

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

**Artisan Technology Group**
(217) 352-9330 | sales@artisantg.com | artisantg.com

**Full-service, independent repair center**
with experienced engineers and technicians on staff.

**We buy your excess, underutilized, and idle equipment**
along with credit for buybacks and trade-ins.

**Custom engineering**
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

**Expert team | Trust guarantee | 100% satisfaction**

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

**Visit our website - *Click HERE***

# Erbium Doped Fiber Amplifier

DATASHEET

BUY NOW



## Features

- Low Noise
- High Output at 27dBm
- High stability
- High Reliability
- Customizable

## Applications

- BOTDR
- OTDR
- LiDAR
- Fiber sensing

Agiltron Erbium-doped fiber amplifier (EDFA) provides cost-effective solutions for high-power optical amplification. It is built using semiconductor lasers, WDM, isolator, and erbium-doped fiber. The product has the advantages of high reliability, high power output, high gain, and low noise. Two configurations are available: A preamplifier for slight optical signal amplification and a Booster amplifier for maximum output power. We make both random polarization and polarization maintain versions. It has several package configuration choices. A Benchtop unit that is preset at the highest gain is suited for laboratory use. The Benchtop has a computer control interface and GUI. The compact module is suited for system integration with the universal control interface. The pluggable and the associated host net-control rack are standardized for local network build-out. Customer configurations are available.

The EDFAs have both ACC mode – automatic current control or constant current control and APC mode – automatic power control settable via GUI. In the ACC mode, the pump laser's current is set by the user and automatically locked by the EDFA to achieve a constant pumping current. The EDFA's output power is proportional to the input power and has output even though the input signal is weak. In the APC mode, the user sets the output power, and the EDFA automatically maintains the output constant in a feedback laser pump control way. When the input optical power fluctuates, the APC mode minimizes the fluctuation of the output power and is suitable for power type and line type EDFA.

The bench top or rack mount units can have multiple output channels in which the output is equally split into multiple outputs.

## Specifications

| Parameter | | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Wavelength | | 1543 | 1550 | 1605 | nm |
| Input Power | Booster Amplifier | -6 | 0 | 7 | dBm |
| | Pre-Amplifier | -30 | -20 | -10 | dBm |
| Saturated Output Power [1] | | 15 | | 40 | dBm |
| Power Conversion Efficiency [2] | | 8 | | 11 | |
| Gain Range [3] | | 13 | | 40 | dB |
| Noise Index | | | 5.5 [6] | | dB |
| Gain Flatness | | | 3 | | dB |
| Polarization Dependent Gain [4] | | | | 0.3 | dB |
| Polarization Mode Dispersion [4] | | | 0.5 | | |
| Polarization Extinction Ratio [5] | | 18 | | 20 | dB |
| Input/output Isolation | | 35 | | | dB |
| Output Stability (8hrs) | | | 0.05 | 0.1 | dB |
| Adjustable Output Power | | | Yes | | |
| Fiber Type | | SMF-28e 9/125um NA = 0.13 | | | |
| Working Temperature [7] | | -30 | | 70 | °C |
| Storage Temperature | | -40 | | 85 | °C |
| Dimension | | 230 x 120 x 15 | | | mm |
| Power Supply | | DC +5V / GND | | | |
| Communication | | >20dBm | RS232 | | |
| | | <20dBm | USB | | |

[1] Maximum optical output power. For Booster type only
[2] Define as the ratio of Electrical Input Power/Optical Output Power
[3] Amplification. Output power = Gain X Input power. For weak signals, buy a preamplifier
[4] Random polarization version only
[5] Polarization Maintaining only
[6] Defined as 10log(SNRi/SNRo)
[7] The regular range is -5 to 40°C, for extended range requires additional cost

**Legal notices:** All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application. Agiltron, The Power to Transform and Agiltron logo are trademarks of Photonwares Corporation. © 2009, 2012 IPG Photonics Corporation. All rights reserved.

Rev 09/06/23

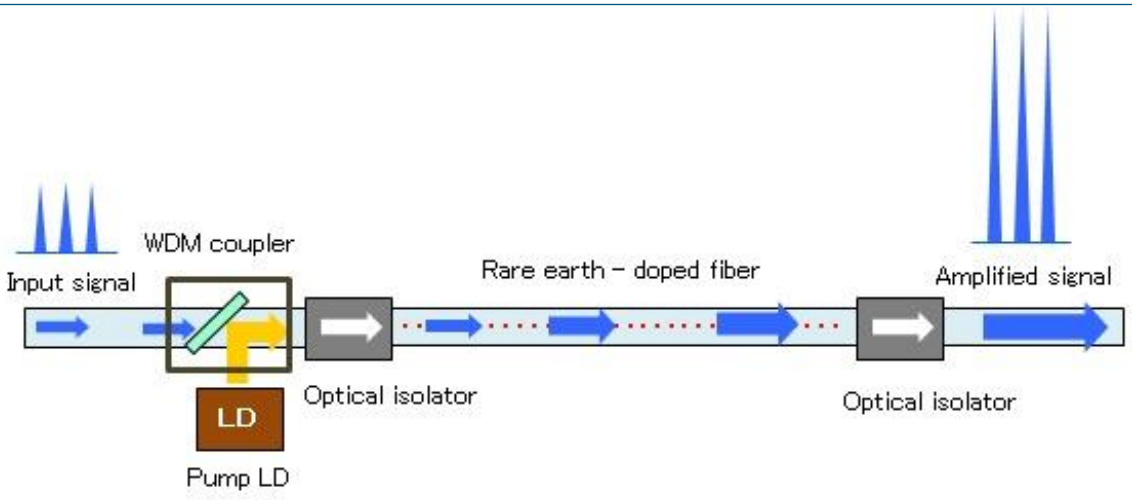


Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

# Erbium Doped Fiber Amplifier

DATASHEET

## Function Diagram



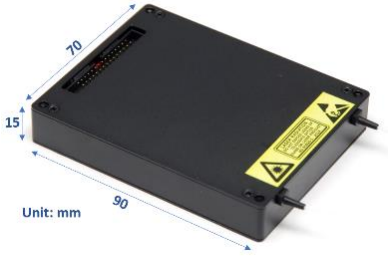

## Package Choices



Component



Benchtop- USB/GUI




MSA



MSA USB/GUI Adopting PCB



Pluggable



Net-Control Rack

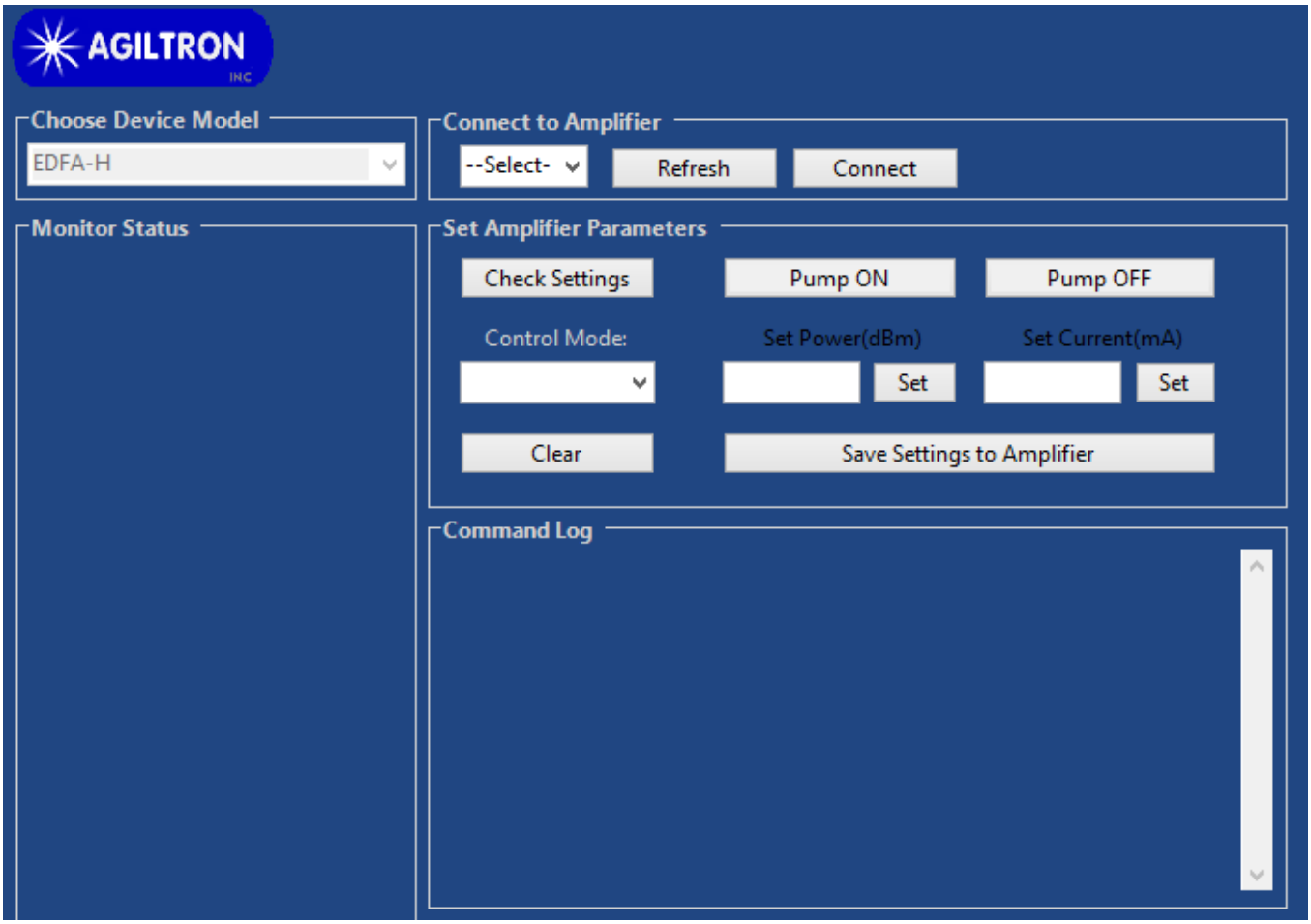
© Photonwares Corporation
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

# Erbium Doped Fiber Amplifier

DATASHEET

## GUI USB Interface




## Operation Instruction

- Load the software, Unzip the folder and Click "setup" to Install the GUI
- Select an amplifier type that matches your PO
- Connect your PC to the Amplifier by first connecting a USB cable and then choosing the necessary port and clicking “Connect“. To change the COM port click "Refresh", choose the necessary port, then click "Connect“
- Obtain the stored settings by clicking "Check Settings“
- To change the setting, first select the control mode
- To set up output power or current, input desired value and click "Set“. There are limits for max output per the model type.
- To turn on the Amplify click "Pump ON“; the green color should appear. To stop click "Pump OFF“; the red color should appear
- To save the setting click "Save Settings to Amplifier”. The Amplifier will store the setting for the next time you turn it on, even without the PC.
- The Amplifier only works if the input optical power level is within the spec.

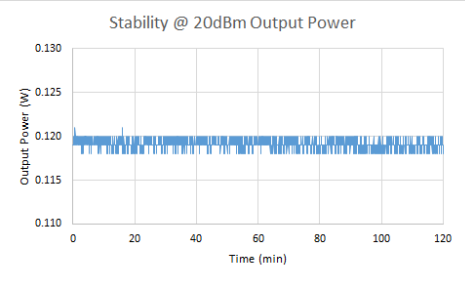
© Photonwares Corporation
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

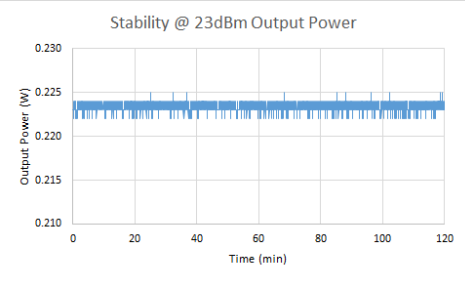
Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

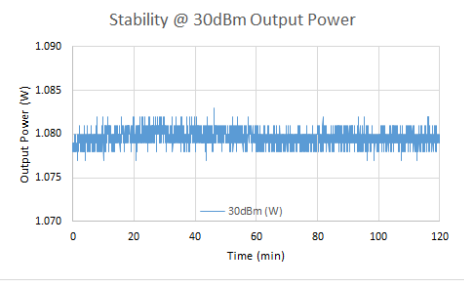
# Erbium Doped Fiber Amplifier

DATASHEET

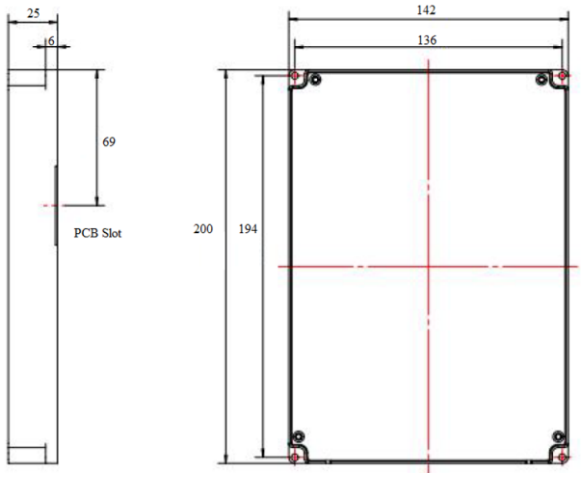
## Output Power Stability (33dBm Benchtop)



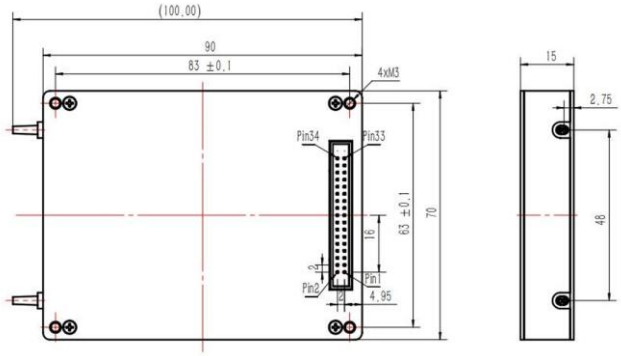




## Mechanical Dimensions (mm)




High-power: >23dBm




SMA package: 20dBm

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

## Ordering Information

| | ☐ | ☐ | ☐ | ☐ | 1 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prefix** | **Type** | **Wavelength** | **Power** | **Output Channel** | **Polarization** | **Package** | **Cable Type** | **Fiber Length** | **Connector [3]** | **Low Temperature** | **High Temperature** | **Control Mode** |
| **EDFA-** | Booster=1<br>Preamp=2 | C Band = C<br>L Band = L<br>Red Band = R<br>Blue Band = B<br>C+L Band = A<br>Special = 0 | 17dBm/50mW [1] = 2<br>30dBm/1W = 1<br>33dBm/2W = 5<br>37dBm/5W = 7<br>40dBm/10W = 6<br>41dBm/12W = 4 | One = 1<br>Two = 2<br>Three = 3<br>Four = 4 | Random = 1 | Component = 1<br>Benchtop = 2<br>Pluggable = 3<br>Rack = 4<br>MSA = M<br>MSA/USB [2] = H | 0.9mm tube = 3<br>Special = 0 | 0.25m = 1<br>0.5m = 2<br>1.0m = 3<br>Special = 0 | None = 1<br>FC/PC = 2<br>FC/APC = 3<br>SC/PC = 4<br>SC/APC = 5<br>LC/PC = 7<br>Special=0 | -5°C = 1<br>-30°C = 2<br>Special = 0 | 40°C = 1<br>70°C = 2<br>Special = 0 | APC = 1<br>ACC = 2<br>CC [4] = 3<br>Special = 0 |

[1]. This has a small package without power adjustment capability for lower cost
[2]. The MSA mounted on a USB adapting PCB. Comes with GUI and power supply
[3]. Regular connector only rated to 0.5W and will burn at higher power. We make a special beam expanded connector to handle up to 5W
[4]. CC is a constant current mode in which the pump laser current is set and always on regardless of input signal level

© Photonwares Corporation
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

# Erbium Doped Fiber Amplifier

DATASHEET

## Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm.

Maximum power = 30 mW.




*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
*IEC is a registered trademark of the International Electrotechnical Commission.

## Q&A About Fiber Optical Amplifier

**Q:** Can this amplifier pulsed signals?
**A:** It has been tested to amplify up to 100GHz digital data.

**Q:** Can this amplifier WDM signals?
**A:** It has been tested to amplify signals with DWDM wavelength spacing.

**Q:** Can this amplifier has a flat wavelength response?
**A:** Yes, by put flattering gain filters, that is an extra cost.

**Q:** If one puts a small signal into it, can it be amplified to the maximum output power indicated on the spec?
**A:** The amplifier is set as an analog mode whose output signal strength is approximately proportional to the input strength. It has a certain gain of about 40dB. There are two types: one is a preamplifier and a booster. One can use a preamplifier before the booster for weak signals, as done in electronic amplifiers.

**Q:** We have an existing amplifier. Can you duplicate it?
**A:** Yes, we can produce it with a seamless software interface.

© Photonwares Corporation
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

# Erbium Doped Fiber Amplifier

DATASHEET

## Modes Description

The EDFAs have both ACC mode - automatic current control or constant current control and APC mode - automatic power control settable via GUI. In the ACC mode, the pump laser's current is set by the user and automatically locked by the EDFA to achieve a constant pumping current. The EDFA's output power is proportional to the input power and has output even though the input signal is weak. In the APC mode, the user sets the output power, and the EDFA automatically maintains the output constant in a feedback laser pump control way. When the input optical power fluctuates, the APC mode minimizes the fluctuation of the output power and is suitable for power type and line type EDFA.

© Photonwares Corporation
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice.
Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

**Artisan Technology Group** is an independent supplier of quality pre-owned equipment

## Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

## We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

## Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP