The LDR250E laser driver module provides a versatile and user friendly platform for stable current and TEC control of laser diodes, SOAs, SLDs, DFBs etc. The f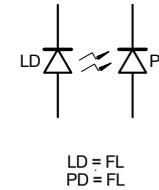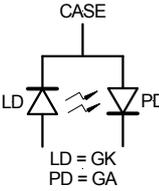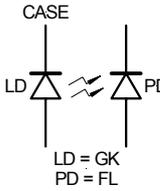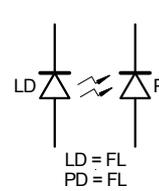ully integrated digital Eurocard modules are designed for device characterisation, prototype development and experimental systems and offer easy device integration, full PC control and monitoring, or set & forget operation utilising the on-board EPROM.

The LDRE module includes ZIF mount & heatsink for 14-pin butterfly package, plug-in power supply, USB interface, PC communications cable and full V-DRIVE control software for easy operation straight out of the box.
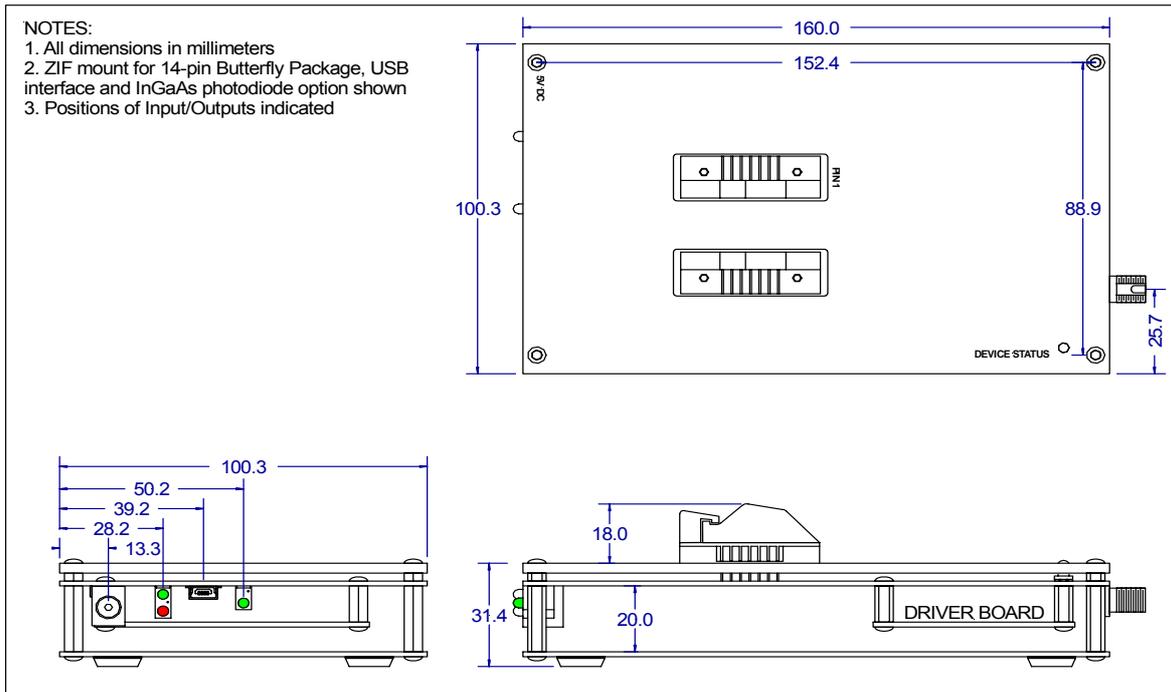
## Features

- Device Drive Current up to 250mA and TEC to 2.5A to ensure precise and stable device current and temperature control for a wide range of devices.

- Integrated heatsink with demountable 14-pin Butterfly connectors as standard for easy device connection or changeover.

- User reconfigurable pin connections to suit various device pin out arrangements.

- Comprehensive driver software (V-DRIVE) supplied for full PC control and monitoring of the device.

- Continuous traces of device drive parameters (power, current, forward voltage and temperature) are available on screen to enable ongoing monitoring of the device.

- V-DRIVE software includes LVI plotter allowing direct device characterisation with test data readily available in CSV format.

- Device current & temperature settings can be saved to driver EPROM for set & forget operation with no need for connection to a PC

- Optional V-DRIVE add-on Multi-Instrument Browser (MIB) for monitoring up to 5 LDR units simultaneously via USB interface.

- Optional LabVIEW (beta) VI's allowing independent temperature / current control of the LDR units via client's own LabVIEW interface.

- Custom modules available. Contact OptoSci to discuss custom device drivers with different specifications or other features.

## Specification

| ITEM | SPECIFICATION | | COMMENT |
|---|---|---|---|
| **Current Source Subsystem** | | | |
| Drive Current | 0 – 250 mA | | *User adjustable in 0.1mA increments* |
| Current stability (CC mode) | ≤ 0.05% | | *8 hours @ 20°C, after warm up* |
| Forward Voltage | ≤ 4 V | | |
| Modulation Bandwidth (GK) [1] | 0.02 – 100 kHz | | *1V pk-pk input* |
| **TEC Subsystem** **(Temperature specifications assume a standard 10k NTC thermistor)** | | | |
| TEC Current | ≤ 2.5 A | | |
| TEC Temperature set-point range | 10 – 40°C | | *User adjustable in 0.1°C increments* |
| TEC Temperature control stability | ±0.02°C | | *8 hours @ 20°C, after warm up* |
| **External Power Monitor (optional)** | | | |
| Input Optical Power | ≤ 2.0 mW | | |
| **PC Communications** | | | |
| Protocol | USB | | *Mini-B connector* |
| **General Data** | | | |
| Supply Voltage | 4.5 – 5.5 V | | *DC* |
| Supply Current | ≤ 2.75 A | | *Depends on TEC draw* |
| Update Rate | 3 Hz | | |
| Ambient Temperature | 0 – 35°C | | |
| Storage Temperature | -10 – 60°C | | |
| Dimensions (LxWxH) | 160 x 100 x 50 mm | | *Including 18mm height of 14-pin device connector* |
| Weight | 0.325 kg | | |
| V-Drive Software Compatibility | Windows XP / 7 / 8 / 10 | | |
| Common Device Suitability | Grounded Anode (GA) | *DFB Laser, SLED* | *14-pin Butterfly* |
| | Grounded Cathode (GK) | *SOA, SLED* | |
| Device Pin Compatibility (GA) [2] | LD ⊳⊲ PD · CASE · LD = GA · PD = GA | LD ⊳⊲ PD · CASE · LD = GA · PD = FL | LD ⊳⊲ PD · LD = FL · PD = FL |
| Device Pin Compatibility (GK) [2] | CASE · LD ⊳⊲ PD · LD = GK · PD = GA | CASE · LD ⊳⊲ PD · LD = GK · PD = FL | LD ⊳⊲ PD · LD = FL · PD = FL |
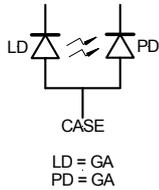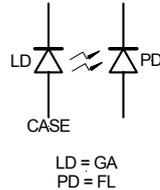
1. Optional 100kHz modulation bandwidth for Grounded Cathode (GK) Version. Contact OptoSci to discuss.
2. LD – Laser Diode, PD – Photodiode, GA – Grounded Anode, GK – Grounded Cathode, FL – Floating

NOTES:
1. All dimensions in millimeters
2. ZIF mount for 14-pin Butterfly Package, USB interface and InGaAs photodiode option shown
3. Positions of Input/Outputs indicated

160.0
152.4
100.3
88.9
PIN1
5V DC
25.7
DEVICE STATUS

100.3
50.2
39.2
28.2
13.3

18.0
31.4
20.0
DRIVER BOARD

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## Ordering Information:

**Driver:**     **LDR250GKE**
250mA Grounded Cathode LDR Controller

**Driver:**     **LDR250GAE**
250mA Grounded Anode LDR Controller

**with Photodiode (optional):**     **LDR250G☐E – IF**

*A (Grounded Anode)*
*K (Grounded Cathode)*

LDR250E with an external InGaAs photodiode in FC receptacle

**Custom Module:**     **LDR250G☐E – CU**
Non-standard / customised module

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### Included Items

The LDR laser current and TEC controller modules are supplied with the following items as standard to allow quick and easy operation straight out of the box.

- Full V-DRIVE control software
- ZIF mount & heatsink for 14pin butterfly package
- USB interface & PC communications cable
- Hex key, screwdriver & device fixing screws
- 5V mains power supply
- Operators manual

For other options and device mounts please contact OptoSci.

### Operation

A full operating manual is supplied describing the set-up and operation of the LDR250E module and the V-DRIVE software.

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