



### Abstract

**An Italian company has developed an high stability, ultra-low noise diode laser driver for high precision applications. It can be used in combination with a temperature controller for a fully stable diode laser operation. The front panel has been designed to allow a quick and easy control on the correct working condition of the diode laser. The company is interested in licence agreement.**

### Description

An Italian University spin-off has developed an high stability, ultra-low noise diode laser driver for high precision applications. It can be used in combination with a temperature controller for a fully stable diode laser operation. The controller is a wide purpose instrument for applications requiring very good temperature stability and low noise. It performs a bipolar control on the thermoelectric module (TE), resulting in fast settling times. It also allows for temperature modulation with an external waveform. A notch filter reduces the 50-60 Hz noise level.

The front panel has been designed to allow a quick and easy control on the correct working condition of the diode laser.

Two output connectors allow both current and power monitoring. The front panel has an input connector for external current modulation.

A protection circuit prevents fast current transients to the diode laser, and a limiter (set by the user) prevents unwanted increase of the driving current.

The device can be applied to several kinds of TE. It includes a current limiting circuit with controllable threshold, with led indicator, for TE protection.

The system can drive the laser diode either at constant current or at constant power. In the former case, the laser is controlled by sampling the voltage signal across a series precision resistor. In the latter case, the photodiode signal is used to control the laser injection current. External modulation is possible

in both operating modes.

### Innovations and advantages of the offer

The system supports any kind of connection to all commercially available laser diodes. Two different connectors allow both cathode-ground and anode-ground driving. It is possible to select the photodiode configuration through a switch on the rear panel.

### For further information (including IPR status)

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