
Stabilized HeNe Laser



SL 02-Series

Design and Operation

SL 02-Series stabilized HeNe lasers employ a two-mode stabilization technique providing high frequency stability in conjunction with rapid warm-up. The laser is characterized by a compact cylindrical design. For the power supply only a single 13.5 V-AC adapter is necessary. The output beam is linearly polarized. Two different models, either with one single mode (Model SL 02/1), or with two polarized modes (Model SL 02/2) are available. An internal thread at the beam exits may be used for installing mechanical shutters or various types of optical components. Fiber couplers with pigtails mating to singlemode or multimode fibers are available as an option.

Technical Data		Model SL 02/1	Model SL 02/2
Wavelength	nm	632.8	
Output power	mW	≥ 1.2 (typ. 1.5)	≥ 2.4 (typ. 3.0)
Amplitude noise (30 Hz - 10 MHz)	%	< 0.5	
Beam diameter (TEM ₀₀)	mm	0.63	
Beam divergence (TEM ₀₀)	mrاد	1.3	
Beam polarization		single linearly polarized longitudinal mode	two mutually orthogonal linearly polarized modes
Warm-up time to achieve stable operation	min	≤ 10	
Frequency stability over 1min / 1h / 24h relatively or absolutely after 40 min warm-up	MHz	± 2·10 ⁻⁹ / ± 5·10 ⁻⁹ / ± 1·10 ⁻⁸ approx. ± 1 / ± 2.5 / ± 5	
Max. thermal frequency drift	MHz/K	< 2	
Max. tolerated optical feedback		< 10 ⁻⁵	
Operating temperature range	°C	+ 15 ... + 30	
Storage temperature range	°C	- 20 ... + 50	
Typical life time	h	30,000	
Power consumption in stabilized condition	W	< 20	
Line voltage	AC	100 ... 240 V / 47 ... 63 Hz	
Dimensions of laser head [Ø x L]	mm	Ø 50 x 410	
Internal thread at beam exit, standard / optional		1.279"-32 / 1.000"-32	
Length of cable between laser head and AC adapter	m	1.5 (optional bis 3)	
Weights of laser head / AC adapter	g	900 / 350	
Laser safety class according to EN 60825-1 and ANSI Z136.1 (CDRH)		3R IIIa	

Major Features and Benefits

- High long-term frequency stability
- Rapid warm-up
- Compact design
- Internal thread at beam exit for installing items such as fiber couplers
- Bear the CE-symbol certifying compliance with:
EC-Guidelines: 73/23/EEC and 89/336/EEC
Harmonized EN-Standards: EN 61010-1,
EN 60825-1, EN 55011 and EN 50082-1

Options

- Certificate with absolute frequency (max. error 1 MHz) measured in comparison with an iodine-stabilized HeNe laser
- Marking indicating the beam's plane of polarization
- Adjustable operating temperature range
- Fiber coupler installation and alignment
- Installation and alignment of a Faraday isolator in order to eliminate back reflections
- Additional module for alternatively single or dual mode operation (Model SL 02/2)



SIOS Meßtechnik GmbH

Am Vogelherd 46
98693 Ilmenau, GERMANY
Phone: +49-3677-64470 E-mail: sales@sios.de
Fax: +49-3677-64478 URL: http://www.sios.de

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