

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 **2500 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 or optionally LAN interface for remote control
- ▶ Single phase mains

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. Ethernet interface can be ordered as option.

GENERAL SPECIFICATIONS

Model	PS5050-1	PS5050-2	PS5050-3	PS5050-4
Number of independent outputs	1			
Number of charging modules	1	2	3	4
Max. average output power P_{avg} at 10 Hz PRR ^{1, 2)}	0.8 kJ/s	1.6 kJ/s	2.4 kJ/s	3.2 kJ/s
Max charging voltage U_{ch}	1000–2500 V ³⁾			
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 ⁴⁾			
Ignition pulse duration	> 1000 ns			
Simmer current options	0.6 A; 1.2 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 (LAN on request)			
Maximum C_{PFN} value	< 240 μ F			
Mains	single phase 230 V (-10%, +6%) or 3-phase 380 V (-10%, +6%) ⁵⁾			
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	from 0 to +40 °C			
Ambient temperature	from 10 to 90 % non-condensing			
Humidity	from 10 to 90 % non-condensing			

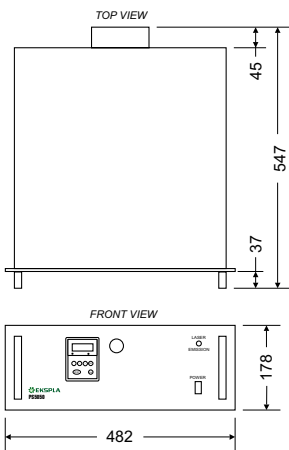


Fig. 1. Physical dimensions



Fig. 2. Front panel controls of PS5050 flashlamp driver

¹⁾ For parallel operation of four charging modules
²⁾ See Fig. 3 for other pulse repetition rates
³⁾ Inquire for other voltages

⁴⁾ Optional 30 kV
⁵⁾ 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.

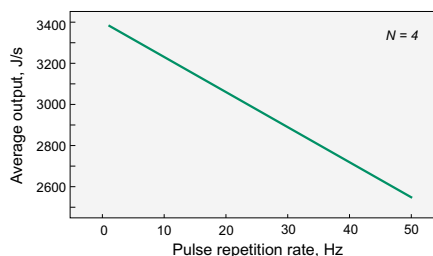


Fig. 3. Average output power versus pulse repetition rate

CONFIGURATION EXAMPLES OF PS5050 SERIES POWER SUPPLIES

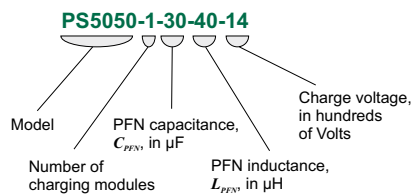
Ordering code	Discharge energy	Repetition rate	Maximal charging rate	Voltage	Flashlamp recommended	PFN specifications		
						Capacitance	Inductance	Pulse duration FWHM, typical
						μF	μH	μs
	J	Hz	J/s	V				
PS5050-2-60-40-6	10.8	60	648	600	5×58; 450 Torr	60	40	103
PS5050-4-30-80-13	25.4	60	1524	1300	2×5×58; 450 Torr	40	60	103
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
PS5050-4-30-60-16	38.4	50	1920	1600	2×5×58; 450 Torr	30	60	89
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
PS5050-2-60-100-16	76.8	10	768	1600	2×5×58; 450 Torr	60	100	163
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
PS5050-2-80-180-19	144.4	10	1444	1900	2×5×75; 450 Torr	80	180	264

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

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



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.