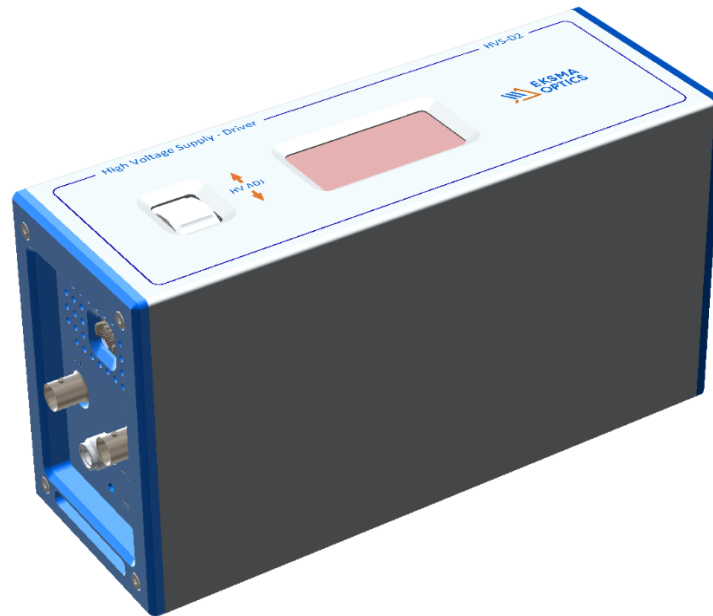




# HVS-D2

High Voltage Power Supply with Pockels cell driver

Technical Description



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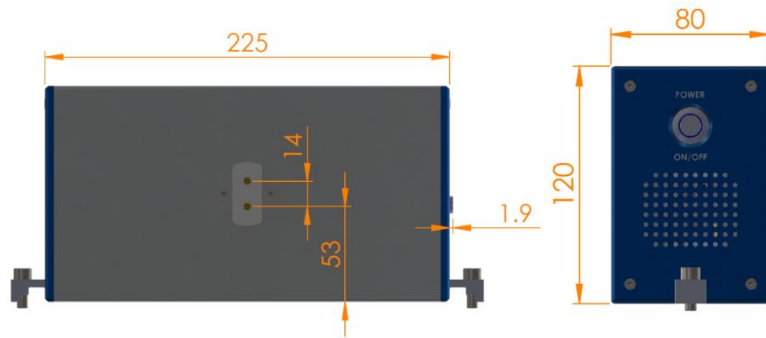


Figure 1. Outline drawing and dimensions of the HVS-D2

Table 1. CONTROLS AND CONNECTIONS OF THE HVS-D2

NO.	DESCRIPTION
1	CAN connector. Used for device control via CAN-USB converter (not included).
2	BNC connector X1 input. Used to trigger rising edge of HV pulse.
3	BNC connector X2 input: Used to trigger falling edge of HV pulse.
4	Power connector. 24V input.
5	Ground M4 screw.
6	Pockels cell driver output.
7	ON/OFF button.
8	Clamp.
9	Handle for tuning. Used for HV adjustment.
10	OLED screen. Displays HV amplitude and average current of internal HV power supply.

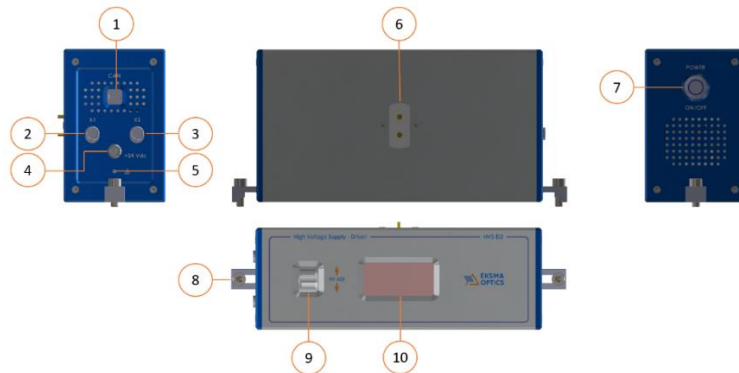



Figure 2. Controls and connections of the HVS-D2

### 1.1. SYMBOLS AND ABBREVIATIONS

 Symbol for chassis earth, potential safety earth.

HV – high voltage.

GND – ground.

DC – direct current.

OLED – organic light-emitting diode.

### 2.1. INSTALLATION AND CONNECTING

- › Ground the device.
- › Connect the load.
- › Connect the device to the DC power source.

**ATTENTION**

For safety reasons, do not connect/disconnect the load when the supply is powered and switched on.

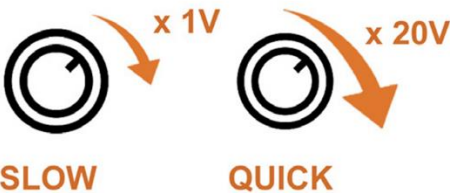
### 2.2. OPERATION

#### 2.2.1 DEVICE WAKE-UP



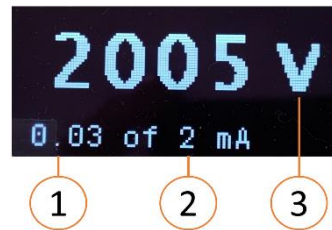
Turn the knob few times in different directions to wake-up the device.

#### 2.2.2. PRECISE HIGH VOLTAGE (HV) ADJUSTMENT



Turn knob till the required voltage value is achieved.

#### 2.2.3. OLED DISPLAY



- 1 Average current of internal HV supply.
- 2 Current limit of internal HV supply.
- 3 Voltage display:
  - › With underline and overline: HV tuned value is displayed;
  - › No underline and overline: HV output value is displayed.

**ATTENTION**

Take care not to apply HV of a higher value than your load is certified to handle.

### 2.3. DISCONNECTING

- › Turn off the **Power** button (1 in Figure 2).
- › Disconnect the load.

## Chapter 3 SPECIFICATIONS

### 3.1. GENERAL INFORMATION

#### 3.1.1. MODEL

The model number can be found on a label on the side of the device.

#### 3.1.2. MAIN COMPONENTS

Table 2. MAIN COMPONENTS

COMPONENT	QUANTITY
High voltage power supply with Pockels cell driver HVS-D2	1
External power supply with AC power cable	1
BNC to BNC cable	2
HVS-D2 output cable	2
Technical description	1

### 3.2. TECHNICAL SPECIFICATIONS

Table 3. TECHNICAL SPECIFICATIONS

MODEL	HVS-D2-10-4.2	HVS-D2-5-5.5	HVS-D2-3-8.6	HVS-D2-2.5-9.8
Maximal output pulse amplitude (HV)	4.2 kV	5.5 kV	8.6 kV	9.8 kV
Output polarity	bipolar			
HV pulse rise time, typical	6 ns	8 ns	10.5 ns	12 ns
HV pulse fall time, typical	6 ns	8 ns	9.5 ns	10.5 ns
HV pulse duration	30...3000 ns		35...2000 ns	
Triggering pulse duration requirement	≥ 30 ns			
Maximum HV repetition rate	10 kHz	5 kHz	3 kHz	2.5 kHz
HV pulse delay	30 ns			
Requirement for external triggering pulse amplitude load	3.5...5 V (50 Ω load)			
Requirement for external triggering pulse rise time	< 5 ns			
External DC powering requirements:	15 - 25 V, 150 mA (0.5 A inrush current)		24...25 V, 150 mA	
Dimensions (W × L × H)	80 × 120 × 225 mm			
Weight	1.6 kg			

Maximal power is proportionally lower by tuning to lower HV output.

Chapter 4

WARRANTY

4.1. WARRANTY STATEMENT

This HV power supply with Pockels cell driver HVS-D2 is protected by one-year warranty covering labor and parts. The warranty enters into validity since the shipment date. Any evidence of improper use or unauthorized attempts at repair leads to warranty cancellation.

4.2. SAFETY

Operating the power supply is allowed to persons acquainted with the operation manual and having permission to deal with voltages over 1000 V. In order to ensure the safe operation of the product, please follow these warnings and cautions in addition to the other information contained elsewhere in this document.

- › Ensure that nothing, and nobody, will be endangered by this High Voltage before putting the unit into operation!
- › The full dielectric strength of the high voltage connectors is only realized when fully mated together.
- › If possible, familiarize yourself with the equipment being used and the location of its high-voltage points.
- › Make sure that instruments are properly grounded.
- › Before supplying the power to the instrument, make sure that the correct voltage of the AC power source is used.
- › After the power off please wait few seconds before making any connections, in order for capacitors to discharge.
- › The units may only be operated in a clean, dry environment. Please make sure that no objects or liquids can enter the casing through the ventilating aperture. Because of the risk of sparks, the unit should not be operated in the vicinity of flammable gases or fumes.
- › To ensure a adequate cooling, the ambient temperature should not exceed 40 °C. This unit is air cooled. Ensure that nothing is placed near the back of unit which may impede the air-flow. Do not expose the unit directly to solar radiation.
- › Use an insulated floor material or a large, insulated floor mat to stand on, and an insulated work surface on which to place equipment. Make certain such surfaces are not damp or wet.
- › Use the time-proven “one hand in the pocket” technique while handling an instrument probe. Be particularly careful to avoid contact with metal objects that could provide a good ground return path.

4.3. SERVICE CONTACT INFORMATION

In case of service required or any questions on warranty, please notify:

EKSMA Optics, UAB  
 Dvarcioniu str. 2B  
 LT-10233 Vilnius, Lithuania

Phone: +370 5 272 99 00  
 Fax.: +370 5 272 92 99  
 E-mail: [info@eksmaoptics.com](mailto:info@eksmaoptics.com)  
 Website: [www.eksmaoptics.com](http://www.eksmaoptics.com)

**WARNING**

The safety of the system incorporating HV power supply is the responsibility of the assembler of the system.

**WARNING**

Direct contact with the exposed inner parts of the system when it is powered may cause human injuries or death.