



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



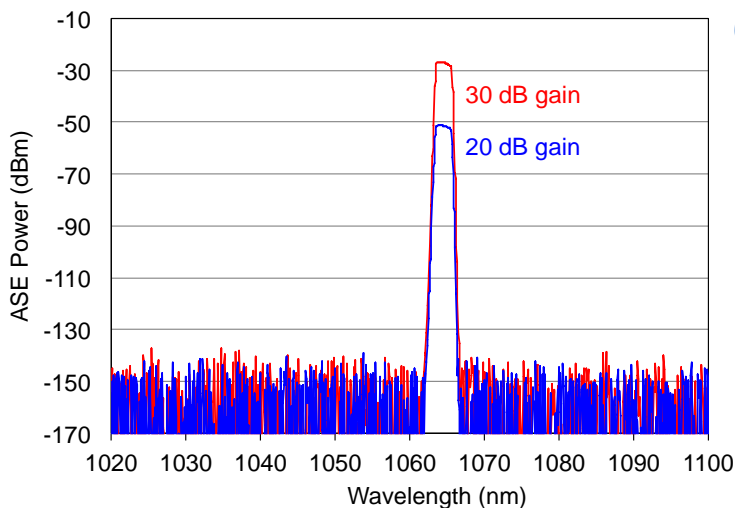
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Specifications:

	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	20 dB gain	μW ⁽¹⁾
	≤ 10	30 dB gain	
	≤ 100	40 dB gain	
Out-of-Band ASE Noise Floor	≤ 10	-	-
Temporal Gain Compression	< 0.1	up to 30 dB gain	pW ⁽¹⁾
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