

# GV6-320 series

320W Waterproof Constant Voltage LED Driver



## Features:

- European AC input voltage: 176-264VAC
- Constant voltage design
- Built-in active PFC function (PF > 0.97)
- Protections: Short Circuit / Over Current / Over Temperature / Input Under Voltage
- Cooling by free air convection
- Surge immunity: Differential Mode - 6kV, Common Mode - 10kV
- IP67 design for indoor and outdoor applications
- Suitable for dry/damp/wet locations

Application:

- Landscape Lighting



## DESCRIPTION

The GV6-320 series is constant voltage led driver, designed for lighting used for landscape illumination. The driver has built-in active PFC, multiple protections, and 10KV surge immunity. It's an excellent design with high reliability and long lifetime.

## MODEL INFORMATION

MODEL NUMBER	OUTPUT POWER [W]	OUTPUT VOLTAGE [VDC]	OUTPUT CURRENT RANGE [A]	TYPICAL EFFICIENCY	TYPICAL PF	TYPICAL THD
GV6-320B012	320	12	0 ÷ 26.7	92%	0.98	10%

### Notes:

1. All performance parameters are measured at 25°C ambient temperature, 230VAC input, full load conditions if no specific note.

## INPUT SPECIFICATIONS

Parameter	Min.		Typ.		Max.		Notes
INPUT VOLTAGE	176VAC		200 ÷ 240VAC		264VAC		-
INPUT FREQUENCY	47Hz		50/60Hz		63Hz		-
LEAKAGE CURRENT	-		-		0.7mA		240VAC/60Hz
INPUT AC CURRENT	-		-		2.2A		220-240VAC, full load
INRUSH CURRENT	-		-		75A		230VAC, full load, Cold start
POWER FACTOR	0.96		0.98		-		230VAC, 50-60Hz, full load
	0.95		0.97		-		230VAC, 50-60Hz, 75% load
	0.90		0.93		-		230VAC, 50-60Hz, 50% load
THD	-		-		10%		220-240VAC, 50-60Hz, 80-100% load
MAX. NO. OF PSU ON CIRCUIT BREAKER	B10	C10	B16	C16	B25	C25	230VAC
	1	1	1	2	2	4	

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## OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
OUTPUT VOLTAGE TOLERANCE	-5%	-	+5%	-
TOTAL OUTPUT CURRENT RIPPLE (PK-PK)	-2%	-	+2%	Full load, measured by 20MHz bandwidth oscilloscope and the output paralleled a 0.1μF ceramic capacitor and 47μF electrolytic capacitor
TURN-ON VOLTAGE OVERSHOOT	-5%	-	+5%	220-240VAC, full load
LINE REGULATION	-0.5%	-	+0.5%	25°C ± 10°C ambient temperature, input voltage changes from 200VAC to 240VAC
LOAD REGULATION	-1%	-	+1%	25°C ± 10°C ambient temperature, 230 VAC input, load changes from 50% to 100%
TURN-ON DELAY TIME	-	0.5s	1s	230VAC, full load

## GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
EFFICIENCY AT 230VAC				25°C ambient temperature, full load / 75% load / 50% load
GV6-320B024	91%	92%	-	
DIELECTRIC STRENGTH	INPUT-OUTPUT	-	3750VAC	-
	INPUT-PE	-	1875VAC	-
	OUTPUT-PE	-	500VAC	-
GROUNDING RESISTANCE	-	-	0.1Ω	25A/60s, 25°C ± 10°C ambient temperature
INSULATION RESISTANCE	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 500VDC/60s/25°C/70%RH
MTBF	-	200 000 hours	-	25°C ± 10°C ambient temperature, 230VAC, 80% load (MIL-HDBK-217F)
LIFETIME	-	50 000 hours	-	230VAC, 100% load, tc=75°C (refer to Lifetime Curve)
OPERATING CASE TEMPERATURE FOR SAFETY T <sub>C-S</sub>	-40°C	-	+90°C	-
OPERATING CASE TEMPERATURE FOR SAFETY T <sub>C-W</sub>	-40°C	-	+75°C	5 years warranty, humidity 10% to 100% RH
STORAGE TEMPERATURE	-40°C	-	+90°C	Humidity 10% to 100% RH
DIMENSIONS (L x W x H)	224.5 x 96.8 x 41.8mm			-
NET WEIGHT	1700 ± 100g			-
PACKAGE (L x W x H)	10pcs./box; 610 x 370 x 160mm			-

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## SAFETY STANDARDS

SAFETY CATEGORY	COUNTRY / TERRITORY	STANDARDS
CE	Europe	EN61347-1
		EN61347-2-13

## EMC STANDARDS

EMC CATEGORY	COUNTRY / TERRITORY	STANDARDS
CE	Europe	EN55015
		EN61000-3-2
		EN61000-3-3
		EN61547

**Note:** This LED driver meets the EMC specifications above, but EMC performance of luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

## PROTECTIONS

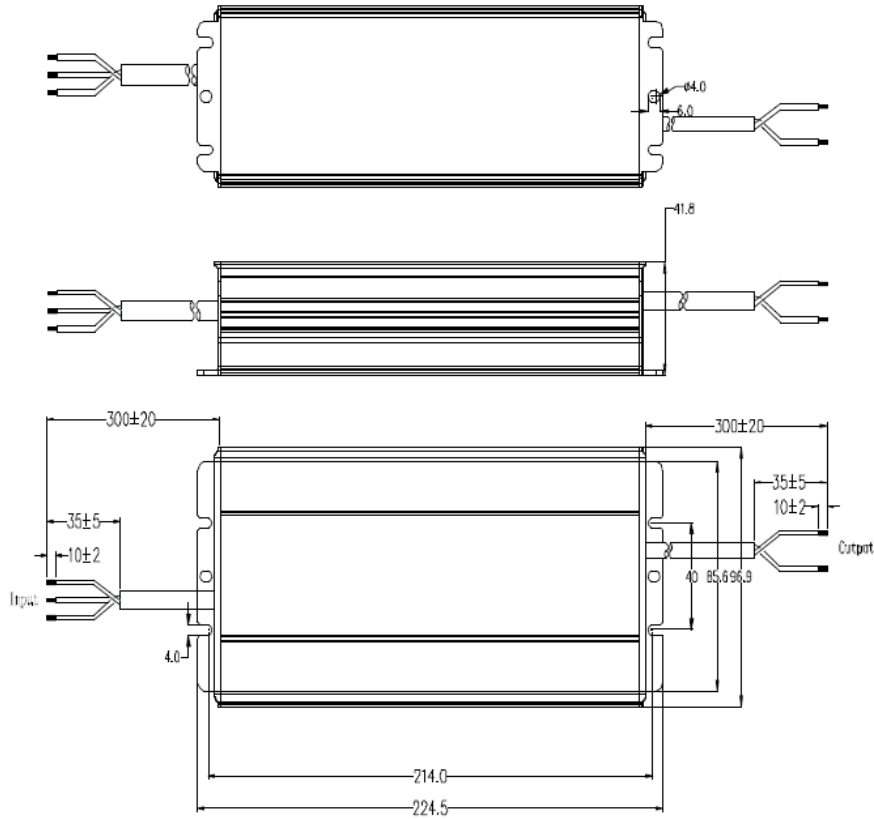
PARAMETER	Min.	Typ.	Max.	NOTES
INPUT UNDER VOLTAGE PROTECTION	156VAC	-	176VAC	Turn off the output when the input voltage falls below protection voltage.
OVER TEMPERATURE PROTECTION	Turn off the output. Returning to normal after over temperature is removed.			
SHORT CIRCUIT PROTECTION	Hiccup mode. The output shall return to normal when the fault condition is removed.			
OVER CURRENT PROTECTION	Hiccup mode. The output shall return to normal when the fault condition is removed.			
OVER VOLTAGE PROTECTION	Turn off the output voltage, when the fault is removed, restart and resume.			

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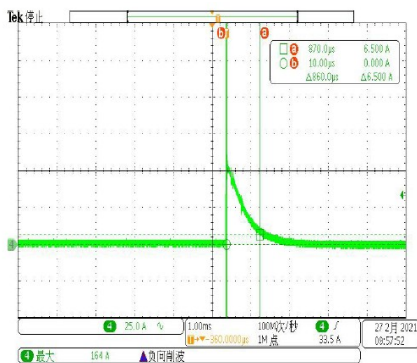
## MECHANICAL SPECIFICATION



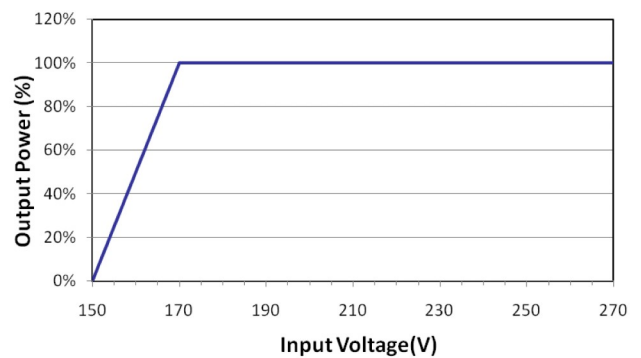
Wire	Specification	Note
INPUT	CCC + VDE, H05RN-F 3x1.0mm <sup>2</sup> , length = 300 ± 20mm, ext. dia = 7.15mm	For CCC/CE
	AC/L: brown, AC/N: blue, FG: green/yellow	
OUTPUT	CCC + VDE, H05RN-F 2x2.5mm <sup>2</sup> , length = 300 ± 20mm, ext. dia = 11.11mm	For CCC/CE
	V <sub>0+</sub> : brown, V <sub>0-</sub> : blue	

## CHARACTERISTICS

### INRUSH CURRENT WAVEFORM



### OUTPUT POWER vs. INPUT VOLTAGE CURVE

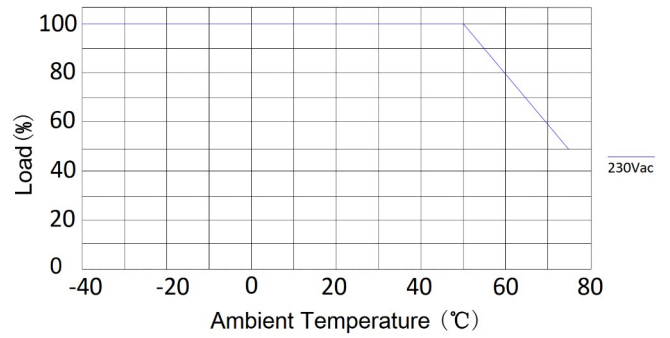
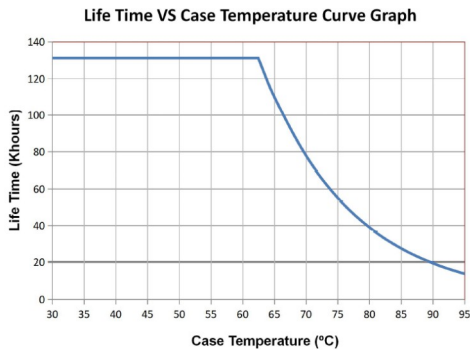


### LIFETIME vs. CASE TEMPERATURE CURVE

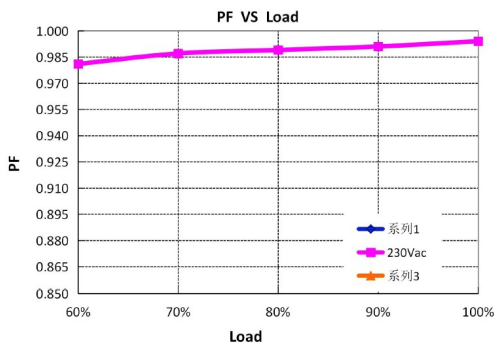
### DERATING CURVE

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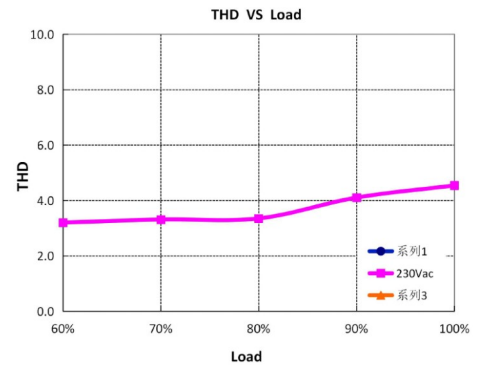
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## POWER FACTOR vs. LOAD CURVE



## THD vs. LOAD CURVE



## EFFICIENCY vs. LOAD CURVE

### GV6-320B024

