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Product Name :

Semiconductor Laser

Product Code :

SLE/PHY/291



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Description :

Semiconductor Laser (Product Code: SLE/PHY/291) is a red diode laser used for optics, speed of light and optical communication experiments in school and college physics laboratories. Itemits an intense monochromatic beam at 630 - 640 nm and 0.9 mW (Class II operation), whichcan be modulated from an external waveform or by its own internal pulse generator. It ismanufactured by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, as a laserexperiment kit component for institutions, within its range of school physics lab equipment in India.

Specifications

Parameter	Detail
Beam	Intense, monochromatic red beam
Wavelength	630 - 640 nm
Output power	0.9 mW (Class II operation)
Beam divergence	Typically about 1 milliradian
External modulation	Digital or analogue waveform applied to the 3.5mm jack socket on the rear panel
Internal modulation	Internal generator producing 0.1 µs pulses at approximately 1MHz
Main application	Speed of light experiments; general optics work
Product code	SLE/PHY/291
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab), Ambala, India

What Is the Semiconductor Laser Used For?

The feature that sets this laser apart is modulation. Switched to its internal generator, it sends short 0.1 µs light pulses at about 1 MHz; students place a fast photodetector near the laser and another at the far end of a measured path, display both signals on a dual-trace oscilloscope, and read the delay to calculate the speed of light. Feeding an audio or digital signal into the 3.5mm rear jack instead turns the beam into a simple optical communication link.

Unmodulated, the narrow, low-divergence red beam is ideal for single-slit, double-slit and diffraction grating work, for tracing reflection and refraction through blocks and prisms, and for aligning optical benches. At Class II output the natural blink reflex normally protects the eye, but students should still never look into the beam, point it at people or let it bounce off shiny surfaces towards the class.

What to Specify When Ordering

- Number of Semiconductor Laser units required.
- Whether you plan speed of light work and need an oscilloscope and detectors quoted as well.
- Your modulation source for external signals, such as a signal generator.
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