

TWO-CHANNEL FLASHLAMP DRIVER PS5053 FOR PULSED LASERS



FEATURES

- ▶ Output voltage up to **2500 V**
- ▶ Single unit for oscillator-amplifier systems
- ▶ Built-in serial ignition circuit
- ▶ Built-in simmer power supply
- ▶ Internal/external triggering
- ▶ Output voltage accuracy $\pm 0.1\%$
- ▶ RS232/CAN or optionally LAN interface for remote control
- ▶ Single phase mains

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. Ethernet interface can be ordered optionally.

GENERAL SPECIFICATIONS

Model	PS5053-1/1	PS5053-1/2	PS5053-x/x
Number of independent outputs	2		
Number of charging modules for first and second channels	1+1	1+2	1+3 or 2+2
Max. average output power P_{avg} at 10 Hz PRR ^{1,2)}	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 %		
Linearity	0.2 %		
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, flashlap 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 ¹⁾		
Mains	single phase 230 V (-10%, +6%) or 3-phase 380 V (-10%, +6%) ⁵⁾		
Power consumption, average	3.2 kW	4.5 kW	5.8 kW
Power consumption, peak	4 kW	6 kW	8 kW
Operation conditions			
Ambient temperature	from 0 to +40 °C		
Humidity	from 10 to 90 % non-condensing		

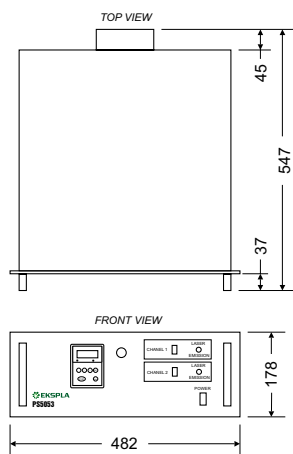


Fig. 1. Physical dimensions

¹⁾ Total for both channels 200 V or 208 V mains

²⁾ See Fig. 2 for other pulse repetition rates

³⁾ Inquire for other voltages

⁴⁾ Optional 30 kV

⁵⁾ 3-phase are optional

Specifications in table are given as reference. We always suggest to optimize power supply by customer's usage conditions.

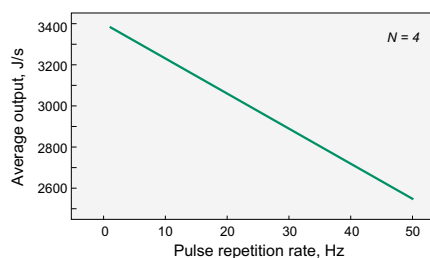


Fig. 2. Average output power versus pulse repetition rate

CONFIGURATION EXAMPLES OF PS5053 SERIES POWER SUPPLIES

Ordering code	Channel	Discharge energy	Repetition rate	Maximal charging rate	Maximal voltage	Flashlamp recommended	PFN specifications			Mains	
							Capacitance	Inductance	Pulse duration FWHM, typical		
		J	Hz	J/s	V			μF	μH	μs	
PS5053-1/1-60/60-100/100-17/17	No 1	86.7	10	867	1700	2×5×58; 450 Torr	60	100	163	1-phase 230 V	
	No 2	86.7	10	867	1700		60	100	163		
PS5053-1/1-80/80-60/60-13/13	No 1	67.6	10	676	1300	5×90; 450 Torr	80	60	146	1-phase 230 V	
	No 2	67.6	10	676	1300		80	60	146		
PS5053-1/2-40/60-100/130-10/20	No 1	20	10	200	1000	5×45; 450 Torr	40	100	133	1-phase 230 V	
	No 2	120	10	1200	2000	2×5×75; 450 Torr	60	130	194		
PS5053-1/2-60/60-70/70-12/18	No 1	43.2	10	432	1200	5×90; 450 Torr	60	70	136	1-phase 230 V	
	No 2	97.2	10	972	1800	2×5×58; 450 Torr	60	70	136		
PS5053-1/2-80/60-60/100-12/18	No 1	57.6	10	576	1200	5×90; 450 Torr	80	60	152	1-phase 230 V	
	No 2	97.2	10	972	1800	2×5×58; 450 Torr	60	100	163		
PS5053-2/2-40/40-100/100-25/25	No 1	125	10	1250	2500	2×5×90; 450 Torr	40	100	139	3-phase 400 V	
	No 2	125	10	1250	2500		40	100	139		
PS5053-2/2-40/40-40/40-11/11	No 1	24.2	50	1210	1100	5×90; 450 Torr	40	40	84	3-phase 400 V	
	No 2	24.2	50	1210	1100		40	40	84		
PS5053-2/2-60/60-100/100-15/15	No 1	67.5	20	1350	1500	2×5×58; 450 Torr	60	100	163	3-phase 400 V	
	No 2	67.5	20	1350	1500		60	100	163		
PS5053-1/1-60/60-100/100-13/14	No 1	50.7	10	1300	1300	2×5×58; 450 Torr	60	100	163	1-phase 230 V	
	No 2	58.8	10	1400	1400		60	100	163		

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

