

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.



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

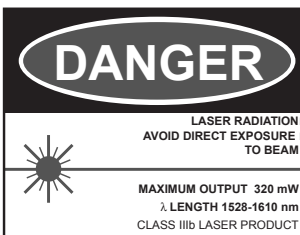
Single channel and multichannel (DWDM) capabilities

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
Operating wavelength range	1528-1565 nm		1528-1563 nm	1528-1565 nm	1540-1560 nm	1528-1563 nm
Input signal	Single channel				Multichannel (DWDM)	
Saturated output power (minimum) ²	14 dBm	17 dBm	20 dBm	24 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)
Spectral gain flatness (maximum) (p-p) ⁵	NA				1.6 dB (1540-1560 nm)	1.4 dB (1528-1563 nm)
PDL (maximum)	0.2 dB		0.3 dB	0.2 dB	0.6 ps	0.25 dB
PMD (maximum)	0.5 ps	0.4 ps	0.4 ps	0.45 ps	0.5 ps	0.65 ps
Input/output isolation (minimum)	NA/32 dB	45/32 dB		32/32 dB	32/32 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 IIb 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 $P_{in} = -20$ dBm (in-line), $P_{in} = -4$ dBm (booster), $P_{in} = -6$ dBm (mid-span), $P_{in} = -30$ 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	OAB1592		OAB1594	OAB1596	OAB1598	OAB1562	OAB1564	
Test band	L-band								
Amplifier type	Pre-amp ¹	Booster	Booster high power	In-line ¹	Mid-span access DWDM	Booster DWDM	Booster	In-line ¹	
Operating wavelength range	1565-1610 nm				1570-1603 nm		1530-1560 nm 1570-1600 nm		
Input signal	Single channel				Multichannel (DWDM)		Single channel		
Saturated output power (minimum) ^{2,3}	15 dBm	15 dBm	22 dBm	20 dBm	20 dBm	20 dBm	19 dBm	14 dBm	
Noise figure (maximum) ⁴	5 dB	5.5 dB			5.8 dB	5.5 dB	6.5 dB		
Small signal gain (minimum) ⁵	24 dB	22 dB	29 dB	28 dB	22 dB (MS loss ≤ 7 dB)	20 dB	22 dB	20 dB	
Spectral gain flatness (maximum) (p-p) ⁵	NA				1.7 dB (1570-1603 nm)	1.7 dB (1570-1603 nm)	NA		
PDL (maximum)	< 0.3 dB								
PMD (maximum)	0.6 ps	0.6 ps	0.8 ps	0.6 ps	0.9 ps		0.7 ps		
Input/output isolation (minimum)	NA/40 dB	40/40 dB						40/40 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 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 $P_{in} = -2$ dBm (mid-span), $P_{in} = 0$ dBm (booster DWDM).

Ordering Information

Sample Order: OAB1554+20FP0

OAB15 +2

code	band
4	C-band (red), 1540-1560 nm
5	C-band, 1528-1565 nm
6	C+L-band, 1530-1560 nm and 1570-1600 nm
9	L-band, 1565-1610 nm

code	description
0	Pre-amplifier
2	Booster
4	In-line
6	DWDM - mid-span access
8	DWDM - booster

code	characteristics
0	Unflattened
2	Gain flattened DWDM (available for OAB1546, OAB1558, OAB1596, OAB1598)

code	connector type
FP	FC/PC
FA	FC/APC
SC	SC/PC
SU	SC/APC

code	output power
0	Standard output power
2	Booster high output power, ≥ 20 dBm (available for OAB1552)
4	Booster high output power, ≥ 22 dBm (available for OAB1592)
6	Booster high output power, ≥ 24 dBm (available for OAB1552)

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

Part Number	Description
ED000899-A-00	Standard 19-inch rack-mount kit

Optional Accessories

Part Number	Description
ED000899-A-01	Rack-mount kit (Japan)