



EVERYTHING
YOU NEED
TO KNOW

Dark Fibre

Everything you need to know

 enquiries@neosnetworks.com

 neosnetworks.com



What is Dark Fibre?

Dark Fibre, also known as unlit fibre, refers to fibre in fibre optic cables with no service or traffic running on it – an unused point-to-point connection. It's called "dark" because the cables aren't lit by a light signal. In contrast, "lit fibre" refers to managed optical services where the provider is responsible for keeping the fibre lit and maintaining your network.

With Dark Fibre, you have maximum control and flexibility to create your own high capacity network with almost limitless scalability.

How does Dark Fibre work?

Unlike lit fibre, with Dark Fibre you decide the services you want and deploy and manage the equipment required to set up and maintain your network. You have complete control over your network protocols, speed, capacity and security.

Typically, you'll use Dense Wavelength Division Multiplexing (DWDM) or Coarse Wavelength Division Multiplexing (CWDM) to transmit and receive data. With DWDM/CWDM, you can transmit multiple wavelengths (channels) on a single fibre pair, each carrying different data streams.

How much bandwidth can Dark Fibre support?

Bandwidth is only limited by the equipment you install at either end of your connection. By installing the latest equipment, you can take advantage of next-generation technology and scale up bandwidth as needed, with full control over future upgrades as technology evolves.

Dark Fibre vs lit fibre

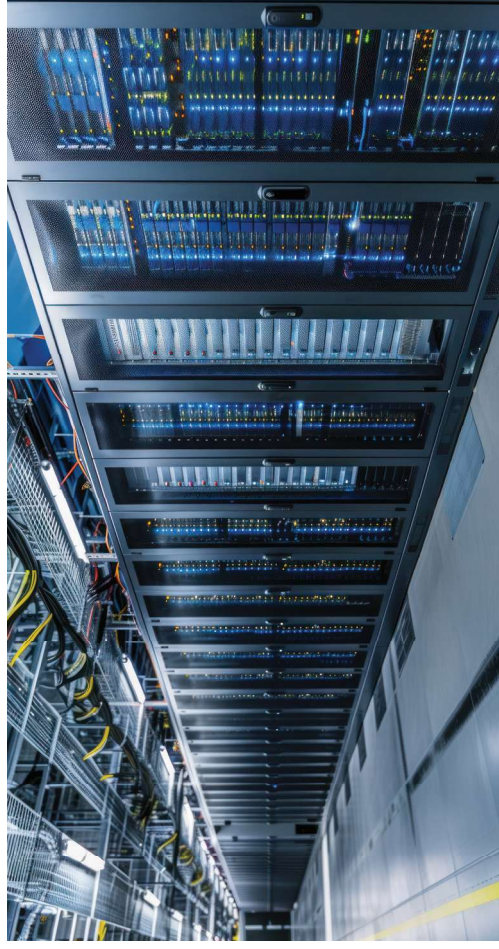
	Dark Fibre	Lit fibre
Definition	Unused optical fibre leased without a service	Optical fibre running a managed service
Management	Your IT team sets up and manages your network in-house	Network provider sets up and manages your network
Hardware required	You supply and maintain your own equipment	Equipment provided by the network provider
Scalability	Virtually unlimited bandwidth, depending on your equipment and setup	Limited to the network provider's service plans
Security	Completely private network you control for maximum security	Standard security set by the network provider
Cost	Higher upfront costs to set up your network; potentially lower ongoing costs	Lower upfront costs; ongoing service fees
Best for	Organisations needing high capacity connectivity with maximum control and scalability	Organisations needing high capacity connectivity with a provider-managed service

Why choose Dark Fibre?

Dark Fibre enables you to build a network you fully control to your exact requirements with near-limitless capacity.

What are the benefits of Dark Fibre?

Full control	You manage your own network, choosing routing, security, and bandwidth allocation.
Future-proof scalability	Scale up bandwidth as needed by upgrading equipment – no need to upgrade fibre.
Customisation	Design your network for your exact needs – routing, wavelengths and security.
Complete security	Choose your own protocols and security standards for maximum security.
Redundancy	Build in diverse routing for maximum resilience and reliability.
Cost efficiency	Dark Fibre can be less expensive than managed services if you use large amounts bandwidth.



Who can benefit from Dark Fibre?

The full control and scalability Dark Fibre gives you is ideal for:

- ✓ **Hyperscalers and cloud providers:** Connect data centres across the UK.
- ✓ **Wholesale network providers:** Expand your network and deliver dedicated fibre services.
- ✓ **Government and public sector:** Connect Critical National Infrastructure (CNI) and public services.
- ✓ **Financial services:** Enable high frequency trading and other real-time transactions.
- ✓ **Large enterprises:** Build high capacity networks for AI, IoT and cloud applications.
- ✓ **Broadcasters and media:** Ensure high bandwidth for video production and live streaming.

Customising Dark Fibre for your business

Neos Networks Dark Fibre gives you maximum flexibility to build out a custom network across the UK. Leverage our high capacity UK-wide network to deploy Dark Fibre for data centre interconnects, backhaul or core networks nationwide.

Depending on your needs, you can either lease our fibre or opt for an IRU (Indefeasible Right of Use). IRUs involve a one-off capital investment with minimal ongoing operations and maintenance costs. They give you maximum control, long-term certainty and a lower total cost of ownership compared to recurring lease charges.

If your required route goes beyond our existing network, we can:

- Design and build new fibre infrastructure or
- Use third-party networks where available

Our specialists work with you to map the optimal route, overcome challenges and plan for future growth. The result is Dark Fibre infrastructure designed for your long-term success.



Dark Fibre features

At Neos Networks, we build your Dark Fibre to your exact specifications. We offer both G652 and G655 fibre, with the flexibility to lease individual or multiple fibre pairs. Whether you need fibre in ducts, sub-ducts or micro-ducts, we can tailor the infrastructure to your requirements.

For peace of mind, we offer fibre-fix SLAs designed for critical infrastructure, backed by 24/7 expert support from our industry-leading helpdesk.

Is Dark Fibre worth it?

Deploying your own Dark Fibre network requires considerable upfront investment in equipment and expertise. Once your network is deployed, you'll need significant in-house IT resources to maintain it.

However, Dark Fibre can make sense if you need total control over your network, your bandwidth and your budget. If you want almost limitless scalability or need to implement custom configurations or security protocols, it's a cost-effective way to future-proof your connectivity.

Whether you need a flexible, short-term lease or a 25-year IRU, we can make Dark Fibre work for you and your budget.

Build your own future-proof network

Take full control of your connectivity with a Dark Fibre network designed for scalability and future-proof performance. With Neos Networks Dark Fibre, you get:



Total flexibility

Leverage our UK-wide fibre network built for CNL, custom-built fibre, or a third-party option.



Near limitless scalability

Scale up your bandwidth and network reach nationwide.



Bespoke specification

Choose G652 and/or G655 fibre with duct and sub-duct options.



Built-in resilience

Customise your network architecture and route diversity for maximum resilience.



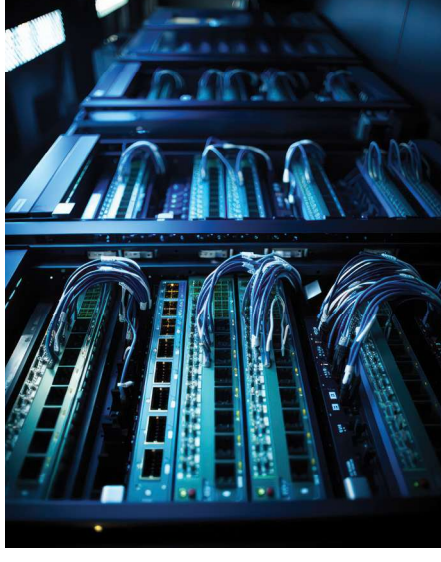
Availability & SLAs

Leading network availability and fault restoration agreements.



Outstanding support

24/7 helpdesk, ISO-certified cyber security and industry-leading +75 NPS.



Looking for colocation?

Combining **Colocation** with Dark Fibre is a practical way to host vital systems and extend your network's reach. Whether you're housing in-line amplification (ILA) equipment, backing up data or supporting core functions like routing, switching and aggregation, Colocation gives you the secure, resilient space you need.

Get on-net access to around 30 Colocation sites across the UK – a cost-effective, accessible solution to help extend and future-proof your network.