



## Gigabit Passive Optical Network

GPON End-to-End Solution

High-Performance OLTs

Low-Cost, Robust ONU CPEs

Models: UF-OLT, UF-OLT-4, UF-Nano,  
UF-LOCO, UF-WIFI, UF-Instant





## High-Performance GPON

Configuring a fiber network just became as easy as setting up a smartphone. Say goodbye to command lines, manuals, and paid support licenses. Introducing U Fiber from Ubiquiti – a fiber solution that anyone can deploy.

UFiber offers internet and telecom service providers a cost-effective fiber optic delivery system for Triple Play Services (data, voice, IPTV/VoD) with speeds of up to 2.488 Gbps downstream and 1.244 Gbps upstream.

A UFiber network consists of two device types, the OLT (Optical Line Terminal), which is deployed at the provider premises, and the ONU (Optical Network Unit), which is deployed at the customer's location. An OLT can connect up to 128 ONU clients per port.

- **OLT** UFiber OLT or OLT-4
- **ONU** UFiber UF-Nano, UF-LOCO, UF-WIFI, or UF-Instant client, which functions as a CPE (Customer Premises Equipment)

## Controller Software

Ubiquiti distinguishes itself with powerful and intuitive management software that is included at no additional cost.

UFiber networks are intelligently managed using UNMS™ (Ubiquiti® Network Management System), a comprehensive management controller. It features a graphical UI that is easy to learn and navigate. UNMS manages all of the registered UFiber OLTs and their ONU clients.

### Features

- Intuitive, Graphical Web UI
- Quick Configuration and Deployment of UFiber Devices
- Centralized Management of Multiple GPON Networks/Sites
- Visual Reports for Efficient Monitoring and Troubleshooting
- Linux-based Software Installation
- Bundled Software – No Licensing or Support Fees



## Optical Line Terminal

UFiber OLT supports up to 128 ONU CPEs per GPON port with physical links of up to 20 km in distance. It also features SFP+ connectivity for uplinking. The UFiber OLT can be mounted in a 1U rack, mounted on a wall, or placed on a desktop.

Management options include the Gigabit Ethernet port (out-of-band), RJ45 serial console port (CLI), and uplink (in-band) – configured via the UFiber UI or UNMS.

### 8-Port GPON Optical Line Terminal

- (8) GPON SFP and (2) SFP+ Ports
- 1024 ONUs Total Concurrent Clients (128 Clients per Port)
- 40W Max. Power Consumption
- Hot-Swappable Power Module(s)
  - AC/DC Power Module (Included)
  - DC/DC Power Module (Optional)



UF-OLT-4



UF-OLT

### GPON Performance

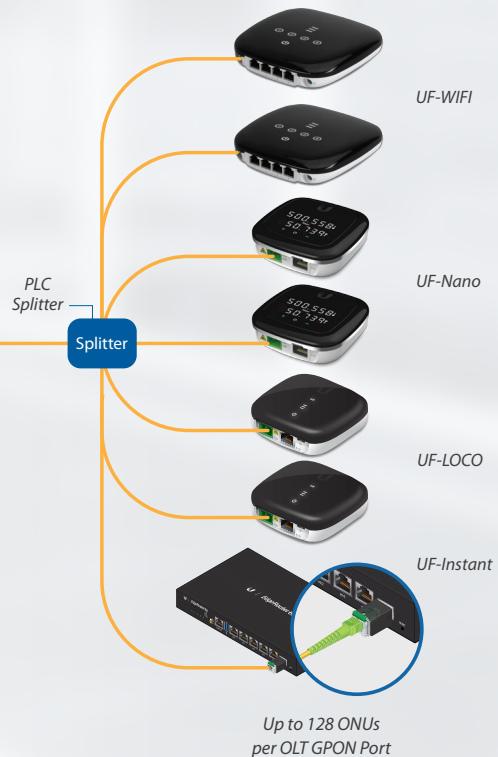
| Detail      | Downstream | Upstream   |
|-------------|------------|------------|
| GPON Speeds | 2.488 Gbps | 1.244 Gbps |
| Wavelengths | 1490 nm    | 1310 nm    |



UF-OLT

### 4-Port GPON Optical Line Terminal

- (4) GPON SFP and (1) SFP+ Ports
- 512 ONUs Total Concurrent Clients (128 Clients per Port)
- 35W Max. Power Consumption
- 100-240VAC, 50/60 Hz, Universal Power Input and Secondary Power Option: 24VDC



## Optical Network Unit

Ubiquiti offers a variety of GPON ONU models to suit any application. Each can be easily mounted on an indoor wall.

### UFiber Nano G

Featuring an informational LED display, the UFiber Nano™ G is a robust, high-performance GPON CPE housed in a sophisticated design. It is powered by 24V passive PoE.

- (1) GPON WAN Port and (1) Gigabit LAN Ethernet Port
- Digital Display LED for Status Reporting
- 7W Max. Power Consumption



UF-Nano



UF-LOCO

### UFiber WiFi

UFiber WiFi is a robust, high-performance GPON CPE that offers routing, four LAN ports, and Wi-Fi. It is powered by 24V passive PoE or a 24V, 0.5A power adapter.

- (1) GPON WAN Port and (4) Gigabit Ethernet Ports
- 802.11n Wi-Fi
- 7W Max. Power Consumption

### UFiber loco

The sleek UFiber loco is a robust, high-performance GPON CPE that features extremely low power consumption and the choice of 24V passive PoE or Micro-USB power.

- (1) GPON WAN Port and (1) Gigabit LAN Ethernet Port
- 3.5W Max. Power Consumption
- Powered by 24V Passive PoE or Micro-USB Power Adapter\*

\* Included only in the single-pack



UF-WIFI



UF-Instant

### UFiber Instant

The UFiber Instant is a high-performance GPON CPE in the form factor of an SFP module. It features an SGMII Ethernet LAN port and is powered by SFP.

- (1) GPON WAN Port and (1) SGMII Ethernet Port
- 2W Max. Power Consumption
- Powered by SFP

For information on compatible Ubiquiti devices, visit: [ubnt.link/Using-UF-Instant](http://ubnt.link/Using-UF-Instant)

## Module Accessories

### GPON OLT SFP Modules

The UFiber OLT's GPON SFP ports are designed for use with the UF-GP-B+ and UF-GP-C+ SFP modules.

Each model, the UF-OLT or UF-OLT-4, includes one UF-GP-B+ module; additional modules can be purchased separately.

### Model Comparison



|                      | UF-GP-B+          | UF-GP-C+          |
|----------------------|-------------------|-------------------|
| Supported Media      | Single-Mode Fiber | Single-Mode Fiber |
| Connector Type       | (1) SC/UPC        | (1) SC/UPC        |
| TX Wavelength        | 1490 nm           | 1490 nm           |
| RX Wavelength        | 1310 nm           | 1310 nm           |
| TX Power Range       | 1.5 to 5 dBm      | 3 to 7 dBm        |
| RX Power Range       | -28 to -8 dBm     | -30 to -12 dBm    |
| Downstream Data Rate | 2.5 Gbps          | 2.5 Gbps          |
| Upstream Data Rate   | 1.25 Gbps         | 1.25 Gbps         |
| Cable Distance       | 20 km             | 20 km             |
| Pack Options         | 20-Pack           | 20-Pack           |

### Power Modules

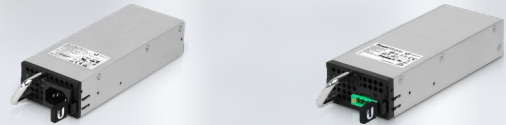
The UF-OLT comes with one AC/DC power module pre-installed and features two modular power adapter bays for flexible power options:

**Backup Power** The second power bay can house a backup power module. If the UF-OLT detects failure of the primary power module, the backup module automatically activates to supply uninterrupted power.

**DC/DC Power** Both power bays can also house a DC/DC power module for use with DC power.

Available power modules are: RPS-AC-100W and RPS-DC-100W.

### Model Comparison



|                      | RPS-AC-100W                 | RPS-DC-100W                 |
|----------------------|-----------------------------|-----------------------------|
| Power Type           | AC/DC                       | DC/DC                       |
| Input Voltage Range  | 90-264VAC                   | 38-54VDC                    |
| Output Voltage Range | 24-26VDC                    | 23-25V                      |
| Operating Temp.      | -10 to 45° C (14 to 104° F) | -10 to 50° C (14 to 122° F) |
| Operating Humidity   | 5 to 95% Noncondensing      | 5 to 95% Noncondensing      |

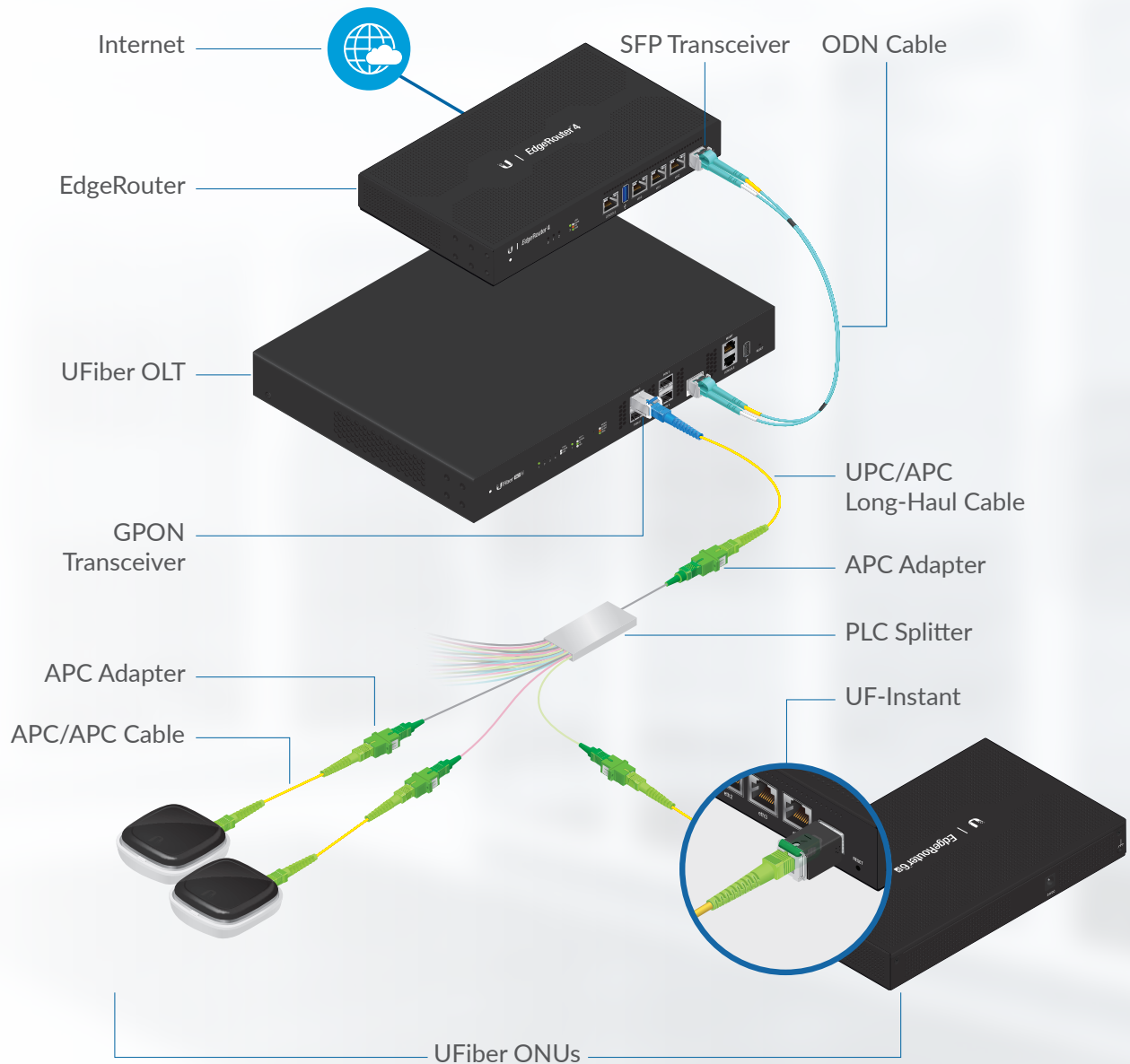
## GPON Network Accessories

To help you design and deploy your GPON networks, Ubiquiti offers the following accessories:

- SC/APC Adapters
- Patch Cables
- PLC Splitters

The diagram\* below illustrates the basic topology for a GPON network using U Fiber accessories with U Fiber OLT and ONU equipment. Each GPON port of the OLT supports up to 128 ONUs.

\* Cable lengths are not shown to scale for maximum clarity.



U Fiber GPON Network Topology Example

### Adapter

Ubiquiti also offers an adapter, model UF-ADAPTER-APC, to connect cables with SC/APC-type connectors. Available in 50-packs



UF-ADAPTER-APC

| UF-ADAPTER-APC        |  |
|-----------------------|--|
| Connectors            | (1) SC/APC                                 |
| Insertion Loss        | ≤ 0.2 dB                                   |
| Durability            | < 0.2 dB Typical Change (1000 Matings)     |
| Operating Temperature | -40 to +85° C (-40 to +185° F)             |
| Compliance            | Telcordia, ANSI, TIA/EIA, NTT, and JIS     |
| Dimensions            | 27.5 x 12.9 x 9.2 mm (1.08 x 0.50 x 0.36") |

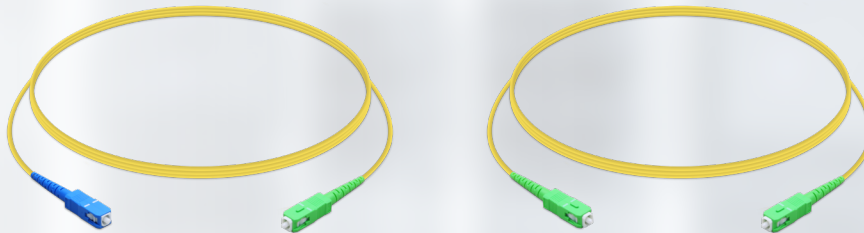
### Patch Cables

Ubiquiti offers two patch cables to help you build out your GPON networks:

- UF-SM-PATCH-UPC-APC
- UF-SM-PATCH-APC-APC

Each patch cable is available as a single-pack.

### Model Comparison



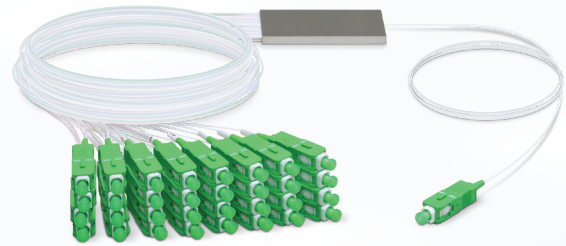
|                | UF-SM-PATCH-UPC-APC   | UF-SM-PATCH-APC-APC                      |
|----------------|---|--|
| Connectors     | (1) SC/UPC, (1) SC/APC  | (2) SC/APC                               |
| Insertion Loss | ≤ 0.3 dB  | ≤ 0.3 dB                                 |
| Return Loss    | UPC: ≥ 50 dB<br>APC: ≥ 60 dB  | ≥ 60 dB                                  |
| Cable Type     | SM9/125 SX 2.0 mm, PVC Jacket, Yellow   | SM9/125 SX 2.0 mm, PVC Jacket, Yellow    |
| Connectors     | (1) SC/UPC 2.0 mm SM SX Connector, Blue<br>(1) SC/APC 2.0 mm SM SX Connector, Green | (2) SC/APC 2.0 mm SM SX Connector, Green |
| Total Length   | 1.5 m (59.1")   | 1.5 m (59.1")                            |

### PLC Splitters

Ubiquiti offers four PLC splitters that provide from 4 to 32 outputs.

- UF-SPLITTER-4
- UF-SPLITTER-8
- UF-SPLITTER-16
- UF-SPLITTER-32

Each model is available as a single-pack.



UF-SPLITTER-32

### Model Comparison



|                                | UF-SPLITTER-4                | UF-SPLITTER-8                | UF-SPLITTER-16               | UF-SPLITTER-32               |
|--------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Input                          | (1) SC/APC                   | (1) SC/APC                   | (1) SC/APC                   | (1) SC/APC                   |
| Outputs                        | (4) SC/APC                   | (8) SC/APC                   | (16) SC/APC                  | (32) SC/APC                  |
| Insertion Loss with Connectors | 7.4 dB                       | 10.5 dB                      | 13.7 dB                      | 17.0 dB                      |
| Uniformity Loss                | 0.6 dB                       | 0.8 dB                       | 1.2 dB                       | 1.5 dB                       |
| Polarization Dependent Loss    | 0.3 dB                       | 0.3 dB                       | 0.3 dB                       | 0.3 dB                       |
| Wavelength Bandwidth           | 1260-1650 nm                 | 1260-1650 nm                 | 1260-1650 nm                 | 1260-1650 nm                 |
| Return Loss (All Ports)        | 50 dB                        | 50 dB                        | 50 dB                        | 50 dB                        |
| Directivity                    | 55 dB                        | 55 dB                        | 55 dB                        | 55 dB                        |
| Fiber Type                     | G657A1                       | G657A1                       | G657A1                       | G657A1                       |
| Operating Temperature          | -40 to 85° C (-40 to 185° F) | -40 to 85° C (-40 to 185° F) | -40 to 85° C (-40 to 185° F) | -40 to 85° C (-40 to 185° F) |
| Total Length                   | 4.06 m (13.32')              | 4.06 m (13.32')              | 4.06 m (13.32')              | 4.08 m (13.39')              |
| Weight                         | 58 g (2.0 oz)                | 62 g (2.2 oz)                | 110 g (3.9 oz)               | 160 g (5.6 oz)               |



| 8-Port GPON Optical Line Terminal (Model: UF-OLT) |  |
|---|--|
| Dimensions  | 442.4 x 285.6 x 43.7 mm<br>(17.42 x 11.24 x 1.72")   |
| Weight<br>(with Mount Brackets)                   | 4.40 kg (9.70 lb)<br>4.495 kg (9.91 lb)  |
| Networking Interfaces                             | (8) GPON OLT SFP<br>(2) 1G/10G SFP+  |
| Concurrent Clients                                | 1024 Registered ONUs/ONTs<br>(128 per GPON Port)   |
| Management Interfaces                             | (1) Ethernet for Out-of-Band Management<br>(1) RJ45 Serial Console Port<br>(2) Uplink for In-Band Management |
| GPON Speeds                                       | 2.488 Gbps Downstream<br>1.244 Gbps Upstream   |
| Operating Wavelengths                             | 1490 nm TX<br>1310 nm RX   |
| Normal Optical Power Range                        | TX (Class B+): 1.5 to 5 dBm<br>RX: -28 to -8 dBm   |
| Max. Fiber Distance                               | 20 km*   |
| Power Method                                      | 100-240VAC, 100W AC/DC Power Module<br>(Included)<br>38-54VDC, 100W DC/DC Power Module<br>(Optional)         |
| Power Supply                                      | (1) 25V, 100W AC/DC PSU Module (Included)  |
| Max. Power Consumption                            | 40W (Excluding SFP Modules)  |
| Operating Mode                                    | OLT GPON Core and Layer 2 Ethernet Switch  |
| Advanced QoS                                      | Supports 8 Priority Queues per User Port and<br>Traffic Classification                                       |
| Processor Specs                                   | MIPS 1004kc, 880 MHz Dual Core   |
| Memory Information                                | 512 MB DDR3, 512 MB NAND   |
| Operating Temperature                             | -10 to 45° C (14 to 113° F)  |
| Operating Humidity                                | 10 to 90% Noncondensing  |
| Certifications                                    | CE, FCC, IC  |



\* Distance varies according to your optical network design.  
For details, visit: [ubnt.link/Designing-a-GPON-Network](http://ubnt.link/Designing-a-GPON-Network)

| 4-Port GPON Optical Line Terminal (Model: UF-OLT-4) |  |
|---|--|
| Dimensions  | 299.80 x 258.95 x 42.55 mm<br>(11.80 x 10.19 x 1.68")  |
| Weight<br>(with Mount Brackets)                     | 1.93 kg (4.25 lb)<br>2.13 kg (4.70 lb)   |
| Networking Interfaces                               | (4) GPON OLT SFP<br>(1) 1G/10G SFP+  |
| Concurrent Clients                                  | 512 Registered ONUs/ONTs<br>(128 per GPON Port)  |
| Management Interfaces                               | (1) Ethernet for Out-of-Band Management<br>(1) RJ45 Serial Console Port<br>(1) Uplink for In-Band Management |
| GPON Speeds   | 2.488 Gbps Downstream<br>1.244 Gbps Upstream   |
| Operating Wavelengths                               | 1490 nm TX<br>1310 nm RX   |
| Normal Optical Power Range                          | TX (Class B+): 1.5 to 5 dBm<br>RX: -28 to -8 dBm   |
| Max. Fiber Distance                                 | 20 km*   |
| Power Method  | 100-240VAC, 50/60 Hz, Universal Input<br>24VDC   |
| Power Supply  | AC/DC Internal 56W DC  |
| Max. Power Consumption                              | 35W (Excluding SFP Modules)  |
| Operating Mode                                      | OLT GPON Core and Layer 2 Ethernet Switch  |
| Advanced QoS  | Supports 8 Priority Queues per User Port and<br>Traffic Classification                                       |
| Processor Specs                                     | MIPS 1004kc, 880 MHz Dual Core   |
| Memory Information                                  | 512 MB DDR3, 512 MB NAND   |
| Operating Temperature                               | -10 to 45° C (14 to 113° F)  |
| Operating Humidity                                  | 10 to 90% Noncondensing  |
| Certifications                                      | CE, FCC, IC  |



\* Distance varies according to your optical network design.  
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| UFiber Nano G (Model: UF-Nano) |   |
|--------------------------------|---|
| Dimensions                     | 77 x 77 x 28 mm (3.03 x 3.03 x 1.1")                                    |
| Weight                         | 110 g (3.88 oz)   |
| Networking Interfaces          | (1) SC/APC, GPON WAN<br>(1) Gigabit RJ45, Ethernet LAN                  |
| Networking Interface Speeds    | (1) GPON WAN, ITU G.984<br>2.488 Gbps Downstream<br>1.244 Gbps Upstream |
|                                | (1) GbE LAN<br>10/100/1000 Mbps   |
| Management Interface           | In-Band Ethernet/PON  |
| Normal Optical Power Range     | TX (Class B+): 1.5 to 5 dBm<br>RX: -28 to -8 dBm                        |
| Power Method                   | Passive PoE (Pins +4, 5; -7, 8)<br>Dying Gasp Support                   |
| Power Supply                   | PoE Adapter: 24V, 0.3A (Included)                                       |
| Max. Power Consumption         | 7W  |
| Supported Voltage Range        | 20V to 28V  |
| Processor Specs                | MIPS32, 240 MHz   |
| Memory Information             | 128 MB DDR3   |
| Buttons                        | (1) Display Information<br>(1) Reset                                    |
| Operating Temperature          | -10 to 45° C (14 to 113° F)   |
| Operating Humidity             | 5 to 95% Noncondensing  |
| Certifications                 | CE, FCC, IC   |



| UFiber loco (Model: UF-LOCO) |  |
|------------------------------|--|
| Dimensions                   | 76.5 x 76.5 x 26.4 mm (3.01 x 3.01 x 1.04")              |
| Weight                       | 77 g (2.72 oz)   |
| Networking Interfaces        | (1) SC/APC, GPON WAN<br>(1) Gigabit RJ45, Ethernet LAN   |
| Networking Interface Speeds  | 2.488 Gbps Downstream<br>1.244 Gbps Upstream             |
| GPON WAN, ITU G.984          |  |
| GbE LAN                      | 10/100/1000 Mbps   |
| Management Interface         | In-Band Ethernet/PON                                     |
| Normal Optical Power Range   | TX (Class B+): 1.5 to 5 dBm<br>RX: -28 to -8 dBm         |
| Power Method                 | Micro-USB: 5V, 1A<br>24V Passive PoE (Pins +4, 5; -7, 8) |
| Power Supply                 | Micro-USB Power Adapter*: 5V, 1A                         |
| Max. Power Consumption       | 3.5W   |
| Supported Voltage Range      | 4.7 to 5.3V  |
| Processor Specs              | MIPS32, 240 MHz  |
| Memory Information           | 128 MB DDR3  |
| Buttons                      | (1) Reset  |
| Operating Temperature        | -10 to 45° C (14 to 113° F)                              |
| Operating Humidity           | 10 to 90% Noncondensing                                  |
| Certifications               | CE, FCC, IC  |

\* Included only in the single-pack of the UF-LOCO



| UFiber WiFi (Model: UF-WIFI)                       |  |
|--|--|
| Dimensions   | 126.34 x 126.09 x 31.65 mm<br>(4.97 x 4.96 x 1.25")                          |
| Weight   | 190 g (6.70 oz)  |
| Networking Interfaces                              | (1) SC/APC, GPON WAN<br>(4) Gigabit RJ45, Ethernet LAN<br>(1) Wi-Fi, 802.11n |
| Networking Interface Speeds<br>GPON WAN, ITU G.984 | 2.488 Gbps Downstream<br>1.244 Gbps Upstream                                 |
| GbE LAN  | 10/100/1000 Mbps   |
| Wi-Fi  | 300 Mbps   |
| Management Interface                               | In-Band Ethernet/PON   |
| Normal Optical Power Range                         | TX (Class B+): 1.5 to 5 dBm<br>RX: -28 to -8 dBm                             |
| Power Method                                       | DC Jack, 24VDC<br>24V Passive PoE (Pins 4, 5+; 7, 8-)                        |
| Power Supply                                       | 100-240VAC, 50/60 Hz Universal AC/DC<br>Power Adapter: 24V, 0.5A             |
| Max. Power Consumption                             | 7W   |
| Supported Voltage Range                            | 20 to 28V  |
| Processor Specs                                    | MIPS, 900 MHz  |
| Memory Information                                 | 256 MB DDR   |
| Buttons  | (1) Reset  |
| Operating Temperature                              | -10 to 45° C (14 to 113° F)  |
| Operating Humidity                                 | 10 to 90% Noncondensing  |
| Certifications                                     | CE, FCC, IC  |



| UFiber Instant (Model: UF-Instant)                 |   |
|--|---|
| Dimensions   | 69.46 x 13.70 x 11.30 mm<br>(2.74 x 0.54 x 0.45") |
| Weight   | 30 g (0.96 oz)                                    |
| Networking Interfaces                              | (1) SC/APC, GPON WAN<br>(1) SGMII Ethernet LAN    |
| Networking Interface Speeds<br>GPON WAN, ITU G.984 | 2.488 Gbps Downstream<br>1.244 Gbps Upstream      |
| GbE LAN  | 1 Gbps  |
| Management Interface                               | In-Band Ethernet<br>PON                           |
| Normal Optical Power Range                         | TX (Class B+): 1.5 to 5 dBm<br>RX: -28 to -8 dBm  |
| Power Method                                       | SFP   |
| Power Supply                                       | 3.3V  |
| Max. Power Consumption                             | 2W  |
| Supported Voltage Range                            | 3.3V  |
| Processor Specs                                    | MIPS 100 MHz                                      |
| Memory Information                                 | 32 MB DDR   |
| Operating Temperature                              | -10 to 45° C (14 to 113° F)                       |
| Operating Humidity                                 | 10 to 90% Noncondensing                           |
| Certifications                                     | CE, FCC, IC                                       |

