Erbium-Doped Fiber Amplifier

The Erbium-Doped Fiber Amplifier (EDFA) amplifies optical signals across the EDFA window (1528-1610 nm). Through optimization of amplifier gain, noise figure, and saturated output power, the EDFA will expand your test capabilities in systems, components or sub-assembly manufacturing as well as research and development environments.

The amplifier incorporates a unique design to produce maximum signal gain and saturated output power in the 1550 and 1590 nm test bands while minimizing noise figure.

The amplifier is offered in C-band, L-band, and C+L-band versions in pre-amplifier, booster, or in-line amplifier configurations.

The compact benchtop or rack-mountable instrument incorporates a user-friendly front panel housing an LCD displaying input/output power, current control, and an optical interface.

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Key Features & Benefits

Wide choice of wavelengths C, L, and C+L-bands High output power and gain Mid-span access Compact benchtop design with rack-mount kit Single channel and multichannel (DWDM) capabilities RS232 remote control

Safety Information

Complies to FDA 21CFR 1040.10 for Class IIIb laser

Complies to CE requirements plus UL3101-1 and CAN/CSA-C22.2 No. 1010.1



Applications

Pre-amp, booster, in-line amplifier emulation DWDM transmission, for multichannel applications Sonet/SDH systems, for single channel applications

Specifications

MODEL	OAB1550		OAB1552		OAB1554	OAB1546	OAB1558	
Test band	C-band							
Amplifier type	Pre-amp ¹	Booster	Booster high power	Booster high power	In-line ¹	Mid-span access booster DWDM	Booster DWDN	
Operating wavelength range	1528-1565 nm			1528-1563 nm	1528-1565 nm	1540-1560 nm	1528-1563 nm	
Input signal	Single channel			Ì	Multichannel (DWDM)		el (DWDM)	
Saturated output power (minimum) ²	14 dBm	17 dBm	20 dBm	24 dBm	17 dBm	17 dBm	21 dBm	
Noise figure (maximum) ³	3.3 dB	4.5 dB	5 dB	5 dB	3.8 dB	5.5 dB		
Small signal gain (minimum)⁴	37 dB	30 dB	32 dB	36 dB	35 dB	23 dB (MS loss ≤ 10 dB)	25 dB	
Spectral gain flatness (maximum) (p-p)⁵			NA	1		1.6 dB (1540-1560 nm)	1.4 dB (1528-1563 nm)	
PDL (maximum)		0.2 dB		0.3 dB	0.2 dB	0.3 dB	0.25 dB	
PMD (maximum)	0.5 ps	0.4 ps	0.4 ps	0.45 ps	0.5 ps	0.6 ps	0.65 ps	
Input/output isolation (minimum)	NA/32 dB 45/32 dB 32/32 dB 32/32 dB					2 dB		
Optical interface	FC/PC, FC/APC, SC/PC, SC/APC							
Packaging	half rack benchtop and 19-inch rack-mount kit							
Dimensions W x H x D	21.2 x 8.9 x 35.5 cm							
Weight	< 4 kg							
Operating temperature	0 to 50 °C							
Storage temperature	- 40 to 70 °C							
Humidity	maximum 95 % RH non-condensing from 0 to 45 °C							

All specifications guaranteed at 1550 nm and at 23 °C.

Maximum output power not greater than 24.5 dBm as per FDA 21CFR 1040.10 for Class IIIb lasers.

1. Input and output monitor available on custom orders.

2. Measured at 1550 nm at P_{in} = - 4 dBm (pre-amp, inline, and booster), P_{in} = - 6 dBm (mid-span).

3. Noise figure measured at $P_{in} = -20 \text{ dBm}$ (in-line), $P_{in} = -4 \text{ dBm}$ (booster), $P_{in} = -6 \text{ dBm}$ (mid-span), $P_{in} = -30 \text{ dBm}$ (pre-amp).

4. Small signal gain measured at P_{in} = - 20 dBm (in-line and booster) P_{in} = - 6 dBm (mid-span), P_{in} = - 4 dBm (booster DWDM), P_{in} = - 30 dBm (pre-amp).

5. Flatness optimized for P_{in} = - 6 dBm (mid-span), P_{in} = - 4 dBm (booster DWDM).

Specifications

MODEL	OAB1590	OAB	1507	OAB1594	OAB1596	OAB1598	OAB1562	OAB1564
Test band	OAB1590 OAB1592 OAB1594				OAD1590	OKD1598	C+L-	
	Due	Desetes			Mist and an	Deseter		
Amplifier type	Pre-amp ¹	Booster	Booster	in-line [.]	Mid-span	Booster	Booster	iniine [.]
	high power			access DWDM	DWDM			
Operating wavelength	1565-1610 nm			1570-1603 nm		1530-1560 nm		
range							600 nm	
Input signal	Single channel			Multichannel (DWDM)		Single channel		
Saturated output power	15 dBm	15 dBm	22 dBm	20 dBm	20 dBm	20 dBm	19 dBm	14 dBm
(minimum) ^{2,3}								
Noise figure (maximum)⁴	5 dB		5.5 dB 5.8 dB 5.5			5.5 dB	6.5 dB	
Small signal gain	24 dB	22 dB	29 dB	28 dB	22 dB	20 dB	22 dB	20 dB
(minimum)⁵					(MS loss \leq 7 dB)			
Spectral gain flatness	NA			1.7 dB	1.7 dB	N	A	
(maximum) (p-p)⁵				(1570-1603 nm)	(1570-1603 nm)			
PDL (maximum)	< 0.3 dB					< 0.	4 dB	
PMD (maximum)	0.6 ps	0.6 ps 0.8 ps 0.6 ps 0.9 ps			ps	0.7 ps		
Input/output isolation	NA/40 dB	NA/40 dB 40/40 dB 40/40					0 dB	
(minimum)								
Optical interface	FC/PC, FC/APC, SC/PC, SC/APC							
Packaging	half rack benchtop and 19-inch rack-mount kit							
Dimensions W x H x D	21.2 x 8.9 x 35.5 cm							
Weight	< 4 kg							
Operating temperature	0 to 50 °C							
Storage temperature	- 40 to 70 °C							
Humidity	maximum 95 % RH non-condensing from 0 to 45 °C							
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All specifications guaranteed at 1590/1550 nm (C+L-band) and at 1590 nm (L-band) at 23 °C.

Maximum output power not greater than 22.8 dBm for L-band, and 24.5 dBm for C+L-band as per FDA 21CFR 1040.10 for Class IIIb lasers.

1. Input and output monitor available on custom orders.

2. Measured at 1590 nm at $P_{in} = 0$ dBm (pre-amp, in-line, and booster), $P_{in} = -2$ dBm (mid-span).

3. C+L-band saturation power measured at P_{in} = - 4 dBm (1550 nm), P_{in} = 0 dBm (1590 nm).

4. Noise figure measured for L-band at P_{in} = - 20 dBm (pre-amp, in-line), P_{in} = - 4 dBm (mid-span, booster), P_{in} = 0 dBm (booster DWDM) and for the C+L-band at , P_{in} = - 20 dBm booster, inline).

5. Small signal gain measured for L-band at P_{in} = - 20 dBm (pre-amp, in-line and booster), P_{in} = - 2 dBm (mid-span), P_{in} = 0 dBm (booster DWDM), and for the C+L-band at P_{in} = - 20 dBm (booster, inline).

6. Flatness optimized for $P_{in} = -2 \text{ dBm} \text{ (mid-span)}, P_{in} = 0 \text{ dBm} \text{ (booster DWDM)}.$

Ordering Information

Sample Order: OAB1554+20FP0

OA		;+	2		
code	band		code	connector type	
4	C-band (red), 1540-1560 nm		FP	FC/PC]
5	C-band, 1528-1565 nm		FA	FC/APC]
6	C+L-band, 1530-1560 nm		SC	SC/PC	
	and 1570-1600 nm		SU	SC/APC	
9	L-band, 1565-1610 nm				
code	description		code	output power	
0	Pre-amplifier		0	Standard output po	wer
2	Booster		2	Booster high outpu	t power,≥ 20 dBm
4	In-line			(available for OAB15	552)
6	DWDM - mid-span access		4	Booster high output	t power,≥ 22 dBm
8	DWDM - booster			(available for OAB15	592)
code	characteristics		6	Booster high output (available for OAB15	1 /

Indicate your requirements by selecting one option from each configuration table. Print the corresponding codes in the available boxes to form your part number.

Standard Accessories

Gain flattened DWDM (available for OAB1546, OAB1558, OAB1596,

Unflattened

OAB1598)

Part Number ED000899-A-00

0

2

Description Standard 19-inch rack-mount kit

Optional Accessories

Part Number	Des
ED000899-A-01	Rack

Description Rack-mount kit (Japan)

INSTRUMENTATION GROUP

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