

Datasheet

C151 - Laser Diode Controller 250mA, Type-1 Pin Configuration

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and supported
in the USA by*



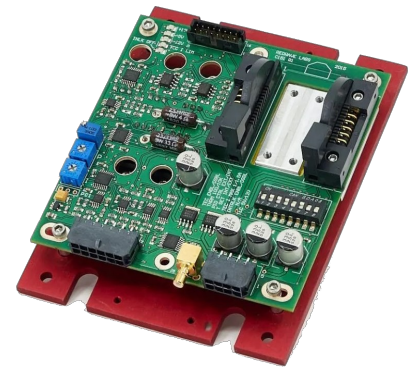
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Introduction

RedWave Labs Laser Controller C151 comes with integrated temperature driver and laser driver in one package. Temperature control is fully linear and has capability to use separate power supply for laser TEC. TEC control can be done via built-in PI loop or external signal. Laser driver has analog bandwidth of 250 kHz and separate fast TTL compatible switching provided via SMB connector. Laser current has a hardware limit of 250 mA which cannot be exceeded in any case.



Specification

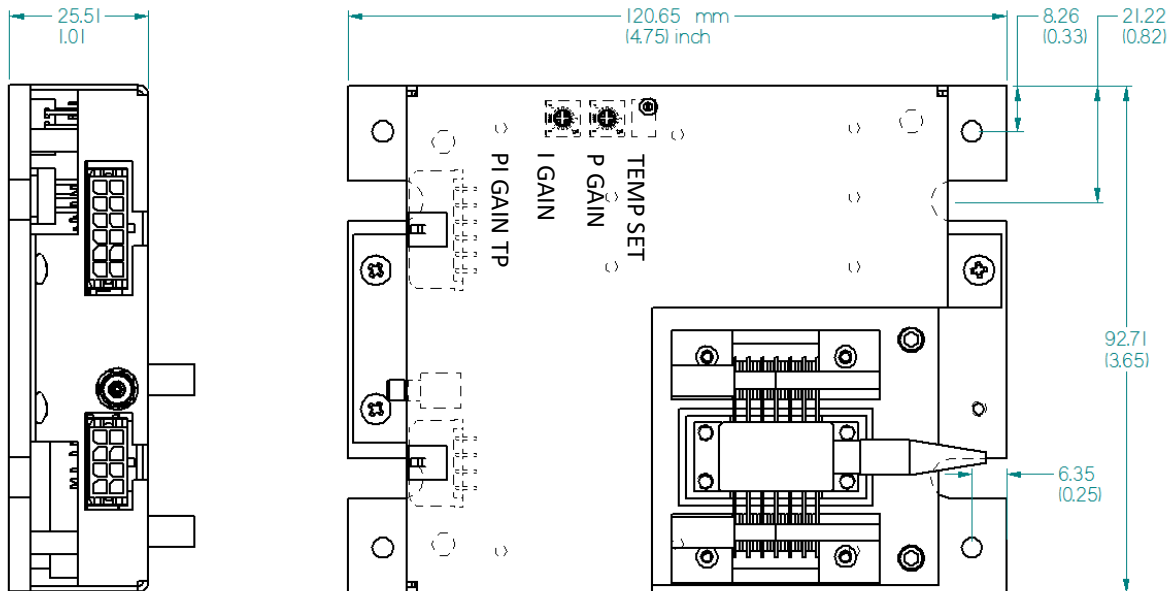
Features	Laser Controller C151 provides full control for semiconductor laser including laser diode control and integrated temperature control.	
Applications	Spectroscopy, Laser, Precision Instrument, OEM applications	
Specifications	Parameter	Value
Power	Dual	+12 V, 2 A or +12 V/0.5 A and +5V/1.5A; -12 V, 0.5 A
	Laser current	0 - 250 mA. Hardware limit. Can be modified for customized versions
Laser Current Control	Compliance voltage	> 4.0 V
	Setting accuracy	2 % fs
	Noise (RMS)	< 2 μ A
	Drift	< 20 μ A
	Temperature coefficient	50 ppm/C
	Current limit	250 mA
	Setting accuracy of current limit	2 % fs
	Voltage range	0 to 10 V
	Input impedance	10 kOhm
	Laser External Control	Modulation coefficient (I const)
3dB Bandwidth		DC ... 250 kHz
TTL modulation, rise / fall-time		250 ns
Interlock		Yes
TEC current		0 ... \pm 1.0 A /1.5 A
TEC control	TEC voltage	> 8.0 V
	Max output power	12 W
	Current limit	1 A or 1.5 A
	Input sensor	Thermistor 10 kOhm or 100 kOhm at 25 C
Connectors	PID control	Internal PI control or External direct TEC current control
	Laser	Integrated Azimuth Electronics 14 pin connector with heat sink. NEL DFB laser pinout. Can be replaced with optional DB15 connector.
	Power	Molex MicroFit 8 pin.
	Control	Molex MicroFit 12 pin.
Dimensions (WxHxD)	120 x 92 x 30 mm	
Weight	350 g	
Storage Temp	-55 to 100 C	
Operating Temp	-40 to 85 C	

RedWave Labs Ltd keeps improving its products and therefore some specifications can vary.

Absolute Maximum Ratings

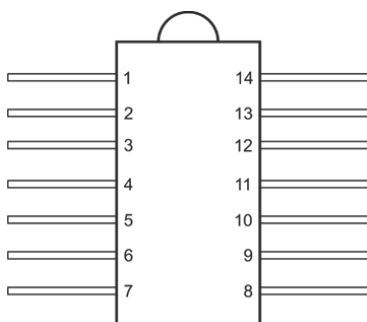
Symbol	Parameter	Ratings	Unit
V _{dd1}	Supply positive voltage / Laser driver and TEC	+12 ± 10%	Volt
V _{dd2}	Supply positive voltage / Separate TEC rail	+5;+10%;-0%	Volt
V _{ee}	Supply negative voltage / Laser driver and TEC	-12±10%	Volt
T _{op}	Operational Temperature	-40 to 85	Deg C
T _{st}	Storage Temperature	-55 to 100	Deg C

Mechanical Information



Parameter	Value	Unit
Length	4.75 (120.65)	Inch (mm)
Width	3.65 (92.7)	Inch (mm)
Height	1.01 (25.1)	Inch (mm)
Weight	350	gram

Pin Assignment



1	TEC+	14	TEC-
2	TH+	13	GROUND
3	Not in use	12	Not in use
4	Not in use	11	LD-
5	TH-	10	LD+
6	Not in use	9	Not in use
7	Not in use	8	Not in use