NEXANS DATA CENTER SOLUTIONS



WELCOME TO THE HYPERLANE!

Nexans

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Nexans Data Center Solutions

Nexans Data Center Solutions (NDS) was launched in 2017 to specifically position Nexans global offerings to the global data center customer.

The NDS product line includes several relevant product families:

- Fiber Assemblies
- Fiber Optic and Copper Patch Panels
- Fiber Optic Cable
- Copper Cable
- DAC's
- AOC's
- Optical Transceivers
- Cable Pathway

The overall product strategy is guided by the "Own the Link" (OTL) philosophy. The direct tangible output of OTL is a cost calculator which compares various components needed to complete a Layer 1 optical link. For example, it can show the total cost of a 100G-CWDM installation as compared to a 100G-PSM4.

It can also be used to compare four 25GBASE-SR links versus one 100GBASE-LR4. The cost of all the components (transceivers, cabling, patch panels, connectivity) are summed and divided into the data rate.
The result is a Layer 1 value normalized to $/Gb. This allows for a direct comparison between the design options.

NDS captures all the global capabilities of Nexans and delivers them to our customers through a single point of contact. These capabilities include:

- Manufacturing in key global regions
- Regionally compliant products that meet various local regulations, particularly in Europe where the rules for deployment are highly variable
- Relationships with installation partners that are certified with our products in all regions
- Distribution relationships to ensure stable inventory/supply



Complete Coverage for All of Your Needs

We can support you in scaling up your hyperscale data center, fixing your problems and industrialising your new concepts.



Scale up your capacity when and where you need
We understand that you're not just adding nodes to corporate infrastructure. You're developing an innovation platform that's expanding rapidly. Refresh cycles happen in weeks, and scalability and resilience are key to support current solutions and enable fast-paced innovations on a global scale.



Fix your problems as soon as they occur
We know that you're a pioneer in what you're doing, and you're piloting new approaches. We can support you in fixing any of your physical-layer- related network problems that crop up, as quickly as possible.



Industrialize your new concepts
We understand that a hyperscale data center is the core of a fast-evolving, massive, and distributed computing network. We know how to turn an idea into a concept, and turn a concept into an industrialized solution that makes you more productive – and that can scale up quickly to keep pace with the IoT.

Capable of serving you anywhere in the world
With nine data communications manufacturing plants and warehouses worldwide, we can deliver the complete portfolio of physical layer infrastructure products anywhere in the world: from data cabling, connectivity and pre-terminated assemblies, to transceivers and fiber containment systems.

As a geo-resilient operation, we know you need services around the globe. With more than 30 sales offices worldwide and more than 1,000 certified partners and value added resellers, we can provide service and support wherever you're located.

We offer savvy cabling logistics
We don't just deliver the cabling, we speed up deployment: we understand that cabling is only one component of your data center, and we know from experience that deploying the cabling is more expensive and cumbersome than the cabling itself. Our logistics services go beyond delivering cable to a warehouse. We deliver pre-terminated, tested and custom-labeled cabling, enclosures, transceivers, pathways, etc., on time and ready for deployment.

Collaborating with customers to improve performance
We have four competence centers worldwide (USA, UK, Belgium and Germany). Our TEK Center in New Holland, PA, USA, features two world-class R&D labs focused on applications and new materials development as well as showcases for data center and enterprise networks. Our competence centers provide insight on how to solve network challenges by allowing you to experience the latest technology, learn about emerging applications and access world class research and development.

Smart Choices for Digital Infrastructure

Three steps to empower your data center

Our world is becoming increasingly mobile, digital and smart. As our dependence on digital services grows, so does traffic in our data centers. The biggest jump has been in east-west traffic within the data center, on top of continued growth in north-south traffic from the data center to the user.

Supporting these explosive rates of digital growth requires an agile, carefully planned IT infrastructure, and efficient data access and exchange. Cabling systems need to be robust, flexible and scalable, designed to support business growth and technological evolutions.

At Nexans, we can help you build and operate an efficient and cost-effective digital infrastructure that will help you reach your business goals.

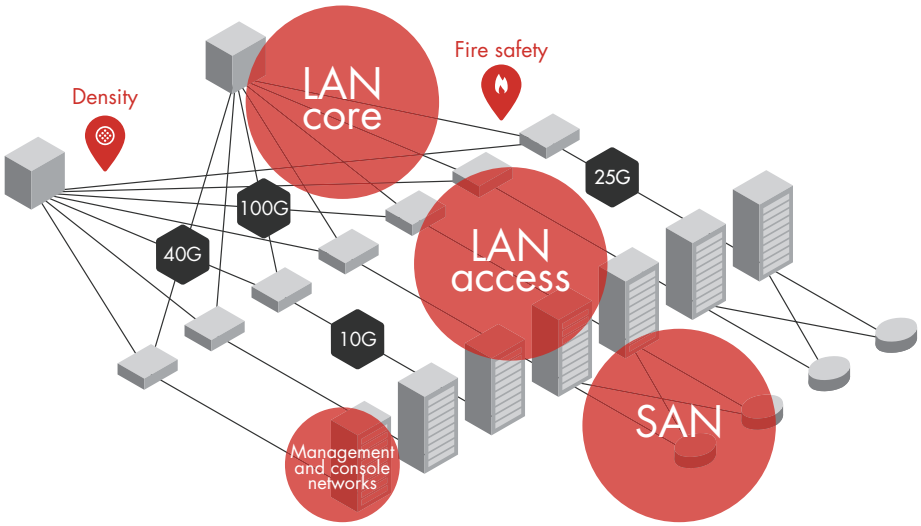
We focus on three key areas:



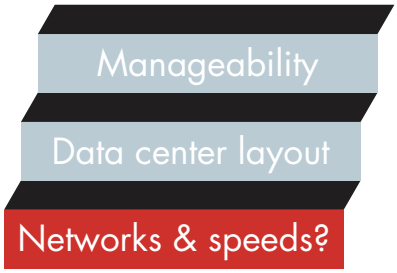
1 - Networks and speeds
Exploring new standards, the evolution from server to switch, and migration scenarios.

2 - Data center layout
What to consider when designing your data center.

3 - Manageability
Smart choices to reduce installation times and space usage, increasing flexibility in use and improving your total cost of ownership.



1. Networks & speeds

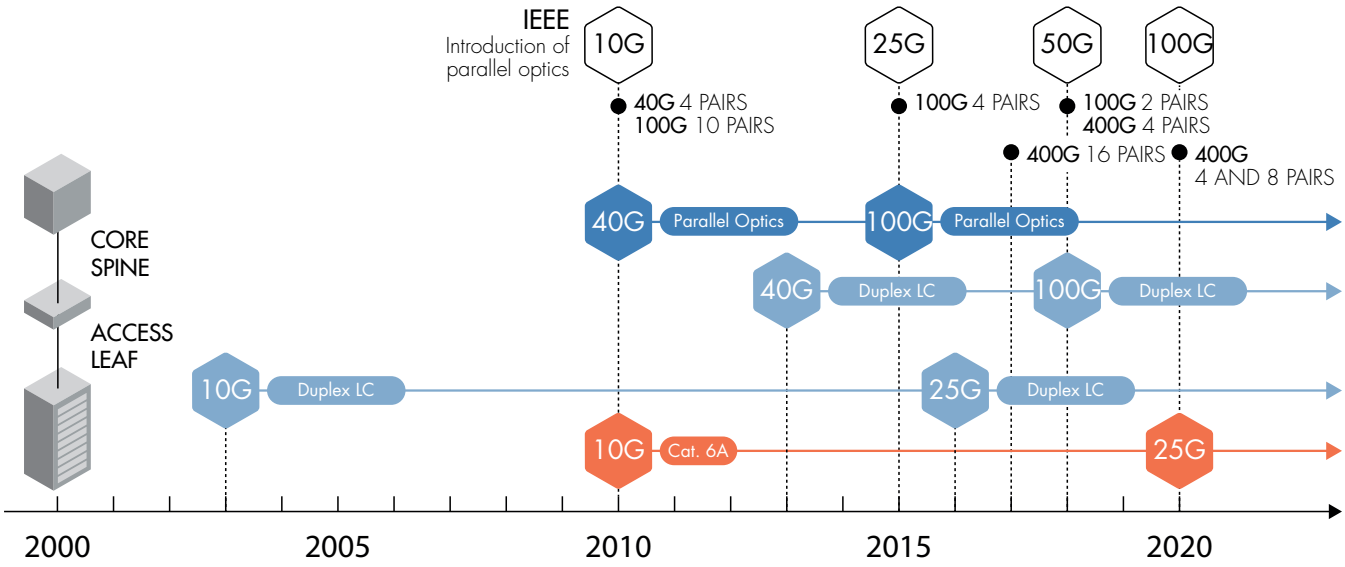


Staying up to date on technology trends and emerging standards is the key to knowing which way to turn, and when.

Choosing which standards to follow has become more complicated. In the past, IEEE high speed protocols were developed well in advance of general use, ahead of market needs. Deciding which speed to work towards was simple: follow the TIA and IEC/ISO standards.

Today, there's a complex landscape of solutions to choose from, including many that operate outside IEEE and other trusted standards bodies. Switch vendors have introduced solutions for 40 Gigabit and 100 Gigabit that are not part of IEEE standards. And some industry alliances have formed multisource agreements.

Nexans can help you to navigate your way through the technology roadmap.



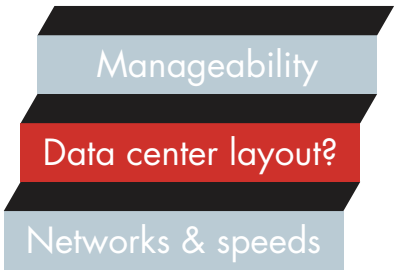
Smart choices for the Core network

When preparing for the core (or spine) network which most likely may need speed of 100G/s and beyond, the choice to make is for parallel optics or duplex LC. The advantage of Nexans' MPO solutions is its support for 40, 100 and 400 Gigabit with 8 fibers. This MPO solution will give you at least three, if not four generations of evolution within your data center. Using the same cabling for 3 or 4 generations lowers installation costs and reduces investment. Nexans offers a variety of both duplex LC and parallel MPO solutions as highlighted throughout the fiber section on pages 12-53.

Smart choices for the Access network

Speeds of 10G, 25G, 40G, 50G, 100G can be supported with fiber in duplex LC and 10G, 25G, and 40G with copper. Please refer to our fiber solutions on pages 12-53 and our copper solutions on pages 54-66 for more information.

2. Data center layout

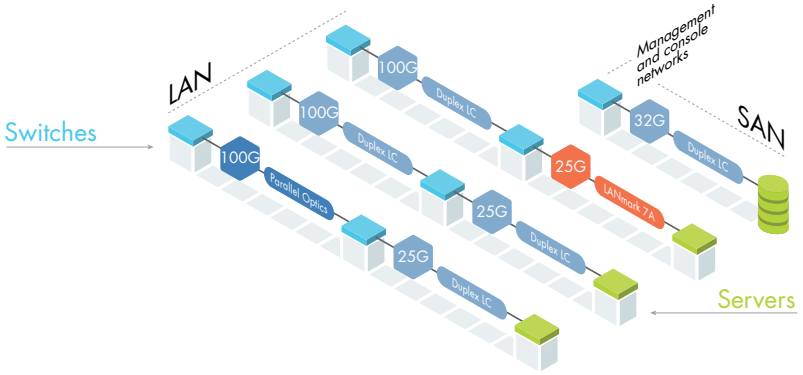


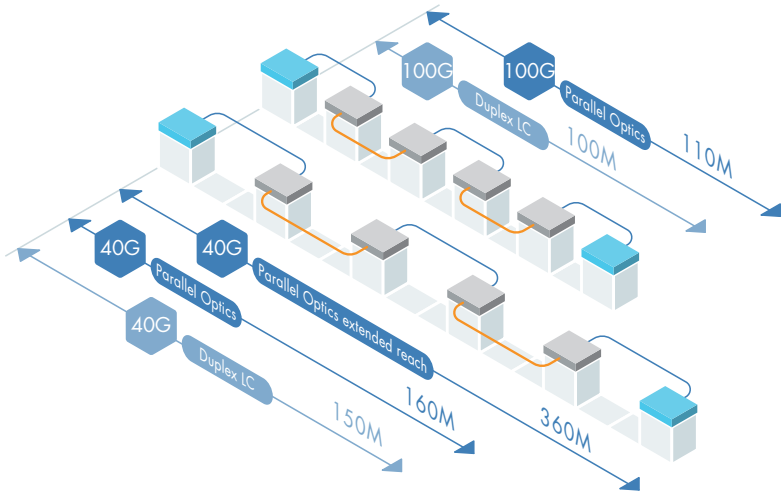
In addition to helping you choose the right standards and technology for your networks and speeds, Nexans can support you in making smart choices for your data center layout.

Things to consider when designing your data center:

- What cable lengths will you need to meet the physical dimensions of your data center?
- Do you have certain space constraints?
- What are the fire safety and other challenges?

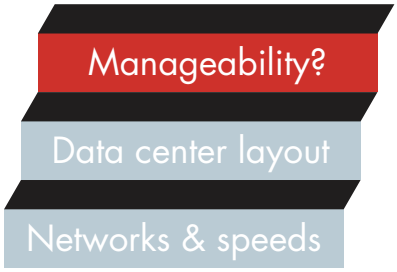
LANmark cabling systems allow you to optimally balance copper and fiber, in line with the performance you need, for any number of ports and any bandwidth.





Nexans connectivity solutions exceed the requirements of all relevant standards, ensuring that data centers perform better and more reliably. You can find more details on guaranteed distances with Nexans fiber solutions on p 48-53.

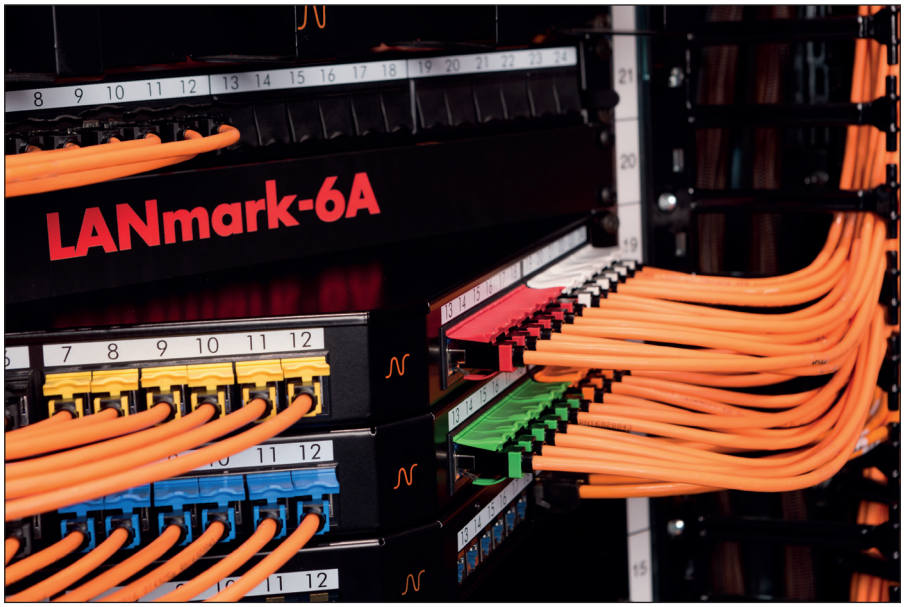
3. Manageability



Nexans can support you in making smart choices to make your network more manageable:

- Easy identification features
- Dedicated fiber trunking systems
- LANsense physical layer automated documentation
- Choosing a patching solution with the density you need

Patching is clearly one of the most significant areas a data center manager has to deal with on a daily basis. Nexans provides 4 different density levels in its fiber offering – see p 12-26. The ENSPACE Ultra high density solution can support 144 LC connections on 1 RU



Colored shutters can be used to to differentiate networks/protocols and/or redundancy path See p 62

Cable Flame Ratings

Communications cables can be designed to prevent the spread of flame and/or smoke if exposed to fire. Various jurisdictions can require specific levels of flame performance for the cabling to protect people and property as part of the local building codes. In the United States, the standard that is most commonly referenced in these codes is the National Electrical Code (NEC).

The NEC has a well-established hierarchy of fire resistance levels. For data center communications, there are two primary cable types that are relevant. Fiber optic cables are covered by NEC Article 770 and twisted-pair category cables are covered by Article 800. There are some differences regarding the mechanical performances of these cable types, but the flame tests are the same. By standard, and typically by code, a higher performing cable can be substituted for a lower performing cable of the same application type.

Flame Rating	Article 770 Designation	Article 800 Designation
Plenum	OFNP, OFCP	CMP
Riser	OFNR, OFCR	CMR
General Purpose	OFN, OFC	CM

For copper cables, there is a significant price premium for higher levels of flame performance. Therefore, CMP and CMR rated cables are both popular. To a lesser degree, CM can also be popular in patch cables.
For fiber optic cables, there is practically no price premium (for most product families) between the highest and lowest levels of flame performance. Therefore, OFNP cables are the most popular since they can be installed in any of the categories.

But for global applications, there are instances when a material requirement from a jurisdiction outside of the US cannot also meet the flame rating requirements of the plenum listing. Therefore, cables can be offered with a riser rating for US applications and a material rating for other regions.

A relatively recent European development is the Construction Products Registration (CPR). Related to cables, European Standard EN 50575 defines various performance classes, also known as EuroClasses. There is more to this standard than simply flame ratings. For more information, please visit www.nexans.co.uk/CPR.

The important takeaway from this is to make sure that all your cables, which may include the ones used for cable assemblies, are compliant to the appropriate codes in the jurisdiction where they will be installed. Since these are government codes, there can be legal repercussions if they are not followed.

Fiber Optic Cables

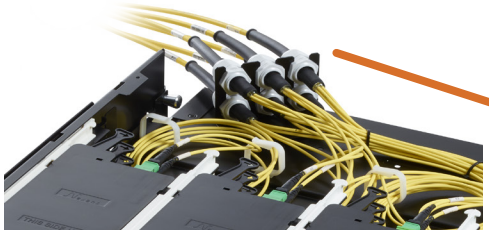
FIBER PART NUMBER CONFIGURATION: N19a.bbcdddd-ef		
N19**a**.bbcdddd-ef	a: fiber type	4: SM
		5: OM3
		7: OM4
		9: OM5
N19a.**bb**cdddd-ef	bb: product family	AC: high density distribution
		DA: data center distribution
		D2: 2.4mm 2-fiber round
		D3: 2.9mm 2-fiber round
		IC: interconnect
		LT: dry loose tube
		MD: micro data center cable
		OP: gel-filled loose tube
		PD: premises distribution
		PI: premises distribution indoor/outdoor
		RD: ribbon
		S2: 2mm simplex
		Z2: 2mm zipcord
N19a.bb**c**dddd-ef	c: amoring	A: corrugated steel tape
		K: aluminum interlock
		N: no armor
N19a.bbc**dddd**-ef	dddd: strand count	
N19a.bbcdddd-**e**f	e: jacket color	A: aqua
		E: erika violet
		K: black
		L: lime green
		Y: yellow
N19a.bbcdddd-e**f**	f: flame rating	N: no rating
		P: plenum
		R: riser
		Z: LSZH riser

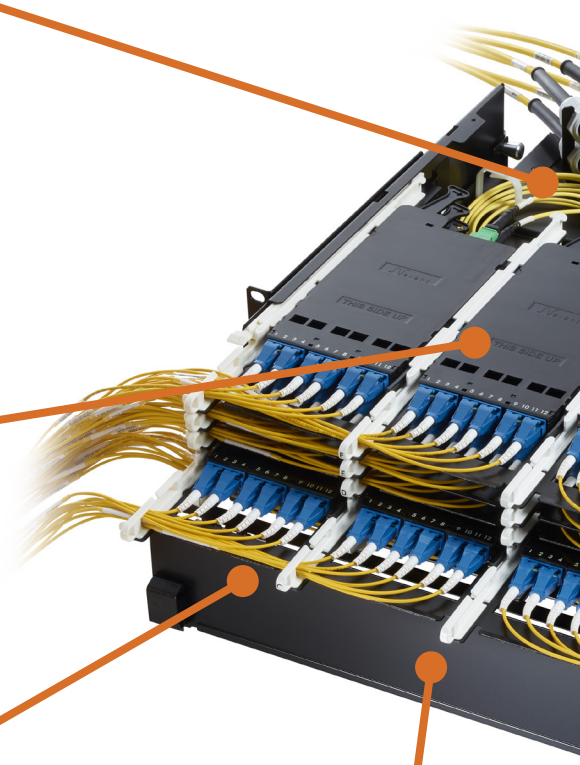
Copper Cables

COPPER PART NUMBER CONFIGURATION: N18a.bbcdde		
N18**a**.bbcdde	a: cable type	0: UTP
		4: UTP Patch
		5: FTP Patch
N18a.**bb**cdde	bb: Category	60: Cat 6 LANmark-6
		61: Cat 6 LANmark-1000
		68: Cat 6 28 AWG
N18a.bb**c**dde	c: flame rating	P: plenum
		R: riser
		M: general purpose
N18a.bbc**dd**e	dd: jacket color	20: white
		40: blue
N18a.bbcdd**e**	e: packaging	B: box
		R: reel
		S: smartPAK 1500' box
		X: reel–box

LANmark-OF ENSPACE

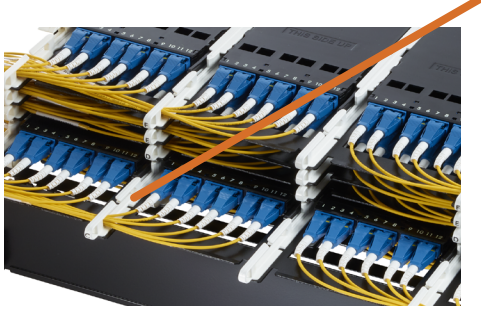
- Cables mounted with glands
- Cables can be attached left, middle, and right of panel and angled in any direction to meet the installation need





- Can be installed from front and rear
- 12x LC, 6x MPO, or LC-MPO cassettes





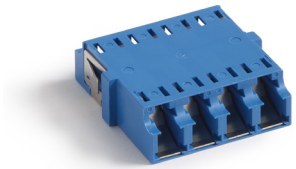
- Fingertip access to patch cords
- Individual sliding tray with 4 modules
- Locking positions when installed, for patching, and before removal



- Opens 180° even with panels below
- Slide in port label for easy indentification

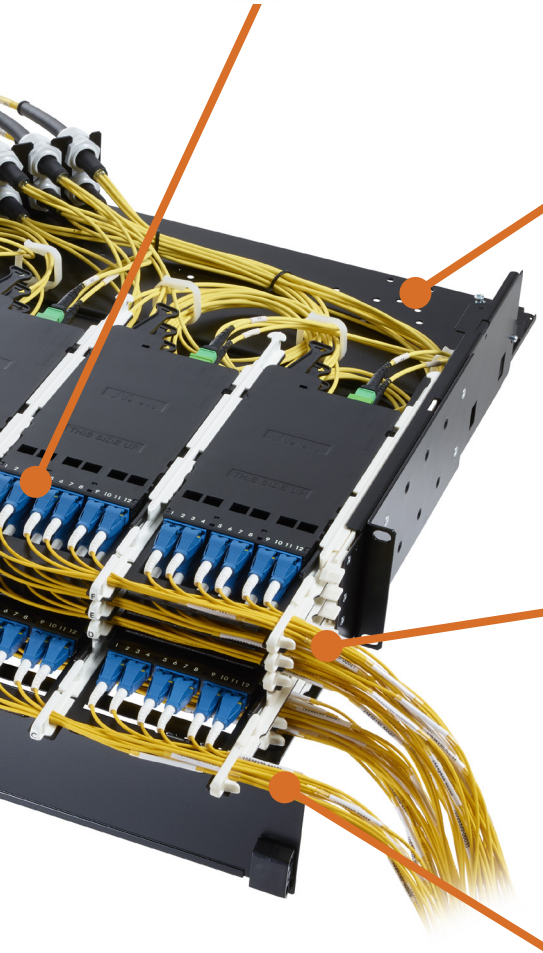
Easy patching and flexible scalability

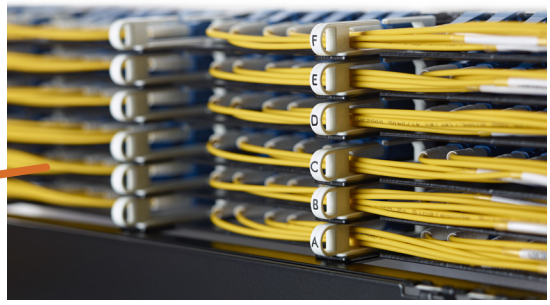
- Internal auto-shutter





- Sliding and tilting rear drawer for maximum maintenance space and ease of access





- Integrated patch cord guide
- Side grips for easy tray removal





- Reduced diameter patch cord
- Uniboot connector

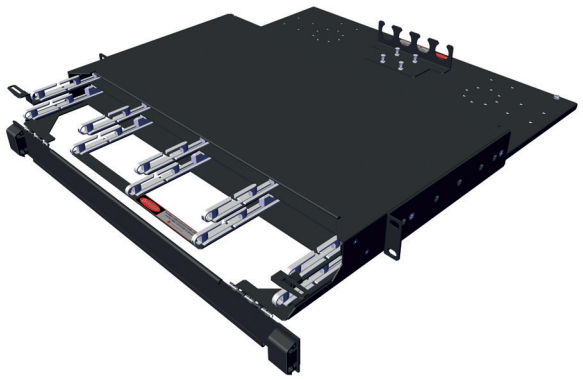
LANmark-OF ENSPACE UHD Patch Panels

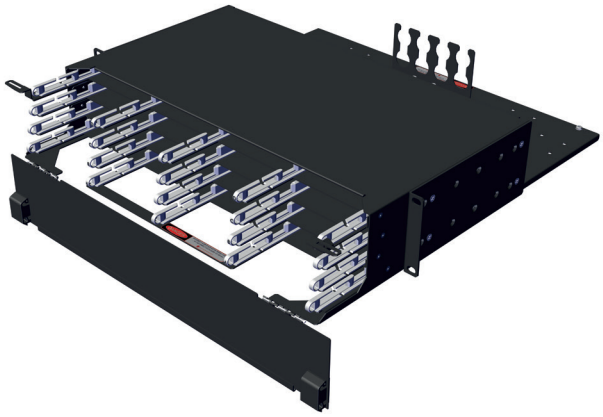


- Optical patch panel with Ultra High Density: up to 144x LCs or 72x MPO in a rack height unit
- Up to 12x ENSPACE modules in 1U
- 3 individually sliding trays per 1U for maximum flexibility during operation and installation
- 3 different locking positions for trays: operational, patching and installation position
- Patch cord management for each individual tray
- Labelling front for port identification
- Labelling front opens almost 180°: Port identification visible even when the panel is high in rack
- Sliding and tilting tray at the rear of the panel for better access to cables during initial installation and additions
- Optimized for installation of LANmark-OF ENSPACE Pre-Term with cable glands

N Number	Description	Height Unit	# Modules	# DLC Adaptors	# MPO Adaptors
NSPACE.PP1U	LANmark-OF ENSPACE UHD Patch Panel 1U 12x Modules Black	1U	12	72	72
NSPACE.PP2U	LANmark-OF ENSPACE UHD Patch Panel 2U 24x Modules Black	2U	24	144	144
NSPACE.PP4U	LANmark-OF ENSPACE UHD Patch Panel 4U 48x Modules Black	4U	48	288	288

LANmark-OF ENSPACE HD Patch Panels

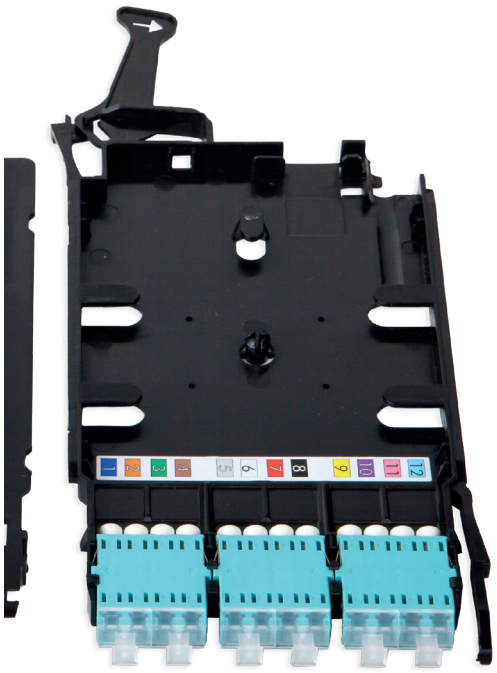




- Optical patch panel with High Density: up to 96x LCs or 48x MPO in one rack height unit
- Up to 8x ENSPACE modules in 1U
- 2 fixed module rows, each with 4 slots for ENSPACE modules
- No sliding parts for assured reliability during maintenance
- Integrated Patch cord management for each module row
- Swinging front door that accommodates a slide-in label for port identification. Labelling front for port identification with label that could be slit in
- Labeled front door opens almost 180°: Port identification visible even when the panel is high in the rack
- Optimized for installation of LANmark-OF ENSPACE Pre-Term with cable glands

N Number	Description	Height Unit	# Modules	# DLC Adaptors	# MPO Adaptors
NSPACE.PHD1U	LANmark-OF ENSPACE HD Patch Panel 1U 8x Modules Black 1U	1U	8	48	48
NSPACE.PHD2U	LANmark-OF ENSPACE HD Patch Panel 2U 16x Modules Black 2U	2U	16	96	96

LANmark-OF ENSPACE LC Adaptor Modules



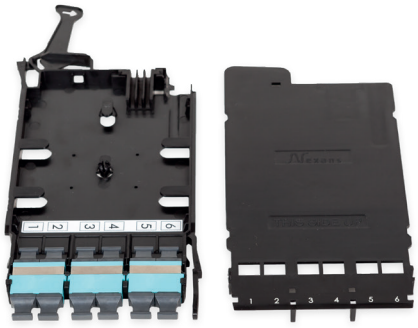


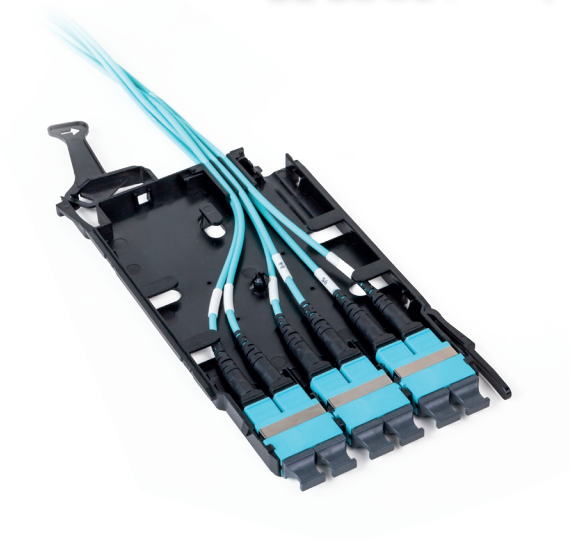


- ENSPACE module with 12x LC adaptors in the front
- Module can be easily mounted into Nexans' ENSPACE patch panel
- Modules can be installed from front and rear of panel
- Innovative handle at rear facilitates removal and installation
- Integrated inner metal shutters
- Optimized for installation with ENSPACE LC/LC Pre-Term
- Integrated strip with color coding for quick Fiber identification during installation
- Splice holders with heat shrink or Aluminum splice protectors are included as accessories
- No additional splice trays required

N Number	Description	Color Adaptor	Fiber Category
NSPACE.PLC12AS	LANmark-OF ENSPACE Adaptor Module 12 LC Multimode Aqua Shutters Integrated	Aqua	OM4
NSPACE.PLC12VS	LANmark-OF ENSPACE Adaptor Module 12 LC Multimode Violet Shutters Integrated	Violet	OM4
NSPACE.PLC12LS	LANmark-OF ENSPACE Adaptor Module 12 LC Multimode Lime Green Shutters Integrated	Lime Green	OM5
NSPACE.PLC12BS	LANmark-OF ENSPACE Adaptor Module 12 LC Singlemode Blue Shutters Integrated	Blue	SM OS2
NSPACE.PLC12GS	LANmark-OF ENSPACE Adaptor Module 12 LC/APC Singlemode Green Shutters Integrated	Green	SM OS2

LANmark-OF ENSPACE MPO Adaptor Modules







- ENSPACE module with MPO adaptors in the front for parallel optics
- Module can be easily mounted into Nexans' ENSPACE patch panel
- Modules can be installed from front and rear of panel
- Innovative handle at rear facilitates removal and installation
- Optimized for installation with ENSPACE MPO/MPO Pre-Term
- Key up/key down and key up/key up available
- Integrated strip for quick port identification during installation
- Available density: 2 x MPO, 4 x MPO and 6 x MPO

N Number	Description	Fiber Category	Key Orientation	# MPO Adaptors
NSPACE.PMPO6A	LANmark-OF ENSPACE Adaptor Module 6x MPO Multimode Key Up Key Down Aqua	OM4	Up / Down	6
NSPACE.PMPO6V	LANmark-OF ENSPACE Adaptor Module 6x MPO Multimode Key Up Key Down Violet	OM4	Up / Down	6
NSPACE.PMPO6U	LANmark-OF ENSPACE Adaptor Module 6x MPO Multimode Key Up Key Up Grey	OM4	Up / Up	6
NSPACE.PMPO6G	LANmark-OF ENSPACE Adaptor Module 6x MPO Singlemode Key Up Key Down Green	SM	Up / Down	6

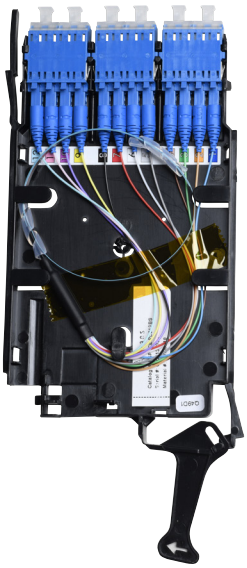
LANmark-OF ENSPACE MPO- LC Adaptor Modules

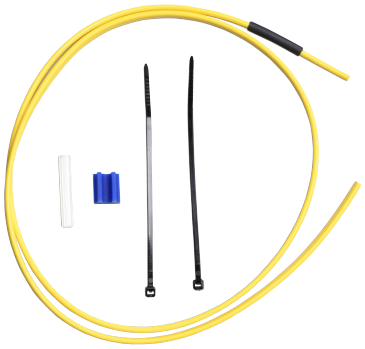


- ENSPACE module with 12x LC adaptors in the front and 1 MPO adaptor in the rear
- Ultra low loss performance for multimode: 0.35 dB insertion loss per module
- Low low loss performance for singlemode: 0.5 dB insertion loss per module
- Metallic shutters are integrated into the LC adaptors
- Modules can be installed from front and rear of panel
- Innovative handle at rear facilitates removal and installation
- Modules available with straight and crossed wiring to support polarity method B or C
- Unpinned/female MPO connector inside module
- ENSPACE modules are pre-installed and 100% factory tested

N Number	Description	Color LC Adaptor	Fiber Category
NSPACE.MSLC12AS	LANmark-OF ENSPACE Ultra Low Loss MPO-Module Straight 12 LC Multimode Aqua Shutters Integrated	Aqua	OM4
NSPACE.MSLC12VS	LANmark-OF ENSPACE Ultra Low Loss MPO-Module Straight 12 LC Multimode Violet Shutters Integrated	Violet	OM4
NSPACE.MSLC12LS	LANmark-OF ENSPACE Ultra Low Loss MPO-Module Straight 12 LC Multimode Lime Green Shutters Integrated	Lime Green	OM5
NSPACE.MSLC12BS	LANmark-OF ENSPACE MPO-Module Straight 12 LC Singlemode Blue Shutters Integrated	Blue	SM OS2
NSPACE.MSLC12GS	LANmark-OF ENSPACE MPO-Module Straight 12 LC/APC Singlemode Green Shutters Integrated	Green	SM OS2
NSPACE.MCLC12AS	LANmark-OF ENSPACE Ultra Low Loss MPO-Module Crossed 12 LC Multimode Aqua Shutters Integrated	Aqua	OM4
NSPACE.MCLC12VS	LANmark-OF ENSPACE Ultra Low Loss MPO-Module Crossed 12 LC Multimode Violet Shutters Integrated	Violet	OM4
NSPACE.MCLC12LS	LANmark-OF ENSPACE Ultra Low Loss MPO-Module Crossed 12 LC Multimode Lime Green Shutters Integrated	Lime Green	OM5
NSPACE.MCLC12BS	LANmark-OF ENSPACE MPO-Module Crossed 12 LC Singlemode Blue Shutters Integrated	Blue	SM OS2
NSPACE.MCLC12GS	LANmark-OF ENSPACE MPO-Module Crossed 12 LC/APC Singlemode Green Shutters Integrated	Green	SM OS2

ENSPACE Splice Cassette Kit





NSPACE.PLC12BS-PL-KIT

The splice-ready ENSPACE module kit expands on the application of the ENSPACE adapter modules while saving time during the installation. The module itself comes pre-populated with a 12-fiber ribbon broken out to 12 individual legs that are pre-terminated and plugged into the LC adapters. Each leg also comes equipped with boots and furcation tubing for protection and easier management within the module. Once the splice activity is complete, the module can be loaded into the ENSPACE 1U, 2U, or 4U patch panel. This option enables data center customers to incrementally and efficiently increase their capacity as their customers and/or bandwidth needs grow.

- ENSPACE LC Adapter Module Pre-Loaded with 12xLC connections to a ribbonized stub end for internal module splicing
- No need for an external splice tray
- Ultra High Density. Up to 144LCs per RU
- Provides a "Pay as You Grow" alternative to fully loaded 288 fiber panel

Kit includes:

- ENSPACE LC Adapter module
- 12xLC to ribbon pigtail, pre-loaded and pre-tested
- Ribbon splice holder with customizable positioning inside the module
- Protective splice sleeve
- Furcation tubing for protective strain relief at module exit

Pre-Populated 2U



The Nexans' pre-populated patch panel leverages the flexible, award-winning ENSPACE platform to deliver an ultra high density of LC ports while significantly reducing the installation cost. Each 2RU panel comes pre-populated with 288 LC connections that are already terminated, installed, managed and tested within the panel to a Nexans' 288-fiber ribbon cable. This value added solution enables the most rapid deployment model for maximum time and operational expense savings, eliminating up to 2 hours for installation per unit. Ribbon cable tail lengths are configurable from 25 ft to 1000 ft and can be ordered to exit the panel from the right, center, or left to support a variety of deployment applications within the data center.

- High Density 288 Pre-Terminated LCs in 2RU
- Ribbon splicing internal to cassette with dual stage transition to bulk ribbon cable. No additional splice tray required
- 288F, Flat, Singlemode, Riser Ribbon
- Pre-Dressed, managed, and pre-tested cables in the rear,
- Pre-Installed bulk cable gland for strain relief
- Stub end ribbon length configurable from 25-1000 feet.
- Unique packaging facilitates easy installation

PART NUMBER CONFIGURATION: NPP2UPLa-bbcdxxxx		
NPP2UPL**a**-bbcdxxxx	a: gland position	C: center
		L: left
		R: right
NPP2UPLa-**bb**cdxxxx	bb: cable type	RD: flat ribbon (jacketed)
NPP2UPLa-bb**c**dxxxx	c: flame rating	R: riser
		P: plenum
NPP2UPLa-bbc**d**xxxx	d: length unit	F: feet
		M: meters
NPP2UPLa-bbcd**xxxx**	xxxx: length	
SAMPLE PART NUMBER:	NPP2UPLL-RDRF0250	250-foot riser-rated cable entering on the left side

LANmark-OF Plug&Play Panel



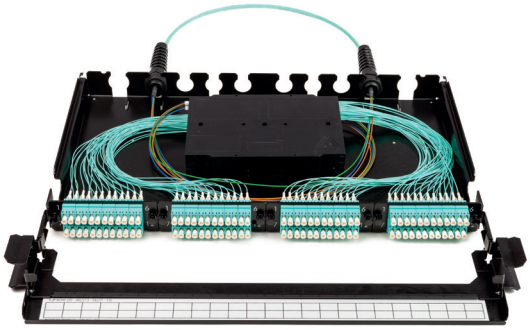
- High density patch panel: up to 96 LC or 32 MPO
- Up to 4 Plug&Play adaptor plates
- Sliding and tilting patch panel for ease of installation, upgrade and maintenance
- Labelling front for port identification and patch cord management



Installation with Plug&Play Adaptor Plates and LC/LC Pre-Terms

- Compatible with LANmark-OF Universal LC/LC Pre-Term
- Compatible with LANmark-OF ENSPACE LC/LC Pre-Term
- Fiber organizers as accessory for fiber management inside patch panel in 4 different loops
- High density: up to 96 LC

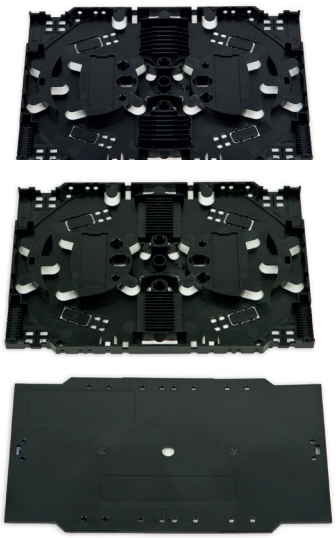
LANmark-OF Plug&Play Panel



Optimized for splicing with Plug&Play

Adaptor Plates and Pigtails

- Up to 4 splice trays and 1 cover
- Large splice trays for improved fiber management inside trays
- Trays can be lifted and tilted
- Up to 48 fibers with heat shrink protectors and tight Buffer pigtails
- Up to 96 fibers with heat shrink protectors and Maxistrip pigtails
- Up to 96 fibers with mechanical/aluminum protection



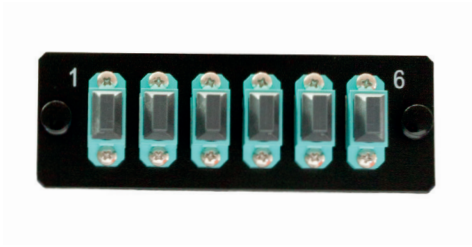
Splice Trays

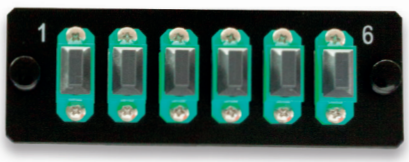
- Splice trays for Plug&Play panels
- Large trays with inner and outer routing for fibers of pigtails and cables
- Cassettes for heat shrink protectors with 12 slots, 2 heat shrink protectors could be stacked in same slot
- Trays for Aluminum protectors with 2 x 12 slots
- Only one cover per patch panel

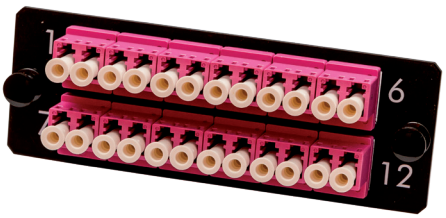
N Number	Description
N439.3MPP	LANmark-OF Plug&Play Patch Panel Integrated Cord Guide Sliding Black
N890.090	LANmark-OF Splice Trays Heat Shrink Protectors
N890.091	LANmark-OF Splice Trays Aluminum Protectors
N890.092	LANmark-OF Splice Trays Cover

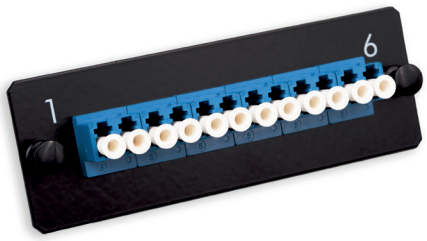
LANmark-OF Plug&Play MPO/LC Adaptor Plates







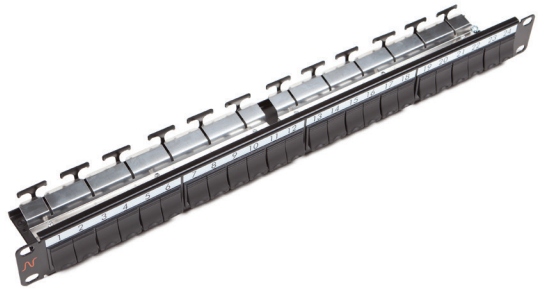




- Adaptor plates for 6DLC,12DLC, 6 MPO, or 8MPO
- Available in multimode, singlemode and singlemode APC
- Module can be easily mounted into Nexans' Plug&Play patch panel
- High density: 4 plates fit into 1U
- Can be used together with LC Pre-Term or cables terminated with splicing

N Number	Description	Adaptor Type	Fiber Category	Density in 1U
N205.ALC12MMA	LANmark-OF Adaptor Plate 12 LC Multimode Aqua	LC	Multimode	48
N205.ALC24MMA	LANmark-OF Adaptor Plate 24 LC Multimode Aqua	LC	Multimode	96
N205.ALC12MMV	LANmark-OF Adaptor Plate 12 LC Multimode Violet	LC	Multimode	48
N205.ALC24MMV	LANmark-OF Adaptor Plate 24 LC Multimode Violet	LC	Multimode	96
N205.ALC12SMB	LANmark-OF Adaptor Plate 12 LC Singlemode Blue	LC	Singlemode	48
N205.ALC24SMB	LANmark-OF Adaptor Plate 24 LC Singlemode Blue	LC	Singlemode	96
N205.ALC12SAG	LANmark-OF Adaptor Plate 12 LC Singlemode APC Green	LC	SM/APC	48
N205.ALC24SAG	LANmark-OF Adaptor Plate 24 LC Singlemode APC Green	LC	SM/APC	96
N205.AMTP6MMUU	LANmark-OF Adaptor Plate 6 MTP Multimode Key Up Key Up Gray	MPO	Multimode	24
N205.AMTP6MMUD	LANmark-OF Adaptor Plate 6 MTP Multimode Key Up Key Down Aqua	MPO	Multimode	24
N205.AMTP6SMUD	LANmark-OF Adaptor Plate 6 MTP Singlemode Key Up Key Down Green	MPO	Singlemode	24
N205.AMTP8MMUD	LANmark-OF Adaptor Plate 8 MTP Multimode Key Up Key Down Aqua	MPO	Multimode	32

Snap-In



Patch Panel 24 Snap-In Fixed Black

- Compatible with all LANmark Snap-In connectors
- 24 Snap-In ports with shutters
- Rapid cable retention with "T" clips for faster installation
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened copper connectors
- Also available in white



Patch Panel 24 Snap-In Sliding Black

- Sliding mechanism for easy access and install in front panel
- Compatible with all Snap-In connectors
- 24 Snap-In ports with shutters
- Rapid cable retention with "T" clips for faster installation
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened copper connectors
- Fully painted design

LANsense AIM LANsense version also available



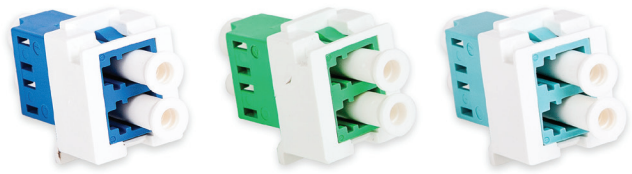
Angled Patch Panel 24 Snap-In Black

- Supports high density patching - ideal for Data Centers
- Eliminates the need for additional cable management
- Up to double density achievable
- Compatible with all Snap-In connectors
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened copper connectors
- Also available in white

LANsense AIM LANsense version also available

N Number	Description
N521.661BK	Patch Panel 24 Snap-In Fixed Black
N521.663BK	Patch Panel 24 Snap-In Sliding Black
N521.671	Angled Patch Panel 24 Snap-In Black

Fiber Snap-In Adaptors





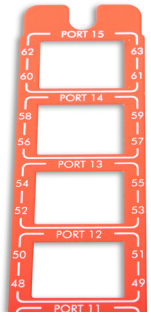
- Provide a quick and efficient method of terminating both copper and fiber interfaces in the same panel
- Fully modular – as little as one interface at a time
- Fast installation: 10-15 sec per adaptor
- Mix of connector types within same patch panel
- Adaptor can be removed and reused
- Fiber Snap-In Interface Options: MPO Key Up / Key Down and Duplex LC

N Number	Description
N205.617	LANmark-OF Duplex LC Snap-In Adaptor Multimode Aqua
N205.627	LANmark-OF Duplex LC Snap-In Adaptor Singlemode
N205.628	LANmark-OF Duplex LC Snap-In Adaptor Singlemode APC
N205.SNMTPG	LANmark-OF MPO Snap-In Adaptor Singlemode Key Up Key Down Green
N205.SNMTPA	LANmark-OF MPO Snap-In Adaptor Multimode Key Up Key Down Aqua

Port Replication Panel







Data center operators and service providers offering SAN and Ethernet services to their customers often need to perform moves, add, changes, and troubleshooting on the ports of large core switches providing those services. Instead of working directly on the switch, it is often preferred to perform these activities at a passive patch panel that provides an exact, one-for-one replication of the port layout and labeling that is presented on the front of the switch. This helps reduce wear and tear as well as limit the opportunity for unnecessary errors on the active equipment during maintenance that could have a greater impact to traffic.

The Nexans 10U Port Replication panel delivers a flexible, dense solution that covers a variety of switch mimic applications. Initially supporting Brocade 8510 SAN Director and various Ethernet switch applications, the 10U panel offers multiple blade configurations, providing an exact representation of switch inputs at a main distribution area in the data center.

- 10RU, 10-Slot patch panel
- Up to 1280 fibers per enclosure
- Effective fiber management in a very dense footprint
- Hinged and removable rear door for easy access
- Engineered harnesses and breakout assemblies that provide staggering for efficient management within the panel
- The same chassis supports all applications (SAN/Ethernet/etc)
- Port blade labeling is customizable for port numbering and coloring to meet customer's preferences

N Number	Description
N438.PP10U	10 RU Port Replication Patch Panel Enclosure
N438.BLVL64AP	64 Duplex LC Vertical Port Blade for 10U Panel, Aqua
N438.BLVL48AP	48 Duplex LC Vertical Port Blade for 10U Panel, Aqua
N438.BLVL36AP	36 Duplex LC Vertical Port Blade for 10U Panel, Aqua
N438.BLBL10U	Blank Port Blade for 10U Panel
N438.FRVL64RN	64 Port Red Overlay Label x 4
N438.FRVL64BN	64 Port Blue Overlay Label x 4
N438.FRVL48RN	48 Port Red Overlay Label x 4
N438.FRVL48BN	48 Port Blue Overlay Label x 4
N438.FRVL36RN	36 Port Red Overlay Label x 4
N438.FRVL36BN	36 Port Blue Overlay Label x 4

LANmark-OF Pre-Term

LANmark-OF ENSPACE Pre-Term cable

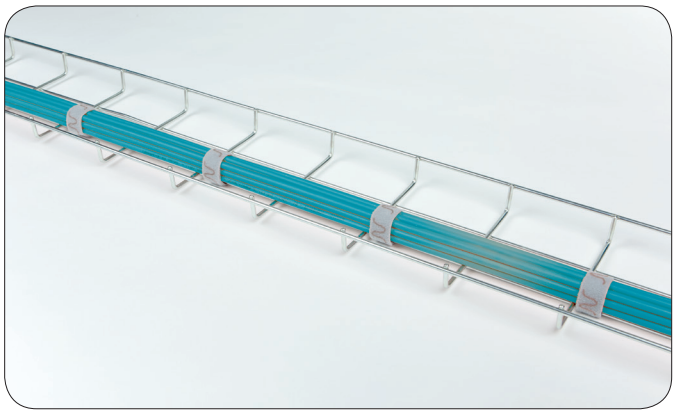


- Plenum (OFNP rating) or LSZH jacket
- Cable Pre-Term based on advanced Micro-Bundle technology
- Slim high fiber count cable to allow a maximum of cables in cable trays
- Reduced weight in cable trays
- Bend insensitive fiber inside cables
- Short bend radius for ease of installation
- Available in strand counts to 288
- Armored options available

	Dimension	Weight	Bend Radius Operation	Bend Radius Installation	Crush Resistance	Max Pulling Force Installation
12F	4.1 mm	15 kg/km	41 mm	61 mm	110 N/km	890 N
24F	4.6 mm	22 kg/km	46 mm	69 mm	110 N/km	890 N
48F	5.9 mm	33 kg/km	59 mm	88 mm	110 N/km	890 N
96F	8.0 mm	66 kg/km	80 mm	120 mm	110 N/km	1335 N

Other designs are available for regions outside North America

High cable density in trays



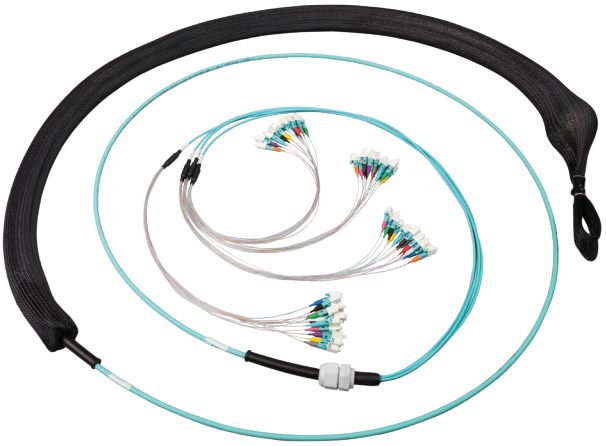
Max number of cables:

427 cables of 48 fibers in 500 mm x 50 mm = 20496 fibers

Small diameter allows high number of cables
Double or triple amount of cables compared to traditional solutions
Space limitations in central patching zones reduced

LANmark-OF ENSPACE Pre-Term

Pre-Term Design



- Protective black net with bubble wrap on one side
- Pulling eye one side, other options available
- Maximum pulling force on pulling eye: 100 pounds
- Protective bubble wrap on second side
- Cable gland with rubber boot for strain relief
- Small transition fan-out
- Made to order with 1m increments to reduce excess lengths

Optical performance

- All connection types have low loss performance for both singlemode and multimode
- Allows for more connections and longer length

Connection Type	Insertion Loss*
LC Multimode	0.3 dB
LC Singlemode	0.3 dB
LC Singlemode APC	0.3 dB
MPO Multimode	0.3 dB low loss
MPO Singlemode APC	0.3 dB low loss

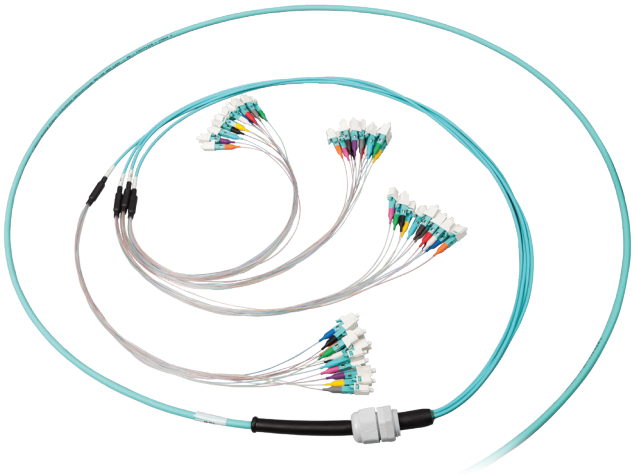
* Other loss options available

Packaging



- Assemblies are coiled or placed on reels depending on length

LANmark-OF ENSPACE LC/LC Fiber Assembly



- Dual stage fan-out for installation inside the ENSPACE panel and inside the ENSPACE module
- Pre-Term based on Micro-Bundle technology
- Cable optimized for installation in data center: small diameter, small bend radius and reduced weight
- Plenum or LSZH jacket
- Fibers identified with colored boots
- Fiber pair flip to maintain transmit-receive polarity implemented in manufacturing
- Low loss insertion loss performance: Max 0.3 dB per LC connection
- Available in strand counts to 288
- Fiber type: OM4, OM5 and singlemode (OS2)

PART NUMBER CONFIGURATION: N13y.nnnnaabbEEdeMDPhjxxxxk		
N13**y**.nnnnaabbEEdeMDPhjxxxxk	y: fiber category	7: multimode OM4 9: multimode OM5 4: singlemode OS2
N13y.**nnnn**aabbEEdeMDPhjxxxxk	nnnn: fiber count	
N13y.nnnn**aa**bbEEdeMDPhjxxxxk	aa: connector type	L: LC P: LC/APC
N13y.nnnnaabb**EE**deMDPhjxxxxk	EE: fan-out optimized for ENSPACE panel	
N13y.nnnnaabbEEdeMDPhj**xxxx**k	xxxx: length in m	
N13y.nnnnaabbEEdeMDPhjxxxx**k**	k: color cable jacket	A: OM4 L: OM5 Y: singlemode
SAMPLE PART NUMBER:	N134.0048LL33EEBSMDPRM0030Y	Singlemode, 48-fiber, LC-LC, ENSPACE fan-out, Micro Data Center Plenum, 1 pulling eye, 30 meters, yellow jacket

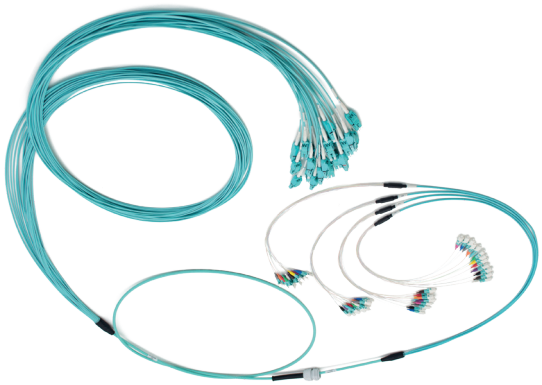
LANmark-OF ENSPACE MPO/MPO Fiber Assembly



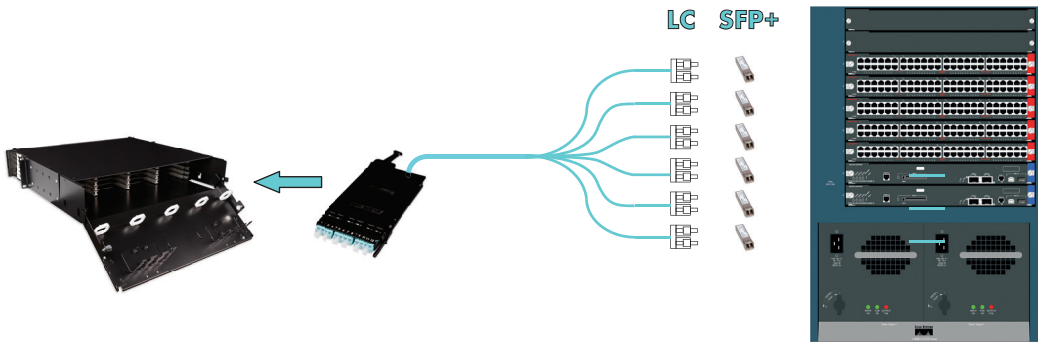
- Fiber assembly for installation inside the ENSPACE and Plug&Play panel
- Cable optimized for installation in Data Center: small diameter, small bend radius and reduced weight
- Plenum or LSZH jacket
- Method B and Method C polarity options available
- Pre-Term can be used together with MPO-LC modules for LC connectivity or with MPO-adaptor modules for parallel optics
- Male-male/pinned-pinned Pre-Terms
- Low loss insertion loss performance: Max 0.3 dB (low loss) per MPO connection for singlemode and multimode
- Available in strand counts to 288
- Fiber type: OM4, OM5 and singlemode (OS2)

PART NUMBER CONFIGURATION: N13y.nnnnMMbbEEdeMDPhjxxxxk		
N13**y**.nnnnMMbbEEdeMDPhjxxxxk	y: fiber category	7: multimode OM4
		9: multimode OM5
		4: singlemode OS2
N13y.nnnnMMbbEE**d**eMDPhjxxxxk	d: polarity for MPO-MPO Pre-Term	B: type B polarity
		C: type C polarity
N13y.**nnnn**MMbbEEdeMDPhjxxxxk	nnnn: fiber count	
N13y.nnnn**MM**bbEEdeMDPhjxxxxk	MM: male MPO-male MPO	
N13y.nnnnMMbb**EE**deMDPhjxxxxk	EE: fan-out optimized for ENSPACE panel	
N13y.nnnnMMbbEEdeMDPhj**xxxx**k	xxxx: length in m	
N13y.nnnnMMbbEEdeMDPhjxxxx**k**	k: color cable jacket	A: OM4
		L: OM5
		Y: singlemode
SAMPLE PART NUMBER:	N137.0144MM33EEBSMDPRM0100A	OM4, 144-fiber, MPO (male) - MPO (male), ENSPACE fan-out, type B polarity, Micro Data Center Plenum, 1 pulling eye, 100 meters, aqua jacket

LANmark-OF ENSPACE Patching Assemblies



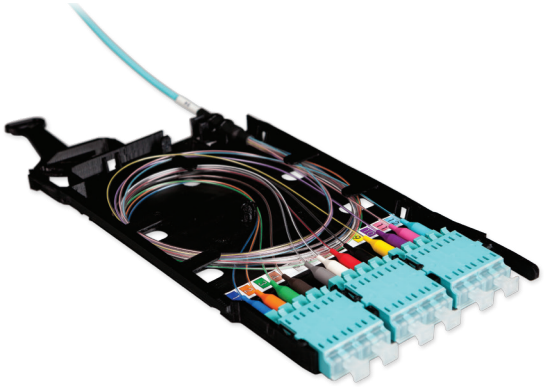
- High fiber count fiber assembly for connecting transceivers on switch and ENSPACE modules
- Switch side has a 2.9mm fan-out with uniboot DLC connector for connecting to SFP+ transceivers
- Panel side:
  - dual stage 900 µm LC fan-out for installation inside the ENSPACE panel with the LC ENSPACE adaptor modules
  - or male MPO-fan out for installation inside the ENSPACE panel with ENSPACE MPO-LC modules
- Micro-Bundle cable optimized for installation in data center: small diameter, small bend radius and reduced weight
- Plenum or LSZH Jacket
- Low loss insertion loss performance: max 0.3 dB per LC connection
- Available in strand counts to 288
- Fiber type: OM4, OM5 and singlemode (OS2)



PART NUMBER CONFIGURATION: N13y.nnnnUabbccdeMDPhjxxxxk		
N13**y**.nnnnUabbccdeMDPhjxxxxk	y: fiber category	7: multimode OM4 9: multimode OM5 4: singlemode OS2
N13y.**nnnn**Uabbccdeh jxxxxk	nnnn: fiber count	
N13y.nnnn**U**abbccdeMDPhjxxxxk	U: uniboot LC connector on switch side	
N13y.nnnnU**a**bbccdeMDPhjxxxxk	L: LC connector inside panel M: Male MPO connector inside panel	
N13y.nnnnUabb**c**cdeMDPhjxxxxk	c: fan-out length switch side	K: equal length 1 meter C: custom length
N13y.nnnnUabbccdeMDPhj**xxxx**k	xxxx: length in m	
N13y.nnnnUabbccdeMDPhjxxxx**k**	k: color cable jacket	A: OM4 L: OM5 Y: singlemode
SAMPLE PART NUMBER:	N137.0048UL33CEBSMDPRM0010A	OM4, 48-fiber, LC Uniboot - LC Simplex, custom fan-out, Micro Data Center Plenum, 1 pulling eye, 10 meters, aqua jacket

Polarity with ENSPACE Pre-Term

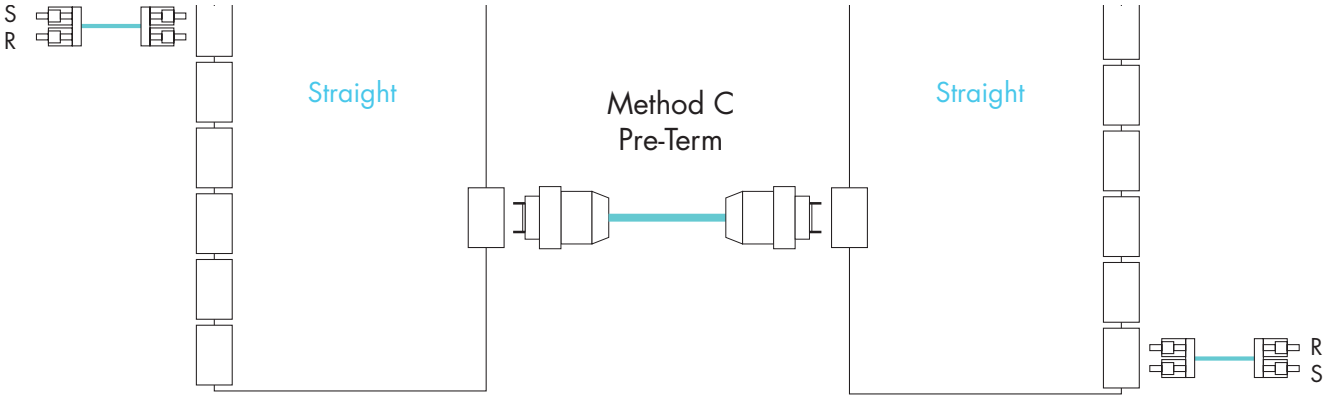
Polarity with LC/LC Pre-Term

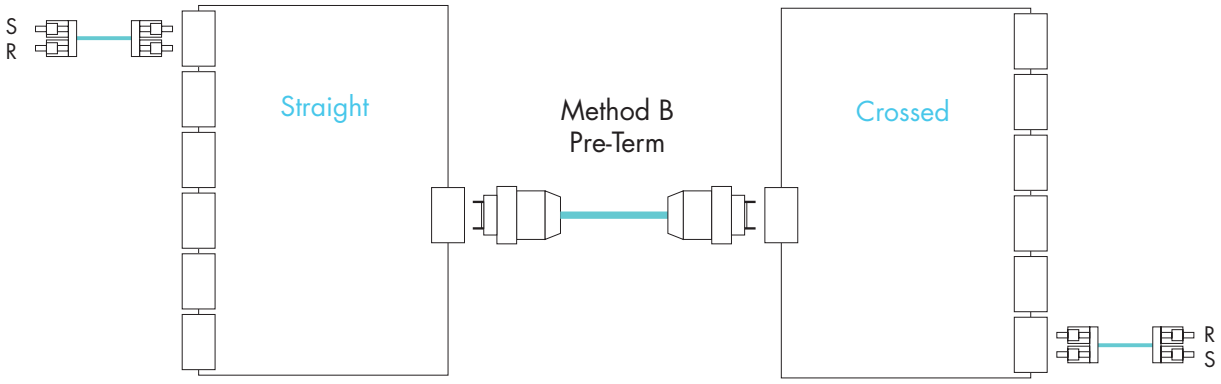


- Colored boots for 900 µm fibers
- Integrated color strip inside ENSPACE LC module
- Matching colored boots with colors on strip guarantee error free installation for duplex transmission
- Required fiber pair flip in Pre-Term to maintain Transmit-Receive polarity introduced during manufacturing

Polarity with MPO-LC modules and MPO-MPO Pre-Term for Duplex Transmission

Duplex transmission





Polarity with ENSPACE Pre-Term



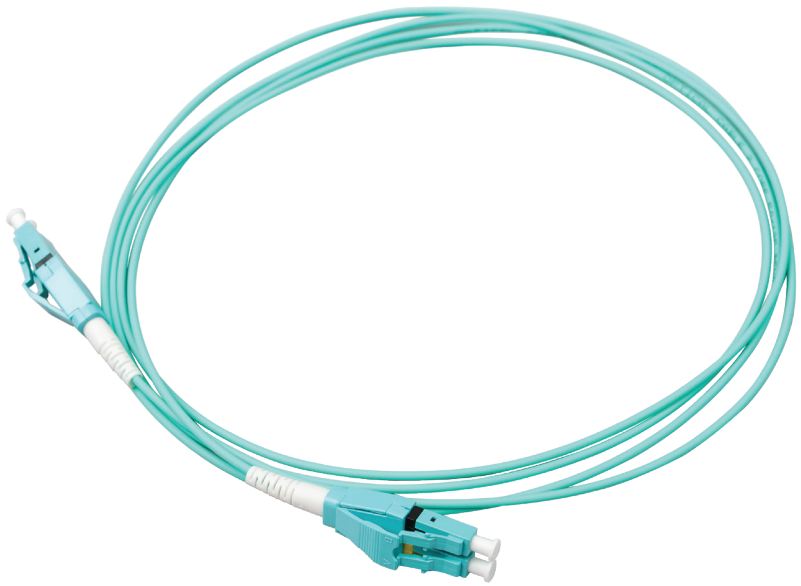
Polarity with with MPO adaptors
and MPO-MPO Pre-Terms for Parallel transmission

Parallel transmission





LANmark-OF ENSPACE LC-LC Patch Cords



- Uniboot style duplex LC connectors
- Slim round patch cord cable to reduce required space in dense patching zones
- Improved handling in high-density applications
- Low-loss connectivity enables system design flexibility
- Bend radius reduced with GIGAliteFlex bend insensitive fiber
- Designed to withstand tight bends and challenging cable routes
- Low-smoke and zero-halogen (LSZH) or Plenum (OFNP)
- Flame retardant
- Reverse polarity uniboot connector

PLENUM

N Number	Description
N137.J002UU33NNBSD2PMxxx.xA	LANmark-OF ENSPACE Patch Cord DLC-DLC OM4 xxx.xm Aqua
N139.J002UU33NNBSD2PMxxx.xL	LANmark-OF ENSPACE Patch Cord DLC-DLC OM5 xxx.xm Lime Green
N134.J002UU33NNBSD2PMxxx.xY	LANmark-OF ENSPACE Patch Cord DLC-DLC OS2 xxx.xm Yellow

LANmark-OF ENSPACE MPO-MPO Patch Cords



- MPO-MPO patch cords
- Slim round patch cable
- Small bend radius
- Female-Female patch cord to fit with male MPO connector of MPO Pre-Term or male QSFP+ connector
- Available in OM4, OM5 and singlemode
- Straight wiring with key up/key down (Type A) design
- Parallel Optics: 40GBASE-SR4 and 100G PSM4
- Low-smoke zero-halogen (LSZH) and Plenum (OFNP)
- Flame and fire retardant
- Optional MTP® Pro connectors for easy gender and polarity change

PLENUM

N Number	Description
N137.J012FF33NNASACPMxxx.xA	LANmark-OF Patch Cord Female MPO-Female MPO OM4 xxx.xm Aqua
N139.J012FF33NNASACPMxxx.xL	LANmark-OF Patch Cord Female MPO-Female MPO OM5 xxx.xm Lime Green
N134.J012FF33NNASACPMxxx.xY	LANmark-OF Patch Cord Female MPO-Female MPO OS2 xxx.xm Yellow

LANmark-OF MTP Pro® Tools and Accessories



- Field tool for MTP Pro connectors to change polarity and gender
- Gender change can be done without opening the connector
- PIN exchangers are required for gender change
- No accessory required for polarity change: keys already included in MTP Pro connector
- Polarity can be changed from key down to key up and key up to key down





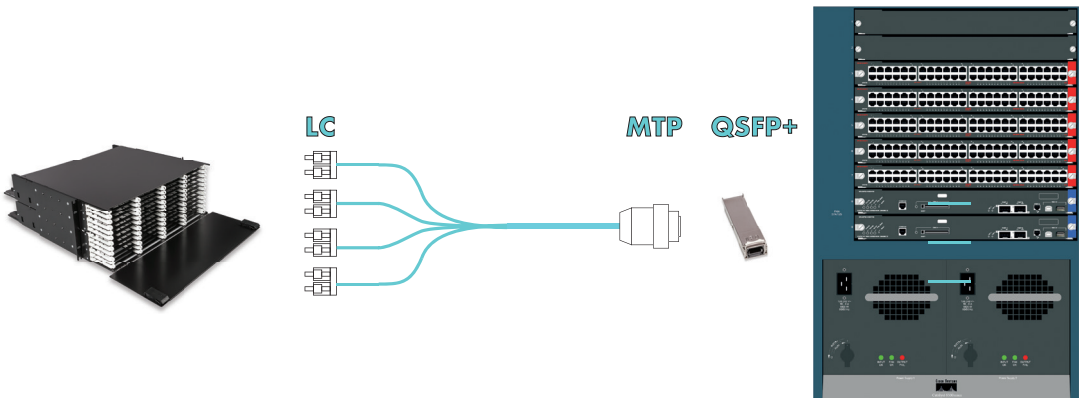
- MTP Pro multimode pin exchangers to change gender from female to male or male to female
- The pin exchangers provide the pins to make the female MTP Pro connector male, or the holder to make the male MTP Pro connector female
- One tube contains 10 exchangers

N Number	Description
N890.161	LANmark-OF MTP Pro Pin Exchanger Male Multimode Aqua 10X
N890.162	LANmark-OF MTP Pro Pin Exchanger Multimode Aqua 10X
N890.163	LANmark-OF MTP Pro Pin Exchanger Male Singlemode Yellow 10X
N890.164	LANmark-OF MTP Pro Pin Exchanger Singlemode Yellow 10X
N890.165	LANmark-OF MTP Pro Gender and Polarity Field Tool

LANmark-OF Aggregation Assembly

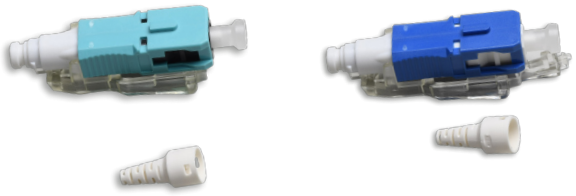


- Female MPO connector for connecting to QSFP+ transceiver on switch
- Uniboot DLC connectors for patching on front of patch panel
- 4 channels / 8 fibers
- Aggregation of 4 channels into 1 port on switch
- Custom lengths and staggers available
- Fiber type: OM4, OM5 and singlemode



PART NUMBER CONFIGURATION: N13y.H008FabbNcdeACPMxxx.xj		
N13**y**.H008FabbNcdeACPMxxx.xj	y: fiber category	7: multimode OM4 9: multimode OM5 4: singlemode OS2
N13y.H008**F**abbNcdeACPMxxx.xj	F: female MPO connector for insertion in QSFP+ transceiver	
N13y.H008F**a**bbNcdeACPMxxx.xj	a: duplex connector type on front of patch panel	J: DLC connector P: LC/APC connector
N13y.H008FabbN**c**deACPMxxx.xj	c: fan-out length patch panel	G: equal length 1 meter C: custom length
N13y.H008FabbNcdeACPMxxx.x**j**	j: color cable jacket	A: OM4 L: OM5 Y: singlemode
N13y.H008FabbNcdeACPM**xxx.x**j	xxx.x: length in m	
SAMPLE PART NUMBER:	N134.H008FJ33NCESACPM002.5Y	Singlemode, 8-fiber harness, MPO (female) - LC duplex, custom fan-out, aramid connect plenum, 2.5 meters, yellow jacket

Connectors



N Number	Description
N205.CONMECLCA	LC Multimode
N205.CONMECLCB	LC Singlemode
N205.CONMECSCA	SC Multimode
N205.CONMECSCB	SC Singlemode

Field Installable Mechanical Connectors

- Pre-polished connectors compatible with standard SCs and LCs
- Mechanical splice
- Sold in packs of 12
- Re-workable if needed
- Translucent window for VFL verification
- Each pack of 12 contains an assembly jig and fiber holder
- Can be used with 250µm and 900µm fiber



N Number	Description
N205.CONSPLLCA10	Multimode, 50/125
N205.CONSPLLCB10	Singlemode

Field Installable Splice-On LC Connectors

- Compatible with standard LC connectors
- Sold in packs of 10
- Each pack includes a plastic splice holder (works with industry leading splicers)
- Splice protection sleeves provided
- Can be used with 250µm and 900µm fiber



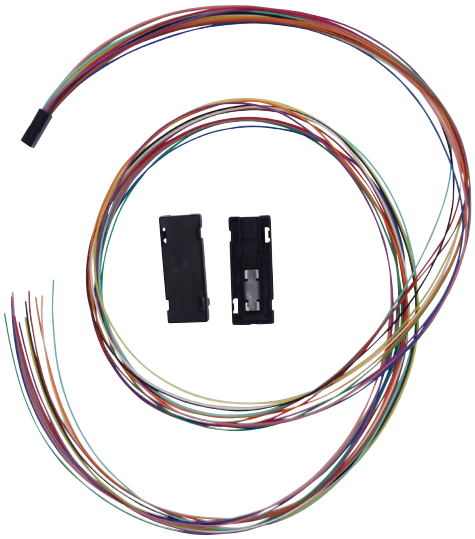
N Number	Description
N205.CONSPLMPOMA	Multimode, 50/125, Pinned (Male)
N205.CONSPLMPOFA	Multimode, 50/125, Unpinned (Female)
N205.CONSPLMPOMG	Singlemode, Pinned (Male)
N205.CONSPLMPOFG	Singlemode, Unpinned (Female)

Field Installable Splice-On MPO Connectors

- Pre-polished MPO connectors for terminating ribbon cable or loose tube cable
- Compatible with standard MPO / MTP® factory terminated connectors
- Housings are color coded by fiber type
- Connector polarity can be configured as Type A or Type B
- Splice protection sleeves provided
- Ferrule has 1 row of 12 fibers

* MTP is a registered trademark of US Conec

Cable Accessories



Breakout Kits

- Easy to install fiber protection solution for loose tube cable
- 12 color-coded 900-micron elastomer tubes
- Snap together transition box
- Detailed instructions provided with each kit
- Heat gun not required

N Number	Description
N890.BOK12-24	12 fiber breakout kit with 24-inch legs
N890.BOK12-36	12 fiber breakout kit with 36-inch legs



Cleaning Tools

- Dry cleaners
- Cloth advances after each use
- Tools can clean mated and unmated connectors

N Number	Description
N890.120	MPO Cleaning Tool
N890.121	SC/ST Cleaning Tool
N890.122	LC Cleaning Tool

Panel Accessories



Overhead Patching Frame 4U or 6U

- 19-Inch 4U or 6U overhead frame
- Ideal in data centers
- Designed to host both copper and fiber cabling
- Metal construction
- Straight or angled position



Angled Blank Panel Black

- 19″ Blank Panel to fill empty cabinet space



Angled Panel Cover Black

- Used to close the triangular gap formed at the top of a stack of LANmark or LANsense Angled Panels to prevent items falling behind the panels and to enhance the appearance of the finished installation

N Number	Description
N345.400	LANmark Overhead Patching Frame 4U
N521.672	Angled Blank Panel Black
N521.673	Angled Panel Cover Black

Panel Accessories



Angled Pass-Through Black

The 2U Angled Pass-Through is designed to match the LANmark and LANsense Angled Panels and to provide a means for patch cables to cross from side to side in a rack while maintaining rack aesthetics.



Pair of Patch Cord Management Hooks Black for Overhead Patching Frame 4U

- Required to guide patch cords on both sides of the frame
- Easy to mount with 2 screws and cage nuts
- Up to 3 hooks on each side
- Black flexible plastic



Letterbox Patch Guide 1U Black

- Allows storage and management of copper and fiber patch cords
- Open structure with rings for easy access
- 8 cm depth
- Central “letterbox” holes allow hiding excess of cords inside the rack
- Black paint finished metal

N Number	Description
N521.678	Angled Pass-Through Black
N345.401	Pair of Patch Cord Management Hooks Black for Overhead Patching Frame 4U
N102.115	Letterbox Patch Guide 1U Black

Panel Accessories



1U Universal Patch Guide with front cover, Black

- Allows storage and management of copper and fiber patch cords
- 8 cm depth
- Cover for tidy cabinet look
- Black paint finished metal



1U Patch Guide with rings, Black

- Allows storage and management of copper and fiber patch cords
- Open structure with rings for easy access
- 8 cm depth
- Black paint finished metal



1U Blank Panel, black

- 19″ Blank Panel to fill empty cabinet space

N Number	Description
N102.117BK	1U Universal Patch Guide with front cover, Black
N102.105BK	1U Patch Guide with rings, Black
N109.207BK	1U Blank Panel, black

Bulk Fiber Cable



DA: Data Center Distribution

Nexans' data center distribution cables with 1.9 mm micro buffer tubes are designed to be used in high density plenum rated environments. Data center distribution is rated for plenum installations and has no gel filler. Riser-rated verions are made with LSZH jackets. Strand counts from 8 to 288.



D3: 2.9mm 2-fiber Round

Nexans' Micro-Interconnect Tight Buffered Plenum fiber optic cable is designed for installation along plenums and in riser structured cabling applications. These are typically used for patch cable applications.



LT: Dry Loose Tube

Nexans' dry loose tube cable design utilizes a unique DryGel waterblocking system. DryGel technology utilizes super absorbent polymers to replace the messy gel filler inside the fiber tubes. Options are available with riser, plenum, and outside plant ratings. Armored versions are also available. Strand counts from 6 to 432.

Bulk Fiber Cable



OP: Gel-Filled Loose Tube

Nexans' Outside Plant Loose Tube fiber optic cables are designed for installation in harsh environments such as direct burial, aerial lashing, conduit and pathways that are subjected to wide temperature variations. The Outside Plant product incorporates a jacket surrounding the core and is offered with 2 - 288 fibers per cable. These cables are thoroughly tested and verified to Telcordia GR-20 and ICEA-640 for outside cabling systems. Corrugated armor versions are available.



PD: Premises Distribution

Nexans' riser or plenum rated Indoor/Outdoor Tight-Buffer cables are designed specifically for campus and building cabling infrastructure. These thermoplastic jacketed cables are suitable for Indoor/Outdoor installations, in-conduit, below the frost line. They are available with a aluminum interlocking armor for added physical protection. Strand counts from 6 to 144.



RD: Ribbon

Nexans' riser or plenum rated central tube optical fiber ribbon cable uses single-mode or multimode, 12 or 24 fiber ribbons, in a dry central tube, surrounded by dielectric strength members and an outer jacket. Strand counts from 12 to 432.

High Speed Interconnect

Active Optical Cable (AOC)



The Nexans family of Active Optical Cables provides a high performance, low power, ultra-reliable solution that is optimal for data center 40GBE, 100GBE and Infiniband QDR connections. All products are compliant to the IEEE and SFF industry standards and include digital diagnostics functions.

40G QSFP+ Active Optical Cable

AQPM40Gxxx

(xxx is length in meters)

- 1m – 20m QSFP+ to QSFP+ 4x10G parallel multi-mode active optical cable (longer lengths available upon request)
- Compliant with IEEE 802.3ba 40GBASE-SR4 and SFF-8436
- 4-channel up to 11.2GBps parallel transmission for 40GBase Ethernet, SDR, QDR Infiniband
- Hot Pluggable QSFP+ footprint
- Small bend radius for easy fiber installation and management
- Robust mechanical peformance
- Built-in real time digital diagnostics monitoring
- Power consumption < 1.5W per module
- Operating temperature range 0 to 70C

100G QSFP28 Active Optical Cable

AQPM100Gxxx

(xxx is length in meters)

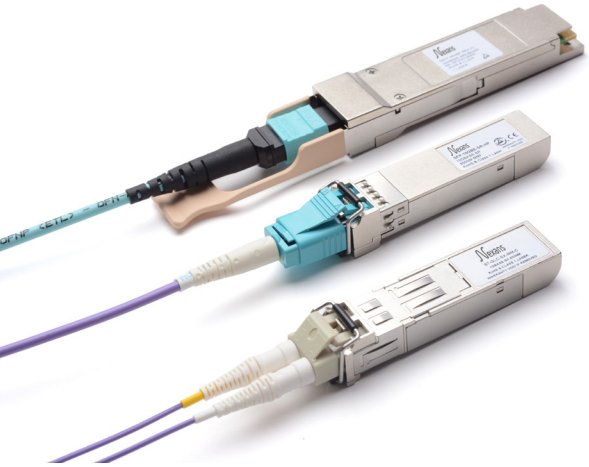
- 1m – 20m QSFP28 to QSFP28 4x25G parallel multi-mode active optical cable (longer lengths available upon request)
- Compliant with IEEE 802.3bm 1000GBASE-SR4 and SFF-8436
- 4-channel up to 25GBps parallel transmission for 100GBase Ethernet, FDR/EDR Infiniband
- Hot Pluggable QSFP+ footprint
- Small bend radius for easy fiber installation and management
- Robust mechanical peformance
- Built-in real time digital diagnostics monitoring
- Power consumption < 2.5W per module
- Operating temperature range 0 to 70C

Transceivers

Introduction

Maximize performance. In recent years, the number of transceiver options has dramatically increased. Since the transceiver decision has a direct impact on the cabling infrastructure (and vice versa), transceiver and cabling decisions should be considered together.

In addition, ever-increasing bandwidth demand continues to drive changes to your network and data center. In fact, in the coming years, you will surely need more servers, more switches and more storage capacity connected at higher data rates. That's why it's so important to "own the link."



What does that mean? In the past, transceivers have been purchased from equipment manufacturers, but since a transceiver's performance has more to do with the cabling than the equipment, it makes more sense to specify the cable and transceivers together. That way, you own the entire link.

Why Nexans for Transceivers? Nexans are leaders in the cabling industry and have a deep understanding of fiber and cabling performance. Nexans writes and tests transceivers to specifications beyond industry standards to maximize the transceiver + cable link performance, and combines this performance evaluation with cost and quality to bring the greatest value from the transceiver vendor community to our data center customers. Our optical experts are also ready to understand and assist with unique challenges in the data center network and work to deliver the right active optics and cabling solution.

100G QSFP28

QSFP-100GBE-SR4

- Compliant with IEEE 802.3bm 100GBASE-SR4
- Uncooled 850 nm VCSEL laser transmitter
- 12-fiber MPO connector
- Power consumption < 2.5 Watts

QSFP-100GBE-CW4

- Compliant with 100G-CWDM4 MSA and IEEE Electrical Interface
- RS FEC
- 1310 nm DFB laser transmitter, 2km
- 2-fiber Duplex LC connector
- Power consumption < 3.5 Watts

QSFP-100GBE-PSM4

- Compliant with 100G PSM4 MSA and IEEE 802.3bm Electrical Interface
- 1310 nm DFB laser transmitter, PSM4, 2 km
- 12-fiber MPO connector
- Power consumption < 3.5 Watts

100 Gb Ethernet QSFP28 Transceiver



- 4 channel 25.78125 GBd bi-directional transceiver module
- Compliant with IEEE 802.3bm 100GBASE XLPPI Electrical Interface and SFF8655
- Hot-pluggable QSFP28 footprint
- Built-in real-time digital diagnostics monitoring
- Class 1 laser product complies with EN 60825-1
- Enhanced performance when used in conjunction with Nexans GIGAlite glass
- Operating temperature range: 0°C to 70°C

Transceivers

40G QSFP+

QSFP-40GBE-LR4

- Compliant with IEEE 802.3ba 40GBASE-LR4
- 1310 nm DFB laser transmitter, 10 km
- 2-fiber Duplex-LC
- Power consumption < 3.5 Watts

QSFP-40GBE-LR4L

- Compliant with IEEE 802.3ba 40GBASE-LR4
- 1310 nm DFB laser transmitter, 2km
- 2-fiber Duplex LC connector
- Power consumption < 3.5 Watts

QSFP-4X10G-LR

- Compliant with IEEE 802.3ba 40GBASE-LR4
- 1310 nm DFB laser transmitter, PSM4, 2km
- 12-fiber MPO connector
- Power consumption < 3.5 Watts

40 Gb Ethernet QSFP+ Transceiver



- 4 channel 10.3125 GBd bi-directional transceiver module
- Compliant with IEEE 802.3ba 40GBASE XLPPI Electrical Interface and SFF8436
- Hot-pluggable QSFP footprint
- Built-in real-time digital diagnostics monitoring
- Class 1 laser product complies with EN 60825-1
- Enhanced performance when used in conjunction with Nexans GIGAlite glass
- Operating temperature range: 0°C to 70°C

10G SFP+

SFP-10GBE-LR

- 10.3125 GBd bi-directional data links
- Compliant with IEEE 802.3ae 10GBASE-LR, SFF-8431
- Single Mode, 10km reach
- Hot-pluggable SFP footprint
- Built-in digital diagnostics
- RoHS Compliant
- Operating temperature range: 0°C to 70°C

SFP-10GBE-SR

- 10.3125 GBd bi-directional data links
- Compliant with IEEE 802.3ae 10GBASE-SR, SFF-8431
- Multimode, up to 600 meter reach with GIGAlite10-XB optical fiber
- Hot-pluggable SFP footprint
- Built-in digital diagnostics
- RoHS Compliant
- Operating temperature range: 0°C to 70°C

10 Gb Ethernet SFP+ Transceiver



Guaranteed distances - LANmark-OF OM4

- **Products**

LANmark-OF OM4 cables terminated with LC connectors or pigtails
LANmark-OF OM4 LC Pre-Terms

Ethernet Distances						
Applications	Pre-Terminated LC Assemblies			Direct Termination or Splicing with LC		
# Connections	2	4	6	2	4	6
1GBASE-SX	970m	960m	940m	930m	880m	820m
10GBASE-SR	550m	540m	530m	520m	490m	460m
25GBASE-SR	120m	110m	105m	110m	90m	70m
40G BiDi	175m	150m	130m	140m	NA	NA
40G SWDM	350m	350m	350m	350m	NA	NA
100GBiDi	100m	100m	100m	100m	NA	NA
100G SWDM	100m	100m	100m	100m	NA	NA

Fibre Channel Distances						
Applications	Pre-Terminated LC Assemblies			Direct Termination or Splicing with LC		
# Connections	2	4	6	2	4	6
1GFC (PI-4 100-M5F-SN-I)	1250m	1230m	1200m	1140m	1000m	800m
2GFC (PI-4 200-M5F-SN-I)	750m	740m	720m	680m	560m	460m
4GFC (PI-5 400-M5F-SN-I)	500m	475m	450m	470m	420m	370m
8GFC (PI-5 800-M5F-SN-I)	250m	230m	220m	220m	190m	130m
16GFC (PI-5 1600-M5F-SN-I)	170m	150m	145m	150m	125m	60m
32GFC (PI-6 3200-5MF-SN-I)	125m	115m	110m	110m	95m	65m

Guaranteed distances - LANmark-OF OM4 MPO

- **Products**

LANmark-OF OM4 ultra low loss MPO-MPO Pre-Term Assemblies
LANmark-OF OM4 ultra low loss MPO-LC module

Ethernet Distances - Duplex Transmission			
# MPO-LC Modules	2	4	6
1GBASE-SX	930m	910m	890m
10GBASE-SR	520m	510m	500m
25GBASE-SR	115m	105m	100m
40G BiDi	165m	120m	110m
40G SWDM	350m	350m	350m
100GBiDi	100m	100m	100m
100G SWDM	100m	100m	100m

Ethernet Distances - Parallel Transmission			
# MPO Connections	2	4	6
40GBASE-SR4	175m	150m	130m
40GBASE-SR4 Extended Distances*	400m	360m	330m
100G-BASE-SR4	120m	110m	105m

* Nexans Approved Transceivers

Fibre Channel Distances - Duplex Transmission			
# MPO-LC Modules	2	4	6
1GFC (PI-4 100-M5F-SN-I)	1150m	1120m	1050m
2GFC (PI-4 200-M5F-SN-I)	680m	660m	620m
4GFC (PI-5 400-M5F-SN-I)	480m	420m	410m
8GFC (PI-5 800-M5F-SN-I)	240m	205m	190m
16GFC (PI-5 1600-M5F-SN-I)	160m	135m	130m
32GFC (PI-6 3200-5MF-SN-I)	120m	105m	100m

Guaranteed distances - LANmark-OF OM5

- **Products**

LANmark-OF OM5 cables terminated with LC connectors or pigtails
LANmark-OF OM5 LC Pre-Terms

Ethernet Distances						
Applications	Pre-Terminated LC Assemblies			Direct Termination or Splicing with LC		
# Connections	2	4	6	2	4	6
1GBASE-SX	970m	960m	940m	930m	880m	820m
10GBASE-SR	550m	540m	530m	520m	490m	460m
25GBASE-SR	120m	110m	105m	110m	90m	70m
40G BiDi	175m	150m	130m	140m	NA	NA
40G SWDM	440m	440m	440m	440m	NA	NA
100GBiDi	100m	100m	100m	100m	NA	NA
100G SWDM	150m	150m	150m	150m	NA	NA

Fibre Channel Distances						
Applications	Pre-Terminated LC Assemblies			Direct Termination or Splicing with LC		
# Connections	2	4	6	2	4	6
1GFC (PI-4 100-M5F-SN-I)	1250m	1230m	1200m	1140m	1000m	800m
2GFC (PI-4 200-M5F-SN-I)	750m	740m	720m	680m	560m	460m
4GFC (PI-5 400-M5F-SN-I)	500m	475m	450m	470m	420m	370m
8GFC (PI-5 800-M5F-SN-I)	250m	230m	220m	220m	190m	130m
16GFC (PI-5 1600-M5F-SN-I)	170m	150m	145m	150m	125m	60m
32GFC (PI-6 3200-5MF-SN-I)	125m	115m	110m	110m	95m	65m

Guaranteed distances - LANmark-OF OM5 MPO

- **Products**

LANmark-OF OM5 ultra low loss MPO-MPO Pre-Term Assemblies
LANmark-OF OM5 ultra low loss MPO-LC module

Ethernet Distances - Duplex Transmission			
# MPO-LC Modules	2	4	6
1GBASE-SX	930m	910m	890m
10GBASE-SR	520m	510m	500m
25GBASE-SR	115m	105m	100m
40G BiDi	165m	120m	110m
40G SWDM	440m	440m	440m
100GBiDi	100m	100m	100m
100G SWDM	150m	150m	150m

Ethernet Distances - Parallel Transmission			
# MPO Connections	2	4	6
40GBASE-SR4	175m	150m	130m
40GBASE-SR4 Extended Distances*	400m	360m	330m
100G-BASE-SR4	120m	110m	105m

* Nexans Approved Transceivers

Fibre Channel Distances - Duplex Transmission			
# MPO-LC Modules	2	4	6
1GFC (PI-4 100-M5F-SN-I)	1150m	1120m	1050m
2GFC (PI-4 200-M5F-SN-I)	680m	660m	620m
4GFC (PI-5 400-M5F-SN-I)	480m	420m	410m
8GFC (PI-5 800-M5F-SN-I)	240m	205m	190m
16GFC (PI-5 1600-M5F-SN-I)	160m	135m	130m
32GFC (PI-6 3200-5MF-SN-I)	120m	105m	100m

Guaranteed distances LANmark-OF SM

- **Products**

LANmark-OF SM cables terminated with LCconnectors or pigtails
LANmark-OF SM LC Pre-Terms

LANmark-OF SM/Direct Termination, Splicing and Pre-Terminated*					
Applications	2 Connections	3 Connections	4 Connections	5 Connections	6 Connections
100BASE-SX	2,000m	-	-	-	-
1GBASE-LX	5,000m	4,900m	4,500m	4,000m	3,500m
10GBASE-LR	10,000m	9,000m	7,500m	6,000m	4,500m
10GBASE-LW	10,000m	9,000m	7,500m	6,000m	4,500m
10GBASE-LX4	10,000m	8,500m	6,750m	5,250m	3,500m
4GBit-FC (PI-5 400-SM-LC-L)	10,000m	10,000m	7,500m	6,000m	4,000m
8GBit-FC (PI-5 800-SM-LC-L)	10,000m	10,000m	7,500m	6,000m	4,000m
10GBASE-FC (1200-SM-LL-L)	10,000m	9,000m	7,500m	6,000m	4,500m
10GBASE-FC (1200-SM-LC4-L)	10,000m	8,500m	6,750m	5,250m	3,500m
16Gbit-FC (PI-5 1600-SM-LC-L)	10,000m	10,000m	7,500m	6,000m	4,000m
40GBASE-LR4	10,000m	10,000m	9,000m	7,000m	5,000m
100GBASE-LR4	10,000m	10,000m	8,000m	6,000m	4,000m

* With one splice every 2 km between 2 connections if required

Guaranteed distances LANmark-OF SM MPO

- **Products**

LANmark-OF SM low loss MPO-MPO Pre-Term Assemblies
LANmark-OF SM low loss MPO-LC module

LANmark-OF SM/MPO Low Loss Connectivity*				
Applications	2 MPO Modules	4 MPO Modules	4 MPO Modules	8 MPO Modules
1GBASE-LX	5,000m	3,000m	-	-
10GBASE-LR	9,000m	7,000m	2,500m	-
4GBit-FC (PI-5 400-SM-LC-L)	10,000m	10,000m	6,000m	3,000m
8GBit-FC (PI-5 800-SM-LC-L)	10,000m	8,000m	6,000m	3,000m
16Gbit-FC (PI-5 1600-SM-LC-L)	10,000m	8,000m	6,000m	3,000m
40GBASE-LR4	10,000m	10,000m	7,000m	4,000m
100GBASE-LR4	10,000m	10,000m	6,500m	3,500m

* With one splice every 2 km between 2 connections if required

LANmark-6

LANmark-6+ System Featuring LANmark-1000



The Nexans LANmark-6+ system featuring LANmark-1000 cable, LANmark-6 Snap-In connectors and LANmark-6 Patch Cords offers significant Category 6 channel performance headroom and is ideal for supporting higher speed applications such as 2.5 Gbps Ethernet in addition to Gigabit and Fast Ethernet. The enhanced performance of LANmark-1000 cables also provides for increased bundle sizes when supporting High PoE power levels,including 60W and 100W.

- Increased bandwidth ideal for 2.5 Gbps Ethernet as well as Gigabit and Fast Ethernet
- Exceeds Category 6 channel performance requirements

LANmark-6 System Featuring LANmark-6



The Nexans LANmark-6 System is the ideal system for covering the basics. The LANmark-6 system includes LANmark-6 cable and connectivity that are manufactured and tested to industry standard Category 6 specifications with each component fully compliant to the TIA-568-C.2 requirements. LANmark-6 components are designed to meet or exceed the quality and performance criteria needed to support applications up to 250 MHz, including 1000BASE-T Gigabit Ethernet.

- Ideal solution for most common applications operating over Fast Ethernet or Gigabit Ethernet networks
- Matched components ensuring minimized signal loss and maximum throughput
- Meets standard channel performance requirements with margin for application performance reliability

Slimflex (28 AWG) U/UTP RJ45 Patch Cords



- Category 6 compliant
- 55% smaller and 56% lighter than standard CAT 6 patch cords
- Snagless plugs
- Variety of cable colors available
- CMR flame rating
- Easy routing within tight racks and cabinets
- Extremely flexible

LANmark-6

N Number	Description
N180.60R40B	LANmark-6, Cat 6, Riser, UTP, Blue, box
N180.60R20B	LANmark-6, Cat 6, Riser, UTP, White, box
N180.60P40B	LANmark-6, Cat 6, Plenum, UTP, Blue, box
N180.60P20B	LANmark-6, Cat 6, Plenum, UTP, White, box
N180.61R40B	LANmark-1000, Cat 6, Riser, UTP, Blue, box
N180.61R20B	LANmark-1000, Cat 6, Riser, UTP, White, box
N180.61P40B	LANmark-1000, Cat 6, Plenum, UTP, Blue, box
N180.61P20B	LANmark-1000, Cat 6, Plenum, UTP, White, box
N420.660-ECO24	LANmark-6 Snap-In Connector, grey, 24-pack
NBS6.P3Axxx.xBZT	Slimflex-6 U/UTP Patch Cord, Blue CMR, xxx.x feet
NBS6.P3Axxx.xWZT	Slimflex-6 U/UTP Patch Cord, White CMR, xxx.x feet
NB16.P9Axxx.xBZT	Category 6 U/UTP Patch Cord, Blue CM, xxx.x feet
NB16.P9Axxx.xWZT	Category 6 U/UTP Patch Cord, White CM, xxx.x feet
N420.567	Universal Comfort Tool
N420.110	Cable Stripper 25x





Pre-Term Copper Assemblies

Definition

Pre-Terminated Copper assemblies can be Jack to Jack or Jack to Plug assemblies of single cables, but most of the time are actually assemblies of multiple cables, what we call Pre-Term bundles. Groups of 6 or 12 Cat6 cables are securely bound by an adhesive binder for simple and efficient routing and installation in the data center. Other group sizing and bundling techniques can be made upon request.

Installation and time saving

Nexans LANmark Pre-Term Units help reduce the installation time and risks as field connector termination is eliminated. Connectors are mounted and assemblies are tested in our factory.

These features drastically reduce on-site installation time enabling massive cabling deployments in data centers within very short time periods.

Each assembly is labeled with a traceability number and a link reference specified by the customer.
All modular structural hardware items designed for the Snap-In range can be used in all positions of a 4 connector twisted pair cabling channel.

- Fast and straightforward installation
- No on-site termination
- Reduce installation time
- No risk linked to field termination
- Supports the 4 connectors channel configuration
- Labelling on each assembly (customisable)
- Factory tests in electronic format available on request

Performance

Nexans Pre-Term Bundles meet or exceed Category requirements according to the international, European and American standards especially for NEXT/FEXT, Power Sum NEXT/FEXT, Alien Crosstalk and Return Loss parameters. When used in combination with LANmark patch cords of the same category the full connector channel is guaranteed as well.

All assemblies are created in a controlled manufacturing environment. This ensures that all termination and bundling procedures are consistent, repeatable and reliable. All assemblies are individually tested and test reports are stored for traceability purposes.

Guarantees

Nexans LANmark Pre-Term Units are covered by a 25 year parts and Labor warranty as described in the Nexans Certified System Warranty. When installed in combination with LANmark patch cords of the same category, a channel warranty can be obtained. Nexans Design Guidelines for length calculations and limitations according to the standards must be respected.

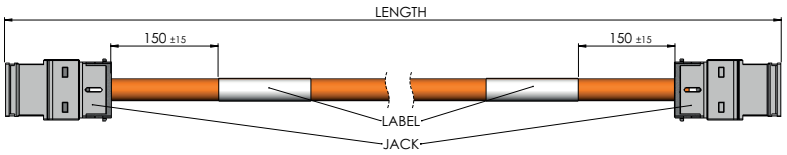
Product description

The range of pre-terminated copper assemblies includes single units in Category 6 and 6E:

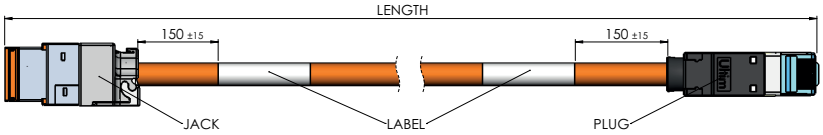
- Jack-Jack assemblies: 4 pair cable terminated with LANmark Snap-In jacks at both ends
- Jack-Plug assemblies: 4 pair cable terminated with a LANmark Snap-In jack at one end and a LANmark plug at the other end
- Long length Plug-Plug assemblies: 4 pair cable terminated with LANmark plugs at both ends

These units can then be further assembled to form bundles of 6 or 12

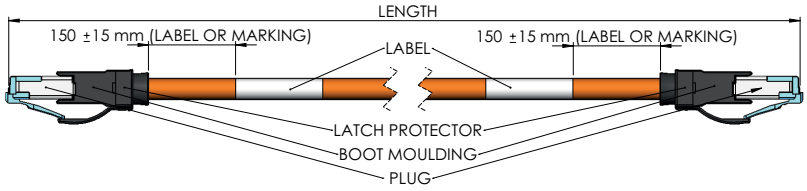
Single unit assemblies



Jack-Jack

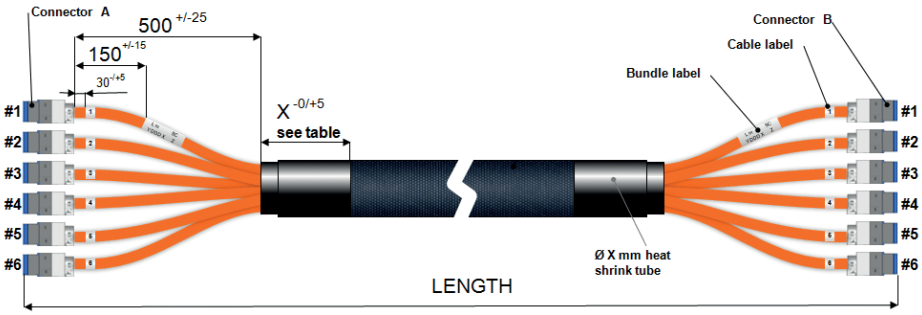


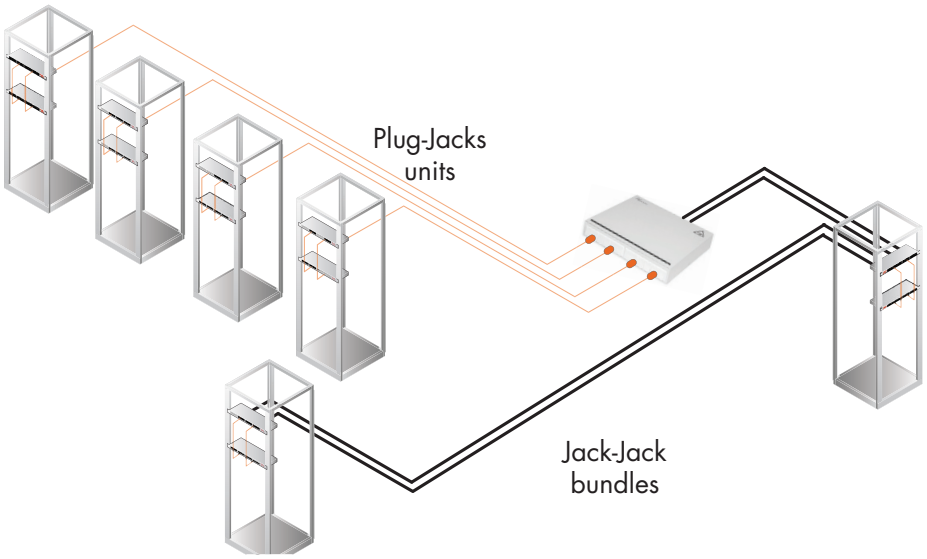
Jack-Plug



Plug-Plug

Bundles of Jack-Jack, Jack-Plug or Plug-Plug assemblies





Bundled units between server racks or patch panels and consolidation points

Installation

Nexans LANmark Pre-Term bundles help reduce installation time. Only a single assembly needs to be laid instead of 6 or 12 individual cables. Furthermore connector termination is simply eliminated thus eliminating field termination risks. Connectors are mounted and tested in our factory.

PART NUMBER CONFIGURATATION N6ab.cdefghijklxxx		
N6**a**b.cdefghijklxxx	a: bundle options	1: single
		2: bundle of 6
		3: bundle of 12
N6a**b**.cdefghijklxxx	b: cable type A	A: 4-pair cable
N6ab.**c**defghijklxxx	c: cable type B	2: LANmark-6
		K: LANmark-1000
N6ab.c**d**efghijklxxx	d: cable type C	A: U/UTP
N6ab.cd**e**fghijklxxx	e: wire type	2: solid
N6ab.cde**f**ghijklxxx	f: rating/color	R: riser/blue
		S: riser/white
		P: plenum/blue
		N: plenum/white
N6ab.cdef**g**hijklxxx	g: side A termination	B: unscreened jack
		D: unscreened plug
		X: no connector
N6ab.cdefg**h**ijklxxx	h: side A type	4: Cat 6
		X: no connector
N6ab.cdefgh**i**jklxxx	i: side A stagger	X: uniform
		Y: stagger
N6ab.cdefghi**j**klxxx	j: side B termination	B: unscreened jack
		D: unscreened plug
		X: no connector
N6ab.cdefghij**k**lxxx	k: side B type	4: Cat 6
		X: no connector
N6ab.cdefghijk**l**xxx	l: side B stagger	X: uniform
		Y: stagger
N6ab.cdefghijkl**xxx**	xxx: length in feet	

High Speed Interconnect

Passive Direct Attach Cables

Direct Attach Cable (DAC)



The Nexans family of Passive Direct Attach Cables provides a high performance, cost effective, and ultra-reliable solution for data center 10G, 40G, and 100G connectivity. All products are compliant to the IEEE and SFF industry standards and contain superior shielding for optimal EMI performance. The DAC cables come in variable lengths from 1 m to 5 m

10G SFP+ Direct Attach Cable

DAxxPS10Gyyy
(xx AWG, yyy Length)

- 1m – 5m SFP+ to SFP+ 10G DAC
- Compliant with IEEE 802.3, SFF-8431, SFF-8472
- 10.3125 Gb to 11.2 Gb bi-directional communication
- Hot Pluggable SFP+ footprint
- Robust Mechanical Performance
- 30AWG up to 3m. 28AWG 3.5m-5m.
- Operating temperature 0 to 70 degrees C

25G SFP28 Direct Attach Cable

DAxxPS25Gyyy
(xx AWG, yyy Length)

- 1m – 5m SFP28 to SFP28 25G DAC
- Compliant with IEEE 802.3bj, SFF-8402
- 25.78125 GB aggregate data rate
- Hot Pluggable SFP28 footprint
- Robust Mechanical Performance
- 30AWG up to 3m. 26AWG 3.5m-5m.
- Operating temperature 0 to 70 degrees C

40G QSFP+ Direct Attach Cable

DAxxPQ40Gyyy
(xx AWG, yyy Length)

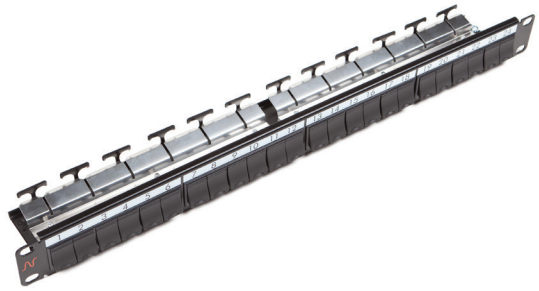
- 1m – 5m QSFP+ to QSFP+ 40G DAC
- Compliant with IEEE 802.3ba, SFF-8436
- 4 channel 10.3125Gb to 11.2Gb bi-directional communication
- Hot Pluggable SFP+ footprint
- Robust Mechanical Performance
- 30AWG up to 3m. 26AWG 3.5m-5m.
- Operating temperature 0 to 70 degrees C

100G QSFP28 Direct Attach Cable

DAxxPQ100Gyyy
(xx AWG, yyy Length)

- 1m – 5m QSFP28 to QSFP28 100G DAC
- Compliant with IEEE 802.3bj, SFF-8665
- 100GB (4x25G Channel) data rate
- Hot Pluggable QSFP28 footprint
- Robust Mechanical Performance
- 30AWG up to 3m. 26AWG 3.5m-5m.
- Operating temperature 0 to 70 degrees C

Modular Patch Panels



Patch Panel 24 Snap-In Fixed Black

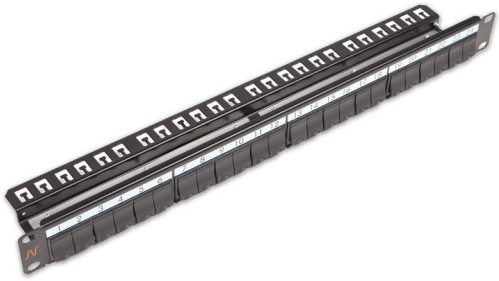
- Compatible with all LANmark Snap-In connectors
- 24 Snap-In ports with shutters
- Rapid cable retention with "T" clips for faster installation
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened connectors
- Also available in white



Patch Panel 24 Snap-In Sliding Black

- Sliding mechanism
- Compatible with all Snap-In connectors
- 24 Snap-In ports with shutters
- Rapid cable retention with "T" clips for faster installation
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened connectors
- Fully painted design

LANsense AIM LANsense version also available



Patch Panel 24 Snap-In Black

- Compatible with all LANmark Snap-In connectors
- 24 Snap-In ports with shutters
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened connectors
- Tie Wrap features for cable strain relief

LANsense AIM LANsense version also available

N Number	Description
N521.661BK	Patch Panel 24 Snap-In Fixed Black
N521.663BK	Patch Panel 24 Snap-In Sliding Black
N521.664BK	Patch Panel 24 Snap-In Black

Modular Patch Panels



Angled Patch Panel 24 Snap-In Black

- Supports high density patching - ideal for Data Centers
- Eliminates the need for additional cable management
- Up to double density achievable
- Compatible with all Snap-In connectors
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened connectors
- Also available in white

LANsense AIM LANsense version also available

N Number	Description
N521.671	Angled Patch Panel 24 Snap-In Black

Tools

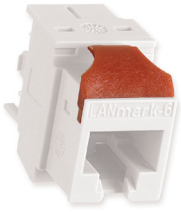






LANmark Colored Shutters

- Available in 8 colors: white, black, blue, red, dark grey, green, yellow, orange
- Colored shutters can be used to replace standard black or white versions on LANmark Snap-In patch panels, outlet modules and zone distribution boxes
- Suitable for differentiation between various services or applications by color coding, throughout the entire channel
- Packed in bags of 100





Keystone Clips

- Adapter allowing LANmark Snap-In connectors to fit the Keystone format
- Plastic clips for all LANmark connectors
- 3 different plastic clips available for different keystone aperture dimensions (height and wall thickness)

N Number	Description
N421.701XXX	LANmark Shutter 100x ("XXX" denoting color: BLA = Black, BLU = Blue, DGR = Dark Grey, GRE = Green, ORA = Orange, RED = Red, YEL = Yellow, WHI = White)
N429.625	LANmark Keystone Clip Evo (Wall Thickness 1.5-1.75) Red 24x
N429.626	LANmark Keystone Clip Evo (Wall Thickness 2.0-2.25) Blue 24x
N429.627	LANmark Keystone Clip Evo (Wall Thickness 2.0-2.25 Height 19.7) Yellow 24x

Tools



Hook & Loop Cable Strap 25m Roll

- High quality self gripping cable tie
- Grey strap with orange Nexans logo
- Reusable multiple times
- Recommended to bundle and tie both copper and optical fiber data cables
- Reduces strain on cables compared to traditional cable fasteners
- 20mm width
- 25m roll



Comfort Tool

- Facilitates smooth termination of all LANmark Snap-In connectors
- Allows re-opening of all LANmark connectors allowing retermination

N Number	Description
N100.100	Hook & Loop Cable Strap 25m Roll
N420.567	Tool - Universal Comfort Tool for Snap-In Connector

Accessories



Overhead Patching Frame 4U and 6U

- 19-Inch 4U and 6U overhead frame
- Ideal in data Centers
- Designed to host both copper and fiber cabling
- Metal construction
- Straight or angled position



Angled Blank Panel Black

- 19" Blank Panel to fill empty cabinet space



Angled Panel Cover Black

- Used to close the triangular gap formed at the top of a stack of LANmark or LANsense Angled Panels to prevent items falling behind the panels and to enhance the appearance of the finished installation

N Number	Description
N345.400	LANmark Overhead Patching Frame 4U
N521.672	Angled Blank Panel Black
N521.673	Angled Panel Cover Black

Accessories



Angled Pass-Through Black

The 2U Angled Pass-Through is designed to match the LANmark and LANsense Angled Panels and to provide a means for patch cables to cross from side to side in a rack while maintaining rack aesthetics.



Pair of Patch Cord Management Hooks Black for Overhead Patching Frame 4U

- Required to guide patch cords on both sides of the frame
- Easy to mount with 2 screws and cage nuts
- Up to 3 hooks on each side
- Black flexible plastic



Letterbox Patch Guide 1U Black

- Allows storage and management of copper and fiber patch cords
- Open structure with rings for easy access
- 8 cm depth
- Central "letterbox" holes allow hiding excess of cords inside the rack
- Black paint finished metal

N Number	Description
N521.678	Angled Pass-Through Black
N345.401	Pair of Patch Cord Management Hooks Black for Overhead Patching Frame 4U
N102.115	Letterbox Patch Guide 1U Black

Accessories



1U Universal Patch Guide with front cover, Black

- Allows storage and management of copper and fiber patch cords
- 8 cm depth
- Cover for tidy cabinet look
- Black paint finished metal



1U Patch Guide with rings, Black

- Allows storage and management of copper and fiber patch cords
- Open structure with rings for easy access
- 8 cm depth
- Black paint finished metal



1U Blank Panel, black

- 19″ Blank Panel to fill empty cabinet space

N Number	Description
N102.117BK	1U Universal Patch Guide with front cover, Black
N102.105BK	1U Patch Guide with rings, Black
N109.207BK	1U Blank Panel, black

FibreRoute Trunking System

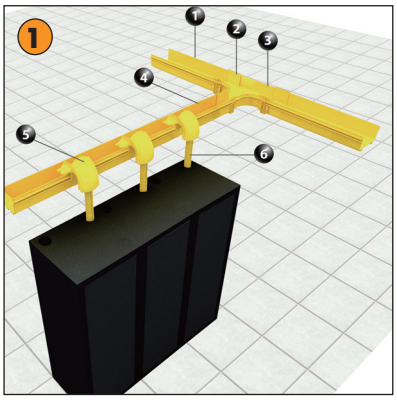
The FibreRoute range offers the possibility to build a modular and well organised tray system to support the cable infrastructure.

Application 1:

The Fiber Optic Trunking System system provides a variety of adaptors and downward junction to cabinets:

Product description:

1. Main channel
2. In-Line Connector
3. Tee Reducer
4. Branch
5. Waterfall
6. Flex tube used for Waterfall

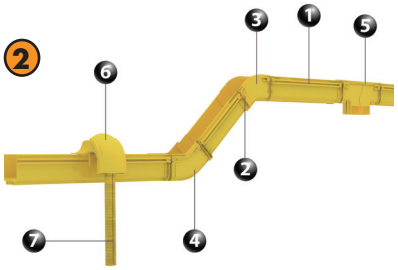


Application 2:

In Data Center environment, pathway systems are complex and there are obstacles in the path. Vertical angle fitters could be used to bypass those existing pathways.

Product description:

1. Main Channel
2. In-line Connector
3. Vertical Internal Bend
4. Vertical External Bend
5. Vertical Unequal Tee
6. Waterfall
7. Flex tube used for Waterfall

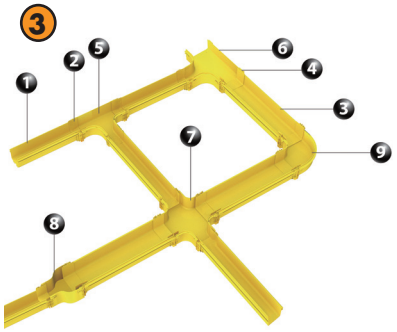


Application 3:

The Fiber Optic Trunking System provides a variety of adaptors for interconnection between Main Channels and Sub Channels.

Product description:

1. Branch
2. In-line Connector
3. Main Channel
4. In-line Connector
5. Equal Tee
6. Tee reducer
7. Unequal Cross
8. Reducer
9. Elbow



Application 4:

A variety of fixing methods are provided such as cabinet/rack support, cable tray suspension, trapeze suspension from ceiling.



FibreRoute Trunking System

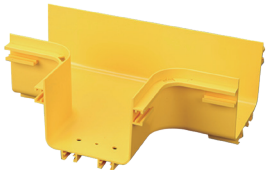
Available in various width
120 or 240mm



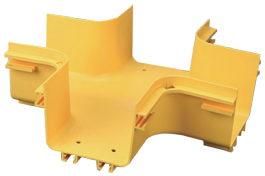
Channel 2m/pcs yellow



Horizontal 90 degree elbow



Equal Tee



Equal cross



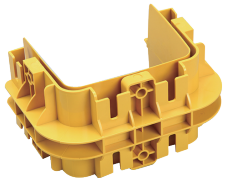
45° Vertical External bend



45° Vertical Internal bend



End cap



In-line Connector

N-Number and description

120 System	
N350.120FC00P	FibreRoute 120mm Channel
N350.120FA01A	FibreRoute 120mm Elbow
N350.120FA02A	FibreRoute 120mm Equal Tee
N350.120FA03A	FibreRoute 120mm Equal Cross
N350.120FA11A	FibreRoute 120mm Elbow Cover
N350.120FA12A	FibreRoute 120mm Equal Tee Cover
N350.120FA13A	FibreRoute 120mm Equal Cross Cover
N350.120FA21A	FibreRoute 120mm 45° Vertical Internal Bend
N350.120FA22A	FibreRoute 120mm 45° Vertical External Bend
N350.120FA31A	FibreRoute 120mm 45° Vertical Internal Bend Cover
N350.120FA32A	FibreRoute 120mm 45° Vertical External Bend Cover
N350.120FC01A	FibreRoute 120mm In-line Connector
N350.120FC02A	FibreRoute 120mm Trumpet
N350.120FC03A	FibreRoute 120mm End-cap
N350.120FC10P	FibreRoute 120mm Channel Cover

240 System	
N350.240FA01A	FibreRoute 240mm Elbow
N350.240FA02A	FibreRoute 240mm Equal Tee
N350.240FA03A	FibreRoute 240mm Equal Cross
N350.240FA11A	FibreRoute 240mm Elbow Cover
N350.240FA12A	FibreRoute 240mm Equal Tee Cover
N350.240FA13A	FibreRoute 240mm Equal Cross Cover
N350.240FA21A	FibreRoute 240mm 45° Vertical Internal Bend
N350.240FA22A	FibreRoute 240mm 45° Vertical External Bend
N350.240FA31A	FibreRoute 240mm 45° Vertical Internal Bend Cover
N350.240FA32A	FibreRoute 240mm 45° Vertical External Bend Cover
N350.240FC00P	FibreRoute 240mm Channel
N350.240FC01A	FibreRoute 240mm In-line Connector
N350.240FC03A	FibreRoute 240mm End-cap
N350.240FC10P	FibreRoute 240mm Channel Cover

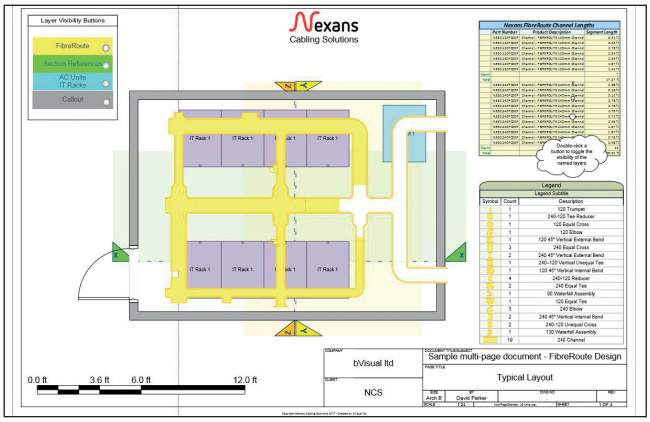
Reducers and Adapters	
N350.003SD01A	FibreRoute Waterfall Assembly 90mm
N350.003SD02A	FibreRoute Waterfall Assembly 130mm
N350.003SD10A	FibreRoute Waterfall Flexible tube, 50mm, 0.8M
N350.240FT01A	FibreRoute 240mm-120mm Reducer
N350.240FT11A	FibreRoute 240mm-120mm Reducer Cover
N350.240FT21A	FibreRoute 240mm–120mm Vertical Unequal Tee
N350.240FT41A	FibreRoute 240mm-120mm Tee reducer
N350.240FT51A	FibreRoute 240mm-120mm Tee reducer Cover
N350.240FT61A	FibreRoute 240mm-120mm Unequal Cross
N350.240FT71A	FibreRoute 240mm-120mm Unequal Cross Cover
N350.240FA04A	FibreRoute 240mm Universal Transition
N350.120FA04A	FibreRoute 120mm Universal Transition

Mounting Hardware & Accessories	
N350.003SMC1	FibreRoute 120mm Cable Tray Mounting Kit
N350.003SMC2	FibreRoute 240mm Cable Tray Mounting Kit
N350.003SMR1	FibreRoute 120mm Cabinet/Rack Mounting Kit
N350.003SMR2	FibreRoute 240mm Cabinet/Rack Mounting Kit
N350.003SMT1	FibreRoute 120mm Trapeze Mounting Kit
N350.003SMT2	FibreRoute 240mm Trapeze Mounting Kit
N350.003SS00S	FibreRoute Screw Kit T Type x100
N350.003SS01S	FibreRoute Screw Kit Round Type x100

FibreRoute PLANNER

Design Software

FREE DESIGN SOFTWARE



Nexans FibreRoute Planner tool is a Visio template and add-in that provides the ability to create layouts of FibreRoute trunking system to scale and export a Bill of Materials to Excel, which can then be used for pricing calculations. It enables system designers, installers and integrators to create professional data center layout drawings showing the row of racks and the trunking design quickly and efficiently.

Automated Infrastructure Management

LANsense AIM

A well-controlled, reliable LAN infrastructure is a critical business enabler. This need comes against a backdrop of increased complexity and accelerated change which is becoming almost impossible to manage manually. LANsense is Nexans' Automated Infrastructure Management (AIM) solution. Also, referred to as Intelligent Infrastructure Management (IIM).

Why LANsense in Data Centers?

There is an increase in infrastructure and network complexity in data centers. In todays, dynamic data center environment, control and monitoring is an increasing challenge.

The initial cost of cabling and its related infrastructure represents a fraction of all the cost in a data center, but given its lifetime in comparison to other active equipment, it is by far the most complex and costly infrastructure to be replaced.

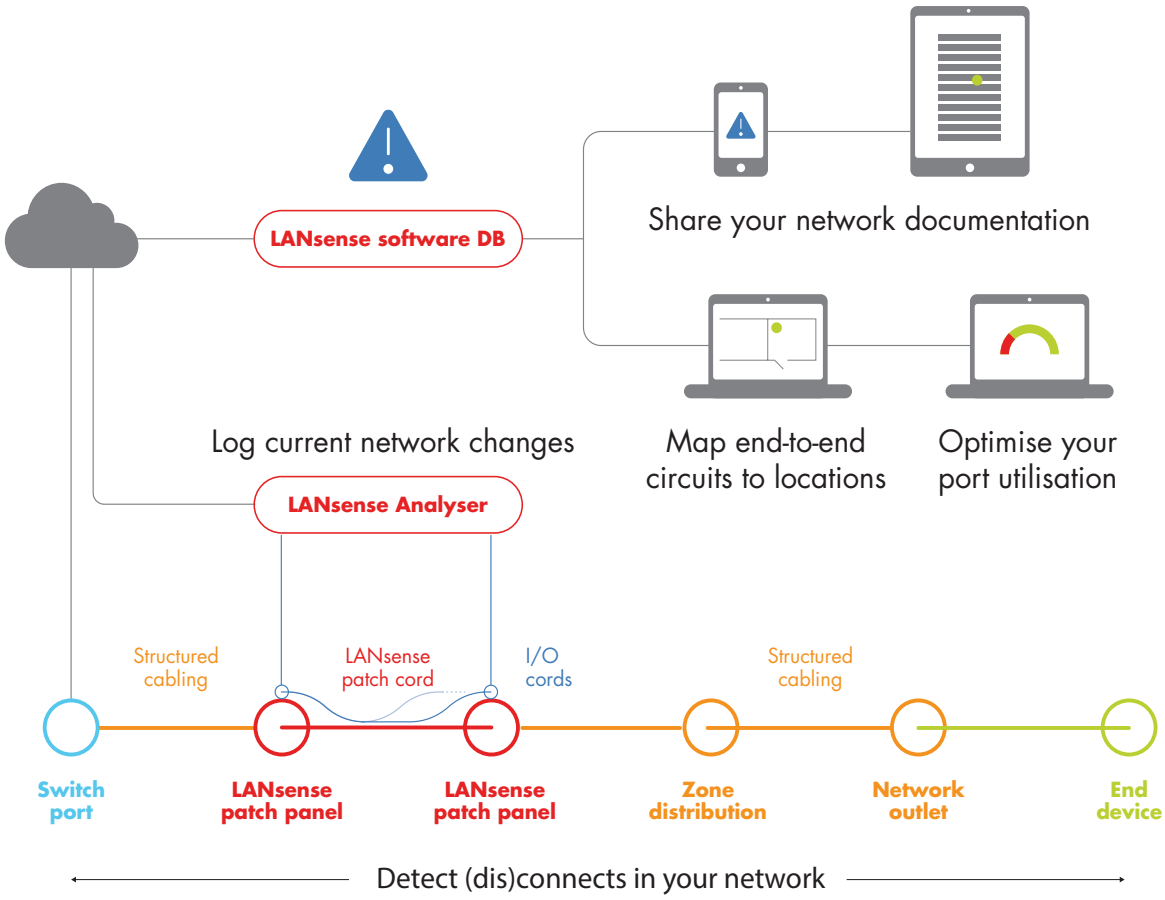
With the increase in Managed Service providers for client and cloud data centers, the need to manage the physical installation and control Moves Adds and Changes (MAC's) has increased. Initial documentation of the installed and tested infrastructure may be correct at hand over, but keeping it up to date is a critical task, and must be well managed to ensure that it remains reliable and accurate for planning future growth, energy efficiency, flexibility, availability and security.

How does LANsense help?

Nexans LANsense is an intelligent management system combining intelligent hardware and software. It is a platform that combines information about physical and network layer connections providing a complete traceable path between core, edge and end devices. Software instantly updates the management database when moves, or unauthorized connects or disconnects are detected. It also establishes a reliable audit trail to satisfy compliance and legal requirements.

LANsense provides additional level of security by detecting the connection of unauthorized devices on the network and tracing the physical circuit route of these devices and locating them on the floor plan.

LANsense also helps in making informed decisions on better utilization of assets and resources like available space in racks, which patch panel ports are free, different VLAN's, recoverable switch ports and much more. The system automatically updates the documentation from day one and is 100% accurate.



LANsense Hardware



LANsense NGA: A LANsense analyzer is required to monitor all network ports, record changes in the events log, and continuously update and maintain the connectivity database. It connects to the equipment presentation panel or integration strip and the horizontal distribution panel using I/O cables, and is in turn connected to the LANsense cable management SQL database.

LANsense Copper Patch Panels

LANsense patch panels and cords incorporate sensor circuits to detect the insertion or removal of cords.



LANsense Modular Patch Panels

Patch Panel 24 Snap-In Fixed Black

- Compatible with all LANmark Snap-In Connectors
- 24 Snap in ports
- Clip on mechanism
- Universal design supporting unscreened and screened connectors



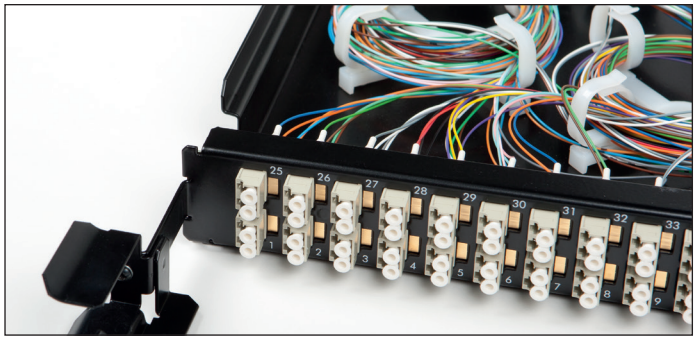
Angled Patch Panel 24 Snap-In Black

- Supports high density patching - ideal for data centers
- Eliminates the need for additional cable management
- Up to double density achievable
- Compatible with all Snap-In connectors
- Exclusive Auto-Connect earthing system
- Universal design supporting unscreened and screened connectors
- Also available in white

N Number	Description
N881.311	LANsense Panel 24 Snap-In
N881.671	LANsense Angled Panel 24 Snap-In

LANsense Fiber Patch Panels

LANsense Sliding Fiber Panels



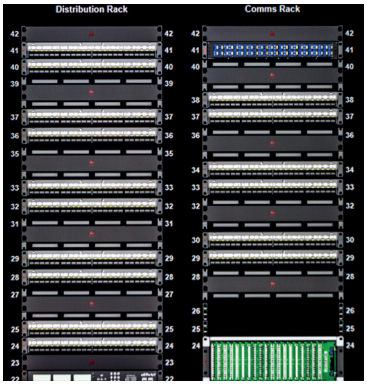
- Preloaded patch panels with adaptors for fast installation in data centers
- High density connectivity: up to 48 LC or 96 LC.
- Sliding and tilting patch panel for ease of installation, upgrade and maintenance
- Optimised for installation of Pre-Term with advanced fiber management features
- Improved splice cassettes with hinged trays for ease of installation and inspection
- Labelling facility for port identification and patch cord management within 1U

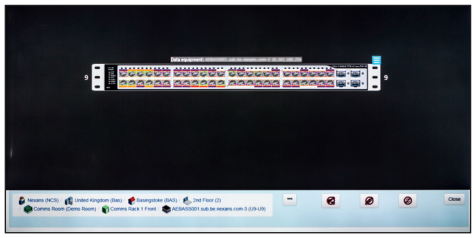
N Number	Description
N883.2B48LCMM	LANsense Pre-Loaded Patch Panel 48 LC Multimode Sliding Black
N883.2B48LCSM	LANsense Pre-Loaded Patch Panel 48 LC Singlemode Sliding Black
N883.2B96LCMM	LANsense Pre-Loaded Patch Panel 96 LC Multimode Sliding Black
N883.2B96LCSM	LANsense Pre-Loaded Patch Panel 96 LC Singlemode Sliding Black

LANsense Software

The new LANsense software is 64 bit safe and secure web based application. It communicates with the LANsense analyser, which monitors physical change, over TCP/IP and update the database providing real time, 100% reliable and accurate automated documentation of physical infrastructure.

Graphical View

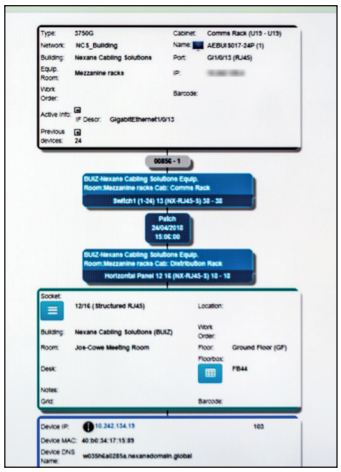




Real time updated graphical view of cabling infrastructures in data centers and equipment rooms like:

- Cabinets/racks
- Networking switches
- LANmark and LANsense patch panels
- Patch connectivity information
- Live switch port and connectivity information

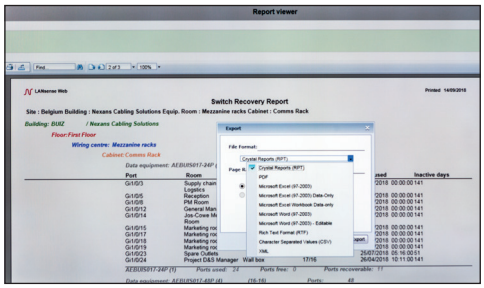
Circuit Trace



LANsense provides real time circuit trace between Servers and End devices and the switch ports like:

- Information about the switch port, VLAN, IP/MAC address of the switch
- Information on the location of the physical infrastructure like patch panels, rack/cabinets, patch panels, networking equipment's, servers, end devices
- Information on the networking equipment's, servers, end devices -IP/MAC address, VLAN and DNS name

Reports



LANsense comes with pre-defined set of useful reports that can be generated on:

- Locations
- Connectivity
- Work orders
- Logs

LANsense reports are customizable and can also be configured by the user depending on his needs.

Floor Planners



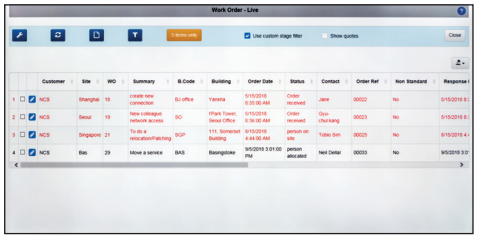
LANsense floor planners is an interactive tool used for locating physical assets or devices on the floor plan.

Floor plans of the Data Centers or small Equipment rooms or of a building floor can be used the tool:

Shows information on Available U space in the Racks/Cabinets and the total cabinet power usage.

Other items critical to the Data Centers like UPS and HVACs can be documented in the floor drawings even though they are not part of the LANsense system

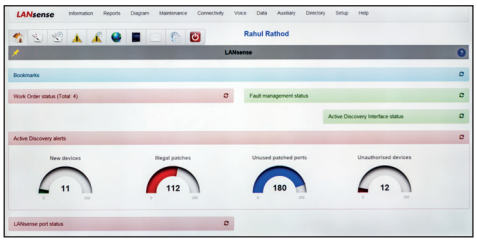
Work order

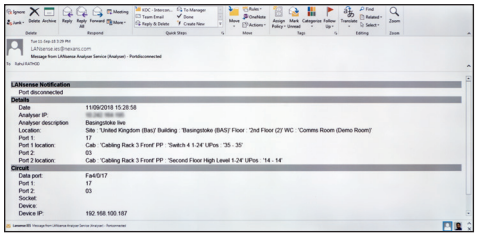


LANsense work orders are used for maintenance and management of network providing:

- Service Level Agreements
- Automatic Email configurations at different work order stages
- History of work orders and reporting

Dashboards, Email Notification and Logs





- LANsense software provides a quick and simplified overview on the status of the network
- Immediately alerts users via email notification on occurrence pre-defined activities and events.
- Logs about various events and activities are maintained which are useful for monitoring and audit purpose

Integration Capabilities:

LANsense allows you to integrate and communicate with third party software's and Hardware.

Training

To provide end users with maximum confidence, Nexans Certified Solution Partners (CSP) must receive training to ensure they are competent to install LANmark solutions to the required standards and are able to offer the full Certified Solution Warranty.

While there are several mandatory modules, several other topics exist to cover general installation materials, such as the basics of copper and fiber parameters. Some of these modules are worth CEC credits, allowing you to work toward your required RCDD accreditation. These programs are all based on standardized training modules to ensure consistency of standards around the globe and require approximately 5 hours of time to complete the mandatory parts.

For more details about the training courses, please contact us at **nexans.csp@nexans.com**.

Training Modules Overview

- Standards and Design*†
- Testing Parameters for Coper Cabling*†
- Nexans LANmark Copper Cabling Solutions†
- LANmark EVO Connectorization
- Fiber Optics Theory*†
- LANmark-OF Products†
- Fiber Testing: Standarization & Field Testing Overview/Procedure*
- ENSPACE Overview
- ENSPACE Installation*
- Warranty Processing
- FibreRoute Training

* Worth 1 BICSI CEC credit

† Only done upon request

e-Learning

Nexans will be introducing E-learning modules during the year in order to provide more flexible learning options for our partners.

E-learning will enable partners to follow parts of the Nexans training online and receive certifications which will reduce the amount of in-class training required.

Visit the website and check the news for announcements on availability in your region by selecting your country at www.nexans.com/LANsystems

Warranty

Fully Comprehensive or Self Certification options

Link Warranty

Online Self Certification

Nexans provide a unique 25-year, self-certification link warranty for standard Cat 5e, Cat 6 and Cat 6A installations which is available for all installers.

- Instant - no waiting while application is processed
- Customized - certificate includes details of end customer and installer
- Easy - simply complete the short online form, generate and print the pdf certificate

Certified Solution Warranty

Complete confidence

Nexans Certified Solution Warranty is the most comprehensive guarantee on the market covering:

- Copper and Fiber
- Channel Performance - Horizontal, Campus and Backbone
- Application support
- Labor*

*Nexans takes liability for labor when installation is made by a full Certified Solution Partner

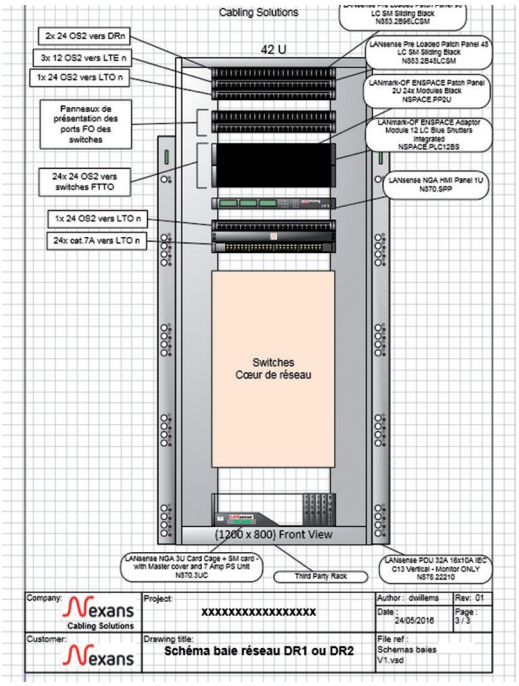
What is Included	Link Warranty Certificate	Certified Solution Certificate
Brands Covered:		
LANmark	✓	✓
Essential	✓	–
Copper Catagories Covered:		
Cat 5e	✓	✓
Cat 6	✓	✓
Cat 6A	✓	✓
Fiber	–	✓
Parts	✓	✓
Link Performance	✓	✓
Full End-to-End Channel	–	✓*
Application Guarantee	–	✓*
Extended Distance Support	–	✓*
Installation Liability	–	✓**
Nexans Checked and Validated	–	✓
Validity	25 Years	25 Years

* with Nexans Patch Cords
** when installed by Certified Solutions Partner

Support

Nexans Visio Template (NVT) Software

Nexans Visio Templates can be used to create professional control cabinet layout designs. From the created network design, a parts list can be generated, which can then be converted to XLS format for easy editing. This can, in turn, serve as a basis for quoting. Version 4.0 includes 3D drawings of Nexans products, which can be used, for example, for presentations.



This useful software tool provides a simple and fast way to create professional drawings of the entire network cabling system. Submit these drawings along with your offers. This will greatly increase your chances of orders!

Features:

- Product selection tool
- Export of parts list to Excel
- Customisable title block (...your companyname/ project name)
- Intelligent master shapes
- "Auto-Fill" options
- Direct hyperlinks of the shapes with the data sheets
- NVT 3D patterns and templates



Nexans LAN Calculation Toolkit

The LAN Calculation Toolkit provides a number of useful features that you need to consider when planning passive data networks, such as

- Current distance calculations from data cables according to the standard and depending on the type of cable trays
- Horizontal link length calculation
- Cable trays filling quantity calculation
- Cable trays filling height calculation
- FO selection guide
- NVP Delta calculation

Installer Programs



Hyperlane

"Hyperlane" is the designation that NDS provides to our top integration partners. This is a very exclusive list of companies that can assist our global customers with critical support services. Services offered by our Hyperlane CSP partners include, but are not limited to: design assistance, specification and BOM generation, supply chain and project management, installation and system integration. These are partners in the truest sense of the word.



Certified Solution Partner (CSP)

CSP's are fully approved and validated by Nexans and are qualified to offer the fully comprehensive Certified Solutions Warranty.

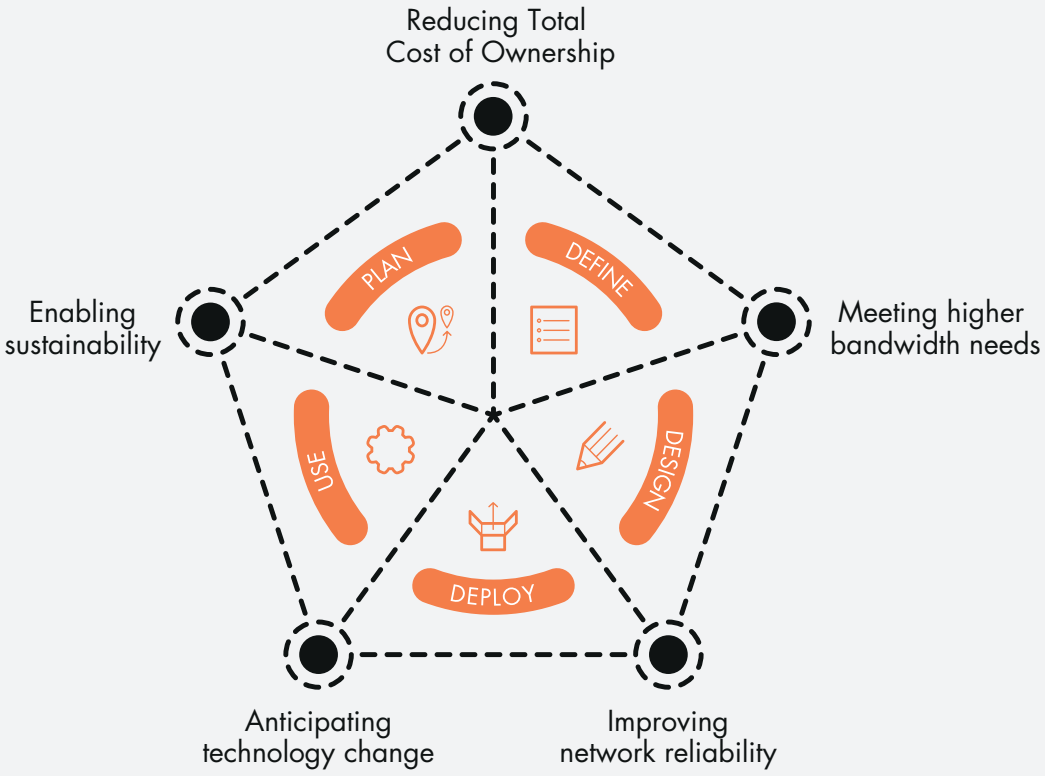


Registered Installer (RI)

Available to all applicants, RI's benefit from latest updates and can offer the self certified online Link Warranty.

	HYPERLANE	CSP	RI
Enhanced commercial benefits	●	☒	☒
Joint Business Plan	●	☒	☒
Logistics support	●	☒	☒
Access to tech support team	●	☒	☒
Co-op marketing	●	☒	☒
Dedicated 'ENGAGE' events	●	☒	☒
Dedicated training	●	☒	☒
Supervisor training	●	●	☒
Warranty - Full Certified Solution Warranty	●	●	☒
Warranty - Link Warranty (Cat5e/Cat6/Cat6A)	●	●	●
Product alerts and standards updates	●	●	●

ENGAGE


Reducing Total
Cost of Ownership
Meeting higher
bandwidth needs
Improving
network reliability
Anticipating
technology change
Enabling
sustainability
PLAN
DEFINE
DESIGN
DEPLOY
USE



PLAN

Keeping you up-to-date on latest innovations, helping you to plan ahead for future changes.

- Technology updates & insights
- NTN and Decoding Standards newsletters
- Peer-to-peer network
- Strategy support / specialist knowledge /outlook
- International roll-out



DEFINE

Sharing our expertise in defining state-of-the-art specifications and solutions.

- Solution specifications
- Cabling categories and grades, standards and systems
- Project outlines
- Scope of Work, project planning and certified partner selection
- Bill of materials
- Requirements review, product catalogue and stock listing
- Customer catalogue



DESIGN

Supporting you in designing robust, flexible and scalable systems.

- Infrastructure design support
- Floor, room, cabinet and patching diagrams
- Proof of concepts
- Starters kits and simulated installation mockups in Lab
- Product customisation and development
- End-user training



DEPLOY

Blueprinting your infrastructure for cost-effective and accurate installation, assisting you on-site and ensuring warranties.

- Preconfigurations
- Pre-terminated assembly, tailor-made labeling and detailed deployment guidelines
- Logistics
- Contractor distribution channel management
- Single point of contact
- On-site assistance
- Toolkit training, surveys, partner training and support
- On-site audits
- Parts & applications warranty and Labor warranty



USE

Offering training, monitoring and fast repair, replacement and third-level support.

- System monitoring
- MACs
  - Repair Services
  - Hardware Replacement Services
  - Third-Level Support Service incl.
    - Software update services
    - Local support service
- Support portal

NOTES:

Nexans Cabling Solutions (NCS)

In the field of LAN Cabling Systems, Nexans offers a complete range of products and value-added services providing improved reliability and reduced cost of ownership for enterprise data centers, offices and campus networks. These LAN infrastructure solutions are provided to a global customer base through an extensive network of regional offices and Key Account Management teams.

Smart choices for Office & Enterprise

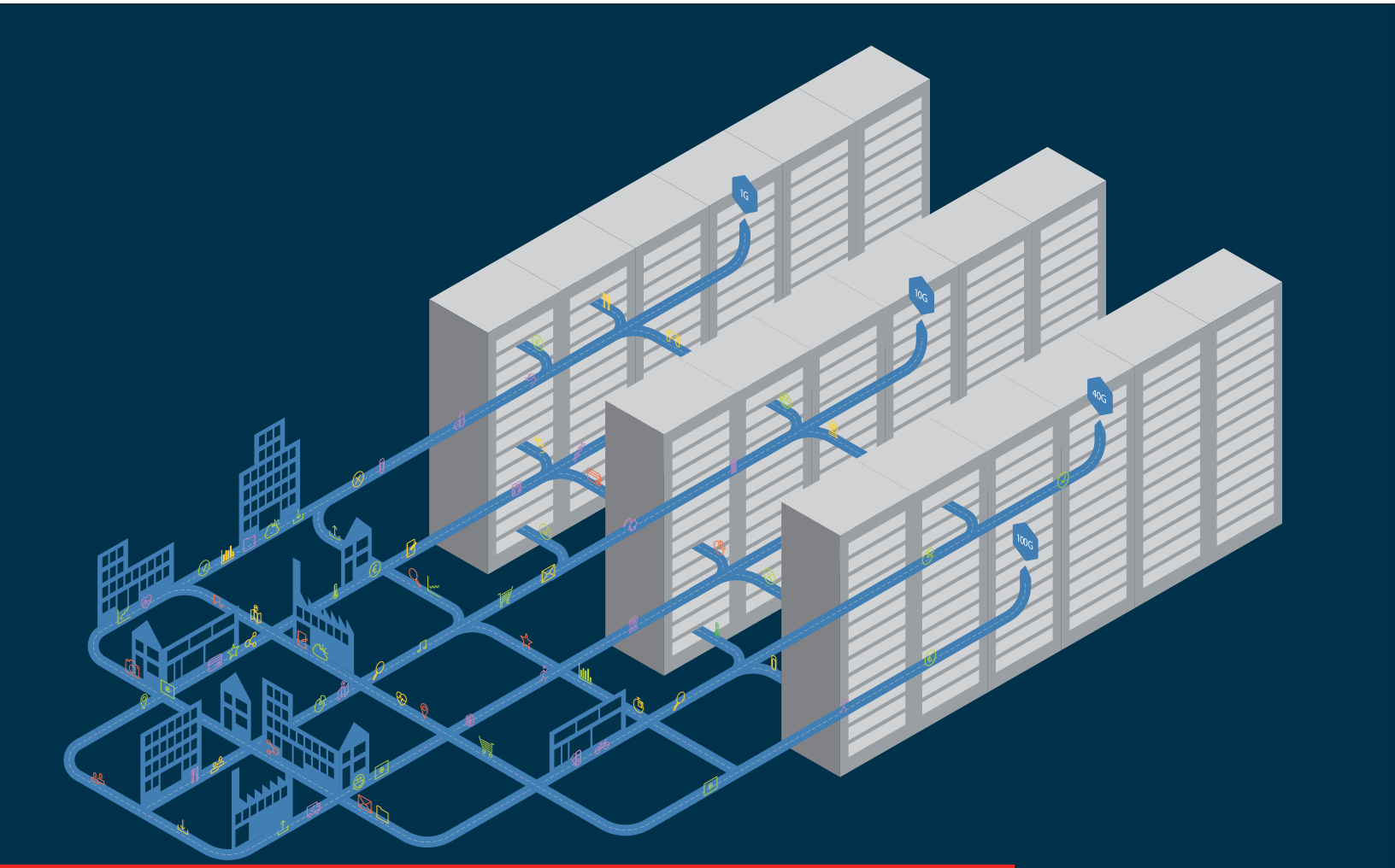
Nexans' range of practical solutions allows customers to make the smart choices necessary to select the right performance for every business and environment without under - or over specifying. Our expertise and and support means we always find the optimal solution.

- Improved performance & reliability
- Faster efficient roll-outs
- Reduced cost of ownership
- Enhanced energy efficiency

Smart choices for Data Centers

Data center cabling should be designed with business growth in mind, ready to accommodate more bandwidth and ports. Nexans supports you in making the smart choices that will help building and operate the most efficient digital infrastructure including:

- Flexible, scalable copper & fiber systems
- Optimized space usage
- Faster deployment
- 'Design through to operation' support services



LANmark

Copper & fiber structured cabling solutions: Connect to tomorrow

LANmark is a high performance physical infrastructure solution using all media types and a total system approach
- Proved reliability and performance
- More ports, more connections, longer links, cost-effective bandwidth
- Perfect balance of copper and fiber for every application

LANsense

Automated Infrastructure Management (A.I.M.): Get clear directions from port to outlet

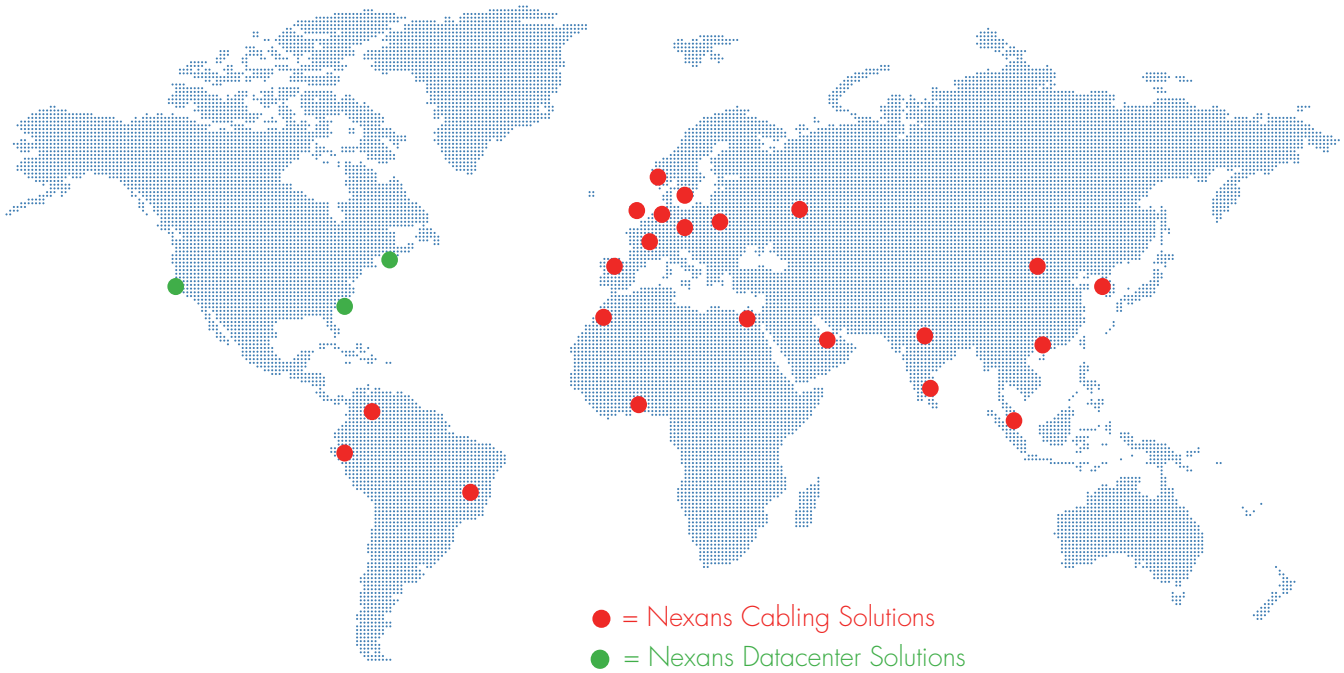
Nexans A.I.M. system uses a combination of
- Hardware and software to automatically document changes to the physical network in real time
- Monitors and controls all connected equipment and manages changes
- Reduce operational costs and improve asset management, utilisation and deployment of new services

LANactive

Fiber To The Office (FTTO): The alternative LAN solution

LANactive uses fiber cabling combined with active switches to provide standard ethernet services to end devices via standard copper
- Vast savings on time, space and cost in campus style environments
- 'Pay-as-you-grow' concept allows expansion according to needs
- Copper and fiber combined for best performance, scalability and flexibility

A world of Nexans solutions



UK film studio digital media & broadcast network

French Bank 3000 branch offices

German University 45000 students rely on LANactive campus network

Middle East Intelligence agency : data center with top level security

South Korea's largest airport Nexans network managed with LANsense

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