

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% |
| GV6-320B024 | 320 | 24 | 0 ÷ 13.4 | 93% | 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% | 93% | - | |
| 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 _{C_S} | -40°C | - | +90°C | - |
| OPERATING CASE TEMPERATURE FOR SAFETY T _{C_W} | -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

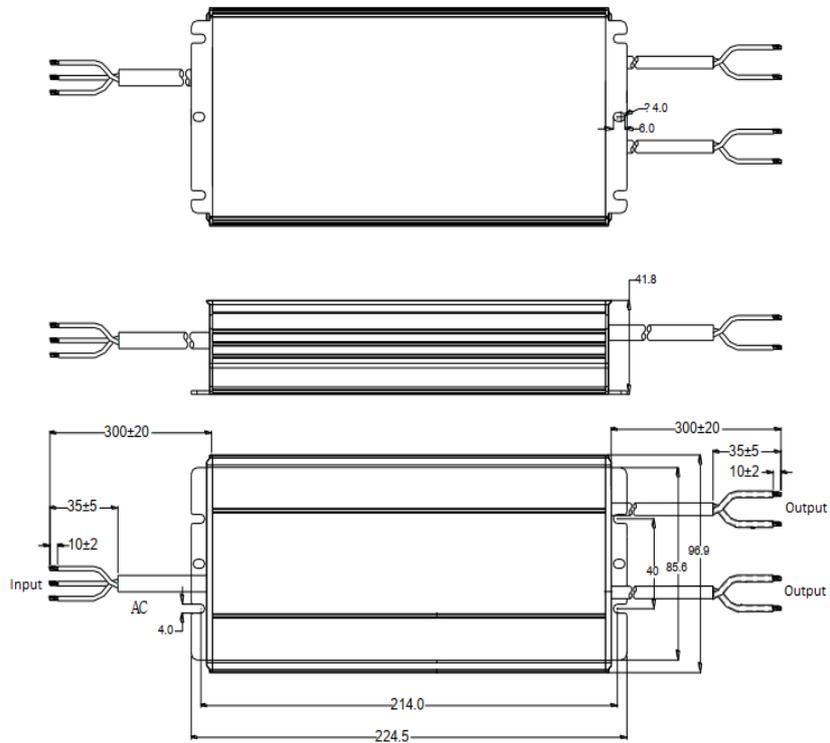
| PARAMETER | Min. | Typ. | Max. | NOTES |
|--------------------------------|---|------|--------|--|
| INPUT UNDER VOLTAGE PROTECTION | 156VAC | - | 176VAC | Turn off the output when the input voltage falls below protection voltage. |
| OVER TEMPERATURE PROTECTION | Turn off the output. Returning to 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

GV6-320B012



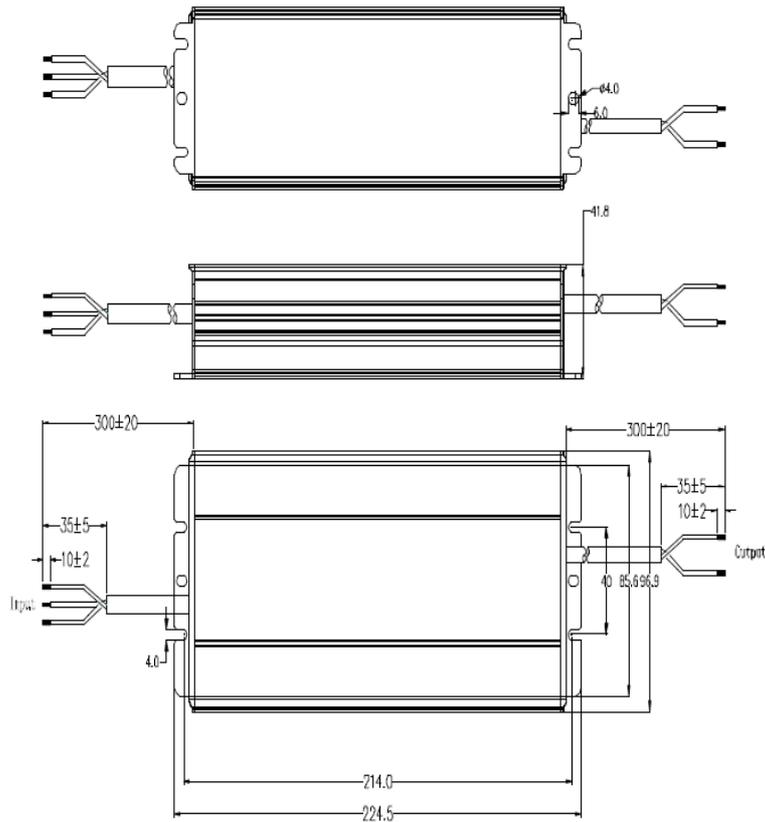
| Wire | Specification | Note |
|--------|---|--------|
| Input | CCC + VDE, H05RN-F 3x1.0mm ² , length = 300 ± 20mm, ext. dia = 7.15mm | CCC/CE |
| | AC/L: brown, AC/N: blue, FG: green/yellow | |
| Output | CCC + VDE, H05RN-F 2x2.5mm ² , length = 300 ± 20mm, ext. dia = 11.11mm | CCC/CE |
| | V _{o+} : brown, V _{o-} : blue | |

Note: Two black output wires (V_{o-}) must be connected to the negative channel of the load end at the same time, and two red output wires (V_{o+}) must be connected to the positive channel of the load at the same time

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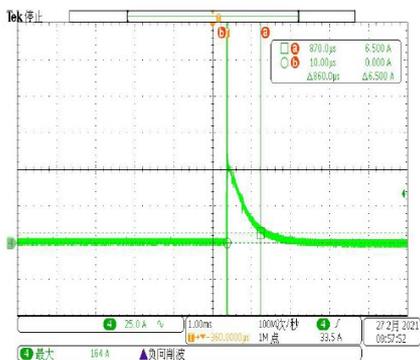
GV6-320B024



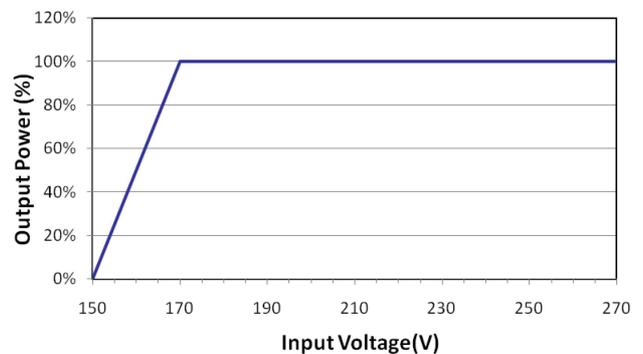
| Wire | Specification | Note |
|--------|---|------------|
| INPUT | CCC + VDE, H05RN-F 3x1.0mm ² , length = 300 ± 20mm, ext. dia = 7.3mm | For CCC/CE |
| | AC/L: brown, AC/N: blue, FG: green/yellow | |
| OUTPUT | CCC + VDE, H05RN-F 2x2.5mm ² , length = 300 ± 20mm, ext. Dia = 9.6mm | For CCC/CE |
| | V _{o+} : brown, V _{o-} : blue | |

CHARACTERISTICS

INRUSH CURRENT WAVEFORM



OUTPUT POWER vs. INPUT VOLTAGE CURVE

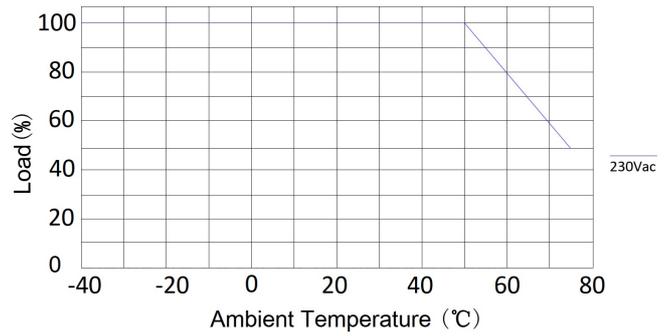
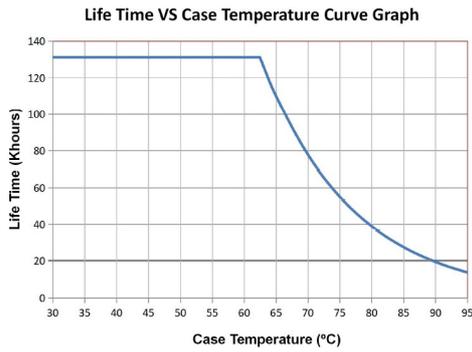


LIFETIME vs. CASE TEMPERATURE CURVE

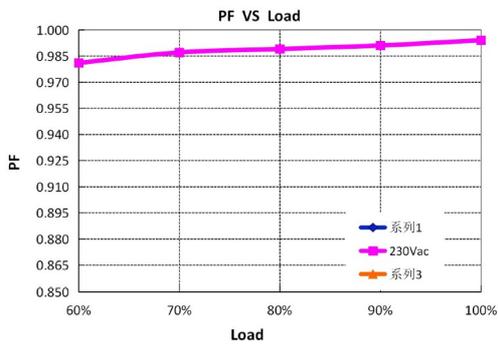
DERATING CURVE

GV6-320 series

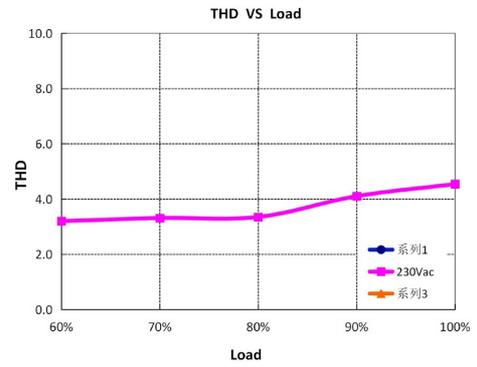
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POWER FACTOR vs. LOAD CURVE



THD vs. LOAD CURVE



EFFICIENCY vs. LOAD CURVE

GV6-320B024

