

Optical Node Series (NC)

FA4520x EDFAs

High Output, Gain Flattened, Optical Amplifiers

FEATURES

- Gain Flattened for C-Band
- Wide optical operating band, ITU channels 17 through 62
- 20 dBm Output Power Level
- User-selectable Constant Current or Constant Gain Modes
- ASE Muting
- Low Noise Figure
- Optical Path Isolation (Input and Output)
- Hot Plug-In/Out
- Remote Status Monitoring and Control



PRODUCT OVERVIEW

The ARRIS FA4520E, F, and H modules are high-output, gain-flattened, extremely compact optical amplifiers with an output power limiting function that limits the optical output power to a maximum 21.5 dBm to comply with requirements for Class 1M laser products. These high performance amplifiers allow operators to use 1550 nm DWDM transmitters over the optical range between ITU channels 17 to 62, to deliver high-quality full spectrum broadcast and digital narrowcast content over significant transmission distances in applications where a flat amplifier gain spectrum is required.

These EDFA models provide two operating modes: a non-adjustable constant-current mode and a user-adjustable constant-gain mode. In addition to the user-selectable operating modes, they also provide an automatic ASE-muting function.

These optical amplifiers enhance the deployment of traditional HFC, passive HFC, and fiber to the home (FTTH) networks. The unit is designed as a plug-in module for ARRIS's NC4000 series Fiber Node Platforms, including the VH4000 "Virtual Hub," and, when used in the latter, provides a practical alternative to OTN-style cabinets.

SPECIFICATIONS			
Characteristics	Specification		
Physical			
Dimensions	4.0" L x 2.2" H x 2.3" W (10.2 cm x 5.6 cm x 5.8 cm)		
Weight	0.6 lbs (0.3 kg)		
Environmental			
Operating Temperature Range	-40° to +85°C (-40° to 185°F)		
Storage Temperature Range	-40° to +85°C (-40° to 185°F)		
Humidity	5% to 95% non-condensing		
General			
Hot plug-in/out			
Modes of operation	Constant Current or Constant Gain		
ASE Muting	Always on, thresholds: <ul style="list-style-type: none"> -29 dBm (enabled) -28 dBm (disabled) 		
Power Requirements			
Input voltage	24 V _{DC}		
Power consumption	10 W		
Status Indicator LEDs			
	CURR MODE = Lighted green when operating in constant current (pump power) mode		
	GAIN MODE = Lighted green when operating in constant gain mode		
	EDFA@MAX/RED: FAILURE - Bi-state LED <ul style="list-style-type: none"> Yellow if laser is at maximum current or EDFA is at maximum output power (21.5 dBm) Red if ASE muting is activated or there is a hardware failure 		
Optical Interface			
Optical connector	SC/APC		
Optical			
Input signal wavelength	1527.9-1563.9 nm (Gain flatness is specified over this entire wavelength range)		
Optical signal path isolation	< -30 dB		
Gain flatness (peak to valley)	< 2.5 dB		
Constant Gain Mode (preferred operation mode)	The gain range is user settable from 6 to 30 dB. Full gain range may not be accessible depending upon input and operating conditions. Gain ranges and composite input power ranges for the specified gain flatness as follows:		
Performance Parameters		Model Number	
	FA4520E	FA4520F	FA4520H
Gain Range	16 to 20 dB	12 to 16 dB	8 to 12 dB
Input Power Range	-10 to 4 dBm	-10 to 8 dBm	-10 to 12 dBm
	NOTE 1: Output power with higher gain value at max input power level of each model will be clamped by the EDFA max power limit at 21.5 dBm. Using an example of the E model: when gain is set at 20 dB, output power is limited to 21.5 dBm at input power of 4 dBm. The actual EDFA gain is 17.5 dB, lower than the set gain of 20 dB.		
	NOTE 2: Gain can be set at 0.25 dB per step.		
Constant Current Mode	Composite input power ranges for specified gain flatness: FA4520E (0 to 4 dBm); FA4520F (4 to 8 dBm); FA4520H (8 to 12 dBm). Nominal output power of 20 dBm under constant current mode at mid-point input power range for each model: FA4520E (2 dBm); FA4520F (6 dBm); FA4520H (10 dBm).		
Output Power Stability	Constant Gain Mode ± 0.7 dB; Constant Current Mode: ± 0.6 dB		
Output Power Margin	0.1 dB min; 0.4 dB max		
Noise figure within the above specified Constant Gain and Constant Current Modes	FA4520E (5.0 dB typical, 5.5 dB max); FA4520F (5.5 dB typical, 6.0 dB max); FA4520H (6.0 dB typical, 6.5 dB max)		
Remote Monitoring/Control Parameters			
Status displayed	Optical input power, laser current, optical output power, laser temperature		
Control Parameter	Operational mode and gain value in constant gain mode		

ORDERING INFORMATION



- Optical Amplifier, Node
- 20 dBm nominal output power
- Specify E, F, or H model
- Feature Set
- AS = SC/APC Connector

RELATED PRODUCTS

NC4000 Optical Node	Optical Patch Cords
VH4000 VHub	Optical Passives
Fiber Service Cable	Installation Services

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

Note: Specifications are subject to change without notice.

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