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Data Sheet

August 1, 2026

THORLABS

Thorlabs Profile LDC 8005 TE Controller Module QTY 1

Thorlabs / Profile LDC8005 Laser Diode Current Controller Module The Thorlabs (Profile) LDC8005 is a laser diode current control plug-in module for the PRO8000 / PRO800 modular mainframe family. Despite some catalog titles that label it a "TE Controller," the LDC8000 series modules are laser diode current drivers; thermoelectric (TEC) temperature control in the same chassis uses TED8000-series modules (for example TED8000). The LDC8005 provides a bipolar current range of 0 to ± 500 mA with 16-bit setting resolution, constant-current or constant-power modes, and multi-layer laser protection. The Thorlabs (Profile) LDC8005 is a laser diode current control plug-in module for the PRO8000 / PRO800 modular mainframe family. Despite some catalog titles that label it a "TE Controller," the LDC8000 series modules are laser diode current drivers; thermoelectric (TEC) temperature control in the same chassis uses TED8000-series modules (for example TED8000). The LDC8005 provides a bipolar current range of 0 to ± 500 mA with 16-bit setting resolution, constant-current or constant-power modes, and multi-layer laser protection. Precision drive of laser diodes in PRO8000 / PRO800 mainframes for lab and production laser characterization, fiber-optic component test, and combined current-plus-temperature control when paired with a TED-series TEC module in an adjacent slot.



MODEL

ThorLabs LDC 8005

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

LDC 8005

LISTING

<https://aumictechlabs.com/products/ldc-8005-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Thorlabs LDC8005 is a single-slot laser diode current control module for the PRO8000 chassis, delivering precise current and temperature management for stable laser operation. It combines 16-bit current setting resolution with exceptional stability - current drift under 2 μA over 24 hours and temperature stability better than 0.002 $^{\circ}\text{C}$ - making it suitable for applications requiring minimal drift and high accuracy. The module operates in Constant Current and Constant Power modes, with dual-level protection via hardware and software current limits, soft start, and interrupt safeguards.

Technical Specifications

Current Control
Current range: 0 to $\pm 500\text{ mA}$
Current setting resolution: 16-bit (1 part in 65,000)
Current setting accuracy (full scale): $\pm 0.05\%$
Current measurement resolution: 15 μA
Current drift: < 2 μA over 24 hours (minimum)
Noise (10 Hz to 10 MHz, RMS): < 5 μA
Frequency bandwidth (3 dB): DC to 100 kHz, DC to 200 kHz
Rise/fall time: < 4 μs (typical)
Analog modulation input: Yes, 10 $\text{k}\Omega$ input impedance
Photo current range adjustment: 0 to 5 mA

Temperature Control
Temperature control range (semiconductor sensor): -12.375 to 90.000 $^{\circ}\text{C}$
Temperature control range (thermistor): 5 Ω to 20 $\text{k}\Omega$ and 50 Ω to 200 $\text{k}\Omega$
Temperature stability: 5 V
Operating modes: Constant Current (CC), Constant Power (CP)

Hardware current limit: Manually set absolute limit
Software current limit: Programmable
Monitor diode current limit: Programmable
Additional protection: Soft start, interrupt protection, interlock control

Compatibility & Integration
Designed for single-slot installation in PRO8000 series chassis. Integrates with complementary TED8000 temperature controller modules supporting TEC current ranges of $\pm 2\text{ A}/16\text{ W}$, $\pm 4\text{ A}/32\text{ W}$, and $\pm 8\text{ A}/64\text{ W}$. Supports AD590, AD592, and LM335 thermistor sensors; Pt 100 and Pt 1000 available upon request.

Features & description

From manufacturer datasheet

Features

- Laser diode current control module for PRO8000 / PRO800 Profile chassis
- Current range: 0 to +/-500 mA (LDC8005)
- 16-bit current setting resolution (one part in 65,000 class)
- Constant current (CC) and constant power (CP) operating modes
- Soft-start after laser enable; transient-free behavior on AC interruption
- Programmable soft current and power limits plus recessed hard current limit trim-pot
- Protection against AC line transients, RF pickup, and programming over-range
- Front-panel soft-key configuration via the PRO8000 mainframe display
- Settings retained in memory and recalled at power-up

LDC8005 Characteristics / Specifications

PARAMETER	VALUE
Model	LDC8005 (also written LDC 8005)
Manufacturer	Thorlabs / Profile
Instrument Type	Laser diode current control plug-in module
Host Chassis	PRO8000 / PRO800 modular laser diode controller mainframe
Current Control Range	0 to +/-500 mA
Setting Resolution	16-bit (family specification)
Operating Modes	Constant current; constant power (photodiode feedback)
Laser Protection	Soft current limit, soft power limit, hard current limit (trim-pot), soft-start, interrupt and transient protection
Module Family	LDC80xx (examples: LDC8001, LDC8002, LDC8005, LDC8010, LDC8040, LDC8080 with different maximum currents) Identity Clarification Catalog listings may say "TE Controller Module." In Thorlabs/Profile nomenclature, LDC = laser diode current module and TED = thermoelectric temperature controller module. Temperature control and TE cooler drive require a TED8xxx module (or an ITC combination controller), not the LDC8005 alone. The LDC8005 can still participate in temperature-protected laser setups when a T
Current range	0 to +/-500 mA (LDC8005)

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

Specifications

PARAMETER	VALUE
Model	LDC8005 (also written LDC 8005)
Manufacturer	Thorlabs / Profile
Instrument Type	Laser diode current control plug-in module
Host Chassis	PR08000 / PR0800 modular laser diode controller mainframe
Current Control Range	0 to +/-500 mA
Setting Resolution	16-bit (family specification)
Operating Modes	Constant current; constant power (photodiode feedback)
Laser Protection	Soft current limit, soft power limit, hard current limit (trim-pot), soft-start, interrupt and transient protection
Module Family	LDC80xx (examples: LDC8001, LDC8002, LDC8005, LDC8010, LDC8040, LDC8080 with different maximum currents)

Identity Clarification

Catalog listings may say "TE Controller Module." In Thorlabs/Profile nomenclature, LDC = laser diode current module and TED = thermoelectric temperature controller module. Temperature control and TE cooler drive require a TED8xxx module (or an ITC combination controller), not the LDC8005 alone. The LDC8005 can still participate in temperature-protected laser setups when a TED module monitors and controls the diode package temperature.

Standard Operating Conditions

Install only in a compatible PR08000 / PR0800 mainframe with adequate slot power. Observe laser safety and polarity for the diode pinout. Recalibrate periodically to maintain manufacturer accuracy.

Operational Notes

Omit quantity text (for example "QTY 1") from identification; it is not part of the model. Confirm faceplate marking LDC8005 versus TED8000-class modules before ordering service or calibration. Pair with appropriate laser cables and photodiode feedback wiring for constant-power mode.

Laser Safety

laser safety and polarity for the diode pinout. Recalibrate periodically to maintain manufacturer accuracy. Operational Notes Omit quantity text (for example "QTY 1") from identification; it is not part of the model. Confirm faceplate marking LDC8005 versus TED8000-class modules before ordering service or calibration. Pair with appropriate laser cables and photodiode feedback wiring for constant-power mode.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.