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PLANTASTAR®

Technical Information

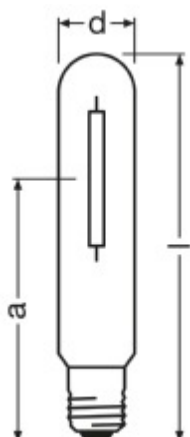


PLANTASTAR®

General product description

- High pressure sodium lamp especially for horticultural lighting
- Ideal for assimilation lighting in horticulture
- Optimized filling with adapted spectra for profitable plant growth
- Photon flux > 90% after 12000 hours
- Lamp replacement after 12000 hours is recommended in order to ensure an optimal and continuous growth
- Centrally-located, durable ceramic arc tube with sodium-amalgam filling
- Advanced Ignition System (AIS), for longer lamp life and reduced starting time
- Advanced Shock Resistance (ASR), flexible mounting of the burner for longer lamp life
- Simple and strong construction, only 5 welding points of electric circuit for longer life
- E40 ceramic base, nickel-plated brass for corrosion resistance, ideal for use in humid environment

Basic technical description



Product reference	Nominal lamp wattage	Cap	Comp. Cap. @50hz, $\cos \phi \approx 0.9$	Length max. (l)	Diameter (d)	Weight per piece	Light centre length (a)	Typical lamp voltage ¹	Typical lamp current ¹
	[W]		[μ F]	[mm]	[mm]	[g]	[mm]	[V]	[A]
PLANTASTAR 250W inter	250	E40	32	257	47	148	158	100	3.0
PLANTASTAR 400W	400	E40	45	285	47	174	175	100	4.5
PLANTASTAR 600W	600	E40	65	285	47	187	175	110	6.1
PLANTASTAR 600W/400V	600	E40	65	285	47	182	175	210	3.5

Performance specification

Product reference	Rated lamp wattage	Rated system wattage ²	Luminous flux	Luminous efficacy	Photon flux	Photon flux efficacy	Recommended use time
	[W]	[W]	[lm]	[lm/W]	[μ mol/s]	[μ mol/s/W]	[h]
PLANTASTAR 250W inter	255	n.a.	33200	130	420	1.60	12000
PLANTASTAR 400W	400	n.a.	56500	141	725	1.70	12000
PLANTASTAR 600W	600	n.a.	90000	150	1100	1.73	12000
PLANTASTAR 600W/400V	620	n.a.	87000	140	1150	1.80	12000

¹ Refers to operation with a reference conventional NAV ballast at 50Hz.

² With OSRAM POWERTRONIC PTi, PT-FIT or PTo

Product reference	Lamp lumen maintenance factor (LLMF) vs. operation hours				
	2000h	4000h	6000h	8000h	12000h
PLANTASTAR 250W inter	98%	97%	96%	95%	94%
PLANTASTAR 400W	98%	97%	96%	95%	94%
PLANTASTAR 600W	98%	97%	96%	95%	94%
PLANTASTAR 600W/400V	98%	97%	95%	94%	93%

Product reference	Lamp survival factor ³ (LSF) vs. operation hours				
	2000h	4000h	6000h	8000h	12000h
PLANTASTAR 250W inter	99%	99%	98%	98%	97%
PLANTASTAR 400W	99%	99%	98%	98%	97%
PLANTASTAR 600W	99%	99%	98%	98%	97%
PLANTASTAR 600W/400V	99%	98%	98%	97%	95%

Operation conditions

Product reference	Burning position	Max. permitted outer bulb temperature [°C]	Max. permitted base edge temperature [°C]	Ignition voltage min. ⁴ / max. ⁵ [kV]	Required control gear ⁶	Suitable OSRAM electronic control gear	Dimming
PLANTASTAR 250W inter	universal	400	250	4 / 5	CCG	n.a.	not allowed
PLANTASTAR 400W	universal	400	250	4 / 5	CCG	n.a.	not allowed
PLANTASTAR 600W	universal	450	250	4 / 5	CCG	n.a.	not allowed
PLANTASTAR 600W/400V	universal	450	250	4 / 5	CCG	n.a.	not allowed

³ Indicates the percentage of operational lamps after a given period of operation time.

⁴ For superimposed ignition with square wave electronic ballast 3.0 kV are sufficient.

⁵ This limit is for safety reasons.

⁶ ECG stands for low frequency square wave electronic ballast. See the respective lamp data sheet in IEC 61167 and Annexes G and H, therein.

CCG stands for electromagnetic ballast (see IEC 61347).

Edition August 30, 2013; replaces edition February 4, 2013. Subject to change without notice. Errors and omissions excepted. Make sure to use the most recent edition.

Safety, materials and environment

Product description	Typical specific effective radiant UV power [mW/1000 lm]	Typical mercury content [mg]
PLANTASTAR 250W inter	<2	20.0
PLANTASTAR 400W	<2	20.0
PLANTASTAR 600W	<2	20.0
PLANTASTAR 600W/400V	<2	24.0

- Compliant with safety specifications according to EN 62035
- Compliant with photo biological safety according to EN 62471
- Compliant with RoHS.
- Only for luminaires with protective shield according to IEC 60598-1
- For operation with an electromagnetic ballast⁷ a protection against rectifying effect at end-of-life required

Energy labelling⁸

Product description	Energy efficiency class	Weighted energy consumption E _c [kWh/1000h]
PLANTASTAR 250W inter	A+	281
PLANTASTAR 400W	A++	440
PLANTASTAR 600W	A++	660
PLANTASTAR 600W/400V	A++	682

Logistics data

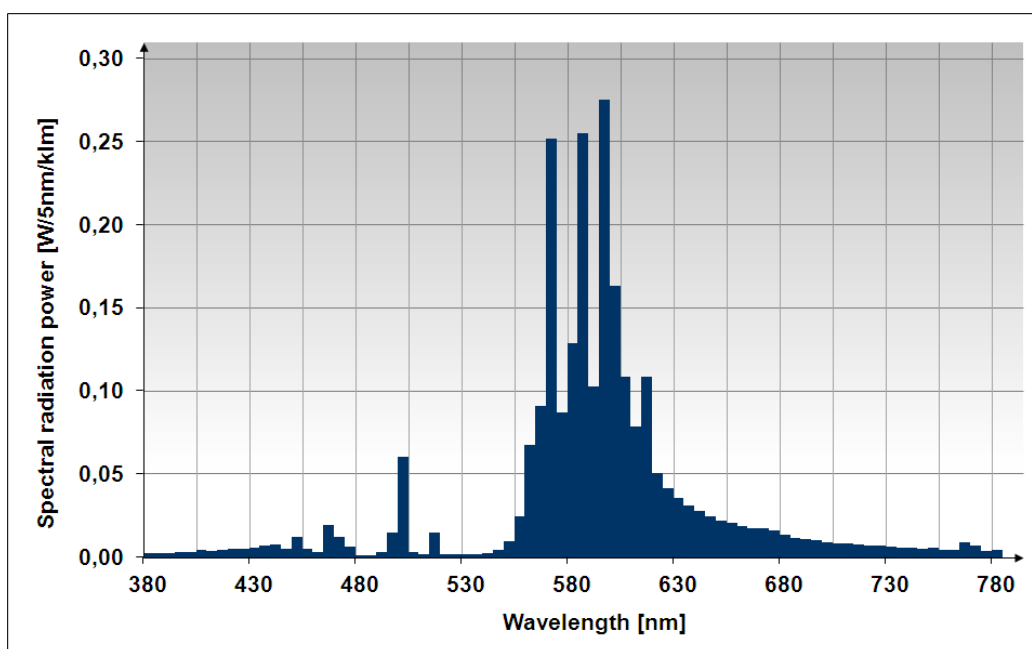
Product description	ILCOS	EAN 10	EAN 40	Standard pack quantity
PLANTASTAR 250W inter	ST-250-H-E40-47/257	4008321240620	4008321240637	12
PLANTASTAR 400W	ST-400-H-E40-47/285	4050300620084	4050300620091	12
PLANTASTAR 600W	ST-600-H-E40-47/285	4050300620107	4050300620114	12
PLANTASTAR 600W/400V	ST-600-H-E40-47/285	4008321284303	4008321284310	12

⁷ See IEC 61347.

⁸ According to Regulation (EU) No 874/2012 of July 12, 2012

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Typical spectral power distribution



References

Reference	
Brochure "Metal halide lamps. Instructions for the use and application"	www.osram.com
Brochure "High Intensity Discharge lamps. Technical information on reducing the wattage"	www.osram.com
Ray data (e.g. ASAP, SPEOS, LightTools)	available on request
3D data (e.g. Parasolid, STEP)	available on request
System* guarantee	level 3C, see www.osram.com