

QCLxPTCx 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.
- 50°C 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

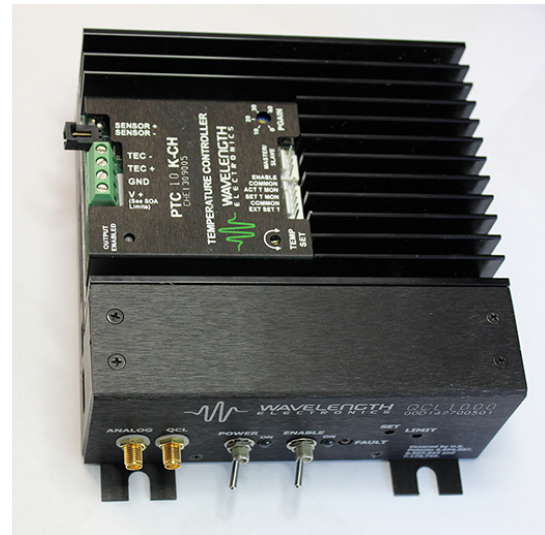
QCL OEM & QCL OEM(+) DRIVERS

- 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

1. Covered by U.S. Patents 6,696,887; 6,867,644 and 7,176,755. Licensed from Battelle Memorial Institute.

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
QCL5PTC5	Negative Polarity 500 mA QCL Driver, 5 A PTC
QCL10PTC5	Negative Polarity 1.0 A QCL Driver, 5 A PTC
QCL5PTC10	Negative Polarity 500 mA QCL Driver, 10 A PTC
QCL10PTC10	Negative Polarity 1.0 A QCL Driver, 10 A PTC
QCL+5PTC5	Positive Polarity 500 mA QCL Driver, 5 A PTC
QCL+10PTC5	Positive Polarity 1.0 A QCL Driver, 5 A PTC
QCL+5PTC10	Positive Polarity 500 mA QCL Driver, 10 A PTC
QCL+10PTC10	Positive Polarity 1.0 A QCL Driver, 10 A PTC



LOWEST-NOISE DRIVER AVAILABLE

The QCL OEM and OEM (+) Series drivers use patented¹ 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 μ A RMS to 100 kHz, and average current noise density of 1 nA / $\sqrt{\text{Hz}}$ —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.

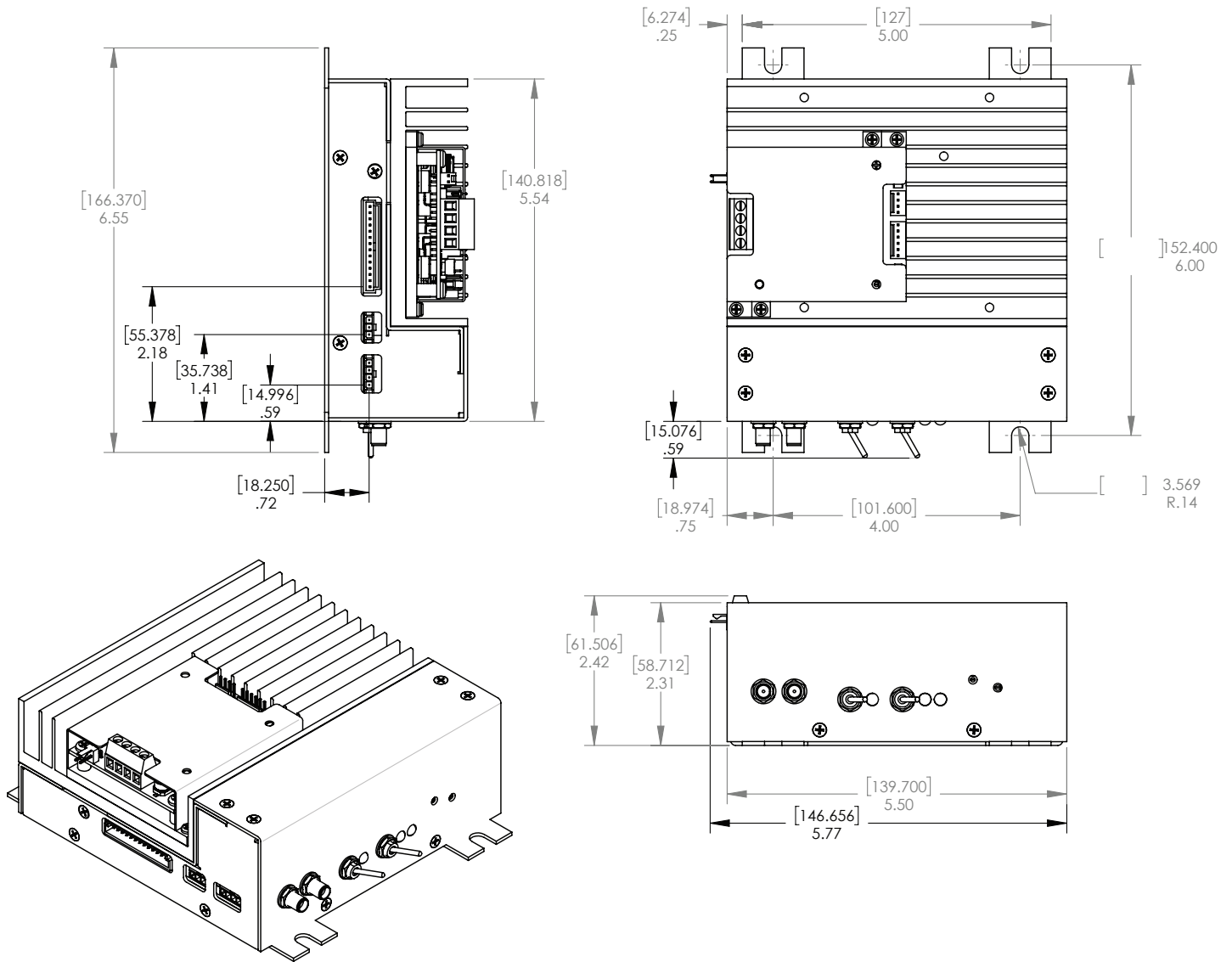
PTCxK-CH controllers interface with a variety of temperature sensors, and the bias current is adjustable in order to maximize controller sensitivity and stability.

406-587-4910

www.teamWavelength.com



MECHANICAL SPECIFICATIONS



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.

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REVISION HISTORY

DOCUMENT NUMBER: QCLxPTCx-400

REV.	DATE	CHANGE
A	Feb 2016	Initial release