D5mm 520nm Green Diode Laser Module with TTL control

Application

Industrial Areas / Medical / Biochemical / Laser Tag

Property

Wavelength Range = 520nm

Introduction

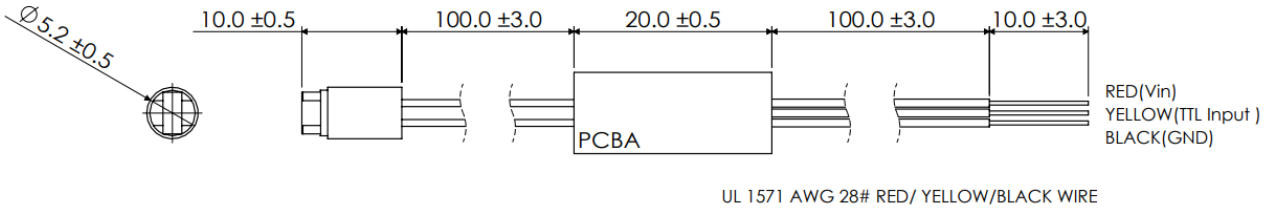
We created high stability and quality green line laser modules that are successfully applied in industry, laser tag, biomedical, medicine etc. LM5 laser line module series are distinguished by its good quality, high MTTF, good stability, reliability and most importantly compact sized. Laser pattern can be further optimized per customers' requirements.

Specifications(T=25℃)

Items	Symbols	LM5G520H10L110T
Mode		CW / PWM(Pulse Width Modulation)
Wavelength	λ	520nm
Lens		Cylindrical
Spot	L	Line
Span angle	Ø	110°
Line width		<2mm at 0.5m
Diameter x Length	Φ x L	5.2x10.3 mm
Output Power	Po	5mW (typ, @100% duty ratio)
Power Stability		<5%
Divergence Angle	mrad	<2
Operating Voltage(DC)	Vo	3V / 5V
CW Operating Current	Io	65~85mA, 120mA (max)
Operating Temperature	To	-10℃~ +70℃
Storage Temperature	Ts	-20℃~ +85℃
Housing Material		Brass
Mean time to failure		>8000 hrs

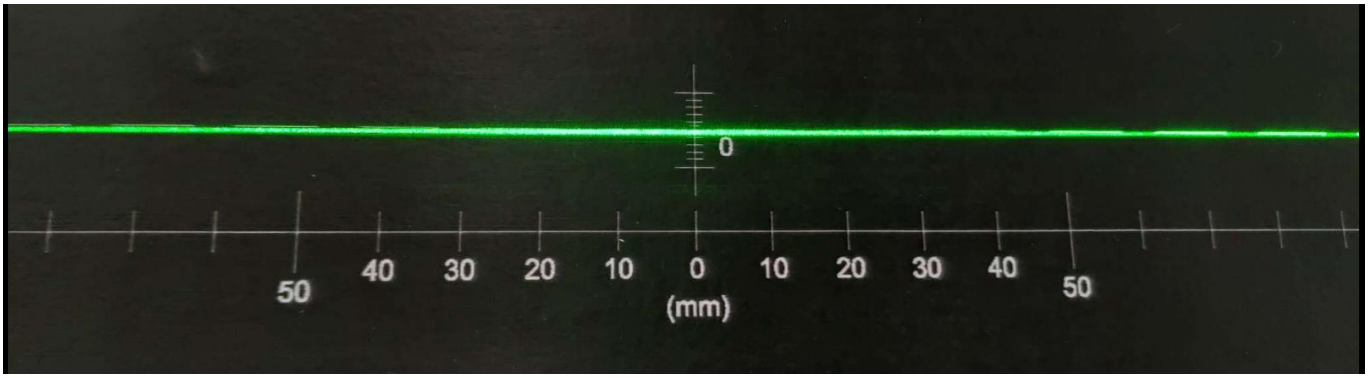
ATTENTION – Observe Precautions For Handling – Electrostatic Sensitive Device

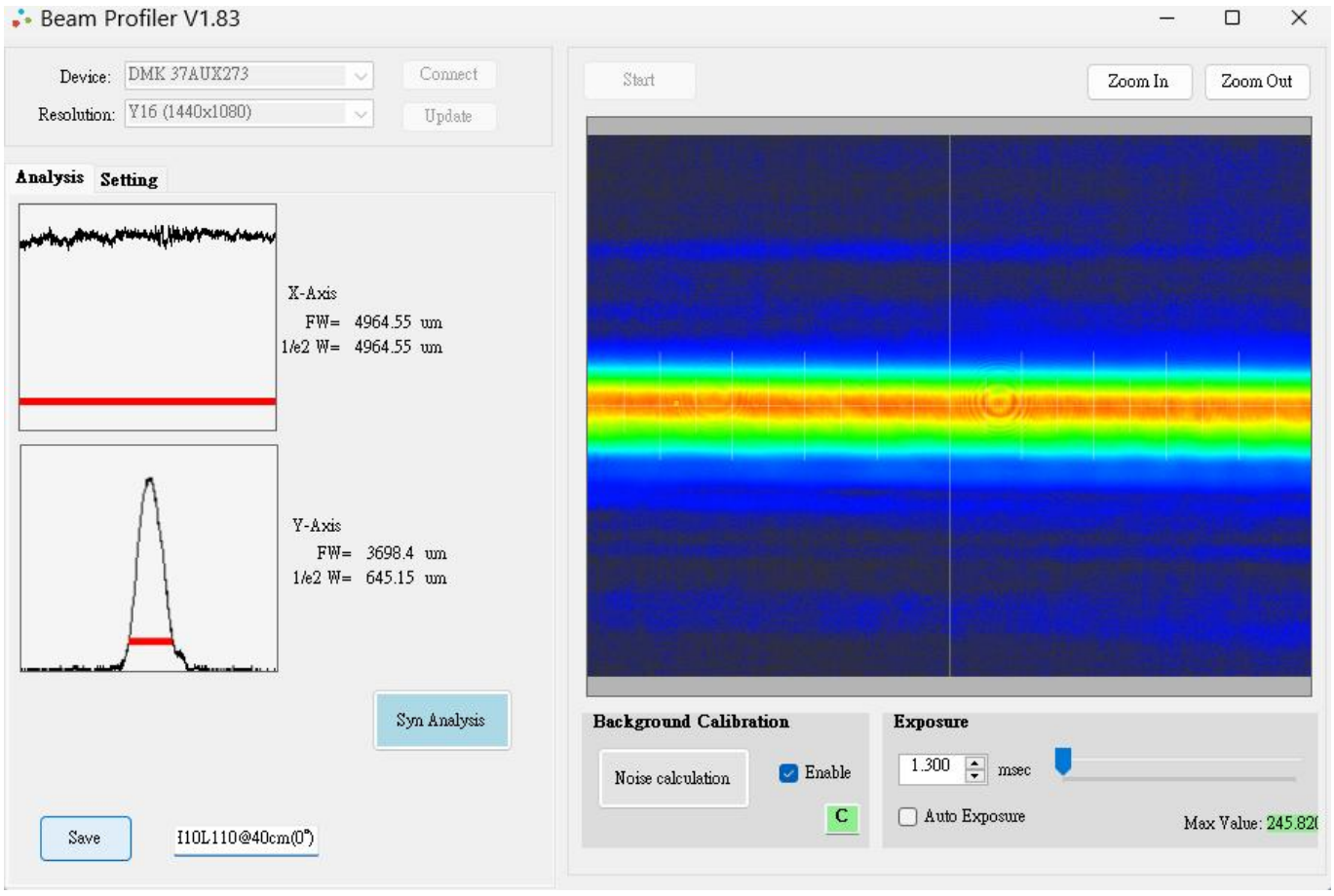
Dimensions



Laser Line Pattern

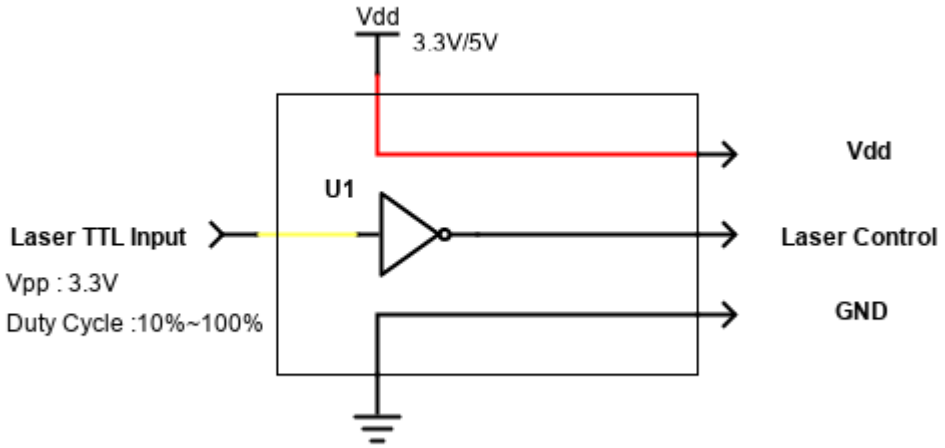
LM5 series Green Line Shape at 500mm





TTL control diagram

All TTL control laser modules will be prepared with 3 flying leads. In addition to red wire for power & black wire for ground, yellow wire allows users to provide programmed PWM signals to tune laser power output. Recommended duty ratio ranges from 10% to 100%



Power Stability

Maximum output power (100% duty ratio) will between the range 4mW to 5mW, but once make sure the value, for example, 5mW±0.25mW at 25 ℃ temperature. Then the power stability represents 5%.

Spot size

The spot size defined as Gaussian beam. In optics, a Gaussian beam is a beam of electromagnetic radiation whose transverse electric field and intensity (irradiance) distributions are well approximated by Gaussian functions. Many lasers emit beams that approximate a Gaussian profile, in which case the laser is said to be operating on the fundamental transverse mode, or "TEM00 mode" of the laser's optical resonator. When refracted by a diffraction-limited lens, a Gaussian beam is transformed into another Gaussian beam (characterized by a different set of parameters), which explains why it is a convenient, widespread model in laser optics.

Mean time to failure (MTTF)

Mean time to failure (MTTF) is the length of time a device or other product is expected to last in operation. MTTF is one of many ways to evaluate the reliability of pieces of hardware or other technology. It's important to note, however, that the mean time to failure metrics provided by companies regarding specific products or components may not have been collected by running one unit continuously until failure. Instead, MTTF data is often collected by running many units, even many thousands of units, for a specific number of hours.

Laser Safety

The light emitted from these devices has been set in accordance with IEC60825. However, staring into the beam, whether directly or indirectly, must be avoided.

Class IM

The maximum permissible exposure(MPE) cannot be exceeded, it includes High-power lasers within an enclosure that prevents exposure to the radiation and that cannot be opened without shutting down the laser. For example, a continuous laser at 600nm can emit up to 0.39mW, but for shorter wavelengths, the maximum emission is lower.

Class IIM

“Caution”, visible laser light less than 1.0mW. Considered eye safe, normal exposure to this type of beam will not cause permanent damage to the retina.

Class IIIA

“Danger”, visible laser light between 1.0mW and 5.0mW. Considered eye safe with caution. Focusing of this light into the eye could cause some damage.

Class IIIB

“Danger”, infrared(IR), and high power visible lasers considered dangerous to the retina if exposed. NB: it is important to note that while complying with the above classifications, unless otherwise stated. Our laser diode products are not certified and are designed solely for use in OEM products. The way in which device is used in the final product may alter its original design classification, and it is the responsibility of the OEM to ensure compliance with the relevant standards.

Specifications are subject to change without notice.