

## FLASHLAMP DRIVER PS5050 FOR PULSED LASERS



### FEATURES

- Output power up to 3.2 kJ/s
- Output voltage accuracy better than  $\pm 0.1\%$
- Output voltage up to 2000 V
- Pulse repetition rate up to 150 Hz
- Built-in serial ignition circuit
- Built-in simmer power supply
- Internal/external triggering
- LCD display
- RS232/CAN interface for remote control
- Single phase mains

### Customised flashlamp drivers are available upon request.

Depending on customer needs, we can produce flashlamp drivers with specific average charging power, output voltage, pulse duration, repetition rate values or/and specific application areas.



Fig. 2. Front panel controls of PS5050 flashlamp driver

PS5050 model flashlamp driver is designed for flashlamp-pumped lasers and establishes itself as an updated version of PS5010 driver. PS5050 features microprocessor control and back illuminated LCD display where all output parameters of power supply are conveniently displayed. Flashlamp driver comprises one or several charging modules, a discharge and simmer module and a control circuit. Such design allows the unit to be operated with the utmost ease and convenience. The unit is fitted into a 19" standard housing and may be comfortably mounted in your power supply stands. The unit is manufactured in conformity with EN61010 and EN55011 standards. Driver can be remotely controlled through RS-232 and CAN (Controller Area Network) interface.

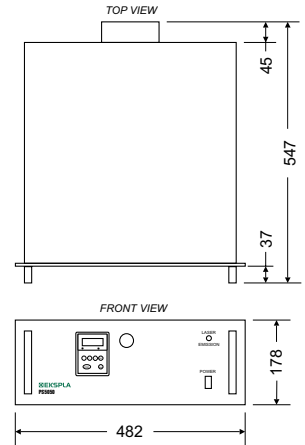


Fig. 1. Physical dimensions

### GENERAL SPECIFICATIONS

Number of independent outputs	1			
Number of charging modules	1	2	3	4
Max. average output power $P_{avg}$ at 10 Hz PRR <sup>1, 2)</sup>	0.8 kJ/s	1.6 kJ/s	2.4 kJ/s	3.2 kJ/s
Max charging voltage $U_{ch}$	1000–2500 V <sup>3)</sup>			
Pulse duration	fixed			
Max pulse repetition rate	< 150 Hz			
Pulse to pulse stability	0.1 %			
Load regulation	0.1 %			
Resolution	1 V			
Ignition pulse voltage	16 kV <sup>4)</sup>			
Ignition pulse duration	> 1000 ns			
Simmer current options	0.6 A; 1.2 A; tunable 0.1–1 A			
Simmer voltage	< 300 V			
Striking voltage	< 900 V			
Protection features	overvolt, overheat, flashlamp breakdown, interlock			
Error report	no simmer current, no charge, HV connectors			
Remote control	RS-232 / CAN (CANopen on request)			
Maximum $C_{PFN}$ value	< 240 $\mu$ F			
Mains	single phase 230 V (-10%, +6%) or 3-phase 380 V (-10%, +6%) <sup>5)</sup>			
Power consumption, average	1.8 kW	3.2 kW	4.5 kW	5.8 kW
Power consumption, peak	2 kW	4 kW	6 kW	8 kW
Operation conditions				
Ambient temperature	from 0 to +40 °C			
Humidity	from 10 to 90 % non-condensing			

<sup>1)</sup> For parallel operation of four charging modules

<sup>2)</sup> See Fig. 3 for other pulse repetition rates

<sup>3)</sup> Inquire for other voltages

<sup>4)</sup> Optional 30 kV

<sup>5)</sup> 3-phase 200 V or 208 V mains are optional

Specifications in table are given as reference.

We always suggest to optimize power supply by customer's usage conditions.

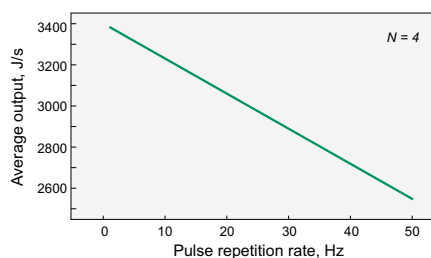
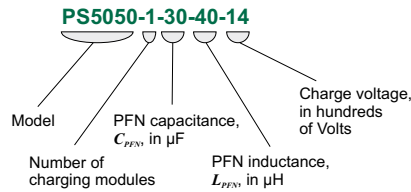


Fig. 3. Average output power versus pulse repetition rate

**Ordering / Part number information**

Please indicate following points by inquiry:

- Flash lamp type (bore diameter, gap length, gas type and pressure)
- Maximal pulse energy
- Pulse duration
- Maximal pulse repetition rate



**CONFIGURATION EXAMPLES OF PS5050 SERIES POWER SUPPLIES**

Ordering code	Discharge energy J	Repetition rate Hz	Maximal charging rate J/s	Voltage V	Flashlamp recommended	PFN specifications		
						Capacitance µF	Inductance µH	Pulse duration FWHM, typical µs
PS5050-1-30-60-16	38.4	10	384	1600	2×5×45; 450 Torr	30	60	89
PS5050-2-30-60-16	38.4	20	768	1600	2×5×58; 450 Torr	30	60	89
PS5050-2-60-100-16	76.8	10	768	1600	2×5×58; 450 Torr	60	100	163
PS5050-2-80-180-19	144.4	10	1444	1900	2×5×75; 450 Torr	80	180	264
PS5050-3-60-100-16	76.8	20	1536	1600	2×5×58; 450 Torr	60	100	163
PS5050-3-80-60-14	78.4	20	1568	1400	5×90; 450 Torr	80	60	146
PS5050-3-80-60-11	48.4	30	1452	1100	5×90; 450 Torr	80	60	152
PS5050-3-100-80-10	50	30	1500	1000	5×90; 450 Torr	100	80	197
PS5050-4-30-60-16	38.4	50	1920	1600	2×5×58; 450 Torr	30	60	89

Contact Ekspla if your requirements are different as in this table. We will consult you and make suggestion best matching your requirements.

**TWO-CHANNEL FLASHLAMP DRIVER PS5053 FOR PULSED LASERS**



Flashlamp driver PS5053 is designed for flashlamp-pumped lasers and presents a two-channel device consisting of two capacitor charging, simmer/trigger and pulse forming modules and control circuit. It is excellent choice for oscillator-amplifier laser systems.

This model is an updated version of flashlamp driver PS5012. PS5053 features microprocessor control and back illuminated LCD display where all output parameters of power supply are conveniently displayed. Driver can be remotely controlled through RS-232 and CAN (Controller Area Network) interface.

**FEATURES**

- Output voltage up to 2000 V
- Single unit for oscillator-amplifier systems
- Built-in serial ignition circuit
- Built-in simmer power supply
- Internal/external triggering
- Output voltage accuracy ±0.1 %
- RS232/CAN interface for remote control
- Single phase mains



Fig. 1. Flashlamp driver PS5053 and cooling unit PS1222CO mounted into a 9U rack



Fig. 2. Average output power versus pulse repetition rate