

## Applications

- High Performance Supertrunking Links
- High Power Distribution Networks
- Redundant Ring Architectures
- FTTx Networks

## Features

- Full Functionality 1 RU EDFA
- Low Noise Figure (Typ < 5.5dB )
- Total Input Power Range:  
-10 dBm to +12 dBm
- +14 dBm to +30 dBm Output Power
- Optional Internal Optical Power Splitters
- Standard RS-232 Communication
- 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 EDFA's 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 EDFA's 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 EDFA's also provide monitors and associated alarms for all vital characteristics. The optical output of the PONA 2100 series EDFA's can be split into multiple ports by an optional external splitter.

### Optical / Electrical Characteristics

PROPERTY	SYMBOL (UNITS)	LIMIT	PONA MODELS							COMMENTS
			2114	2117	2120	2122	2124	2127	2130	
Product Code			2114	2117	2120	2122	2124	2127	2130	
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	Typical (May vary for some models)
Output Power	Po (dBm)		14.0 +/- .25	17.0 +/- .25	20.0 +/- .25	22.0 +/- .25	24.0 +/- .25	27.0 +/- .25	30.0 +/- .25	(Note 2)
Noise Figure	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	5.5/6.0	(Notes 3, 8)
Static Gain Flatness	GF (dB)	Max	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	(Note 7)	(Note 4)
Dynamic Gain Flatness	(dB)	Max	+/-1	+/-1.25	+/-1.5	+/-2.0	+/-2.0	+/-2.0	(Note 7)	(Notes 5, 8)
Output Power Stability	(dB)	Max	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	(Note 6)
Power Consumption (steady state regime)	Psys (W)	Max	5	7	9	12	20	35	40	50°C Case

**Notes:**

- 1) Unless stated otherwise, all specifications apply over the full operating temperature and humidity ranges
- 2) Measurement variations
- 3) Measured with 8 evenly spread input optical signals @ 25°C, ΣPin ≈ 0 dBm (Measuring with 1 input optical signal with Pin ≈ 0 dBm and λ ≈ 1550 nm is also possible. (Low Noise Figure options with NF ≤ 4.0/4.5 dB are available for some models)
- 4) Measured with a swept Probe Signal (Pp), where Pp ≈ 0 dBm @ 25°C
- 5) Measured with a swept Probe Signal (Pp), and a fixed Tone Signal (Pt) @ ~ 1550 nm; (Pt ≈ Pp+20 dB; Pt + Pp ≈ 0 dBm) @ 25°C; Gain Flattened Options with ΔG ≤ +/-0.75dB or ΔG ≤ +/-1.0dB are available (for some models)
- 6) Over polarization and temperature
- 7) Static and Dynamic Gain Flatness for PONA 2130 can be defined for 1545 nm ≤ λ ≤ 1562 nm and by special request only. (Please contact your Sales Representative)
- 8) Specific NF and ΔG can be guaranteed at a single specified Input Optical Power Level (Pin = Pt + Pp) different from 0 dBm. (Please contact your Sales Representative for more information)

### General and Mechanical Specifications

PROPERTY	REQUIREMENT	COMMENTS
GENERAL		
	Operating Wavelength	
PONA 2114 – PONA2127	1530 ~ 1562 nm	Standard
PONA 2130	1545 ~ 1562 nm	Standard
Operating Case Temperature	-10°C to 55°C	Standard
Storage Temperature	-40°C to 85°C	Standard
Operating Humidity	20% to 85%	Non-condensing
Voltage Supply Range	100 VAC to 240 VAC 50/60 Hz -36 to -60 V DC	Standard 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

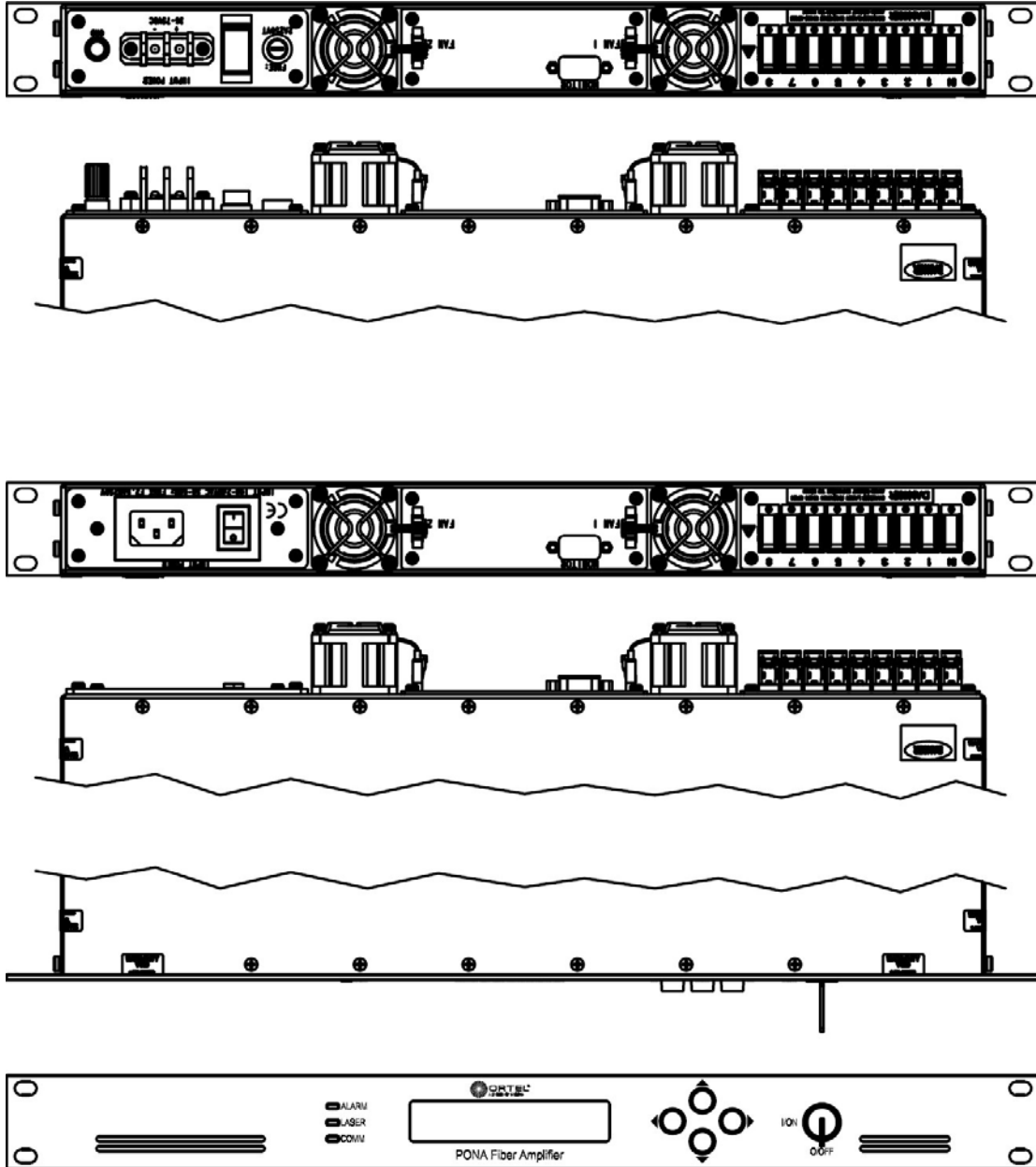


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### Outline Drawing

*DC & AC versions shown below with 8 output port option*



## 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

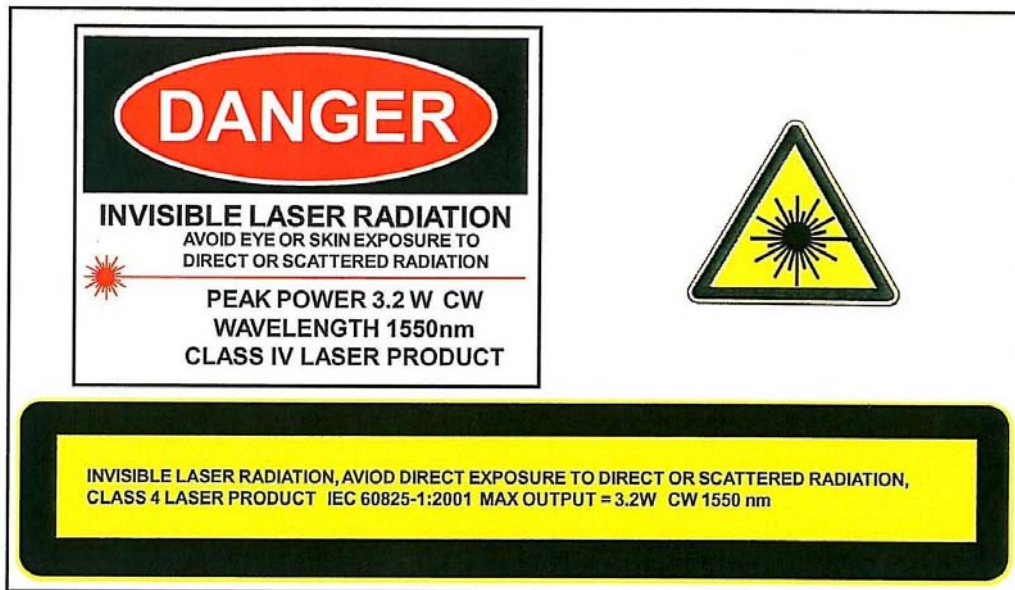
EN 60825-1	Laser Safety Requirement
EN 60825-2	Laser Safety Requirement
CDRH	Laser Safety Requirement

### Laser Safety Information

This product meets the applicable requirements of 21 CFR 1010 & 1040 and is classified as a Class IV laser product based on the maximum optical output power shown below. During use as intended, the laser energy is fully contained within the fiber network such that there is no accessible laser radiation and would meet the requirements for a Class I laser product. The laser product report has been submitted to the CDRH and the accession number is expected by October 2006.

Wavelength = 1530 ~ 1561 nm (dependant on input source)

Maximum Output Power = 1.0 W (single output, 30 dBm model)



AVOID EXPOSURE - INVISIBLE LASER RADIATION IS  
EMITTED FROM THIS APERTURE

**Ordering Information**

PONA 21   -  -    -   -   \*

<b>Optical Output Power</b>	<b>Output Ports</b>	<b>Input Voltage</b>	<b>Connector</b>	<b>GFF/ NF Options</b>
14 - 14 dBm	1	AC – 90-260V 50/60 Hz	SC - SC/APC (Default Option)	00 - Standard
17 - 17 dBm	2	DC – 48 V	FC - FC/APC (Default Option)	01 - Gain Flattened Option
20 - 20 dBm	4	2DC – Redundant 48 V	EC - E2000/APC	02 - Low NF Option
22 - 22 dBm	8		TC - SC/UPC	03 – Gain Flattened AND Low NF Option
			GC - FC/UPC	
24 - 24 dBm				
27 - 27 dBm				
30 - 30 dBm				

**\*Notes:**

1. PONA 2130 with one or two optical outputs and PONA 2127 with one optical output will have special high power output optical connector(s) and bulkheads.
2. For ordering PONA *preamplifiers* please contact your Sales Representative
3. Only some models can be order with Gain Flattened and/or Low NF options. (-01, -02, and -03 suffixes). **Please contact your Sales Representative for details**

**For exact model number, please contact your Sales Representative.**

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