No time for downtime.
Whether your data center is in the cloud, on a campus, global, local, commercial or government, making it faster, more reliable and more efficient is what matters most. We’re focused on helping you keep your data center up and running - efficiently and effectively - through the use of our innovative solutions and products.

How do we do this? For starters, we worked closely with you, helping to find ways to make your systems operate quicker, less-expensively, and with with less down time.

Thanks to innovative solutions, taking your data center operations to a better place is no longer tomorrow’s dream. It’s happening right now.
Speed & Performance

3M™ Twin Axial Cable Assemblies
3M™ Fiber Structured Cabling
3M™ Copper Structured Cabling

Uptime & Reliability

3M™ Novec™ 1230 Fire Protection Fluid
3M™ Fire Barrier Products
3M™ Cogent Biometric Access Control Readers
3M™ Medium Voltage and Transmission Class Accessories

Efficiency & Sustainability

3M™ Commercial Air Filters
3M™ Novec™ Engineered Fluids for Liquid Immersion Cooling

3M.com/datacenters
Minimizing design constraints

3M Data Center Solutions are designed to deliver fast performance, quickly. From high-speed connectivity solutions that reduce power usage to field-terminated fiber connectors that enable fast, onsite installation to modular fiber management systems that provide scalability for your fiber network, 3M Data Center Solutions can expedite deployment while improving your bottom line ASAP.

3M™ Twin Axial Cable Assemblies
Flat, foldable and longitudinally shielded high-performance cable

Thin and bendable cable gives users more configuration flexibility. With our flat, foldable and longitudinally shielded high-performance cable, the ability to fold these cables with virtually no signal integrity loss allows for improved routing and flexibility of design, enabling complex, high-performance architectures.

External Cabling
The low-profile and foldability of 3M Twin Axial Cable Assemblies allow for tighter bundling of the external server cabling leading to improved air flow and easier maintenance of server cabling.

- QSFP+, SFP+, 26P miniSAS

Internal Cabling
Thin is in. The low-profile capabilities of 3M Twin Axial Cable Assemblies saves a substantial amount of internal space and help alleviate congestion inside dense server systems – giving design engineers considerably more room for server architecture options.

- PCI Express, HD miniSAS, SATA, SAS
Fiber Structured Cabling
Includes fiber management systems, field-installable fiber connectors, and pre-terminated fiber cables.

- **3M™ Fiber Distribution System RFO-NG**: High-density fiber management system that allows for easy expansion and fiber management.
- **3M™ No Polish Connectors**: Fiber connectors that provide fast, easy and reliable field installation.
- **3M™ Pre-Terminated Fiber Cables**: Pre-engineered, factory-terminated solutions that offer fast installation time.

- **3M™ Easy Cleaver**: The 3M™ Easy Cleaver requires no maintenance, creates smooth end faces and has an approximate life of 120 cleaves. Available only in packages of connectors and splices.
- **3M™ SCS – Data Center with MTP Connectors**: High density Plug & Play Fiber Patch Panel with up to 144 ports in 1RU, providing fast, reliable installation in modular format for very high density data center applications.

Copper Structured Cabling
Designed with ease in mind, these include copper patch panels, jacks, and patch cords for Cat 6 and 6A needs

- **3M™ Patch Panels**: Modular-design patch panels accommodating up to 32 RJ45 ports in 1U
- **3M™ RJ45 Jacks**: Easy-to-terminate tool-less connectors with excellent headroom
- **3M™ Patch Cords**: Cat 6A patch cords designed to minimize alien crosstalk up to 500 MHz
- **3M™ Port Identification Bezel**: Important tracing and troubleshooting covers that can be changed without resulting downtime
Making reliability a standard

With the demand for data exploding, data centers face ever-greater challenges. Customers expect data centers to perform like utilities. They expect 24-hour reliability, without interruption. If centers go offline, the effects can be catastrophic.

Just minutes of downtime can cost thousands or even millions of dollars. The reasons for data center downtime are many, including overheating servers, fires, interruption of power, operator error and security breaches. We understand these problems, so we’ve designed 3M Data Center Solutions that can help with all of them.

3M™ Novec™ 1230 Fire Protection Fluid
Safe, sustainable clean agent that quickly extinguishes fires, maintaining operations

**Safe for Electronics**
- Electrically non-conductive, non-corrosive

**Continued Operation /No Clean-up**
- Evaporates cleanly, leaving no residue
- Does not damage electronics

**High Margin of Safety**
- Widest margin of safety per NFPA 2001 compared to other halon alternatives

**Outstanding Environmental Profile**
- Non-ozone depleting
- Five-day atmospheric life (vs HFCs: ~ 30 years)
- Global Warming Potential of less than 1 (vs HFCs: >3000)

Fire Barrier Products
Passive fire protection solutions to help protect buildings from the spread of fire, smoke and toxic gases

3M offers a broad portfolio with over 100 products and almost 1000 tested and listed fire-rated systems

3M™ Fire Barrier Foam FIP 1 Step
- Re-enterable, intumescent rated firestop foam that expands up to 5X

3M™ Fire Barrier Sealants
- Intumescent firestop sealant with over 600 tested and listed systems

3M™ Pass Through Fire Barrier Devices
- Re-enterable cable protection for listed systems for up to 4 hours

3M™ Fire Barrier Molded Putty
- Affordable, re-enterable solution for the installation of cable and blank openings

3M™ Fire Barrier Pillows
- Self-contained, highly-intumescent pillows

3M™ Fire Barrier Composite Sheets
- Thin one-part composite sheet used for firestopping large openings
With the demand for data exploding, data centers face ever-greater challenges. Customers expect data centers to perform like utilities. They expect 24-hour reliability, without interruption. If centers go offline, the effects can be catastrophic. Just minutes of downtime can cost thousands or even millions of dollars. The reasons for data center downtime are many, including overheating servers, fires, interruption of power, operator error and security breaches. We understand these problems, so we've designed 3M Data Center Solutions that can help with all of them.

Passive fire protection solutions to help protect buildings from the spread of fire, smoke and toxic gases

3M™ Cogent MiY Biometric Access Control Readers

Multi-factor biometric access control reader for data center physical security needs

Configurable
- Over 500 pre-programmed applications
- “Make It Yours” (MiY) platform allows for third-party configuration
- USB for add-on device (cameras, bar codes, magnetics strip readers, etc.)
- Integrated with Schneider Continuum and Identiv / Cisco Velocity systems

Multi-Mode Authentication
- Contact / Contactless smart cards, fingerprint, and/or PIN

Connected or Standalone operation
- Integrates with existing physical access control systems
- Can operate in a fully standalone system

Back Office Functionality
- Easy to maintain user access privileges
- Complete card life cycle management
- Remotely update devices / multiple clients can access the server at once
- Fully encrypted system from edge to client using AES 256 and TLS
Increasing efficiency and sustainability

On average, only about half the energy used by data centers actually powers the servers and storage. So how can you reduce the waste and increase efficiency? One way is to spend less energy cooling the servers. Another is to use products that are more energy efficient in the first place, like the ones from 3M Data Center Solutions.

Commercial Air Filters

3M™ Commercial HVAC Filters with a unique filtration structure designed to lower pressure drop and provide longer life

Filters should work as hard as you do. 3M™ Commercial Air Filters use an optimized combination of both mechanical and electrostatic technologies to capture particles throughout the depth of the filter instead of just blocking particles on the surface.

Key advantages

- Low pressure drop design > Potential energy savings
- Moisture tolerant > Ideal for free air cooling / evaporative water cooled systems and high-humidity conditions
- Pre-Filter not required > Further reduces pressure drop and increases energy savings
- Longer filter life > Less filter change outs and waste
- Integral gaskets > Reduced air bypass
- Metal-free > Can be incinerated, helps with Zero Waste goals
- Lower Total Cost of Ownership > No capital, no retrofit, rapid payback
- Available as MERV 11-16

3M™ Novec™ Engineered Fluids for Liquid Immersion Cooling

Providing dramatic savings in cooling energy while increasing power density

Two-phase immersion cooling (2PIC) using Novec™ Engineered Fluid is proving to significantly increase power density, reduce energy consumption and deployment time and deliver environmental sustainability. By taking advantage of Novec fluid’s relatively low boiling point and resulting phase change, this technology can achieve extreme energy efficiency.

Advantages

- Simplifies design by eliminating server level cooling hardware
- Significant savings due to energy efficiency—have achieved PUEs of less than 1.01
- Enables higher density compute power regardless of climate (up to 250kW per rack)
- Servers can be hot-swapped
- Simplifies facility construction through elimination of air cooling infrastructure
- Reduces thermal stress from temperature fluctuations
**Sustainability for the environment and the health of your business**

From more efficient products to protecting the environment, 3M is innovating with your needs in mind. We’ve actively pursued the development of products that enable our customers to reduce their impact on the environment while reducing our own, as well. Along with working with communities, developing product solutions is a key component of 3M’s sustainability strategy and our portfolio is a living example of our expertise in inventing for a better tomorrow. This same commitment extends to 3M’s data center portfolio – we offer products that enable you to become better environmental citizens.

**3M™ Novec™ 1230 Fire Protection Fluid**

From its inception, 3M™ Novec™ 1230 Fire Protection Fluid was designed to address the global demand for a sustainable clean agent. It is effective at extinguishing fires and is not targeted for emission reduction, phase-out or phase-down. Novec 1230 fluid offers the sustainable clean agent properties you need.

**3M™ Commercial Air Filters**

3M’s filters use both mechanical blocking and electrostatic technology to capture particles throughout the full depth of the filter, resulting in:
- Low pressure drop design > Potential energy consumption reduction
- Longer filter life > Less waste

**3M™ Twin Axial Cable Assemblies**

Twin Axial Cable Assemblies offer excellent routability, allowing for:
- Improved airflow, lowering energy costs
- Higher-density packaging

**3M™ Novec™ Engineered Fluids for Liquid Immersion Cooling**

Many of the benefits from immersion cooling compared to traditional air cooling include:
- Decreased power consumption – PUE 1.01
- Improved water efficiencies
- Higher rack densities (up to 250kW per rack)
- Reduced floor space requirements

Dell’s PowerEdge™ Server Portfolio uses 3M’s Twin Axial Cable Assembly to optimize airflow for better cooling to maintain the high speeds and processing power HPC environments demand.
Serving the servers

The pace of server innovation is extraordinary. There is a constant demand for improved performance and reliability. Designers are ever challenged to push these performance limits while managing space, thermal, vibration, and EMI/EMI concerns. With products that help address these limitations without sacrificing performance, 3M can help minimize design constraints.

Along with heat, vibration, noise issues, EMI and EMC, servers are also being placed into even more demanding environments that include moisture and environmental pollutants. 3M can help manage these design concerns and provide improved protection and cleaning.

Thanks to our innovative solutions, taking your data center servers to a better place is no longer tomorrow’s dream. It’s happening right now.

Minimizing design constraints

- Cable Assemblies
- Bonding Solutions
- Thermal Management Materials
- Immersion Cooling

Providing device protection

- Vibration and Acoustic Control
- EMI/EMC Management
- Labeling Materials

Helping to ensure quality

- Electronics Cleaning
- Moisture & Corrosion Protection
3M’s 46 Core Technology Platforms

Providing a wide range of solutions to help customers adapt and grow with an ever-changing marketplace.
For additional information visit 3m.com/datacenters or email 3MDataCenters@3m.com

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