SPACE PHOTONICS

1178 nm narrowband guide-star fibre amplifiers

Narrowband infrared amplification for frequency-doubled sodium guide-star architectures.

Applications to discuss: Guide-star laser development; Adaptive-optics source integration.

Amplifier technology references; supply configuration to confirm

Selection points
1178 nm amplified seed / 130 W reported infrared scaling point / Separate frequency conversion to 589 nm

Configuration options

Reference operating point	Infrared wavelength	Reported infrared power
Earlier amplifier reference	1178 nm	40 W
Higher-power amplifier reference	1178 nm	130 W

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

Technical details

Parameter	Specification or condition
Architecture	Polarization-maintaining fibre amplification
Pump-chain reference	1064 nm and 1120 nm pump lasers
Conversion path	Second-harmonic generation from 1178 nm to 589 nm
Seed linewidth and amplifier gain	Numerical limits to confirm

Integration and delivery

Item	Configuration detail
System boundary	Seed, pump delivery, amplifier and visible conversion stage must be defined

Conditions and configuration notes

- The 130 W value is an infrared amplifier reference, not a 589 nm output-power claim.
- The historical 40 W and higher-power 130 W references are different configurations, not a continuously adjustable guaranteed range.
- Confirm whether an amplifier-only assembly is available and which ancillary stages are included.