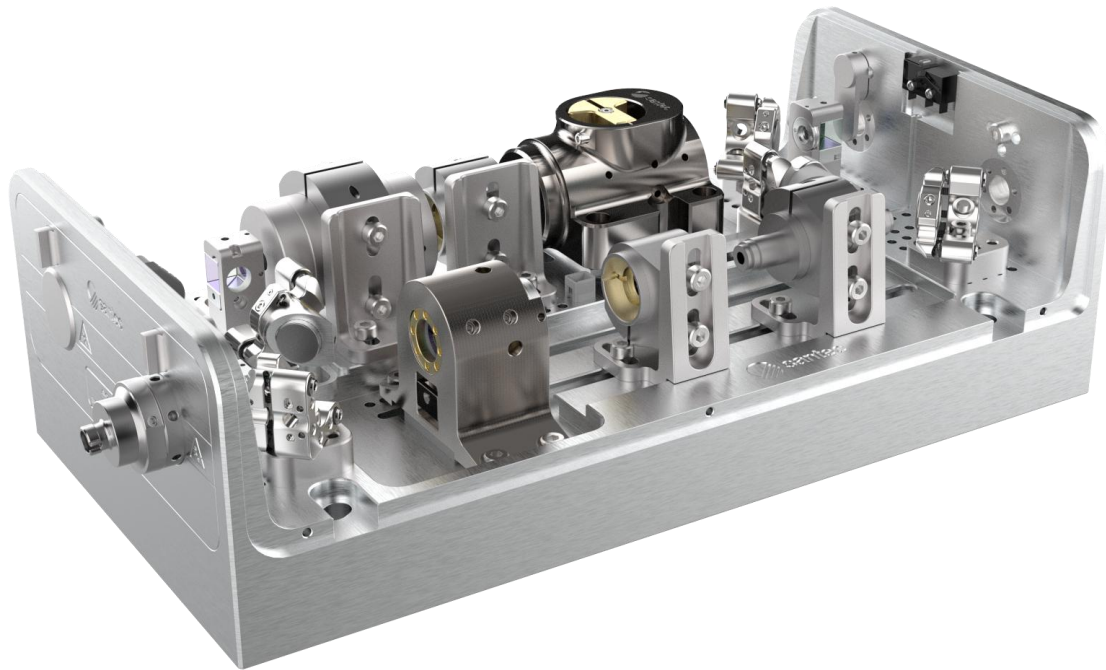




ILA Injection-Locked Amplified Laser system



The Santec ILA injection-locked amplified laser system is a new approach to high power narrow linewidth tunable lasers. Higher power, up to 1 W, is available at critical wavelengths without the need for complex and expensive frequency doubling cavities.

The ILA uses new Santec technology for stable injection locking of Fabry-Perot (FP) laser diodes. Injection locking has traditionally been plagued by extreme sensitivity to environmental drift: very small changes in temperature, alignment, or current can cause the amplifier diode to drift out of lock. We have developed an auto-tracking system that continually monitors the laser and makes tiny adjustments to the amplifier diode to maintain lock.

Key wavelengths

- 370 nm/100 mW (Yb+)
- 399 nm/400 mW (Yb)
- 461 nm/1000 mW (Sr)
- 509 nm/200 mW (Cs Rydberg)
- 657 nm/300 mW (Ca clock)
- 689 nm/110 mW (Sr MOT)
- 698 nm/110 mW (Sr clock)
- Many others; please enquire

Power measured after isolator; includes seed

Features

- Digital controller for amplifier
- Low-cost amplifier diode replacement
- Stable intuitive flexure alignment
- Fibre options for seed and amplified beams

Injection-locked amplified laser

Specifications ILA

Wavelength/frequency

Wavelength	370 nm – 710 nm, dependent on diode availability
Gain bandwidth	5 nm – 15 nm, wavelength dependent
Power	100 mW to 1W, wavelength dependent
ASE suppression	>45 dB

Optical

Beam diameter (1/e ²)	Typically 1.8 x 3.0 mm, wavelength dependent
Beam quality	M ² from 1.0 to 1.2
Beam divergence	<1.5 mrad
Polarisation	Linear 100:1

Thermal

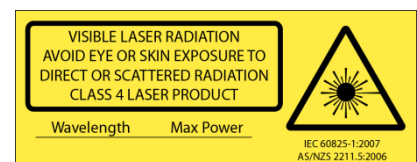
TEC	Seed and amplifier: ± 14 V 3.3 A Q = 34 W standard
Sensor	NTC 10 k Ω
Cooling	Quick-fit water cooling, ϕ 6 mm

Electronics

Protection	Relay, reverse diode, photodiode cutout
Indicator	Laser ON/OFF (LED)
Connectors	Seed: DVI-D DL; amplifier DE9 + DE15

Dimensions

Dimensions	300 x 155 x 93 mm (LxWxH)
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