

LAPS21000

ACDC Power Current Driver System
for Laser Applications with safety interlock



21 kW, water cooled, for DC and pulsed applications,
3 phase mains (no neutral), up to 12 channels current/
voltage source. Rise/fall times less than 100 µs.
Class 3 safety interlock

Solution for
Laser / Industry

Product range	Power
LAPS120	120 W (AUX)
LAPS2400	2.4 kW
LAPS3800	3.8 kW
LAPS21000	21 kW

Technical Data

Input

Nominal input voltage	360 V ... 528 Vac, 3 phase, 50/60 Hz
Hold up time	> 10 ms
Inrush current	< 50 A

Output

Output voltage	2,5 ... 45 V / 5 ... 90 V / 7,5 ... 135 V / 10 ... 180 V / 15 ... 270 V
Output current	540 A / 270 A / 180 A / 135 A / 90 A
Ripple and noise	<100 mArms
Line regulation	< 0,1 %
Load regulation	< 1 %
Total output power	7 kW, 14 kW, 21 kW
Efficiency (typical)	93 %
Rise/fall time	<100 µs

General

MTBF	250.000 Hrs. (35 °C, GB)
Protections	Over-current, Over-voltage and Over-temperature
Safety	EN61010, Double interlock: ISO13849-1, PLd
EMC	IEC61000-6-2, IEC61000-6-4, F47
Dimensions W x D x H	445 mm x 445 mm x 133 mm
Cooling	Water

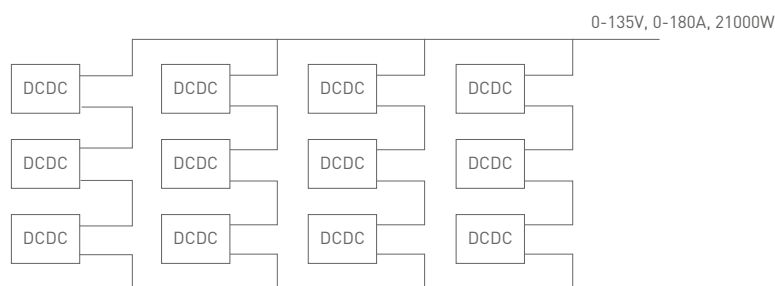
LAPS21000

The LAPS21000 is a flexible Power System, consisting of 3 PFC frontends of each 7 kW and 12 DCDC converters of 1750 W. These DCDC converters can be switched in any serial or parallel configuration. This flexible approach makes it possible to offer over many different configurations which can vary from e.g. 12 DCDC converters in parallel to individual channels with different output configurations. By removing a 7 kW PFC and 4 DCDC converters, a 14 kW system can be built. In the same way, a 7 kW with up to 4 channels can be made.

Each output channel can be used as a high speed current driver with rise and fall times below 100 µs which makes it an ideal power supply for laser diode bars or as an ACDC front end to drive fiber laser systems.

Configuration examples

A power supply system with 135 V/180 A can be built by using 3 DCDC converters in series and 4 converters in parallel.



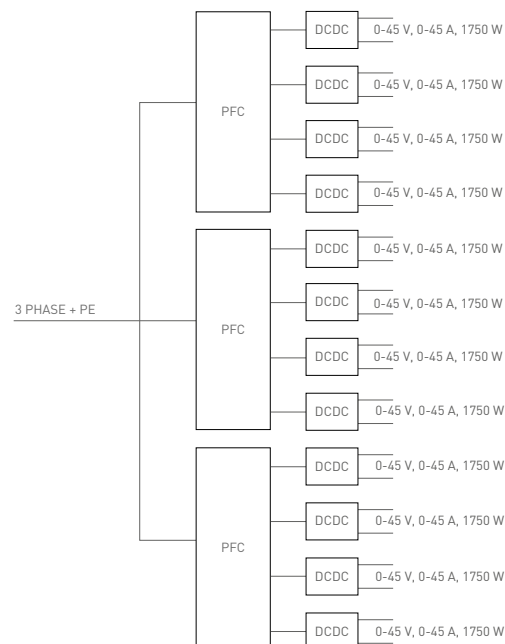
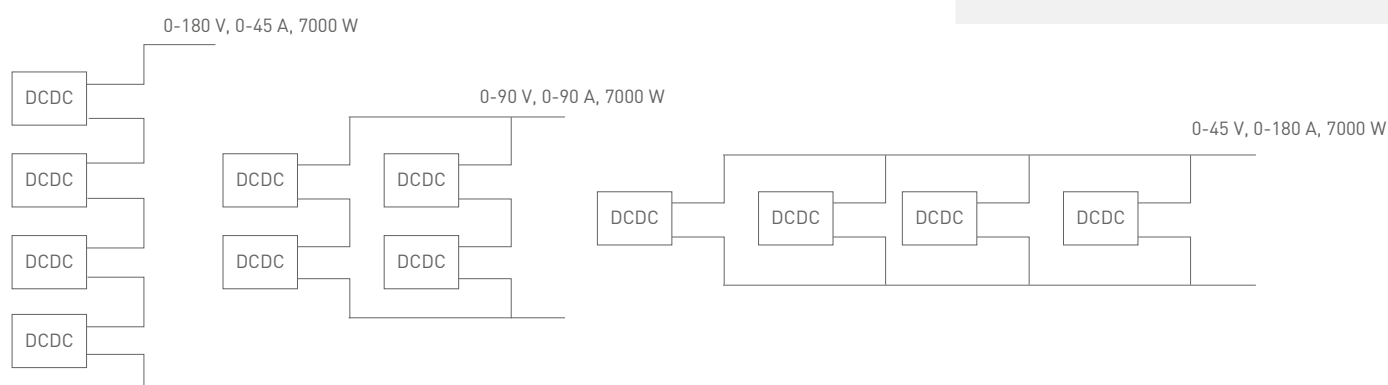
The 12 channels can be switched to a multi-channel power supply system. The modularity of the system allows to program each output channel.

Example

Channel 1: 0-180 V, 0-45 A, 7000 W

Channel 2: 0-90 V, 0-90 A, 7000 W

Channel 3: 0-45 V, 0-180 A, 7000 W



Safety interlock

The LAPS21000 system has a class 3 performance level d safety interlock according to ISO13849-1. For operation in a laser system there is no need to repeatedly switching off the mains voltage. This limits the stress on the power supply and increases the up time of the total laser system.