LDTC Laboratory Series
Combination Laser Driver & Temperature Controller
Instrument with IntelliTune® PID Control

• LD2TC5 LAB offers up to 2 A of laser current and 5 A of TEC current
• LD5TC10 LAB offers up to 5 A of laser current and 10 A of TEC current
• Compliance voltages of 10 V (laser) and 15 V (TEC)
• Stable, low-noise laser current. Noise as low as 3.5 μA or 8.5 μA from 1 Hz to 100 kHz
• Laser modulation bandwidth up to 450 kHz
• Temperature stability better than 0.0009ºC with thermistor
• Compatible with a variety of temperature sensors
  » Thermistors & 2-wire RTDs
  » Linear voltage & current sensors
• Touchscreen with intuitive user interface
• Safety features for maximum protection
  » Adjustable current limit, with Brick-Wall Never-Exceed circuitry
  » Load failure protection
  » Temperature limits on the load
  » Current/voltage limits for both TEC and laser
  » Automatic laser shutdown upon TEC error available
• IntelliTune® sets ideal PID control parameters for optimal time to temperature or disturbance rejection
• Operates all laser diode/photodiode configurations
• Constant Laser Current or Constant Power modes
  » Three photodiode ranges available: 0.5, 5, or 100 mA
  » Photodiode bias voltage available
• Complete command set for remote control from computer
• Feature-rich for research projects
  » USB interface with LabVIEW® Virtual Instrument application
  » Field upgradeable firmware
  » Sophisticated error handling
  » Save and recall functions for specific parameter sets
• CE compliant
• AC input, auto detect, 100-240 ±10% VAC, with a 50/60 Hz power-line frequency

FEAT URES

406-587-4910
www.teamWavelength.com

* LabVIEW is a registered trademark of National Instruments.
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INTUITIVE USER TOUCH SCREEN INTERFACE

1.400 A
Setpoint: 1.400 A
Mode: Constant Current
Type: Type A

20.000 °C
Setpoint: 20.000 °C
P: 291.2 I: 18.86 D: 34.14
Tune mode: Disturbance Rejection

APPLICATIONS
The advanced and reliable circuitry of the LDTC LAB Series instruments achieves better than 0.0009°C temperature stability with thermistors while also providing stable, low-noise (as low as 3.5 μA RMS) laser diode current.

The combination laser driver and temperature control instruments are well-suited for research in electro-optical, biomedical, spectroscopy, and defense systems wherever precision temperature control and low-noise laser current is required.

ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>INSTRUMENT SPECIFICATIONS</th>
<th>DRIVER OUTPUT CURRENT</th>
<th>LD2TC5</th>
<th>LD5TC10</th>
<th>UNIT</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD Output Current</td>
<td>2</td>
<td>5</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC Output Current</td>
<td>5</td>
<td>10</td>
<td>A</td>
<td></td>
<td></td>
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<tr>
<td>LD Compliance Voltage</td>
<td>0-10</td>
<td></td>
<td>V</td>
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<tr>
<td>TC Compliance Voltage</td>
<td>0-15</td>
<td></td>
<td>V</td>
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<tr>
<td>Temperature Stability, 1 Hour</td>
<td>0.0009</td>
<td></td>
<td>°C</td>
<td>25°C Ambient, On Ambient</td>
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<tr>
<td>Temperature Stability, 24 Hours</td>
<td>0.005</td>
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<td>°C</td>
<td>25°C Ambient, Off Ambient</td>
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<tr>
<td>Temperature Coefficient</td>
<td>20</td>
<td></td>
<td>ppm / °C</td>
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<tr>
<td>LD Current Cumulative Noise</td>
<td>3.5</td>
<td>8.5</td>
<td>μA RMS</td>
<td>From 1 Hz to 100 kHz</td>
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<tr>
<td>LD Noise Current Density</td>
<td>20</td>
<td>40</td>
<td>nA / √Hz</td>
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<tr>
<td>LD Current Stability</td>
<td>120</td>
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<td>ppm</td>
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<td>LD Current Modulation Bandwidth</td>
<td>450</td>
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<td>kHz</td>
<td>Constant Current Mode</td>
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ORDERING INFORMATION

<table>
<thead>
<tr>
<th>ORDERING INFORMATION</th>
<th>LD2TC5 LAB</th>
<th>LD5TC10 LAB</th>
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<tbody>
<tr>
<td></td>
<td>2 A, 10 V Laser Diode Driver</td>
<td>5 A, 15 V Temperature Controller Instrument</td>
</tr>
<tr>
<td></td>
<td>5 A, 10 V Laser Diode Driver</td>
<td>10 A, 15 V Temperature Controller Instrument</td>
</tr>
<tr>
<td>THERMISTORS</td>
<td>Various Thermistors Available</td>
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</tr>
<tr>
<td>CABLES &amp; CONNECTORS</td>
<td>Various connector kits and cables are available</td>
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</tbody>
</table>

Free, effective, and responsive technical support is available.

sales@teamWavelength.com
406-587-4910

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