

Data Sheet

1FINITY L120 Lambda Blade

Expansion WSS blade for optical hubs and increased ROADM add/drop capacity

1FINITY™ L120 Blade at a Glance

- Optical switch with twin 12×9 WSS
- Colorless, Directionless (CD) add/drop architecture for any degree and any wavelength
- Expands ROADM support to eight degrees
- Up to 144 C-band CD add/drop channels per blade with the L110
- Optimized for 100G wavelengths and above



Product Overview

The 1FINITY L120 is an expansion Wavelength Selective Switch (WSS) for building up to eight degree CD ROADM nodes in Open ROADM networks. The L120 is used in conjunction with the L100 and L110 blades. Each L120 blade, in total, can support up to 144 CD add/drop channels in combination with the L110. The L120 is managed as a single network element though the L100. Application programming interfaces (APIs) are supported for Open ROADM configurations.

ROADM Configurations

Large ROADM configurations using the 1FINITY L120 provide up to eight optical degrees of ROADM support. Dual 1×16 add/drop PIUs from the 1FINITY L110 deliver channels into the L120 for further degree routing. The 1FINITY L120 has three Multifiber Push-On (MPO) optical connectors, with two currently used by the L120, providing up to eight connections: one to each of the L100 blades and one to each of the 1×16 PIUs in the L110.

1FINITY L100 Series Overview

The 1FINITY L100 Series, Fujitsu's disaggregated optical layer, provides flexible ROADM functionality that easily accommodates rapid bandwidth growth. The series features compact, 1RU globally compliant enclosures and a functionally modular design. These blades provide the building blocks for an open, simple, scalable physical ROADM architecture.

Blades in the Series

The series currently consists of three types of blades:

- **L100** – A twin 1×9 wavelength selectable switch (WSS) ROADM-on-a-blade
- **L110** – An optical channel management blade for coupler/splitter plug-in units supporting channel add/drop
- **L120** – An expansion WSS for nodes beyond four degrees

L100 series blades can be deployed in combination with other 1FINITY blades, including the L200 Inline Amplifier, in addition to blades in the Switch and Transport Series.

Equipped to handle any provider's SLA requirements, L100 series blades incorporate dual-feed, fixed DC power supplies and robust, field-replaceable fans. Blades are compatible with various physical installation environments, including 19" or 23" standard racks (two- or four-post), as well as the 1FINITY Housing.

Open ROADM Nodes Up to Eight Degrees

Supported Solutions and Applications

Fujitsu applications and solutions supported by the L120 blade incorporate certified and tested performance characteristics, in addition to SDN provisioning and management and optical design tool functions. The L120 can be deployed in either new or existing optical networks by pairing with it the L100 and L110 blades to create a ROADM node between four and eight degrees:

For greenfield scenarios, ROADM nodes that include the L120 can be connected to 1FINITY transport blades to provide an agile 200G network. For brownfield scenarios, L120 node can be added as a spur to a FLASHWAVE 9500® multihaul ROADM ring, creating a hybrid 10G/100G network that extends the life of the existing network and preserves capital.

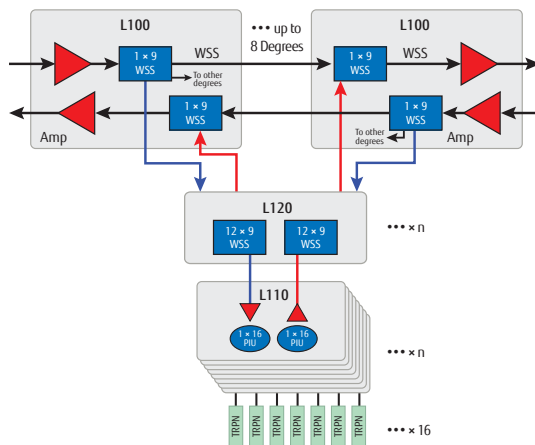
Open ROADM Applications

The 1FINITY L120 is approved for deployment under the Open ROADM Multi-Source Agreement (MSA) that defines interoperability specifications among different vendors, thus enabling optical layer flexibility and software control.

Device Management and Control

For easier management, 1FINITY L100 series blades work with the 1FINITY C200 Series Communications Integrator. Each C200 unit provides sufficient management ports for up to 35 individual blades.

1FINITY L100 series blades are supported by the Fujitsu Virtuora® software platform, including Virtuora Planning and Design; Virtuora Network Management; Virtuora WDM Control Applications; and Virtuora NC (network controller).



Up to 8-Degree CD-ROADM Node (Open ROADM API Only)

Lambda Blades:

- L100: One ROADM-on-a-blade per degree
- L110: One or more management blades for 4 x 16 add/drop PIU
- L120: One or more twin 12 x 9 WSS blades

Capabilities:

- Up to 480 clients

Up to 8-degree CD-ROADM node configuration with transponders (TPR)

Technical Specifications

Base System		Short-Term Temperature	5 °C to +50 °C
System Configuration	1RU ROADM-on-a-blade with twin WSS	Operating Humidity	5% to 85%
Local Management Port (LMP)	1 × 10/100 Mbps Ethernet RJ-45	Power	
Management Port (LCN)	4 × GbE SFP (T, SX, LX, EX, ZX)	Power Supply	Dual-feed, fixed DC power supply
Front LEDs	System Status, Severity, Port	120 V AC	No
Fans	3 replaceable fans	-48 V DC	-40V DC to -57V DC
Power Supply	Dual-feed, fixed DC power supply	Power Consumption	180 W
Software OS	Linux	Regulatory and Compliance	
Line Interface		FCC	FCC Part 15, Class A
Line Ports per Blade	1 Network, 1 OSC	NEBS	NEBS Level 3
Line Rates	100 Gbps, 200 Gbps, Future 400 Gbps	UL/CSA	UL/CSA 60950-1
Tx Wavelength	1528.77–1566.72 nm	CE	CE
Rx Wavelength	1528.77–1566.72 nm	RoHS	RoHS
Performance Monitoring		CISPR	CISPR 24, CISPR 32
Service PMs	24-hour, 15-min	ETSI	EN 300-019, EN 300-132, EN 300-753, EN 300-386
Thresholds and TCA	Support (user assignable)	WEEE	WEEE
Management		RCM	RCM
Virtuora NC	Yes	CDRH	FDA CDRH
Web GUI	Yes	ROADM Capacity and Functions	
CLI	Yes	Configuration	<ul style="list-style-type: none"> Colorless, Directionless (CD) ROADM Colorless 8-channel ROADM option
NETCONF / YANG	Yes	ROADM degrees	<ul style="list-style-type: none"> Up to 4 degrees with L110 Up to 8 degrees with L110 and L120 (Open ROADM)
SNMP	SNMP v1, v2c	Topology	Point-to-point, linear, ring, mesh
Communications	SSH, SFTP, FTP, Telnet, HTTP, HTTPS	Wavelengths	100G, 200G, future 400G and above
Timing	NTP	Wavelengths Range	1528.77–1566.72 nm
In Band Mgmt	OSC (1511 nm)	Maximum Number of Channels per Degree	96 (50 GHz ITU-T fixed grid) 128 (37.5 GHz flex-grid)
OSMINE Support	CLEI	Maximum System Capacity	25.6 Tbps (200G × 128 channels) per degree
Physical Characteristics		Span Loss	0–35 dB
Blade Physical Dimensions (H × W × D)	1.75" × 19" × 17.72" (44.45 × 483 × 450 mm) W = 19" or 23" with mounting rails D < 23.6" (600 mm) with fiber management	Optical Supervisory Channel (OSC)	OC-3, 100 Mbps Ethernet, GbE
Rack Compatibility	19" and 23", 2- and 4-post	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>LASER SAFETY CLASSIFICATION & CAUTION Compliant with IEC/EN 60825-1, -2 laser standards</p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>CLASS 1M CAUTION Invisible laser radiation Do not view directly with optical instruments Class 1M laser product</p> <p>HAZARD LEVEL 1M CAUTION Hazard level 1M laser radiation Do not view directly with non-attenuating optical instruments</p> </div> </div>	
Supported in Housing	Yes		
Weight	Blade: 17.86 lbs (8.10 kg)		
Operating Environment			
Operating Temperature	5 °C to 40 °C		

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