

# Laser Diode Driver & Dual TEC Controller

LPS1-2T Series

Microprocessor-  
Controlled

The LPS1-2T is a very compact microprocessor-controlled laser diode driver with dual temperature controller. It offers many advanced and unique features at a very competitive price.

The device can drive up to three infrared laser diodes in series or one blue laser diode. Different models of the LPS1-2T are available, depending on the maximum laser diode current. All devices feature constant current as well as constant power modes. Current limits, voltage limits and a soft-start delay can be set. A safety interlock is also implemented.

The LPS1-2T is very easy to use. All parameters can be programmed through the symbolic self-explanatory controls. The two-line matrix display shows set values and actual values at the same time.

ALPHALAS has implemented a novel switch-mode topology to achieve high efficiency, low thermal dissipation and a very compact design. A unique combination of analog and digital control guarantees very low current noise and high reliability.



## Features

- Microprocessor-Controlled with Fully Programmable Parameters and Two-Line Matrix Display
- Easy to Use with Self-Explanatory Operational Controls
- Current Limits, Voltage Limits, Soft-Start, Safety Interlock
- Very Low Current Noise
- High Reliability
- Const. Current & Const. Power Modes
- Drives Multiple Laser Diodes in Series
- Very Compact Design

## Display Data

- Laser Diode Current
- Laser Diode Current Limit
- TEC Current 1 & 2
- TEC Current Limit 1 & 2
- Laser Diode Temperature 1 & 2
- Laser Diode Voltage
- Laser Diode Voltage Limit
- Operating Mode (Const. Current/ Const. Power)
- Optical Power (Relative Units)
- Soft-Start Delay (Relative Units)

## LPS1-2T Series: Electrical Specifications

<b>Voltage and Current Requirements</b>	<b>LPS1-2T:</b> 12 V DC, 5 - 8 A <b>Optional AC/DC Adapter:</b> Universal Input, 100 - 240 V AC (may differ, model dependent)		
<b>Power Consumption</b>	Depends on the Laser, 50 - 100 W		
<b>Conversion Accuracy</b>	D/A: 12 bit, A/D: 12 bit		
<b>Laser Diode Current</b> (model dependent, other hardware current limit may be factory preset)	<b>LPS1-2T-L</b>	<b>LPS1-2T-E</b>	<b>LPS1-2T-HP</b>
	0 - 2.5 A	0 - 4.0 A	0 - 8.0 A
<b>Laser Diode Voltage</b> (model dependent, programmable)	max. 7 V	max. 6.5 V	max. 6 V
<b>Current Noise, rms</b>	60 $\mu$ A		
<b>TEC Controllers</b>	Two Controllers, 4 A, 8 V each, cooling mode only		
<b>TEC Temperature Range</b> (programmable)	<b>TEC 1:</b> 0°C - 99.9°C (hardware high temperature limit can be factory preset, default is 38°C) <b>TEC 2:</b> 0°C - 99.9°C (no hardware high temperature limit)		
<b>Temperature Stability</b>	0.1°C		
<b>Remote Control</b>	Proprietary PC Serial Interface		

## LPS1-2T Series: Mechanical Specifications

<b>LPS1-2T Dimensions</b>	105 x 70 x 200 mm <sup>3</sup> (WxHxL)
<b>Optional AC/DC Adapter Dimensions</b>	100 x 67 x 32 mm <sup>3</sup> (WxHxL) (may differ, model dependent)
<b>Ambient Temperature</b>	5°C .. 35°C (41°F .. 95°F)

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