Innolume GmbH
Konrad-Adenauer-Allee 11
44263 Dortmund, Germany

Specification

LDD-14pin-2A-NS

Nanosecond Laser Diode Driver

Features:

- Self-contained enclosure combining and incorporating:
  - Device pulse current driver (2A)
  - Device TEC driver (1.5A)
  - 14/10-pin butterfly device mount with only output port **(LD/SLD)**
  - Control electronics and firmware
- 1-100 ns pulse duration (FWHM)
- Repetition rate up to 10MHz
- Internal or external trigger
- USB/RS232/CAN/UART interfaces
- Software with graphical user interface (GUI)
- LabView and Python libraries
- Ready-to-use with mounted LD (optional)

Applications:

- Fiber laser seeding
- LIDAR in automotive

Output parameters

25°C

Parameter	Min.	Typ.	Max.	Unit
Pulse current amplitude			2	A
Compliance voltage	1		3	V
Pulse width (FWHM)*	1		100	ns
Pulse width step		0.2		ns
Pulse repetition rate**	0.001		10	MHz
Rise time*	50		500	ps
Fall time*	200		1000	ps
TEC current	-1.5		1.5	A
TEC voltage	1		4	V

** - optical pulse performance depends on laser diode characteristics and can't be guaranteed*

*** - max duty cycle 2%*

Input parameters

Parameter	Min.	Typ.	Max.	Unit
Voltage	4.8	5	5.2	V
Current			2	A

Modulation

Parameter	Min.	Typ.	Max.	Unit
Trigger input impedance		50		Ohm
Trigger input voltage	3.3		5	V
Trigger output voltage (TTL logic)			3.3	V
Trigger input/output frequency	single shot		10	MHz

Connection

Interfaces	USB/RS232/CAN/UART

Mechanical

Parameter		Unit
Size (WxDxH)	60 x 85 x 21	mm

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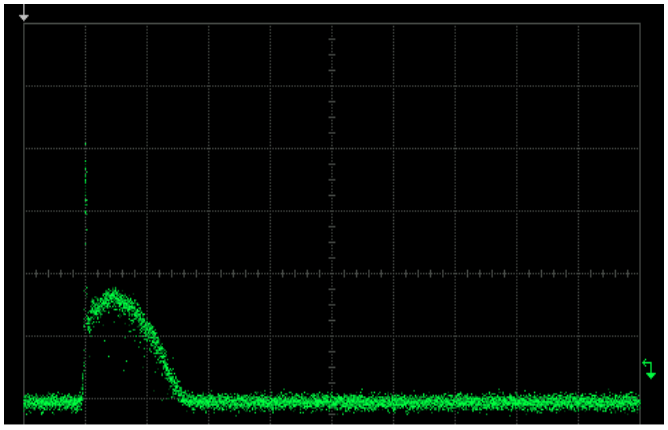
Typical Performance (for reference only)

Test conditions: SM-1064-PM-300 laser diode, case temperature 25°C

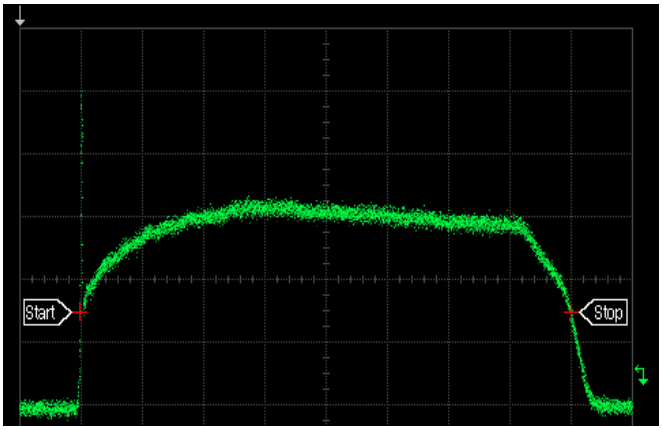
1 ns Pulse Shape

Iamp = 1A, F = 1MHz, Top = 25°C; Triggered by splitted optical signal; 1.25ns/div



10 ns Pulse Shape

Iamp = 1A, F = 1MHz, Top = 25°C; Triggered by splitted optical signal; 1.25ns/div



Conditions

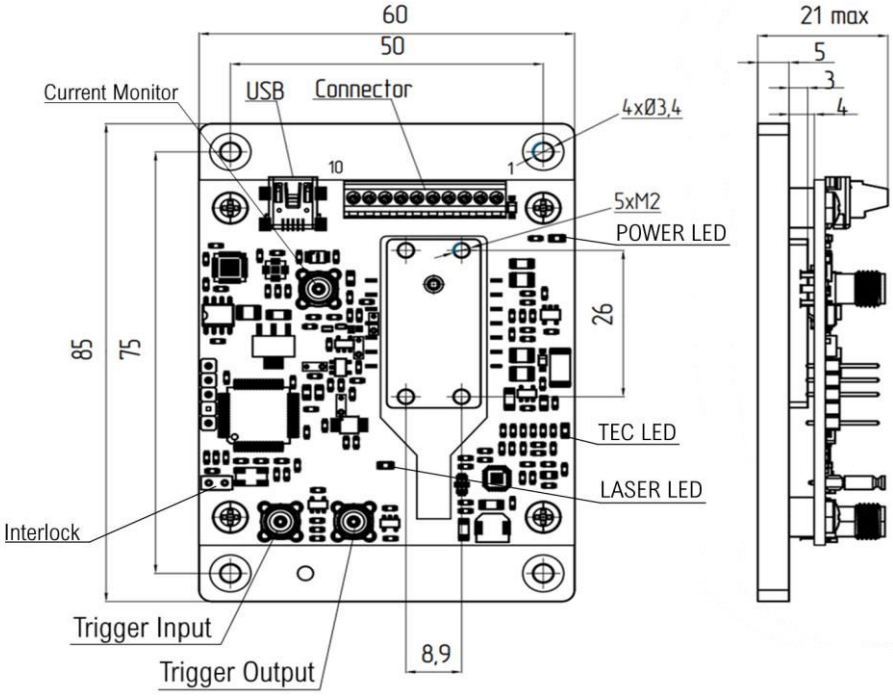
Parameter	Min.	Typ.	Max.	Unit
Operating temperature	10		50	°C
Storage temperature	-20		70	°C
Humidity, Non-condensing			95	%

Package contents

Items	Qty, pcs
1. Laser diode driver***	1
2. Heatsink for BTF(10pin) or BTF(14pin) mount	1
3. Screws set	1

**** - AC/DC power adapter not included*

Dimensions (in mm)



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Safety and Operating Instructions

MUST - It's highly recommended to assemble the Laser Diode Driver (LDD) case by screws to optical table or some other solid metal surface to prevent device overheating. If it's not possible, a forced blow-off of driver case can help.
WARNING - Laser diodes are susceptible to damage as a result of electrostatic discharge (ESD). Ensure that you take proper precautions when handling these devices.
WARNING - Depending on the type of laser used, the laser diode modules may deliver several hundreds of mW of invisible laser radiation. To avoid injuries follow the laser diode manufacturer and standard laser safety instructions.
WARNING - Always power off the LDD before replacing the laser diode. Configure the LDD parameters with the provided PC Software before operating.
WARNING - Always set limits before operation with laser diode modules not to exceed absolute maximum ratings. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device.

NOTE: Innolume product specifications are subject to change without notice

Revision history

Rev	Date	Description
01	08 Aug 2023	Initial issue of the document