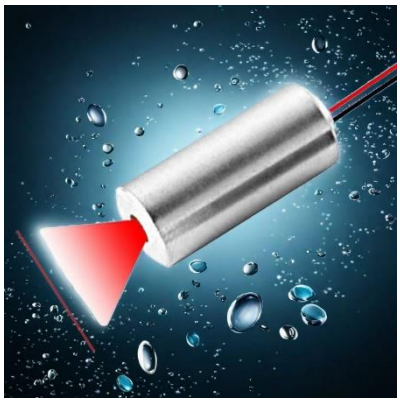
D9mm 635nm Water Proof Line Laser Module

Application

Industrial Areas / Biochemical / Laser Sensing / Laser Detection



Property

Wavelength Range = 635nm

Introduction

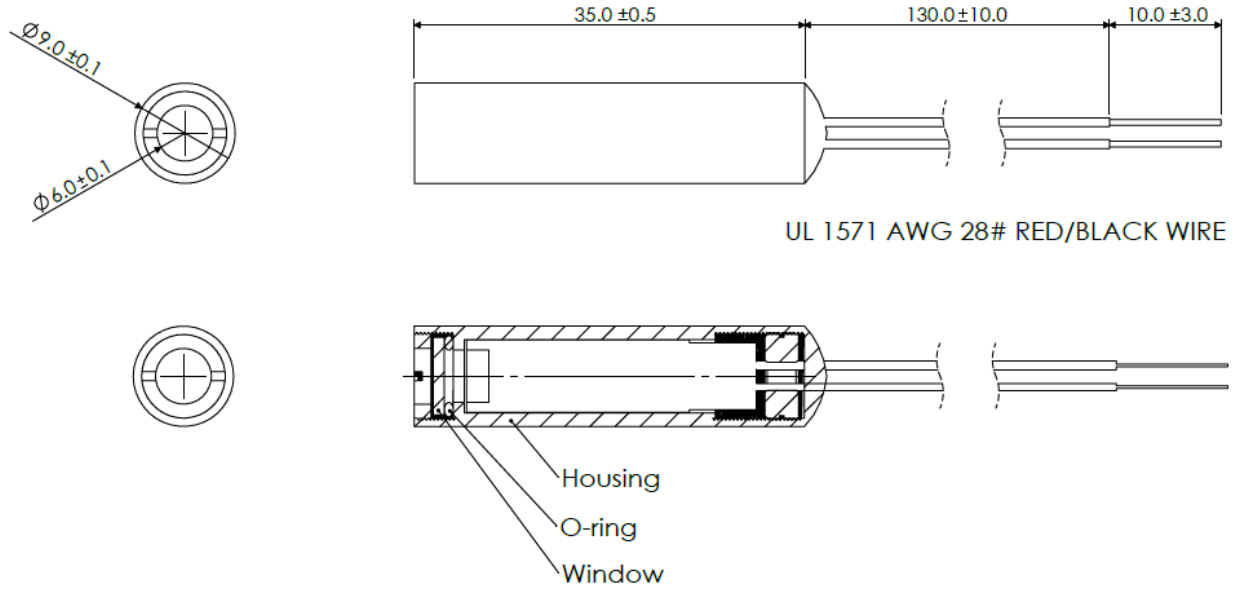
We created high stability and quality water proof laser modules that are successfully applied in military, industry, biochemistry, medicine etc. LM9 laser module series are distinguished by its compact size, high MTTF, good stability and reliability, also wide wavelength selection and custom made as requirements.

Specifications(T=25℃)

Items	Symbols	LM9R635S10LX	LM9R635H30LX
Mode		CW	CW
Wavelength	λ	635nm	635nm
Lens		PMMA	Glass
Spot	L	Line	Line
Span Angle	deg	30/60/75	30/60/75
Line Width		<3mm at 1m	<3mm at 1m
Diameter x Length	Φ x L	9X35 mm (housing)	9X35 mm (housing)
Output Power	Po	<10mW	<30mW
Power Stability		<5%	<5%
Divergence Angle	mrad	<1	<1
Operating Voltage(DC)	Vo	3V / 5V	3V / 5V
CW Operating Current	Io	40mA(typ), 50mA (max)	110mA(typ), 120mA (max)
Operating Temperature	To	-10℃~ +60℃	-10℃~ +60℃
Storage Temperature	Ts	-20℃~ +80℃	-20℃~ +80℃
Housing Material		Stainless Steel	Stainless Steel
Mean time to failure		>8000 hrs.	>8000 hrs.

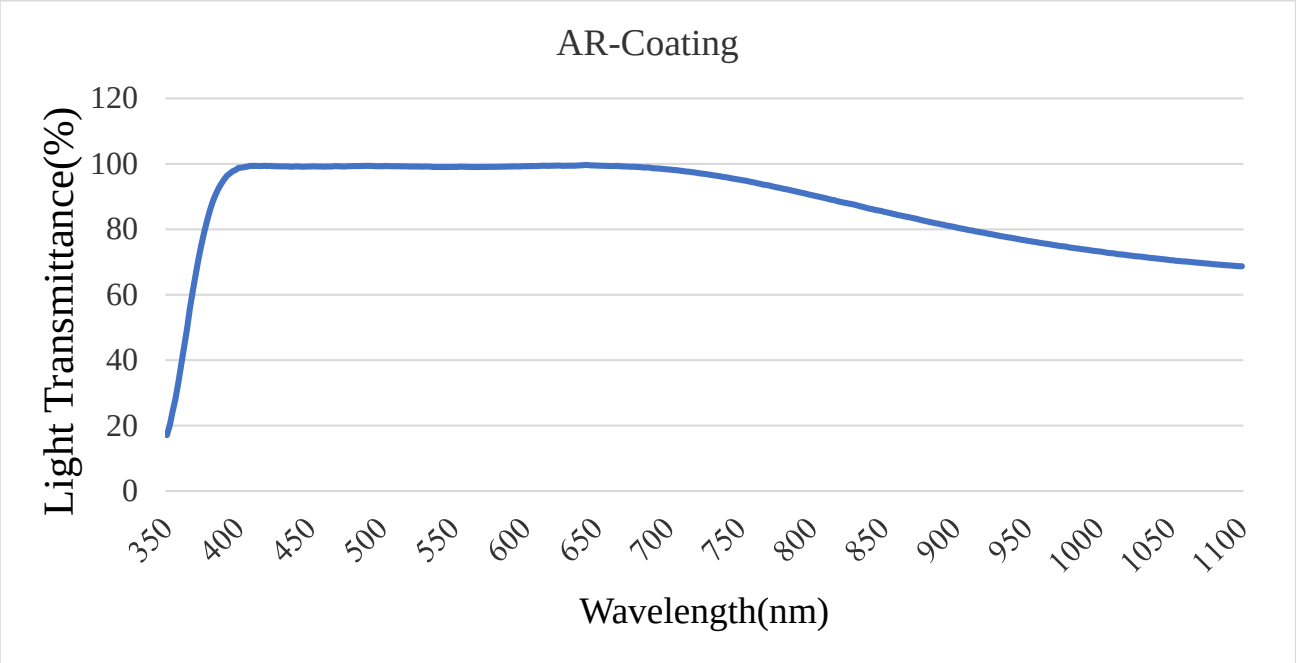
ATTENTION – Observe Precautions For Handling – Electrostatic Sensitive Device

Outline Dimensions



The laser module is installed within a housing through a specially designed mechanism, with the front end sealed by O-ring and window, and back end sealed with epoxy, ensuring waterproof capabilities.

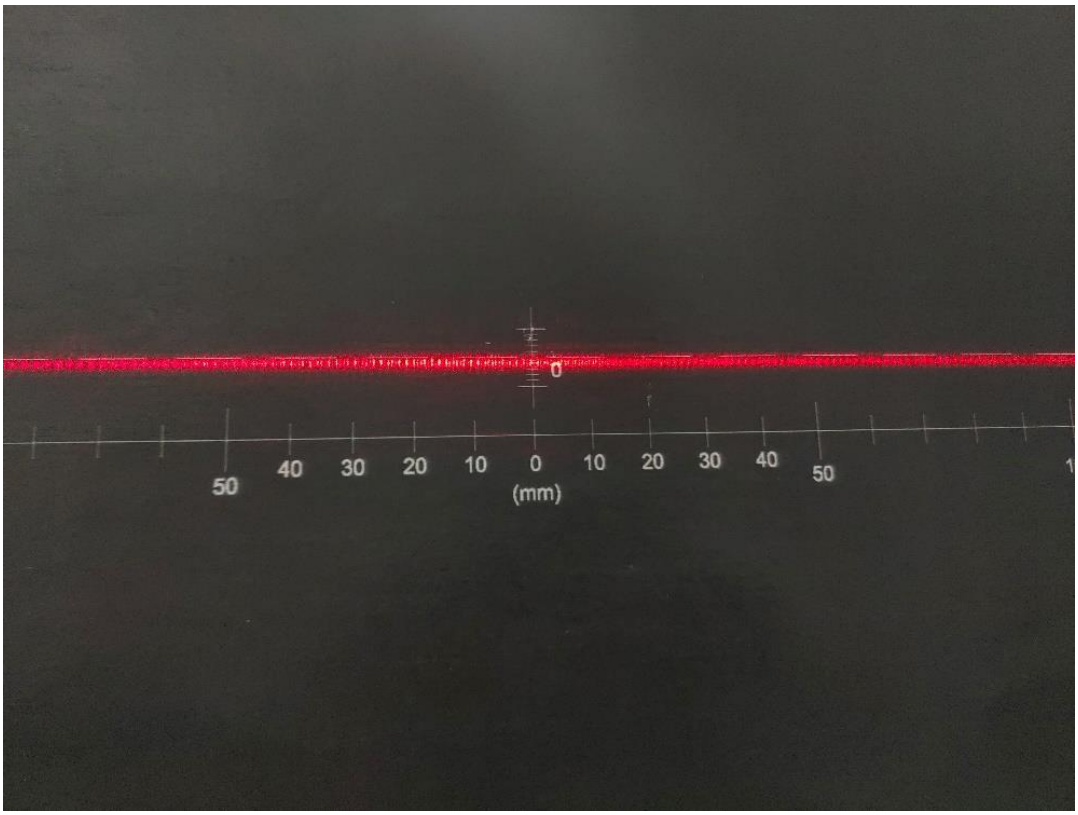
Anti-Reflective Coating Window

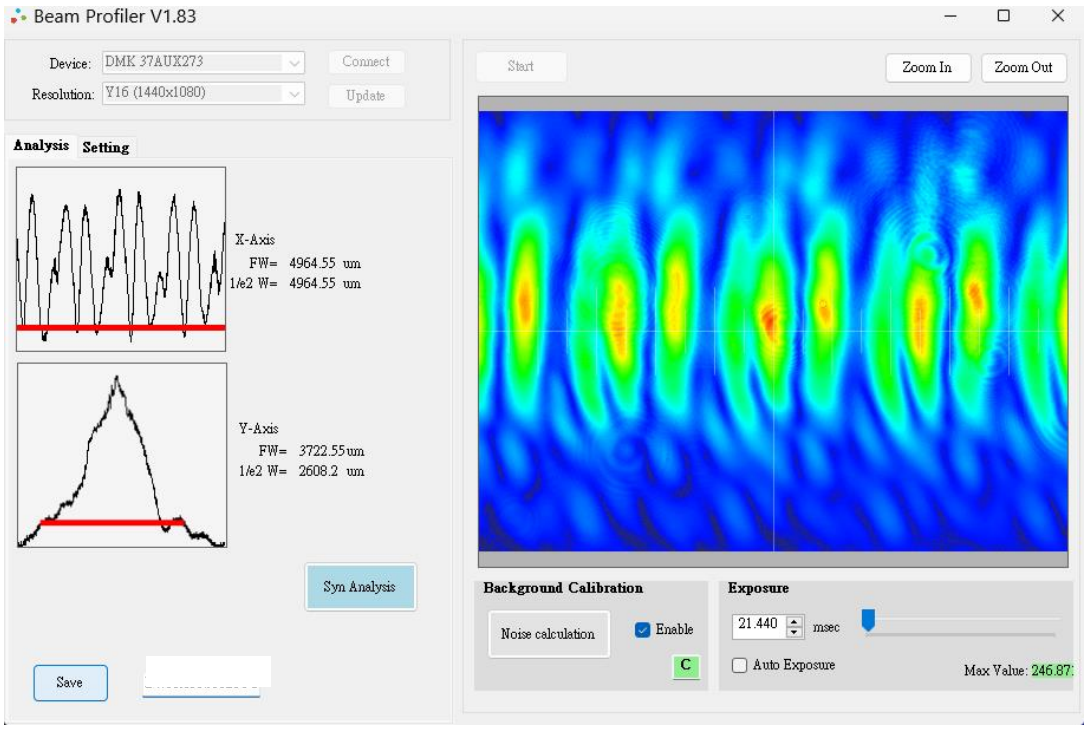


The window is coated with an anti-reflective layer, providing over 99% light transmittance across the 400nm to 680nm wavelength range, effectively minimizing interference from secondary reflections and enhancing system stability.

Spot size Define

LM9 series Line Shape at 1m





Power Stability

The actual output power will between the range 5mW to 10mW, but once make sure the value, for example, 10mW±0.5mW in the 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 d.

CLASS 1

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 2

"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 3A (3R)

"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 3B

"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.