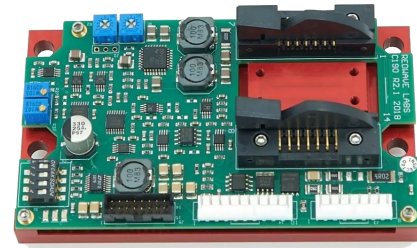


Introduction

Redwave Labs Laser Controller C190 comes with integrated temperature driver and laser driver in one package. TEC control can be done via built-in PI loop or external signal. Laser driver can drive up to 500 mA with. CW and pulse operation set via TTL line. Pulse amplitude control through internal pot or externally.



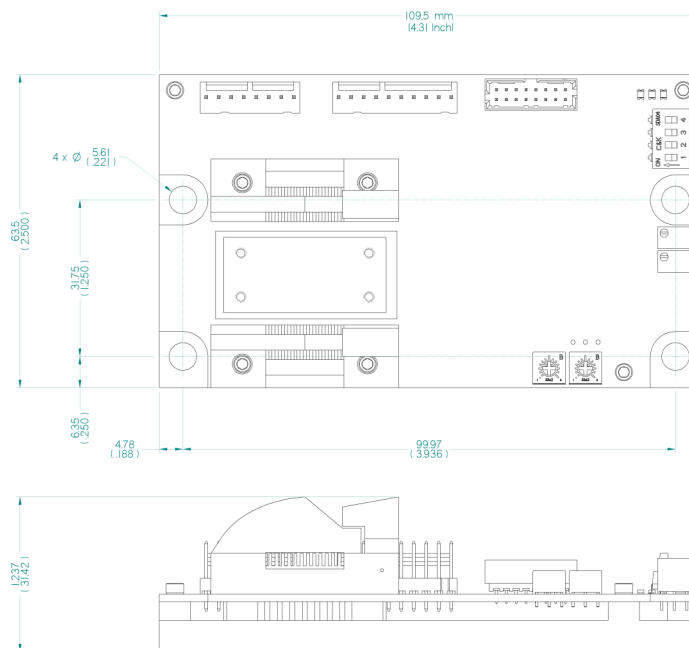
Specification

| | | |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Features | Laser Controller C190 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 | +5 V, 1.5 A; |
| Laser Current Control | Laser current | 0 - 500 mA. |
| | Compliance voltage | 0.8- 3.0 V |
| | Setting accuracy | 2 % fs |
| | Noise (RMS) | <0.5% |
| | Drift | 1 μ s -CW |
| | Temperature coefficient | TTL external |
| | Current limit | 0 - 500 mA |
| | Setting accuracy of current limit | External and internal |
| | Laser External Control | Voltage range |
| Input impedance | | 10 kOhm |
| Modulation coefficient (I const) | | 100 mA/V |
| 3dB Bandwidth | | 3 ns, electrical |
| TTL modulation, rise / fall-time | | 100 ns |
| Interlock | | Yes |
| TEC control | | TEC current |
| | TEC voltage | > 3.0 V |
| | Max output power | 4 W |
| | Current limit | 1.5 A |
| | Input sensor | Thermistor 10 kOhm or 100 kOhm at 25 C |
| | PID control | Internal PI control or External direct TEC current control |
| | Laser | Integrated Azimuth Electronics 14 pin connector with heat sink. |
| Connectors | Power | TBD |
| | Control | TBD |
| Dimensions (WxHxD) | 120 x 92 x 30 mm | |
| Weight | 350 g | |
| Storage Temp | -55 to 100 C | |
| Operating Temp | -40 to 85 C | |

Absolute Maximum Ratings

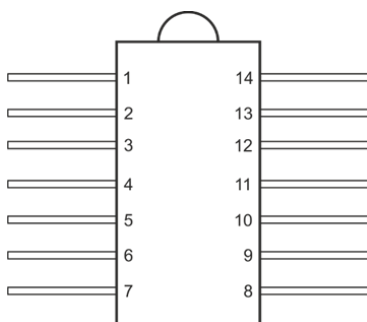
| Symbol | Parameter | Ratings | Unit |
|-----------|------------------------------------------------|------------|-------|
| V_{dd1} | Supply positive voltage / Laser driver and TEC | +5±10% | Volt |
| T_{op} | Operational Temperature | -40 to 85 | Deg C |
| T_{st} | Storage Temperature | -55 to 100 | Deg C |

Mechanical Information



| Parameter | Value | Unit |
|-----------|---------------|-----------|
| Length | 4.31 (109.5) | Inch (mm) |
| Width | 2.5 (63.5) | Inch (mm) |
| Height | 1.237 (31.42) | Inch (mm) |
| Weight | 350 | gram |

Pin Layout



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