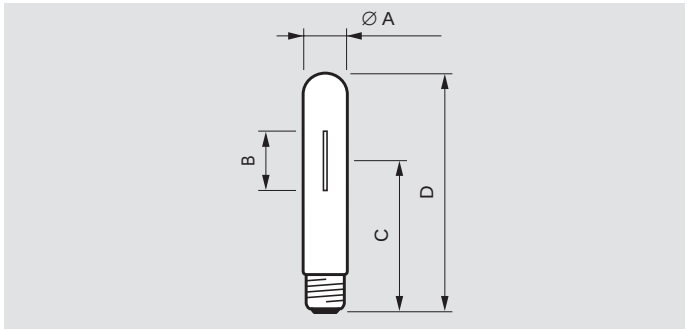
NEW

MASTER SON-T PIA for horticultural lighting

MASTER SON-T PIA Green Power

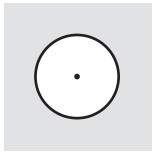
MASTER SON-T PIA Agro

** Philips Integrated Antenna*



Dimensions in mm

Type	A max.	B max.	C	D max.
Cap/base E40				
MASTER SON-T PIA Green Power 400 W	47.0	84.0	175.0	283.0
MASTER SON-T PIA Green Power 600 W 230V	47.0	112.0	175.0	283.0
MASTER SON-T PIA Green Power 600 W 400V	47.0	117.0	172.0	283.0
MASTER SON-T PIA Agro 400 W	47.0	83.0	175.0	283.0



Burning position

MASTER SON-T PIA for horticultural lighting is available in two versions:
- MASTER SON-T PIA Green Power
- MASTER SON-T PIA Agro

MASTER SON-T PIA Green Power

Green Power lamps are ideal for assimilation lighting. They promote CO_2 assimilation for better photosynthesis and growth of plants.
MASTER SON-T PIA Green Power means
- improved growth light
- highest efficacy
- improved lumen maintenance

MASTER SON-T PIA Green Power lamps have the highest amount of growth light per Watt (PAR). The increased pressure in the Green Power lamps increases the luminous efficacy to close to 150 lumen per Watt. It is the most efficient SON lamp with the best light-technical performance resulting in the lowest energy use. In assimilation lighting a constant light level is very important. The Green Power lamps have an excellent lumen maintenance during the service life of the lamp.

MASTER SON-T PIA Green Power 600W 400V system

For new installations a new system has been developed consisting of a specially designed lamp, ballast and ignitor, suitable for phase/phase connection to the mains. Additional to the above mentioned Green Power benefits the benefit of the 400V system is that the lighting installation needs no neutral connector and there is virtualluy no distortion of the mains by 3rd harmonics. The 600W 400V system has an improved spectrum by which a higher amount of growthlight is generated.

MASTER SON-T PIA Agro

The Agro lamp generates a spectrum with more blue radiation. Especially at lower lighting levels the special spectrum of the MASTER SON-T PIA Agro will result in a more compact plant development for certain plants.

MASTER SON-T PIA – general product information

SON is the Philips name for a range of high-quality high pressure sodium lamps. The MASTER SON-T PIA are high pressure sodium lamps with PIA (Philips Integrated Antenna) technology.

The sintered aluminium oxide discharge tube with integrated antenna is enclosed in a vacuum hard glass outer bulb. The discharge tube is filled with sodium-mercury amalgan and xenon. The cap mounting of the MASTER SON-T PIA is lead-free which means that the lamps are completely free of lead.
The MASTER SON-T PIA lamps have a clear tubular outerbulb.
The SON-T PIA Green Power and Agro lamps have an extra high pressure in the discharge tube and are electrical comparable with the MASTER SON-T PIA Plus lamps. The lamps employ a ballast and ignitor in accordance with IEC HPS Plus standard.

MASTER SON-T PIA: reliable operation with less early failures thanks to:
- Philips Integrated Antenna
- ZrAl or ZrCo getter
- Construction with less welding points

The integrated antenna on the discharge tube makes the construction more simple and more robust. This improvement to the design completely eliminates early failures caused by the old external antenna with the bi-metallic strip. PIA stands for reliable ignition during the total use.

ZrAl getter: optimal lumen maintenance and low early failures. The function of the getter is to remove impurities in the vacuum of the outer bulb ensuring an optimal functioning and light output throughout the lifetime of the lamp. The early failures due to the old Barium getter are completely eliminated.

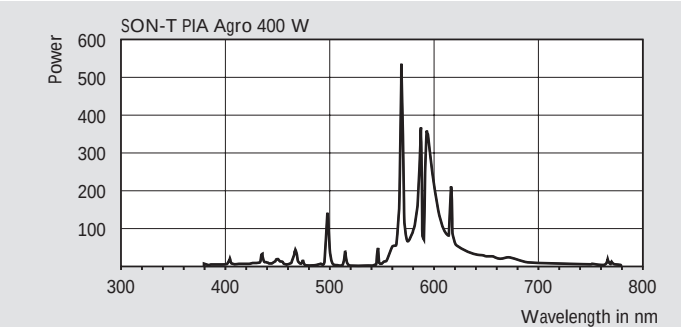
New construction with less welding points: less early failures. The new construction with less components and welds extends the life of the lamp as it is more robust and thus more resistant to vibrations and shocks.

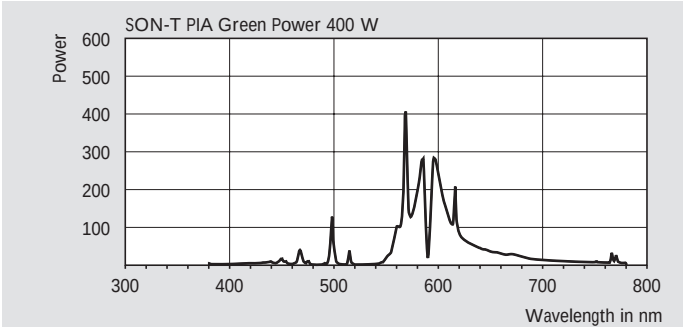
All SON lamps employ a ballast and ignitor in accordance with the latest IEC HPS standard, in which it is clearly stated that all HPS lamps require luminaire protection for rectification, according EN60598-1. This is due to the risk of lamp rectification at end of lamp life, requiring luminaire protection because of overheating ballasts and ignitors. For HPS lamps this is valid for all lamps except 1000 W, SON-H .

PHILIPS

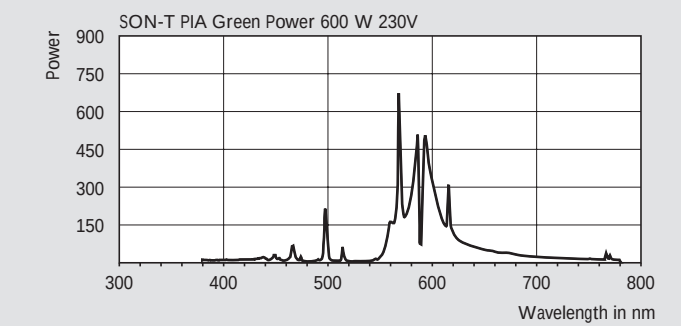
Type	Wattage W	Cap/ base	External Starter	Finish	Lamp wattage W	Lamp voltage V	Lamp current A	Lumen output lm	Efficacy source lm/W	Correlated colour temp. K
MASTER SON-T PIA Agro										
MASTER SON-T PIA Agro	400	E40	E	CLEAR	423	116	4.13	55000	130	2050
MASTER SON-T PIA Green Power										
MASTER SON-T PIA Green Power	400	E40	E	CLEAR	420	113	4.20	58500	140	2100
MASTER SON-T PIA Green Power 230V	600	E40	E	CLEAR	605	105	6.20	88500	147	2100
MASTER SON-T PIA Green Power 400V	600	E40	E	CLEAR	608	191	3.62	88000	145	2100

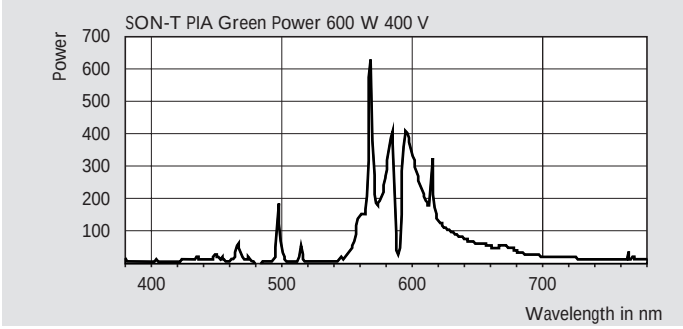
Type	Wattage W	Cap/ base	External Starter	Chromaticity coordinate x	Chromaticity coordinate y	Colour rendering index	Maximum permissible base/pinch temp. degr.C	Maximum permissible bulb temp. degr.C	Nett weight g	EOC
MASTER SON-T PIA Agro										
MASTER SON-T PIA Agro	400	E40	E	520	415	25	250	450	190	707505
MASTER SON-T PIA Green Power										
MASTER SON-T PIA Green Power	400	E40	E	523	424	25	250	450	180	201966
MASTER SON-T PIA Green Power 230V	600	E40	E	530	430	20	250	480	190	202024
MASTER SON-T PIA Green Power 400V	600	E40	E	526	420	25	250	480	190	203076





Spectral power distributions





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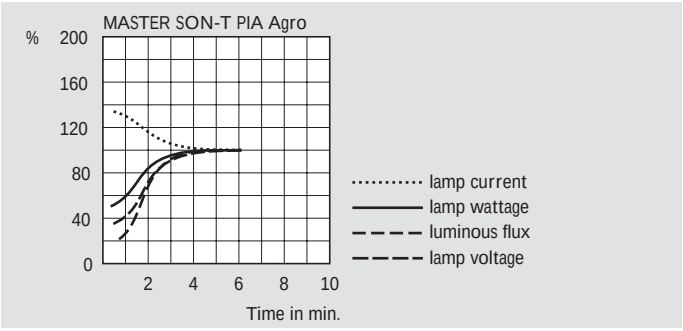
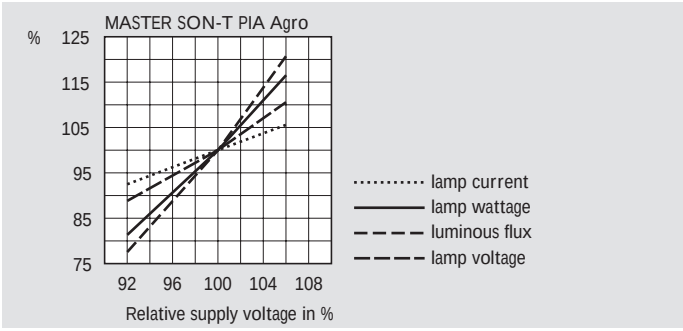
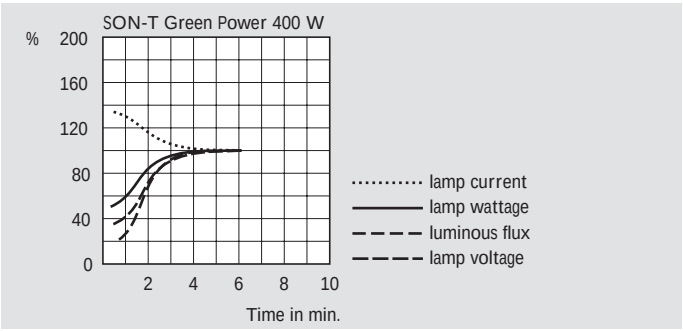


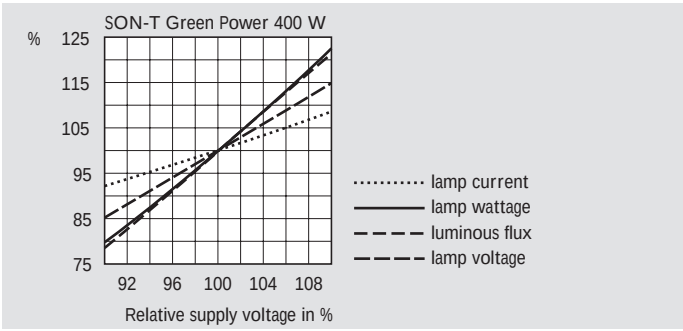
Lamp performance during run-up



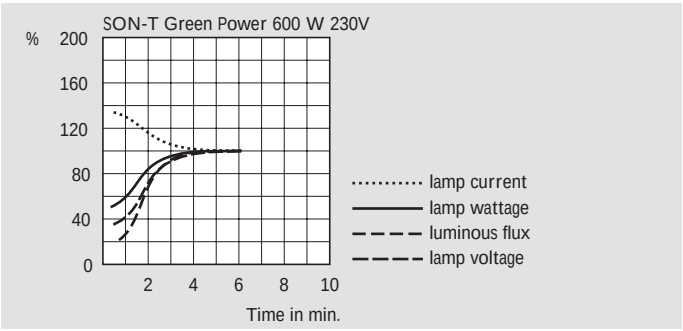
Effects of main voltage variations



Lamp performance during run-up



Effects of main voltage variations



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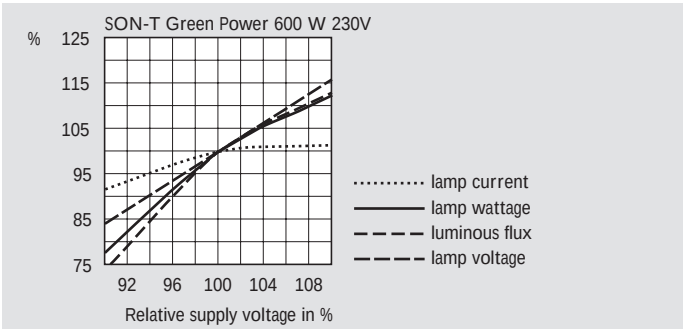

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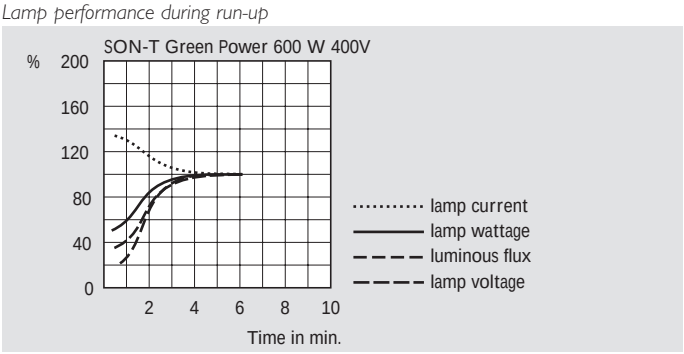

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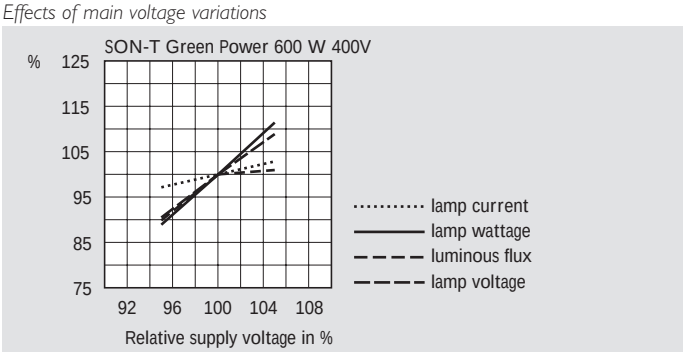

Effects of main voltage variations