

## Customization Laser Module

# AZ81Z00002

815nm 2.5mW

According to your needs for laser modules, we can make them for wavelengths ranging from red, green, blue, and even invisible light. Laser modules cover a wide range of applications, such as ranging, positioning, PM2.5, 3D printing, etc. We have related products for you to choose from.

In addition, according to the customer's application requirements, LECC can be adjusted for optical power, focusing distance, spot size, and mechanism. We can advise on the required specifications for different application areas. Or provide your current products for testing first, and then adjust according to your needs, and tailor-made the required specifications.

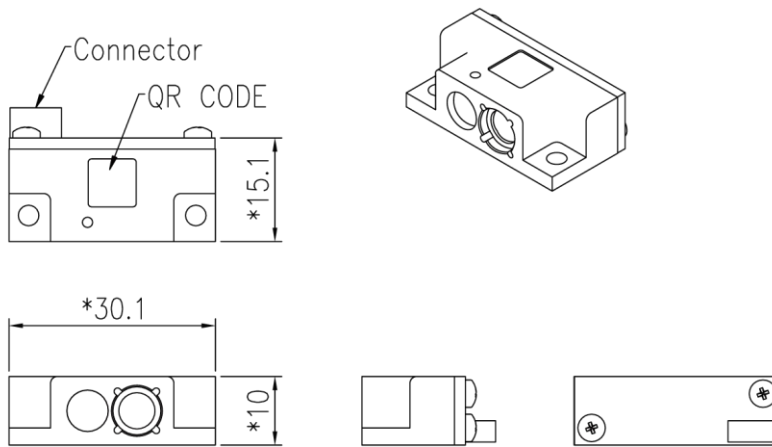


## Specification

Item	Values	Unit
Sampling Rate	1800	Hz
Supply Voltage	5	V
Current Consumption	<110	mA
Light Source	$\lambda=815$	nm
Laser Safety	IEC 60825-1 Class 1	-
Detection Distance	0.15~15	m
Distance Accuracy (10% ~90% reflectivity)	$\pm 20$	mm (<2m)
Distance Accuracy (10% ~90% reflectivity)	$\pm 30$	mm (2m~6m)
Distance Precision (1 $\delta$ , white 90% reflectivity)	0.15~8m: <5mm	1.8k
Distance Precision (1 $\delta$ , white 10% reflectivity)	~4m:6mm; 4~8m: 8mm	-
Operating Temperature range	-10~+50	°C
Storage Temperature range	-40~+85	°C
Relative Humidity	5~90	%
Interface	3.3V UART (576,000bps)	

## Mechanical Dimensions

### 1. Dimensional Drawing



## **[ Cautions ]**

### 1. Absolute maximum ratings

The absolute maximum ratings which must not be exceeded even momentarily have been established for over driving laser operation reason such as COD. Exercise particular caution with respect to the drive voltage supply and static electricity.

### 2. Prevention of surge current and electrostatic discharge (ESD) and surge stress

Laser diode is sensitive device to ESD and surge, so even an extremely short time, Laser diode damaged with the strong light emitted. Use the power supply that was designed not to exceed the optical power output specified at the absolute maximum ratings.

We advise taking the following protective measures:

- Ground the device and circuits.
- When working with laser diodes wear anti-static clothing.
- Grounded wrist straps should always be worn while working with laser diodes.
- Use anti-static containers for transport and storage.
- Laser diode deterioration and damage can occur due to excessive current spikes when the power is turned on or off.

Design circuits to avoid the generating of excessive current spikes

### 3. Soldering

When soldering, please give attention to the mechanical stress and the temperature. Temperature of die-pad portion should be less than 160°C. It is recommended to radiate heat by putting heat sink on the package.

**Soldering temperature and time : Iron temperature less than 180°C within 3sec (leads only)**

### 4. Eye Safety

When the laser diode is in operation, looking into laser beam directly by naked eyes, even looking into through a lens, microscope, or optical fibers, may cause severe damage to human eyes. For observing laser beams, using safety goggles is recommended.

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