Data Sheet
1FINITY™ L200 Inline Amplifier

A compact, simple, economical approach to network extension

L200 Blade at-a-Glance

- Fixed 1RU blade form factor
- Developed for metro, regional and long-haul networks
- Supports bidirectional (east and west) amplification
- Extended reach and cascaded configurations up to six spans
- Web-based GUI, CLI script, or NETCONF API management

Product Overview

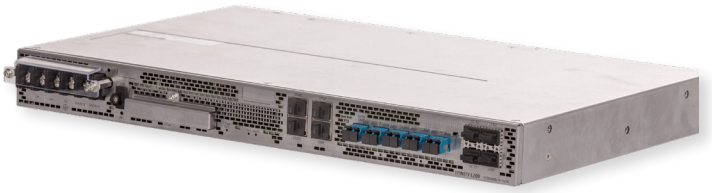
The 1FINITY L200 is a carrier-grade optical inline amplifier (ILA) blade designed for metro, regional and long-haul optical networks. Its easy-to-use front-access design takes the worry out of deploying ILAs when space is limited or energy efficiency is a priority. An economical amplifier platform, the L200 has no superfluous features to drive up size, complexity or cost.

The purpose-built 1RU L200 blade is designed to work with other platforms in the 1FINITY Lambda family. As with the whole 1FINITY range, the L200 is a key building block in simple, scalable optical networks that easily accommodate rapid growth. The platform is also highly suited to a disaggregated NFV network with SDN control.

Small Footprint, Simple Deployment, Reduced Costs

The L200, with its fully bidirectional ILA, fits in a compact 1RU space requiring only 15 inches (381 mm) depth. The platform easily fits into the smallest remote ILA sites/huts and other space-constrained environments such as data centers.

Shelf-based systems, in contrast, require much more space and impose significantly higher cost for comparable span amplification. Additionally, shelf-based systems require different units and accessories for different transmission distances, while the L200 can cover metro, regional and long-haul reach requirements in one blade. This simplifies inventory and further reduces cost of ownership.



High-Performance Connectivity up to 35 dB Spans

The optical specifications of the L200 provide high-performance connectivity up to 35 dB spans, which can be cascaded up to 6000 km over ultra low-loss fiber when used with the 1FINITY T200 Transport Blade. The L200 employs automatic gain control for fully automated setup when operating in a Fujitsu network environment. Furthermore, the L200 amplifies all 96 or 128 flex-grid optical channels and provides control of optical tilt and transients.

The platform features a C-band bidirectional EDFA for 1528.77–1566.77 nm, with 96 channels at 50 GHz and flex-grid up to 128 channels at 37.5 GHz. Fiber types include Single-Mode Fiber (SMF), Dispersion-Shifted Fiber (DSF), and Non-Zero Dispersion-Shifted Fiber (NZDSF).

1FINITY: A Revolutionary, Disaggregated Platform

For network operators seeking an open, simple, scalable architecture to meet escalating bandwidth demand, Fujitsu provides 1FINITY, a revolutionary disaggregated platform that delivers unprecedented flexibility, scalability, and efficiency. Unlike the traditional converged systems other vendors provide, the programmable, blade-centric design of 1FINITY offers operators a pay-as-you grow approach with low initial investment. Additional benefits include high rack space utilization; evergreen technology design; operational convergence; and open, pluggable optics, APIs, and protocols.

Ideal for Space-Constrained Environments

Flexible ROADM Applications

The L200 ILA supports pre- and post-amplification for the WDM signal in several ROADM applications. The initial release of the L200 supports other Fujitsu Lambda blades (such as the L100, L110 and L120) in standard ROADM configurations.

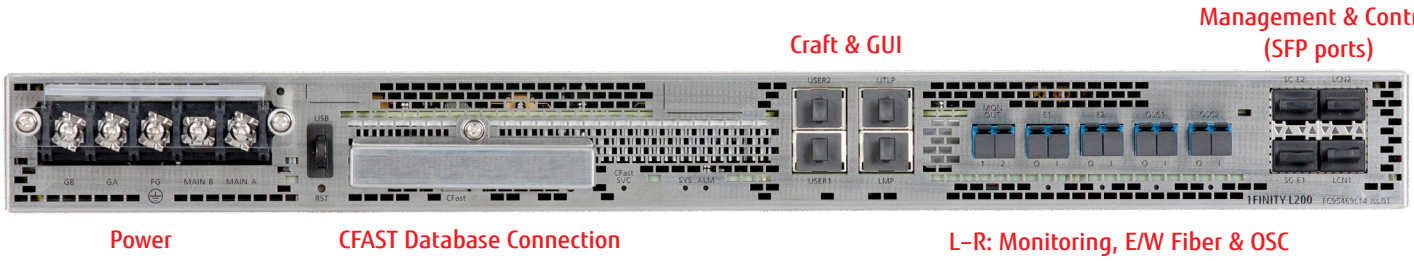
Upcoming releases of the L200 will support 1FINITY Lambda blades in open ROADM configurations and incorporate compatibility features with the Fujitsu FLASHWAVE® 9500 packet optical networking platform.

Management Options

The L200 is managed via a direct local control network (LCN) node using a 100 Mbps Ethernet or 1 GbE LAN connection. An optical supervisory channel (OSC) at 1511 nm is supported for remote out-of-band management of the ILA site at 100 Mbps, 1 GbE, or a future OC3 data rate (interoperating with the FLASHWAVE 9500 platform).

Simplified Network Operations

Like other blades in the 1FINITY Lambda family, the L200 employs a Linux-based operating system and can be managed with a Web GUI, a CLI script, SNMP, or a NETCONF interface. The GUI or CLI script can provision numerous service options. The NETCONF management interface makes it easy to use the L200 with SDN network controllers, including Fujitsu Virtuora® NC.



Technical Specifications

Base System	
System Configuration	Fixed 1RU blade
Local Management Port (LMP)	1 × 100/1000 Mbps Ethernet RJ-45
Management Port (LCN)	2 × Gigabit Ethernet SFP (T, SX, LX, EX, ZX)
USB	1
Front LEDs	System Status, Alarm Severity, Port
Fans	2 replaceable fans
Power Supply	Dual-feed, fixed DC power supply (front-access)
Software OS	Linux
ILA Functions	
Line Ports per Blade	2 (bidirectional)
Optical Module	Fixed
Line rate	100G, 200G
Tx Wavelength	1528.77–1566.72 nm
Rx Wavelength	1528.77–1566.72 nm
Max. Channels per Degree and Cascade Limitations	96 (50 GHz ITU-T fixed-grid), 128 (flex-grid) channels available • CH1–CH90 (50 GHz grid), CH1–CH120 (37.5 GHz grid), Max. 6 ILA cascades • CH91–CH96 (50 GHz grid), CH121–CH128 (37.5 GHz grid), 1 ILA cascade
Span Loss	0–35 dB
Optical Supervisory Channel (OSC)	100 Mbps Ethernet, Gigabit Ethernet, OC3 (future)
Performance Monitoring	
Service PMs	24-hour, 15-minute
Thresholds and TCA	Supported (user-assignable)
Management	
Virtuora NC	Yes
Web GUI	Yes
CLI	Yes
NETCONF/YANG/	Yes
SNMP	SNMPv2
Communications	SSH, SFTP, FTP, Telnet, HTTP, HTTPS
Timing	NTP
In-Band Mgmt	1511 nm OSC
OSMINE Support	CLEI
Physical Characteristics	
Blade Physical Dimensions (H × W × D)	1.75 × 19 × 15", (44.45 × 483 × 381 mm) W = 19" or 23" with mounting rails (D <600 mm including fiber management)
Rack Compatibility	19" and 23", 2-post only
Weight (Blade)	14 lb (6.4 kg)
Operating Environment	
Operating Temperature	+5 to +40 °C
Operating Humidity	5–85%
Power	
Power Supply	Dual-feed, fixed DC power supply (front-access)
120 V AC	No
-48 V DC	-40 V DC to -57 V DC
Power Consumption	153 W
Regulatory & Compliance	
FCC	FCC Part 15, ICES-003
NEBS	NEBS Level 3, GR-63, GR-1089, GR-3108
Safety	UL/CSA 60950-1, IEC/EN 60950-1
RoHS	RoHS
CE	CE
CISPR	CISPR 24 & CISPR 32
ETSI Environmental	ETSI EN 300-019-2-1,2-2,2-3, ETS 300-753
WEEE	WEEE
RCM	RCM
FDA/CDRH	Compliant with 21 CFR Chapter 1, Subchapter J

LASER SAFETY CLASSIFICATION & CAUTION
Compliant with the IEC/EN 60825-1, -2 Laser standards

CLASS 1M CAUTION
Invisible laser radiation
Do not view directly with optical instruments
Class 1M laser product

HAZARD LEVEL 1M CAUTION
Hazard level 1M laser radiation
Do not view directly with non-attenuating optical instruments

Fujitsu Network Communications, Inc.
2801 Telecom Parkway, Richardson, TX 75082
Tel: 888.362.7763
us.fujitsu.com/telecom

Walker and Associates, Inc.
PO Box 1029, 7129 Old Hwy 52
Welcome, NC 27374
Tel: 800.925.5371
www.walkerfirst.com

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