Optical Amplifier

Overview

The Fiber Driver™ Optical Amplifier modules from MRV Communications provide an affordable and flexible means of extending an optical link by compensating for optical budget loss. The modules are *erbium-doped fiber amplifiers* (EDFAs), which directly amplify an optical signal without the optical-to-electrical-to-optical ("O2E2O") conversion performed by conventional signal repeaters.

Instead of complex electronics, the Fiber Driver Optical Amplifier employs a length of special optical fiber doped with the rare earth element erbium. The output of the EDFA is an optical signal with saturated power of up to 18 dBm, allowing the signal to be transmitted over greater distances. The emerging signal retains all of its original characteristics.

Fiber Driver Optical Amplifiers are protocol and bandwidth transparent, and can amplify single or multiple channels within the C-band (1529 nm - 1565 nm) or L-band (1565 nm - 1605 nm) ranges. These optical amplifier modules are suitable for use as booster or pre-amplifiers, thereby reducing the number of network elements and simplifying network design. They can be deployed in a variety of network topologies, including Ring, Point-to-Point, and Add/Drop.

The compact, 1-slot Fiber Driver Optical Amplifier modules install into any of the Fiber Driver AC or DC powered chassis with plug-n-play ease.

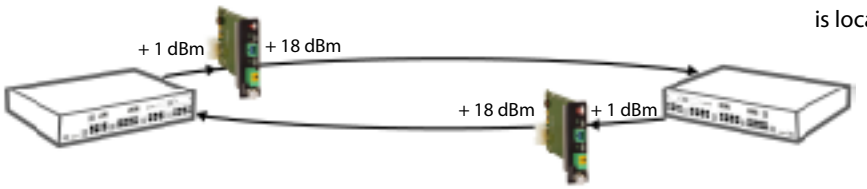
When paired with the Fiber Driver Network Management Module, the Fiber Driver Optical Amplifiers provide both In-Band and Out-of-Band management interfaces, including SNMP, Telnet, and a Command Line Interface (CLI). The modules are fully supported within MegaVision Web™, our own Network Management System (NMS), as well as any other SNMP-based NMS. Management features include link detect, input and output power monitoring, operating temperature monitoring, and output signal shutoff.

For additional information on the Fiber Driver Optical Amplifier, contact your MRV Communications sales representative.

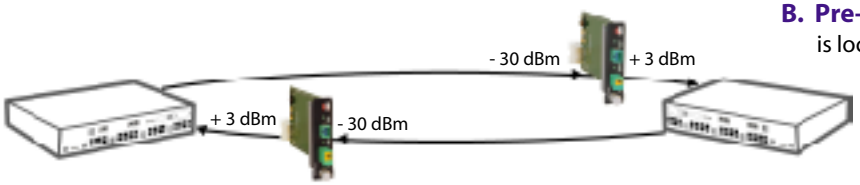
Features

- Extend optical link distances without O2E2O conversion
- Saturated output power of up to 18 dBm
- Protocol and bandwidth transparent
- Supports C-Band or L-Band
- Can be used as a booster, or pre-amplifier
- Compatible with Ring, Point-to-Point, and Add/Drop topologies
- In-Band (SNMP, Telnet) and Out-of-Band (CLI) management features, MegaVision Web supported
- Compact form factor

A. Booster Amplifier – The optical amplifier is located close to the signal source.



B. Pre-Amplifier – The optical amplifier is located near the final destination.



Physical Specifications: Optical Amplifier

Input Port Connector:	SC-APC
Output Port Connector:	SC-APC
Diagnostic LEDs:	Power On, Input Optical Power (in range), Output Optical Power (in range)
Electrical Requirement:	Power provided by chassis
Operating Temperature:	0º to 50º C / 32º to 122º F
Storage Temperature:	-10º to 60º C / 14º to 140º F
Relative Humidity:	85% maximum, non-condensing
Dimensions:	25 mm x 75 mm x 175 mm deep (1" x 3" x 7" deep), 1-Slot
Weight:	120 - 240 g (4.2 - 8.5 oz) depending on configuration
Standards Compliance:	FCC-PART 15, SUBPART B 1999, CLASS A. CE MARK - EN 50081-1:1992; EN 50082:1997; EN 55024:1998; EN 55022:1998. AS/NZS 3548:1995

Performance Specifications: Optical Amplifier

Parameters	Configuration	Condition	Unit	C-Band	L-Band
Operating Wavelength Range	–	–	nm	1529-1565	1565-1605
Output Power @ -30 dBm	Booster or Pre-Amplifier	–	dBm	Up to 3 dBm	Up to 3 dBm
Noise Figure @ -30 dBm	Booster or Pre-Amplifier	Typ.	dBm	4.5	4.5
Gain Flatness	WDM Versions	Typ.	dB	±0.3	±0.3
PDG	–	Max.	dB	0.3	0.3
PMD	–	Max.	ps	0.4	0.4

Ordering Info

Part Number	Function	Protocol Port / Link	Connectors Input / Output	Wavelength Supported (nm)	Saturated Output Power (dBm)
EM316OAC18AS	EDFA (Optical Amplifier)	Protocol Independent	SC-APC / SC-APC	C-band (1529-1565)	18
EM316OAL18AS	EDFA (Optical Amplifier)	Protocol Independent	SC-APC / SC-APC	L-band (1565-1605)	18
EM316 OAC18SC	EDFA (Optical Amplifier)	Protocol Independent	SC / SC	C-band (1529-1565)	18
EM316OAL18SC	EDFA (Optical Amplifier)	Protocol Independent	SC / SC	L-band (1565-1605)	18

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