

LaserBench

PRECISION
CONSTANT
CURRENT
LASER
CONTROL
BENCH



Key Features

Built-in

- Unified design for 10/14 pin Butterfly Laser Diode
- High Precision Constant Current Mode
- Output Current up to 2000 mA
- High Current Stability: 0.01 mA
- Control interfaces USB, RS-232
- Optical power stabilization mode
- On-Board TEC Controller
- Regulated Maximum TEC Current
- High precision temperature stability: 0.01 deg
- 12Vdc Input Power

Extension

Could be extended by any Evolase laser controller board via RS232 interface

Description

The LaserBench is a constant current laser diode driver for powering 10/14-pin butterfly laser diode modules for applications, which require high precision low ripple constant current regulation.

The driver circuitry operates from a single 12Vdc power source. The driver supplies a bidirectional proportional-integral-derivative (PID) thermoelectric cooler controller (TEC) with current capability of 4A and voltage capability of 4V. Maximum TEC current is regulated by user.

The main parameters of LaserBench (output current, temperature set, maximum TEC current, monitor photodiode signal) are controlled by touch screen.

The LaserBench can control multiple Evolase laser controller board via RS232 interface.

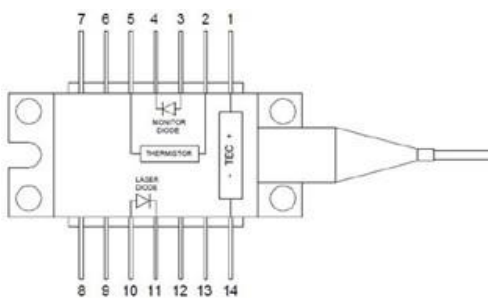


Specifications

Parameter	Min.	Typ.	Max.	Units
INPUT				
Voltage	11.8	12.0	12.2	Vdc
Current	-	-	5	A
OUTPUT				
Current	-	-	2000	mA
Current regulation step	-	0.01	-	mA
Current ripple amplitude	-	-	0.1	%
Current stability	-	-	0.1	%
Current set accuracy	-	-	1	%
Compliance voltage	1	-	3	V
TEC current setting range	-4	-	+4	A
TEC voltage	1	-	4	V
TEC temperature set	5	25	50	°C
TEC temperature step	-	0.01	-	°C
TEC temperature accuracy	-	-	0.1	%
TEMPERATURE				
Operating	+10	-	+50	°C
Storage	-20	-	+70	°C
Humidity, Non-Condensing	-	-	95	%
CONNECTIONS				
Power	2 mm / 5.5 mm Jack (PJ-05AH Cui Devices)			
USB	Mini-USB, Type B (1734035-1 TE connectivity)			
Interface connector	DB9 (5-338313-2 TE connectivity)			
MECHANICAL				
Size	100 × 85 × 31 mm			
Weight, not more	200 g			

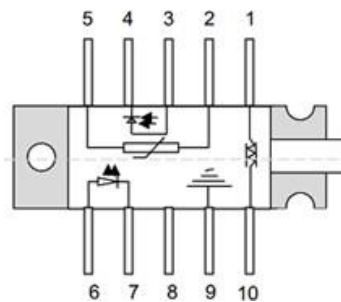
Compatible Laser Pinout

14-pin Butterfly package



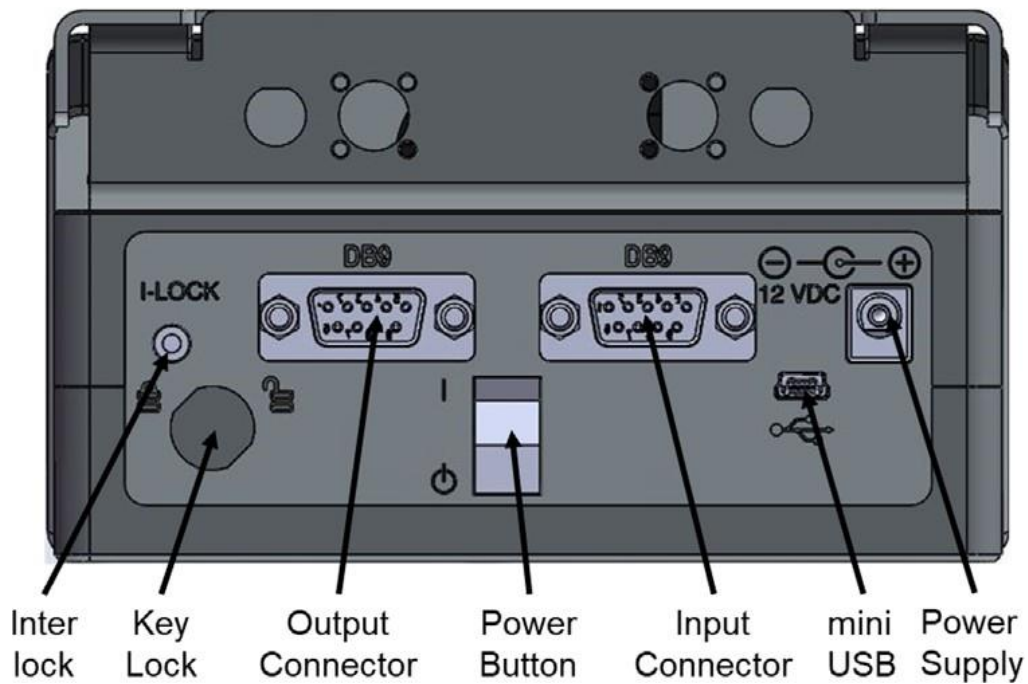
Nº	Description	Nº	Description
1	TEC Anode	8	n/c
2	Thermistor	9	n/c
3	Monitor PD Anode	10	LD Anode
4	Monitor PD Cathode	11	LD Cathode
5	Thermistor	12	n/c
6	n/c	13	n/c
7	n/c	14	TEC Cathode

10-pin Butterfly package



Nº	Description	Nº	Description
1	TEC (+)	6	Laser anode (+)
2	Thermistor	7	Laser cathode (-)
3	Monitor anode (-)	8	NC
4	Monitor cathode (+)	9	Package ground
5	Thermistor	10	TEC (-)

Connections



Input connector pinout

PIN	Function	Description
1	NC	No connection
2	RS232-RX	RS232 port reception
3	RS232 TX	RS232 port transmit
4	NC	No connection
5	GND	Device ground
6	NC	No connection
7	NC	No connection
8	CANL	CAN bus low
9	CANH	CAN bus high

Output connector pinout

PIN	Function	Description
1	+5Vdc	Power output
2	+5Vdc	Power output
3	+5Vdc	Power output
4	GND	Device ground
5	GND	Device ground
6	GND	Device ground
7	NC	No connection
8	CANL	CAN bus low
9	CANH	CAN bus high