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Data Sheet

August 13, 2026

ILX LIGHTWAVE

ILX Lightwave LDC-3900 Laser Diode Controller

Aumictech offers NIST-traceable calibration and repair for the ILX Lightwave LDC3900 / LDC-3900. Calibration covers I/O channel accuracy per specification, analog output and input calibration to rated accuracy, and functional communication interface test (serial, Ethernet, fieldbus). All calibrations ship with a NIST-traceable certificate. Turnaround is typically 1–3 business days after receipt. Common ILX Lightwave LDC3900 / LDC-3900 faults: blown I/O fuses, failed analog modules, power supply capacitor failure. Common faults include blown I/O protection fuses, failed analog I/O modules, power supply capacitor failure, and serial or Ethernet communication port damage. This ILX Lightwave LDC3900 / LDC-3900 is listed at . Calibration is available separately from . Contact us for volume pricing or if you need multiple units. NIST-traceable calibration for the ILX Lightwave LDC

**MODEL****ILX Lightwave
LDC3900 / LDC-
3900****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****LDC3900 / LDC-
3900****LISTING**[https://aumictechlabs.c
om/products/ldc3900-l
dc-3900-2/](https://aumictechlabs.com/products/ldc3900-l dc-3900-2/)

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The ILX Lightwave LDC-3900 Laser Diode Controller is a instrument engineered for precise control of laser diodes. This controller integrates a low-noise current source and a highly stable temperature controller. This ensures accurate control and monitoring of both the laser diode current and temperature, which is critical for maintaining stable laser operation and achieving

optimal performance in demanding applications. It has a solution for controlling and protecting laser diodes.

Features & description

From manufacturer datasheet

Features

- Four rear-loading isolated module bays
- Current modules 200 mA to 8 A (8 A module uses two bays)
- 32 W TEC modules (8 V, 4 A class) with thermistor, AD590/LM335, RTD
- Combination modules: current plus TEC in one bay (up to 2 A / 8–12 W)
- Clamping current limits, shorting circuits, slow start, AC line filtering
- Optional GPIB; all front-panel functions are bus-accessible

LDC3900LDC3900 Characteristics / Specifications

PARAMETER	VALUE
Model	LDC-3900
Manufacturer	ILX Lightwave (Newport / MKS)
Instrument Type	Modular laser diode controller mainframe
Alias	LDC3900; LDC 3900
Module bays	4 rear-loading
Chassis ground	4 mm banana jack
AC power	100/120/220/240 VAC user selectable, +6% / –10%, 50–60 Hz
Size	145 mmHx 426 mmWx 346 mm D (5 5/8 × 16 3/4 × 13 5/8 in)
Mainframe weight	12.5 kg (27.5 lb)
Module weight typical	1.05 kg (2.3 lb) each
Operating temperature	0 C to 50 C
Storage temperature	–40 C to 70 C
Humidity	less than 90%, noncondensing
Laser safety	keyswitch, interlock, output delay (CDRH US21 CFR 1040.10)
Laser display	5-digit green LED
TEC display	5-digit green LED
CSM 39020 current	0 to 200 mA; compliance 7 V; setpoint 10 uA; accuracy ±0.1% FS
CSM 39050 current	0 to 500 mA; compliance 6.5 V; setpoint 10 uA; accuracy ±0.1% FS
CSM 39100 current	0 to 1000 mA; compliance 6 V; setpoint 100 uA; accuracy ±0.1% FS
CSM 39400 current	0 to 4000 mA; compliance 5 V; setpoint 100 uA; accuracy ±0.1% FS
CSM 39800 current	0 to 8000 mA; compliance 5 V at connector (4.5 V end of cable); two-bay module
TEC 39032 39034 range	–99.9 C to 199.9 C (software limits)
TEC short term stability	less than ±0.004 C (1 h, LDM-4412 at 25 C, 10 kohm, 100 uA)
TEC long term stability	less than ±0.01 C (24 h, same conditions)
TEC output	bipolar constant current; isolated; compliance greater than 8 V

PARAMETER	VALUE
TEC short circuit current	4 A
TEC max power	32 W
TEC current limit	0 to 4 A; set accuracy ± 50 mA
TEC ripple noise	less than 1 mA rms (1 A, 10 Hz to 10 MHz)
TEC sensors	2-wire NTC thermistor; AD590/LM335; Pt100 RTD (option)
Thermistor sense current	10/100 μ A
Usable thermistor range	25 to 450000 ohm typical
TEC connector	15-pin D-sub
LCM 394	500 mA drive / 12 W TEC with modulation
Remote interface	optional GPIB IEEE 488.2
Spec condition	module values after 1 hour warm-up per LDC-3900 datasheet

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	−40 C to 70 C
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Remote interface	optional GPIB IEEE 488.2
Spec condition	module values after 1 hour warm-up per LDC-3900 datasheet Notes Mainframe and module ratings from the ILX Lightwave LDC-3900 datasheet (Artisan/ILX reprint). This file is the mainframe; current, noise, and TEC accuracy of a given slot follow the installed CSM/TCM/LCM module. Confirm GPIB option and module set on the unit. Successor high-channel systems include LDC-3916 / LDC-3908 / LDC-3926.

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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Model	LDC-3900
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Thermistor sense current	10/100 μ A
Usable thermistor range	25 to 450000 ohm typical
TEC connector	15-pin D-sub
LCM 39420	200 mA drive / 8 W TEC
LCM 39425	500 mA drive / 12 W TEC
LCM 39427	500 mA drive / 12 W TEC with modulation
LCM 39437	1 A drive / 12 W TEC with modulation
LCM 39440	2 A drive / 8 W TEC
Remote interface	optional GPIB IEEE 488.2
Spec condition	module values after 1 hour warm-up per LDC-3900 datasheet

Notes

Mainframe and module ratings from the ILX Lightwave LDC-3900 datasheet (Artisan/ILX reprint). This file is the mainframe; current, noise, and TEC accuracy of a given slot follow the installed CSM/TCM/LCM module. Confirm GPIB option and module set on the unit. Successor high-channel systems include LDC-3916 / LDC-3908 / LDC-3926.

Laser Safety

Laser safety: keyswitch, interlock, output delay (CDRH US21 CFR 1040.10) Laser display: 5-digit green LED
TEC display: 5-digit green LED CSM 39020 current: 0 to 200 mA; compliance 7 V; setpoint 10 μ A;
accuracy $\pm 0.1\%$ FS CSM 39050 current: 0 to 500 mA; compliance 6.5 V; setpoint 10 μ A; accuracy $\pm 0.1\%$
FS CSM 39100 current: 0 to 1000 mA; compliance 6 V; setpoint 100 μ A; accuracy $\pm 0.1\%$ FS CSM 39400
current: 0 to 4

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.