CC-S
Precision Pulsed Laser Diode Driver with TEC Controller

ALPhA NOV
Optics & Lasers Technology Center

www.alphanov.com
CC-S
Precision pulsed laser diode driver and TEC controller
with Integrated Butterfly Mounting Sockets and USB

Designed for precision seed pumping applications, ALPhANOV butterfly packaged laser diode pulsing control electronics and mounting modules are optimized for single-shot to CW performance with pulse width lengths down to 1 ns. These complete control electronics and mounting modules deliver precision pulses which are generated internally by an on-board pulse generator, or on demand from an external TTL signal.

Key features:

- Integrated TEC controller
- User set pulse width from 1 ns to CW
- Up to 4 MHz repetition rate (250 MHz with optional HPP - High Pulse Performance technology)
- Down to 500 ps risetime
- Up to 1200 mA peak current (3500 mA with HPP technology)
- USB, manual, & analog (0-5 V) signal peak power adjustment
- Smart control (USB interface to drive simultaneously several modules from ALPhANOV’s laser electronics series)
- Preconfigured butterfly mounting socket for Type-1 or Type-2 laser diodes
# Technical Specifications

## Electronic and Optical

<table>
<thead>
<tr>
<th>Feature</th>
<th>Standard version</th>
<th>HPP&lt;sup&gt;(1)&lt;/sup&gt; technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output current - CW regime</td>
<td></td>
<td>800 mA</td>
</tr>
<tr>
<td>Output current - pulse regime</td>
<td>1200 mA</td>
<td>3500 mA&lt;sup&gt;(2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Output voltage</td>
<td></td>
<td>4.8 V</td>
</tr>
<tr>
<td>Laser diode T° regulation</td>
<td></td>
<td>15-50 °C</td>
</tr>
<tr>
<td>External pulse duration adjustment</td>
<td>1 ns - CW</td>
<td></td>
</tr>
<tr>
<td>Internal pulse duration adjustment</td>
<td>1 ns - 500 ns</td>
<td></td>
</tr>
<tr>
<td>Temporal Jitter</td>
<td>&lt; 30 ps</td>
<td>&lt; 8 ps</td>
</tr>
<tr>
<td>Internal repetition rate adjustment</td>
<td>1 Hz - 4 MHz</td>
<td>1 Hz - 250 MHz</td>
</tr>
<tr>
<td>Adjustable CW current offset in pulse regime</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Compatibility &amp; libraries</td>
<td>Windows XP/7/10 - DLLs - Hexa - Labview</td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>USB</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>12 V (110 V/220 V adapter included)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>(1)</sup> High Pulse Performance  
<sup>(2)</sup> 9A HP (High Power) version available on demand

## GUI control software

- Configure Maximum Levels First
- Max Avg Current
- Max Peak Current
- Control
- Laser Activation
- Current Source
- Pulse and Dwell
- Trigger/Pulse Delay
- Control Mode

- Pulse Settings
- Current Source
- Peak Current
- Offset Current
- Offset Parameters

- Diode Temp.
- Temperature
- Interlock

## Mechanical

![Mechanical diagram]

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