

## Applications

- High performance supertrunking links
- High power distribution networks
- Redundant ring architectures
- FTTx networks

## Features

- Full Functionality 1 RU EDFA
- Low Noise Figure (Typ < 5dB )
- Total Input Power Range:  
-10 dBm to +12 dBm
- +14 dBm to +27 dBm Output Power
- Optional Internal Optical Power Splitters
- Standard RS-232 Communication (RS-485 or I<sup>2</sup>C is optional)
- Key lock switch
- Standard and Optional Gain Flatness (1530nm - 1562nm)
- VFD Panel Status Indicator
- Low Electrical Power Consumption
- Input / Output Isolation > 40/40 dB
- Polarization Dependant Gain < 0.1 dB
- Polarization Mode Dispersion < 0.5 ps

## PONA 2100 Series Erbium Doped Fiber Amplifier



The Ortel PONA 2100 Series Erbium Doped Fiber Amplifier (EDFA) is an ideal building block for OEM system integrators. The family of PONA 2100 series EDFAs is designed to meet the most demanding noise performance requirements of CATV applications, and performs all the functions required of an optical amplifier for system integration. PONA 2100 series EDFAs provide optical isolation on the input and output of the gain block for stable, low noise operation. The input and output optical signal power levels are detected for monitoring and control. The input optical signal is amplified with active gain control for a constant output power level, or with active output power control for constant gain mode. The PONA 2100 series EDFAs also provide monitors and associated alarms for all vital characteristics. The optical output of the PONA 2100 series EDFAs can be split into multiple ports by an optional external splitter.

### Optical / Electrical Characteristics

| PROPERTY                                   | UNIT      | LIMIT   | PONA MODELS   |               |               |               |               |               | COMMENTS      |                      |
|--|-----------|---------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------------|
| Product Code                               |           |         | 2114          | 2117          | 2120          | 2122          | 2124          | 2126          | 2127          |                      |
| PERFORMANCE                                |           |         |               |               |               |               |               |               |               | (note 1)             |
| Operating Input Power                      | Pin (dBm) | Max     | 12            | 12            | 12            | 12            | 12            | 12            | 12            |                      |
| Operating Input Power                      | Pin (dBm) | Min     | -10           | -10           | -10           | -10           | -10           | -10           | -10           |                      |
| Output Power                               | Po(dBm)   |         | 14<br>+/- .25 | 17<br>+/- .25 | 20<br>+/- .25 | 22<br>+/- .25 | 24<br>+/- .25 | 26<br>+/- .25 | 27<br>+/- .25 | Nominal              |
| Noise Figure<br>(Note 2)                   | NF (dB)   | Typ/Max | 4.5/5.0       | 4.5/5.0       | 4.5/5.0       | 4.5/5.0       | 5.0/5.5       | 5.0/5.5       | 5.0/5.5       | -00 and -01 versions |
|  | NF (dB)   | Typ/Max | 4.0/4.5       | 4.0/4.5       | 4.0/4.5       | 4.0/4.5       | 4.5/5.0       | 4.5/5.0       | 4.5/5.0       | -02 version          |
|  | NF (dB)   | Typ/Max | 4.0/4.5       | 4.0/4.5       | 4.0/4.5       | 4.0/4.5       | 4.5/5.0       | N/A           | N/A           | -03 version          |
| Static Gain Flatness                       | GF (dB)   | Max     | +/-0.5        | +/-0.5        | +/-0.5        | +/-0.5        | +/-0.5        | +/-0.5        | +/-0.5        | (Note 3)             |
| Dynamic Gain Flatness<br>(Note 4)          | (dB)      | Max     | +/-1.0        | +/-1.25       | +/-1.5        | +/-2.0        | +/-2.0        | +/-2.0        | +/-2.0        | -00 and -02 versions |
|  | (dB)      | Max     | +/-0.5        | +/-0.5        | +/-1.0        | +/-1.0        | +/-1.0        | N/A           | N/A           | -01 version          |
|  | (dB)      | Max     | +/-0.5        | +/-0.5        | +/-1.0        | +/-1.0        | +/-1.0        | N/A           | N/A           | -03 version          |
| Output Power Stability                     | (dB)      | Max     | +/- 0.1       | +/- 0.1       | +/- 0.1       | +/- 0.1       | +/- 0.1       | +/- 0.1       | +/- 0.1       | (Note 5)             |
| Power Consumption<br>(steady state regime) | Psys(W)   | Max     | 5             | 7             | 9             | 12            | 20            | 27            | 32            | 50°C Case            |

**Notes:**

1. Unless stated otherwise all specifications apply over the full temperature range and humidity
2. Measured with 8 evenly spread signals @ 25°C, Σ Pin = 0 dBm.
3. Measured with a swept Probe Signal (Pp), where Pp = 0 dBm @ 25°C
4. Measured with a swept Probe Signal (Pp), and a fixed Tone Signal (Pt) @ 1545 nm; (Pt = Pp+20 dB; Pt + Pp = 0 dBm) @ 25°C; Gain Flattened Option with ΔG = +/-0.5dB is available for some Models
5. Stability over polarization and temperature

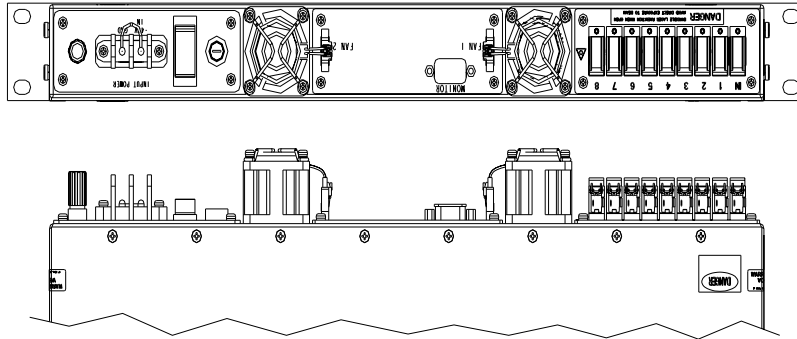
### General and Mechanical Specifications

| PROPERTY                   | REQUIREMENT                               | COMMENTS             |
|----------------------------|---|----------------------|
| GENERAL                    |   |                      |
| Operating Wavelength       | 1530 ~ 1562nm                             | Standard             |
| Operating Case Temperature | 0°C to 50°C                               |                      |
| Storage Temperature        | -40°C to 85°C                             |                      |
| Operating Humidity         | 20% to 85%                                | Non-condensing       |
| Voltage Supply Range       | 85 VAC to 265 VAC 50/60 Hz                | Standard             |
|                            | -36 to -60 V DC                           | Optional             |
| Optical Connectors         | SC/APC; SC/UPC; FC/APC; FC/UPC; E2000/APC | User Specified       |
| Dimensions In Inches       | 19.0"W x 14.76"D x 1.72"H                 | 19" Rack Mounted, 1U |

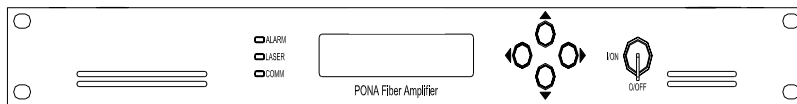
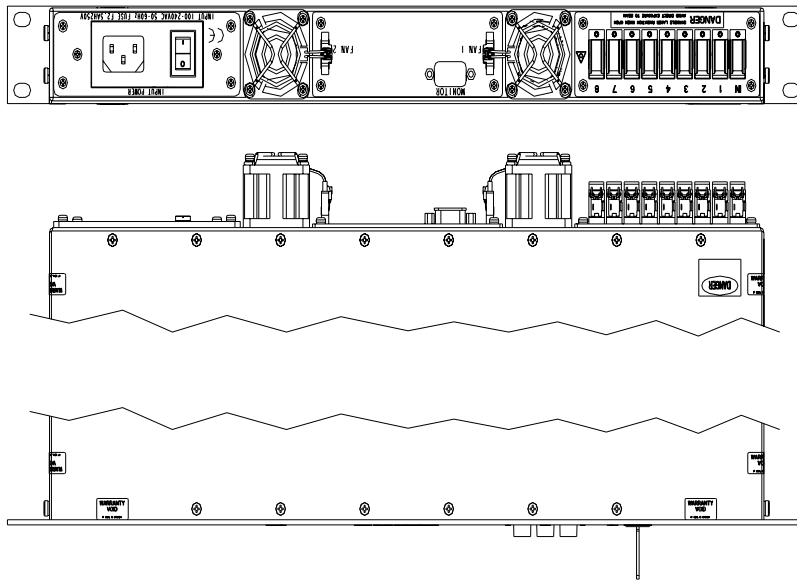
**Outline Drawing**

*AC and DC versions shown below with 8-port option*

*DC Version*



*AC Version*



## Compliance Information

**89/336/EEC Electromagnetic Compatibility Directive, amended by 92/31/EEC & 93/68/EEC**

**73/23/EEC Low Voltage Directive, amended by 93/68/EEC**

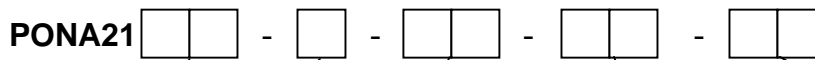
EN 50083-2, (2001) Cable networks for TV signals, sounds and interactive services, Part 2 Electromagnetic Compatibility for equipment.

|              |  |
|--------------|--|
| EN 55013     | Mains Conducted Emissions                              |
| EN 61000-3-2 | Mains Frequency and its Harmonics, Conducted Emissions |
| EN 55020     | Radiation from Active Equipment, Radiated Immunity     |
| EN 61000-4-6 | Immunity of Active Equipment, Radiated Immunity        |
| EN 61000-4-3 | Immunity of Active Equipment, Radiated Immunity        |
| EN 61000-4-2 | Electrostatic Discharge Immunity                       |
| EN 61000-4-4 | Electrical Fast Transient / Burst Immunity             |

EN 60950 Low Voltage Directives

|            |                          |
|------------|--------------------------|
| EN 60825-1 | Laser Safety Requirement |
| EN 60825-2 | Laser Safety Requirement |
| CDRH       | Laser Safety Requirement |

## Ordering Information



| Optical Output Power | Output Ports | Input Voltage         | Connector      | GFF/ NF options                          |
|----------------------|--------------|-----------------------|----------------|--|
| 14 - 14 dBm          | 1            | AC – 90-260V 50/60 Hz | SC - SC/APC    | 00 - Standard                            |
| 17 - 17 dBm          | 2            | DC – - 48 V           | FC - FC/APC    | 01 - Standard with Gain Flattened option |
| 20 - 20 dBm          | 4            |                       | EC - E2000/APC | 02 - Standard with Low NF option         |
| 22 - 22 dBm          | 8            |                       | TC - SC/UPC    | 03 - Low NF and Gain Flattened           |
| 24 - 24 dBm          |              |                       | GC - FC/UPC    |  |
| 26 - 26 dBm          |              |                       |                |  |
| 27 - 27 dBm          |              |                       |                |  |

Note: The maximum number of output ports when using E2000 connectors is four. All other optical connectors allow for the eight ports option

Example:

**PONA2120-2-AC-SC-00:**

Standard 20 dBm EDFA with AC Power Supply, two (2) optical outputs, and SC/APC optical connectors

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