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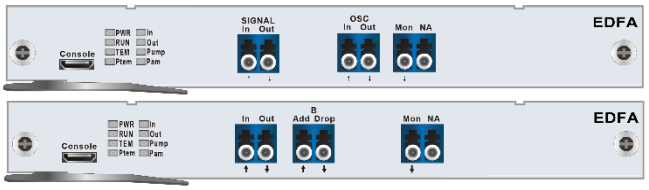
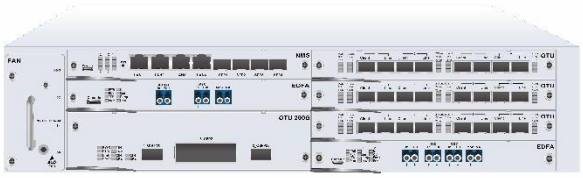
# F520 EDFA ( Erbium-Doped Fiber Amplifier ) Series

## Part Number: F520-DxxxxGxxxx-x-xx

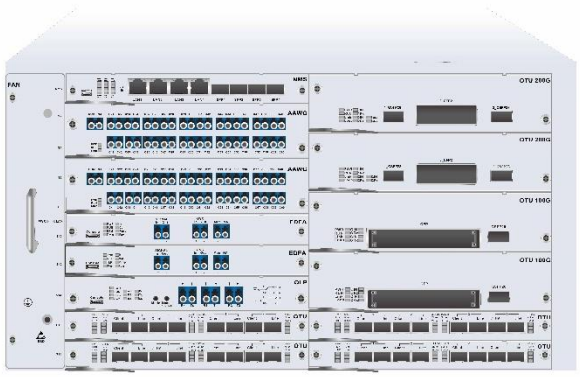



EDFA Module Card

1U4S Chassis (CH04)



2U8S Chassis (CH08)



5U20S Chassis (CH20)

## Overview

The F520 series of C-Band EDFA Optical Amplifiers is part of the F520 optical multi-service transmission platform solution. Many model options serve all the traditional amplifier applications in an extended optical link: booster, in-line, and pre-amplifier

A **Booster amplifier** operates at the transmission side of the link. It features high input power, high output power, and medium optical Gain. Boosters are designed to amplify aggregated optical input power for reach extension.

An **In-Line amplifier** operates in the middle of an optical link. It features medium to low input power, high output power, high optical Gain, and a low noise figure. In-line amplifiers are designed for optical amplification between two network nodes on the main optical link.

A **Pre-Amplifier** operates at the receiving end of an optical link. It features medium to low input power, medium output power, and medium Gain. Pre-amplifiers are designed for optical amplification to compensate for losses in a demultiplexer located near the optical receiver.

Some EDFA models include an additional mid-stage port designed for insertion of a Dispersion Compensation Management (DCM) unit without its inherent insertion loss. The design of these models maximizes the DCM benefits to increase deployment flexibility. New placement options require fewer amplifiers in the link, and they can open the door to applications that were not possible with older technology.

Some EDFA models include a Red and blue port designed for Single fiber DWDM Solution. The design of these models is used for single-fiber DWDM transmission systems.



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## Applications

- Metro DWDM distance extension
- Single wavelength distance extension
- CATV network system
- Long-Haul transmission system

## Features

- Low noise figure : typical 5dB
- Gain Flattening Filters (GFF) assure flat Gain (<1dB variance) over the entire amplified band
- Multiple operating modes : AGC, APC, ACC
- High performance transient response control to ensure Power, Gain stable without affecting existing signal
- Support customized saturated Output Power range up to +23dBm
- Support customized Gain variety range 8 ~ 40dB
- Support ALS (Auto Laser Shutdown)
- Support Red / Blue port for single-fiber DWDM transmission system
- Support Mid-Stage access for insertion of a DCM or OADM unit without it's inherent loss.
- Optional OSC management channel for remote management
- Own monitoring port, real-time monitoring optical power and OSNR
- Support SNMP, WEB, Console management
- Support 4, 8, 20 slot chassis for different capacity requirement

## Specification

| Parameter | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Wavelength | Standard | 1529 | | 1565 | nm |
| | Extended | 1528 | | 1567 | |
| Output Power | | | | +23 | dBm |
| Gain | | 8 | | 35 | dB |
| Gain Flatness | | | 1.0 | 1.5 | dB |
| Gain Adjustable Range | w/o VOA | ± 3 | | | dB |
| | with VOA | ± 5 | | | |
| Input Power | BA | -22 | | Max.Output -Gain | dBm |
| | PA/LA | -32 | | Max.Output -Gain | |
| Noise Figure | | | 5.0 | 5.5 | dB |
| Input Threshold | | Input Power -1dB | | | dBm |
| Polarization Dependence Loss | | | | 0.3 | dB |
| Polarization Dependence Gain | | | | 0.4 | dB |
| Polarization Mode Dispersion | | | | 0.5 | ps |
| Pump Power Leakage | | | | -29 | dBm |
| Return Loss | | | | -45 | dB |
| Power Consumption | | ≤15 | | | W |
| Size | EDFA model | 191(W) x 253(D) x 20(H) | | | mm |
| | 4-slot chassis | 482.5(W) x 350(D) x 44.5(H) | | | |
| | 8-slot chassis | 482.5(W) x 350(D) x 89(H) | | | |
| | 20-slot chassis | 482.5(W) x 350(D) x 222.5(H) | | | |
| Operating Temperature | | -10~60 | | | °C |
| Storage Temperature | | -40~85 | | | °C |
| Relative Humidity | | 5~95 | | | RH% |

**Note1:** The Insertion Loss values not including Connector Loss.
**Note2:** PDL was measured on average polarization over a ±0.08nm window around the ITU wavelength.

## Ordering Information

F520-D□□□□G□□□□-□-□□

**Amplifier Type**
B- Booster Amplifier
L- In-Line Amplifier
P- Pre-Amplifier

**Wavelength Range**
A- Standard *default
E- Extended

**Max. Total Output Power**
16- 16dBm 20- 20dBm
18- 18dBm 22- 22dBm
xx- xxdBm

**Power Gain**
12- 12dB 30- 30dB
20- 20dB 35- 35dB
25- 25dB
xx- xxdB

**VOA Function**
V- with VOA
Blank- without VOA

**OSC Function**
S- with OSC
Blank- without OSC

**Bidi Function**
B- Pass 1528~1543nm (Ch45~Ch60)
Reflect 1547~1561nm (Ch21~Ch36)
R- Pass 1547~1561nm (Ch21~Ch36)
Reflect 1528~1543nm (Ch45~Ch60)
Blank- Not Bidi

**Mid-Stage Insertion Loss**
08- 8dB *default if with Mid-Stage
10- 10dB
xx- xxdB
Blank- without Mid-Stage Access

## Common EDFA Modules

| Model | Description | Gain (dB) | Max. Output (dBm) | Min. Input (dBm) | Max. Input (dBm) | Typ. NF (dB) |
|---|---|---|---|---|---|---|
| **Booster EDFA** | | | | | | |
| DBA16G12S | DWDM Booster，Max.Output 16dBm，Gain 12dB，with OSC | 12dB | 16dBm | -23dBm | 7dBm | 5dB |
| DBA16G12 | DWDM Booster，Max.Output 16dBm，Gain 12dB，without OSC | 12dB | 16dBm | -23dBm | 7dBm | 5dB |
| DBA20G12S | DWDM Booster，Max.Output 20dBm，Gain 12dB，with OSC | 12dB | 20dBm | -19dBm | 11dBm | 5dB |
| DBA20G12 | DWDM Booster，Max.Output 20dBm，Gain 12dB，without OSC | 12dB | 20dBm | -19dBm | 11dBm | 5dB |
| DBA20G15S | DWDM Booster，Max.Output 20dBm，Gain 15dB，with OSC | 15dB | 20dBm | -22Bm | 8dBm | 5dB |
| DBA20G15 | DWDM Booster，Max.Output 20dBm，Gain 15dB，without OSC | 15dB | 20dBm | -22dBm | 8dBm | 5dB |
| DBA20G20S | DWDM Booster，Max.Output 20dBm，Gain 20dB，with OSC | 20dB | 20dBm | -27dBm | 3dBm | 5dB |
| DBA20G20 | DWDM Booster，Max.Output 20dBm，Gain 20dB，without OSC | 20dB | 20dBm | -27dBm | 3dBm | 5dB |
| DBA22G30S | DWDM Booster，Max.Output 22dBm，Gain 30dB，with OSC | 30dB | 22dBm | -30dBm | -5dBm | 5dB |
| DBA22G30 | DWDM Booster，Max.Output 22dBm，Gain 30dB，without OSC | 30dB | 22dBm | -30dBm | -5dBm | 5dB |
| **Bidi Booster EDFA** | | | | | | |
| DBA16G12S-B | DWDM Bidi Booster，Max.Output 16dBm，Gain 12dB，with OSC，Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 12dB | 16dBm | -23dBm | 7dBm | 5dB |
| DBA16G12-B | DWDM Bidi Booster，Max.Output 16dBm，Gain 12dB，without OSC，Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 12dB | 16dBm | -23dBm | 7dBm | 5dB |
| DBA20G12S-B | DWDM Bidi Booster，Max.Output 20dBm，Gain 12dB，with OSC，Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 12dB | 20dBm | -19dBm | 11dBm | 5dB |



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|---|---|---|---|---|---|---|
| DBA20G12-B | DWDM Bidi Booster，Max.Output 20dBm，Gain 12dB，without OSC，Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 12dB | 20dBm | -19dBm | 11dBm | 5dB |
| DBA16G12S-R | DWDM Bidi Booster，Max.Output 16dBm，Gain 12dB，with OSC，Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 12dB | 16dBm | -23dBm | 7dBm | 5dB |
| DBA16G12-R | DWDM Bidi Booster，Max.Output 16dBm，Gain 12dB，without OSC，Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 12dB | 16dBm | -23dBm | 7dBm | 5dB |
| DBA20G12S-R | DWDM Bidi Booster，Max.Output 20dBm，Gain 12dB，with OSC，Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 12dB | 20dBm | -19dBm | 11dBm | 5dB |
| DBA20G12-R | DWDM Bidi Booster，Max.Output 20dBm，Gain 12dB，without OSC，Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 12dB | 20dBm | -19dBm | 11dBm | 5dB |

| Model | Description | Gain (dB) | Max. Output (dBm) | Min. Input (dBm) | Max. Input (dBm) | Typ. NF (dB) |
|---|---|---|---|---|---|---|
| **Pre-amplifier EDFA** | | | | | | |
| DPA16G20S | DWDM Pre-amplifier，Max.Output 16dBm，Gain 20dB，with OSC | 20dB | 16dBm | -30dBm | -1dBm | 4.5dB |
| DPA16G20 | DWDM Pre-amplifier，Max.Output 16dBm，Gain 20dB，without OSC | 20dB | 16dBm | -30dBm | -1dBm | 4.5dB |
| DPA16G20S-08 | DWDM Midstage access Pre-amplifier，Max.Output 16dBm，Gain 20dB，with OSC，Midstage insertion loss 8dB | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DPA16G20-08 | DWDM Midstage access Pre-amplifier，Max.Output 16dBm，Gain 20dB，without OSC，Midstage insertion loss 8dB | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DPA16G25S | DWDM Pre-amplifier，Max.Output 16dBm，Gain 25dB，with OSC | 25dB | 16dBm | -30dBm | -6dBm | 4.5dB |
| DPA16G25 | DWDM Pre-amplifier，Max.Output 16dBm，Gain 25dB，without OSC | 25dB | 16dBm | -30dBm | -6dBm | 4.5dB |

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|---|---|---|---|---|---|---|
| DPA16G25S-08 | DWDM Midstage access Pre-amplifier, Max.Output 16dBm, Gain 25dB, with OSC, Midstage insertion loss 8dB | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DPA16G25-08 | DWDM Midstage access Pre-amplifier, Max.Output 16dBm, Gain 25dB, without OSC, Midstage insertion loss 8dB | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DPA16G30S-08 | DWDM Midstage access Pre-amplifier, Max.Output 16dBm, Gain 30dB, with OSC, Midstage insertion loss 8dB | 30dB | 16dBm | -30dBm | -11dBm | 5dB |
| DPA16G30-08 | DWDM Midstage access Pre-amplifier, Max.Output 16dBm, Gain 30dB, without OSC, Midstage insertion loss 8dB | 30dB | 16dBm | -30dBm | -11dBm | 5dB |
| DPA20G20S | DWDM Pre-amplifier, Max.Output 20dBm, Gain 20dB, with OSC | 20dB | 20dBm | -30dBm | 3dBm | 5dB |
| DPA20G20 | DWDM Pre-amplifier, Max.Output 20dBm, Gain 20dB, without OSC | 20dB | 20dBm | -30dBm | 3dBm | 5dB |
| DPA20G25S | DWDM Pre-amplifier, Max.Output 20dBm, Gain 25dB, with OSC | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DPA20G25 | DWDM Pre-amplifier, Max.Output 20dBm, Gain 25dB, without OSC | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DPA22G30S | DWDM Pre-amplifier, Max.Output 22dBm, Gain 30dB, with OSC | 30dB | 22dBm | -30dBm | -5dBm | 5dB |
| DPA22G30 | DWDM Pre-amplifier, Max.Output 22dBm, Gain 30dB, without OSC | 30dB | 22dBm | -30dBm | -5dBm | 5dB |
| **Bidi Pre-amplifier EDFA** | | | | | | |
| DPA16G20S-B | DWDM Bidi Pre-amplifier, Max.Output 16dBm, Gain 20dB, with OSC Pass 1528~1543 (Blue), Reflect 1547~1561nm (Red) | 20dB | 16dBm | -30dBm | -1dBm | 4.5dB |
| DPA16G20-B | DWDM Bidi Pre-amplifier, Max.Output 16dBm, Gain 20dB, without OSC Pass 1528~1543 (Blue), Reflect 1547~1561nm (Red) | 20dB | 16dBm | -30dBm | -1dBm | 4.5dB |
| DPA16G25S-B | DWDM Bidi Pre-amplifier, Max.Output 16dBm, Gain 25dB, with OSC Pass 1528~1543 (Blue), Reflect 1547~1561nm (Red) | 25dB | 16dBm | -30dBm | -6dBm | 4.5dB |

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|---|---|---|---|---|---|---|
| DPA16G25-B | DWDM Bidi Pre-amplifier，Max.Output 16dBm，Gain 25dB，without OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 25dB | 16dBm | -30dBm | -6dBm | 4.5dB |
| DPA16G20S-R | DWDM Bidi Pre-amplifier，Max.Output 16dBm，Gain 20dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 16dBm | -30dBm | -1dBm | 4.5dB |
| DPA16G20-R | DWDM Bidi Pre-amplifier，Max.Output 16dBm，Gain 20dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 16dBm | -30dBm | -1dBm | 4.5dB |
| DPA16G25S-R | DWDM Bidi Pre-amplifier，Max.Output 16dBm，Gain 25dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 16dBm | -30dBm | -6dBm | 4.5dB |
| DPA16G25-R | DWDM Bidi Pre-amplifier，Max.Output 16dBm，Gain 25dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 16dBm | -30dBm | -6dBm | 4.5dB |
| DPA20G20S-B | DWDM Pre-amplifier，Max.Output 20dBm，Gain 20dB，with OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 20dB | 20dBm | -30dBm | 3dBm | 5dB |
| DPA20G20-B | DWDM Pre-amplifier，Max.Output 20dBm，Gain 20dB，without OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 20dB | 20dBm | -30dBm | 3dBm | 5dB |
| DPA20G25S-B | DWDM Pre-amplifier，Max.Output 20dBm，Gain 25dB，with OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DPA20G25-B | DWDM Pre-amplifier，Max.Output 20dBm，Gain 25dB，without OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DPA22G30S-B | DWDM Pre-amplifier，Max.Output 22dBm，Gain 30dB，with OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 30dB | 22dBm | -30dBm | -5dBm | 5dB |
| DPA22G30-B | DWDM Pre-amplifier，Max.Output 22dBm，Gain 30dB，without OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 30dB | 22dBm | -30dBm | -5dBm | 5dB |

| | | | | | | |
|---|---|---|---|---|---|---|
| DPA20G20S-R | DWDM Pre-amplifier，Max.Output 20dBm，Gain 20dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 20dBm | -30dBm | 3dBm | 5dB |
| DPA20G20-R | DWDM Pre-amplifier，Max.Output 20dBm，Gain 20dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 20dBm | -30dBm | 3dBm | 5dB |
| DPA20G25S-R | DWDM Pre-amplifier，Max.Output 20dBm，Gain 25dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DPA20G25-R | DWDM Pre-amplifier，Max.Output 20dBm，Gain 25dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DPA22G30S-R | DWDM Pre-amplifier，Max.Output 22dBm，Gain 30dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 30dB | 22dBm | -30dBm | -5dBm | 5dB |
| DPA22G30-R | DWDM Pre-amplifier，Max.Output 22dBm，Gain 30dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 30dB | 22dBm | -30dBm | -5dBm | 5dB |

| Model | Description | Gain (dB) | Max. Output (dBm) | Min. Input (dBm) | Max. Input (dBm) | Typ. NF (dB) |
|---|---|---|---|---|---|---|
| **In-Line EDFA** | | | | | | |
| DLA16G20S | DWDM In-Line-Amp，Max.Output 16dBm，Gain 20dB，with OSC | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DLA16G20 | DWDM In-Line-Amp，Max.Output 16dBm，Gain 20dB，without OSC | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DLA16G20S-08 | DWDM Midstage access In-Line-Amp，Max.Output 16dBm，Gain 20dB，with OSC，Midstage insertion loss 8dB | 20dB | 16dBm | -30dBm | -1dBm | 6dB |
| DLA16G20-08 | DWDM Midstage access In-Line-Amp，Max.Output 16dBm，Gain 20dB，without OSC，Midstage insertion loss 8dB | 20dB | 16dBm | -30dBm | -1dBm | 6dB |
| DLA20G20S | DWDM In-Line-Amp，Max.Output 20dBm，Gain 20dB，with OSC | 20dB | 20dBm | -27dBm | 3dBm | 5dB |



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|---|---|---|---|---|---|---|
| DLA20G20 | DWDM In-Line-Amp，Max.Output 20dBm，Gain 20dB，without OSC | 20dB | 20dBm | -27dBm | 3dBm | 5dB |
| DLA20G20S-08 | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 20dB，with OSC，Midstage insertion loss 8dB | 20dB | 20dBm | -27dBm | 3dBm | 6dB |
| DLA20G20-08 | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 20dB，without OSC，Midstage insertion loss 8dB | 20dB | 20dBm | -27dBm | 3dBm | 6dB |
| DLA16G25S | DWDM In-Line-Amp，Max.Output 16dBm，Gain 25dB，with OSC | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DLA16G25 | DWDM In-Line-Amp，Max.Output 16dBm，Gain 25dB，without OSC | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DLA16G25S-08 | DWDM Midstage accessIn-Line-Amp，Max.Output 16dBm，Gain 25dB，with OSC，Midstage insertion loss 8dB | 25dB | 16dBm | -30dBm | -6dBm | 6dB |
| DLA16G25-08 | DWDM Midstage accessIn-Line-Amp，Max.Output 16dBm，Gain 25dB，without OSC，Midstage insertion loss 8dB | 25dB | 16dBm | -30dBm | -6dBm | 6dB |
| DLA20G25S | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，with OSC | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DLA20G25 | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，without OSC | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DLA20G25S-08 | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 25dB，with OSC，Midstage insertion loss 8dB | 25dB | 20dBm | -30dBm | -2dBm | 6dB |
| DLA20G25-08 | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 25dB，without OSC，Midstage insertion loss 8dB | 25dB | 20dBm | -30dBm | -2dBm | 6dB |
| **Bidi In-Line EDFA** | | | | | | |
| DLA16G20S-B | DWDM In-Line-Amp，Max.Output 16dBm，Gain 20dB，with OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DLA16G20-B | DWDM In-Line-Amp，Max.Output 16dBm，Gain 20dB，without OSC Pass 1528~1543（Blue），Reflect 1547~1561nm（Red） | 20dB | 16dBm | -30dBm | -1dBm | 5dB |

| | | | | | | |
|---|---|---|---|---|---|---|
| DLA16G20S-08-B | DWDM Midstage access In-Line-Amp，Max.Output 16dBm，Gain 20dB，with OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 20dB | 16dBm | -30dBm | -1dBm | 6dB |
| DLA16G20-08-B-B | DWDM Midstage access In-Line-Amp，Max.Output 16dBm，Gain 20dB，without OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 20dB | 16dBm | -30dBm | -1dBm | 6dB |
| DLA20G20S-B | DWDM In-Line-Amp，Max.Output 20dBm，Gain 20dB，with OSC<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 20dB | 20dBm | -27dBm | 3dBm | 5dB |
| DLA20G20-B | DWDM In-Line-Amp，Max.Output 20dBm，Gain 20dB，without OSC<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 20dB | 20dBm | -27dBm | 3dBm | 5dB |
| DLA20G20S-08-B | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 20dB，with OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 20dB | 20dBm | -27dBm | 3dBm | 6dB |
| DLA20G20-08-B | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 20dB，without OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 20dB | 20dBm | -27dBm | 3dBm | 6dB |
| DLA16G25S-B | DWDM In-Line-Amp，Max.Output 16dBm，Gain 25dB，with OSC<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 16dBm | -30dBm | -9dBm | 5dB |
| DLA16G25-B | DWDM In-Line-Amp，Max.Output 16dBm，Gain 25dB，without OSC<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DLA16G25S-08-B | DWDM Midstage accessIn-Line-Amp，Max.Output 16dBm，Gain 25dB，with OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 16dBm | -30dBm | -6dBm | 6dB |

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|---|---|---|---|---|---|---|
| DLA16G25-08-B | DWDM Midstage accessIn-Line-Amp，Max.Output 16dBm，Gain 25dB，without OSC，<br>Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 16dBm | -30dBm | -6dBm | 6dB |
| DLA20G25S-B | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，with OSC<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DLA20G25-B | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，without OSC<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DLA20G25S-08-B | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 25dB，with OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 20dBm | -30dBm | -2dBm | 6dB |
| DLA20G25-08-B | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 25dB，without OSC，Midstage insertion loss 8dB<br>Pass 1528~1543（Blue），<br>Reflect 1547~1561nm（Red） | 25dB | 20dBm | -30dBm | -2dBm | 6dB |
| DLA16G20S-R | DWDM In-Line-Amp，Max.Output 16dBm，Gain 20dB，with OSC<br>Pass 1547~1561nm（Red），<br>Reflect 1528~1543（Blue） | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DLA16G20-R | DWDM In-Line-Amp，Max.Output 16dBm，Gain 20dB，without OSC<br>Pass 1547~1561nm（Red），<br>Reflect 1528~1543（Blue） | 20dB | 16dBm | -30dBm | -1dBm | 5dB |
| DLA16G20S-08-R | DWDM Midstage access In-Line-Amp，Max.Output 16dBm，Gain 20dB，with OSC，<br>Midstage insertion loss 8dB<br>Pass 1547~1561nm（Red），<br>Reflect 1528~1543（Blue） | 20dB | 16dBm | -30dBm | -1dBm | 6dB |
| DLA16G20-08-R | DWDM Midstage access In-Line-Amp，Max.Output 16dBm，Gain 20dB，without OSC，<br>Midstage insertion loss 8dB<br>Pass 1547~1561nm（Red），<br>Reflect 1528~1543（Blue） | 20dB | 16dBm | -30dBm | -1dBm | 6dB |
| DLA20G20S-R | DWDM In-Line-Amp，Max.Output 20dBm，Gain 20dB，with OSC<br>Pass 1547~1561nm（Red），<br>Reflect 1528~1543（Blue） | 20dB | 20dBm | -27dBm | 3dBm | 5dB |

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|---|---|---|---|---|---|---|
| DLA20G20-R | DWDM In-Line-Amp，Max.Output 20dBm，Gain 20dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 20dBm | -27dBm | 3dBm | 5dB |
| DLA20G20S-08-R | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 20dB，with OSC，Midstage insertion loss 8dB Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 20dBm | -27dBm | 3dBm | 6dB |
| DLA20G20-08-R | DWDM Midstage accessIn-Line-Amp，Max.Output 20dBm，Gain 20dB，without OSC，Midstage insertion loss 8dB Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 20dB | 20dBm | -27dBm | 3dBm | 6dB |
| DLA16G25S-R | DWDM In-Line-Amp，Max.Output 16dBm，Gain 25dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DLA16G25-R | DWDM In-Line-Amp，Max.Output 16dBm，Gain 25dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 16dBm | -30dBm | -6dBm | 5dB |
| DLA16G25S-08-R | DWDM Midstage accessIn-Line-Amp，Max.Output 16dBm，Gain 25dB，with OSC，Midstage insertion loss 8dB Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 16dBm | -30dBm | -6dBm | 6dB |
| DLA16G25-08-R | DWDM Midstage accessIn-Line-Amp，Max.Output 16dBm，Gain 25dB，without OSC，Midstage insertion loss 8dB Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 16dBm | -30dBm | -6dBm | 6dB |
| DLA20G25S-R | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，with OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DLA20G25-R | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，without OSC Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |
| DLA20G25S-08-R | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，with OSC Midstage insertion loss 8dB Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |

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|---|---|---|---|---|---|---|
| DLA20G25-08-R | DWDM In-Line-Amp，Max.Output 20dBm，Gain 25dB，without OSC Midstage insertion loss 8dB Pass 1547~1561nm（Red），Reflect 1528~1543（Blue） | 25dB | 20dBm | -30dBm | -2dBm | 5dB |

## Chassis Model

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|---|---|
| CH04 | 1U 4-Slot Chassis, 1-Slot for Management, 3-slot for Service, two power supplies |
| CH08 | 2U 8-Slot Chassis, 1-Slot for Management, 7-slot for Service, two power supplies |
| CH20 | 5U 20-Slot Chassis, 1-Slot for Management, 19-slot for Service, two power supplies |