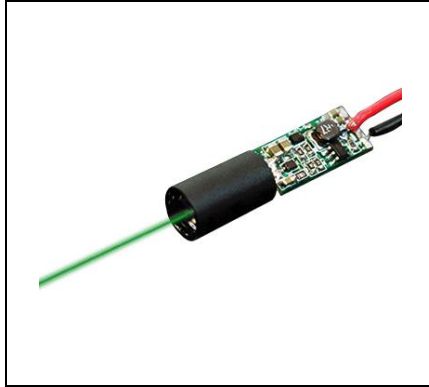


## Direct Green Dot Laser

### VLM-520-51 Series



#### FEATURES:

- Designed and manufactured in Taiwan, ensuring exceptional quality and durability.
- This module is an industrial-grade product that integrates an aspherical glass collimating lens, a direct green laser diode, and an APC driver circuit into a compact and durable hard anodized aluminum housing.
- Direct green laser diode with glass lens - Delivers a high-quality laser spot, supports a wide operating temperature range, and offers a 10,000 hours lifespan for reliable performance in diverse environments.
- Operating Voltage: 3~6 VDC
- Wavelength: 520 nm
- Laser power output : LPA - Class 3R - less than 4mW  
LPT - Class 2 - less than 1mW
- Beam Divergence (Full Angle): Less than 0.4 mRad
- Dimensions: D8 x L30 mm (0.314 x 1.18 inches)
- Compact design with an integrated Auto-Power-Control (APC) driver circuit for safe and consistent laser output.
- Connection Type: Lead wire

A 520 nm green laser is significantly more visible to the human eye (5-10x brighter than red lasers at the same power) due to the eye's high sensitivity to green light. Its advantages include higher brightness and easier visibility in daylight or outdoor environments. It is ideal for long-distance visibility and precise alignment applications.

## APPLICATIONS:

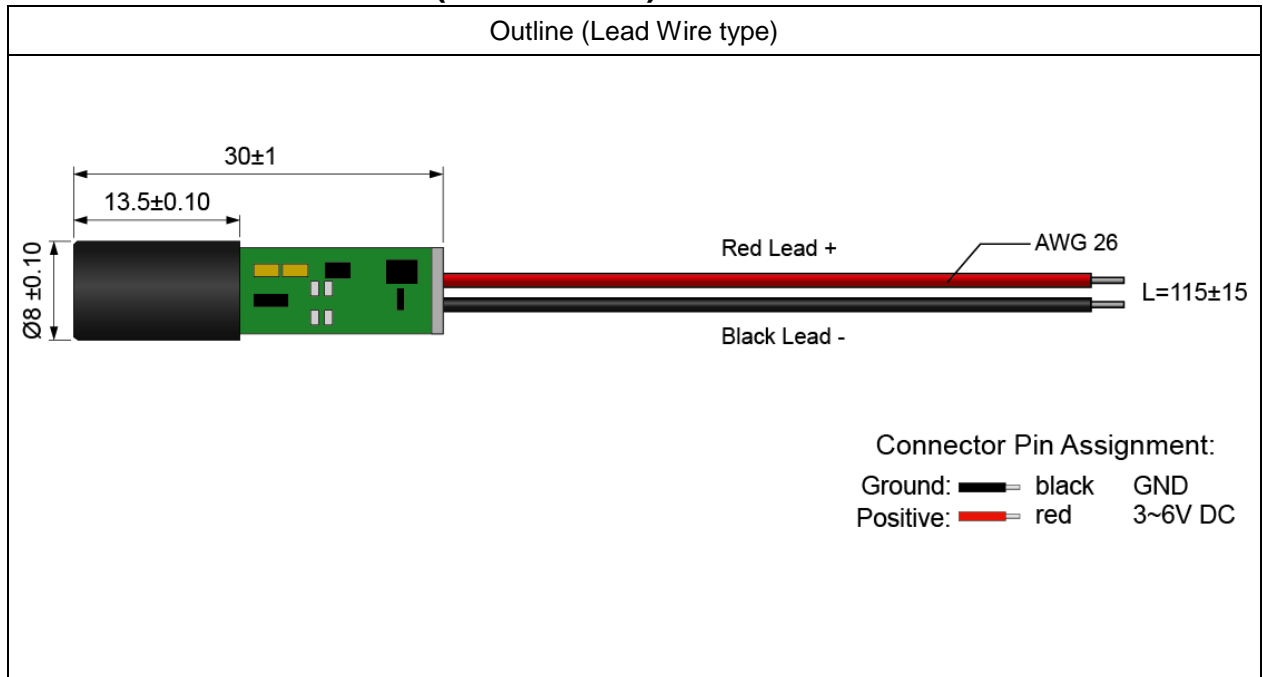
The green laser is a versatile tool with various applications due to its higher brightness and visibility, especially in outdoor or daylight environments. Here are some detailed applications for green lasers:

- **Positioning:**  
Green lasers are ideal for precise positioning in both industrial and commercial settings. Their bright beam ensures clear alignment even over long distances, making them valuable in construction, surveying, and large-scale assembly tasks.
- **Measuring:**  
Green lasers are used in measuring devices such as laser distance meters, where their high visibility enables accurate and easy distance measurement, even in bright lighting conditions.
- **Pointing:**  
These lasers are widely used for pointing applications, where visibility is key, such as in presentations, astronomy, or during events. Their intensity makes them easy to see from long distances.
- **Laser Sighting Device:**  
In military, sports (like archery), and recreational activities, green lasers are used as sighting devices. Their high brightness ensures that targets or paths are clearly marked for precision aiming.
- **Automotive Industry:**  
In the automotive sector, green lasers are used for precision alignment in manufacturing processes, like assembly line work, and for laser-based sensors in advanced driver-assistance systems (ADAS), helping with tasks like lane-keeping and parking assistance.
- **Medical & Science:**  
Green lasers find significant use in medical and scientific applications, including surgeries (such as eye surgeries) and diagnostic tools. They also assist in laboratory experiments where precision laser alignment is essential.

Green lasers' ability to perform well in a variety of settings, including those requiring high visibility and accuracy, makes them indispensable in many fields.

## VLM-520-51 Series

### OUTLINE DIMENSIONS (UNITS: mm)



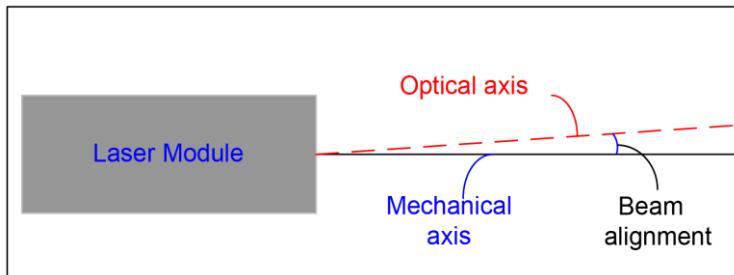
### SPECIFICATIONS

SPECIFICATIONS		VLM-520-51	
		LPT	LPA
1	Dimensions	$\varnothing 8 \times 30$ mm ( $\varnothing 0.314" \times 1.18"$ )	
2	Weight	2.5g	
3	Operating voltage (Vop)	3~6 VDC	
4	Operating current (Iop)	Less than 150mA	
5	Laser power output	Less than 1mW	Less than 4mW
6	Laser class	Class 2	Class 3R
7	Wavelength at peak emission ( $\lambda_p$ )	505~530nm	
8	Collimating lens	Aspherical Glass lens	
9	Output aperture	5mm	
10	Beam shape	Ellipse	
11	Spot size at 10M	$5 \pm 1$ mm	
12	Divergence (Full Angle)	Less than 0.4 mRad	
13	Beam alignment*	Less than 3°	
14	Operating temp. range	$-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$	
15	Storage temp. range	$-20^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
16	Housing material	Aluminum	

## VLM-520-51 Series

17	Potential of housing	Insulated
18	Electrostatic discharge (ESD)	30KV
19	Moisture sensitivity level (MSL)	Level 1 - acc to JEDEC J-STD-020E.
20	Protection circuit	Reversed supply circuit protection, over-current protection, surge protection
21	Vibration resistance	10 to 55Hz, 1.5mm amplitude for 2 hours each in X, Y and Z direction
22	Standard	IEC60825:2014
23	Wire type	1007-26AWG
24	Cable length	115±15mm
25	Mean time to failure (MTTF) 25°C	10000hrs
26	Application	Industrial application
27	Suggestion work distance	1~30 meters / 3~100 feet

\* Beam alignment:



## ORDER CODE

Order Code	Wavelength	Laser Power Output	Laser Class	Connection Type
VLM-520-51 LPA	520 nm	Less than 4mW	Class 3R	Lead Wire
VLM-520-51 LPT	520 nm	Less than 1mW	Class 2	Lead Wire

## SAFETY LABEL

