QCLxPTC\textsubscript{x} Series
QCL Driver with Temperature Controller

**FEATURES AND BENEFITS**

**QCL-PTC SERIES**
- Hybrid combinations of the QCL OEM driver with the PTC-CH family of temperature controllers.
- Utilizes QCL heatsink for more compact design
- Requires an airflow of 15 - 20 CFM directly across the QCL heatsink from right to left when facing the front panel.
- 50ºC maximum enclosure or ambient temperature

**PTCXK-CH TEMPERATURE CONTROLLERS**
- Drive up to ±5.0 or ±10.0 A of linear bipolar TEC current
- Single supply operation: 5 to 30 VDC
- Use a wide variety of temperature sensors
- Remote Output and Setpoint controls
- Short term stability: 0.0012°C
- Selectable sensor bias current
- Adjustable current limit
- Failsafe Setpoint default in case of remote temperature setpoint signal error

**QCL OEM & QCL OEM[+] DRIVERS**
- Off-the-shelf models at 500 mA, 1 A
- Negative (OEM) and positive (OEM+) polarity
- Compliance voltage 16 V (standard), Compliance 7-20 V with factory modification
- Safety features protect your QCL investment
  - Adjustable soft-clamping current limit
  - Brown-out, reverse-voltage, & over-voltage protection
  - Driver over-temperature protection circuit
  - Relay shorts output when current is disabled
- Local/remote power-on/enable control, TTL-compatible


**LOWEST-NOISE DRIVER AVAILABLE**
The QCL OEM and OEM (+) Series drivers use patented circuitry to produce the lowest current noise density of any commercially available QCL driver. The 500 mA QCL driver exhibits noise performance of $0.4 \mu A$ RMS to 100 kHz, and average current noise density of $1 \, nA / \sqrt{Hz}$—the lowest available.

**APPLICATIONS**
The QCL Series drivers are used in trace element detection systems, both laboratory-based and field-deployed. This driver is well suited to applications requiring fast measurement times and ultra high sensitivity.

**ULTRA-NARROW QCL LINEWIDTH**
In order to maintain their characteristically tight center linewidths and minimize jitter, quantum cascade lasers must be powered by drivers with exceptionally low current noise density. Our customers have reported achieving narrower linewidths with these drivers than any other they’ve used.

**PROTECT YOUR QCL INVESTMENT**
All the essential control and monitor functions you expect in a Wavelength laser driver are incorporated into this driver, along with protection circuitry to safeguard your QCL from minor power source faults, over-temperature conditions, and electrical faults.

**INTEGRATED TEMPERATURE CONTROL**
The PTCxK-CH controllers operate from a single power supply between 5 V and 30 V. The linear bipolar controller drives a Peltier thermoelectric cooler, and integrates easily into OEM applications.

PTCxK-CH controllers interface with a variety of temperature sensors, and the bias current is adjustable in order to maximize controller sensitivity and stability.
Refer to the QCL OEM or QCL OEM (+), and PTC-CH datasheets for specifications and operating instructions.

Free, effective, and responsive technical support is available to simplify integration of Wavelength products into your OEM design. Standard product can be modified to meet your unique application requirements.

sales@teamWavelength.com

REVISION HISTORY

<table>
<thead>
<tr>
<th>REV.</th>
<th>DATE</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Feb 2016</td>
<td>Initial release</td>
</tr>
</tbody>
</table>