

# Prysmian Group Data Centre Solutions

For the future of information and communication

**Prysmian**  
Group

 **PRYSMIAN**

 **Draka**

 **General Cable**

# Linking the future

As the worldwide leader in energy and telecom cable solutions, Prysmian Group believes in the effective, efficient and sustainable supply of energy and information as a primary driver in the development of communities. With this in mind, we provide major global organisations in multiple industries with best-in-class products and services, based on state-of-the-art technology.

Through three renowned commercial brands – Prysmian, Draka and General Cable – based globally, we're constantly close to our customers, enabling them to further develop the world's energy and telecoms infrastructures, and achieve sustainable, profitable growth.

In our **energy business**, we design, produce, distribute and install cables and systems for the transmission and distribution of power at low, medium, high and extra-high voltage. Our energy cables are compliant with all local regulations.

**In telecoms**, the Group is a leading manufacturer of all types of copper and fibre cables, systems and accessories – meeting the high demands placed on data centre data transmission.

Drawing on almost 140 years' experience and continuously investing in R&D, we apply excellence, understanding and integrity to everything we do, meeting and exceeding the precise needs of our customers across all continents, while shaping the evolution of our industry.

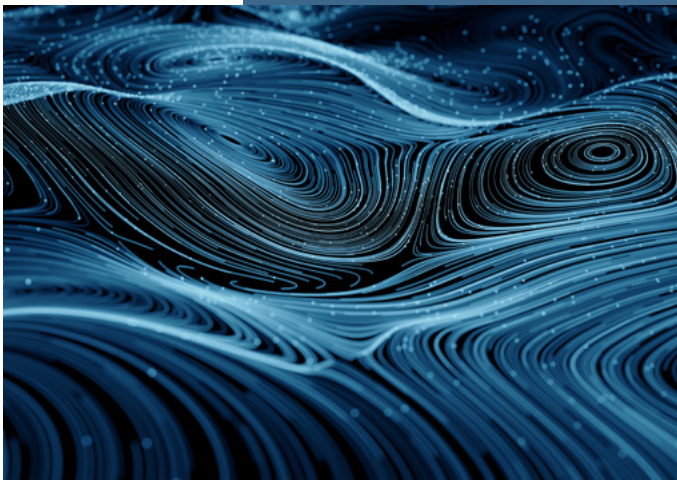
## Linking communications to communities

We're the world's largest producer of passive cabling systems in energy and telecoms, supporting the infrastructures of many of the world's leading telecoms and data centre operators.

Prysmian Group delivers optical fibre and copper cabling solutions, energy transmission and distribution cabling solutions, and monitoring systems that help link communications to communities almost everywhere on earth.

Our portfolio is the outcome of continuous multi-million-euro investment in R&D, and production in more than 30 international facilities.





## Data centres: Pathways to the future

VR. AR. 5G. IoT. The smart home. Automated cars. Remote surgery. All require a whole new level of performance. More fibre, faster data transmission, an abundance of power, and robust computing are vital to supporting these new and emerging technologies.

**The first step is to ensure a reliable, secure, and flexible infrastructure.**

Often hidden in plain sight, data centres are the backbone of the community. In most cities today, our lives rely on the functioning and availability of these data centres. They store, communicate, and transport the information we produce

every single second. The more data we create, the more vital our data centres become – especially in the future, where next-generation applications will generate enormous volumes of data per millisecond, globally.

But, many of today's data centres are cumbersome, inefficient and outdated. So, what happens if access to data isn't reliable, or fast enough?

**Customer satisfaction will plummet. Revenue will decline. And there could be serious consequences if vital services cannot be reached.**

**As the largest energy and telecoms manufacturer in the world, Prysmian Group is perfectly placed to support data centre operators in meeting the demands of these new applications and this exponential growth – on a local and global scale.**



# Your data centre challenges – solved

We focus our efforts on developing state-of-the-art solutions to alleviate ever-increasing bandwidth concerns.





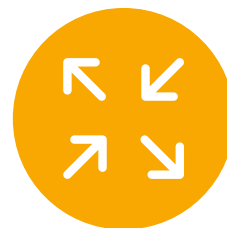
### **Downtime threats**

Downtime is a major issue not only for data centre operators, but for business owners also. And, according to technical data centre managers, the main causes of this downtime are low-quality and unreliable cables, or lengthy cable installation times.



### **Scaling challenges**

Scalability is vital to accommodate next-generation applications. However, data centre operators often struggle to provide sufficient infrastructure to facilitate more demanding IT requirements.



### **Space restrictions**

Operators must accommodate the increasingly high volumes of fibre running in and out of their data centres, but often they must work with legacy infrastructures such as fibre raceways, ducts and manholes, to name a few.

# Complete solutions from Prysmian

## Telecoms

Our Ultra-High-Density (UHD) suite has been engineered specifically to meet the increasing bandwidth demands posed by billions of connected devices.

### UHD fibre cable

FlexRibbon™ allows operators to bundle the maximum number of fibres into the smallest possible cable thanks to extremely flexible fibre ribbons that can be rolled up for ultra-high densities or laid flat for ribbon splicing.

### UHD connectivity

A patch panel suite designed to provide ultimate flexibility, ease of use and fibre management features. It includes modules or cassettes that can be connected by multi-fibre push on (MPO), direct termination (LC or SC), or by splicing (LC or SC).

### Assemblies

High-performance, MPO, pre-terminated, and patch cord assemblies.

**Our UHD suite enables data centre operators to 'scale' their network in limited legacy space quickly, easily and accurately.**

## Energy

Unplanned data centre downtime must be avoided at all cost, and the reliability of energy systems or components is integral in achieving this. Prysmian Group offers the most extensive and reliable range of energy solutions on the market.

### Energy distribution cables



A suite of reliable MV and LV energy distribution cables – for connection to the grid, right down to the rack PDU. Ideal for addressing downtime issues.

### Cable monitoring technology



Prysmian's PRY-CAM energy monitoring system assesses the condition of electrical systems in real time – avoiding faults, breakages and downtime.

**A large number of data centre businesses that have lost availability (due to downtime) for more than 10 days in a year have filed for bankruptcy within 12 months.\***

### UHD fibre cables

-  Inside: pre-connectorised
-  Outside: FlexRibbon™

### Energy distribution cables

-  Prysmian Energy MV + Prysmian Electronics
-  Prysmian Energy LV

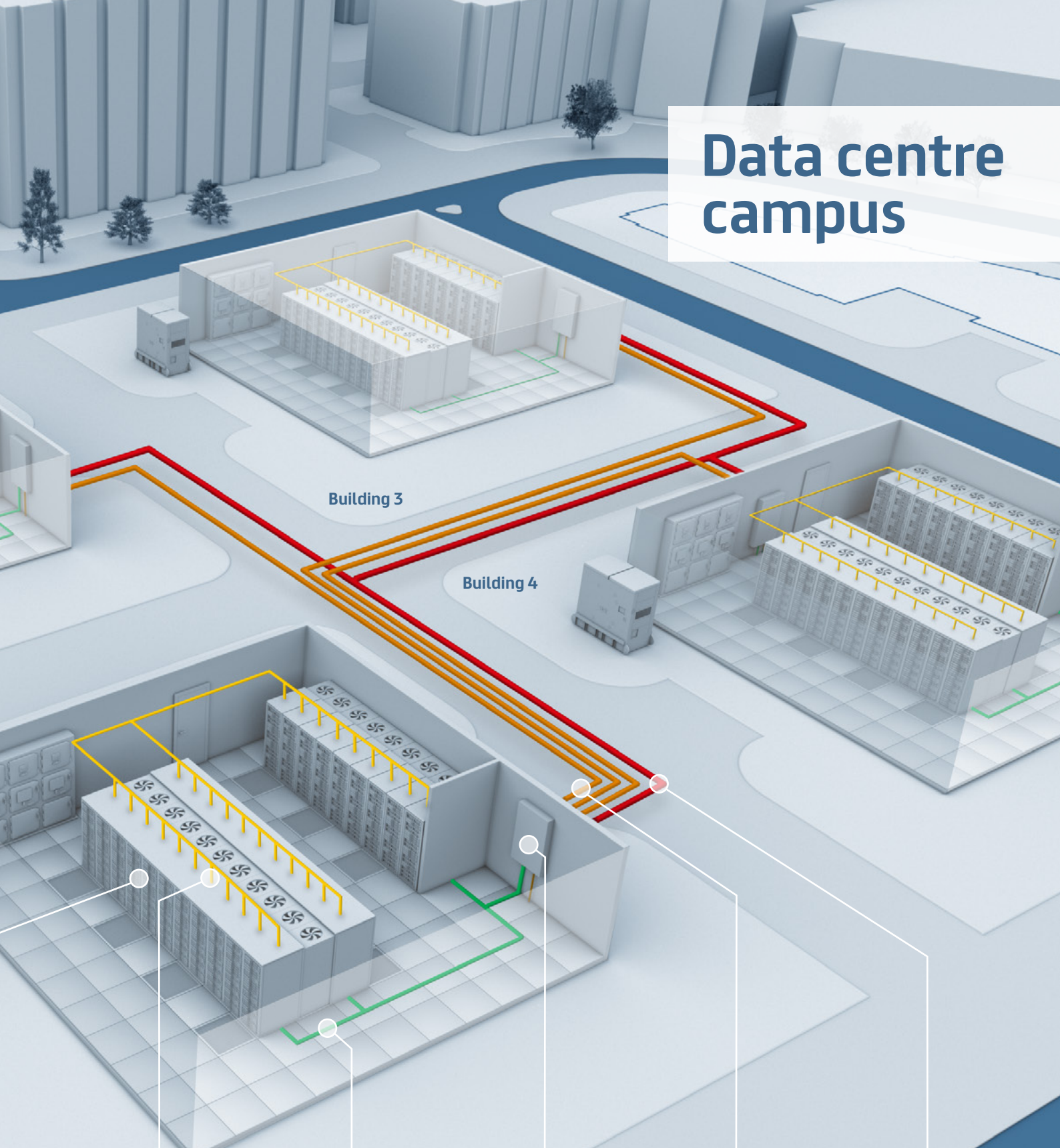
### UHD connectivity



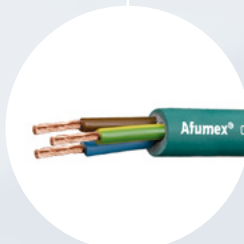
**Prysmian's UHD distribution solution**

\*National Archives and Records Administration

# Data centre campus



Pre-connectorised



Prysmian  
Energy LV



Cable monitoring  
technology



FlexRibbon™



Prysmian Energy MV +  
Prysmian Electronics

# Telecom data centre solutions

## UHD FlexRibbon™ fibre cable

### Overview

Data centre operators need high density. So, they must bundle as much fibre as possible into the smallest possible cable, to fit into their existing duct infrastructure.

Originally developed for our hyperscale data centre customers, Prysmian's UHD cables – featuring FlexRibbon™ technology – are designed to maximise fibre density and duct space utilisation, and will support major large-scale data centres worldwide.

FlexRibbon™ is compatible with existing splicing technology (200-250  $\mu$ m fibre splicing).

**Currently available in the following fibre counts:**

**864**

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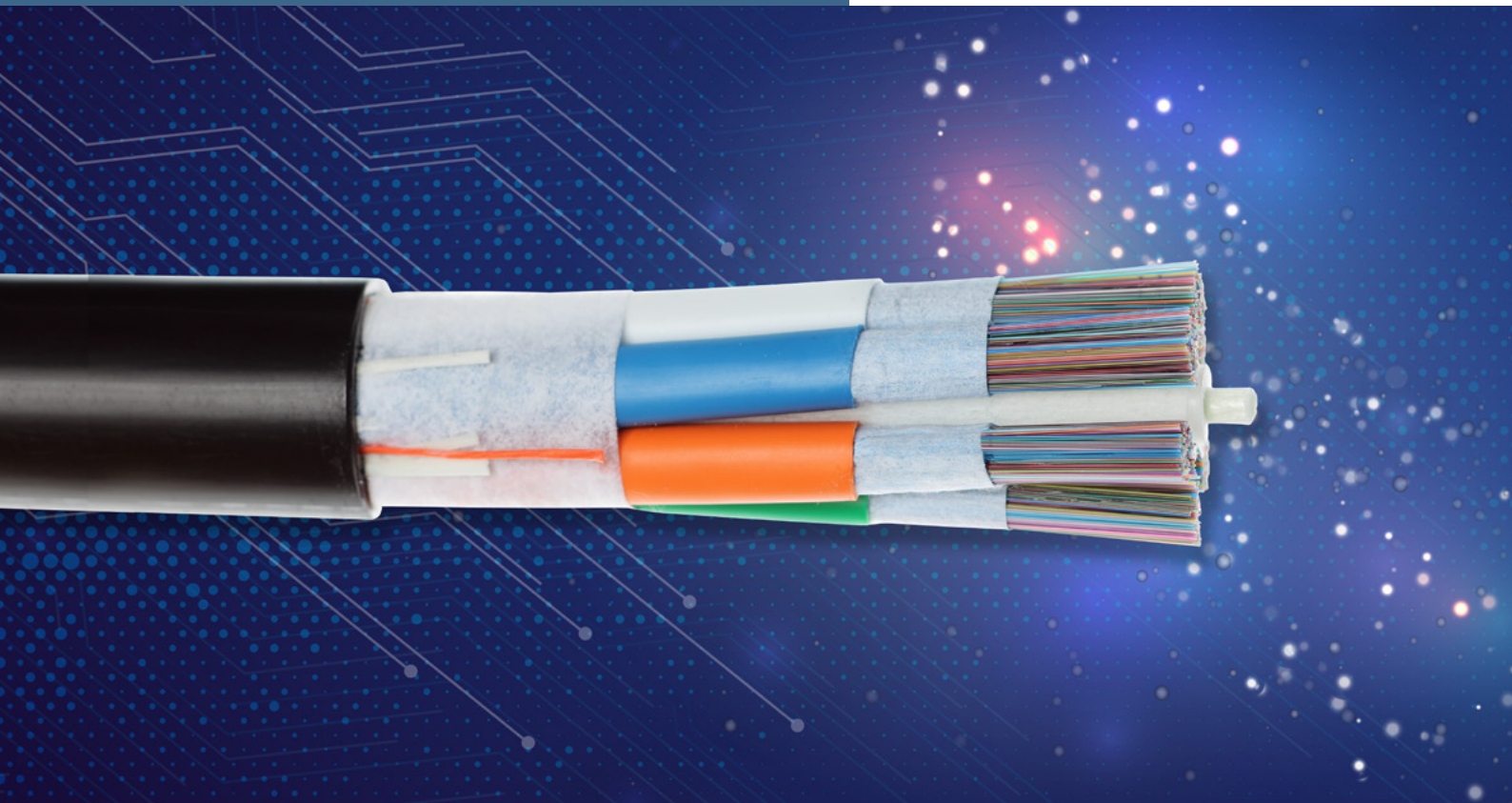
**1,728**

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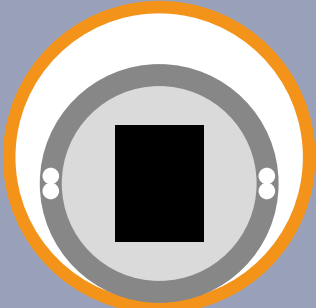
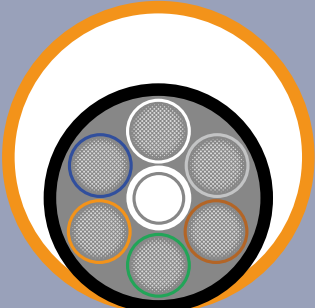
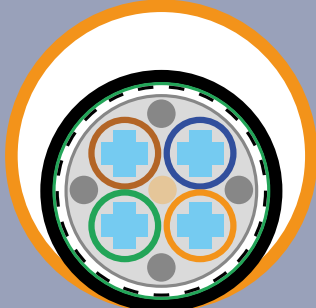
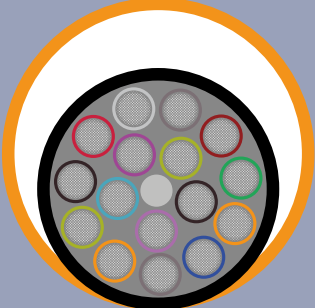
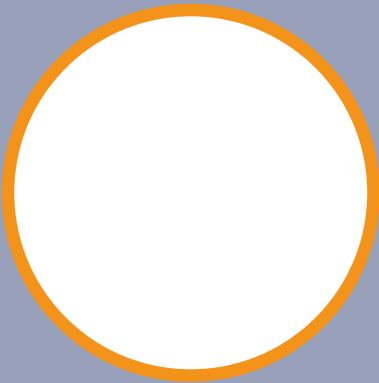

**3,456**

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**6,912**



## MassLink and FlexRibbon™ technology provide an ultra-compact outside-plant cable design.\*

Legacy solutions	FlexRibbon™	Features
<p>1.25-inch duct</p>  <p>864f</p>	 <p>1728f</p>	<p><b>1728 250 <math>\mu</math>m Fibre</b></p> <ul style="list-style-type: none"> <li>– A 21% smaller diameter (38% volume reduction) over traditional ribbon designs</li> <li>– Contains 1,728 bend-insensitive fibres</li> <li>– Small enough to fit into 31.75 mm/1.25-inch duct</li> <li>– Ribbons can be rolled up and packed together in small diameter 288-fibre subunits.</li> </ul>
<p>1.5-inch duct</p>  <p>1728f</p>	 <p>3456f</p>	<p><b>3456 200 <math>\mu</math>m Fibre</b></p> <ul style="list-style-type: none"> <li>– Contains 3,456 bend-insensitive fibres</li> <li>– Small enough to fit into 38.1 mm/1.5-inch duct</li> <li>– Ribbons can be rolled up and packed together in small diameter 216-fibre subunits</li> <li>– Enables high packing density while delivering advantages of mass fusion splicing.</li> </ul>
<p>2-inch duct</p> 	 <p>6912f</p>	<p><b>6912 200 <math>\mu</math>m Fibre</b></p> <ul style="list-style-type: none"> <li>– Contains 6,912 bend-insensitive fibres</li> <li>– Small enough to fit into 50.8 mm/2-inch duct</li> <li>– Ribbons can be rolled up and packed together in small diameter 288-fibre subunits</li> <li>– Enables high packing density while delivering advantages of mass fusion splicing.</li> </ul>

\*Ultra-compact indoor and indoor-outdoor versions are available, contact your sales representative for more information

# Patch panel suite

## Overview

The need for bandwidth has pushed data centre operators to deploy hundreds and thousands of fibres. This makes managing cables very difficult. Installation takes time, and scaling up and down can be particularly challenging.

Prysmian's High-Density (HD) Fibre Panel has been developed in our high-tech connectivity R&D centre, specifically for high-density fibre installations in hyperscale and carrier-based fibre networks.

It's easily deployed in multiple applications: hyperscale cloud, multi-tenant data centres, central offices, edge data centres, CATV headend and enterprise.



## Features

### Installation time

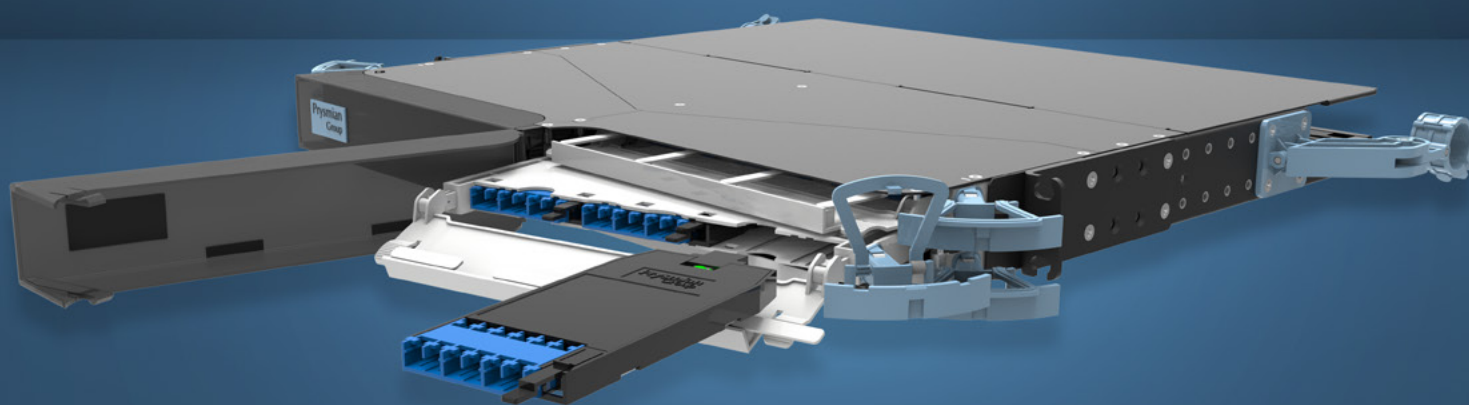
- Tested with data centre installer partners and experts
- Can reduce operational error and installation time by almost 30%.\*

### Ultra-high-density

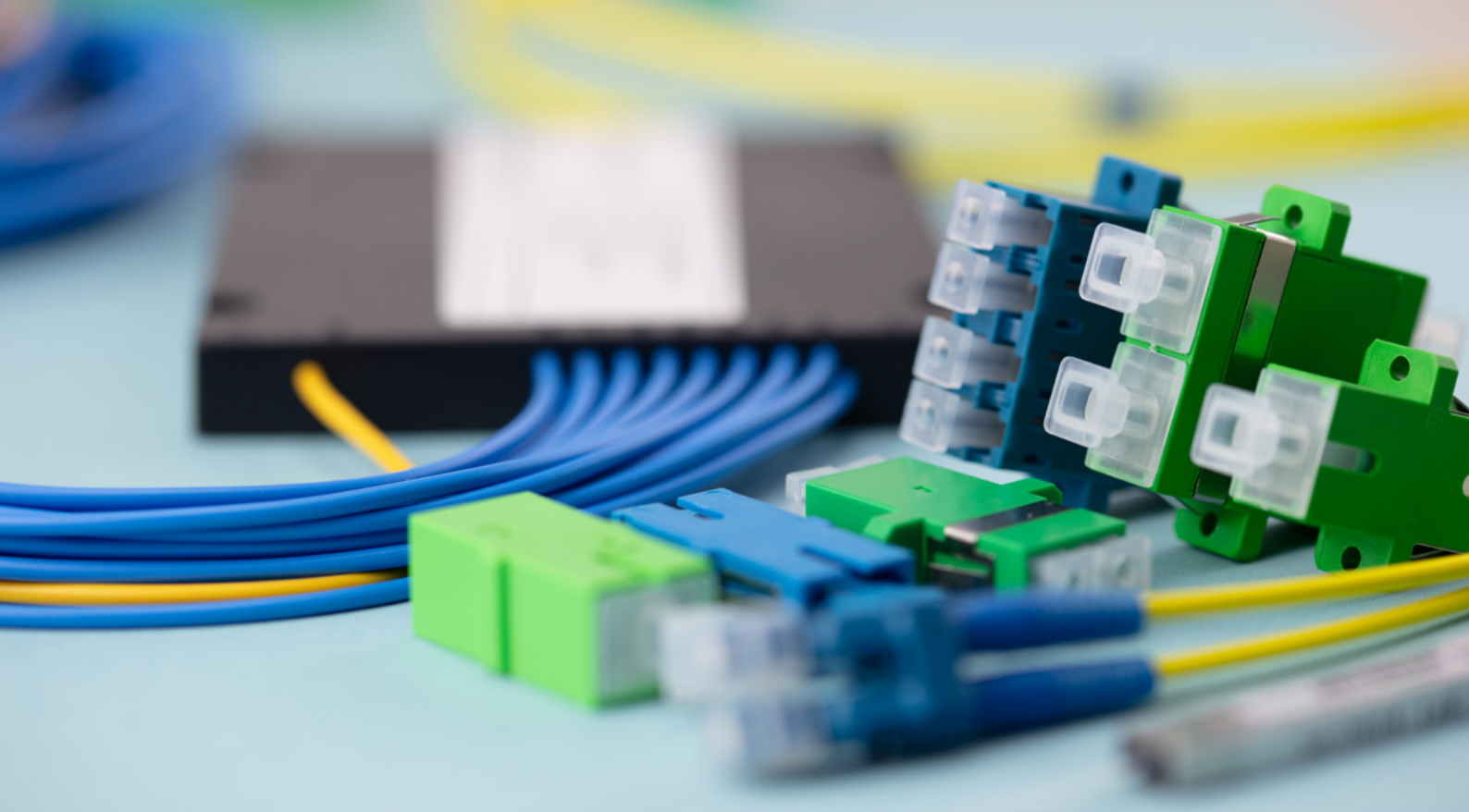
- Available in 1U, 2U, and 4U fibre footprints
- 144 to 576 in relative port counts, primarily using standard LC connectors
- MPO and other speciality connectors are also available to raise the densities in line with the demands of specific fibre network operators in each market segment.

### Modular and flexible

- The panel's cassette-based design enables flexibility and modularity
- Managed fibre count can be raised to up to 432 fibres per unit using high-density MPO connectors and trunks.



\*Compared with typical HD panels



# Pre-connectorised solutions

## Overview

In modern data centres where bandwidth is hungrier than ever before, performance just isn't enough. Equally, data centre operators need to meet revenue and reliability benchmarks, while keeping an eye on the long-term migration path.

Prysmian Group offers a complete portfolio of uniquely designed pre-connectorised solutions for copper and fibre, ranging from small accessories like keystone jacks, through a selection of cable patch cords and trunk cables, to panel and management systems.

Our multimode and single-mode assemblies guarantee performance, are factory tested and come with a complete test protocol.



## Features

### Modular

Our pre-connectorised modular cabling system deploys quickly and easily to meet performance demand.

### A wide range of cable solutions

- A complete line of fibre cable assemblies: pigtails, simplex and duplex patch cords, MPO and complex cable assemblies, and more
- All are factory-connectorised for use in a variety of data centre applications.

Available in fibre types OM1, OM2, OM3, OM4, OS2 and connector types available include: SC-SC, SC-FC, SC-ST, FC-FC, FC-ST, ST-ST, LC-LC, LC-SC, LC-FC, and LC-ST.

# Energy data centre solutions

Data centre operators need a reliable supply of energy, so high-quality energy cables are a must to ensure business reliability.

The Prysmian product portfolio includes:

**Medium-voltage cable systems** through both air and ground (including all conceivable network components) for connecting industrial buildings and/or residential construction to the main distribution network.

**Low-voltage cable systems** for power distribution and cabling to buildings.

Prysmian's low and medium-voltage cables, building wires, low-fire-hazard cables, fire-resistant cables, instrumentation and control cables, and accessories play a pivotal role in managing and distributing power and signals throughout infrastructures like data centres.

Our products meet local standards and are available for each territory and region. And our local team will support you in any logistics and project management issues.





#### Low-voltage energy cables

A full range of standard PVC cables up to 1 kV for lighting, heating, air conditioning, and more. Fully conforming to international and local standards.



#### Low-voltage fire-reaction cables

Up to 1 kV, these low fire-hazard cables decrease flammability, prevent fire propagation and heat release, and dramatically reduce the emission of smoke and hazardous, acidic and irritant gases to protect servers and switches.



#### Low-voltage flexible cables

A family of copper wire reticulated elastomer cables provide outstanding protection, flexibility and durability.



#### Low-voltage fire-resistant cables

Especially appropriate for the data centre environment, fire-resistant cables ensure the integrity and continued operation of vital circuits during firefighting.



LV



#### Medium-voltage cables

A full range, with several insulation sheath types available, up to 20 kV for power distribution in and around data centre buildings.

MV



# Asset monitoring system (PRY-CAM)

## PRY-CAM: For data-driven power

The reliability of the power supply coming from power distribution grids and equipment is key for data centres, where a blackout or malfunctioning of the power supply may be highly disruptive and pose serious consequences. In the US, economy losses due to power outages are estimated to be \$150 bn a year.

## Average cost of 1 hour outage by industry

Industry	Amount (USD)
Cellular communications	50,000
Telephone ticket sales	72,000
Airline booking system	90,000
Semiconductor manufacturer	2,000,000
Credit card operation	2,580,000
Brokerage operation	6,480,000





PRY-CAM is a breakthrough technology that allows **online, accurate and reliable measurements of key parameters, and the diagnosis and localisation of defects – remotely**, to support our customers facing the growing complexity, reliability, safety and continuity challenges of power supply to their equipment.

The data that we can gather are manifold: conditions of use, malfunctioning, overheating. All in real time and with no specific expertise needed. In this way, PRY-CAM can help increase the uptime and safety of electrical systems, enhance asset longevity and significantly reduce maintenance costs and risks by harnessing the extraordinary possibilities of data gathering and the Internet of Things.

It is faster, more data driven and more effective than ever before.

The PRY-CAM family features a range of cutting-edge products covering the key aspects of condition assessment and monitoring of electrical systems and equipment. It is suitable for any electrical equipment from 3 kV to 600 kV, including cables, joints, terminations, switchgear, transformers, electrical machines, etc.

PRY-CAM SYSTEM integrated combined monitoring solutions consist of one or more PRY-CAM products that enable the continuous monitoring – either permanent or temporary – of key parameters (partial discharge, temperature, humidity, etc.) remotely.

It is based on a fixed, reliable, experienced and highly advanced platform architecture. Each has the flexibility to adapt to customers' SCADA protocols and can be configured based on customers' specific requirements – from parameters to be monitored to fulfil specific maintenance and asset management strategies, to visual graphic interfaces.

Thanks to a private cloud-based system built around our technologies, today PRY-CAM relies on a database that hosts more than three million measurements that had never before been classified and stored, allowing effective maintenance strategies for electrical assets, and learning for continuous improvement.

**Discover more at [www.pry-cam.com](http://www.pry-cam.com)**

**Prysmian Group**

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