

# Particulars Laser – Hardware Manual

## Introduction

Particulars lasers are very compact and lightweight since they combine the laser head and driver in the single housing. They were designed for Transient Current Technique, but their applicability is far broader. They offer short pulses (350-4000 ps) with pulses energy corresponding to creation of e-h pairs in silicon equivalent to up to 1000 m.i.p. The lasers can be triggered internally triggers or externally. Internal triggering can be simple with a fixed frequency or a pattern of pulses can be programed with trigger(s) provided independently of the laser/driver pulses.

## Connections

**USB** – communication with PC

**TRout (driver)** - trigger output connected to the circuitry triggering the laser diode)

**TROut (processor)** – trigger output connected to the microcontroller independently on driver (see software manuals for details about the usage of laser in this operation mode)

**TRin** – trigger input for external triggering of the laser pulse. Note that in this mode the switch for selection of the operation mode should be in “Ex. Tr.” (External trigger).

**Ex. Tr./Int. Tr.** – external / internal triggering of the laser

**Power** – 2 pole lemo connector for power supply



## Power Supply

Only Particulars power supply should be used to power the lasers. At the moment they are designed to be operated only at 220V/50 Hz (AC). A two pin Lemo connector is used to deliver the power to the laser.



## Laser heads

The laser can have two different outputs:

- a focused and collimated head
- a fibre coupled head (single mode) output using standard FC connector

While fibre connection should be used with optical system, focused-collimated head can be used to directly illuminated device. The collimator can be moved for few mm backward and forward in order to achieve desired collimation. Use the screw on top of the head and slide the collimator for desired position.

