

Uniphase Microgreen SLM Laser System Operating Notes

The Uniphase Microgreen laser system is a sophisticated, lab-grade laser that provides an stable, single frequency (i.e. single longitudinal mode or SLM) beam of 532nm laser light. The following are a few guidelines to help you get the most out of your laser system.

Specifications

Wavelength	532 nm
Laser Safety Classification	IIIb
Output Power	10-50 mW
Beam Waist Diameter	0.6 mm ($\pm 10\%$), (1/e ² points)
Power Stability (2 hour, 25 \pm 3 °C) [%]	<1.0
Mode Quality M ²	<1.2
Beam Divergence (full angle) [mrad]	<1.2
Polarization Ratio (E-vector is vertical)	>100:1

Safety

This is a Class IIIb laser system and is not eye-safe. You should be careful not to look into the beam or reflections of the beam. The best bet is to use safety goggles that have a rating of OD3 or better at 532nm.

Input Power

The controller requires a regulated 5 volt DC supply rated at 10A or more. When first powered on, the system may draw up to the full 10A briefly, but will drop to 2-4A once stabilized.

Heat

The laser head contains 2 thermoelectric cooler (TEC) modules which keep the 808nm pump diode and the KTP resonator cavity at optimum temperatures. The heat dissipation takes place through the base plate of the laser head. The head must be attached to a heat sink if it is to be run for more than a few minutes. The base plate must be kept under 45 degrees C. Overheating the head will dramatically reduce the life of the pump diode!

Startup Sequence

After applying power, there will be a 5 second delay before the laser comes on. Initially the controller will run the laser in constant current mode. The output power will vary as the internal temperatures stabilize. After a few minutes (3-5 depending on ambient temperature), the system will switch to constant power mode and the output will increase to rated power and become more stable.

Learning More

See Sam's Laser FAQ on the Web at:

<http://www.repairfaq.org/sam/laserssl.htm#ssljuug>

<http://www.repairfaq.org/sam/laserstr.htm#strjuug>

<http://www.repairfaq.org/sam/juhyb23.pdf>