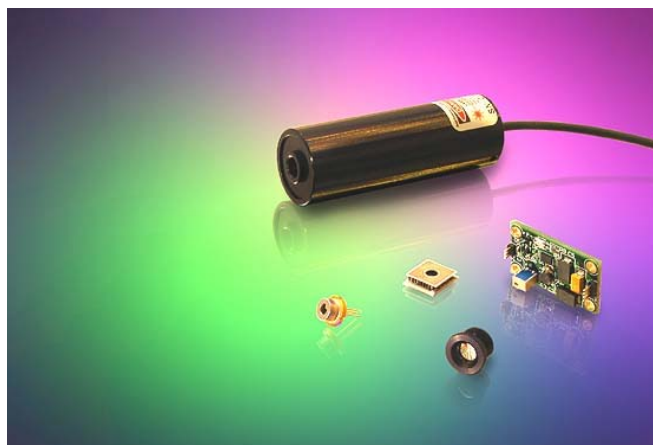


## TECGL Series

### *Thermoelectrically Cooled Modulated Green Laser System*



The **TECGL Series Thermoelectrically Cooled Green Laser System** from WSTech is a self-contained laser module composed of a laser head and optics with a built in temperature controller and driver circuit in a compact and rugged package. The built-in temperature controller controls the laser temperature with a stability of  $\pm 0.01^{\circ}\text{C}$ . The laser output power stability is less than 1% over a long term. The stable power and exceptional beam pointing characteristics of this laser makes it ideal for medical and imaging applications.

All standard TECGL series lasers are supplied with a 3.3 VDC power supply and do not need any additional instrumentation. They are available in output power ranges of 1mW to 30mW.

It is TTL Modulatable from CW up to 3kHz.

#### Product Features

- *Integrated TEC & Laser Controller*
- *Compact Size, 1 × 4 inch*
- *Low RMS Noise*
- *Excellent Beam Quality*
- *Excellent Power and Wavelength Stability*
- *ESD and Over-Temperature Protection*
- *Long Life Time*
- *Low Power Consumption, < 2W*

#### Application

- *Bioanalytical*
- *DNA Sequencing*
- *Flow Cytometry*
- *Medical Imaging*
- *Capillary Electrophoresis*
- *Confocal Microscopy*
- *Particle Counting*
- *Interferometry*
- *Printing (Reprographics)*

# TECGL Series

## Thermoelectrically Cooled Modulated Green Laser System

### Specification

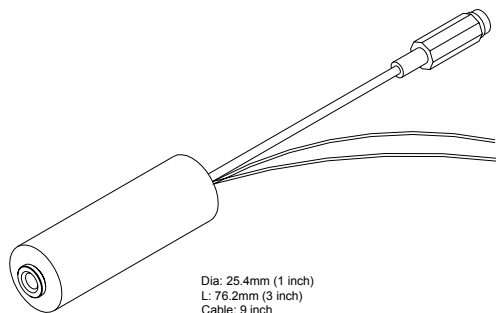
|                                |                                  |   |          |
|--------------------------------|----------------------------------|---|----------|
| <b>Optical</b>                 | Wavelength                       | 532 nm  |          |
|                                | Power Stability                  | <0.5%   |          |
|                                | RMS Noise (0~20 MHz)             | <0.5%   |          |
|                                | P-P Noise                        | <5% over 8hrs   |          |
|                                | Spatial Mode                     | TEM <sub>00</sub>   |          |
|                                | M <sup>2</sup>                   | < 1.1   |          |
|                                | Beam Diameter @ 1/e <sup>2</sup> | < 1.2 mm  |          |
|                                | Beam Divergence                  | < 1 mrad  |          |
|                                | Beam Shape                       | Circular (1:1.1)  |          |
|                                | Pointing Stability               | < ±25 µrad  |          |
|                                | Polarization Ratio               | > 100:1 (higher ratio upon request)                           |          |
|                                | <b>Electrical</b>                | Operating Voltage   | 3.3 V DC |
|                                |                                  | Operating Current   | <0.5 A   |
| Modulation frequency           |                                  | 3kHz  |          |
| TTL Input                      |                                  | Low(0~0.8V), High(1-3.3V)                                     |          |
| Absolutely Maximum TTL Signal* |                                  | 3.3V DC   |          |
| Electrical Connections         |                                  | Power Connector(+ Red, - Black),<br>TTL(Signal-White, -Black) |          |
| Power Consumption              |                                  | < 2W  |          |
| Warm up time                   |                                  | < 1 min   |          |
| <b>Mechanical</b>              | Dimension (Length x Dia) mm      | 101.6mm x 25.4 mm   |          |
|                                | Weight                           | 95 g  |          |
|                                | Operating Temperature            | 10°C to +40°C *   |          |
|                                | Storage Temperature              | -10°C to +50°C  |          |
|                                | Heat Sink Requirements           | Recommended for extended use                                  |          |

**\*\*Thermal Management** TECGL Series Laser System is designed to dissipate heat through its body. For proper cooling, do not restrict air circulation around the device.

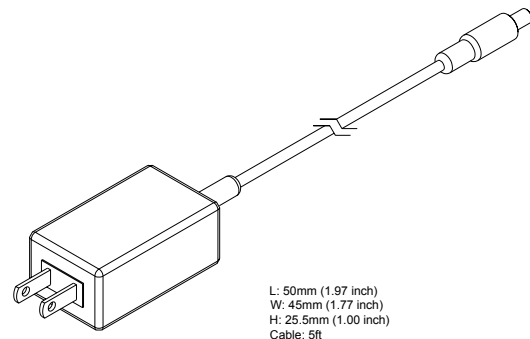
An additional heat sink should be used to maximize the performance of the laser system if the operating temperature is more than 30°C.

### Mechanical Drawing

**Laser**



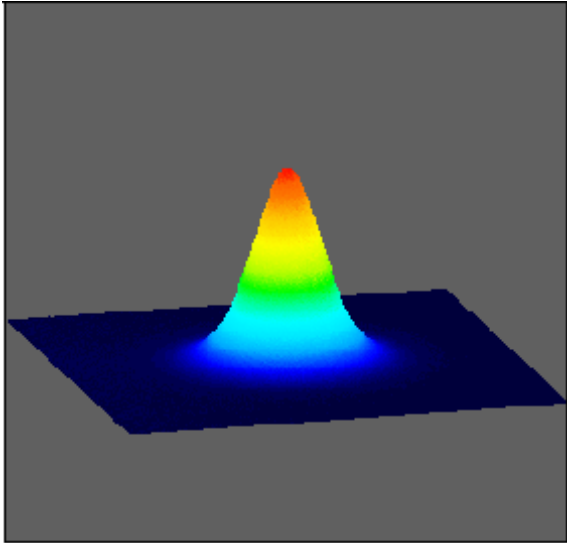
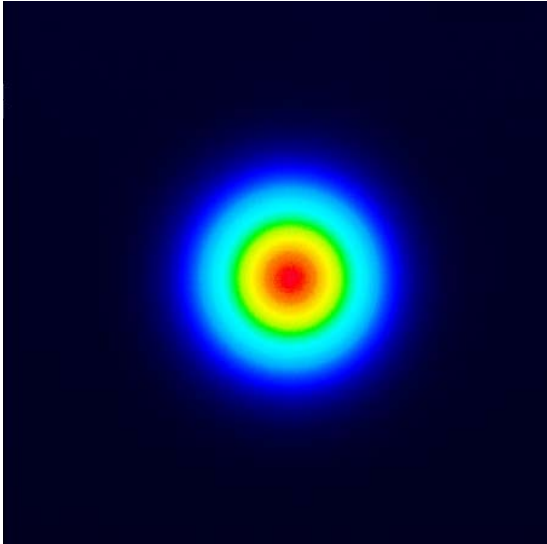
**Power Supply**



# TECGL Series

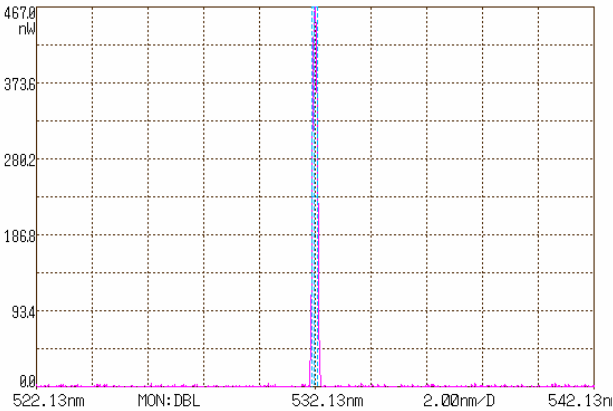
## Thermoelectrically Cooled Modulated Green Laser System

### Typical Characteristics

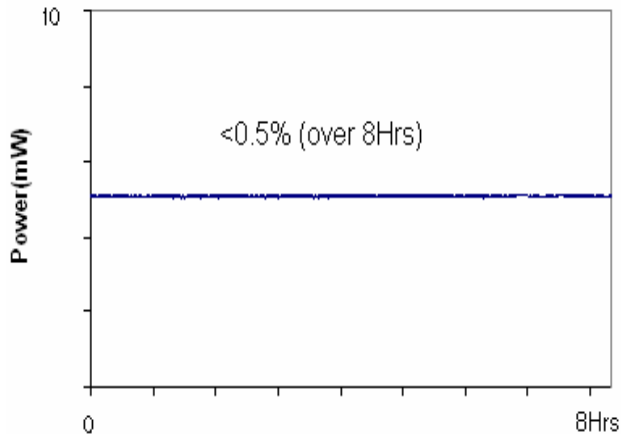


Beam Profile

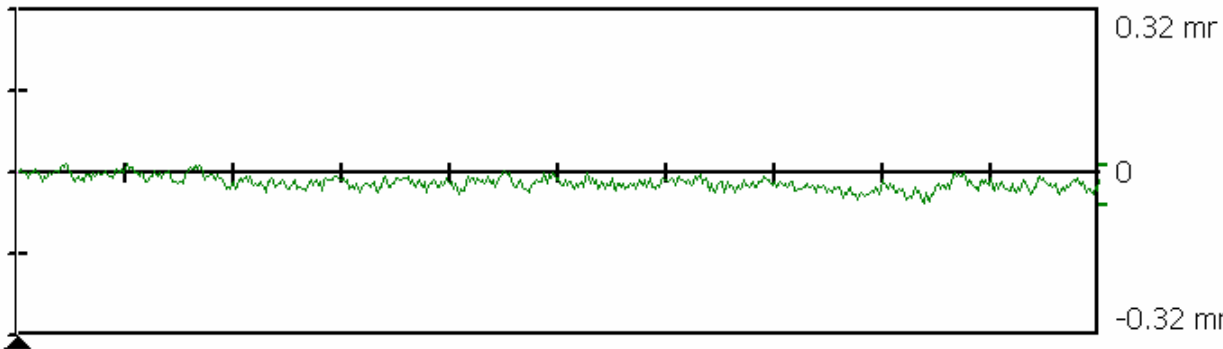
SPECTRAL WIDTH : <ENVELOPE>  
THRESH LVL1 : 3.0dB K : 1.00  $\Delta\lambda$  : 0.192nm  
THRESH LVL2 : 13.0dB MODE : 1  $\lambda_C$  : 532.122nm



Wavelength



Power Stability



Duration = 8hrs

Beam Pointing Stability

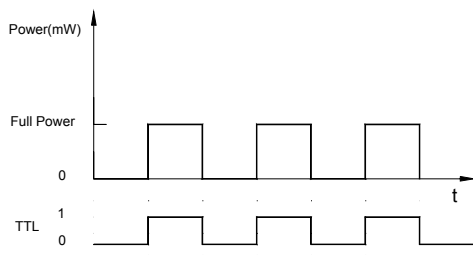
# TECGL Series

## Thermoelectrically Cooled Modulated Green Laser System

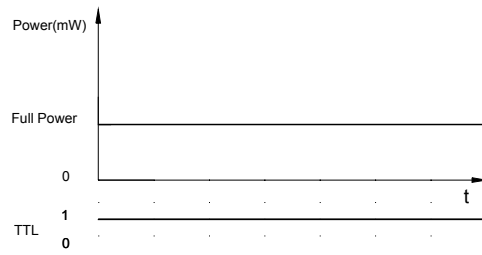
### TTL Modulation

The TECGL series modulated green laser system is TTL modulatable between 0 and the full power by applying an external TTL input signal (e.g. from function generator) using third white wire. When the TTL input is Low the laser power is completely off. When the TTL input is high the laser output is at Full Power. The TTL signal can be any on-off time combination.

It can also be operated continuously by applying a high signal to the TTL input which can be done by connecting the white wire and red wire together.



TTL Modulation



Continuous operation

### Order Information

| Part No.       | Power(mW) | Class | Operation Mode |
|----------------|-----------|-------|----------------|
| TECGL-01-TTL*  | 1         | II    | CW             |
| TECGL-05-TTL*  | 5         | IIIa  | CW             |
| TECGL-10-TTL** | 10        | IIIb  | CW             |
| TECGL-20-TTL** | 20        | IIIb  | CW             |
| TECGL-30-TTL** | 30        | IIIb  | CW             |

\*Complies with CDRH 21CFR 1040.10

\*\* Module components sold solely for use in OEM equipment, OEM is responsible for compliance with all applicable safety regulations.



**Operational Hazard-Semiconductor Laser Diode Module:** This laser module emits radiation that is visible and harmful to human eye. When in use, do not look directly into the laser emitting aperture. Direct viewing of laser diode emission at close range may cause eye damage.

**Limited Warranty:** One year. No warranty coverage for disassembly, modifications or damage due to abuse or misapplication.

### World Star Tech.

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