SPACE DEVELOPMENT

High-energy 1550 nm pulsed fibre amplifier prototype

A polarization-maintaining pulsed amplifier prototype with reported high-energy operating points.

Applications to discuss: Pulsed optical-communications research; Photoacoustic research; Scientific pulse experiments.

Functional prototype; released availability unconfirmed

Selection points
1545-1565 nm wavelength range / >20 W reported average output / Up to 80 µJ reported pulse energy

Configuration options

Wavelength	Pulse duration range	Repetition-rate range
1545-1565 nm	2-100 ns	0.05-50 MHz

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

Technical details

Parameter	Specification or condition
Average output power	>20 W, reported prototype
Peak power	Up to 4 kW, reported
Pulse energy	Up to 80 µJ, reported
Emission linewidth	≤50 pm at the 1/e² definition
Gain medium	Polarization-maintaining erbium-ytterbium-doped fibre
Delivery	Collimated pigtailed output; interface to confirm

Integration and delivery

Item	Configuration detail
Integration	Compact prototype; size, mass, electrical power and thermal interfaces to confirm

Conditions and configuration notes

- Pulse energy, peak power, average power and repetition-rate extremes are not one simultaneous operating point.
- A deep-space optical-communications standard is a design objective, not an established compliance claim in this draft.
- Hollow-core delivery is described as an investigation and is not assumed to be included.