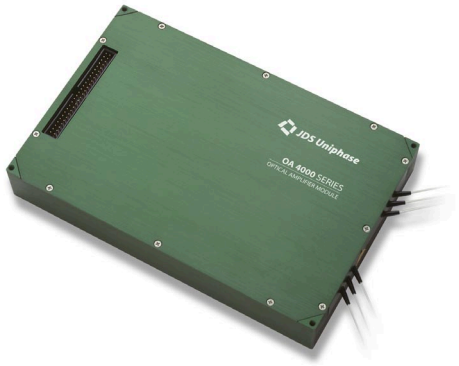
JDS Uniphase

Product Bulletin



21 dBm Controlled Erbium Doped Fiber Amplifier (EDFA) for Long Haul and Ultra Long Haul Applications

OA 4000 Amplifier Series

The JDS Uniphase OA 4000 Amplifier Series offers two variants of the controlled optical amplifier. It features fast transient control with mid-stage access:

OAC-21F-40 — A 21 dBm Controlled EDFA Booster Amplifier with 7 dB Mid-Stage Access Loss
The maximum signal gain of 14 dB and a gain ripple of 1.0 dB make this module suitable for booster amplifier applications.

OAC-22F-41 — A 22 dBm Controlled EDFA Line Amplifier with 10 dB Mid-Stage Access Loss
The maximum signal gain of 27 dB and a gain ripple of 1.0 dB make this module suitable for inline amplifier applications.

Both variants feature gain-transient suppression that minimizes transmission penalties as channels are added and dropped in the network, or as input power varies. The control interface is a Transistor-Transistor Logic (TTL) level RS232 driven by 5 V and 12 V power supplies.

JDS Uniphase has extensive experience with the development of fully functioning EDFAs, and can design standard, high-performance optical amplifier products that meet your time-to-market requirements.

Key Features

- Mid-stage access for dispersion compensation or add/drop
- Transient suppression
- Variable optical attenuator (VOA)
- Improved output spectrum flatness due to heater coil
- Constant gain, current, and power modes
- Alarms

Applications

- Dense wavelength division multiplexing (DWDM) amplification for long haul and ultra long haul networks
- Booster or inline amplification
- C band
- Up to 40 channels

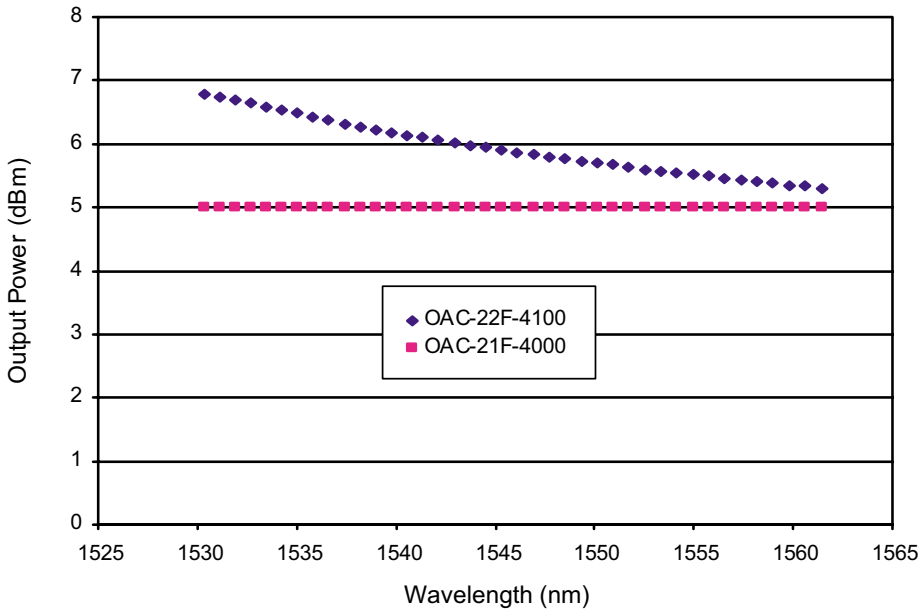
Specifications

Parameter	OAC-21F-40	OAC-22F-41
Signal wavelength	1530.33 to 1561.42 nm	1530.33 to 1561.42 nm
Total input signal power	5.0 to 8.0 dBm	-6.0 to -2.0 dBm
Total output signal power	21 dBm (see Figure 1 below)	22 dBm (see Figure 1 below)
Signal gain (design point)	14 dB maximum	27 dB maximum
Flatness	1.0 dB	1.0 dB
Noise figure	8.0 dB	5.8 dB
Gain transient suppression time	see table below	see table below
Gain transient overshoot/undershoot	see table below	see table below
Mid-stage access loss	7 dB	10 dB
Power supply requirement	5 and ±12 V	5 and ±12 V
Dimensions (W x H x D)	200 x 130 x 31 mm	200 x 130 x 31 mm
Operating temperature	0 to 65 °C	0 to 65 °C

Sample transient performance at nominal input (each amplifier stage)

Transient	Maximum Excursion	Settling Time	Gain Offset
1 dB drop	0.5 dB	40 µs	0.15 dB
3 dB drop	1.0 dB	60 µs	0.15 dB
6 dB drop	1.4 dB	100 µs	0.15 dB
1 dB add	0.5 dB	40 µs	0.15 dB

Figure 1: Output Spectrums



Note: The above output spectrums can be slightly modified to your specifications.

Ordering Information

For more information on this or other products and their availability, please contact your local JDS Uniphase account manager or JDS Uniphase directly at 800-871-8537 in North America and 1-800-8735-5378 worldwide or via e-mail at jdsu.sales@jdsu.com.

Sample: OAC-21F4000CA

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Code	Application
21F40	21 dBm DWDM booster amplifier
22F41	22 dBm DWDM line amplifier

Code	Connector Type[1]
3	FC/APC
5	SC/APC
9	FC/UPC
A	SC/UPC (default)
C	MU

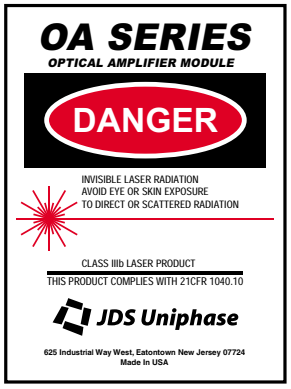
1. More connector options are available upon request.

The OA 4000 Amplifier Series also offers EDFAs to work with our Raman Pump units. Please refer to the OA 4000R Amplifier Series product bulletin for more information on these modules.

A heat sink (0440-5351) and thermal pad (0440-5352) can be purchased separately.

User Safety

The invisible laser light emitted from this module is harmful to the human eye. Wear proper laser safety eyewear during operation.



ESD Protection

The laser diodes and photodiodes contained in this module are very reliable under normal operating conditions. However, they can be easily destroyed by inadvertent electrical or static discharges (ESD). Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces, and anti-static techniques when operating this module. When not in use, the fiber amplifier must be kept in a static-free environment with the shorting foam covering the connector.

JDS Uniphase

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