

## GEPS24-150U-EU

### 24V 150W Power Supply

All Tetra<sup>®</sup> power supplies are designed specifically for the sign industry by our team of electronics experts. Tetra power supplies are built to stand the test of time, backed by the most extensive reliability testing in the industry and a five-year warranty.



### Features:

- High Efficiency (up to 89.0%)
- Constant Voltage Output
- Input Surge Protection: 4kV line-line, 6kV line-earth
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- Suitable for Independent Use
- 5 Year Warranty

### Description

This is a 150W, constant-voltage IP67 LED driver that operates from 200-240 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver and compact metal case enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, over current, output over voltage, short circuit, and over temperature.

## Models

Output Voltage	Rated Voltage Range (1)	Output Current Range	Max. Output Power (1)	Typical Efficiency (2)	Typical Power Factor 220Vac (2)
24 V	200-240 Vac 190-250 Vdc	0~6.3 A	150 W	89%	0.96

**Notes:** (1) Extreme input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below "Derating" curve for details)  
 (2) Measured at 100% load and 220Vac input (see below "General Specifications" for details)  
 (3) Not intended for "No Load" operation

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac	220-240 Vac	305 Vac	
Input DC Voltage	190 Vdc	-	250Vdc	
Input Frequency	47 Hz	50-60 Hz	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/60Hz
Input AC Current	-	-	0.84 A	Measured at 100% load and 220Vac input.
Inrush Current(I <sup>2</sup> t)	-	-	0.042 A <sup>2</sup> s	At 220Vac input, 25°C cold start, duration=27.6 μs, 10%I <sub>pk</sub> -10%I <sub>pk</sub> . See Inrush Current Waveform for details.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100% load (90-150W)
THD	-	-	20%	At 220-240Vac, 50-60Hz, 60%-100% load (90-150W)
THD	-	-	12%	At 220-240Vac, 50-60Hz, 75%-100% load (112.5-150W)

## MCB Loading

Type B 10A	Type B 16A	Type C 10A	Type C 16A
7	11	8	13

## Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-5%Vo	-	5%Vo	At 100% load condition
Output Voltage		-	24V	-	
Total Output Voltage Ripple (pk-avg)		-	-	2.0V	At 0%-100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 47 uF electrolytic capacitor.
Dimmable		-	No	-	
Startup Overshoot/Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	±1%	Measured at 100% load
Load Regulation		-	-	±3%	
Turn-on Delay Time		-	-	0.75 s	Measured at 220Vac input, 100% load
Load Dynamic Response	Output Deviation		-	8%Vo	R/S: 1 A/μs Load: 25%~100% load.
	Settling Time		-	10 ms	
Temperature Coefficient of Vo		-	0.03%/°C	-	Case temperature= 0°C~Tc max

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220Vac input	87.0%	89.0%	-	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Operating Case Temperature for Safety Tc_s	-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+75°C	Case temperature for 5 year warranty. Humidity: 10% RH to 95% RH.
Storage Temperature	-40°C	-	+85°C	Humidity: 5% RH to 95% RH
Dimensions Millimeters ((L x W x H)	145 x 67.5 x 39.7			With mounting ear : 166 x 67.5 x 39.7
Net Weight	-	830 g	-	

## Safety & EMC Compliance

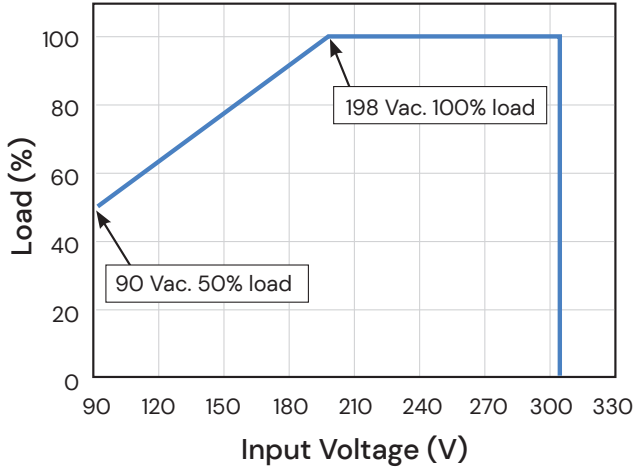
Safety Category	Standard
CE & ENEC	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
EMI Standards	Notes
EN 55015/GB 17743/KN 15 <sup>(1)</sup>	Conducted emission Test & Radiated Emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient/ Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: Differential Mode 4 kV, Common Mode 6 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

**Note:** (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

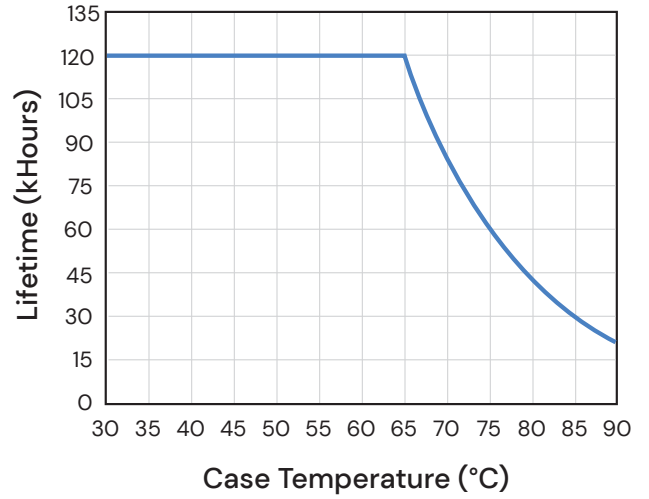
## Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

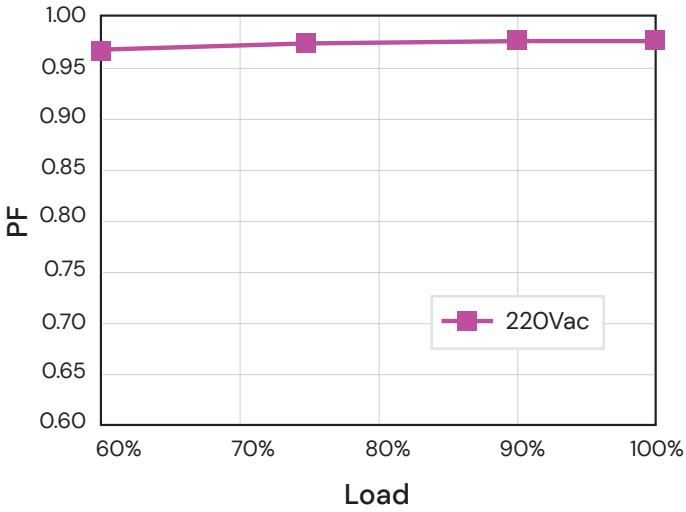
### Derating



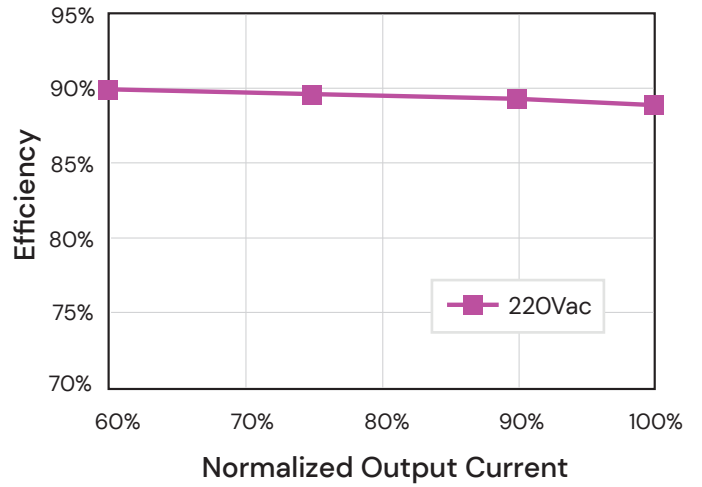
### Lifetime vs. Case Temperature



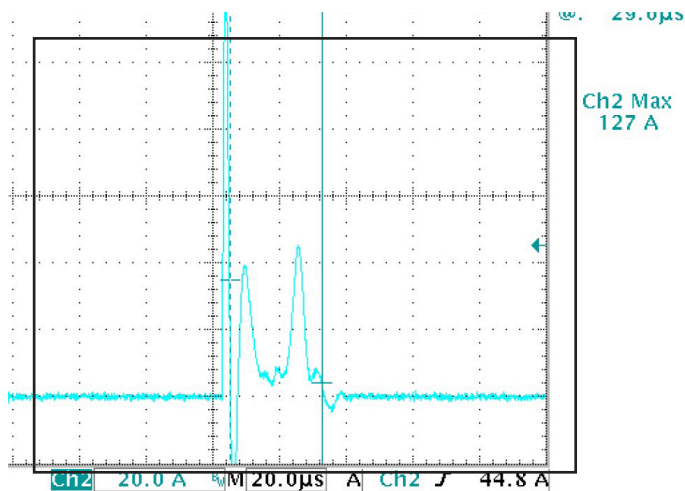
### Power Factor



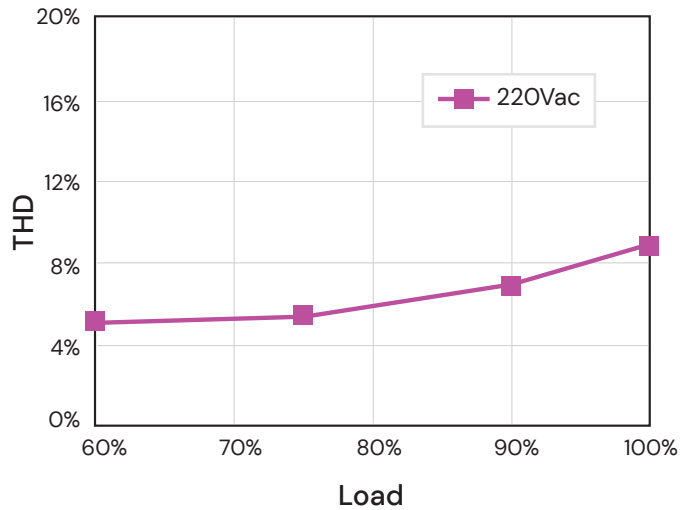
### Efficiency vs. Load



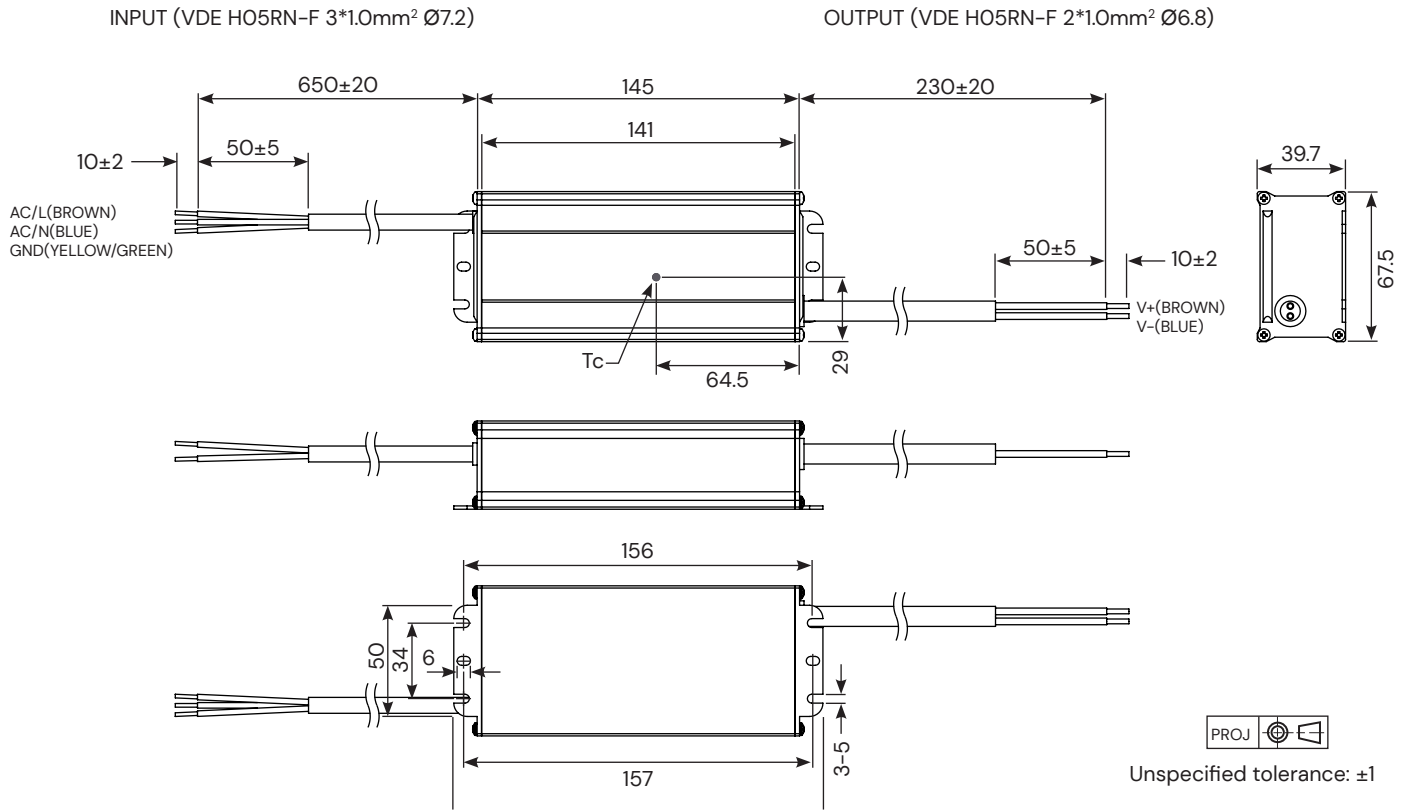
### Inrush Current Waveform



### Total Harmonic Distortion




# Mechanical Outline



## RoHS Compliance

Our products comply with the European Directive 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.



 Electrical products must not be thrown out with domestic waste. They must be taken to a communal collecting point for environmentally friendly disposal in accordance with local regulations. Contact your local authorities or stockist for advice on recycling. The packaging material is recyclable. Dispose of the packaging in an environmentally friendly manner and make it available for the recyclable material collection-service.