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Data Sheet

August 1, 2026

ILX LIGHTWAVE

ILX Lightwave LDC-39100 Modular Laser Diode Controller

The ILX Lightwave LDC-39100 is a modular laser diode controller designed for precision control of laser diodes in various applications. It offers high stability and low noise performance for demanding laser control needs.



MODEL

**ILX Lightwave
LDC-39100**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

LDC-39100

LISTING

<https://aumictechlabs.com/products/lhc-39100-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The ILX Lightwave LDC-39100 is a 1 A Current Source Module (CSM) designed for precision laser diode control within the LDC-3900 Modular Laser Diode Controller mainframe. This service-free module delivers high-stability, low-noise output with on-module calibration data storage and closed-case calibration capability. It integrates into any of four interchangeable module bays, enabling flexible system configuration alongside TEC modules and combination units. The CSM-39100 supports photodiode feedback control, modulation input, and both local and remote calibration via GPIB interface. Technical Specifications Maximum Output Current: 1 A Modulation Input Signal Level: 100 mV/A Modulation Input Impedance: 10 k Ω Photodiode Adjustable Reverse Bias: 0–5 V Laser Output: Isolated from chassis ground; either output terminal can be grounded Module Weight (typical): 1.05 kg (2.3 lbs) Warm-up Period (pre-calibration): 1 hour Key Features

On-module calibration data storage with service-free modularity Closed-case calibration capability Photodiode feedback control mode with adjustable reverse bias (0–5 V) Front-panel PHOTODIODE BIAS ADJUST control and BNC connector option on back panel Flexible setup via LDC-3900 Save/Recall functions Modulation input for dynamic current control Local (front panel) and remote (GPIB) calibration procedures Typical Applications High-precision laser diode bias and modulation control Optical communications and test instrumentation Research and development in photonics and fiber-optic systems Multi-channel laser systems requiring modular expansion Compatibility & Integration Designed exclusively for the ILX Lightwave LDC-3900 Modular Laser Diode Controller mainframe. Interchangeable with other LDC-3900 series modules, including current source variants (200 mA to 8 A), thermoelectric cooler (TEC) modules (up to 32 W), and combination current source/TEC modules. The LDC-3900 mainframe provides four rear-loading bays, 4 independent channels with 8 isolated outputs, and supports standard GPIB IEEE interface (optional).

Features & description

From manufacturer datasheet

Features

- LDC-3900 Mainframe
- Four rear-loading module bays
- Interchangeable current source, TEC, and combination modules
- Front-panel LASER and TEC control sections with per-channel adjust
- Optional GPIB for full remote control; LabVIEW driver available
- Laser protection: clamping current limits, output shorting, slow start, AC line filtering, isolated modules
- Save/Recall instrument setups

LDC39100 Characteristics / Specifications

PARAMETER	VALUE
System Designation (catalog)	LDC-39100
Mainframe	LDC-3900
Primary Module (name match)	CSM-39100 1000 mA Current Source
Manufacturer	ILX Lightwave LDC-3900 Mainframe
Slots	4
Size	5.625 in x 16.75 in x 13.625 in (145 × 426 × 346 mm)
Weight	mainframe about 27.5 lb (12.5 kg); module about 2.3 lb (1.05 kg) typical
Power	100/120/220/230-240 V +/-10%, 50-60 Hz
Operating Temperature	0 to +40 C
Humidity	less than 95% RH non-condensing CSM-39100 Current Source Module
Output Current Range	0 to 1000 mA
Setpoint Resolution	100 uA
Setpoint Accuracy	+/-0.1% of FS
Compliance Voltage	6 V at connector
Temperature Coefficient	less than 100 ppm/C
Noise/Ripple (rms)	High BW less than 10 uA; Low BW less than 5 uA; Low BW CW less than 2.5 uA
Operational Transients	less than 2 mA
Current Limit Range	0 to 1000 mA; resolution 4 mA; accuracy +/-10 mA
Photodiode Current Range	0 to 10 mA class (family table)
Modulation Transfer	100 mA/V; High BW DC to 200 kHz; Low BW DC to 5 kHz
Connectors	9-pin D-sub laser; BNC photodiode and modulation Other Available Modules (examples) CSM-39020 (200 mA), CSM-39050 (500 mA), CSM-39400 (4 A), CSM-39800 (8 A) TCM-39034 32 W TEC; LCM combination current+TEC modules Standard Operating Conditions
Laser protection	clamping current limits, output shorting, slow start, AC line filtering, isolated modules

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	0 to +40 C
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Humidity	less than 95% RH non-condensing
Output Current Range	0 to 1000 mA
Setpoint Resolution	100 uA
Setpoint Accuracy	+/-0.1% of FS
Compliance Voltage	6 V at connector
Temperature Coefficient	less than 100 ppm/C
Noise/Ripple (rms)	High BW less than 10 uA; Low BW less than 5 uA; Low BW CW less than 2.5 uA
Operational Transients	less than 2 mA
Current Limit Range	0 to 1000 mA; resolution 4 mA; accuracy +/-10 mA
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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	
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LDC-3900 Mainframe	
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CSM-39100 Current Source Module	
Specifications	
PARAMETER	VALUE
Output Current Range	0 to 1000 mA
Setpoint Resolution	100 uA
Setpoint Accuracy	+/-0.1% of FS
Compliance Voltage	6 V at connector
Temperature Coefficient	less than 100 ppm/C
Short-Term Stability (1 hr): less than 20 ppm	
Long-Term Stability (24 hr): less than 40 ppm	
Specifications	

PARAMETER	VALUE
Noise/Ripple (rms)	High BW less than 10 uA; Low BW less than 5 uA; Low BW CW less than 2.5 uA
Operational Transients	less than 2 mA
Current Limit Range	0 to 1000 mA; resolution 4 mA; accuracy +/-10 mA
Photodiode Current Range	0 to 10 mA class (family table)
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Other Available Modules (examples)

CSM-39020 (200 mA), CSM-39050 (500 mA), CSM-39400 (4 A), CSM-39800 (8 A)

TCM-39034 32 W TEC; LCM combination current+TEC modules

Standard Operating Conditions

Install modules with power off. Set current limits before enabling outputs. Enter TEC Steinhart-Hart constants when using thermistors.

Operational Notes

If the physical unit is only a CSM-39100 card, it requires an LDC-3900 mainframe. If the unit is a populated LDC-3900, inventory which modules are installed. "LDC-39100" is not a separate single-piece controller model number in ILX literature; it maps to LDC-3900 + CSM-39100 naming.

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.