SINGLE FREQUENCY

High-power single-frequency visible laser systems

Visible single-frequency output using a seeded fibre amplifier and a stabilized resonant conversion cavity.

Applications to discuss: Atomic spectroscopy; Quantum-optics experiments.

Selection points
532-671 nm wavelength options / ≤10 W listed family limit / <100 kHz emission linewidth

Configuration options

Configuration	Output wavelength options	Output power
Resonant frequency conversion	532-671 nm	≤10 W; configuration dependent

Each row is a separate configuration. Limits from different rows must not be combined.

Technical details

Parameter	Specification or condition
Emission linewidth	<100 kHz
Coarse frequency adjustment	50 GHz
Fine frequency adjustment	500 MHz
Beam propagation factor	M^2 <1.2
Collimated beam diameter	1 mm
Relative intensity noise	<0.5%; bandwidth to confirm
Wavelength stability	±0.1 pm; averaging time to confirm

Integration and delivery

Item	Configuration detail
System elements	Single-frequency seed, polarization-maintaining amplifier, resonant conversion cavity and cavity-control electronics
Cavity control	Pound-Drever-Hall stabilization; electrical interfaces to confirm

Conditions and configuration notes

- The frequency adjustment values are not a claim of tuning across the full 532-671 nm family range.
- Available power depends on output wavelength and the chosen conversion configuration.
- Noise bandwidth, wavelength-stability duration and included locking hardware require confirmation.