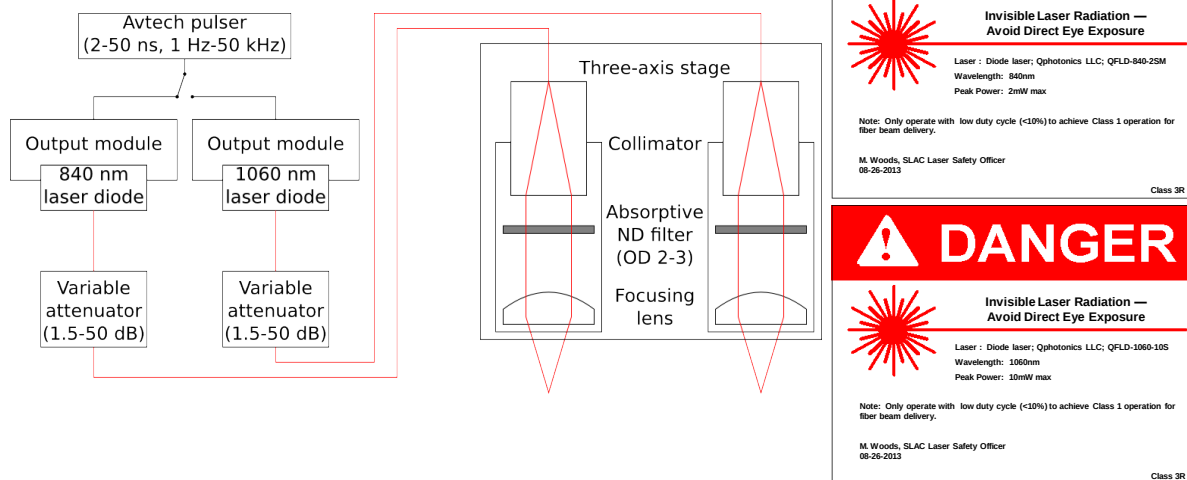




The laser test stand uses a pair of Class 3R laser sources with Class 1 fiber beam delivery to experimental equipment. If the requirements for operation are met, the system is designed to meet Class 1 safety limits.

Laser sources Laser diodes are bonded at their outputs to fiber pigtails. The diodes can only be powered using the output modules listed. The fiber pigtails are tagged with the labels shown.

- 840 nm laser diode: QPhotonics QFLD-840-2SM, nominal output power 2 mW, max output power 3 mW, Class 3R; output module AVX-S1-P3-SLAA
- 1060 nm laser diode: QPhotonics QFLD-1060-10S, nominal output power 10 mW, max output power 14 mW, Class 3R; output module AVX-S1-P4B

Laser pulse generator AVTech Electrosystems AVO-9A-B-P-P3-SLAA: maximum amplitude 10 V (200 mA into the 50 Ω impedances of the output modules) and maximum duty cycle 0.0025 (50 ns $\times$ 50 kHz).

Beam delivery The laser diodes are connected through adjustable fiber attenuators to the optical system (collimator, absorptive filter, and focusing lens) on the three-axis stage. The laser light is confined to a optical fiber or a light-tight lens tube up to the exit of the focusing lens. The stage is enclosed in a hutch.

Requirements for operation

- Laser operators for this system must review requirements for Class 2 and 3R systems in ESH Manual Chapter 10, Laser Safety (and are recommended to take the ESH132 class); see
 - General Requirements: <http://www-group.slac.stanford.edu/esh/eshmanual/references/laserReqGeneral.pdf>
 - Class 2 and Class 3R Laser Operation Requirements: <http://www-group.slac.stanford.edu/esh/eshmanual/references/laserReqClass2and3R.pdf>
- The output modules must only be powered by the AVTech pulser. The DC bias inputs to the output modules are shorted to ground (as recommended by AVTech when not applying bias). This guarantees the laser diodes operate within Class 1 limits.
- For unattended operation, the hutch should be closed.