WEALTEC

Wealtec Corp.

mini ELITE
POWER SUPPLY

Service & Operation & Instruction
Manual

Item # 02030

V 1.10

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Section 1 — General Information

1.1 Objective

This document is intended to define the Customer Support Department (CSD) service strategy for the mini ELITE project.

1.2 Scope

This document will outline the strategic requirements necessary to support the mini ELITE project for the CSD manager associated department staff and mini ELITE team members.

1.3 Conventions

The following conventions are used throughout this manual

※Left and Right side of the unit are as viewed from the front operator position of the unit, unless otherwise stated.

※Dimensions are in centimeters unless otherwise stated.

Section 2 - System Overview

2.1 Product Introductions

The mini ELITE is a single output , 20 Watts , universal input switching mode power supply. It is designed to meet EN61010, IEC60601 , UL3101-1 high performance power supply. The efficiency is higher than 78% typ. While measuring at nominal line and rated load.

The hold up time is only 16mS typ. At 115VAC input and rated load , which is measured from the end of the last charging pulse when the main output drops down to 95% output voltage. Do not touch power leads metallic part when green LED in front of panel went to on. This could provoke an awful electric shock.

For some reason the power supply fails to control itself , the build-in over voltage protection circuit will shut down the outputs to prevent damaging external parts. The trip point of circuit is around 135V to 150V. The power supply will go into hiccup mode against short circuit or over load conditions , and will auto-recovery while faulty conditions are removed. The recovery time is around 3-5 seconds.

2.2 Input Specifications

2.2.1 Input Voltage

The range of input voltage is from 90VAC to 264VAC. Nominal line 115VAC(60Hz), 230VAC(50Hz). The AC rating shown on the label 100VAC – 240VAC.

2.2.2 Input Frequency

The range of input frequency is from 47Hz to 63Hz.

2.2.3 Input Current

The maximum input current is 1.5A at 115VAC or 0.75A at 230VAC.

2.2.4 Inrush Current

The inrush current will not exceed 30A at 115VAC input or 15A at 230VAC input , cold start, 25℃.

2.3 Output Specifications

2.3.1 Load Range

Output	min. load	rated load	voltage accuracy
R1--- 50V	0.1A	0.4A	45V to 55V
R2--- 80V	0.1A	0.25A	75V to 85V
R3--- 100V	0.1A	0.2A	95V to 105V
R4--- 120V	0.1A	0.16A	115V to 125V

The output in the conditions of 90% rated load and nominal line , the 50V output is set to between45V and 55V , the other output checked to be within the specified voltage accuracy range.

2.3.2 Ripple and noise

The peak-to-peak ripple and noise is less than 500mV. Measuring is done by 15MHz bandwidth limited oscilloscope and terminated each output with a 0.47uF capacitor at rated load , nominal line.

2.3.3 Line regulation

The line regulation is less than +-1% while measuring at rated load and +-10% of

input voltage changing.

2.3.4 Load regulation

The load regulation is less than +-5% measuring is done by changing the output load +-40% from 60% rated load and nominal line.

2.4 Environment Specifications

Operation Temperature	0-40℃
Humidity	10% to 90% R.H. Non-condensing

2.5 Physical Dimensions:

Weight	0.6 kg
Length	19.0 cm
Width	8.0 cm
Height	5.0 cm

2.6 Certificate

The power supply been tested and confirmed to meet following standards :

2.6.1 Safety standards

EN61010

IEC 60601-1

UL-3101-1

CSA 22

2.6.2 EMI standards

IEC60601-1-2

CISPR II class “B”

EN55022 “B”

2.6.3 EMS standards

IEC 1000-4-2	6KV cont. 8KV air discharge
IEC 1000-4-3	3V/m criteria A
IEC 1000-4-4	2KV criteria A
IEC 1000-4-5	2KV criteria A

2.7 Service Strategy Worldwide

The preferable service option is most of the service on the Instrument is performs by the customer. The customer can call for phone support after diagnosing the problem. Phone support personnel will ship the appropriate parts/unit to the customer to be installed by the user. The phone support personal will determine if defective parts be discarded or returned to the repair center.

2.8 Prevention Maintenance

The design of the mini ELITE does not need any routine maintenance to be performed by the customer. PM visits by service engineers will not be required.

2.9 Warranty Coverage

Coverage will include replacement of any failed parts or component during normal operation. Warranty period is one year.

Section 3 — Control and Operation

3.1 Control

The front and rear panel keys discussed in Fig-3.1 are used to set up and run the mini ELITE Power Supply.

KEY	Description
1 ON/OFF	ON/OFF Power Supply
2 Voltage Select Knob	Select Voltage to be run
3 Green LED	Indicate Power Output Status
4 Output Terminals	Output Power to Electrophoresis

Fig 3.1

3.2 Setup and Operation

Step	Action	Description
1	Connect the electrophoresis cell(s) to the power supply	The power leads are non-reverse and color coordinated to the output terminals.
2	Select the Voltage to be run	Turn the knob in front of panel to the position voltage to be run.
3	Turn the power on.	Start the run.
4	Stop of the run	Turn the power off or unplug power leads to manually stop a run.

Section 4 — Trouble-Shooting

4.1 Instrument Service

If your mini ELITE malfunction or operates unusually in any way. You may contact with local WEALTEC representatives. All other servicing attempts will terminate the responsibility of the manufacturer under the forms of the warranty.

4.2 General Fault

Pre-caution

Wait 10 seconds from time AC power is disconnected to allow high voltage discharge within the power supply.

Symptom	Action and possible causes
LED did not light up	1. Check if power switch is on 2. Wait 3-5 sec to see if LED can light up. 3. Contact your local Wealtec representative.
No power output, LED is on	1. Contact your local Wealtec representative.

Section 5 — Circuit Diagram

As special request.

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