AFL

DENALI™

Peak Performance for Optical Fiber Networks

Platform Overview

DENALI™

Optical Fiber Platform

AI and cloud infrastructure demands are accelerating rapidly. Data volumes are increasing, workloads are more distributed, and latency expectations are tighter than ever. As network speeds climb and rack space efficiency becomes even more critical, your fiber platform must rise to the challenge of managing the scale and complexity of AI-driven workloads while keeping pace with the explosive growth of the cloud.

The DENALI™ optical fiber platform is purpose-built for the evolving era of AI-driven data center innovation. Designed for high-speed, high-density fiber deployments, DENALI delivers peak data center performance today and positions your network to scale seamlessly with the rising demands of hyperscale and AI workloads.

Peak Performance for Optical Fiber Networks

Designed to meet the growing demands of complex hyperscale and AI workloads, the DENALI optical fiber platform combines advanced technology, global scalability, and operational simplicity to accelerate deployment and performance across any data center environment.

Future-ready optical fiber platform

Built for networks demanding density, speed, and scalable growth, the DENALI Optical Fiber Platform supports rising fiber counts in growing cloud environments and high-power, GPU-intensive AI clusters with minimal infrastructure upgrades.

Accelerate AI network deployments

Deploy quickly and scale with confidence. The DENALI optical fiber platform enables quicker AI cluster expansions, reducing time to market - keep projects on track with faster time-to-revenue and a stronger ROI on infrastructure build.

Global consistency with local expertise

Deploy one proven platform worldwide while meeting local standards and requirements. DENALI ensures consistent performance wherever you build, backed by local delivery capabilities and regional compliance expertise.

Simplify operations from order to install

Streamline the entire deployment process - with fewer part numbers, faster installs, and smarter integration, DENALI minimizes build complexity. Keeping your network on schedule and under control.

DENALI Network Environments

From new fiber network deployments to existing infrastructure upgrades, DENALI provides a modular optical fiber platform supporting rapid scalability and comprehensive white space coverage across a range of network environments.

Artificial Intelligence / Machine learning (AI/ML)

Key Fiber Network Requirements	How DENALI Can Support
High Bandwidth, Low Latency: AI workloads demand ultra-fast data processing and minimal latency.	**800G-Ready Architecture:** Engineered for high-speed optics (400G–800G+), optimized for next-gen applications.
Scalability: Infrastructure must scale with growing model complexity and data volumes.	**Modular Design:** Expands seamlessly to support higher fiber counts, bandwidth, and AI growth.
Network Reliability: Downtime disrupts training and inference operations.	**Robust Infrastructure:** Designed to minimize human error with secure, protected fiber connections.
Thermal Management: Dense cabling must maintain airflow and rack cooling efficiency.	**Efficient Airflow:** Slim cable profiles and managed routing maintain optimal cooling in high-density racks.

Hyperscale

Key Fiber Network Requirements	How DENALI Can Support
Scalability: Rapid growth demands infrastructure that scales without compromising performance.	**Modular Platform:** Enables fast expansion with minimal disruption or rework.
Standardization: Global networks require uniform design across sites.	**Global Consistency:** Supports standardized builds while aligning with regional standards and compliance.
Operational Agility: Frequent MACs require flexibility without service interruption.	**Flexible Installation:** Front/rear-loading cassettes and tool-less components enable fast, safe MACs.
Installation Efficiency: Streamlined deployment reduces labor time and errors.	**Rapid Deployment:** Pre-configured options and simplified hardware accelerate consistent rollout.

Colocation

Key Fiber Network Requirements	How DENALI Can Support
Fast Access: Tenants expect quick servicing with minimal disruption.	**Quick Maintenance:** Sliding trays and accessible designs allow non-intrusive service and upgrades.
Rack Space Optimization: High density needed in limited RU.	**Compact Scalability:** High-port-count housings available in 1RU, 2RU, and 4RU.
Clear Documentation: SLA compliance and tenant visibility demand labeling and order.	**Port ID Labelling and Cable Management:** Internal door label aids port ID, and cable management enables easier port access.

Campus / Data Center Interconnect (DCI)

Key Fiber Network Requirements	How DENALI Can Support
Building-to-Building Links: Mix of indoor and outdoor requirements.	**Indoor/Outdoor-Ready Components:** Supports indoor/outdoor-rated cable assemblies and splice options for compliant, end-to-end connectivity
Future Scalability: Infrastructure must support increasing user/device growth.	**Expandable Platform:** Add fiber capacity without major redesign.
Environmental Flexibility: Must fit various install spaces.	**Adaptable Housing Options:** Suitable for racks and frames in building entry areas.

Central Office

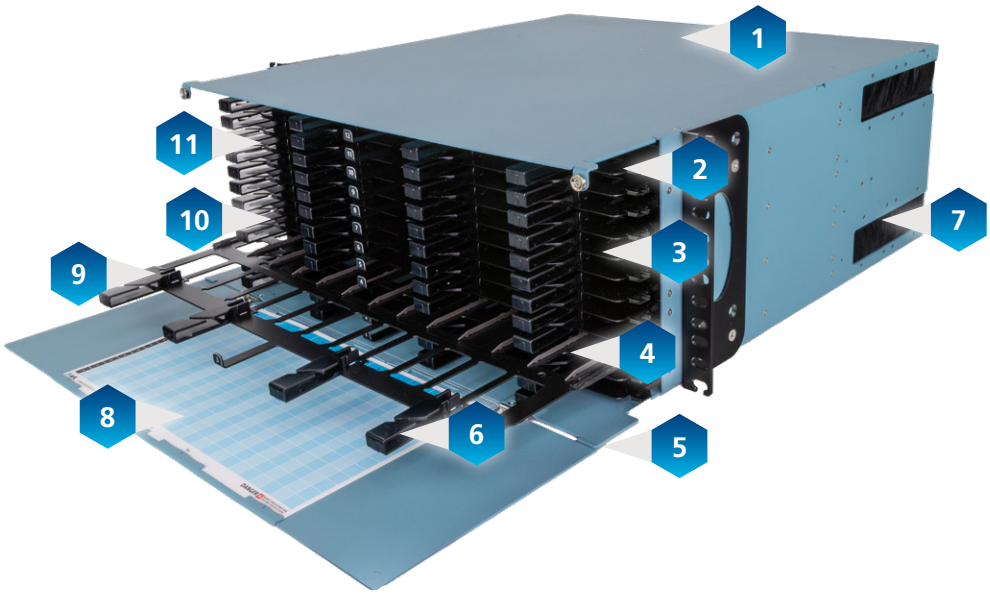
Key Fiber Network Requirements	How DENALI Can Support
Fast Installation: Speed-to-service in high-volume builds.	**Quick-Mount Hardware:** Enables tool-less, one-person installation.
Greenfield & Retrofit: Must integrate with old and new infrastructure.	**Versatile Cassettes:** Options for patch, splice, or MPO fanout in mixed environments.
Operational Consistency: Design must scale across many sites.	**Standardized Design:** Supports repeatable deployments across multiple central offices.

Office Backbone

Key Fiber Network Requirements	How DENALI Can Support
Core-to-Edge Connectivity: Links between core switches, Wi-Fi, and edge devices.	**High-Density Core Links:** Low-loss modular cassettes for seamless distribution.
Support for High User Density: Rising IoT and remote work strains capacity.	**Tool-Less Panels:** Enable rapid MACs without disrupting existing infrastructure.
Ease of Maintenance: Infrastructure must be easily serviceable.	**Front-Access Trays and Magnetic** Doors: Provide safe, intuitive access for fast servicing.

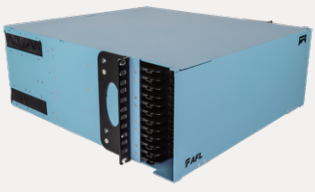
DENALI Housing Overview

The DENALI modular optical fiber platform is designed for rapid scalability and extensive white space coverage, accelerating new fiber network deployments and simplifying upgrades to existing infrastructure.



Key Features:

1. **Standard Rack Compatibility**
   Supports both 19- and 23-inch rack configurations for seamless integration into existing infrastructure
2. **Flexible Cassette Installation**
   Install from the front or rear of the housing
3. **Versatile Routing**
   Run assemblies to the left or right, depending on connection needs
4. **Universal Front-Loading Trays**
   One tray type fits all cassette sizes, simplifies access and handling
5. **Dual Hinged Doors**
   Both front and rear doors hinge at the bottom for convenient access
6. **Efficient Cable Management**
   Easy access for streamlined loading and patching
7. **Rear Cable Support**
   Rear area accommodates trunk assemblies with integrated mounting clips
8. **Clear Identification**
   Facilitates maintenance, upgrades, and troubleshooting
9. **Sliding, Lockable Trays**
   Trays slide and lock in place for simplified patching and maintenance
10. **Removable Patch Cord Managers**
    Enhances flexibility and organization
11. **Scalable Design**
    Cassettes can be installed or swapped to adapt as networks expand



4RU Housing

- Up to 12 trays
- Base-12 & Base-24: LC (576 f), MPO (3456 f)
- Base-8: LC (576 f), MPO (2304 f)

- 72 x Base-8 Cassettes (6 per tray)
- 48 x Base-12 Cassettes (4 per tray)
- 24 x Base-24 Cassettes (2 per tray)

2RU Housing

- Up to 6 trays
- Base-12 & Base-24: LC (288 f), MPO (1728 f)
- Base-8: LC (288 f), MPO (1152 f)

- 36 x Base-8 Cassettes (6 per tray)
- 24 x Base-12 Cassettes (4 per tray)
- 12 x Base-24 Cassettes (2 per tray)

1RU Housing

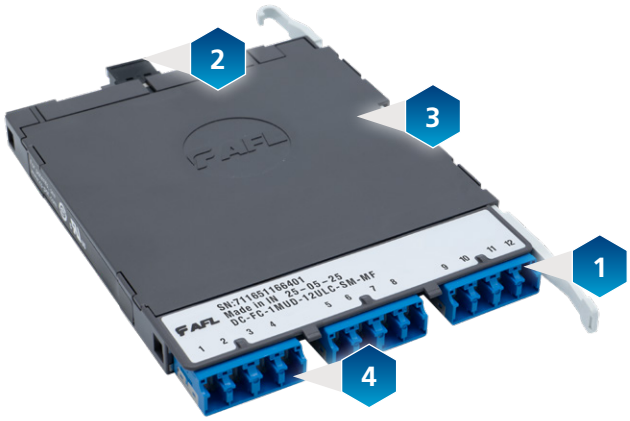
- Up to 3 trays
- Base-12 & Base-24: LC (144 f), MPO (864 f)
- Base-8: LC (144 f), MPO (576 f)

- 18 x Base-8 Cassettes (6 per tray)
- 12 x Base-12 Cassettes (4 per tray)
- 6 x Base-24 Cassettes (2 per tray)

DENALI Cassette Overview

The DENALI Optical Fiber Platform offers a versatile range of cassettes designed to support modular network expansion and enable seamless transitions across Base configurations and connectivity platforms.

1. Front or rear cassette loading for flexible installation
2. Base-8, Base-12, Base-16 and Base-24 configurations
3. Multimode and single-mode fiber cassette options
4. Shuttered LC adapters (eliminate dust caps, enhance laser eye safety, and simplify fault detection)



MPO Fanout

Pre-Terminated Plug-and-Play System

- Available in Base-8, Base-12, Base-16, and Base-24 configurations
- Supports up to 12 LC ports (24 fibers) per cassette
- Multi-mode and single mode options available
- Polarity F design enables consistent cassette orientation at both ends of the link

Patch

Supports Interconnection of MPO Trunk Assemblies, Patch Cords, and MPO Fanouts

- Accommodates up to 12 MPO ports per cassette
- Supports up to 12 LC ports (24 fibers) per cassette

Splice

Enables Faster Field Splicing and Streamlined Moves, Adds, and Changes (MACs)

- Supports up to 12 LC ports (24 fibers) per cassette
- Compatible with both single fiber and ribbon fiber mass-fusion splicing

DENALI Assemblies Overview

DENALI MPO trunk assemblies deliver high-performance, plug-and-play capability for high-density data center and enterprise environments.

DENALI MPO Trunk Assemblies

- Polarity options available
- Low loss Premium MPO connectors
- Base-8, Base-12, Base-16, and Base-24 connectors available

DENALI Uniboot Patch Cord

- OM4 and SM fiber types
- Premium LC and SN connectors
- Compact diameter 2mm cables

Founded in 1984, AFL is an international manufacturer providing end-to-end network solutions to the energy, service provider, enterprise, hyperscale and industrial markets. The company's products are in use in over 130 countries and include fiber optic cable, assemblies, and hardware, transmission and substation accessories, outside plant equipment, connectivity, test and inspection equipment, fusion splicers, and training. AFL also offers a wide variety of services supporting data center, enterprise, wireless and outside plant applications.

Headquartered in Spartanburg, SC, AFL has operations in the U.S., Mexico, Canada, Europe, Asia and Australia, and is a wholly owned subsidiary of Fujikura Ltd. of Japan.