403	HPS 1000 W DE EL 2.2 standard	3.2	4.8	1 000	2 100	n.a.	n.a.	10 000
107990	HPS 1000 W DE EL supra	3.2	4.4	1 000	2 140	n.a.	n.a.	10 000
115342	HPS 1000 W DE EL supra plus	3.2	4.4	1 000	2 180	n.a.	n.a.	10 000
116417	HPS 1000 W DE EL suprema	3.2	4.4	1 000	2 200	n.a.	n.a.	6 000



Further Information

For more information on our horticulture product portfolio, visit our website or contact us directly under +31 621 82 61 31.

Developing Solutions Together

Ushio is a partner that listens to your ideas and requirements. Let us optimise your processes according to your specifications and expectations. Use our expertise to develop a tailor-made solution that matches your needs.

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