photomultiplier bench top HV supply
HVLAB3000 data sheet

ET Enterprises
electron tubes

1 description

The HVLAB3000 is a programmable 3000V high stability, dc power supply for laboratory and test applications, designed with the photomultiplier user in mind. It has a small foot-print and features a choice of positive or negative polarity. Additional +/-5V and +/-12V auxiliary outputs are provided for powering associated electronics modules such as amplifiers and photon counting instrumentation. Power input is 100V to 240V ac.

The output voltage can be set using three different methods: manually, using a ten-turn precision front-mounted potentiometer, digitally via a USB port, or using an analogue control input. Two power supplies can be controlled by the HVLAB3000 software.

The voltage setting is retained on switch-off and upper limits for HV and current can be set manually via the rear panel adjustment potentiometers using a small screwdriver (tamper proof). The current limit folds back the high voltage to limit the current. The voltage limit is the same for both polarities and the current limits are set individually for each polarity. Both voltage and current limits operate independently of the soft-set control limits.

Adjustable brightness LED displays provide accurate readings of the HV output voltage and current. The same displays indicate the set maxima for HV and current by push button, as selected by the user.

The USB control is compatible with the ET Enterprises MCS-CT3 multi-channel scaler when used in photomultiplier photon counting systems.

2 applications

- general laboratory use
- photomultiplier based photon detection systems

3 features

- compact
- HV adjustable from 100-3000V
- user selectable HV polarity
- overload protected
- adjustable brightness LED displays
- manual or USB controlled HV adjustment
- user selectable upper current limit
- small footprint
- dual polarity auxiliary low voltage output
- USB interface
- analogue remote control (0-3V)

4 specifications

	unit	min	typ	max
input voltage (50/60Hz)	V	100		240
remote control input	V	0		3
input power (full load)	VA		46	
output voltage (+ or -)	V	100		3000
output ripple (full load)	% full scale		0.01	
output current	mA			3
voltage set precision:				
manual	V		1	
software	V		1	
voltage regulation	%			0.001
load regulation (0-2.5mA)	%		1	
discharge time				
(90 to 10% with 4M7 load)	s		4	
auxiliary voltage output 1:				
voltage (fixed)	V		+/-5	
current	mA			300
auxiliary voltage output 2:				
voltage (fixed)	V		+/-12	
current	mA			125
protection				
short circuit (to ground)	protected against continuous short circuits			
temperature				
operating	ºC	0		40
storage	ºC	-40		60
weight	kg		1.5	

5 connections

input connector	IEC
HV output connector (2)	SHV
interface connector	USB B (2.0)
auxiliary output connector	DIN
remote control sockets (2)	4mm banana socket

6 outline dimensions (mm)
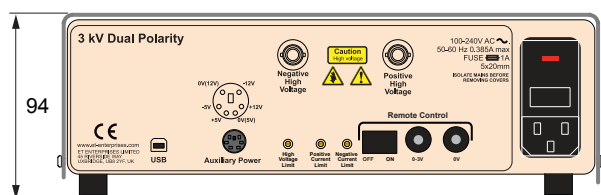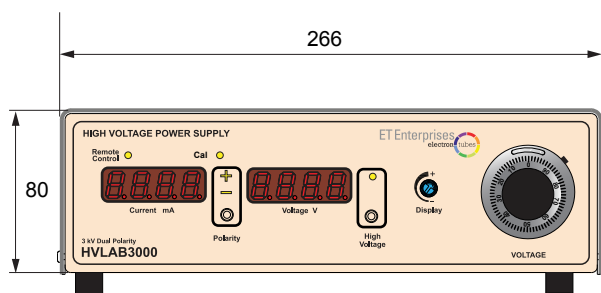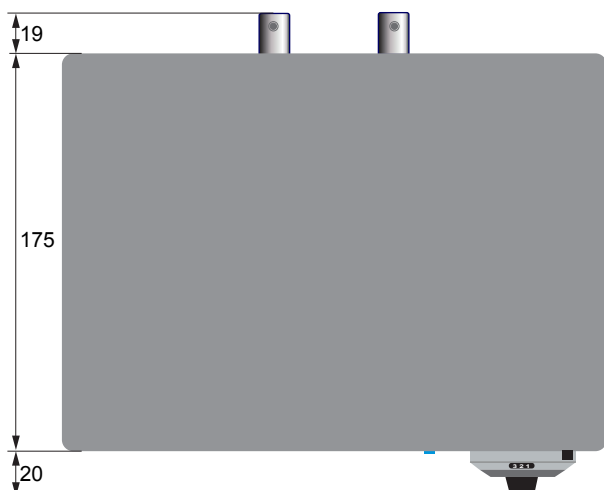
7 ordering information

item	ordering code
3000V dual polarity	HVLAB3000
HV cable to PMT housing	LEADMHVSHV-100cm

8 warning

High voltages generated by these products present an electrical shock hazard and appropriate precautions must be taken. Installation must be by qualified personnel.

All units are despatched with the HV control potentiometer set to zero.

Do not operate outside the specification limits of the HVLAB3000 or those of the photomultiplier. This may result in loss of performance, permanent damage, or both.