Optical Amplifiers

2RU Optical Amplifier:

ATX presents the FLEDFA series of low cost, high quality, high powered optical amplifiers. They adopt the latest cladding pump with photonic integration technology to yield high optical amplification, while maintaining low noise to provide superior transmission of video, voice & data. The fully self-contained 2RU rack mounted amplifiers may be customized with internal WDMs & splitters allowing support of FTTx (E-PON, G-PON, RFoG) or HFC networks without the need for shelves of WDM couplers and a mountain of optical jumpers.

Applications:

- GPON/EPON RF overlay access networks
- Interoffice video transport networks
- RFoG access networks
- HFC networks

Features & Benefits:

- Low noise, high performance for the highest video quality
- Front access optical connections for easy maintenance
- Remote management using SNMP allows operations integration
- Built-in WDMs to simplify installation and improve reliability
- AC or DC powering to optimize the power system for each installation

WDM Options:

HFC

- 1550 forward, 1310 return
  The HFC WDM splits off the 1310nm return signal and directs it to the return connector on the front panel.

RFoG

- 1550 forward, 1610 return
  The RFoG WDM splits off the 1610nm return signal and directs it to the return connector on the front panel.

PON

- 1550 forward, 1490/1310 PON
  The PON WDM inserts the EDFA output onto a BPON, EPON or GPON network. The PON wavelengths are directed to the OLT connector on the front panel.

PON + RFoG

- 1550 forward, 1490/1310 PON, 1610 return
  The PON + RFoG WDM inserts the EDFA output onto a BPON, EPON or GPON network. It also separates the 1610 return wavelength. The PON & RF return signals are directed to the OLT & return connectors on the front panel.
## 2RU Optical Amplifier Specifications

### GENERAL
- **DIMENSIONS**: 3.5"H x 19.0"W x 14.5"D (8.89H x 48.26W x 36.83D cm) (2RU Rack Mount)
- **WEIGHT**: 30.0 lbs (13.6 kg)
- **OPTICAL CONNECTORS**: SC/APC, LC/APC

### ELECTRICAL
- **AC POWER**: 90-265 VAC, 50/60 Hz (Universal AC)
- **DC POWER (Optional)**: -36 to -60 VDC (Fuse for 3 Amps)
- **POWER CONSUMPTION**: 80 Watts

### ENVIRONMENTAL
- **OPERATING TEMPERATURE RANGE**: 0°C to +50°C (+32°F to +122°F)
- **STORAGE TEMPERATURE RANGE**: -40°C to +85°C (-40°F to +185°F)
- **HUMIDITY**: 5-95% (Non-condensing)

### OPTICAL PERFORMANCE
- **WAVELENGTH**: 1540-1560nm
- **INPUT POWER**: 0 dB to +10 dB (3 dB Typical)
- **TOTAL OUTPUT POWER**: +28 dBm to +37 dBm
- **OUTPUT PORT SPLIT**: 4, 8, 16, 32
- **NOISE FIGURE**: 5.5 dB Typical @ +3 dB Input
- **OUTPUT POWER STABILITY**: +/- 0.2 (0°C to +50°C)
- **PUMP LEAKAGE**: < -30 dB
- **RETURN LOSS**: > 55 dB

### MANAGEMENT
- **LOCAL DISPLAY**: Backlit LCD with Menus, Status LEDs
- **LOCAL CONTROL**: Menu Keys, Laser Switch
- **CONFIGURATION**: RS232/485 Terminal on Front Panel
- **REMOTE MONITORING**: RJ45/LAN with SNMP on Front Panel

### Ordering Information

<table>
<thead>
<tr>
<th>Example Part Number:</th>
<th>FLEDFA-Ç-P-WDM-PS-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>Port Count (4, 8, 16, 32)</td>
</tr>
<tr>
<td>2</td>
<td>P</td>
</tr>
<tr>
<td>P</td>
<td>Output Power/Port (13, 16, 18, 21 dBm)</td>
</tr>
<tr>
<td>3</td>
<td>WDM</td>
</tr>
<tr>
<td>WDM</td>
<td>WDM Type (None, HFC, RFoG, PON, PON + RFoG)</td>
</tr>
<tr>
<td>4</td>
<td>PS</td>
</tr>
<tr>
<td>PS</td>
<td>Power Supply Voltage (AC, DC)</td>
</tr>
<tr>
<td>5</td>
<td>R</td>
</tr>
<tr>
<td>R</td>
<td>Redundant Power Supplies (None, R)</td>
</tr>
<tr>
<td>Blank</td>
<td>Optional</td>
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Specifications subject to change without notice.
**1RU Optical Amplifier:**

ATX’s 1RU optical amplifiers are equipped with the latest optical amplification technology to provide high quality, reliable system performance, with low power consumption. These fully self-contained rack mounted amplifiers may be configured to deliver 13-24 dBm total optical power with constant power control and 1-4 output ports, making them ideal for HFC and long distance applications. Features include power level monitoring, user friendly front panel display, & SNMP (SCTE-HMS MIBs) remote management with alarms allowing them to serve both manned & unmanned headend & hub applications.

**Applications:**
- GPON/EPON RF feeder networks
- Interoffice video transport networks
- HFC optical distribution networks

**Features & Benefits:**
- Low noise, high performance for optimal video transport
- Remote management using SNMP for operations integration
- AC or DC powering to optimize the power options for each installation
- Compact 1RU design to minimize headend footprint

### 1RU Optical Amplifier Specifications

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
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<tbody>
<tr>
<td><strong>GENERAL</strong></td>
<td></td>
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<tr>
<td><strong>DIMENSIONS</strong></td>
<td>1.75&quot;H x 19.0&quot;W x 14.2&quot;D (4.45H x 48.26W x 36.07D cm) (1RU Rack Mount)</td>
</tr>
<tr>
<td><strong>WEIGHT</strong></td>
<td>7.0 lbs (3.2 kg)</td>
</tr>
<tr>
<td><strong>OPTICAL CONNECTORS</strong></td>
<td>SC/APC on Rear Panel</td>
</tr>
</tbody>
</table>

**ELECTRICAL**
- **AC POWER** 90-265 VAC, 50/60 Hz (Universal AC)
- **DC POWER (Optional)** -36 to -60 VDC (Fuse for 2 Amps)
- **POWER CONSUMPTION** 50 Watts (max)

**ENVIRONMENTAL**
- **OPERATING TEMPERATURE RANGE** 0°C to +50°C (+32°F to +122°F)
- **STORAGE TEMPERATURE RANGE** -40°C to +85°C (-40°F to +185°F)
- **HUMIDITY** 5-95% (Non-condensing)

**OPTICAL PERFORMANCE**
- **WAVELENGTH** 1540-1564nm
- **INPUT POWER** -10 dB to +10 dB (3 dB Typical)
- **TOTAL OUTPUT POWER** +13 dBm to +24 dBm
- **OUTPUT PORT SPLIT** 1, 2, 4
- **NOISE FIGURE** 4.5 dB Typical @ +3 dB Input
- **OUTPUT POWER STABILITY** +/- 0.2 (Constant Power Control)
- **PUMP LEAKAGE** < -30 dBm
- **RETURN LOSS** > 55 dB

**MANAGEMENT**
- **STATUS DISPLAY** Backlit LCD with Menus, Status LEDs
- **LOCAL CONTROL** Menu Keys, Keyed Laser Switch
- **CONFIGURATION** RS232 Terminal on Rear Panel
- **REMOTE MONITORING** RJ45/LAN with SNMP on Rear Panel
1RU Optical Amplifier:

Ordering Information

<table>
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<tbody>
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<td>FLEDFA-SPS-P-R</td>
</tr>
</tbody>
</table>

1. C = Port Count (1, 2, 4)
2. P = Output Power/Port (10, 13, 16, 18, 21 dBm)
3. PS = Power Supply Type (AC, DC)
4. R = Redundant Power Supplies (None, R)