
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 pigtailed 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	< 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 1 min / 1 h / 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 IIa	

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)



<http://www.dct3d.com>

大慶科技儀器有限公司

701台南市東區長榮路一段256號6F-4

電話：(06)236-5697 傳真：(06)236-5698

email: jacky3d@dct3d.com

Stabilized HeNe Laser



SL 03-Series

Design and Operation

Our SL 03-Series stabilized HeNe lasers employ a dual longitudinal mode stabilization technique providing high frequency and amplitude stabilities, low optical feedback, and extremely rapid warm-up. They consist of a compact cylindrical head incorporating the laser tube, plus a separate table-top housing incorporating a high-voltage supply and control electronics equipped with a front-panel switch for selecting frequency-stabilized or amplitude-stabilized mode of operation. An internal thread at their beam exit provides a rigid mounting for mechanical shutters or various types of optical components. Fiber couplers mating to singlemode or multimode fibers are available as an option.

Technical Data		Model SL 03/1
Wavelength	nm	632.8
Output power	mW	≥ 0.8 (typ. 1.0)
Amplitude noise (30 Hz - 10 MHz)	%	< 0.2
Beam diameter (TEM ₀₀)	mm	0.55
Beam divergence (TEM ₀₀)	mrاد	1.5
Beam polarization		linearly polarized longitudinal mode
Warm-up time to achieve stable operation	min	≤ 10
with Frequency control: Frequency stability over 1min / 1h / 24h relatively or absolutely after 40 min warm-up	MHz	± 1·10 ⁻⁹ / ± 2·10 ⁻⁹ / ± 1·10 ⁻⁸ approx. ± 0.5 / ± 1 / ± 2.5
Amplitude stability	%	< 5
with Amplitude control: Amplitude stability 1min / 24h	%	< 0.2 / < 0.3
Maximum thermal frequency drift	MHz/K	< 1
Maximum tolerated optical feedback		< 10 ⁻⁵
Operating temperature range / Storage temperature range	°C	+ 15 ... + 30 / - 20 ... + 50
Typical life time	h	30,000
Power consumption in stabilized condition	W	< 20
Line voltage / frequency	AC	100 ... 240 V / 47 ... 63 Hz
Dimensions of laser head [Ø x L] / electronic unit [W x H x D]	mm	Ø 34.9 x 280 / 172 x 60 x 230
Internal thread at beam exit		1.279"-32
Length of cable between laser head and electronic unit	m	1 (optionally up to 2)
Mass of laser head incl. cable / electronic unit	g	600 / 1,600
Laser safety class according to EN 60825-1 / ANSI Z136.1 (CDRH)		3R / IIIa

Major Features and Benefits

- High frequency or amplitude stability
- Two operation modes: frequency stabilized or amplitude stabilized
- 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 und 89/336/EEC
Harmonized EN-Standards: EN 61010-1,
EN 60825-1, EN 55011 and EN 50082-1



Options

- Certificate with absolute frequency 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 reflection



<http://www.dct3d.com>

大慶科技儀器有限公司

701台南市東區長榮路一段256號6F-4

電話：(06)236-5697 傳真：(06)236-5698

email: jacky3d@dct3d.com

Stabilized HeNe Laser



SL 04-Series

Design and Operation

Our SL 04-Series stabilized HeNe lasers employ a dual longitudinal mode stabilization technique providing high frequency and amplitude stabilities, low optical feedback, and extremely rapid warm-up. They consist of a compact cylindrical head incorporating the laser tube, plus a separate table-top housing incorporating a high-voltage supply and control electronics equipped with a front-panel switch for selecting frequency-stabilized or amplitude-stabilized mode of operation. An internal thread at their beam exit provides a rigid mounting for mechanical shutters or various types of optical components. Fiber couplers mating to singlemode or multimode fibers are available as an option.

Technical Data		Model SL 04/1
Wavelength	nm	632.8
Output power	mW	≥ 1.2 (typ. 1.5)
Amplitude noise (30 Hz - 10 MHz)	%	< 0.2
Beam diameter (TEM ₀₀)	mm	0.55
Beam divergence (TEM ₀₀)	mrاد	1.5
Beam polarization		linearly polarized longitudinal mode
Warm-up time to achieve stable operation	min	≤ 10
with frequency control: Frequency stability over 1min / 1h / 24h relatively or absolutely after 40 min warm-up	MHz	$\pm 1 \cdot 10^{-9}$ / $\pm 2 \cdot 10^{-9}$ / $\pm 5 \cdot 10^{-9}$ ca. ± 0.5 / ± 1 / ± 2.5
Amplitude stability	%	< 5
with amplitude control:		
Amplitude stability 1min / 24h	%	< 0.2 / < 0.3
Maximum thermal frequency drift	MHz/K	< 1
Maximum tolerated optical feedback		< 10 ⁻⁵
Operating temperature range / Storage temperature range	°C	+ 15 ... + 30 / - 20 ... + 50
Typical life time	h	30,000
Power consumption in stabilized condition	W	< 20
Line voltage / frequency	AC	100 ... 240 V / 47 ... 63 Hz
Dimensions of laser head [Ø x L] / electronic unit [W x H x D]	mm	Ø 45 x 314 / 172 x 60 x 230
Internal thread at beam exit		1.000"-32 (C-Mount)
Length of cable between laser head and electronic unit	m	1 (optionally up to 2)
Mass of laser head incl. cable / electronic unit	g	900 / 1,600
Laser safety class according to EN 60825-1 / ANSI Z136.1 (CDRH)		3R / IIIa

Major Features and Benefits

- High frequency or amplitude stability
- Two operation modes: frequency stabilized or amplitude stabilized
- 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 und 89/336/EEC
Harmonized EN-Standards: EN 61010-1,
EN 60825-1, EN 55011 and EN 50082-1



Options

- Certificate with absolute frequency 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
- Longer laser head on request



<http://www.dct3d.com>

大慶科技儀器有限公司

701台南市東區長榮路一段256號6F-4

電話：(06)236-5697 傳真：(06)236-5698

email: jacky3d@dct3d.com