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High-voltage power supply

PF0082

User manual



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Shelyak

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# Table of contents

<b>TABLE OF CONTENTS</b> .....	<b>3</b>
<b>INTRODUCTION</b> .....	<b>4</b>
<b>1. SAFETY WARNING</b> .....	<b>5</b>
1.1. <i>Operating principle</i> .....	5
1.2. <i>Safety rules</i> .....	5
<b>2. CONTENTS OF THE BOX</b> .....	<b>6</b>
<b>3. OPTIONAL ELEMENTS</b> .....	<b>6</b>
<b>4. OVERVIEW</b> .....	<b>6</b>
4.1. FRONT VIEW .....	6
4.2. REAR VIEW .....	6
<b>5. TECHNICAL SPECIFICATIONS</b> .....	<b>6</b>

# Introduction

This document has been written to provide you with the information you need to use your product safely and efficiently. This high voltage power supply is a versatile device, designed to provide high voltage with current regulation to power a wide variety of spectral lamps.

This manual explains how to install it correctly, how to use it optimally and gives you important safety advice to follow. It is essential that you read this manual carefully before starting to use the high-voltage power supply to prevent any risk of accident or potential damage.

Before using the high-voltage power supply, make sure you fully understand how it works and follow all the safety instructions in this manual. If you have any doubts or questions, please refer to this document or contact our team.

The Shelyak Instruments team  
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# 1. Safety warning

This power supply produces a high DC voltage (up to 310V), which is **potentially dangerous for the user**. It is therefore essential to understand how it works and to follow a few simple safety rules.

## 1.1. Operating principle

Any gas lamp - whether a simple neon lamp or a sophisticated hollow-cathode spectral lamp - requires a high DC voltage to excite the gas in the lamp. The voltage required depends mainly on the gas used; for example, neon requires around 60V, whereas a Thorium-Argon (ThAr) lamp requires over 200V.

The High Voltage power supply is therefore capable of producing a high DC voltage (up to around 310V), to excite a wide variety of gases. Once the gas excitation has started, a current regulator takes over, adapting the voltage to maintain the current.

The excitation holding voltage for a given current is always lower than the excitation voltage itself. On power-up, there is a voltage peak, then the voltage drops significantly.

You can set the current using the potentiometer on the front panel, and display it using the galvanometer. The maximum current is 30mA.

In addition, power limiting reduces the risks, since normal use of the power supply never requires maximum voltage at the same time as maximum current.

Ultimately, the stabilised operating voltage depends mainly on the type of lamp you use.

Note that as the power supply incorporates current regulation, it is naturally protected against short-circuits.

## 1.2. Safety rules

To ensure your safety when using the high-voltage power supply, it is essential to follow certain instructions.

- Any manipulation of the power supply (installation, connection of a lamp, etc.) must be carried out with the power off, i.e. with the switch in the OFF position and, if possible, with the 12V supply switched off.
- We strongly recommend that you set the current potentiometer to the minimum position (0mA) when you first switch it on.
- Always use cables and plugs that are in good condition, to avoid any risk of electrocution or short-circuiting.
- **Never open** the power supply unless you are an experienced technician (you may be held liable). The high-voltage power supply contains sensitive components and may present a high risk of electric shock, fire or other hazards if handled incorrectly.
- Keep the power supply away from moisture and heat sources, and avoid overloading electrical sockets.
- In the event of malfunction or need for repair, it is strongly recommended that you contact the manufacturer (Shelyak Instruments) for professional assistance.

For your information, an internal switch box will disconnect it if the box is opened.

## 2. Contents of the box

Inside the packaging you will find :

- 1 high-voltage power supply « PF0082 ».

## 3. Optional elements

You can complement your power supply with the following accessories:

- Cable for 90cm hollow cathode lamp "SE0268".
- Connector (to create your own "EL0334" cable).
- 12V power supply « EL0073 ».

## 5. Technical specifications.

- Dimensions : 172×106×60.
- Weight : 540 g.
- Maximum output voltage : 310 V.
- Current range : 1 à 30 mA.
- Power supply : 12 V, 1A with 5.5/2.5 mm pin and + 12v in the centre.
- Internal fuse : 2A.
- Protection against short circuits
- Internal safety switch (power supply will not operate if opened).

## 4. Overview

### 4.1. Front view



### 4.2. Rear view

