

Fourier-limited bandwidth, TEM₀₀ beam profile, diode laser pumped, Q-switched solid-state laser. Wavelengths 1064 nm and 532 nm

General Description

The SLM-series are solid-state diode-pumped Q-switched lasers with a fundamental output wavelength of 1064 nm. Single longitudinal and transversal mode emission is achieved by injection-seeding with the narrow-linewidth radiation of an Innolight GmbH cw non-planar ring laser. The lasers provide short output pulses with a duration of <12 ns in a diffraction-limited beam with $M^2 < 1.2$ at a repetition rate of 8 to 15 kHz. The spectral bandwidth of the seeded laser output is < 80 MHz. These lasers are well suited for scientific applications due to a high pulse-to-pulse stability of $\sigma < 2\%$. The average output power is up to 4.0 W at 1064 nm, and 1.5 W at the frequency-doubled wavelength of 532 nm. The laser system is completely-computer controlled via a RS-232 interface with different trigger control modes available.

The system operates autoranging from 90-240 VAC, 50-60Hz from single line-supply.

Applications

- Fundamental research
- Spectroscopy
- Pump source for OPOs / OPGs
- Holography

Features

- Diode laser pumped
- Sealed housing
- Slot-mounted laser diode
- Excellent beam profile
- High pulse power
- Low pulse-to-pulse fluctuations
- RS-232 interface
- Maintenance free thermo-electrical heat management

General Characteristics

model	SLM-1.06-Q	SLM-1.06-QA	SLM-1.06-QA-S
wavelength	1064 nm	1064 nm	532 nm
spectral bandwidth	< 80 MHz	< 80 MHz	< 80 MHz
average power	1.5 W	4.0 W	1.5 W
pulse duration	< 12 ns	< 12 ns	< 10 ns
energy per pulse	100 μ J	260 μ J	100 μ J
repetition rate	8-15 kHz	8-15 kHz	8-15 kHz
M^2	< 1.2	< 1.2	< 1.3

All specifications at 10 kHz pulse repetition rate.
Specifications are subject to change without notice due to product improvement.

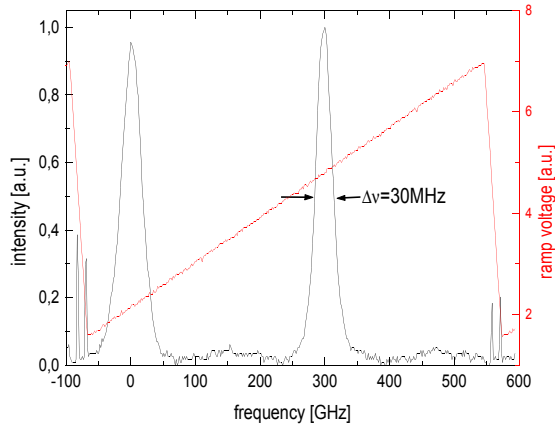


Fig. 1: Spectral bandwidth of the SLM-laser at nominal output power measured with a scanning Fabry-Perot-interferometer with a FSR of 300MHz and a finesse of 150.

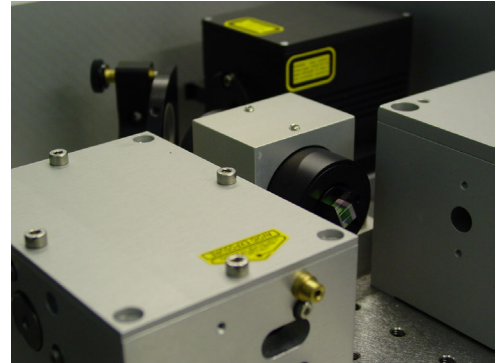


Fig. 2: Detail view inside the SLM laser head.

System Dimensions (L x W x H, weight)

Laser	605 x 305 x 136 mm ³	12 kg
Seed electronics	236 x 280 x 92 mm ³	2.5 kg
Power supply	446 x 440 x 134 mm ³	23.5 kg
Chiller	446 x 440 x 134 mm ³	18.7 kg

Electrical Characteristics

Operating voltage	85-264 VAC
Frequency	47 – 63 Hz
Power consumption	1200 W max., 580 W typ.

Visible and/or invisible laser radiation. Avoid eye or skin exposure to direct or scattered radiation.

Class 4 laser (IEC-825)

