

EverSale LPF-25-48

Meanwell LPF-25-48 Power Supply User Manual

Model: LPF-25-48

1. INTRODUCTION

The EverSale LPF-25-48 is a 25W AC/DC LED driver designed for reliable power delivery. It features dual modes for constant voltage and constant current output, making it versatile for various LED lighting applications. This power supply operates efficiently from 90 to 305VAC and is available in models with rated voltages ranging from 12V to 54V. With an efficiency of up to 87% and a fanless design, the LPF-25-48 can operate in a wide temperature range of -35°C to +70°C under free air convection. Its robust design includes a plastic housing with Class II protection, built-in active Power Factor Correction (PFC) function, and full encapsulation to an IP67 level, ensuring durability and safety. The typical lifetime exceeds 50,000 hours, backed by a 5-year warranty.

2. SAFETY INSTRUCTIONS

Please read these safety instructions carefully before installation and operation to prevent personal injury or damage to the device.

- **Qualified Personnel:** Installation and maintenance should only be performed by qualified electricians.
- **Power Disconnection:** Always disconnect the power supply from the mains before any installation, wiring, or maintenance work.
- **Proper Grounding:** Ensure proper grounding according to local electrical codes.
- **Ventilation:** Although fanless, ensure adequate air circulation around the unit to prevent overheating. Do not cover the unit.
- **Environmental Conditions:** Do not expose the unit to temperatures or humidity levels outside its specified operating range.
- **Load Matching:** Ensure the connected load (LED module) is within the power supply's specified output voltage and current range.
- **Wiring:** Use appropriate gauge wiring for input and output connections to prevent overheating and ensure stable operation.
- **IP67 Rating:** The IP67 rating indicates protection against dust and immersion in water up to 1 meter for 30 minutes. However, avoid prolonged submersion or high-pressure water jets.

3. INSTALLATION

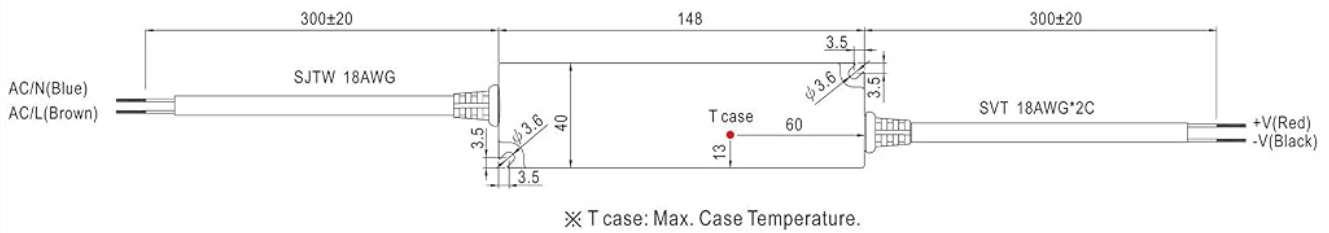
The LPF-25-48 power supply is designed for easy installation. Follow the guidelines below for optimal performance and safety.

3.1 Mechanical Specification

Refer to the diagram below for the physical dimensions and wiring details of the LPF-25-48 unit. All dimensions are in millimeters (mm).

Mechanical Specification

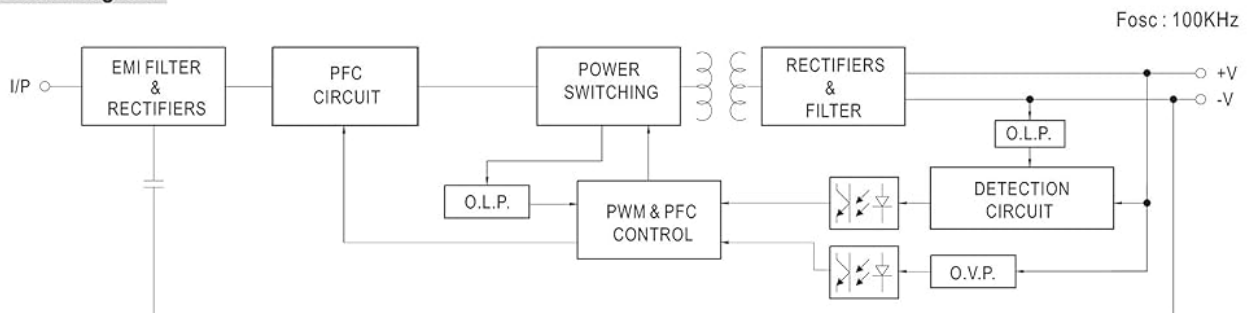
Case No.: LPF-16A Unit:mm



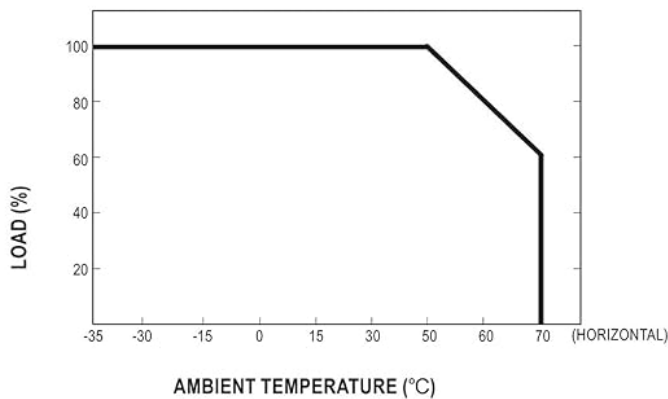
Recommend Mounting Direction



Block Diagram



Derating Curve



Static Characteristics

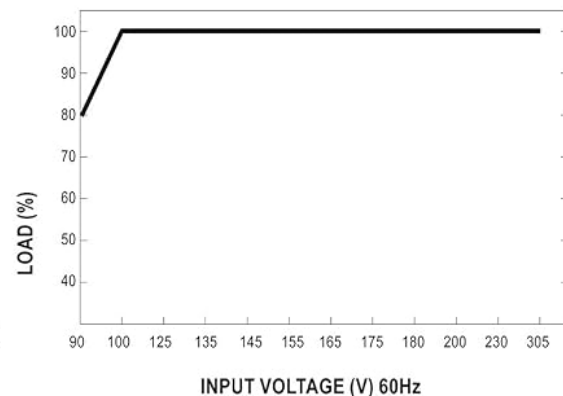


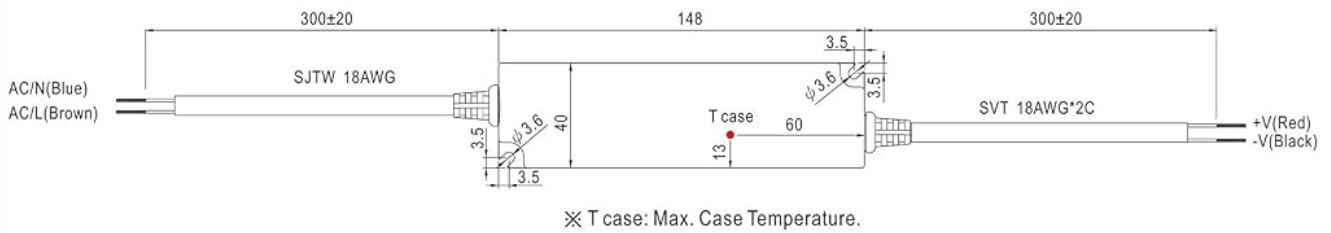
Image 1: Mechanical specifications of the LPF-25-48 power supply. This diagram illustrates the physical dimensions (300x20mm, 148mm, 3.5mm, 3.6mm, 60mm, 32mm), wire types (SJTW 18AWG for AC IN, SVT 18AWG*2C for DC OUT), and the location for Tcase (Max. Case Temperature) measurement. It also shows the AC/N (Blue) and AC/L (Brown) input wires, and +V (Red) and -V (Black) output wires.

3.2 Mounting Direction

Proper mounting ensures efficient heat dissipation and longevity of the power supply. The recommended mounting direction is shown below to facilitate free air convection.

Mechanical Specification

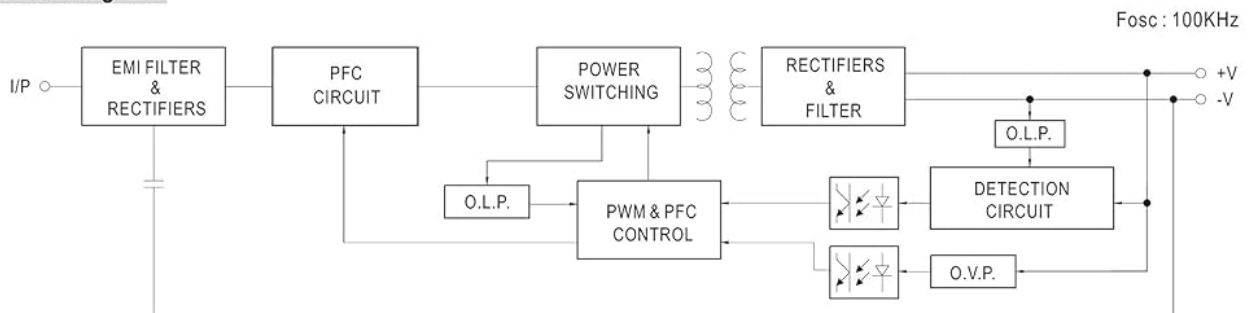
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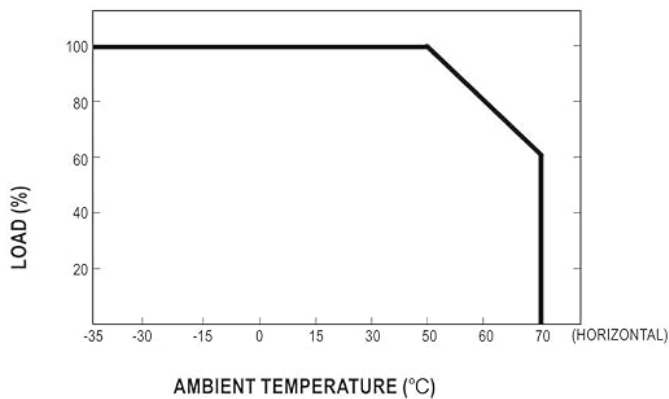
Recommend Mounting Direction



Block Diagram



Derating Curve



Static Characteristics

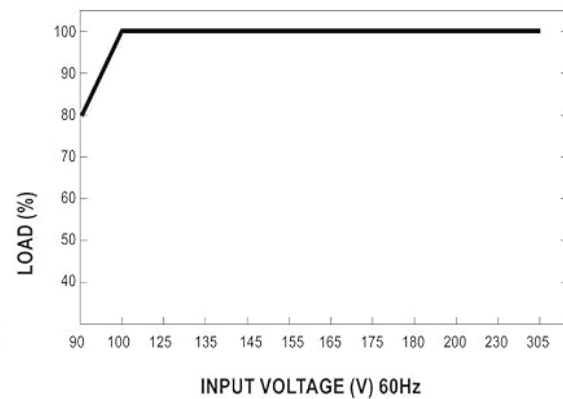


Image 2: Recommended mounting direction for the LPF-25-48 power supply. The diagram illustrates the unit mounted horizontally, which is ideal for maximizing heat dissipation through natural air convection.

3.3 Wiring Connections

Connect the input and output wires as indicated in the mechanical specification diagram. Ensure all connections are secure and insulated.

- **AC Input:** Connect the AC/L (Brown) and AC/N (Blue) wires to your mains power supply (90-305VAC).
- **DC Output:** Connect the +V (Red) and -V (Black) wires to your LED module or load.

4. OPERATION

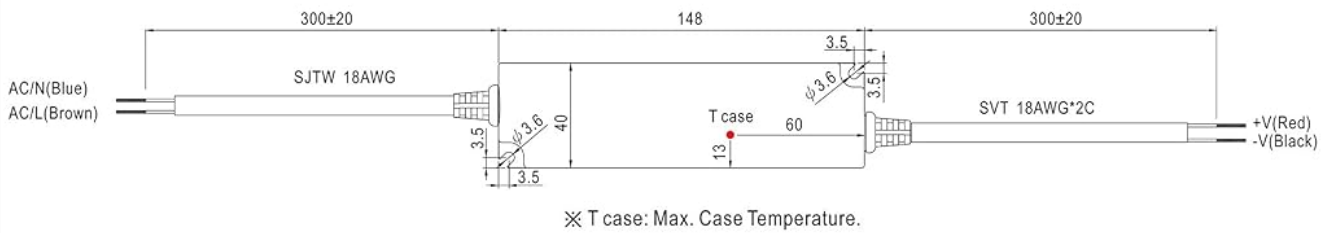
The LPF-25-48 operates in dual modes: Constant Voltage (CV) and Constant Current (CC). Understanding these modes is crucial for proper application.

4.1 Block Diagram

The internal architecture of the power supply is represented by the block diagram below, illustrating the flow of power and control mechanisms including PFC, power switching, and protection circuits.

Mechanical Specification

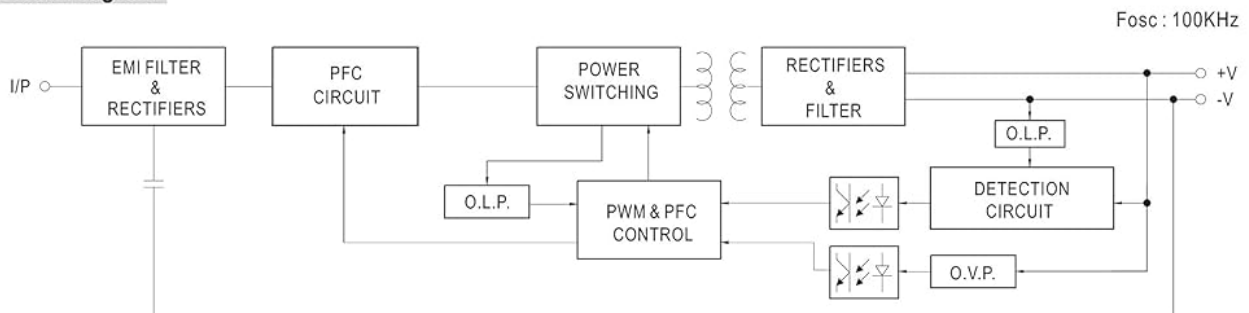
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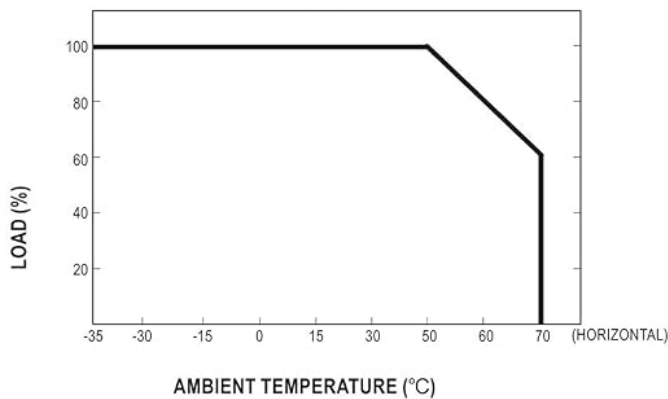
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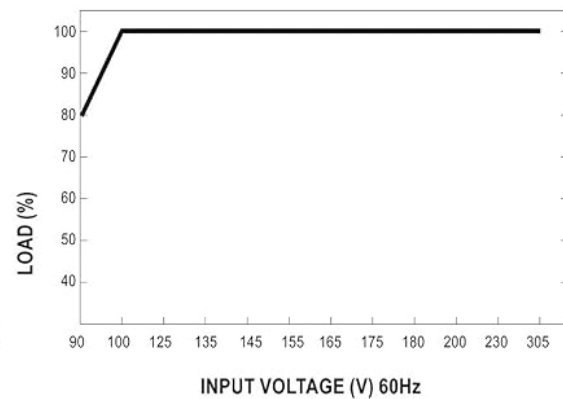
Block Diagram



Derating Curve



Static Characteristics

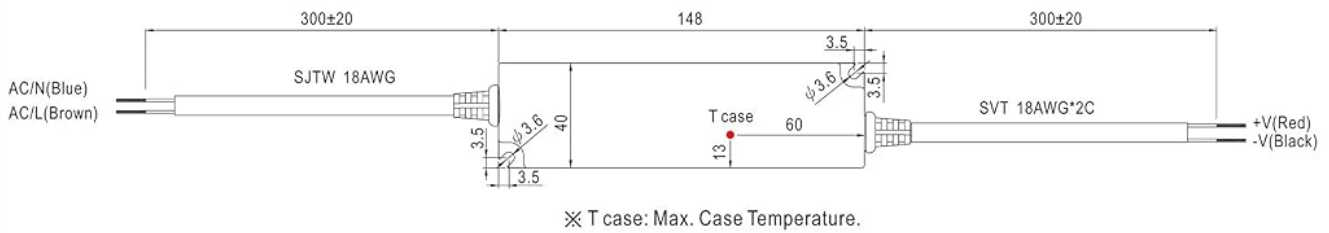


4.2 Derating Curve

The derating curve illustrates the maximum permissible load as a function of ambient temperature. Operating within the specified temperature range is essential to maintain the power supply's performance and lifespan.

Mechanical Specification

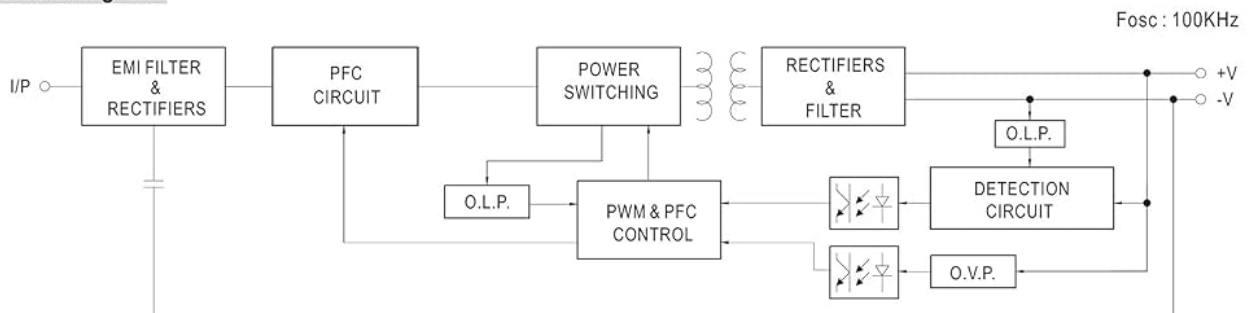
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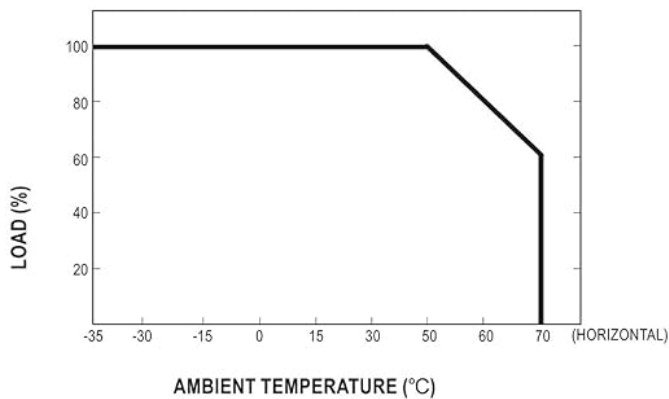
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Block Diagram



Derating Curve



Static Characteristics

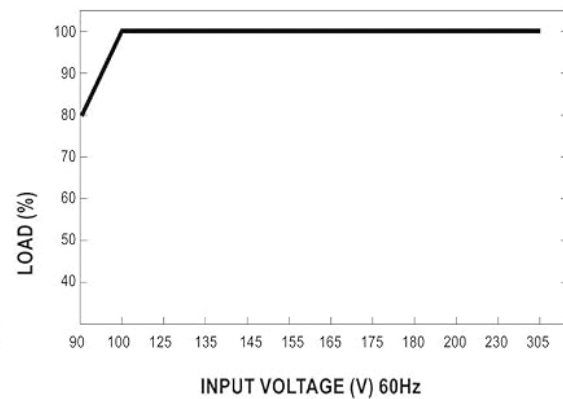


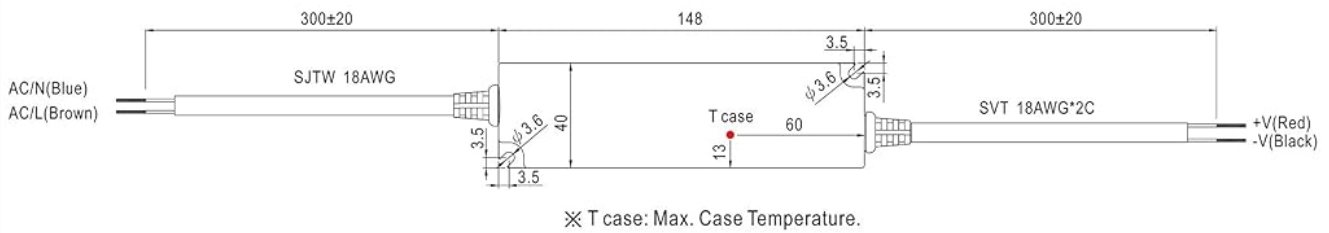
Image 4: Derating curve for the LPF-25-48 power supply. This graph shows that the power supply can operate at 100% load up to approximately 50°C ambient temperature, after which the load must be reduced linearly down to 60% at 70°C. Operation below -30°C also requires derating.

4.3 Static Characteristics

The static characteristics graph shows the relationship between the output load and the input voltage, indicating the power supply's stability across its operational input voltage range.

Mechanical Specification

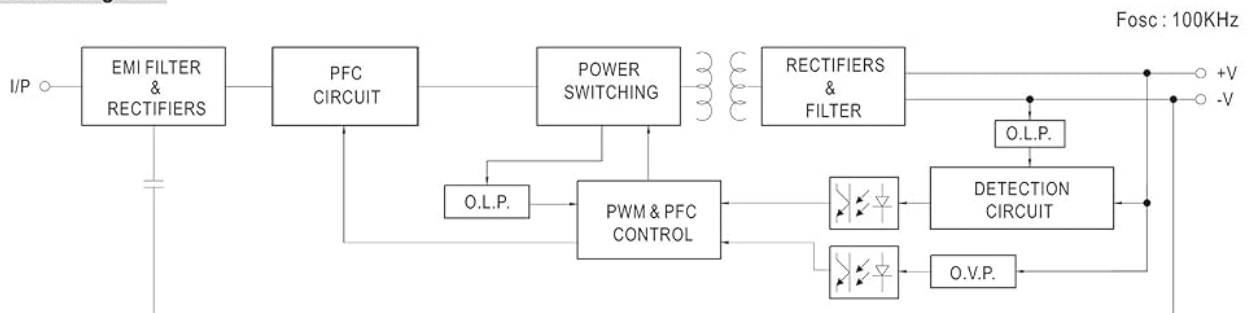
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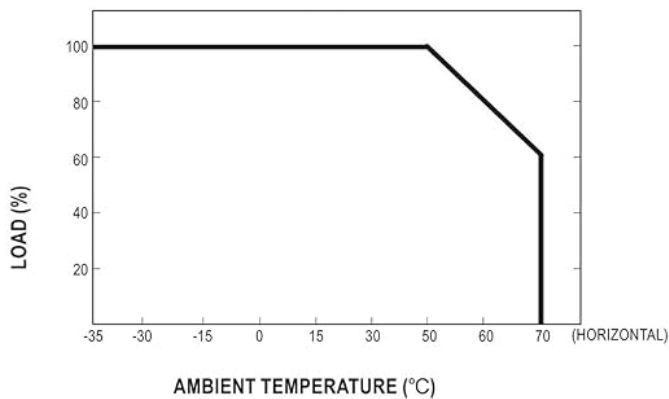
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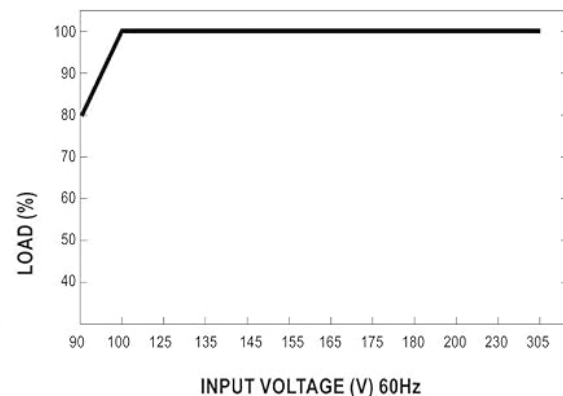


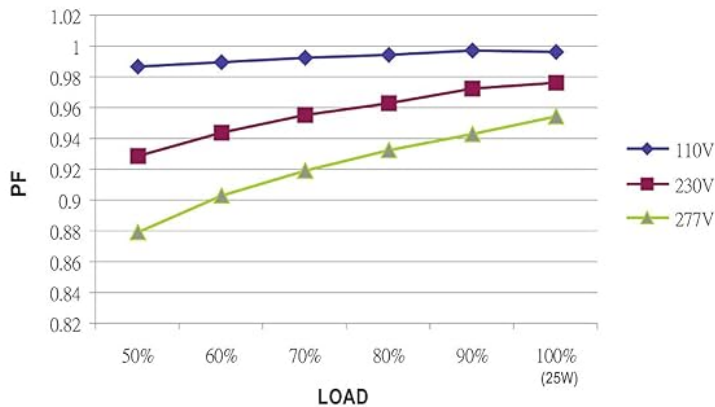
Image 5: Static characteristics of the LPF-25-48 power supply. This graph illustrates that the power supply maintains 100% load capability across a wide input voltage range, typically from 90VAC to 305VAC at 60Hz, with a slight reduction at lower input voltages.

4.4 Power Factor Characteristic

The power factor (PF) characteristic demonstrates the efficiency of power utilization. A higher power factor indicates less reactive power and more efficient energy use.

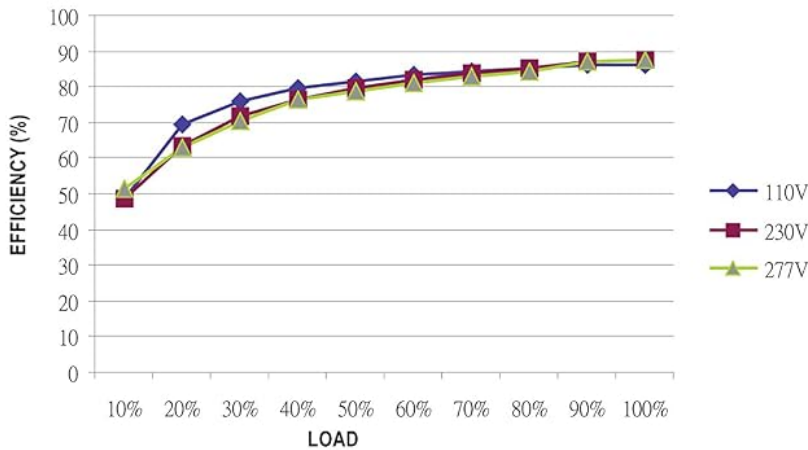
Power Factor Characteristic

Constant Current Mode



EFFICIENCY vs LOAD (48V Model)

LPF-25 series possess superior working efficiency that up to 87% can be reached in field applications.

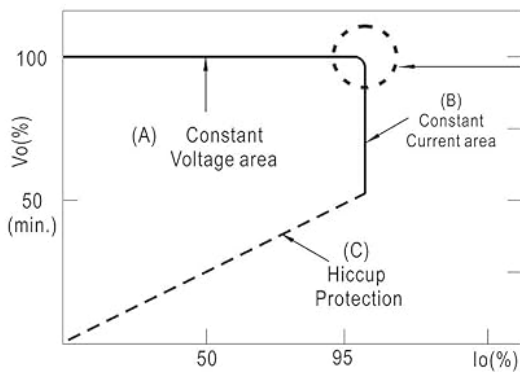


DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B)).



Typical LED power supply I-V curve

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

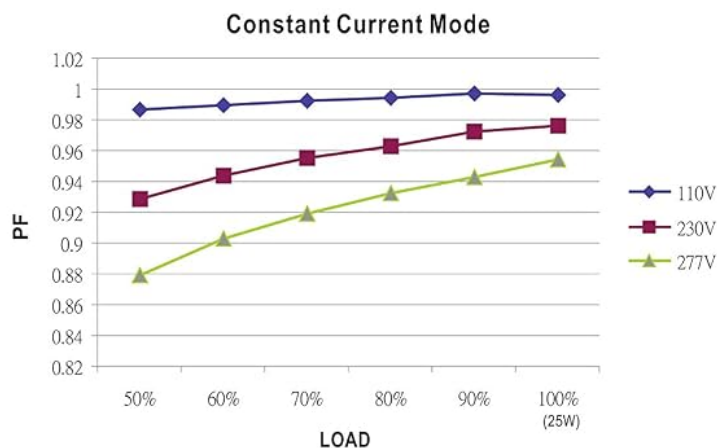
Should there be any compatibility issues, please contact MEAN WELL.

Image 6: Power Factor Characteristic of the LPF-25-48 power supply. This graph shows the power factor (PF) in constant current mode as a function of load percentage for input voltages of 110V, 230V, and 277V. The PF generally increases with load, reaching values above 0.95 at higher loads, indicating efficient power utilization.

4.5 Efficiency vs. Load (48V Model)

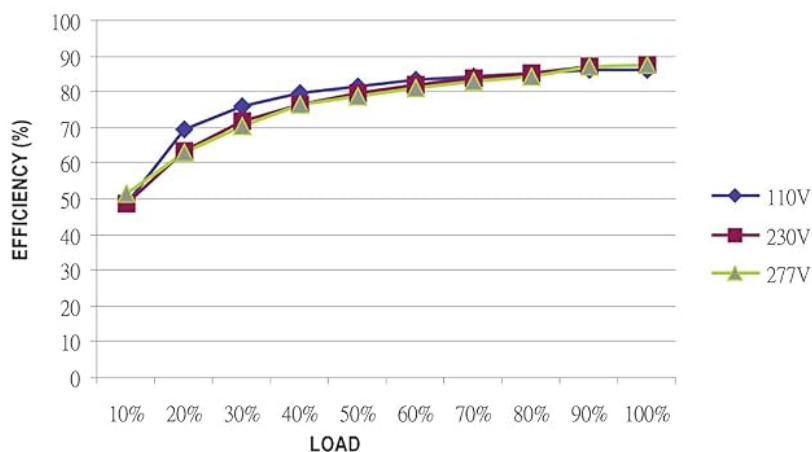
This graph illustrates the power supply's efficiency at various load percentages for the 48V model, demonstrating its superior working efficiency, especially at higher loads.

Power Factor Characteristic



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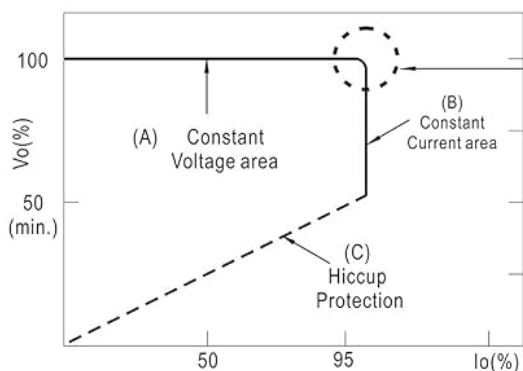


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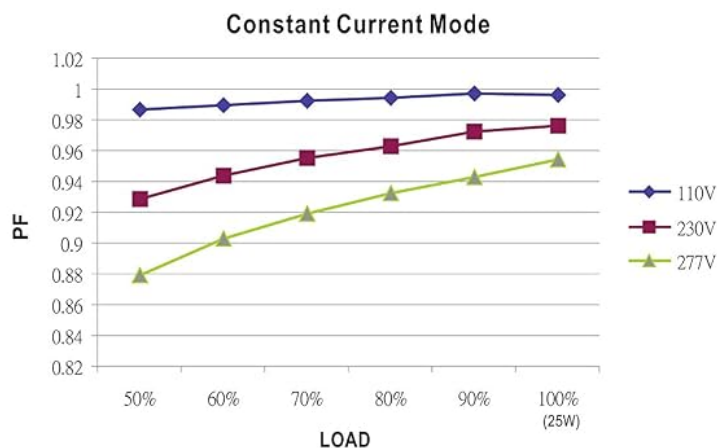
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4.6 Driving Methods of LED Module

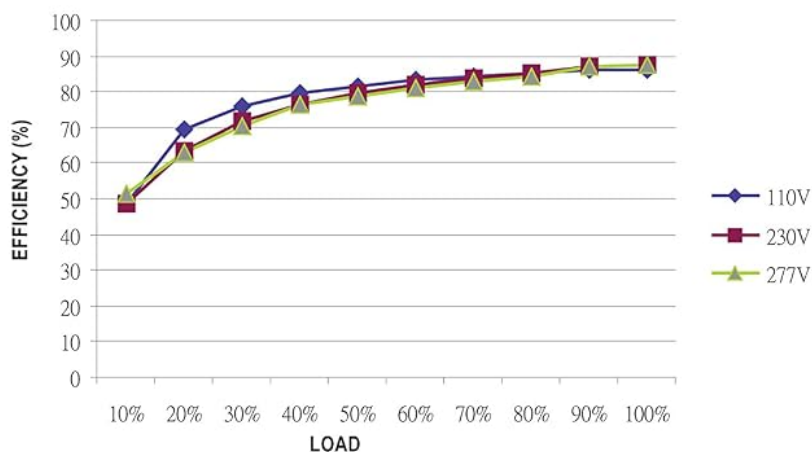
The LPF-25-48 supports both Constant Voltage (CV) and Constant Current (CC) driving methods, allowing flexibility for various LED applications. The typical LED power supply I-V curve is shown below.

Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

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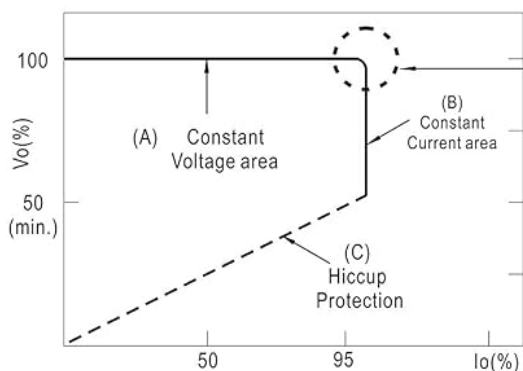


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5. MAINTENANCE

The LPF-25-48 power supply is designed for long-term, maintenance-free operation due to its robust construction and IP67 rating. However, periodic checks can help ensure optimal performance.

- **Visual Inspection:** Periodically inspect the unit for any signs of physical damage, loose connections, or discoloration.
- **Cleaning:** If installed in a dusty environment, gently wipe the exterior of the unit with a dry, soft cloth to remove any accumulated dust. Do not use liquid cleaners.
- **Environmental Check:** Ensure the operating environment remains within the specified temperature and humidity ranges.
- **No User-Serviceable Parts:** The unit contains no user-serviceable parts. Do not attempt to open or repair the power supply, as this will void the warranty and may pose a safety risk.

6. TROUBLESHOOTING

If the LPF-25-48 power supply is not functioning as expected, consider the following common issues and solutions:

Problem	Possible Cause	Solution
No output voltage/LEDs not lighting up	• No input power • Loose wiring connections • Overload protection activated • Short circuit in the load • Unit failure	• Check mains power supply and circuit breaker. • Verify all input and output wiring connections are secure. • Reduce the load to within specifications. Disconnect and reconnect power to reset. • Inspect LED module/load for short circuits. • If all else fails, contact technical support.
Intermittent operation	• Unstable input voltage • Overheating • Loose connections	• Ensure stable input power. • Check ambient temperature and ensure adequate ventilation. Refer to derating curve. • Re-check all wiring connections.
Output voltage/current is incorrect	• Incorrect load matching • Unit operating in wrong mode (CV vs CC)	• Verify the load's requirements match the power supply's specifications. • Ensure the LED module is compatible with the CV or CC mode of the power supply.

If troubleshooting steps do not resolve the issue, please contact EverSale customer support for further assistance.

7. SPECIFICATIONS

Key technical specifications for the EverSale LPF-25-48 Power Supply:

- **Model:** LPF-25-48
- **Output Voltage:** 48V
- **Output Current:** 0.53A
- **Approx. Wattage:** 25W
- **Input Voltage Range:** 90-305VAC
- **Operating Modes:** Constant Voltage (CV) + Constant Current (CC)
- **Power Factor Correction (PFC):** Built-in active PFC function
- **Efficiency:** Up to 87%
- **IP Level:** IP67 (Fully encapsulated)
- **Mechanical Form:** Plastic housing with Class II design
- **Operating Temperature:** -35°C to +70°C (case temperature, under free air convection)
- **Typical Lifetime:** >50,000 hours
- **Item Weight:** 13.3 ounces (0.83 Pounds)
- **Material:** Plastic
- **Manufacturer:** Mean Well

8. WARRANTY & SUPPORT

The EverSale LPF-25-48 Power Supply comes with a comprehensive **5-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

Warranty Exclusions: The warranty does not cover damage caused by improper installation, misuse, unauthorized modifications, accidents, or natural disasters. Any attempt to open or repair the unit will void the warranty.

Customer Support: For technical assistance, warranty claims, or any questions regarding the LPF-25-48 power supply, please contact EverSale customer support through the retailer where the product was purchased or visit the official EverSale website for contact information.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question