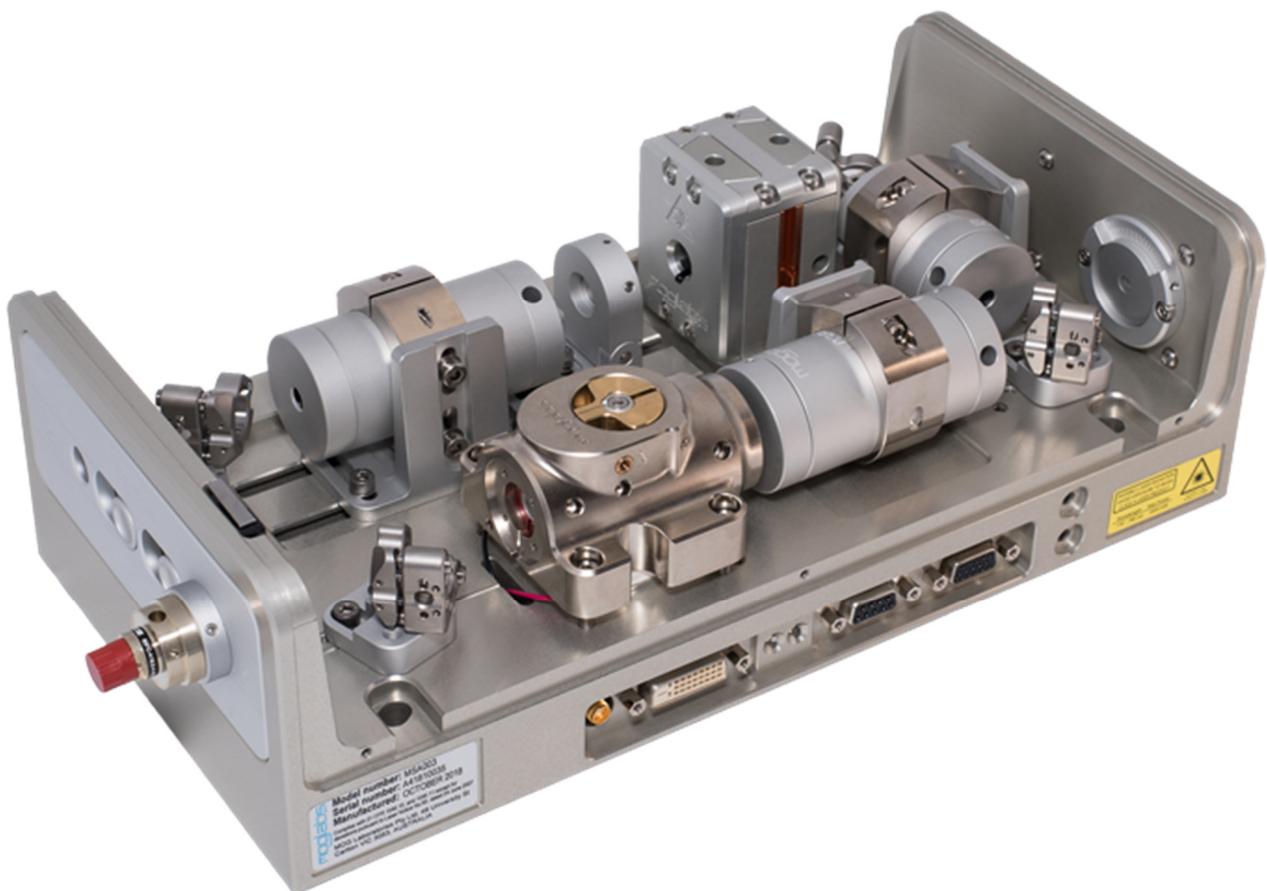

MOGLabs amplified lasers

We have several options for amplifier, or amplifier with seed.

MSA: combined seed and amplifier

The MOGLabs Seeded Amplifier offers the best mechanical stability, smallest system footprint and best overall price compared to externally seeded optical amplifier options.

The same chassis can be used for both tapered amplifier and injection-locked systems. Output can be free-space or fibre coupled, or both (dual-beam), and we can pick off some of the seed for locking or other diagnostics. Two stages of input isolation are possible as well as a double-stage output isolator option.

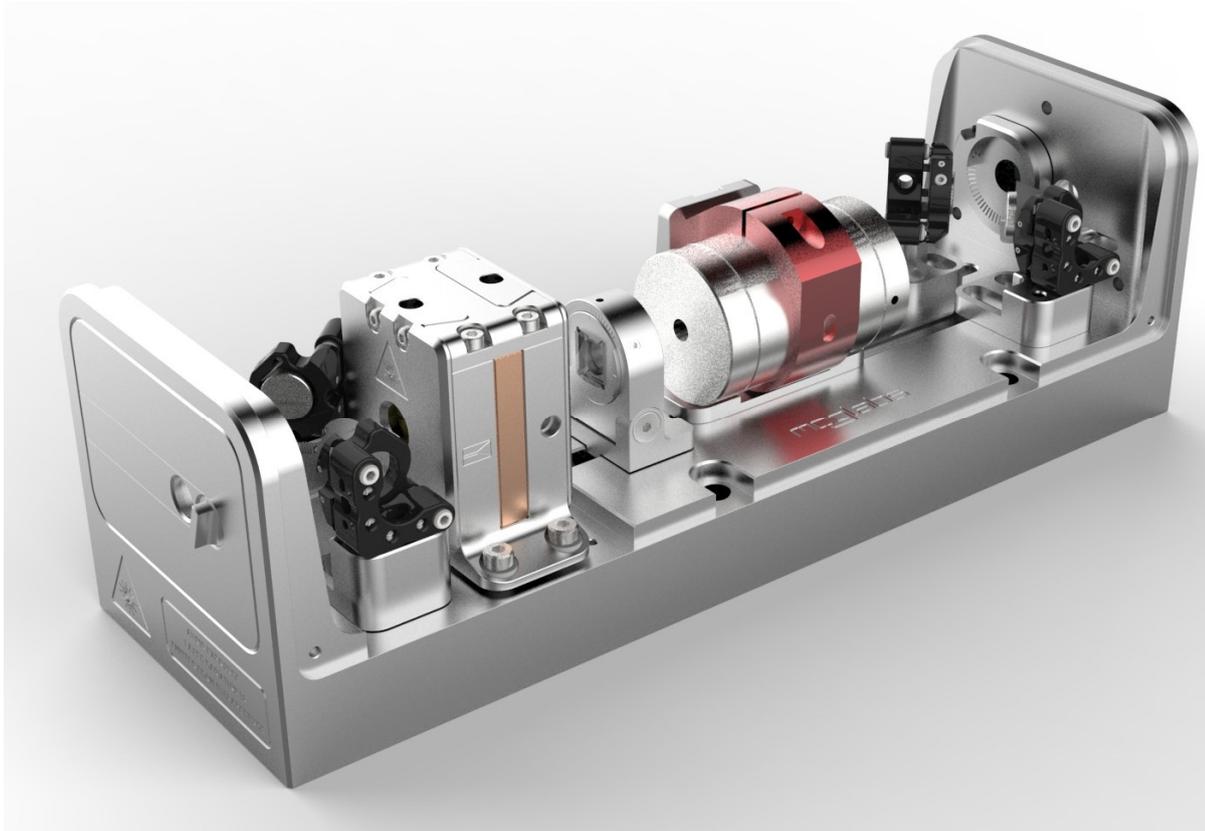


MOA: amplifier only

The above can also be used in amplifier-only configuration as a MOGLabs Optical Amplifier, with free-space or fibre coupled input. Only one stage of input isolation is possible.

MOA (L): long-chassis amplifier

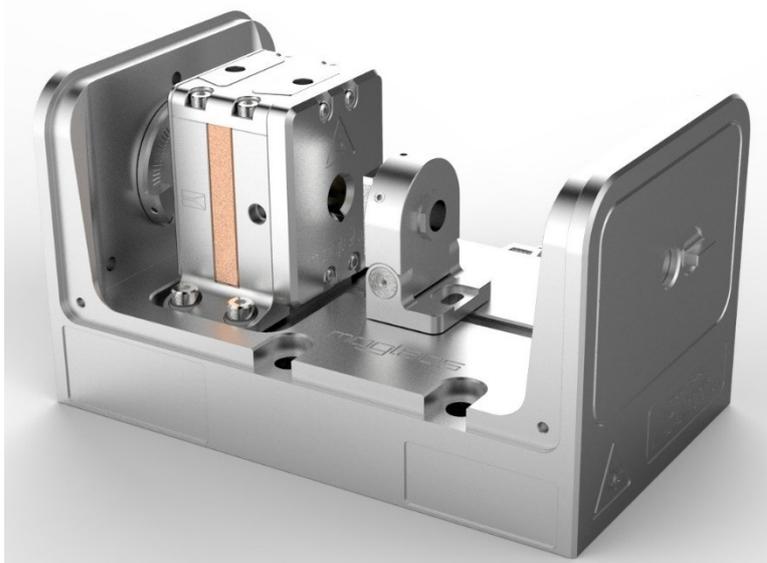
Narrower and slightly shorter version of MOA. Input can be free-space or fibre-coupled; output can be free-space or fibre-coupled or both. Lower in cost than MOA, but no provision for a Faraday isolator on input.



MOA (C): compact-chassis amplifier

Shorter version of MOA (L), lowest cost, only free-space input and output, no Faraday isolators. This is a "do it yourself" solution for mounting tapered amplifier chips. MOA (C) does include Peliter module, laser headboard, input and output aspheric collimation lenses with x-y-z adjust, cylindrical lens for astigmatism correction on output and an optional half wave plate on input.

Warning: for high power diodes (>2W), the small size of the MOA (C) is not sufficient to dissipate heat generated. It becomes quite hot (>30°C) so we recommend use of the built-in water-cooling channels.



Comparison

Why MOGLabs amplifiers?

- 1) A big price advantage; for an amplifier and controller, the price is typically 30% lower.
- 2) Our LDD605 controller has lower noise, higher current, ethernet as well as USB, colour LCD display, encoder rather than membrane pushbuttons
- 3) Photodetector safety cutoff (see below)
- 4) User-replaceable TA chip (see below)

MOGLabs amplifiers are more compact and fibre-coupling is a lot easier; we have heard from customers of alternative suppliers that they throw away the fiber coupler because it's annoying to use and doesn't have a waveplate option for matching to PM fibre. We also provide all documentation freely on our website, and update it as needed.

Photodetector safety cutoff: protects the TA chip if the seed beam fails or is blocked. If the TA chip is run at high current without seed, it can self-oscillate and produce high power through the input ridge waveguide end, causing damage. There is also lots of electrical power going in, with no optical power coming out, so there is an additional thermal load. We detect the optical power out of the TA chip and if that falls below a preset value, with current above a threshold minimum, the TA power will be switched off.

User-replaceable TA chips: we use flexure-mounted collimation lenses. They are easily focused and aligned by the user. Unlike non-MOGLabs amplifiers, you don't have to send back the core TA module. We also don't use the proprietary (and rather outdated) TA chip mount known in the industry as the SDL bone. Thus the cost of TA chip replacement is much lower, as much as a factor of 3.

