

SPA Series

Single Pulse Fiber Amplifiers



SPA Series fiber amplifiers provide low-noise amplification of signals *not* operating in the continuous-wave regime, such as a single optical pulse. In contrast to conventional continuous-wave or average-power amplifiers that rely on saturation conditions, the SPA series provides low-noise amplification that is inherently stable regardless of input pulse energy, duration, or format.

KEY FEATURES

- 10-40 dB optical gain
- 1- μm or telecom band
- ASE noise floor $\leq 1 \mu\text{W}$
- Stable against seed loss
- Out-of-band ASE suppression
- SM or PM amplification

APPLICATIONS

- Finite pulse train amplification
- Remote sensing
- High energy laser seeder pulse
- Infrared systems
- Dynamic transmission electron microscopy

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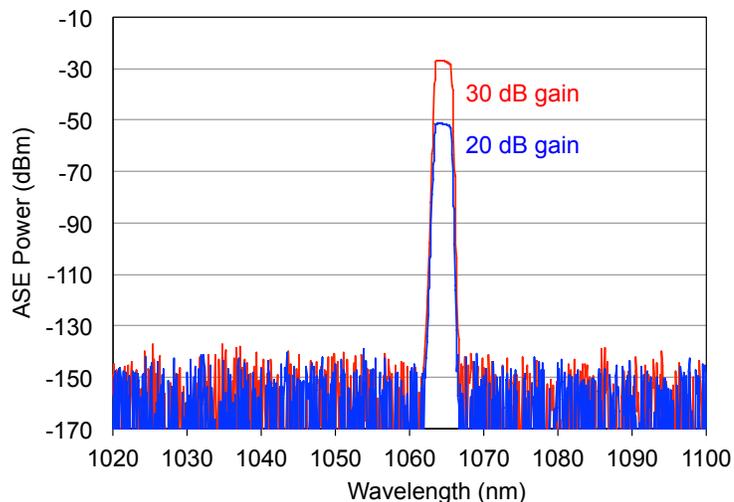
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Single Pulse Fiber Amplifiers

SPECIFICATIONS

| | Standard | Options / Comment | Unit |
|--------------------------------------|--|---------------------|-------------------|
| Gain | 10-30 | up to 40 | dB |
| Operational Wavelength | typically < 2 nm in 1020-1090 nm or 1520-1600 nm bands | | |
| In-Band ASE Noise Floor | ≤ 1 | 20dB gain | μW ⁽¹⁾ |
| | ≤ 10 | 30dB gain | |
| | ≤ 200 | 40 dB gain | |
| Out-of-band ASE Noise Floor | ≤ 10 | up to 30 dB gain | pW ⁽¹⁾ |
| Temporal Gain Compression | ≤ 0.1 | - | dB |
| Polarization Extinction Ratio | 18 | PM versions only | dB |
| Input/Output | FC/APC | collimator optional | - |
| Synchronization to Input | - | none required | - |
| Power Consumption | ≤ 20 | - | W |

(1): Measured in 0.1-nm bandwidth



**Measured ASE noise floor
(0.1-nm bandwidth)**

CUSTOMIZATION OPTIONS

- Selectable wavelength
- SM or PM
- User-controlled gain
- Broad-band (>10nm) operation
- SBS monitor port
- Long pulse train / moderate rep. rate
- Output collimator
- SBS suppression
- High-energy pulse output