

## About the Product

This EDFA-R optical amplifier provides a highly stable output. The key features include a multimode PUMP laser, unique Automatic Power Control (APC), and an Automatic Temperature Control (ATC) circuit to ensure stability and reliability of the output power. The unit can fit in a 19" sub-rack to occupy 1RU or 2RU. The unique optical circuit design provides excellent optical performance. The high precision microprocessor unit (MPU) ensures the intelligent and easy controls through the front display and web interface.

The optical circuit is specially designed for CATV systems. Having an extremely low noise profile, it ensures a better CNR and better BER/MER performance. The EDFA-R's spectral flatness provides a low CSO contribution and supports DWDM applications in the C-Band.

The EDFA-R includes dual hot-swappable power supplies providing for a true uninterrupted redundant power source ensuring a high MTBF.

The EDFA-R employs an intelligent temperature control system by utilizing a special temperature control circuit and ventilating heat, resulting in a reduction of up to 30% in power consumption. The high performance airflow design reduces operating temperatures and has a power efficient fan that is engaged when temperatures exceed 45 °C until the temperature drops to under 40 °C. The EDFA-R's cooling technologies provide thermal stability of the unit and helps to extend the cooling fan's lifespan.

Intelligent network management systems can communicate with the EDFA-R through the Ethernet, RS-485, or RS-232 interfaces. With Open MIB support, it can easily be integrated in to PBN's NMSE management software as well as other open standard network management systems.



19" sub-rack for 1RU

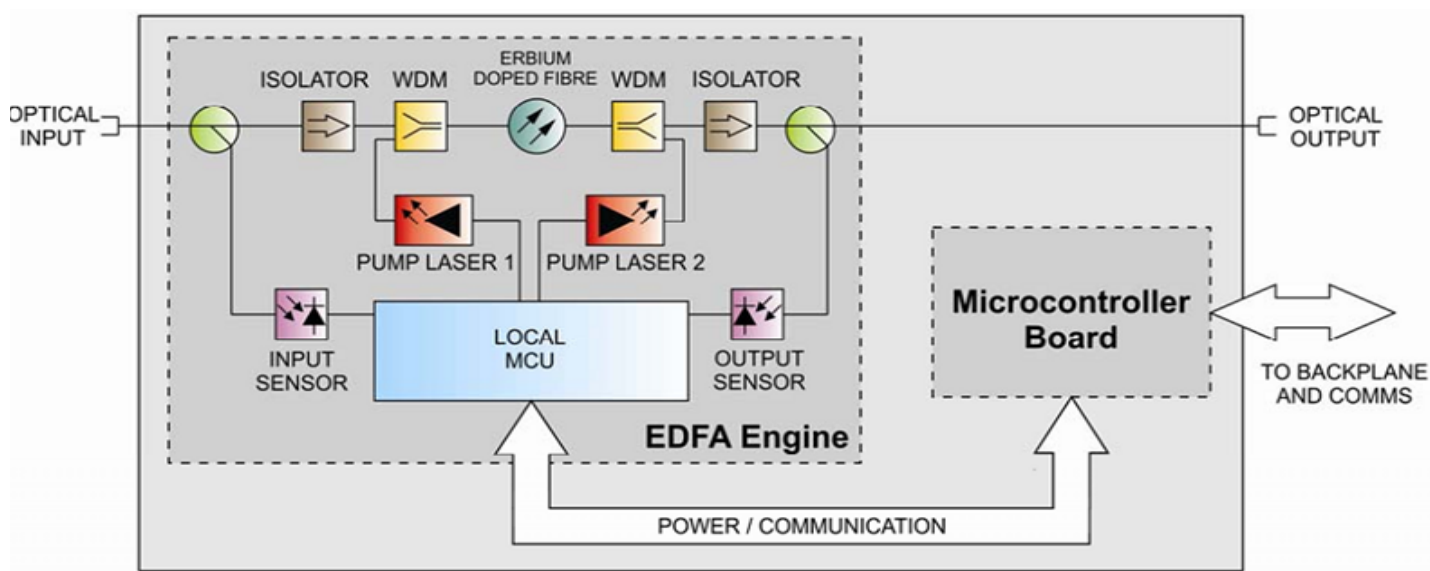


19" sub-rack for 2RU

## Key Features and Functions

- Low noise signature: Typical <4.5dB (0dBm input)
- Extremely low CSO distortion: <-70dBc
- Dual redundant power supplies can use 220V Mixed interpolation with 48V
- High stability and reliability: MTBF over 100,000 hours
- A variety network management interfaces: RJ-45, RS-485 and RS-232
- Supports-Telnet and SNMP network management
- High precision AGC/APC circuit: accurate to  $\pm 0.05$ dB
- Intelligent temperature control system reduces power consumption and heat by more than 30%
- Flexible mechanical and circuit structure (including the pure module, electric module, desktop, and 1RU structure)
- 19" sub-rack, can fit in 1RU or 2RU
- BellcoreGR-1312-CORE compliant

## Structure Example



## Specifications

### Optical Performance

Parameters	Symbol	Min	Typ	Max	Unit
Optical wavelength	$\lambda_c$	1530	1550	1565	nm
Saturated output power <sup>(1)</sup>	Posat	13	-----	24	dBm
Input power	Pi	-3	-----	+10	dBm
Gain	G	-----	20	-----	dB
Noise level <sup>(2)</sup>	NF	-----	4.5	-----	dB
Output Power Stability	$\Delta P_o$	-----	$\pm 0.05$	$\pm 0.1$	dB
Input Isolation	ISOi	30	-----	-----	dB
Output Isolation	ISOo	30	-----	-----	dB
Input pump leakage	PLi	-----	-----	-35	dBm
Output pump leakage	PLo	-----	-----	-45	dBm
Return Loss	RL	-----	-----	-45	dB
Polarization Dependent Gain	PDG	-----	-----	0.3	dB
PMD	PMD	-----	-----	0.5	ps
Optical connector	SC/APC, E2000/APC, FC/APC, LC/APC				

(1) Customer optional  
(2) Test at 0dBm input

### Electrical Performance

Parameters	Symbol	Min	Typ	Max	Unit
Power Supply	Vps	85/170	220	132/264	VAC
Power Consumption	P	-----	-----	18	W

Note:

1 220VAC, -48VDC and 220VAC/-48VDC are optional

2 The actual power consumption is relative to output power, the operating environment, and temperature

### General

Parameters	Symbol	Min	Typ	Max	Unit
Operation Temperature	T <sub>w</sub>	-5	-----	60	°C
Storage Temperature	T <sub>s</sub>	-40	-----	80	°C
Humidity <sup>(3)</sup>	Pi	10	-----	90	%
Dimensions (H x W x D)	44 x 483x 220mm				
Weight	6.0 kg				

(3) No condensation

## Order Details

**EDFA-R-[V]-[W]-[X]-[Y]-[Z]** .....| Erbium Doped Fiber Amplifier (Optical Amplifier)

### Options:

<b>V-W</b>	<b>Output power and Number of Output ports</b>
	<b>1RU height</b>
13-1	13 dBm x 1 (13 dBm/per port, 1 port. total 20mw, 13 dBm), 1RU.
⋮	⋮
24-1	24 dBm x 1 (24 dBm/per port, 1 port. total 250mw, 24 dBm), 1RU.
⋮	⋮
13-2	13 dBm x 2 (13 dBm/per port, 2 ports. total 40mw, 16 dBm), 1RU.
⋮	⋮
21-2	21 dBm x 2 (21 dBm/per port, 2 ports. total 250mw, 24 dBm), 1RU.
⋮	⋮
13-4	13 dBm x 4 (13 dBm/per port, 4 ports. total 80mw, 19 dBm), 1RU.
⋮	⋮
18-4	18 dBm x 4 (18 dBm/per port, 4 ports. total 250mw, 24 dBm), 1RU.
16-5	16 dBm x 5 (16 dBm/per port, 5 ports. total 200mw, 23 dBm), 1RU.
16-6	16 dBm x 6 (16 dBm/per port, 6 ports. total 240mw, 24 dBm), 1RU.
	<b>2RU height</b>
15-8	15 dBm x 8 (15 dBm/per port, 8 ports. total 256mw, 24 dBm), 2RU.
16-8	16 dBm x 8 (16 dBm/per port, 8 ports. total 320mw, 25 dBm), 2RU.
22-10	22 dBm x 10 (22 dBm/per port, 10 ports. total 1585mw, 32 dBm), 2RU.
16-12	16 dBm x 12 (16 dBm/per port, 12 ports. total 480mw, 27 dBm), 2RU.
16-16	16 dBm x 16 (16 dBm/per port, 16 ports. total 640mw, 28 dBm), 2RU.
17-16	17 dBm x 16 (17 dBm/per port, 16 ports. total 802mw, 29 dBm), 2RU.
20-16	20 dBm x 16 (20 dBm/per port, 16 ports. total 1585mw, 32 dBm), 2RU.
20-20	20 dBm x 20 (20 dBm/per port, 20 ports. total 2000mw, 33 dBm), 2RU.
8-24	8 dBm x 24 (8 dBm/per port, 24 ports. total 151mw, 22 dBm), 2RU.
16-24	16 dBm x 24 (16 dBm/per port, 24 ports. total 960mw, 30 dBm), 2RU.
18-24	18 dBm x 24 (18 dBm/per port, 24 ports. total 1585mw, 32 dBm), 2RU.
17-32	17 dBm x 32 (17 dBm/per port, 32 ports. total 1585mw, 32 dBm), 2RU.
<b>X</b>	<b>Optical connector</b>
1	SC/APC
2	E2000/APC
3	FC/APC
4	LC/APC

<b>Y</b>	<b>Network management</b>
0	None
1	SNMP
<b>Z</b>	<b>Power supply options</b>
	<b>AC = 90~265 Vac 50~60Hz, DC = 36~72Vdc</b>
1A	Single mains power supply 220VAC
2A	Dual mains power supplies 220VAC
1D	Single mains power supply -48 Vdc
2D	Dual mains power supplies -48 Vdc
AD	With two mains power supplies of 220VAC and -48 Vdc

**Note:**

*The 2RU device is used for the when more than 6 output ports are needed.*

## Accessories

### Power Supply

<b>RPSAC</b>	Mains power supply 220VAC (AC = 90~265 Vac 50~60 Hz)
<b>RPSDC</b>	Mains power supply -48VDC (DC = 36~72 Vdc)