

Flashlamp Driver for Pulsed Lasers

PS5070



FEATURES

- Output power up to 3.2 kJ/s
- Output voltage accuracy better than 0.15 %
- 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 / LAN interface for remote control

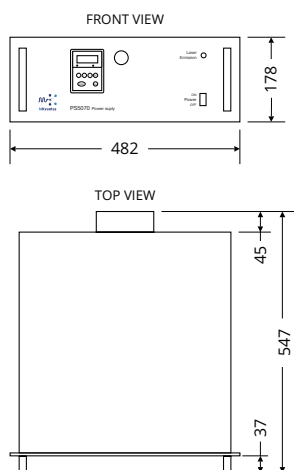
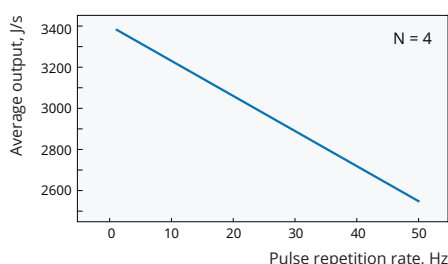


Fig. 1. Dimensions



Fig. 2. Control Panel



N – number of charging modules

Fig. 3. Average output power versus pulse repetition rate

PS5070 model flashlamp driver is designed for flashlamp-pumped lasers. 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.

PS5070 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, CAN and LAN.

The unit is manufactured in conformity with EN61010 and EN55011 standards.

As standard front and rear panels are powder coated in RAL7035 (Light Grey). RAL7021 (Black Grey) and RAL9002 (Grey White) are possible upon request.

The unit is fitted into a 19" standard housing and may be comfortably mounted in your power supply stands.

The driver can be easily integrated with cooling unit PS1223. Up to 6 units can be mounted into up to 25U height 19" racks providing powerful yet compact laser pumping cabinets (sold separately). More information about Mounting Rack – page 13 (Accessories).

GENERAL SPECIFICATIONS

Model	PS5070-1	PS5070-2	PS5070-3	PS5070-4
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 voltage stability	0.15 %			
Load regulation	0.15 %			
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			
Maximum C_{PFN} value	< 240 μ F			
Mains	single phase 220V AC (-10%, +15%) 50/60Hz or 3-phase 400V AC (-15%, +15%) 50/60Hz 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				
Ambient temperature	Storage	from +5 to +50 °C		
	Operation	from +15 to +40 °C		
Humidity	below 80 % non condensing			
Protection class	IP20			

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 208V AC (-10%, +15%) 50/60Hz mains are optional

Specifications in table are given as reference.

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

Not all combinations of parameters can be possible at the same time. Specifications are subject to changes without advance notice.

CONFIGURATION EXAMPLES OF PS5070 SERIES POWER SUPPLIES

Ordering code	Discharge energy	Repetition rate	Maximal charging rate	Voltage	Flashlamp recommended	Capacitance	Inductance
	J	Hz	J/s	V		μF	μH
PS5070-10-16-30-60-1-1F1	38.4	10	384	1600	2×5×45; 450 Torr	30	60
PS5070-50-16-30-60-4-3FY	38.4	50	1920	1600	2×5×58; 450 Torr	30	60
PS5070-10-16-60-100-2-1F1	76.8	10	768	1600	2×5×58; 450 Torr	60	100
PS5070-20-14-80-60-3-1F1	78.4	20	1568	1400	5×90; 450 Torr	80	60
PS5070-10-19-80-180-3-1F1	144.4	10	1444	1900	2×5×75; 450 Torr	80	180

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

Ordering information

Please indicate following points by inquiry:

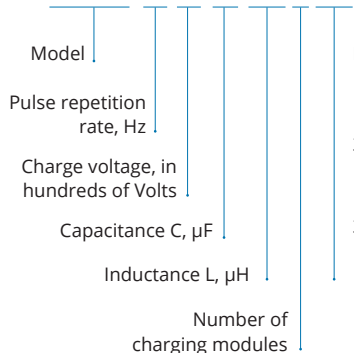
- Flash lamp type (bore diameter, gap length, gas type and pressure)
- Maximal pulse energy
- Pulse duration
- Maximal pulse repetition rate
- Mains voltage/phase

Customized orders

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.

Ordering code

PS5070-10-16-60-100-2-1F1



Mains options:

- 1F1 – single phase 220V AC (-10%, +15%) 50/60Hz; (L+N)
- 3FY – 3-phase 400V AC (-15%, +15%) 50/60Hz; star with neutral (L1+L2+L3+N)
- 3FD – 3-phase 208V AC (-10%, +15%) 50/60Hz. delta or star without neutral (L1+L2+L3)

