# HA8000 Single fiber Bi-direction EDFA

## PRODUCT DESCRIPTION

HA8000 series, is a bi-directional fiber amplifier with high-quality. It can transmit and amplify downlink and uplink signal on one fiber. It offers an economical solution to network operators when utilizing the existing fiber source, upgrading networks and providing bi-directional VAD business.

HA8000 is a assembled flat form can configured flexible, users can specify downlink and uplink wavelength, downlink and uplink amplifier type (BA, LA, PA), output power, gain and amplifier optical port model according to their requirement.

## PRODUCT FEATURES

▶Downlink and uplink operating wavelength option:

R/B: downlink Red-Band (1548~1564nm), Uplink Blue-Band (1528~1563nm)

B/R: downlink Blue-Band (1528~1563nm)), Uplink Red-Band (1548~1564nm

C/C: Downlink and uplink are used C-Band (1528~1564nm)

▶Downlink and uplink amplifier type (BA, LA, PA) and output optical power to choose

▶Three optical ports mode option: Master, Line, Slave

▶Perfect RS232 communication interface and SNMP network management function

▶APC, AGC, ACC controlled selection

▶Low noise, high performance, high reliability

▶Excellent P/P ratio

## MAIN APPLICATION

▶Single fiber bi-direction DWDM application

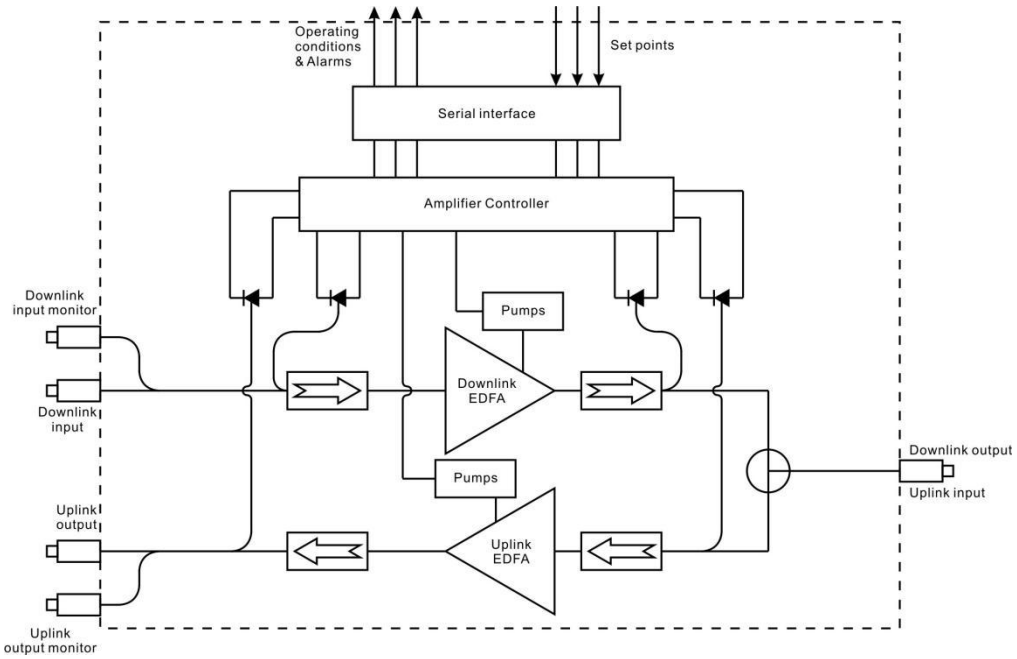
▶Network upgrade and value-added service

# TECHNICAL INDEX

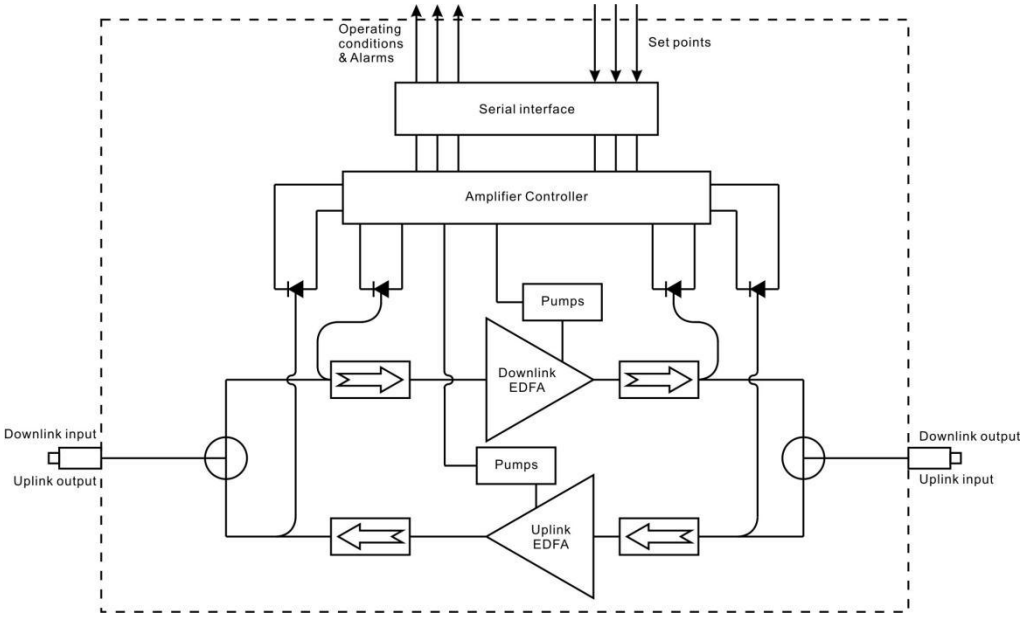
| Performance | | | Index | | | Supplement |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Optic feature | Operation Wavelength range (λ) (uplink or downlink) | (nm) | 1528.0 | | 1563.3 | B: Blue-band (C-Band) |
| | | | 1548.4 | | 1563.4 | R: Red-Band (C-Band) |
| | | | 1528.0 | | 1564.0 | C: C-Band |
| | Input power (uplink or downlink) | (dBm) | -10 | | +6 | BA |
| | | | -25 | | -10 | LA |
| | | | -35 | | -15 | PA |
| | Output power | (dBm) | | | 24 | Uplink or downlink |
| | Gain flatness | (dB) | | 0.7 | 1.0 | peak-to-peak |
| | Noise figure | (dB) | | | 0 | |
| | Polarization dependence loss | (dB) | | | 0.2 | |
| | Polarization dependence gain | (dB) | | | 0.5 | |
| | Polarization mode dispersion | (ps) | | | 0.3 | |
| | Input/output isolation | (dB) | 30 | | | |
| | Pump power leakage | (dBm) | | | -30 | |
| | Echo loss | (dB) | 40 | | | UPC |
| | | | 55 | | | APC |
| General feature | SNMP network management interface | | RJ45 | | | |
| | Communication interface | | RS232 | | | |
| | Power supply | (V) | 90 | | 265 | 220VAC |
| | | | 30 | | 72 | -48VDC |
| | Power Consume | (W) | | | 50 | |
| | Work temp. | (℃) | 0 | | 65 | |
| | Storage temp. | (℃) | -40 | | +80 | |
| | Relative humidity | (%) | 5 | | 95 | |
| | Size (W)×(D)×(H) | (mm) | 483×368×44 | | | |

## OPTO-ELECTRICAL DIAGRAM

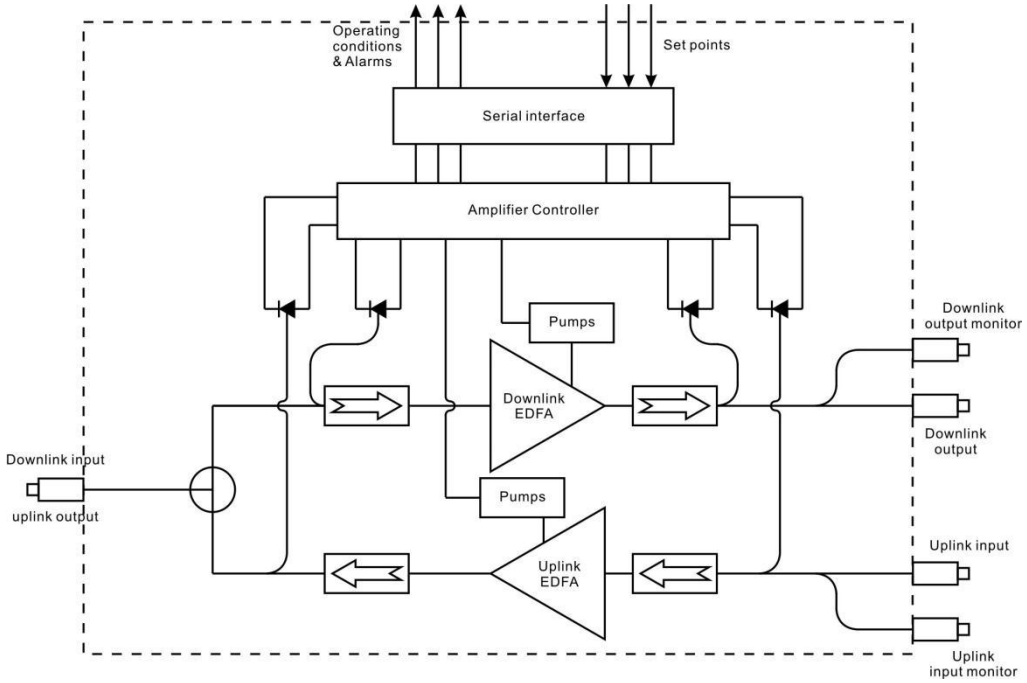
Optical port mode – Master (021, without monitor port, M21 with uplink, downlink monitor)




Optical port mode – Line 011



Optical port mode – Slave (012, without monitor, M12 with uplink and downlink monitor)



## MODEL EXPLANATION

HA 8 [1] [2] [0] [R] / [1] [2] [0] [B]

| Product series | Operating bandwidth | | Product type | | BA & PA | | Wavelength | | Product type | | BA & PA | | Wavelength | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amplifier of communication class | 8 | Bi-direction | 0 | No | 00 | No | R | C-Band/ Red-Band | 0 | No | 00 | No | B | C-Band/ Blue-band |
| | | | 1 | BA | 13 | 13dBm | | | 1 | BA | 13 | 13dBm | | |
| | | | 2 | LA | 17 | 17dBm | B | C-Band/ Blue-band | 2 | LA | 17 | 17dBm | R | C-Band/ Red-Band |
| | | | 3 | PA | 20 | 20dBm | | | 3 | PA | 20 | 20dBm | | |
| | | | | | 21 | 21dBm | C | C-Band | | | 21 | 21dBm | C | C-Band |
| | | | | | 22 | 22dBm | | | | | 22 | 22dBm | | |
| | | | | | 23 | 23dBm | | | | | 23 | 23dBm | | |
| | | | | | 24 | 24dBm | | | | | 24 | 24dBm | | |
| | | | | | 15 | 15dBm | | | | | 15 | 15dBm | | |
| | | | | | 20 | 20dBm | | | | | 20 | 20dBm | | |
| | | | | | 25 | 25dBm | | | | | 25 | 25dBm | | |
| | | | | | 30 | 30dBm | | | | | 30 | 30dBm | | |
| | | | | | 35 | 35dBm | | | | | 35 | 35dBm | | |
| Downlink EDFA | | | | | | | | | Uplink EDFA | | | | | |

– [0] [N] – [0] [1] [1] – [1] [U] – [F] / [S] [A] – [2] [2]

| Function | | Network management | | Optical port mode | | Exterior | | Position of optical ports | | Connector | | Power supply | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | No | 0 | Without | 011 | Line, without monitor port | 1U | 19" 1RU | F | Front-panel | FA | FC/APC | 22 | 220VAC |
| P | Power adjustable | N | With | 012 | Master, without monitor port | 2U | 19" 2RU | B | Back-panel | FP | FC/UPC | 11 | 110VAC |
| G | Power gain | | | M12 | Master, with monitor port | 3D | Desk-type | | | SA | SC/APC | 48 | -48VDC |
| | | | | 021 | Slave, without monitor port | OD | Out-door | | | SP | SC/UPC | | |
| | | | | M21 | Slave, with monitor port | OEM | Appearance user customized | | | LA | LC/APC | | |
| | | | | | | | | | | LP | LC/UPC | | |
| | | | | | | ML | Modulator | | | | | | |