



## 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- $\mu\text{m}$  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



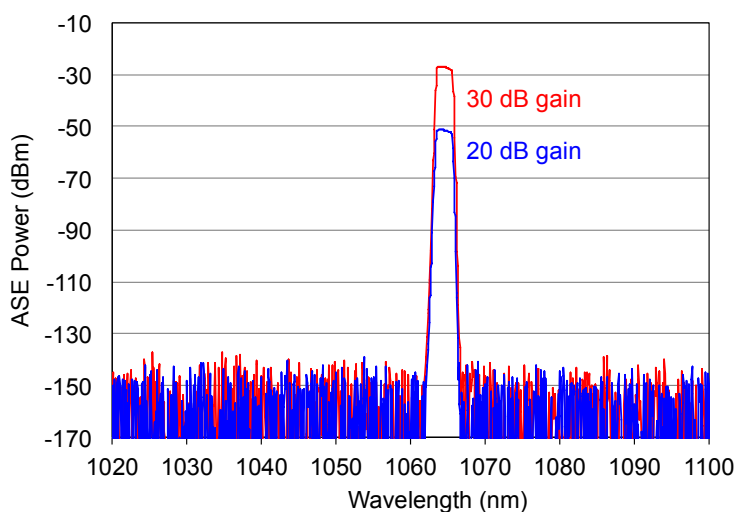
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#### Specifications:

	Standard	Options / Comment	Unit
<b>Gain</b>	10-30	up to 40	dB
<b>Operational Wavelength</b>	typically < 2 nm in 1020-1090 nm or 1520-1600 nm bands		
<b>In-Band ASE Noise Floor</b>	≤ 1	20 dB gain	μW <sup>(1)</sup>
	≤ 10	30 dB gain	
	≤ 100	40 dB gain	
<b>Out-of-Band ASE Noise Floor</b>	≤ 10	-	-
<b>Temporal Gain Compression</b>	< 0.1	up to 30 dB gain	pW <sup>(1)</sup>
<b>Polarization Extinction Ratio</b>	18	PM versions only	dB
<b>Input / Output</b>	FC/APC	collimator optional	-
<b>Synchronization to Input</b>	-	none required	-
<b>Power Consumption</b>	≤ 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