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**Data Sheet**

August 14, 2026

ILX LIGHTWAVE

# ILX Lightwave LDC-3916558 Laser Controller Module

The ILX Lightwave LDC-3916558 is a precision laser diode controller designed for demanding laser diode characterization and control applications. It offers low noise, high stability, and comprehensive laser protection features.



MODEL

**ILX Lightwave  
LDC-3916558**

CALIBRATION

**Available on  
request**

CONDITION

**Used**

STATUS

**In stock**

RFQ / SKU

**LDC-3916558**

LISTING

<https://aumictechlabs.com/products/ldc-3916558-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

## This unit

The ILX Lightwave LDC-3916558 is a laser diode controller that delivers precise and stable control of laser diode current and temperature. Its low-noise design ensures accurate measurements and minimizes laser wavelength drift. Comprehensive laser protection features safeguard the laser diode from damage due to overcurrent, overtemperature, and transient events.

## LDC3916558 Characteristics / Specifications

| PARAMETER                                       | VALUE                          |
|-------------------------------------------------|--------------------------------|
| Temperature Control Range                       | -99 C to 150 C                 |
| Thermistor Setpoint Resolution Neg20 to Pos20 C | 0.1 C                          |
| Thermistor Setpoint Accuracy Neg20 to Pos20 C   | plus or minus 0.2 C            |
| Thermistor Setpoint Resolution 20 C to 50 C     | 0.2 C                          |
| Thermistor Setpoint Accuracy 20 C to 50 C       | plus or minus 0.2 C            |
| Short Term Stability 1 hour                     | less than +0.007 C             |
| Long Term Stability 24 hours                    | less than +0.01 C              |
| Output Type                                     | bipolar current source         |
| Compliance Voltage                              | 8 V DC                         |
| Maximum Output Current                          | 3 A                            |
| Maximum Output Power                            | 24 W                           |
| Current Noise and Ripple                        | less than 2 mA rms             |
| Current Limit Range                             | 0.1 to 3.10 A                  |
| Current Limit Set Accuracy                      | plus or minus 0.05 A           |
| Control Algorithm Gain Range                    | 1 to 127                       |
| Temperature Sensor Type                         | thermistor 2-wire NTC          |
| Thermistor Sensing Current                      | 10 uA / 100 uA                 |
| Usable Thermistor Range                         | 25 to 450000 Ohm typical       |
| User Calibration                                | Steinhart-Hart three constants |
| Temperature Display Range                       | -99.9 C to 199.9 C             |
| Temperature Display Accuracy                    | plus or minus 0.5 C            |
| Thermistor Resistance Range 10 uA               | 0.01 to 450.00 kOhm            |
| Thermistor Resistance Accuracy 10 uA            | plus or minus 0.05 kOhm        |

| PARAMETER                             | VALUE                    |
|---------------------------------------|--------------------------|
| Thermistor Resistance Range 100 uA    | 0.001 to 45.000 kOhm     |
| Thermistor Resistance Accuracy 100 uA | plus or minus 0.005 kOhm |
| TE Current Display Range              | -3.00 to 3.00 A          |
| TE Current Accuracy                   | plus or minus 0.04 A     |
| TE Voltage Range Class                | -8.00 to +8.00 V         |
| Mainframe Compatibility               | LDC-3916 and LDC-3908    |
| Channels                              | 1 TEC                    |

# 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 describeabipolar TEC driver with thermistor sensing, adjustable control-loop gain from 1 to 127, TEC voltage measurement, and selectable 10 uA / 100 uA thermistor bias.

### Applications

The LDC-3916558 is used for high-density multi-channel laser diode temperature control in LDC-3908/3916 systems, long-cable TEC drive needing 8 V compliance, production multi-bay fixtures, and automated thermal stabilization via the mainframe remote interface.

### Key Features

- Single independent 3 A TEC channel inamodular card
- Bipolar current source with 24 W maximum output power
- Thermistor-only temperature sensing with Steinhart-Hart constants
- Control loop gain adjustable from 1 to 127
- Selectable thermistor sense current 10 uA or 100 uA
- TEC module voltage measurement capability
- Compatible with LDC-3916 and LDC-3908 mainframes

### Technical Specifications

#### Technical Specifications

| PARAMETER                                       | VALUE               |
|-------------------------------------------------|---------------------|
| Temperature Control Range                       | -99 C to 150 C      |
| Thermistor Setpoint Resolution Neg20 to Pos20 C | 0.1 C               |
| Thermistor Setpoint Accuracy Neg20 to Pos20 C   | plus or minus 0.2 C |

Thermistor Setpoint Resolution 20 C to 50 C: 0.2 C  
Thermistor Setpoint Accuracy 20 C to 50 C: plus or minus 0.2 C

### Specifications

| PARAMETER                    | VALUE                  |
|------------------------------|------------------------|
| Short Term Stability 1 hour  | less than +0.007 C     |
| Long Term Stability 24 hours | less than +0.01 C      |
| Output Type                  | bipolar current source |
| Compliance Voltage           | 8 V DC                 |
| Maximum Output Current       | 3 A                    |
| Maximum Output Power         | 24 W                   |
| Current Noise and Ripple     | less than 2 mA rms     |
| Current Limit Range          | 0.1 to 3.10 A          |
| Current Limit Set Accuracy   | plus or minus 0.05 A   |
| Control Algorithm Gain Range | 1 to 127               |

| PARAMETER                             | VALUE                          |
|---------------------------------------|--------------------------------|
| Temperature Sensor Type               | thermistor 2-wire NTC          |
| Thermistor Sensing Current            | 10 uA / 100 uA                 |
| Usable Thermistor Range               | 25 to 450000 Ohm typical       |
| User Calibration                      | Steinhart-Hart three constants |
| Temperature Display Range             | -99.9 C to 199.9 C             |
| Temperature Display Accuracy          | plus or minus 0.5 C            |
| Thermistor Resistance Range 10 uA     | 0.01 to 450.00 kOhm            |
| Thermistor Resistance Accuracy 10 uA  | plus or minus 0.05 kOhm        |
| Thermistor Resistance Range 100 uA    | 0.001 to 45.000 kOhm           |
| Thermistor Resistance Accuracy 100 uA | plus or minus 0.005 kOhm       |
| TE Current Display Range              | -3.00 to 3.00 A                |
| TE Current Accuracy                   | plus or minus 0.04 A           |
| TE Voltage Range Class                | -8.00 to +8.00 V               |
| Mainframe Compatibility               | LDC-3916 and LDC-3908          |
| Channels                              | 1 TEC                          |

#### Notes

Specifications are from the ILX LDC-3916558 user manual and Newport product listing. Requires an LDC-3908 or LDC-3916 mainframe. Faceplate module labeling and calibration constants remain authoritative.

### Available from Aumictech

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

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

#### Aumictech

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NIST-traceable calibration · SAM registered ·  
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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.