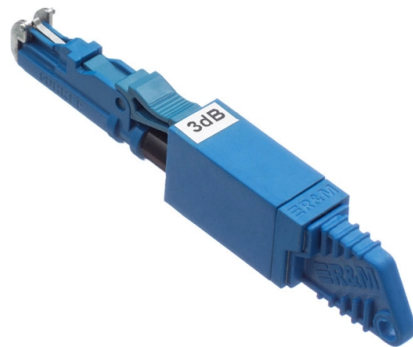


Upgraded version of large-core fiber for metropolitan area networks



Article Overview

Second-generation 800G coherent systems and multiband fiber solutions represent the latest upgrades for high-capacity metropolitan area networks, enabling scalable, long-reach, and energy-efficient metro backbones.

Advanced Coherent Optical Systems

Modern metro networks are increasingly adopting second-generation 800G coherent solutions, which support 120–140 Gbaud and enable 1.2T connections over distances exceeding 2,000 km, while also supporting ultra-long-haul 400G links up to 5,000 km . These systems improve reach and reduce power consumption compared to first-generation 800G solutions, making them ideal for dense urban networks. Future generations are expected to exceed 190 Gbaud, allowing single-wavelength 1.6T transmission and ultra-long-haul 800G links, optimizing wavelength usage and reducing optical components .

Multiband and Expanded Fiber Capacity

To maximize fiber utilization, operators are deploying multiband solutions, leveraging both C-band and L-band to effectively double fiber capacity. Expanding the width of each band can increase capacity by up to 50% per band, enabling metro networks to handle growing traffic demands without laying additional fiber . This approach is particularly useful in metropolitan areas where physical fiber deployment is constrained....

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Metropolitan Area Network

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MCF can be seamlessly integrated into existing telecom ducts and architectures, making it a high-impact upgrade for metro, access,

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