

PHILIPS

GreenVision



Datasheet

HID-GV III 1000W/P GP-SON 400V

Full-electronic driver for GP-SON 1000W 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 _{ac}	Performance range
Rated input voltage	400	V _{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	2.6	A	@ rated output power @ rated input voltage
Max. input current	2.8	A	@ max. output power @ minimum performance input voltage
Rated input power	1030	W	@ rated output power @ rated input voltage
Power factor	≥ 0.95		@ rated output power @ rated input voltage
Total harmonic distortion (typ)	8	%	@ rated output power @ rated input voltage
Efficiency (typ)	97	%	@ rated output power @ rated input voltage
Input voltage AC range	360 ... 440	V _{ac}	Safety operational range
Input frequency AC range	45...66	Hz	Safety operational range
Isolation input/output to bracket	Basic		
Max. rated voltage between input and bracket	277	V _{ac}	
Grid configuration	L - L only		Wye connection in 400/690V grid not supported.

Electrical output data

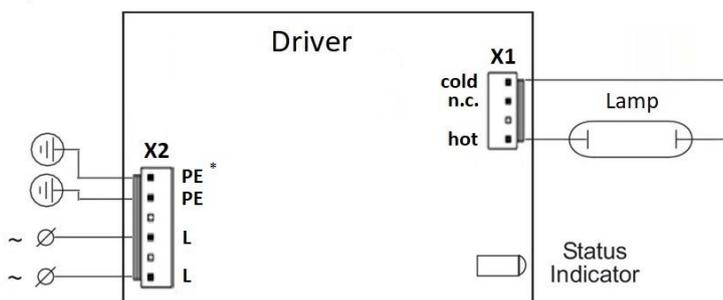
Specification item	Value	Unit	Condition
Regulation method	Constant Power		
Lamp voltage range	232 ... 315	V	Output power regulation within +/- 3% of rated power
Lamp voltage shutdown	<50 or > 330	V	After 60s. No automatic restart; mains cycle required after re-lamping
Rated output power	1000	W	Tolerance max. +/- 3% across input voltage performance range
Ignition voltage range	2.3 ... 2.5	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	100 ... 220	kHz	
Max. cable length between driver and lamp	0.5	m	Shielded output cables not supported

Logistical data

Specification item	Value
Product name	HID-GV III 1000W/P GP-SON 400V
EOC	872790090906700
Logistic code 12NC	9137 006 60461
Pieces per box	144

Connections

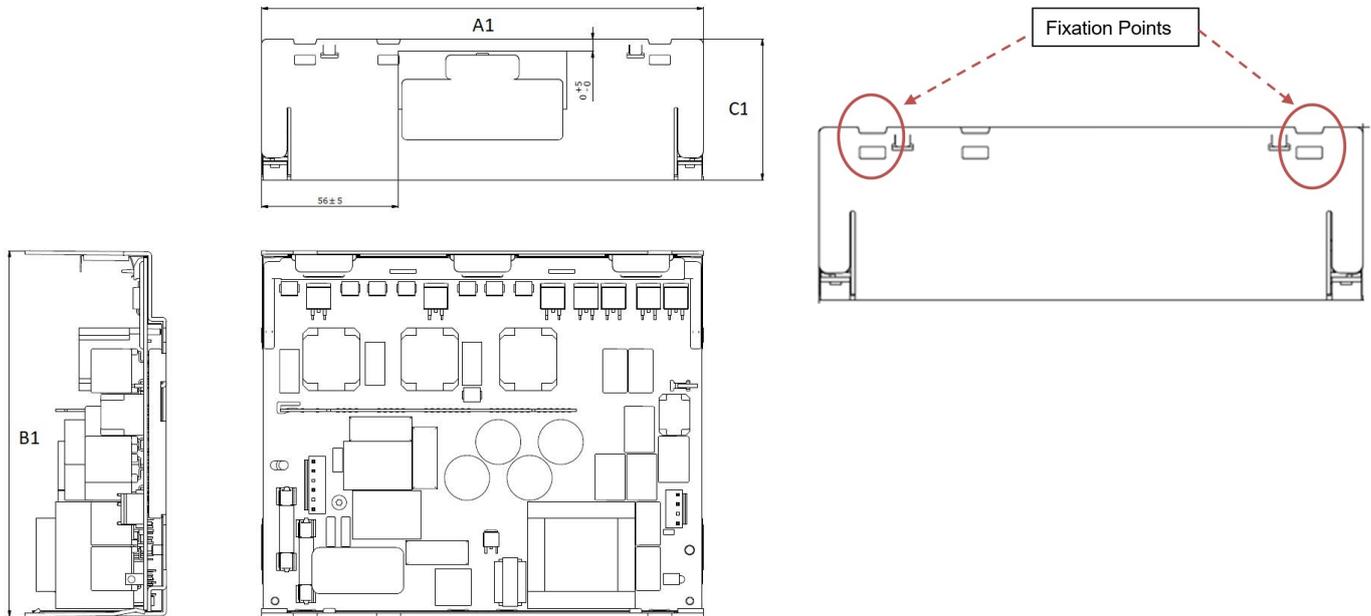
Specification item	P/N	Brand	Condition
Input connector X2	B4P(6-2.4)-VH (LF)(SN)	JST	Counterpart P/N: JST VHR-6N SVH-21T-P1.1/SVH-41T-P1.1
Output connector X1	B3P4-VH (LF)(SN)	JST	Counterpart P/N: JST VHR-4N SVH-21T-P1.1/SVH-41T-P1.1



* 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.

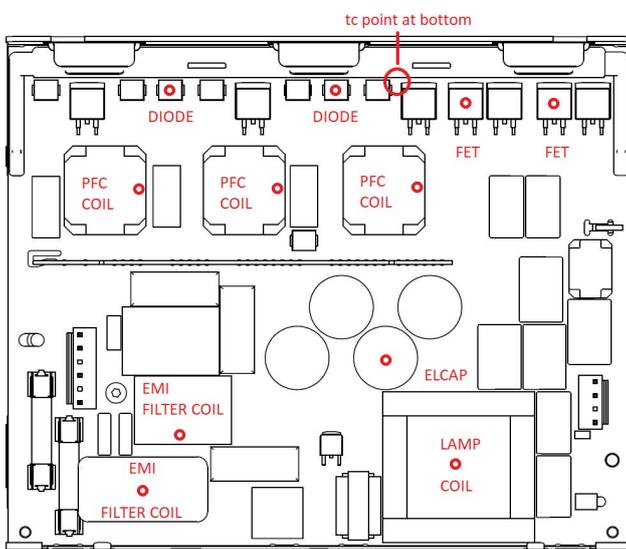
Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	181	mm	
Width (B1)	151	mm	
Height (C1)	58	mm	
Weight	875	gram	



Operational temperatures and humidity

Specification item	Value	Unit	Condition
Typical luminaire temperature	0...+35	°C	Max. luminaire ambient temperature depending on driver component temperatures. See design-in guide for details
Relative humidity	10...90	%	Non-condensing
Driver Ingress Protection rating (IP)	00		Recommended luminaire IP rating \geq 65. See design-in guide



Maximum component temperatures

Specification item	Maximum temperature	°C	Remark
EMI FILTER COIL	100		Measured on wire
PFC COIL	100		Measured on wire
ELCAP	85		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 $U_{\text{mains}}=368\text{V}$ and $U_{\text{lamp}}=315\text{V}$ at components indicated with a red dot.

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+85	°C	
Relative humidity	5...95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	30,000	hours	Number of survivors \geq 90%. Driver lifetime defined by critical driver components. See previous page.

Features

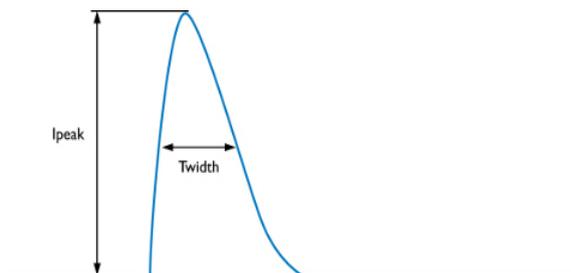
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic driver shutdown
Short circuit protection	Yes		Automatic driver shutdown
Over power protection	Yes		Automatic driver shutdown
Remote gearing	No		Max. output cable length 0.5m
Suitable for luminaire Insulation Class	I		Acc. IEC60598-1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

Certificates and standards

Specification item	Value
Approval marks	CE / ENEC / CELMA A2 / EAC / UA
Electrical standards	CISPR15, IEC61000-3-2, IEC61000-4-1, IEC61000-4-5, EN61547, EN62493, IEC61347-2-12
Environmental standards	ISO 14001, RoHS
Mechanical standards: vibration & bumps	IEC 60068-2-6 Fc (10-150Hz, 2g); IEC60029-2-29 Eb (10g/16ms)
Approved Philips GreenPower lamp types	Master GreenPower Plus 1000W EL, Master GreenPower Xtra 1000W EL

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	30	A	Input voltage 424VAC
Inrush current T_{width}	1.6	ms	Input voltage 424VAC, measured at 50% I_{peak}



MCB type	Rating	Max. recommended number of drivers
B	10A	1
B	16A	2
B	20A	3
B	25A	4
B	32A	5
C	10A	2
C	16A	4
C	20A	5
C	25A	6
C	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. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	L - PE acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us



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