UFiber

DATASHEET

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 UFiber 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.

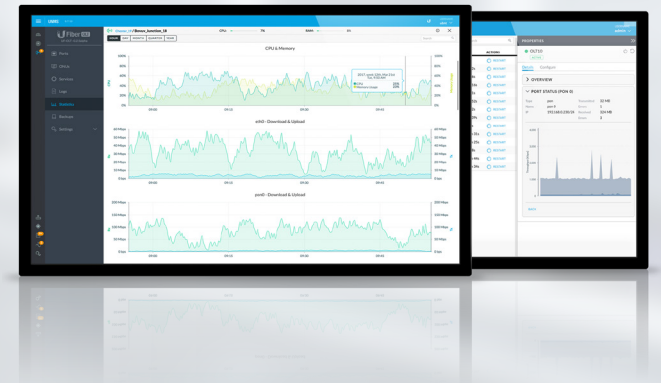
A UFiber network consists of two device types, the OLT (Optical Line Terminal), which is deployed at the provider premises, and the ONU (Optical Network Unit), which is deployed at the customer's location. An OLT can connect up to 128 ONU clients per port.

- **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.

GPON Performance

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

8-Port GPON Optical Line Terminal

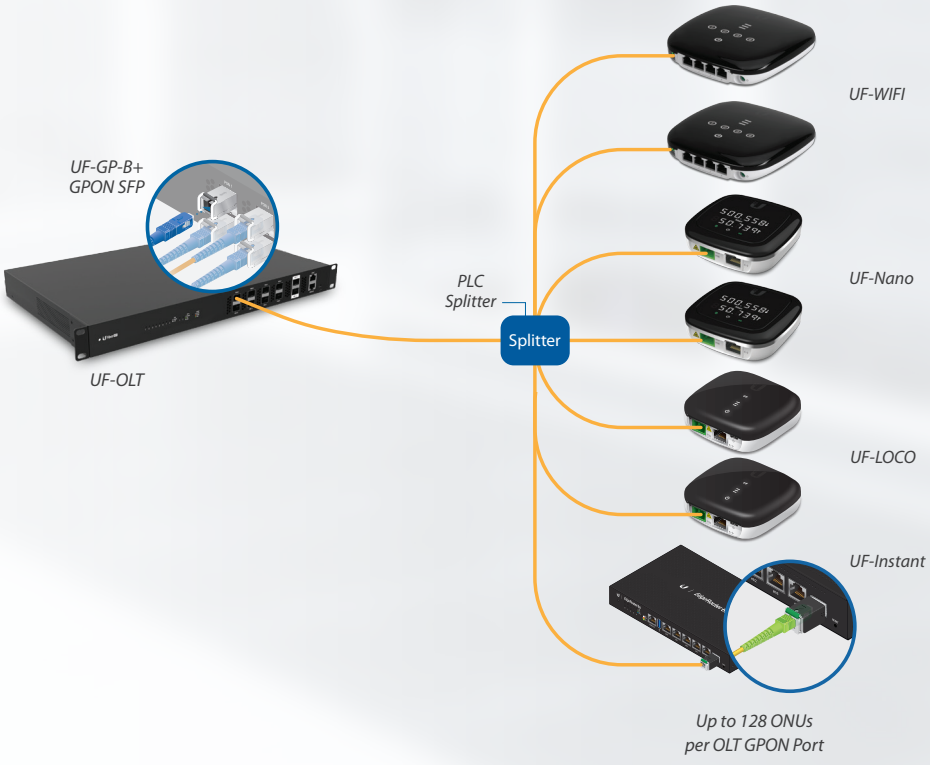
- (8) GPON SFP and (2) SFP+ Ports
- 1024 ONUs Total Concurrent Clients (128 Clients per Port)
- 40W Max. Power Consumption
- Hot-Swappable Power Module(s)
  - AC/DC Power Module (Included)
  - DC/DC Power Module (Optional)

UF-OLT

UF-OLT-4

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 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*

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

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

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

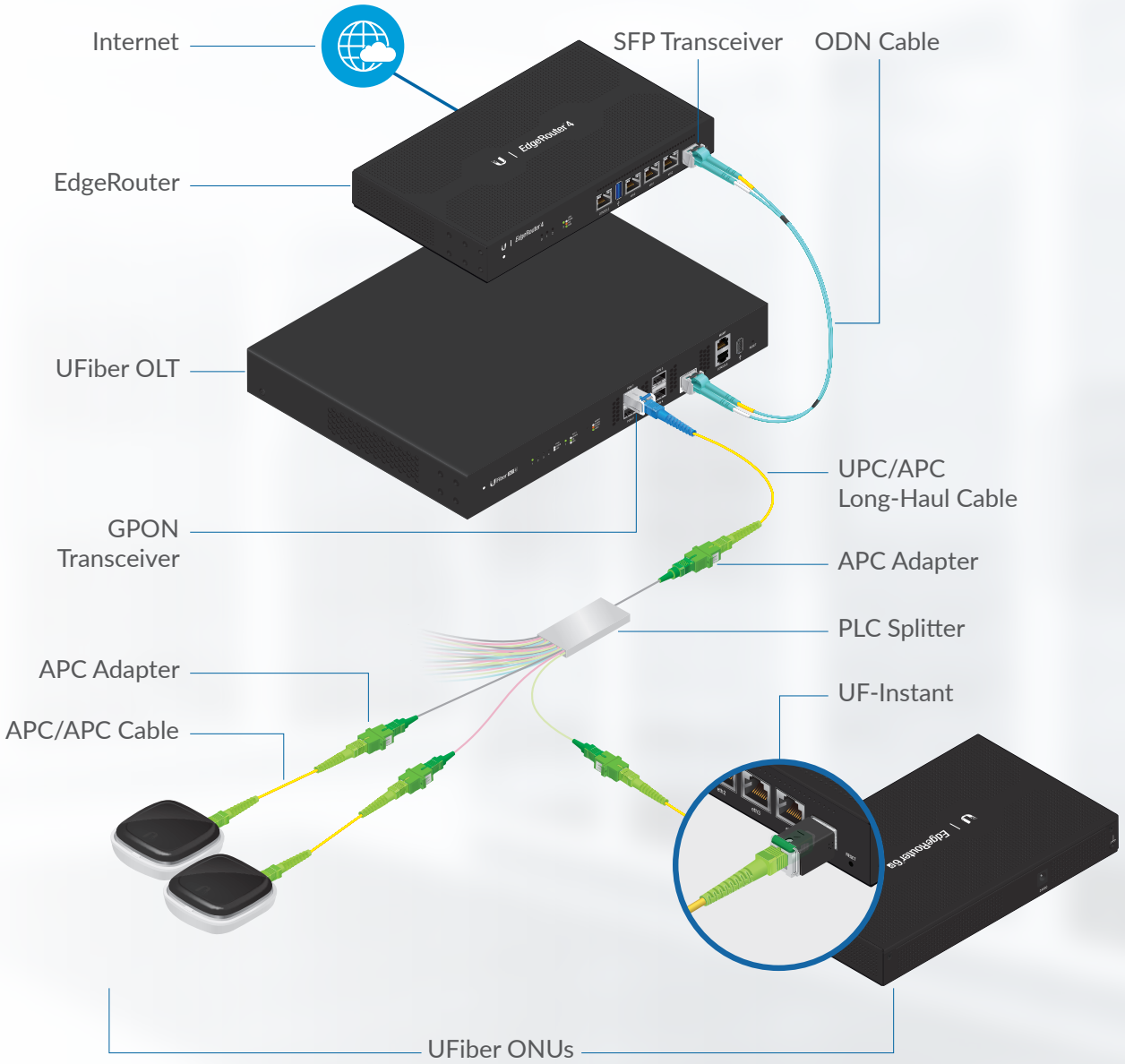
GPON Network Accessories

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 UFiber accessories with UFiber 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.*



UFiber 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")

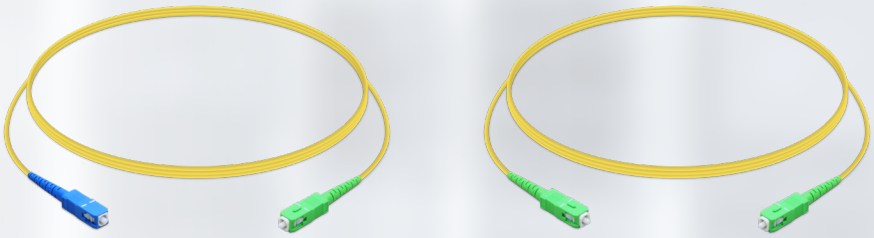
Patch Cables

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



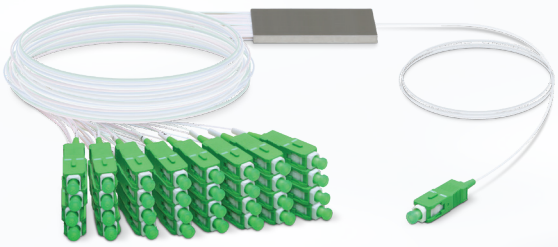
	UF-SM-PATCH-UPC-APC	UF-SM-PATCH-APC-APC
Connectors	(1) SC/UPC, (1) SC/APC	(2) SC/APC
Insertion Loss	≤ 0.3 dB	≤ 0.3 dB
Return Loss	UPC: ≥ 50 dB APC: ≥ 60 dB	≥ 60 dB
Cable Type	SM9/125 SX 2.0 mm, PVC Jacket, Yellow	SM9/125 SX 2.0 mm, PVC Jacket, Yellow
Connectors	(1) SC/UPC 2.0 mm SM SX Connector, Blue (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 (17.42 x 11.24 x 1.72")
Weight (with Mount Brackets)	4.40 kg (9.70 lb) 4.495 kg (9.91 lb)
Networking Interfaces	(8) GPON OLT SFP (2) 1G/10G SFP+
Concurrent Clients	1024 Registered ONUs/ONTs (128 per GPON Port)
Management Interfaces	(1) Ethernet for Out-of-Band Management (1) RJ45 Serial Console Port (2) Uplink for In-Band Management
GPON Speeds	2.488 Gbps Downstream 1.244 Gbps Upstream
Operating Wavelengths	1490 nm TX 1310 nm RX
Normal Optical Power Range	TX (Class B+): 1.5 to 5 dBm RX: -28 to -8 dBm
Max. Fiber Distance	20 km*
Power Method	100-240VAC, 100W AC/DC Power Module (Included) 38-54VDC, 100W DC/DC Power Module (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 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

4-Port GPON Optical Line Terminal (Model: UF-OLT-4)	
Dimensions	299.80 x 258.95 x 42.55 mm (11.80 x 10.19 x 1.68")
Weight (with Mount Brackets)	1.93 kg (4.25 lb) 2.13 kg (4.70 lb)
Networking Interfaces	(4) GPON OLT SFP (1) 1G/10G SFP+
Concurrent Clients	512 Registered ONUs/ONTs (128 per GPON Port)
Management Interfaces	(1) Ethernet for Out-of-Band Management (1) RJ45 Serial Console Port (1) Uplink for In-Band Management
GPON Speeds	2.488 Gbps Downstream 1.244 Gbps Upstream
Operating Wavelengths	1490 nm TX 1310 nm RX
Normal Optical Power Range	TX (Class B+): 1.5 to 5 dBm RX: -28 to -8 dBm
Max. Fiber Distance	20 km*
Power Method	100-240VAC, 50/60 Hz, Universal Input 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 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*

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 (1) Gigabit RJ45, Ethernet LAN
Networking Interface Speeds (1) GPON WAN, ITU G.984 (1) GbE LAN	 2.488 Gbps Downstream 1.244 Gbps Upstream 10/100/1000 Mbps
Management Interface	In-Band Ethernet/PON
Normal Optical Power Range	TX (Class B+): 1.5 to 5 dBm RX: -28 to -8 dBm
Power Method	Passive PoE (Pins +4, 5; -7, 8) 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 (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 (1) Gigabit RJ45, Ethernet LAN
Networking Interface Speeds GPON WAN, ITU G.984 GbE LAN	 2.488 Gbps Downstream 1.244 Gbps Upstream 10/100/1000 Mbps
Management Interface	In-Band Ethernet/PON
Normal Optical Power Range	TX (Class B+): 1.5 to 5 dBm RX: -28 to -8 dBm
Power Method	Micro-USB: 5V, 1A 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 (4.97 x 4.96 x 1.25")
Weight	190 g (6.70 oz)
Networking Interfaces	(1) SC/APC, GPON WAN (4) Gigabit RJ45, Ethernet LAN (1) Wi-Fi, 802.11n
Networking Interface Speeds GPON WAN, ITU G.984 GbE LAN Wi-Fi	 2.488 Gbps Downstream 1.244 Gbps Upstream 10/100/1000 Mbps 300 Mbps
Management Interface	In-Band Ethernet/PON
Normal Optical Power Range	TX (Class B+): 1.5 to 5 dBm RX: -28 to -8 dBm
Power Method	DC Jack, 24VDC 24V Passive PoE (Pins 4, 5+; 7, 8-)
Power Supply	100-240VAC, 50/60 Hz Universal AC/DC 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

SPECIFICATIONS

UFiber Instant (Model: UF-Instant)	
Dimensions	69.46 x 13.70 x 11.30 mm (2.74 x 0.54 x 0.45")
Weight	30 g (0.96 oz)
Networking Interfaces	(1) SC/APC, GPON WAN (1) SGMII Ethernet LAN
Networking Interface Speeds GPON WAN, ITU G.984 GbE LAN	 2.488 Gbps Downstream 1.244 Gbps Upstream 1 Gbps
Management Interface	In-Band Ethernet PON
Normal Optical Power Range	TX (Class B+): 1.5 to 5 dBm 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