



*Simply Advanced Control  
Laser Diode Drivers & Temperature Controllers*

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Contact: Lisa Mueller  
Wavelength Electronics Inc.  
406-587-4910  
[lisa@teamwavelength.com](mailto:lisa@teamwavelength.com)

## **Ultra-Stable 2.2A Temperature Control Across Ambient** Reliably Scan Across Ambient with the Upgraded WTC3243

The robust and reliable WTC3243 is designed into electro-optical systems, airborne instrumentation, spectroscopic monitors, and medical diagnostic equipment. Now, the award-winning, compact, powerful WTC3243 has been upgraded for greater temperature stability – even across ambient.

Stability is a measure of how close the actual load temperature stays to setpoint temperature over time. Often there can be a “dead band” when scanning across ambient temperature, during the transition between heating and cooling control. Proprietary circuitry in the new WTC3243 does not exhibit this typical loss of control across ambient. Wavelength Electronics has devoted significant research efforts to making the upgraded controller immune to ambient crossover. An on-ambient stability of 0.0014 °C has been achieved with thermistors. A Technical Note on Measuring Ambient Stability, TN-TC02, is available at [www.teamwavelength.com](http://www.teamwavelength.com).

The linear, PI (Proportional, Integral) control loop offers maximum stability while the bipolar current source has been designed for higher efficiency. Optimized for ultrastable thermoelectric temperature control applications, the WTC3243 maintains precision temperature regulation using an adjustable sensor bias current and error amplifier circuit that operates directly with thermistors, RTDs, AD590, and LM335 type temperature sensors. Supply up to 2.2 A for either Thermoelectrics (bipolar) or Resistive Heaters (unipolar).

The Proportional Gain (P) and Integrator Time Constant (I) are set by external resistors and can be modified to optimize temperature overshoot and stability. Other features offer added flexibility. Independent heat and cool current limits are set by single resistors. An onboard reference voltage simplifies potentiometer control of the temperature setpoint. The WTC3243 can be operated remotely with an external setpoint voltage. Thermal management accessories such as form-fitting heatsink, thermal washer and fans maximize power dissipation. An evaluation board is available to quickly integrate the WTC3243 into your system.

Wavelength Electronics has simplified advanced laser diode drive and thermal control technology for OEM and research applications since 1993. Our high performance specifications are supported by a team of experienced sales and design engineers and a top-notch manufacturing facility. Evaluation quantities are typically available from stock.

To learn more about the WTC3243 Temperature Controller and Wavelength's complete line of high precision, low-noise, ultra-stable laser diode drivers and temperature controllers, call 406-587-4910, email [sales@teamwavelength.com](mailto:sales@teamwavelength.com) or visit our website, [www.teamwavelength.com](http://www.teamwavelength.com).