

moglabs

MOA003 Optical Amplifier



The MOGLabs Optical Amplifier is a high-power extension for single-frequency external cavity diode lasers.

Laser power is increased by up to 3W, while maintaining the tunability and linewidth of the injection seed laser.

Replacement of the amplifier diode and alignment are easily accomplished by the end-user. Options include 35 or 70dB of input isolation and 35dB on the output, and fibre coupling of input or output or both. Wavelength options extend from 630nm to 1064nm, and power from 250mW to 3000mW.

Features

- Wavelength 630nm – 1064nm
- Output power up to 3W
- Optional input and output Faraday isolators
- Optional input and output fibre coupling
- Simple customer TA diode replacement
- Stable flexure alignment

Benefits

- High performance, low cost
- Flexible and versatile
- Stable and robust

Applications

- Laser cooling and trapping
- Bose-Einstein condensation
- Quantum optics: squeezed light
- Electromagnetic transparency and slow light
- Time and frequency standards
- Laser spectroscopy
- Physics teaching labs

Optical Amplifier

Specifications MOA003

Wavelength/frequency

Wavelength	630nm – 1064nm
Gain bandwidth	10nm to 30nm, wavelength dependent
Power	250mW, 500mW, 1W, 2W and 3W options, wavelength dependent
Gain	Up to 23dB (200x)
Seed input power	10mW to 30mW, depending on amplifier diode
ASE suppression	>45dB

Optical

Beam diameter ($1/e^2$)	Typically 1.8 x 3.0 mm, wavelength dependent
Beam quality	$M^2 < 1.7$ typically; $M^2 < 2.0$ max
Beam divergence	<1.5 mrad (630 – 670nm: <2.5 mrad)
Polarisation	Linear 100:1, usually vertical

Thermal

TEC	$\pm 14.5V$ 3.3A Q = 23W standard
Sensor	NTC 10k Ω standard; AD590, 592 optional
Cooling	Quick-fit water cooling, ϕ 6mm

Electronics

Protection	Relay, reverse diode, photodiode cutout
Indicator	Laser ON/OFF (LED)
Connectors	DE9 (temperature control) and DE15 (current control)

Dimensions

Dimensions	295 x 90 x 90mm (LxWxH), 3.6kg
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