# EDFA-PA-MSA

## MSA Pre-Amp EDFA Module, C-band

**DEVICE**

**OVERVIEW**

The Optilab EDFA-PA-MSA is a high-gain pre-amplifier module in a multiple source agreement footprint housing. It is an easy-to-use and cost-efficient solution for photonic subsystems, OEM integration, and fiber optic system integration. Using a high gain design, this pre-amp module provides over 30 dB gain with a 4.5 dB noise figure, good for input power level as low as -40 dBm. Software control via an a standard TTL RS-232 interface is available for status monitoring and pump current adjustments. It also features pump laser protection and alarms to ensure the reliability and safety of the device. The EDFA-PA-MSA only requires a single +5 Volt DC power supply for operation. Contact Optilab for more information.
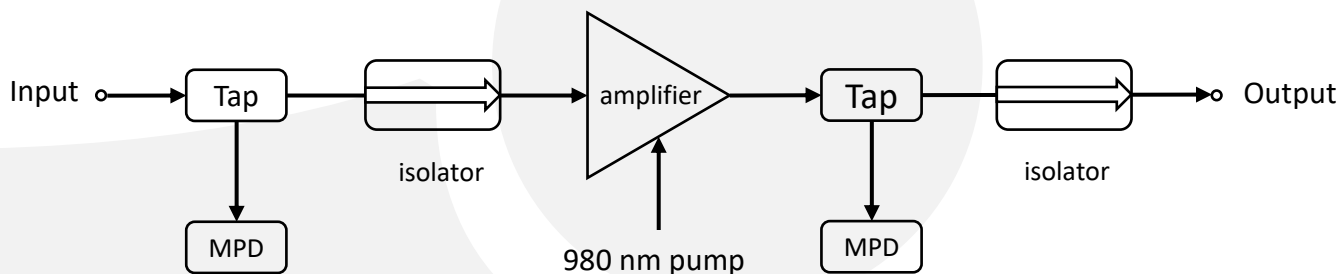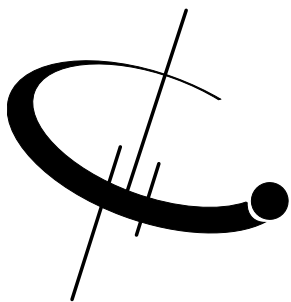
**FEATURES**

- MSA footprint
- RS-232 standard for remote control
- Wide wavelength operation range
- 30 dB gain
- Internal Isolators

- Low noise figure
- Designed for low input level
- Single +5V power supply
- 10+ years of operation life

**USE IN**

- Photonic subsystems
- Fiber optic link amplification

- OEM integration for
  - DWDM networks
  - DFC/CATV
  - RFoG/PON

**FUNCTIONAL DIAGRAM**
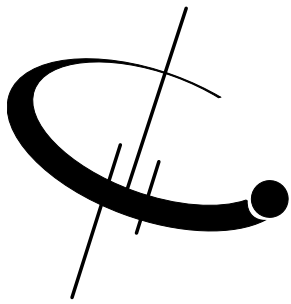
# EDFA-PA-MSA

## SPECIFICATIONS

### GENERAL

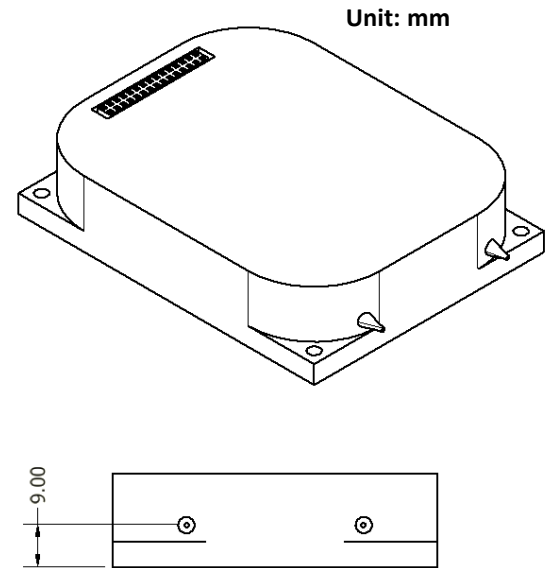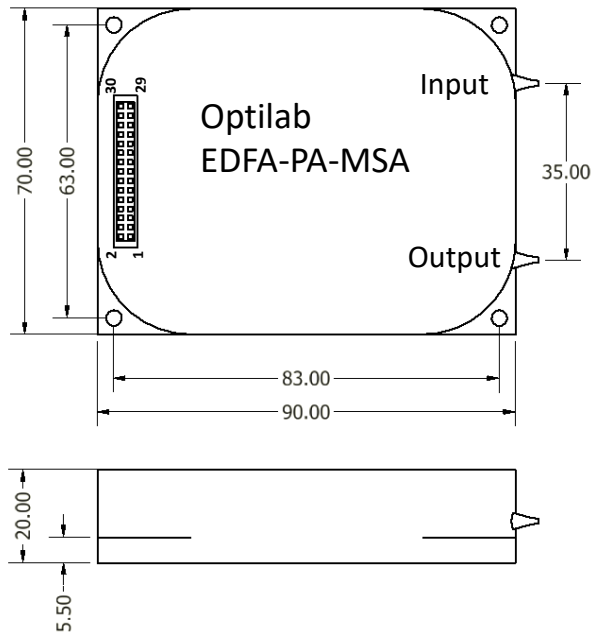| | |
|---|---|
| Operating Range | 1528 nm – 1563 nm |
| Saturation Output Power | +15 dBm min. +16 dBm typical |
| Optical Gain | 28 dB min. @ -30 dBm input |
| Noise Figure | 4.5 dB typ., 5.0 dB max. |
| Optical Return Loss | 50 dB min. |
| Input Optical Isolation | 30 dB min. |
| Output Optical Isolation | 30 dB min. |
| Polarization Mode Dispersion | 0.1 ps max. |
| Polarization Dependent Gain | 0.1 dB max. |
| Input Power Range | -40 dBm to +5 dBm |
| Output Power Stability | 0.15 dB over 8 hours |
| Operation Mode | ACC |
| Input/Output Fiber Type | Corning SMF-28 |

### MECHANICAL

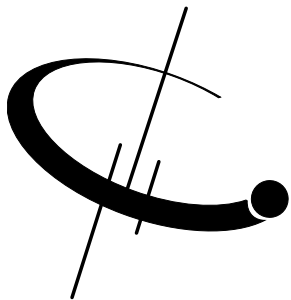| | |
|---|---|
| Operating Temperature | -10°C to +50°C |
| Power Supply | +5 V DC, 4.0 A max. |
| Power Consumption | 20 W max. |
| Fiber Type | SMF-28 |
| Fiber Jacket | 900 um loose tube |
| Connector Type | FC/APC |
| Connector (Power and Control) | 2 x 15 pin header, 1.0 mm pitch |
| Remote Control | RS-232 for laser control, status monitoring |
| Dimensions | 90 mm x 70 mm x 20 mm |
| Power Adapters | 30 Pin to Molex and USB Adapter, included |
| Matching Power Supply | Optilab PS-5-M, optional accessory |

# EDFA-PA-MSA

## MECHANICAL DRAWING

**Unit: mm**

Optilab
EDFA-PA-MSA

Input

Output

70.00
63.00
35.00
83.00
90.00
20.00
5.50
9.00

## ELECTRICAL PINOUT

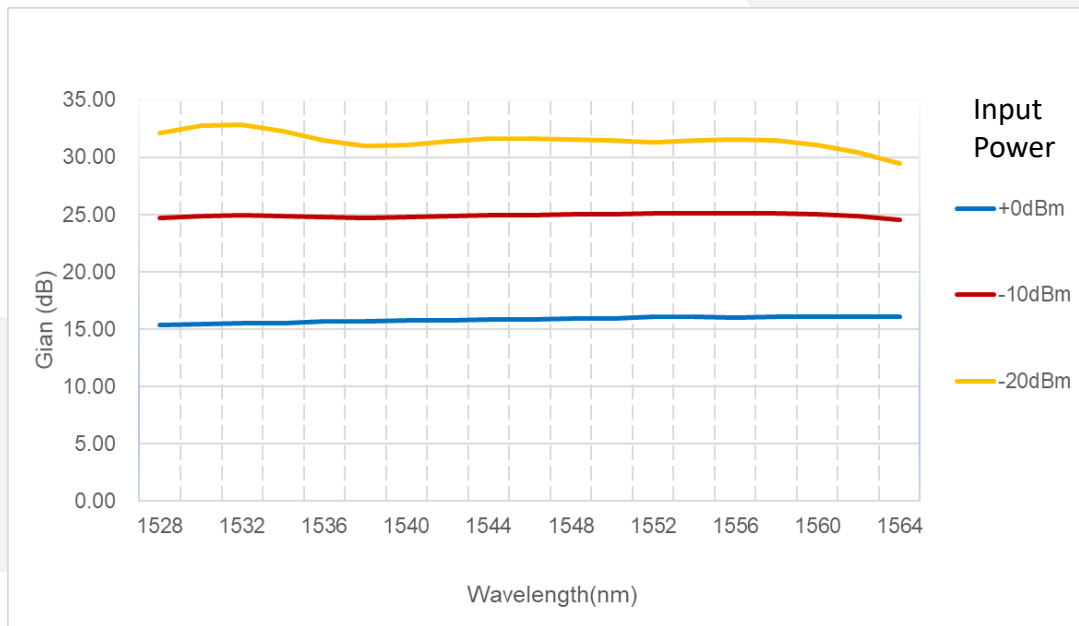| PIN # | DESCRIPTION | PIN # | DESCRIPTION |
|-------|-------------|-------|-------------|
| 1 | +5V | 2 | +5V |
| 3 | NC | 4 | NC |
| 5 | GND | 6 | GND |
| 7 | RS232 RX, TTL | 8 | RS-232 TX, TTL |
| 9 | GND | 10 | GND |
| 11 | NC | 12 | NC |
| 13 | Amplifier Enable, active low, 3.3V LVCMOS | 14 | NC |
| 15 | Case Temp Alarm*, active high, 3.3V LVCOMS | 16 | NC |
| 17 | NC | 18 | NC |
| 19 | Loss of Input Alarm*, active high, 3.3V LVCMOS | 20 | Loss of Output Alarm*, active high, 3.3V LVCOMS |
| 21 | GND | 22 | GND |
| 23 | NC | 24 | NC |
| 25 | GND | 26 | GND |
| 27 | NC | 28 | NC |
| 29 | +5V | 30 | +5V |

* Alarm function is disabled in the firmware.

## GAIN SPECTRUM



## ACCESSORIES



**5V Power Adapter
(Included)**



**30 PIN Cable
(Included)**



**Adapter Box
(Included)**