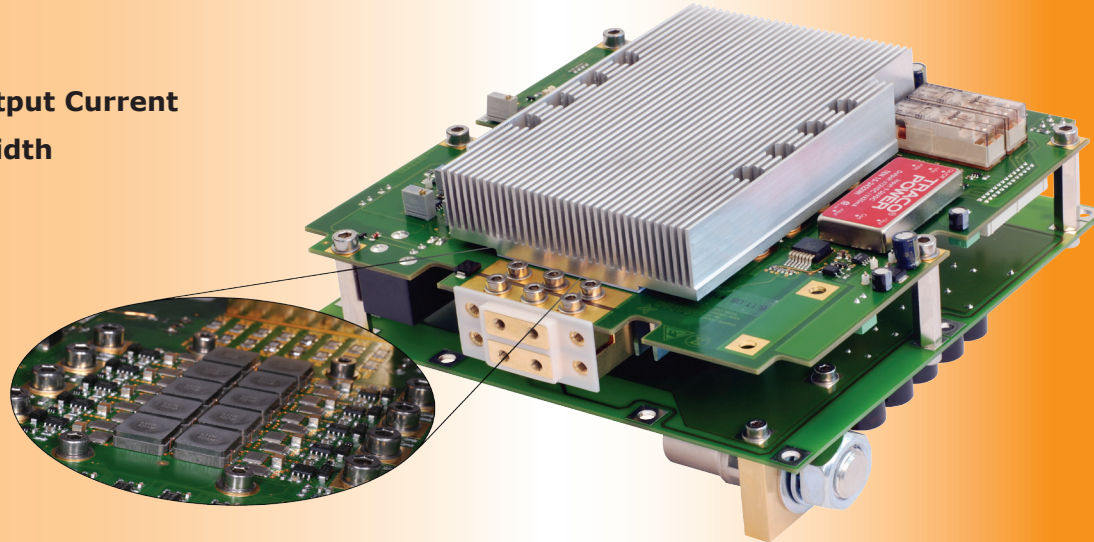


# High Power Laser Diode Driver

## LDD-20450

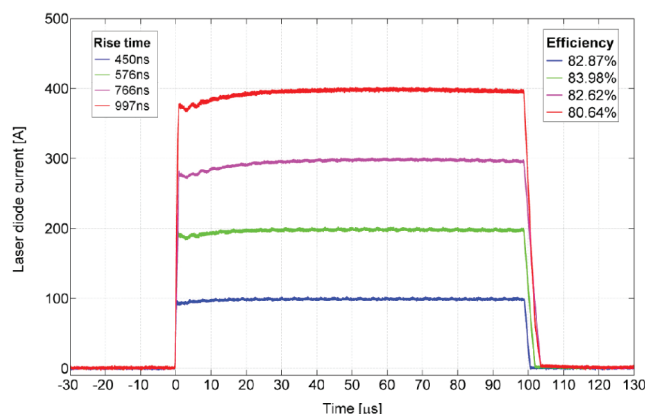
- Up to 450 A Pulsed Output Current
- 10 to 1000  $\mu$ s Pulse Width
- $\geq 80\%$  Efficiency
- Full Digital Control
- $< 2 \mu$ s Rise Time
- Protective Features



## Product Description

The LDD-20450 is an economic QCW laser diode driver module designed to provide high current pulses to drive laser diodes in various applications. It delivers output currents up to 450 A and pulse widths variable from 10 to 1000  $\mu$ s operation. Up to 1500 W average output

power is available with the supplied heatsink and forced air flow. By using a custom cooling solution, the power can be increased up to 3000 W. Several safety features are integrated to protect both laser diode and driver.



## Applications

- Medical Industry e.g. DPM15
- Laser Marking
- Plastic and Metal Welding
- Soldering
- Laser Cutting
- Laser-Assisted Machining
- Surface Treatment
- High Power Laser Pumping

# LDD-20450

## Specifications

### Output

Output Current	up to 450 A
Compliance Voltage	2 to 20 V
Pulse Width	10 to 1000 $\mu$ s
Rise Time (10 - 90%)	$\leq 2 \mu$ s
Efficiency	$\geq 80\%$ @ $U_{IN} \sim (U_{LD} + 6 V)$
Maximum Average Output Power (with Air Flow)	1500 W
Maximum Average Output Power (Advanced Cooling)	3000 W <sup>1)</sup>
Power Fluctuation (rms)	$< 0,5\%$

### Input

Input Voltage $U_{IN}$ (Power)	10 to 28 VDC (minimum $U_{LD} + 6 V$ )
Input Voltage (Logic)	12 VDC

### External Control

	Serial Peripheral Interface (SPI) for Configuration and Control
	External Trigger Input (5 V TTL)
	Analog Current Input

### General Features

	Built-in Pulse Generator
	Current Monitor Output (100 A/V, 50 $\Omega$ )

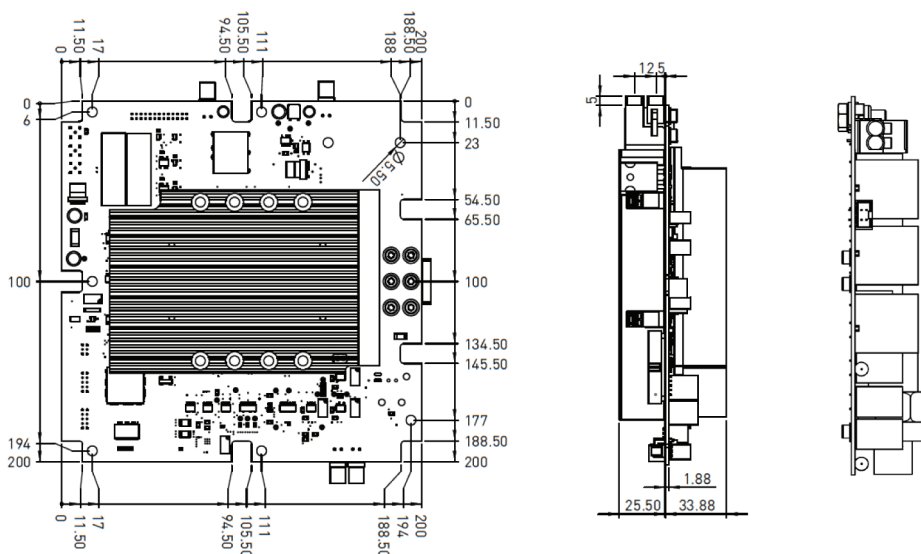
### Protective Features

	Integrated Crowbar
	Overload
	Over-Temperature
	Open-Circuit
	Short-Circuit
	Emergency Circuit Relais

### Environmental Conditions

Humidity	max 80% RH, non Condensing
Operation Temperature	0 to 50 $^{\circ}$ C
Storage Temperature	-20 to 60 $^{\circ}$ C

<sup>1)</sup> Water cooling required



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