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Data Sheet
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THORLABS

ThorLabs YDFA100S Ytterbium-Doped Fiber Amplifier, Single Mode

Thorlabs YDFA100S Ytterbium-Doped Fiber Amplifier, Single Mode The Thorlabs YDFA100S isabenchtop core-pumped ytterbium-doped fiber amplifier (YDFA) for single-mode operation from 1025 nm to 1075 nm. It provides greater than 22 dB small-signal gain and about 19 to 20 dBm typical saturated output power near 1050 nm, withanoise figure of 8 dB or less. The compact turnkey package includes input and output isolators, FC/APC connectors, front-panel controls, and USB remote control. A polarization-maintaining sibling model is YDFA100P. The Thorlabs YDFA100S isabenchtop core-pumped ytterbium-doped fiber amplifier (YDFA) for single-mode operation from 1025 nm to 1075 nm. It provides greater than 22 dB small-signal gain and about 19 to 20 dBm typical saturated output power near 1050 nm, withanoise figure of 8 dB or less. The compact turnkey package includes input and output isolators, FC/APC connectors, front-panel controls, and USB remote control. A polarization-maintaining sibling model is YDFA100P. Preamplification and power boosting for CW and ultrafast sources in the ytterbium band, seed amplification for laser systems, photonic research, and fiber-optic experiments requiring single-mode HI1060-compatible amplification with low added dispersion relative to high-gain amplifier designs.

MODEL **ThorLabs YDFA100S**	CALIBRATION **Available on request**
CONDITION **Used**	STATUS **In stock**
RFQ / SKU **YDFA100S**	LISTING **https://aumictechlabs.com/products/ydfa100s-2/**

NIST-traceable cal · SAM registered · 30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Thorlabs YDFA100S is a single-mode ytterbium-doped fiber amplifier engineered for signal amplification across the 1 µm wavelength band. This turnkey benchtop instrument delivers >22 dB small signal gain with a noise figure below 8 dB, making it suitable for preamplifier and booster configurations in ultrafast and continuous-wave applications. The amplifier operates in constant current mode and includes built-in input and output isolators for system protection.Dual control interfaces - front panel and USB - enable both manual operation and automated system integration. The compact package weighs 4.09 kg and connects via FC/APC connectors with standard single-mode fiber (HI1060).Technical Specifications Operating Wavelength Range: 1025–1075 nm Small Signal Gain: >22 dB @ −20 dBm input power Saturated Output Power: >19 dBm @ 3 dBm input power Typical Output Power: 20 dBm Noise Figure: <8 dB @ −20 dBm input power Polarization-Dependent Gain: <0.3 dB Output Connectors: FC/APC (2.0 mm narrow key) Fiber Type: Standard single-mode (HI1060) Operational Mode: Constant current Low dispersion design optimized for ultrafast pulse applicationsKey Features Built-in input and output isolators Polarization-independent operation Compact benchtop form factor USB interface for automated control and monitoring One-year standard warrantyTypical Applications Telecommunications and optical communication systems Laser physics and ultrafast pulse amplification Optical sensing systems Preamplifier and booster stages in scientific research Automated manufacturing environmentsCompatibility & Integration The YDFA100S integrates with standard fiber optic systems using FC/APC connectors and HI1060 single-mode fiber. USB connectivity enables seamless integration into automated test and measurement setups.

Features & description

From manufacturer datasheet

Features

• Operating wavelength 1025 to 1075 nm • Small-signal gain greater than or equal to 22 dB at 1050 nm (-20 dBm input class conditions) • Output power greater than or equal to 19 dBm at 1050 nm with about 3 dBm input (YDFA100S) • Typical output power about 20 dBm (100 mW) class • Noise figure less than or equal to 8 dB • Absolute maximum input power 10 dBm; absolute maximum output power 23 dBm • Built-in input and output optical isolators • Single-mode (random polarization) fiber path; FC/APC connectors • Front-panel and USB remote control • Engineered for CW and ultrafast pulse amplification with minimized dispersion

YDFA100S Characteristics / Specifications

PARAMETER	VALUE
Model	YDFA100S
Manufacturer	Thorlabs
Instrument Type	Ytterbium-doped fiber amplifier (YDFA), single mode
Operating Wavelength Range	1025 to 1075 nm
Amplifier Type	Core-pumped YDFA
Output Power	Greater than or equal to 19 dBm at 1050 nm (at approximately 3 dBm input); typically about 19 to 20 dBm
Noise Figure	Less than or equal to 8 dB
Absolute Maximum Input Power	10 dBm
Absolute Maximum Output Power	23 dBm
Input/Output Polarization	Random (single-mode version)
Optical Connectors	FC/APC
Fiber	Single-mode (HI1060-compatible class)
Isolation	Built-in input and output isolators
Control	Front panel and USB Related Models
YDFA100P	Polarization-maintaining version with higher small-signal gain (about 30 dB class) and about 20 dBm output at 1050 nm under published conditions. Standard Operating Conditions Operate within Thorlabs published optical power limits. Use clean FC/APC connectors and appropriate dust caps. Avoid exceeding maximum input/output power. Allow warm-up per manufacturer guidance before critical measurements.
Wavelength range	1025 to 1075 nm
Maximum output power	23 dBm - Built-in input and output optical isolators - Single-mode (random polarization) fiber path; FC/APC connectors - Front-panel and USB remote control - Engineered for CW and ultrafast pulse amplification with minimized dispersion

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

Specifications

PARAMETER	VALUE
Model	YDFA100S
Manufacturer	Thorlabs
Instrument Type	Ytterbium-doped fiber amplifier (YDFA), single mode
Operating Wavelength Range	1025 to 1075 nm
Amplifier Type	Core-pumped YDFA

Small-Signal Gain: Greater than or equal to 22 dB at 1050 nm (at approximately -20 dBm input)

Specifications

PARAMETER	VALUE
Output Power	Greater than or equal to 19 dBm at 1050 nm (at approximately 3 dBm input); typically about 19 to 20 dBm
Noise Figure	Less than or equal to 8 dB
Absolute Maximum Input Power	10 dBm
Absolute Maximum Output Power	23 dBm
Input/Output Polarization	Random (single-mode version)
Optical Connectors	FC/APC
Fiber	Single-mode (HI1060-compatible class)
Isolation	Built-in input and output isolators
Control	Front panel and USB

Related Models
YDFA100P: Polarization-maintaining version with higher small-signal gain (about 30 dB class) and about 20 dBm output at 1050 nm under published conditions.

Standard Operating Conditions
Operate within Thorlabs published optical power limits. Use clean FC/APC connectors and appropriate dust caps. Avoid exceeding maximum input/output power. Allow warm-up per manufacturer guidance before critical measurements.

Operational Notes
Confirm connector polish (APC) before mating. For polarization-sensitive experiments, use YDFA100P instead of YDFA100S. Monitor output with an appropriate power meter and attenuate as needed to protect downstream detectors and components.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: **sales@aumictech.com** · +1 (484) 841-9341

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