CHP-EDFA Erbium Doped Fiber Amplifiers Technical Specification

Specifications

Models	Constant Gain/Power				Constant Power						High Input, Constant Gain	
General Specifications												
Optical Wavelength Range, nm (Notes 1, 2)	1530-1562	1530-1562	1530-1562	1530-1562	1535-1562	1535-1562	1535-1562	1535-1562	1535-1562	1535-1562	1528-1562 (Note 1)	1528-1562 (Note 2)
Total EDFA Power, nominal, dBm (Note 3)	13	16	19	22	16	22	19	22	25	29	20.5	23.5
Number of Output Ports	1	1	1	1	1	4	1	2	4	8	1	1
Output Power per Port (Note 4)	13	16	19	22	16	16	19	19	19	20	20.5	23.5
Optical Input Range												
Constant Gain Mode (AGC), dBm (Note 5)	-10 to 12	-10 to 12	-10 to 12	-10 to 12	_	_	_	_	_	_	0 to 14.5	2 to 15
Constant Power Mode (APC), dBm (Note 6)	-3 to12	-3 to 12	-3 to 12	-3 to 12	-3 to 12	-3 to 12	-3 to 12	-3 to 12	-3 to 12	-3 to 12	_	_
Optical Power Stability, dB (Note 7)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5
Input Isolation, dB	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30
Output Isolation, dB	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30
Remnant Pump Power, dBm	<-25	<-25	<-25	<-25	<-25	<-25	<-25	<-25	<-25	<-25	<-25	<-25
Noise Figure (Note 8)												
In 1550 ±5 nm, dB, typ./max. (Note 9)	4.5/4.8	4.5/4.8	4.5/4.8	4.5/4.8	5.0/5.5	5.0/5.5	5.0/5.5	5.0/5.5	5.0/5.5	5.0/5.5	5.0/6.0 (Note 9)	5.0/5.5 (Note 9)
In Range λ, dB, max. (Notes 10, 11)	5.8	5.8	5.8	5.8	6.5	6.5	6.5	6.5	6.5	6.5	7.0 (Note 11)	6.5 (Note 11)
Gain Flatness (dB)												
Optimum Gain per port	12.0	15.0	18.0	21.0	_	_	_	_	_	_	8.0	10.0
Allowable Gain Variation, dB	±3.0	±3.0	±3.0	±3.0	_	_	_	_	_	_	±2.0	±2.0
Gain Flatness, P-V at optimum gain (Notes 12-14)	2.2	2.5	2.7	3.2	_	_	_	_	_	1.3/5.2 (Note 12)	1.5/2.0 (Note 13)	1.5/3.0 (Note 14)
Power Specifications												
Power Consumption, W, max.	21.7	21.7	21.7	21.7	21.7	43.4	21.7	43.4	43.4	65.1	15	15

Technical Specification

Specifications Continued…

Models	Constant Gain/Power				Constant Power						High Input, Constant Gain	
Physical & Environmental												
Slot Width	1	1	1	1	1	2	1	2	2	3	1	1
Dimensions (W x H x D)	Single: 3.18 x 8.7 x 47.0cm (1.25 x 3.4 x 18.5in.), Double: 6.36 x 8.7 x 47.0cm (2.5 x 3.4 x 18.5in.), Triple: 9.6 x 8.7 x 47.0cm (3.75 x 3.4 x 18.5in.)											
Operating Temperature	Operating: 0 to 50°C (32 to 122°F), Storage: -40 to 70°C (-40 to 158°F)											
Operating Humidity, max.	85% noncondensing											

Notes:

1. Specifically for CORWave II 16-wavelength forward applications
2. The range 1540-1562 nm is the optimized wavelength range.
3. The total output power is within 1dB of the nominal output power with an input between –6 and –3dBm; the total output power is within 3dB of the nominal output power with an input between –10 and –6dBm.
4. Factory set point accuracy approximately ±0.25dB.
5. When operating in the AGC mode, the sum of input power and gain set-point should not exceed the nominal output power (Input Power + Gain Set-point < Nominal Output Power) or high output power shutdown may be triggered. If the input power is <–10dBm, no optical power is emitted.
6. EDFAs operating in APC mode will meet output power specifications with input power levels > –3dBm. At input power levels between –10 and –3dBm, the EDFA will attempt to maintain the set-point output power but it may be less than specifications.
7. Over temperature, wavelength, and polarization.
8. Specified for 0dBm optical input.
9. The Noise Figure is 5.0 dB for the 1540 to 1562 nm range.
10. See Optical Wavelength Range specification above.
11. The Noise Figure is 6.0 dB typical for CHP-EDFA-HG-20-1-S and 6.5 dB maximum for CHP-EDFA-HG-23-1-S in the 1527 to 1562 nm range.
12. For CHP-EDFA-20-8-L, optical power in = 6dBm, optical power out = 20dBm/port. The peak to valley gain flatness is 1.3dB over bandwidth 1550 to 1562nm and 5.2dB over bandwidth
    1535 to 1562nm.
13. For CHP-EDFA-HG-20-1-S, the Gain Rating is 1.5 P–V at optimum gain for the 1540 to 1562 nm range and 1.5 P–V at optimum gain for the 1528 to 1562 nm range.
14. For CHP-EDFA-HG-23-1-S, the Gain Rating is 1.5 P–V at optimum gain for the 1540 to 1562 nm range and 3.0 P–V at optimum gain for the 1528 to 1562 nm range.

Ordering Information

Part Number	Description
Constant Gain/Constant Power EDFAs	
CHP-EDFA-CG-13-1-S	13dBm, 1 output port, 1530–62nm, constant gain/power, SC/APC, 1-wide module
CHP-EDFA-CG-16-1-S	16dBm, 1 output port, 1530–62nm, constant gain/power, SC/APC, 1-wide module
CHP-EDFA-CG-19-1-S	19dBm, 1 output port, 1530–62nm, constant gain/power, SC/APC, 1-wide module
CHP-EDFA-CG-22-1-S	22dBm, 1 output port, 1530–62nm, constant gain/power, SC/APC, 1-wide module
Constant Power EDFAs	
CHP-EDFA-16-1-S	16dBm, 1 output port, 1535–62nm, constant power, SC/APC, 1-wide module
CHP-EDFA-16-4-L	22dBm, 4 output ports, 16dBm per port, 1535–62nm, constant power, LC/APC, 2-wide module
CHP-EDFA-19-1-S	19dBm, 1 output port, 1535–62nm, constant power, SC/APC, 1-wide module
CHP-EDFA-19-2-S	22dBm, 2 output ports, 19dBm per port, 1535–62nm, constant power, SC/APC, 2-wide module
CHP-EDFA-19-4-L	25dBm, 4 output ports, 19dBm per port, 1535–62nm, constant power, LC/APC, 2-wide module
CHP-EDFA-20-8-L	29dBm, 8 output ports, 20dBm per port, 1535–62nm, constant power, LC/APC, 3-wide
High Input and Constant Gain EDFAs	
CHP-EDFA-HG-20-1-S	20dBm, 1 output port, 1527–62nm, high input constant gain, SC/APC, 1-wide module
CHP-EDFA-HG-23-1-S	23dBm, 1 output port, 1528–62nm, high input constant gain, SC/APC, 1-wide module

Customer Care—For sales and product information via the ARRIS website (http://www.arrisi.com) or as indicated: United States: 866-36-ARRIS International: +1-678-473-5656

Specifications are subject to change without notice.

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