

# Medallion 7110 Series CATV Fiber Amplifier

Erbium/Ytterbium Doped Fiber Amplifier (EYDFA)



DATASHEET | JANUARY 2016

FIBER OPTICS



## Applications

- CATV Supertrunking
- High Power Distribution Networks
- Redundant Ring Architectures
- FTTx Networks

## Features

- High Saturation Output Power up to 31.5 dBm (Pre-Splitter)
- Dual Power Supplies, Redundant & Hot Swappable – AC or DC
- Front Panel Optical Input & Output Monitor Ports
- SNMPv2 Control Interface
- Web Server
- 10/100bT
- Low Noise Figure for CATV
- Wide Input Dynamic Range
- Very Stable Output Power Over a Wide Operating Temperature Range
- Redundant Power Supplies
- Redundant Fans

The Medallion 7110 series product line is a family of state-of-the-art high performance CATV Erbium/Ytterbium Doped Fiber Amplifiers (EYDFA). Packaged in a convenient 1 RU housing, this line of fiber amplifiers has been optimized for superior output power stability and the exceptionally low noise figures demanded by CATV applications.

The Medallion 7110 provides very stable optical outputs over a wide operating temperature range. Internally it is supported with input and output isolators for enhanced system stability and performance. Optical power is continuously monitored at the input and output for automatic power control during operation over a wide operating temperature range.

The Medallion 7110 offers a full range of flexible configurations and a rich set of features. These include remote management capability through SNMPv2, Telnet and a resident Web Server. The Medallion 7110 also supports MIBs specified by SCTE (Society of Cable Television Engineers) for this product class. For local management, an RS-232 port is standard, along with a convenient front panel control menu provided on a Vacuum Fluorescent Display (VFD).

## High Level Features

- Automatic Power Control and/or Automatic Gain Control Modes
- Port Count, Optical Power, and Connector Style Options
- Integrated per Channel WDM for FTTx PON Applications

## Monitors & Alarms

- Loss of Input Power
- Loss of Output Power
- Pump Laser Diodes Bias Current
- Pump Laser Diodes Temperature
- Case Temperature

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## General and Electrical Characteristics

Property	Requirements	Symbol	Min	Typ	Max	Unit
AC Power Supply Voltage		$V_{AC}$	85		265	$V_{AC}$
DC Power Supply Voltage		$V_{DC}$	-36	-48	-72	$V_{DC}$
Power Consumption <sup>Note 1</sup>		$P_{TOT}$			60	W
Agency Listing, EMI	EN 50083-2-2006 EN 55013 EN 61000-3-2 EN 61000-4-6 EN 61000-4-3 EN 61000-4-2 EN 61000-4-4 EN 61000-3-3 FCC Part 15 (Subpart B, Class A), 107(b), 109(b)					
Agency Listing, Safety	IEC 60950-1/A1:2009 IEC 60825-1:2007					
Transportation Vibration	GR-63-CORE					
Transportation Shock	GR-63-CORE					

Note 1: 60 W valid at 0 dBm input power and 31.5 dBm total output power within specified operating temperature range.

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## Optical Characteristics <sup>Note 4</sup>

Property	Symbol	Min	Typ	Max	Unit
Wavelength Range	$\lambda_{OP}$	1545	1550	1562	nm
Input Power	$P_{IN}$	-10	0	12	dBm
Total Output Power Options <sup>Note 1</sup>	$P_{OUT}$	27		31.5	dBm
Output Power Delta to Nominal	$P_{OUT\Delta}$	-0.5		0.5	dB
Output Port Count Options (SC) <sup>Notes 2</sup>	-	1		16	
Noise Figure <sup>Note 3</sup>	NF			6.0	dB
Optical Isolation	ISO	30			dB
Input Power Alarm	LOS	-12	-11	-10	dBm
Input Monitor Loss	Lmon_in	22.5	23.5	24.5	dB
Output Monitor Loss	Lmon_out	22.5	23.5	24.5	dB

Note 1: Pre-splitter total output power. Number of ports varies by model type.

Note 2: Model Types are specified by output power per port. Output power per port is limited to 21 dBm. A maximum of 8 outputs are available with integrated WDMs.

Note 3: Test condition with input power = 0 dBm (@ 1555 nm).

Note 4: Specifications valid within operating temperature range.

## Absolute Maximum Ratings

Property	Symbol	Min	Typ	Max	Unit
Operating Temperature Range	TO	0		50	°C
Storage temperature Range	TS	-40		85	°C
Relative Humidity (non condensing)	H	0		95	%

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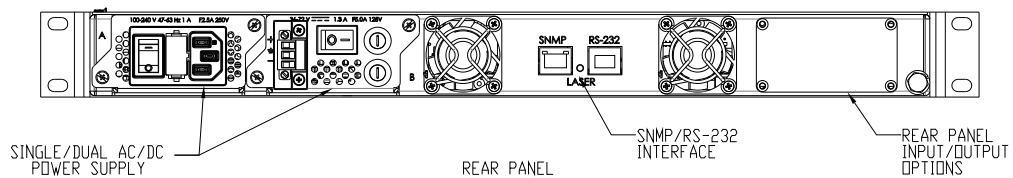
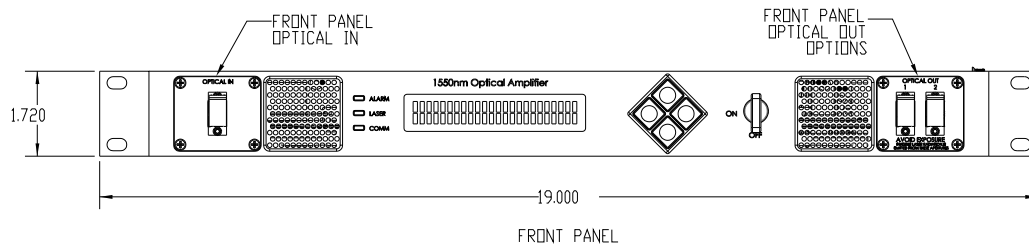
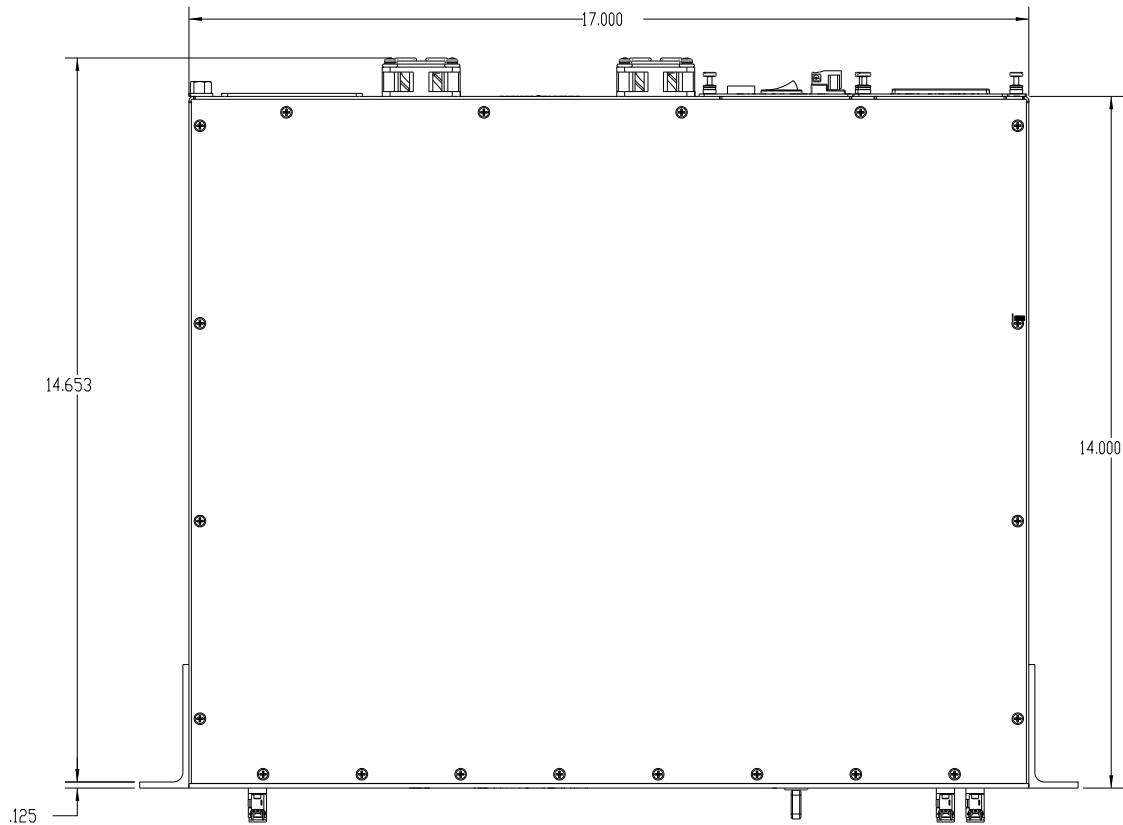
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## Outline Drawing



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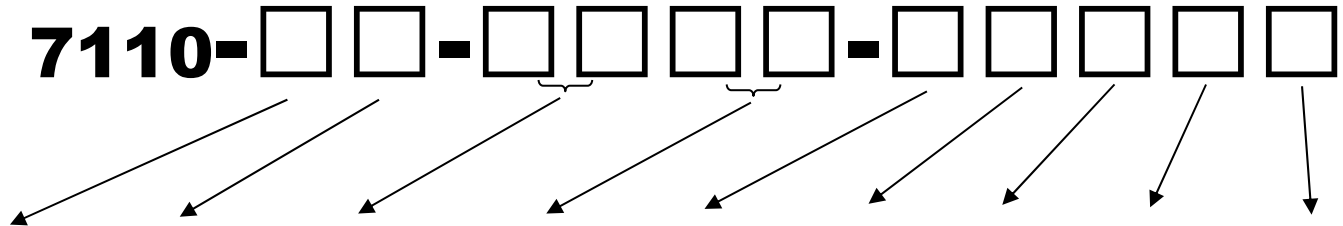
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## European Union “RoHS Directive” Compliance

Except for the exemption claimed herein for lead used in solder for network infrastructure equipment, all homogenous materials contained in the product contain less than the maximum concentration levels for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated biphenyl ethers permitted under the European Union Directive 2011/65/EU (the "RoHS Directive").

## Model Number Information



Logo & Customer Specific	Integrated WDM	Output Power per Port	Number of Ports	Optics	Optical Input	Optical Output	Optical Monitor	Power Supply
0= EMCORE Logo	0 = Integrated WDM	XX = xx dBm/port (Maximum: xx=21 dBm)	01 = 1 port 02 = 2 ports 04 = 4 ports 08 = 8 ports 16 = 16 ports	1 = SC/APC	1 = Front	1= Front	1= Front	1= AC primary, no secondary
1=No Logo	1 = No Integrated WDM			2 = FC/APC	2 = Rear	2= Rear	2= Rear	2=DC primary, no secondary
				3 = E2000/APC			3 = None	3=AC primary, AC secondary
								4=AC primary, DC secondary
								5=DC primary, DC secondary

Note 1: Not all configurations are available; please contact your EMCORE Sales Representative.

e.g. 7110-01-2108-11135 (EYDFA, EMCORE Logo, 8 Ports, 21 dBm/Port, SC/APC, Front Input/Output, No Optical Monitors, Dual DC)

e.g. 7110-11-1704-11133 (EYDFA, No EMCORE Logo, w 1310/1490/1550 WDM, 4 Ports, 17 dBm/Port, SC/APC, Front Input/Output, No Optical Monitors, Dual AC)

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## Laser Safety Information

Class 1M Laser Products IEC 60825-1:2007 EN 60825-1:2007

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50 dated June 24, 2007

Caution: Use of controls, adjustment and procedures other than those specified herein may result in hazardous laser radiation exposure.

