



### Diode Laser and Dual TEC Controller

The Sequoia is a fully integrated, solid-state laser controller designed to drive two thermoelectric coolers (TECs) and a laser diode.

It provides constant-current and constant optical power laser control, programmable start-up sequence and monitoring, 5-LED status indicator, safety interlock and key switch.

The next-generation Sequoia II features an RS-232 digital command interface and a miniaturized form-factor.

### Features

Specification	Sequoia I Controller	Sequoia II Controller
Laser Output Control	Constant Current, Constant Power	Constant Current, Constant Power
Command Interface	Manual digital "thumbwheel" switches	RS232 (RJ-11), Ethernet (optional)
Status Interface	5 built-in white status LEDs	Output for external status LEDs
Key switch	Integrated safety key switch	Optional external key switch
Safety interlock	External interlock connector	External interlock connector
Monitoring	Adjustable analog current limits	Digitally programmable current limits
System and startup	Logic controlled (digital state-machine)	Microprocessor controlled
Physical dimensions	174mm x 123mm x 37mm (6.85" x 4.84" x 1.46")	111mm x 63mm x 21.9mm (4.37" x 2.48" x 0.86")
Laser head interface	High-current DB-15	High-current DB-15
Test and debug port	16-pin buffered test port	N/A
Supply voltage	9-14V (12V nominal)	5V (regulated)
Supply power	28W	28W

### TEC Control

Device	Dynamic Range	Resolution	Stability	Max Current	Max Voltage	Feedback
TEC1	15°C - 45°C	12-bits (.01 °C)	+/- 0.02°C	4A	4V	Thermistor
TEC2	15°C - 45°C	12-bits (.01 °C)	+/- 0.02°C	1.8A	2.5V	Thermistor

### Laser Diode Control

Mode	Dynamic Range	Resolution
Constant Current	500mA – 850mA	100uA (12-bit)
Optical Power (TIA output)	0V – 4V	12-bits (1mV)