

ChromaFlex

EDFA Optical Amplifier Modules



EDFA
(front view)

ChromaFlex CF-GCA EDFA

The CF-GCA EDFA is a high density, single-slot module. As wavelengths are added, the gain per wavelength remains constant and the composite total output power will vary to maintain consistent optical levels on a per wavelength basis ensuring network performance.

ChromaFlex CF-CPA EDFA

The CF-CPA EDFA operates in a fixed constant output power mode for single wavelength or applications where the number of wavelengths is fixed.

Applications

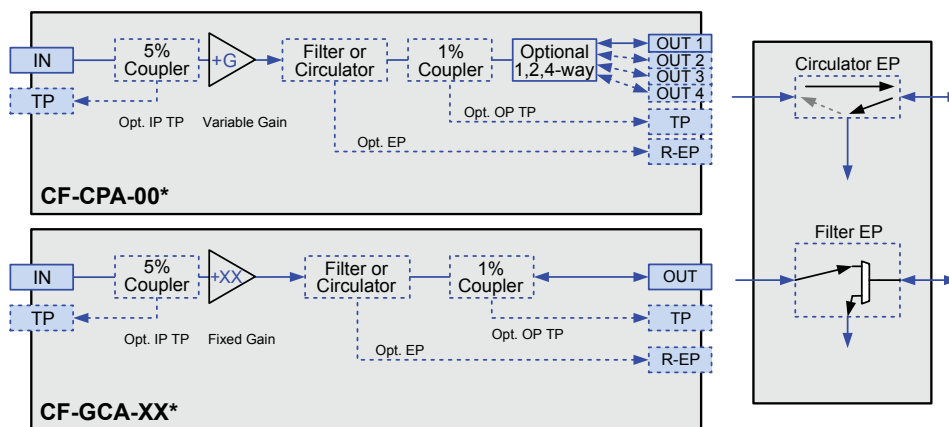
- Two versions of optical amplifiers are supported in this platform to extend network reach
- Both models are gain flattened and provide superb noise figure performance. Combining a CT* hybrid series high OMI output laser and these low noise figure EDFAs results in minimal MER impact contribution of the EDFA even at very low input levels



EDFA Optical Amplifier (front view)

Features

- Low noise performance
- Constant gain or constant power options
- Multiple gain and total power options
- Integrated filter or circulator based express ports
- One-slot ChromaFlex module
- Up to eight modules in a single 2RU ChromaFlex chassis
- SNMP, Telnet or web GUI remote monitoring



Functional Schematics

Specifications

EDFA Optical Amplifier Modules

	CF-CPA-00YY	CF-GCA-XXYY
OPTICAL		
OUTPUT POWER⁽¹⁾	YY ± 0.1 dBm	
GAIN	Varies	XX dB
GAIN ADJUST (Software)	n/a	± 1 dB
GAIN FLATNESS⁽²⁾	n/a	± 0.75 dB
OUTPUT POWER VARIATION	± 0.2 dB	
AMPLIFIED PASSBAND	1530-1562nm	
NOISE FIGURE (at 0 dBm Input)⁽³⁾	< 4.5 dB Typ. at 0 dBm Input	
OPTICAL INTERFACES	LC/APC (default)	
OPTICAL RETURN LOSS	> 50 dB	
INPUT POWER RANGE⁽⁴⁾	-3 to +10 dBm	
OUTPUT TEST POINT (Optional)	1%	
INPUT TEST POINT (Optional)	5%	
ELECTRICAL		
POWER CONSUMPTION⁽⁵⁾⁽⁶⁾	≤ 7W (if Pto ≤ 18 dBm)	
	≤ 12W (if Pto ≤ 24 dBm)	
MANAGEMENT	Local Craft, SNMP v2c, CLI, GUI, Telnet	
ENVIRONMENTAL		
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)	
STORAGE TEMPERATURE	-40°C to +85°C (-40°F to +185°F)	
HUMIDITY	5-85% Non-condensing	
PHYSICAL		
DIMENSIONS⁽³⁾	ChromaFlex One-slot Module, 1.7"H x 3.7"W x 14.4"D (4.3H x 9.3W x 36.5D cm)	
WEIGHT	1.5 lbs (0.7 kg)	

NOTES:

- (1) Maximum total composite power per output port. Derate by 0.5 dB per coupler or express ports.
- (2) Maximum 6 LC/APC ports (input + output).
- (3) If total output power ≥ 25 dBm, then dual-slot ChromaFlex module and noise figure is < 5.5 dB.
- (4) Composite power (power per wavelength + 10log (# wavelengths)).
- (5) Varies by composite output power, which is output of EDFA gain stage.
- (6) Ppp = Composite Power Per Port = Power per WL + 10log (# WL)
 for CPA: # WL = 1
 Pto = Composite Output Power = Ppp + 10log (# ports)
 = YY + 10log (# ports)
 for GCA: # ports = 1

Ordering Information

Optical Amplifier CF-Gained Flattened EDFAs

Part Number Format: CF- $\frac{\text{a}}{\text{bc}} \frac{\text{de}}{\text{fg}}$

Example: CF-CPA-0018-10 +18 dBm Constant Output Power EDFA, with One Output, LC/APC
 CF-GCA-0421-10 +4 dB Gain EDFA with +21 dBm Total Output Power Max., with One Output, LC/APC

a = Amplifier Type	bc = Gain in dB (Set to 00 for CPA, Variable Gain)	f = # Output Ports
CPA	de = Composite Output Power per Port in dBm	1 = One Output (GCA or CPA)
GCA		2 = Two Outputs (CPA Only)
		4 = Four Outputs (CPA Only, No Express Port)
		g = Return Reflector Port Type
		0 = None
		R = Circulator Type, No Test Point
		E = Filter Type, No Test Point
		T = Circulator Type, Output Test Point
		F = Filter Type, Output Test Point

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