



# Datasheet

# PILA Horti Driver 600W / 400V Full-electronic driver for PILA 600W lamps

# Benefits

- Very high efficiency for maximum energy savings
- Long lifetime and high reliability
- Constant output power regulation across wide input voltage range for constant growth light
- Enables the control of the light period by extending the natural day length with artificial light.
- Replaces daylight with artificial light for ultimate climate control (cultivation without daylight).
- Supplements daylight in greenhouses with growth light

# Features

- Full-electronic state-of-the-art driver technology
- Robust electronic and mechanical design for enhanced reliability and longer life
- High and constant lumen control safeguards a constant crop quality and quantity over life
- Easy to design-in; single luminaire component

# Application

- Ideal for growing vegetables and flowers
- Designed for delta connection in 3-phase 230/400V grid

# **Electrical input data**

Specification item	Value	Unit	Condition
Rated input voltage range	368 424	V <sub>ac</sub>	Performance range
Rated input voltage	400	V <sub>ac</sub>	
Rated input frequency range	4763	Hz	Performance range
Rated input current	1.6	A	@ rated output power @ rated input voltage
Max. input current	1.72	A	@ max. output power @ minimum performance input voltage
Rated input power	635	W	@ rated output power @ rated input voltage
Power factor (typ)	0.99		@ rated output power @ rated input voltage
Total harmonic distortion (typ)	8	%	@ rated output power @ rated input voltage
Efficiency (typ)	96	%	@ rated output power @ rated input voltage
Input voltage AC range	360 440	V <sub>ac</sub>	Safety operational range
Input frequency AC range	4566	Hz	Safety operational range
Insulation input/output to bracket	Basic		
Max. rated voltage between input and bracket	277	V <sub>ac</sub>	
Grid configuration	L-L		Wye connection in 400/690V grid not supported.

# **Electrical output data**

Specification item	Value	Unit	Condition
Regulation method	Constant Power		
Lamp voltage range	210 275	V	Output power regulation within +/- 3% of rated power
Lamp voltage shutdown	<60 or > 285	V	After 60s. No automatic restart; mains cycle required after re-lampir
Rated output power	615	W	+/- 3%
Ignition voltage range	2.4 2.6	kV	Max. capacitive loading < 100pF (< 0.5 m)
Max. ignition voltage towards earth	3.2	kV	Max. capacitive loading < 100pF (< 0.5 m)
Ignition frequency (max.)	400	kHz	
Steady-state operating frequency range	110 230	kHz	
Max. cable length between driver and lamp	0.5	m	Shielded output cables not supported. Max. output capacitance: 250pF

# Logistical data

Specification item	Value
Product name	PILA Horti Driver 600W / 400V
EOC	8727900965780
Logistic code 12NC	XXXX XXX XXXXX
Pieces per box	144

# Connections

Specification item	P/N	Brand	Condition
Input connector X2	B4P(6-2.4)-VH (LF)(SN)	JST	Counterpart P/N: JST VHR-6N SVH-21T-P1.1/SVH-41T-P1.1
Output connector X1	B3P4-VH (LF)(SN)	JST	Counterpart P/N: JST VHR-4N SVH-21T-P1.1/SVH-41T-P1.1



\* Note: driver PE connector not intended for PE loop-through from one luminaire to the next luminaire. Driver bracket must be connected to Protective Earth.

# **Dimensions and weight**

Specification item	Value	Unit	Condition
Length (A1)	181	mm	
Width (B1)	151	mm	
Height (C1)	58	mm	
Weight	760	gram	









#### **Operational temperatures and humidity**

Specification item	Value	Unit	Condition
Typical luminaire temperature	0+30	°C	Max. luminaire ambient temperature depending on driver
			component temperatures. See design-in guide for details
Relative humidity	1090	%	Non-condensing
Driver Ingress Protection rating (IP)	00		Recommended luminaire IP rating ≥ 65. See design-in guide



# Maximum component temperatures

Specification item	Maximum temperature	۰C	Remark
EMI FILTER COIL	110		Measured on wire
PFC COIL	110		Measured on wire
ELCAP	90		Measured on top (use insulation!)
LAMP COIL	105		Measured on wire
FET	100		Measured on top
DIODE	100		Measured on top

Component temperatures above must be verified in worst-case conditions with  $U_{mains}{=}380V$  and  $~U_{lamp}{=}275V$  at components indicated with a red dot.

# Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20+85	°C	
Relative humidity	595	%	Non-condensing

#### Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	20,000	hours	Number of survivors $\geq$ 90%. Driver lifetime defined by critical driver components. See previous page.

# Features

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Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic driver shutdown
Short circuit protection	Yes		Automatic driver shutdown
Over power protection	Yes		Automatic driver shutdown
Remote gearing	No		Max. output cable lenght 0.5m
Suitable for luminaire Insulation Class	1		Acc. IEC60598-1
Overtemperature protection driver	Yes		Driver shutdown if $T_c$ temperature > 115°C.
	1	1	Driver restart < 95°C.

# **Certificates and standards**

Specification item	Value
Approval marks	CE / EAC / UA / CELMA A2
Electrical standards	CISPR15, EN60298, EN61547, EN90926, IEC61000-3-2
Environmental standards	ISO 14001, RoHS
Mechanical standards: vibration & bumps	IEC 60068-2-6 Fc (10-150Hz, 2g); IEC60029-2-29 Eb (10g/16ms)
Approved PILA lamp types	WLS PILA Horti 600W EL E40 SLV/12

#### Inrush current

Specification item	Value	Unit	Condition
Inrush current I <sub>peak</sub>	30	A	Input voltage 424VAC
Inrush current T <sub>width</sub>	1.6	ms	Input voltage 424VAC, measured at 50% $I_{peak}$



MCB type	Rating	Max. recommended number of drivers
В	10A	1
В	16A	2
В	20A	3
В	25A	4
В	32A	5
С	10A	2
С	16A	4
С	20A	5
С	25A	6
С	32A	8

#### **Protective conductor current**

Specification item	Value	Unit	Condition
Protective conductor current (max)	1.0	mA rms	Acc. IEC61347-1

#### Surge immunity

Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2	kV	L - L acc. EN61547, 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	L - PE acc. EN61547, 12 Ohm 1.2/50us, 8/20us



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