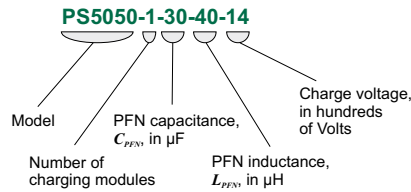


**Ordering / Part number information**

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 | Repetition rate | Maximal charging rate | Voltage | Flashlamp recommended | PFN specifications |            |                              |
|--------------------|------------------|-----------------|-----------------------|---------|-----------------------|--------------------|------------|------------------------------|
|                    |                  |                 |                       |         |                       | Capacitance        | Inductance | Pulse duration FWHM, typical |
|                    | J                | Hz              | J/s                   | V       |                       | µF                 | µH         | 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

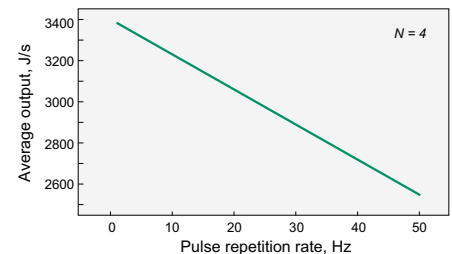


Fig. 2. Average output power versus pulse repetition rate

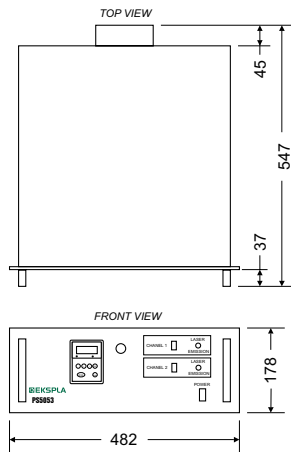
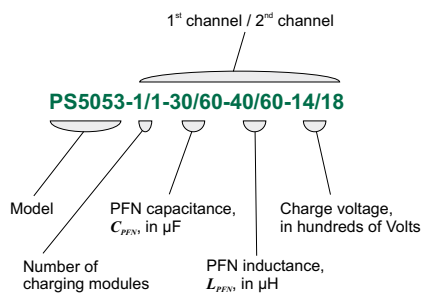


Fig. 3. Physical dimensions

### 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



### GENERAL SPECIFICATIONS

|  |  |          |            |
|--|--|----------|------------|
| 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 <sup>1,2)</sup> | 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 %  |          |            |
| Linearity  | 0.2 %  |          |            |
| 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, flashlap breakdown, interlock                            |          |            |
| Error report   | no simmer current, no charge, HV connectors                                  |          |            |
| Remote control   | RS-232 / CAN (CANopen on request)  |          |            |
| Maximum $C_{PFN}$ value  | < 240 $\mu F$ <sup>1)</sup>  |          |            |
| Mains  | single phase 230 V (-10%, +6%)<br>or 3-phase 380 V (-10%, +6%) <sup>5)</sup> |          |            |
| Power consumption, average                                       | 3.2 kW   | 4.5 kW   | 5.8 kW     |
| Power consumption, peak  | 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   |          |            |

<sup>1)</sup> Total for both channels

<sup>2)</sup> See Fig. 2 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.

### 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               |                       | $\mu F$            | $\mu H$    | $\mu s$                      |              |
| 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 230V |
|                                | 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 230V |
|                                | 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 230V |
|                                | No 2    | 120              | 10              | 1200                  | 2000            |                       | 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 230V |
|                                | No 2    | 97.2             | 10              | 972                   | 1800            |                       | 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 230V |
|                                | No 2    | 97.2             | 10              | 972                   | 1800            |                       | 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 400V |
|                                | 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 400V |
|                                | 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 400V |
|                                | No 2    | 67.5             | 20              | 1350                  | 1500            |                       | 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.