

## 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



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).

### 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.

### 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.

### 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 facilitates simple, scalable networks that easily accommodate rapid bandwidth growth, and is highly suited to a disaggregated NFV network with SDN control.

### Small Footprint, Big Performance, Reduced Costs

The L200, with its fully bidirectional ILA, fits in a compact 1RU space requiring only 15 inches (381 mm) depth. The platform is suitable for the smallest of 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.

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

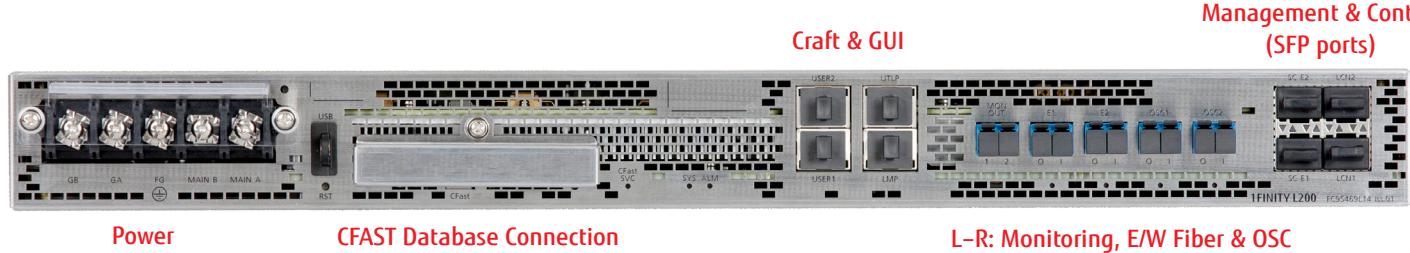
# Ideal for Space-Constrained Environments

## Management Options

Management of the L200 is via a direct local control network (LCN) node using a 100 Mbps Ethernet or 1 GbE LAN connection. In addition, 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-based GUI, a CLI script, or a NETCONF API. The GUI or CLI script can provision numerous service options. The NETCONF management API 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)	10/100 Mbps Ethernet RJ-45 x1
Management Port (LCN)	2 × Gigabit Ethernet SFP (T, SX, LX, EX, ZX)
USB	1
Front LEDs	System Status, Severity, Port
Fans	2 replaceable fans
Power Supply	Dual-feed, fixed DC power supply
Software OS	Linux

## ILA Functions

Line Ports per Blade	2 (bidirectional)
Optical Module	Fixed
Tx Wavelength	1528.77–1566.77 nm
Rx Wavelength	1528.77–1566.77 nm
Max. channels per degree / cascade limitations	96 (50 GHz ITU-T fixed grid), 128 (flex-grid) channels available <ul style="list-style-type: none"> <li>• CH1–CH90 (50 GHz grid), CH1–CH120 (37.5 GHz grid), Max. 6 ILA cascades</li> <li>• CH91–CH96 (50 GHz grid), CH121–CH128 (37.5 GHz grid), 1 ILA cascade</li> </ul>
Span Loss	0 - 35 dB
Optical Supervisory Channel (OSC)	100 Mbps Ethernet, Gigabit Ethernet, OC3 (future)

## Performance Monitoring

Service PMs	24-hour, 15-minute
OTN PMs	N/A
Thresholds and TCAOTN PMs	Supported (user-assignable)
<b>Management</b>	
Virtuora NC	Yes
Web GUI	Yes
CLI	Yes
NETCONF/YANG/	Yes
SNMP	SNMPv2
NTP, SNTP, Telnet, and FTP	Telnet, FTP and SFTP R1.1, NTP
In-Band Mgmt	1511 nm OSC
OSMINE Support	CLIEI

## 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	14.0 lb (6.4 kg) (chassis and two fan units)

# Technical Specifications

## Operating Environment

Temperature (Normal Operating)	+5 to +40 °C
Temperature (Short-Term)	-5 to +50 °C
Humidity (Normal Operating)	5–85% noncondensing
Humidity (Short-Term)	5–93% noncondensing

## Power

Power Supply	Dual-feed, fixed power supply (front-access)
120 V AC	No
-48 V DC	-40 V DC to -57 V DC
Power Consumption	153 W (typical)

## Regulatory and Compliance

FCC	FCC Part 15, Class A
NEBS	NEBS Level 3
UL/CSA	UL/CSA 60950-1
RoHS	RoHS
CE	CE
IEC/EN	IEC/EN 60825-1, 60825-2
WEEE/IEC/EN	WEEE
RCM	RCM
CDRH	FDA CDRH

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