FutureLink™ Modular

Fiber Optic Cabling System

Issue 1

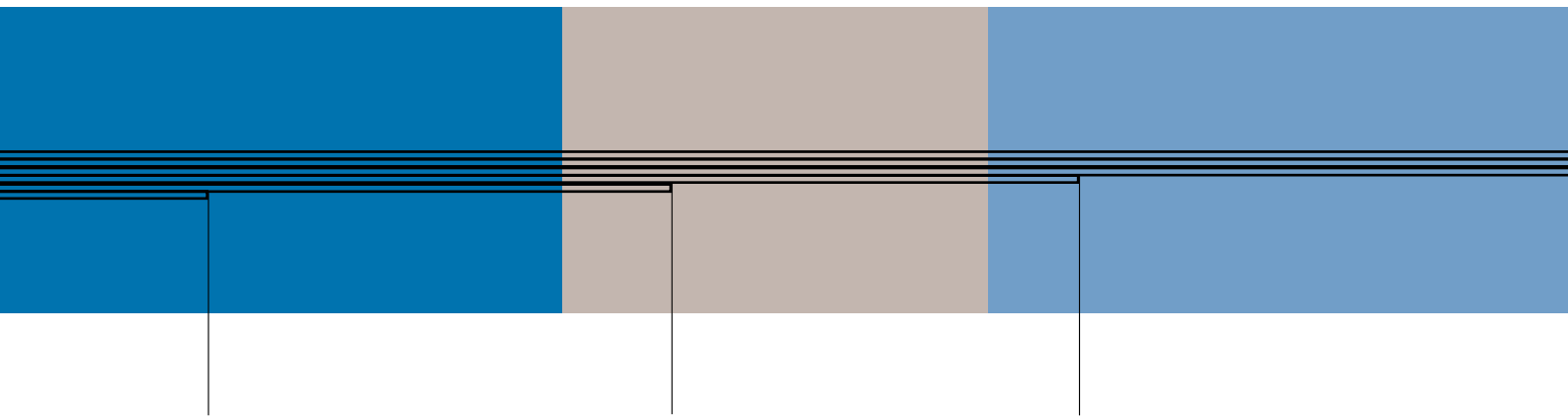
CORNING
Discovering Beyond Imagination

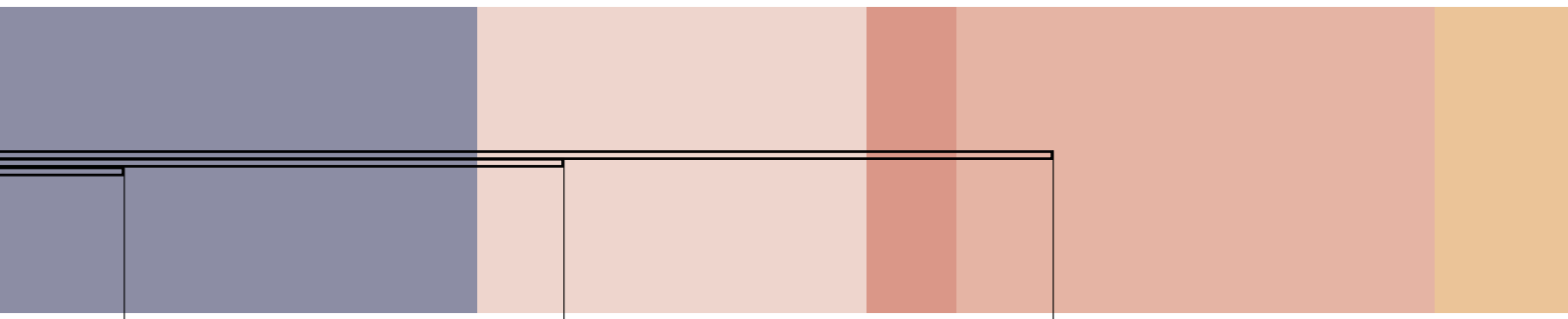
Corning
Cable Systems

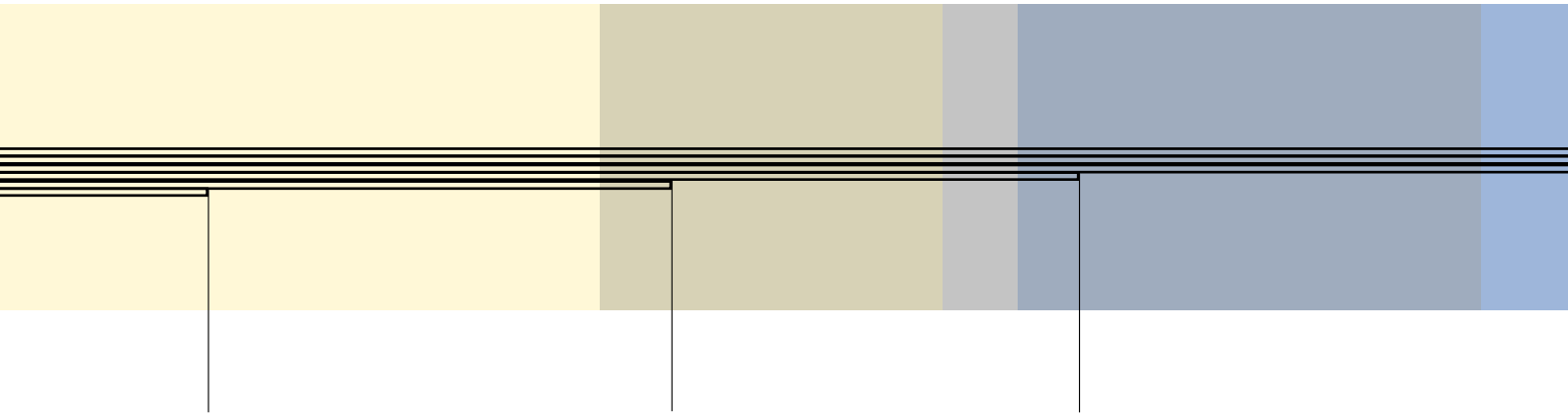
Vogel. Michael P. Giordano. November 2000

FO

Carrier Networks | Private Networks | OEM | Data Centers | Project Services



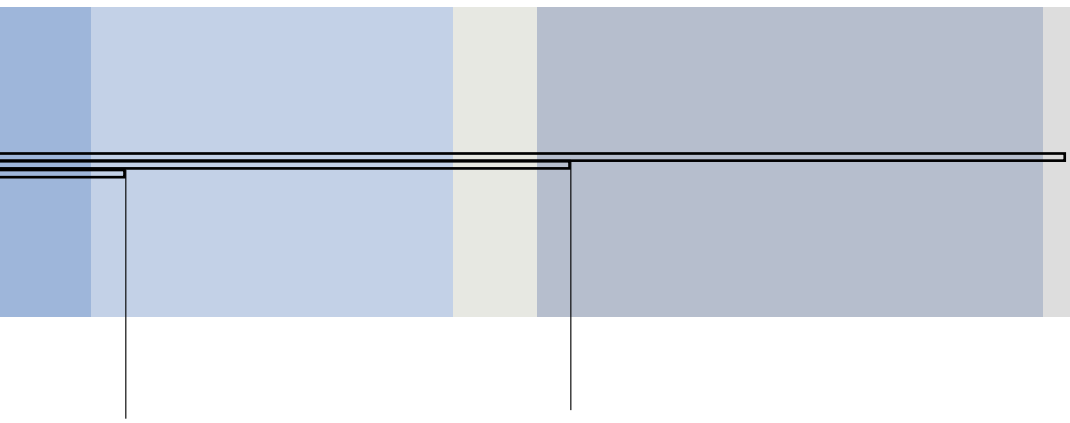




Outlets, Floor Box and Patch Panel Solutions

Tester and Tools

Other Product Families



Training

Further Information

> Corning: An experienced and reliable partner for you

With over 150 years of experience in telecommunications, Corning is a reliable partner that meets the communication requirements of its customers all over the world with cost-effective solutions. In the field of fiber optic cable technology, Corning was one of the original pioneers with expertise second to none.

In 2000 Corning grouped all its cable, hardware and equipment businesses into the Corning Cable Systems division. Corning Cable Systems now comprises the former Siecor Corporation, the communication cables business from BICC (Corning Cables), Siemens' former Communication Cables division and RXS Kabelgarnituren. The Norddeutsche Seekabelwerke that also belongs to Corning Incorporated is continuing to operate as a separate company.

As early as 1974, when fiber optic technology was still in its infancy, Corning was working with Europe's leading Public Telecommunications companies in developing trial fiber optic routes.

In 1977 came the first fiber optic route for Deutsche Telekom in Berlin. This was followed in 1979 with further projects in the USA, marking the start of a global business with a string of major commercial contracts.

Today, Corning offers with LANscape a complete system of copper components with 100 to 1200 MHz bandwidth that can also be combined with modular Future*Link* fiber optic components. LANscape, which combines Future*Com* and Future*Link*, is thus able to provide an excellent solution for every network.

Corning Cable Systems stands for technical expertise, superior product quality and customized support services. Corning, as a market leader, has sold more than 40 million fiber kilometers in fiber optic cables worldwide, providing a fund of experience on which you can build.

As a manufacturer of passive cabling systems, we can supply our customers not only with individual products but also complete cabling solutions from a single source. Our global presence is your gain because, wherever you are, Corning is close at hand.

Our quality and environmental management systems are naturally certified to DIN EN ISO 9001 and ISO 14001.

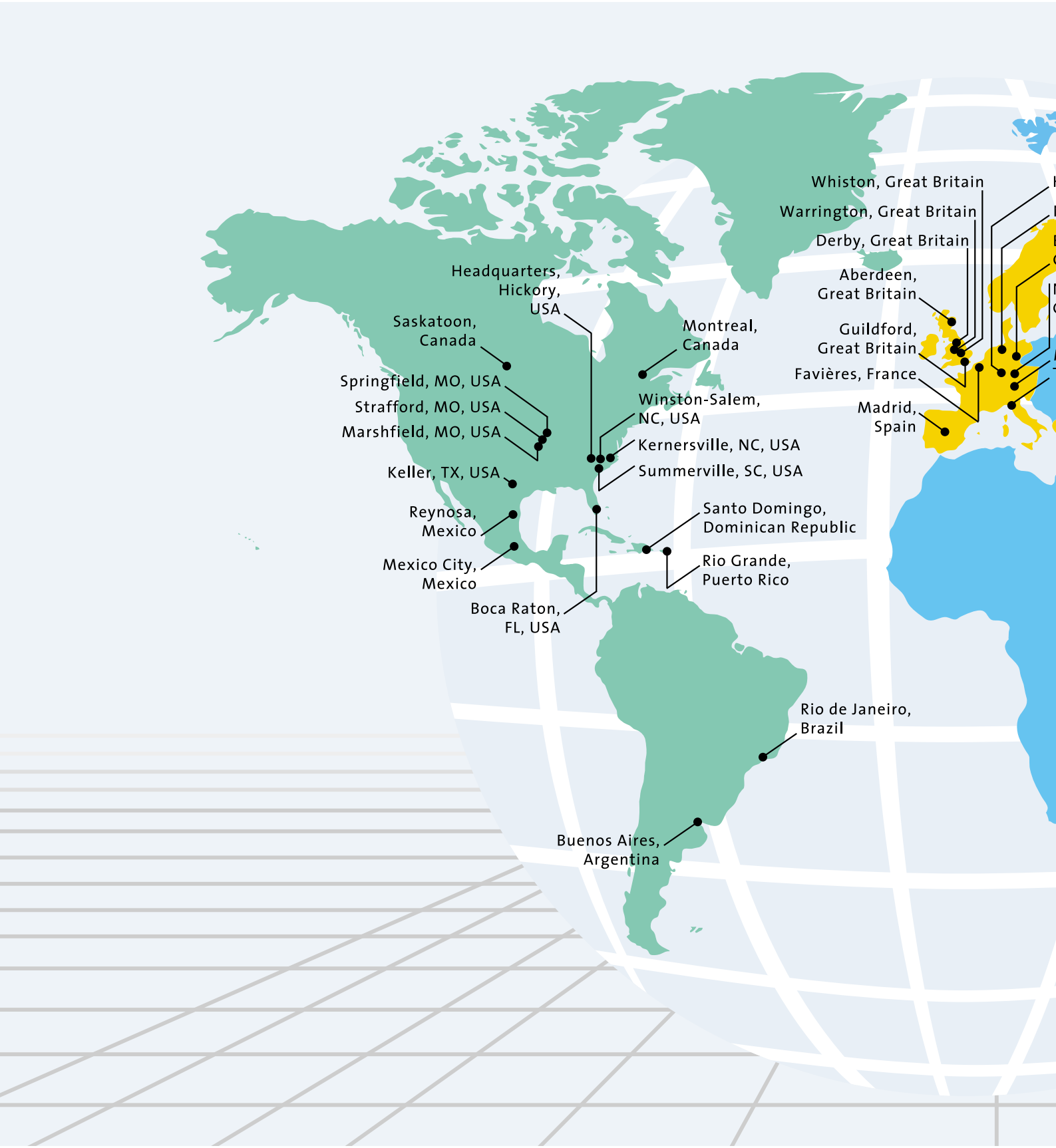
DIN EN ISO 9001 IS

> The customer is our focal point

Our commitment is to meet the expectations of our customers unreservedly in supplying high-quality products and services for all communication networks.

DIN EN ISO 14001

Corning Cable Systems: Global Cable and Hardware Business




Hagen, Germany
Nordenham, Germany
Berlin, Germany
Neustadt, Germany
Moscow, Russia
Kaluga, Russia
Samara, Russia
Munich, Germany
Turin, Italy
Gebze, Turkey
Amman, Jordan
Ramadan City, Egypt
Port Elizabeth, South Africa
Tokyo, Japan
Chengdu, China
Bangkok, Thailand
Ho Chi Minh City, Vietnam
Kuala Lumpur, Malaysia
Singapore, Singapore
Jakarta, Indonesia
Bayswater, Australia
Melbourne, Australia
Clayton, Australia
Stand: 2001

> Standards for structured premises cabling solutions

The requirements of future-proof and flexible structured cabling are largely determined by three fundamental cabling standards addressing specific geographic regions:

Europe

EN 50173 (1995 + A1: 2000)
Cabling standard
Information technology –
Generic cabling systems

North America

TIA/EIA 568 A (1994) / B (1999)
Commercial building telecommunications cabling standard

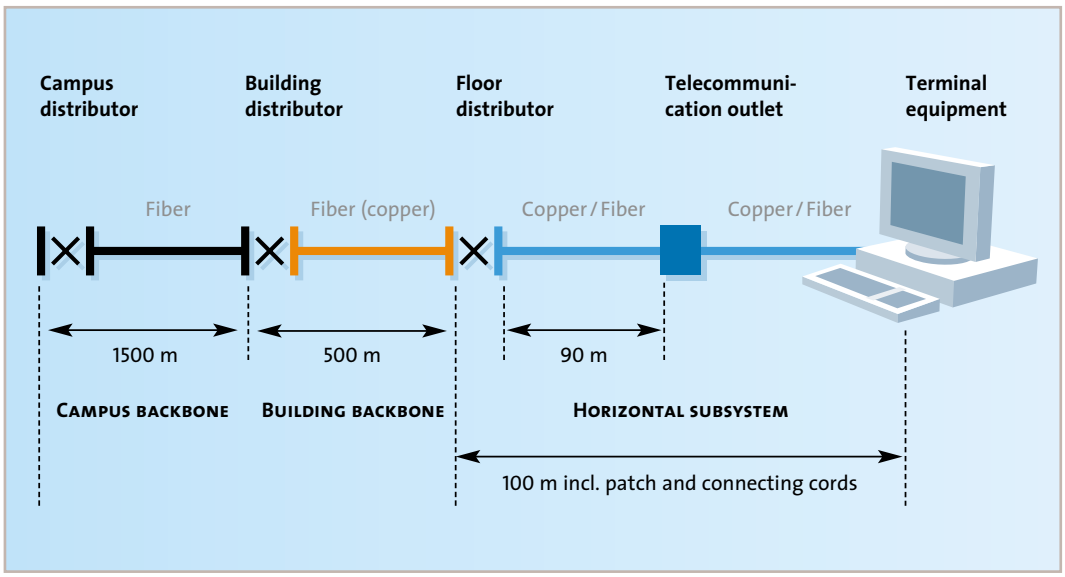
World

ISO / IEC 11801
Edition 1.2 / 1.2000
Cabling standard
Generic cabling
for customer premises

The TIA / EIA is not a standard as such, but an industry specification in the North American market. It also contains requirements regarding the transmission characteristics of cabling and components that differ from those of the EN or ISO / IEC. It has its origins in the specification of unshielded copper components.

> Structured cabling according to ISO / IEC 11801 (2000) and EN 50173 (2000)

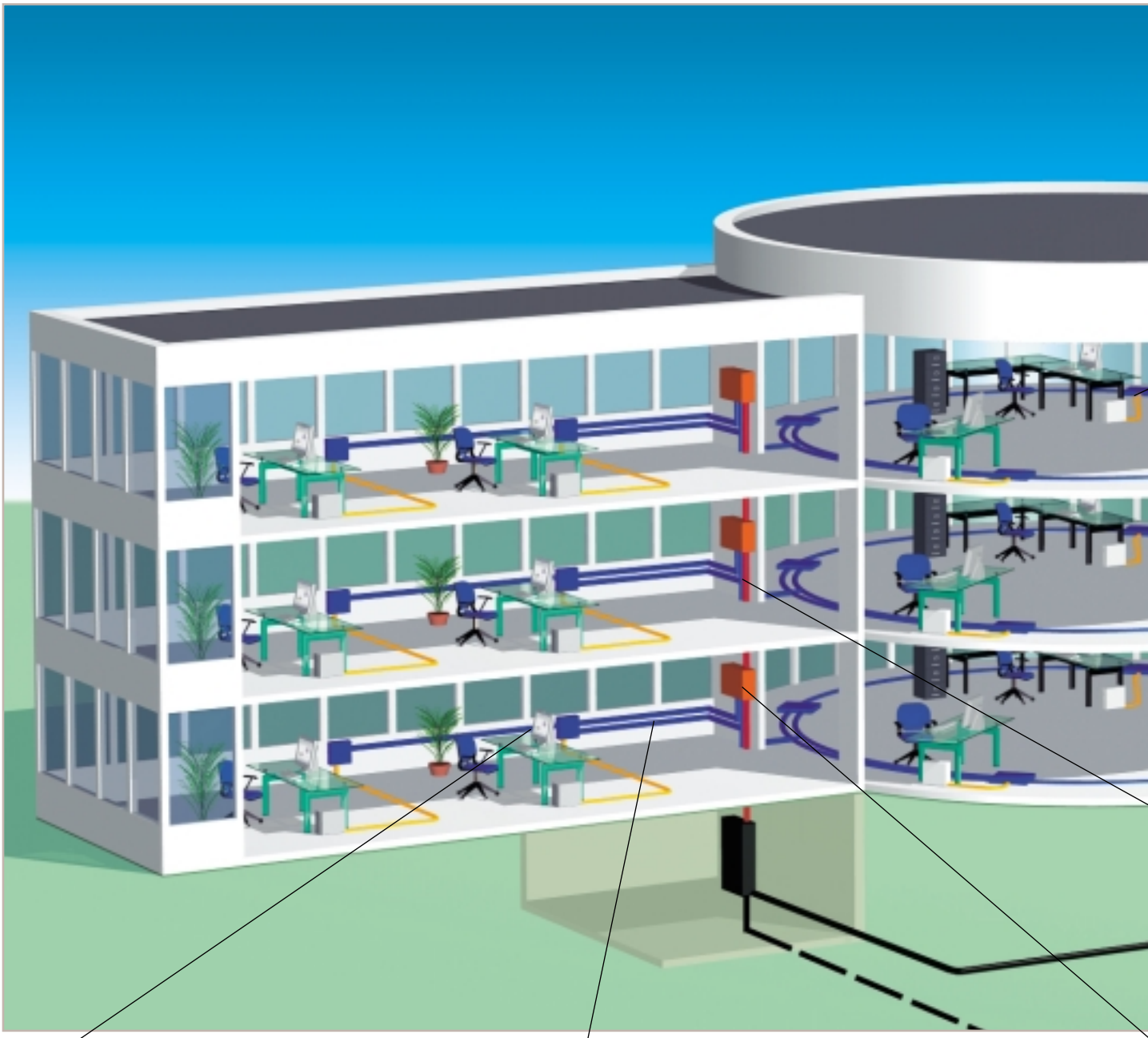
The current EN 50173 and ISO / IEC 11801 are largely identical and contain the same cabling and component requirements. The two standards are currently being revised and the aim is to achieve complete harmonization.



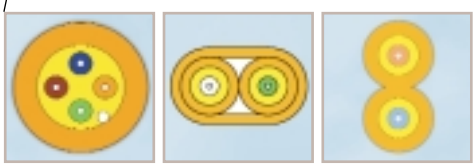
In the EN 50173 as in the ISO / IEC 11801 the premises cabling is divided into three subsystems:

- The campus backbone subsystem for connecting the buildings of a site one to another
- The building backbone subsystem for connecting the individual floors of a building
- The horizontal subsystem for connecting the communication outlets (e. g. wall outlet) to the floor distributor

> LANscape Structured cabling according to ISO/IEC

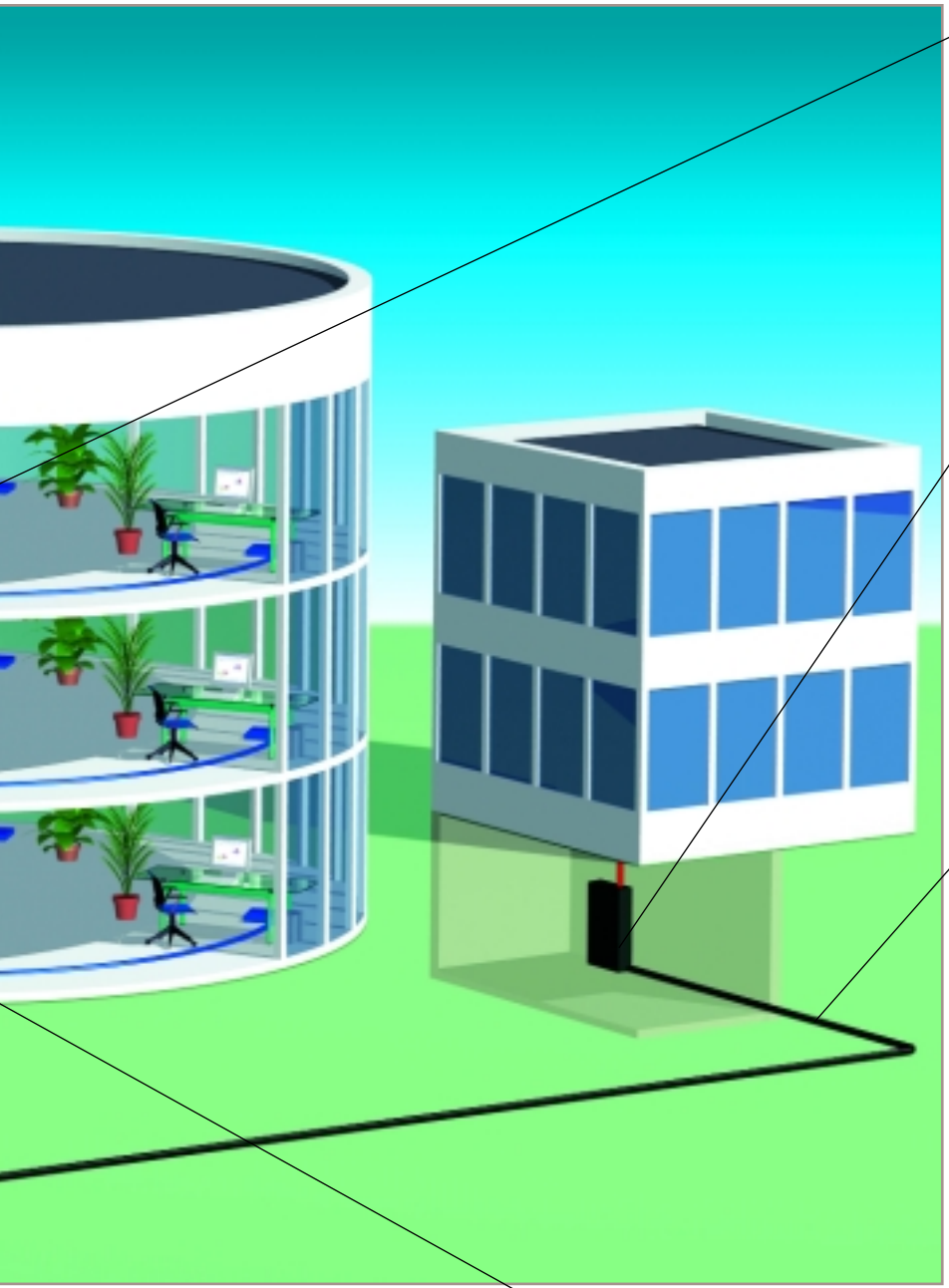


Horizontal subsystem:
Future*Link* outlets and outlet accessories
see pages 114 to 124
or Future*Com* outlets and outlet accessories
see Future*Com* system catalogs



Horizontal subsystem:
Future*Link* indoor cables
see pages 42 to 49
or Future*Com* data cables
see Future*Com* system catalogs

11801 (2000) AND EN 50173 (2000)



Horizontal subsystem:
Future*Link* floor box solutions
see pages 123, 126 to 127

Campus backbone – building distributors:
Future*Link* Modular 19" patch panels
see pages 128 to 147

Campus – backbone cabling:
Future*Link* fiber optic outdoor and universal cables
see pages 30 to 37

Building backbone – floor distributors
Future*Link* Modular 19" patch panels
see pages 128 to 147
or Future*Com* 19" patch panels
see Future*Com* system catalogs

Building backbone – riser cabling:
Future*Link* fiber optic indoor cables
see pages 38 to 47

> LANscape

Structured cabling according to ISO/IEC 11801 (2000) and EN 50173 (2000)

In premises cabling it is possible to use both fiber optic cabling and components as well as balanced copper cabling and components.
The campus backbone employs only fiber optic cables and components.

Campus Backbone

The campus backbone cabling interconnects the individual buildings of a site. The center of this cabling subsystem is the campus distributor.
For the campus backbone with its relatively long transmission links only fiber optic cabling is suitable. Here Corning provides the Future*Link* Modular system, a high-quality, coordinated cabling solution.
The campus backbone employs mainly single-mode-fiber cables that are outstanding for their low loss and high bandwidth. A further argument for fiber optic cables in this area is their electromagnetic immunity (EMI).

Building Backbone

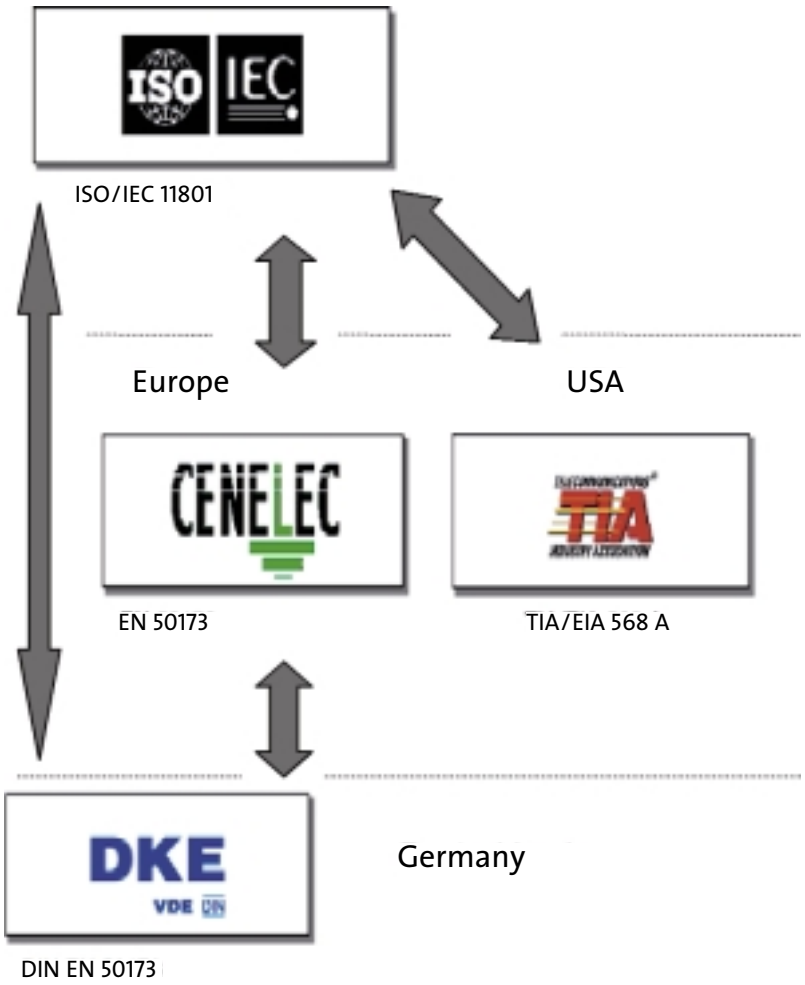
The connection between the building distributor and the various floor distributors is known as the building backbone and forms the vertical riser in the building. With bandwidth requirements increasing, it is advisable to use fiber optic cables in this area also for enhanced future proofing (usually multimode-fiber cables).
However, “high-end” copper data cables (bandwidths up to 1200 MHz), as provided in the Corning Future*Com* product range, can also be used in the building backbone for distances of up to 100 m.

Horizontal Subsystem

The horizontal subsystem mainly employs shielded balanced copper cables.
The cabling is configured as a star radiating out from the floor distributor to the individual outlets. The distance here should, however, not exceed 90 m. Otherwise the cabling will not conform to the standards.
A further option in the horizontal subsystem is “fiber-to-the-desk”, i. e. fiber optic cabling right up to the workplace. This is employed for very high bandwidth requirements or for long distances. A further advantage of fiber optic cabling in this application is once again its EMI immunity.

> Future Standards for structured premises cabling solutions

The first editions of these standards were published in 1995 and expanded in 2000. The future issues of EN 50173 (2002) and ISO/IEC 11801 (2002) will contain, as before, detailed requirements for cables and components as well as specifications relating to the cabling structure. The structure of the standard is also to be revised for easier comprehension. Moreover, various additions will be incorporated in order to take account of progress in the industry. Both standards are currently subject of discussions that are aiming to achieve complete harmonization. Requirements formulated in TIA / EIA will be taken into account in the process. The interaction between the study groups in the various cabling-related standards bodies is shown in the following diagram.



> Planned additions to the future editions of EN 50173 (2002) and ISO/IEC 11801 (2002)

The present structure with the subdivision into campus, building and horizontal areas has been retained together with the associated maximum permissible distances. However, there are a few amendments and additions relating to the building and horizontal cabling areas.

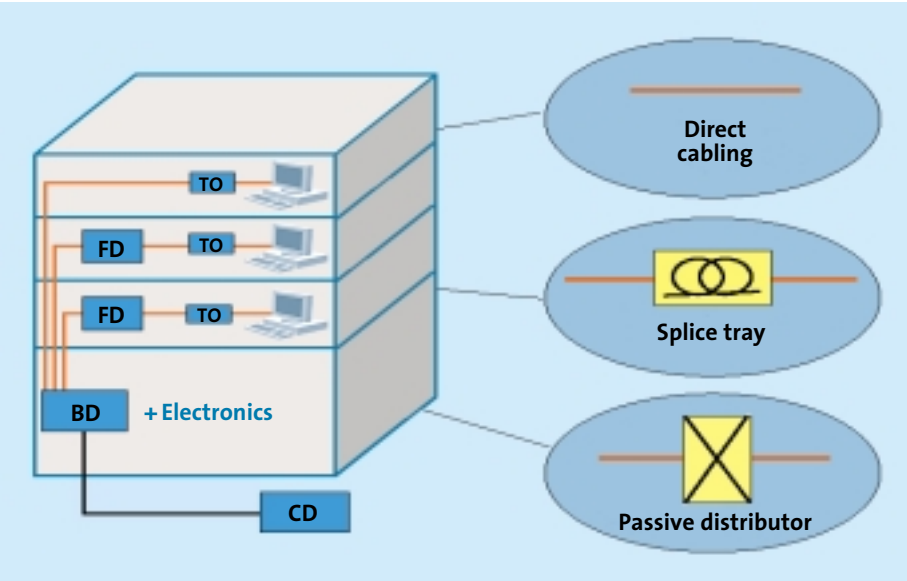
MUTO

In parallel with the hitherto optionally permitted Consolidation Point, the so-called Multi User Telecommunication Outlet (MUTO), enabling several work areas to be served by one outlet (in raceway, wall or floor box), can now be used to support "Open Office Cabling".

Centralized fiber cabling

Centralized cabling will be adopted as a new cabling concept to support fiber cabling to the work area (desk). This centralized cabling (completely passive from the building distributor to the outlet) makes the following options possible:

1. Cable pulled through directly from the building distributor to the consolidation point, to the telecommunications outlet (TO) at the work area or to the multi-user TO (MUTO)
2. Plain splice connection in the floor distributor
3. Cross-connect in the floor distributor



The permitted distances under discussion for centralized cabling with fiber-optic cables are considerably greater than 100 m. Approval of this cabling structure will allow the floor distributor to be omitted, making "Fiber-to-the-Desk" (FttD) commercially more attractive than copper cabling.

For copper cabling the maximum lengths of 100 m to the terminal equipment, including patch cords, will continue to apply. Although patch cords with a total length of more than 10 m are permissible, the permanently cabled path (hitherto 90 m maximum) must then be reduced in accordance with a formula given in the standard.

Small form factor optical connectors

The use of so-called small form factor (SFF) connectors, e.g. MT-RJ, LC, at the telecommunications outlet (TO) is not provided for in the new editions of the standards. However, their use outside the TOs is not excluded in either draft standard. By contrast, the industry standard TIA/EIA covering the North American region includes almost all the SFF designs. This approach ensures that all connectors of the same type, that conform to the standard, will be compatible.

Connector interface at the telecommunications outlet (TO)

The so-called ST "legacy" clause will not be included in the new editions of ISO/IEC 11801 and EN50173. This means that the only standards-compliant connector interface at the TO is the SC or SC duplex connector.

New fiber classes

In order for multimode fibers to meet requirements for Gigabit-Ethernet compatibility, the optical fibers were categorized in various fiber classes.

The proposed fiber classes are:

- OM1: Multimode fibers with minimum modal OFL bandwidth (MHz x km) of 200 (850 nm)/500 (1300 nm)
- OM2: Multimode fibers with minimum modal OFL bandwidth (MHz x km) of 500 (850 nm)/500 (1300 nm)
- OM3: So-called "next generation" multimode fibers with minimum modal OFL bandwidth (MHz x km) of 500 (850 nm)/500 (1300 nm) and a laserbandwidth of 2000 MHz x km in the first window
- OS1: Single-mode fibers with 9 µm core diameter

In addition, the multimode fiber classes differentiate for the first time between OFL (Over-Filled Launch) and laser bandwidth. Further details on the fibers can be obtained from the Introduction in the section on Cables.

> Laser-Optimized™ Multimode fibers for Gigabit Ethernet

Gigabit Ethernet requires lasers in place of LEDs

New and future transmission standards are imposing additional demands on fiber cabling in local area networks. The data rate transmitted by active components with LED transceivers is limited to 622 Mbps (megabits per second). This is due to the inertia of the transmit LEDs resulting from their switching hysteresis. However, to transmit Gigabit Ethernet (GbE) and future applications, the data rates required will be significantly higher than 622 Mbps, necessitating active components with alternative transmitters.

Instead of using lasers, such as Fabry-Perot or DFB (Distributed Feedback) lasers that are relatively expensive and would escalate the cost of the active components, so-called VCSELs (Vertical Cavity Surface Emitting Lasers) are employed. These VCSELs, unlike alternative lasers, using a wavelengths of 850 nm and enables the lower costs of active components. All the established manufacturers of transceivers offer implementations with VCSELs, which are already being widely used by many manufacturers of active components.

Differences between LED launching and laser launching

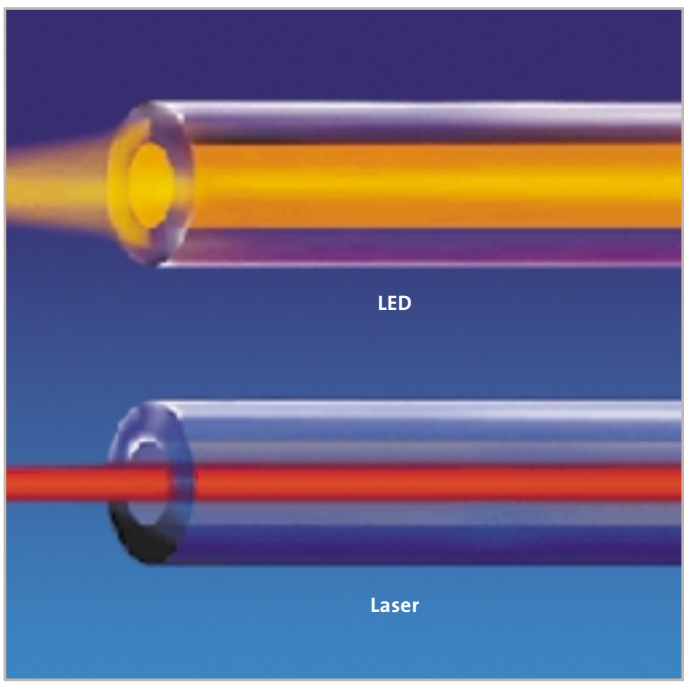
The difference between the use of LEDs and lasers lies in the method of launching. The method used by the LED is the over-filled launch (OFL), while the laser employs the laser launch condition.

When a multimode fiber is operated with an LED, hundreds of optical modes are propagated throughout the fiber core and beyond (over-filled launch). The parabolic index profile of today's graded-index fibers reduce the delay differences to a minimum. Nevertheless, the modal dispersion is relatively high due to the large number of modes involved.

If a graded-index multimode fiber of the type required for Gigabit Ethernet data rates is operated with a VCSELs, the optical power is transmitted by a few modes in the region of the fiber core center. The modal dispersion is in this case very low.

VCSELs have further advantages over LEDs, such as a lower loss during launching, a higher transmit power and thus greater transmission distances, a longer service life and not least a better price/performance ratio.

In addition to the savings achieved by using active components with VCSELs instead of alternative/conventional lasers, the lower-cost connecting hardware is a further argument in favor of using multimode fibers.



Furthermore, multimode fiber connecting hardware with its large core diameter compared to single-mode fibers, is quicker, simpler and more reliable to handle, providing the benefit of further cost savings during installation.

Reasons for using multimode fibers optimized for laser applications

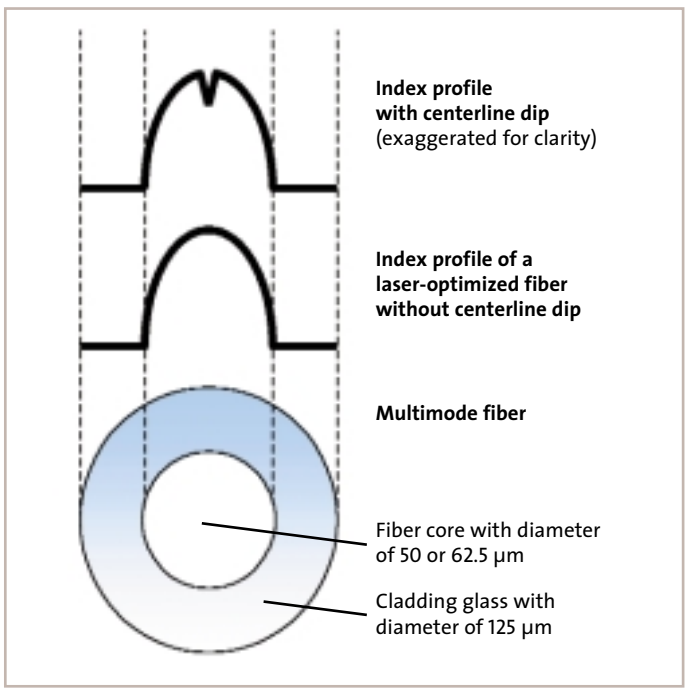
The current or future use of lasers in place of LEDs means that the fibers employed must be optimized in the core center for laser launching.

The reason for this is that in the center of common multimode fibers there are frequently disturbances, such as the so-called centerline dip. The centerline dip is a dip in the index profile at the center of the fiber. Other disturbances occurring in the index profile are flat tops and peaks.

When the narrow laser signal is fed into the center of the fiber core, a large proportion of the total power is incident on this region, resulting in distortion of the original transmission pulse.

Ultimately the resulting, undefinable distortion of the transmitted signal produces an increase in the bit error rate. This in turn leads to a deterioration in the net data rate. In extreme cases this may result in complete failure of the transmission.

Given the high degree of future proofing and investment protection that these fibers provide together with their favorable price/performance ratio in combination with low cost SX active components, laser-optimized multimode fibers for 850 nm VCSELs transmission are the fibers of choice for cabling in the riser or out-to-the-desk. The use of single-mode fibers in these network areas is often inadvisable for commercial reasons.



Different multimode fiber index profiles

> Laser-optimized InfiniCor® fibers

Fibers which are to be used in laser systems must be tested for their specific laser system performance. The measurement method RML (Restricted Mode Launch) used for this has been defined in the new test specification FOTP 204 for determining the laser bandwidth. The IEEE Gigabit-Ethernet standard 802.3 refers to FOTP 204 in relation to verifying the required fiber transmission characteristics.

Test specification FOTP 204 describes in detail the reproducible verification of the RML conditions.

Corning InfiniCor® fibers are measured in accordance with specification FOTP 204 using the RML method and are thus tested at the exact launch conditions of the VCSELs. Verification of the RML conditions makes it possible to guarantee, on an application-specific basis, the minimum distances over which these fibers can transmit Gigabit Ethernet data rates.

Fiber type / Features	Core diameter in µm	Guaranteed minimum distance in m at 1 Gbit/s		Guaranteed minimum distance in m at 10 Gbit/s
		850 nm	1300 nm	850 nm
InfiniCor® 600	50	600	600	86
InfiniCor® 300	62.5	300	550	33
InfiniCor® CL™ 1000	62.5	500	1000	n/a

InfiniCor® SX300 is a fiber which already meets the current requirements of the future standard IEEE 802.3ae for 10 GbE transmission (Draft 1394b).

Fiber type / Features	Core diameter in µm	Guaranteed minimum distance in m at 10 Gbit/s
		850 nm
InfiniCor® SX300	50	**300**

As can be seen from the tables, the laser-optimized fibers are specified by the guaranteed minimum transmission link length at a data rate of 1 Gbit/s or 10 Gbit/s. This considerably simplifies the planning and implementation of the cabling, since the difference between bandwidth-distance product in MHz and data rate in Mbit does not have to be considered in relation to the specific type of Gigabit Ethernet encoding.

The necessary fiber type can be read off directly from the required path lengths! The specified transmission lengths are guaranteed values which are at least equal to the distances specified for Gigabit Ethernet transmission by the IEEE. In addition, investigations have proved that Gigabit Ethernet can be readily transmitted over more than 1 km with normal commercial 850 nm VCSEL based active SX components and InfiniCor® CL™ 1000 or InfiniCor® 600 fibers.

Moreover, cables equipped with InfiniCor® fibers are fully compatible with all LED-based transmission methods, such as FDDI, Ethernet and Fast Ethernet, and thus with all standard active components. Furthermore, InfiniCor® fibers can be combined with all standard patch cords and pigtails in customary lengths as well as with standard connectors and adapters. They can also be processed on splicing equipment in the same way as the conventional multimode fibers.

Cables equipped with InfiniCor® fibers can be readily distinguished from existing standard cables by virtue of the printing on the jacket. The use of InfiniCor® fibers in patch cords and pigtails of normal length is not absolutely necessary given the short distances involved, but they are recommended. In addition, Corning continues to offer all cable products with the existing standard fibers. These are listed, as before, in parallel with the new InfiniCor® cable types in the cable product descriptions in this catalog.

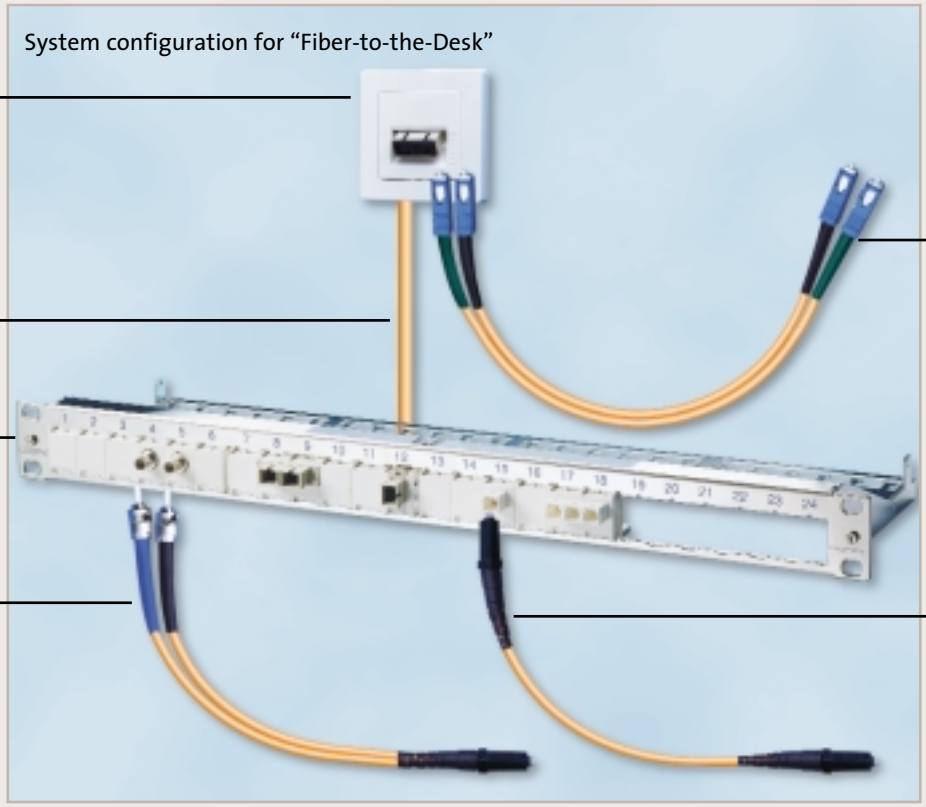
Summary

With the prospect of rapid growth in GbE applications and the need to future-proof the investment in the cabling system, Corning Cable Systems recommends that private networks with multimode fibers should be planned and implemented using cables with InfiniCor® fibers. This approach allows for transmitting data with existing LED-based components as well as for changing over to low cost Gigabit Ethernet or even 10 Gigabit Ethernet active component in the future. This is an important consideration particularly for the cabling because, compared to end devices and active components, it have very long life cycles and hence a special claim to future proofing.

> FutureLink Modular System description

A high-performance and reliable communications infrastructure gives the user a vital competitive edge. The rapid advance in information technology and the constantly increasing demands on the telecoms and IT network underline the importance of selecting the right platform for the optimum communications infrastructure. The passive cabling, in particular, needs the maximum possible investment protection. This means that the cabling system must meet both current and future requirements for universal, application-independent deployment, bandwidth evolution, service reliability and interference immunity.

System configuration for "Fiber-to-the-Desk"



FO outlet, 1x SC duplex, inclined, white
LAXSLSD-S0201-C001
Order faceplate separately: e. g. **faceplate "DELTAfläche",** white
WAXWSE-00001-C002

Cable J-VH 2G50/125
2,7B400 + 0,8F1200
LCXL12-L1002-J700

Patch panel universal box 19",
1U, 24 ports loaded with various FO modules
WAXWSV-02400-C001

FutureLink-duplex patch cord
50 µm, 2 m, zero-halogen
A-end: 2 x ST-1 connectors
B-end: 1 x MT-RJ connector
LCAL12-B5341-A020

FutureLink-duplex patch cord
50 µm, 2 m
A-end: 2 x SC plugs
B-end: 2 x SC plugs
LCAL12-B2322-A020

FutureLink-duplex patch cord
50 µm, 2 m, zero-halogen
A-end: 1 x MT-RJ connector
B-end: 1 x MT-RJ connector
LCAL12-B7344-A020

The Future*Link* Modular fiber optic (FO) cabling system is part of the Corning LANscape product family for structured building and campus cabling. The LANscape product family is the generic designation covering all the modular cabling system solutions based on copper and fiber technology.

The modularity of the LANscape connecting hardware provides the flexibility that modern cabling systems nowadays demand. Accordingly, the Future*Com* and Future*Link* modules, being compatible, make it possible for the copper and fiber connecting hardware to be combined in the same patch panels and outlets as required.

Future*Link* components have hitherto been employed principally in the campus backbone (inter-building) and building backbone (riser) cabling subsystems. However, with the cost of active components declining, it is increasingly important for a cabling system to be future proof so there is a growing trend to build the cabling system with fiber components up to the workstation (FttD = Fiber to the Desk).
Here again, the universal and compact Future*Link* components deliver the desired solutions. Future*Link* cabling systems already support future network topologies such as centralized fiber optic cabling or "open office cabling" with consolidation point and/or "multi-user telecommunications outlet assembly" (MUTO).

Owing to their compact size, the system components reduce the space required in cable runs and in distribution hardware to a minimum.
Future*Link* cabling systems implemented in compliance with the standards provide the universal deployability and multi-service capability required for operating network systems such as Ethernet, Fast Ethernet, Gigabit Ethernet, ATM or Token Ring at all network levels.

When the new Small Form Factor MT-RJ or LC connectivity is used, it is possible to achieve the high packing density normally associated with copper cabling systems.

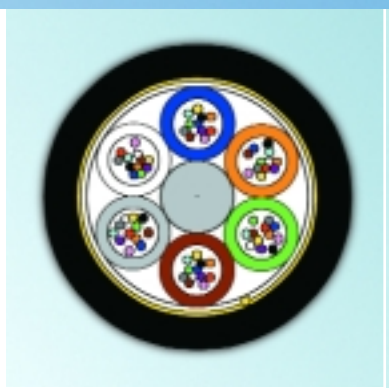
Notes

FutureLink™ Modular

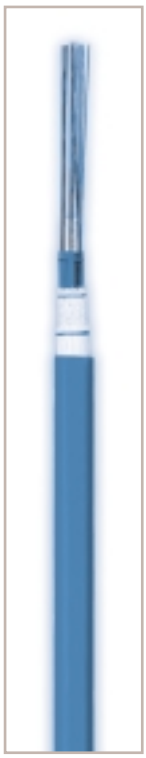
Cables

Issue 1

LANscape™



> FutureLink Modular Cables



The cables referred to below are provided with laser-optimized Infinicor® 600 and Infinicor® 300 fibers as well as with standard single- and multimode fibers.
High-end fibers such as Infinicor® CL™ 1000, SX300 and SMF-28e as well as other fiber types are also available on request. The coated fibers are colored according to the Telcordia (formerly Bellcore) specification for ease of identification. The coating and coloring process employed is state of the art and guarantees a uniform, smooth surface.

The cables employed in the system are metal-free, thus obviating the need for equipotential bonding and lightning protection measures.

Universal Cables

A link failure in a modern FO network can involve the operator in considerable costs. The cables must therefore meet stringent mechanical requirements and be able to withstand environmental effects such as frost and humidity. Accordingly, Future*Link* universal cables have been designed to be particularly rugged and resilient.
For campus cabling applications there are MPC (Multi-Purpose Cables = in- and outdoor cables) available. The MPC cables provide outdoor characteristics e. g. enhanced rodent protection, water blocking and UV resistance. The microbe resistance of the cable sheaths allows them to be buried directly in the ground. The LS0H (Low Smoke Zero Halogen) characteristics enable the cable to be deployed inside buildings. The cable sheaths are colored black.

Two design variants are provided:

- Minibundle cables: Cables with loose buffer tubes stranded around a central metallic or non-metallic (dielectric) strength member.
- Maxibundle (maxitube) cables: Cables with a central loose buffer tube and with strength members partially integrated in the sheath.

If a bundle is to contain more than twelve fibers (the maximum that can be distinguished visually), the fibers are grouped in twelves with a colored binder. This also prevents the individual optical fiber being subjected to the mechanical stress that may be caused by ring marking.

To prevent water, that may have entered through cable sheath damage, from penetrating any further, water blocking is generally provided in the form of swellable (dry) elements. The advantage of this so-called “dry” cable design is the enhanced installer-friendliness.

Indoor Cables

The indoor cables used for the building backbone (riser) and horizontal subsystems are non-corrosive (to IEC 60754-2), low-smoke (to IEC 61034) and flame-retardant cables (tested to IEC 60332-1 or -3 and DIN VDE 0472, part 804, test type B or C). The color of the cable sheaths is, unless stated otherwise, yellow for single-mode and orange for multimode fiber cables.

With the new tight buffer coating TB3 (Tight Buffer 3rd Generation) our indoor FO cabling is even more installer-friendly, as well as zero halogen and flame retardant. In addition, it excels over other indoor FO cables on the market with the following advantages:

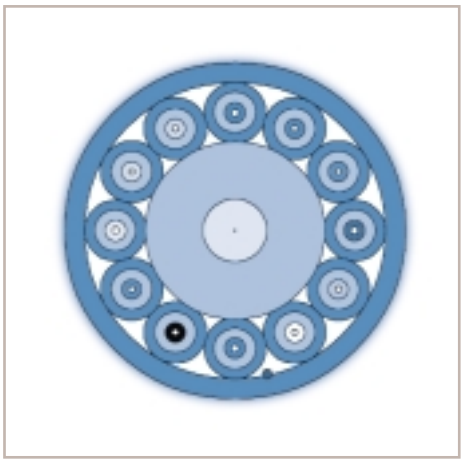
- installer-friendly as it contains no filling compound
- very easy to strip with stripping lengths of about 150 mm
- rapid, direct connectorization
- direct termination of field-installable connectors on tight buffer
- flame retardant to IEC 60332-3
- non-corrosive (halogen free)

There are multifiber indoor, breakout and patch cables available. Multifiber indoor cables consist of tight buffers stranded together with a serving of non-metallic strength members.
Breakout cables comprise buffered single-fiber cables (tight buffers each in own sheath) stranded together as subunits for tensile strength under an additional shared sheath.

Multifiber indoor cables are often also called “mini-breakout” or “MIC” cables. Simplex and duplex cords are single-fiber or Zipcord cables with tight buffer fibers.

All Future*Link* indoor FO cables are metal-free and hence

- EMC immune
- require no grounding
- require no lightning protection
- require no equipotential bonding



> FutureLink Modular Cables – Technical Data

Laser-optimized InfiniCor® Multimode fibers

Fiber type / Features	Typ. attenuation in loose tube cable in dB/km		Typ. attenuation in tight buffer cable in dB/km		Bandwidth-length product (OFL) in MHz x km*		Guaranteed minimum distance in m at 1 Gbit/s		Fiber Class**
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	
InfiniCor® 600 (50 µm)	2.5	0.7	2.7	0.8	≥500	≥500	**600**	600	OM 2
InfiniCor® 300 (62.5 µm)	3.1	0.8	3.1	0.8	≥200	≥500	**300**	550	OM 1

*) The stated bandwidth-length products (OFL) are provided for information, but are not relevant owing to the previously stated requirements for GbE.

Standard Single-mode fiber

Fiber type / Features	Typ. attenuation in loose tube cable in dB/km		Typ. attenuation in tight buffer cable in dB/km		Chromatic dispersion ps / (nm x km)		Fiber Class**
	1310 nm	1550 nm	1310 nm	1550 nm	1310 nm	1550 nm	
Single-mode fiber SMF-28™ (9 µm)	0.36	0.22	0.38	0.25	≤ 3.5	≤ 18.0	OS 1

Standard Multimode fiber (for LED operation)

Fiber type / Features	Typ. attenuation in loose tube cable in dB/km		Typ. attenuation in tight buffer cable in dB/km		Bandwidth-length product (OFL) in MHz x km*		Fiber Class**
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	
Multimode fiber 50 µm	2.5	0.8	2.8	0.9	≥500	≥800	OM 2
Multimode fiber 62.5 µm	3.1	0.8	3.1	0.8	≥200	≥600	OM 1

*) Fibers with other bandwidth-length products are available on request, e. g. 500/1200 at 50 µm
**) According to Draft ISO/IEC 11801 (2002), status Feldafing 08.2001

Technical Data for Cables with special fibers

The following fiber types, as well as others, can be incorporated in the Future*Link* MPC and indoor cables on request.

Fiber type / Features	Typ. attenuation in loose tube cable in dB/km		Typ. attenuation in tight buffer cable in dB/km		Bandwidth-length product (OFL) in MHz x km		Guaranteed minimum distance in m at 10 Gbit/s	Fiber Class**
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	
InfiniCor® SX300 (50 µm)	2.5	0.7	2.7	0.8	≥ 1500	≥ 500	**300**	OM 3

Fiber type / Features	Typ. attenuation in loose tube cable in dB/km		Typ. attenuation in tight buffer cable in dB/km		Bandwidth-length product (OFL) in MHz x km		Typ. minimum distance in m at 1 Gbit/s		Fiber Class**
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	
Multimode fiber 50 µm premium 500	2.5	0.7	2.7	0.8	≥500	≥1200	600	600	OM 2
Multimode fiber 50 µm premium 600	2.5	0.7	2.7	0.8	≥600	≥1200	600	600	OM 2

Fiber type / Features	Typ. attenuation in loose tube cable in dB/km		Typ. attenuation in tight buffer cable in dB/km		Bandwidth-length product (OFL) in MHz x km		Guaranteed minimum distance in m at 1 Gbit/s		Fiber Class**
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	
InfiniCor® CL™ 1000 (62.5 µm)	3.1	0.8	3.1	0.8	≥ 200	≥ 500	500	1000	OM 1

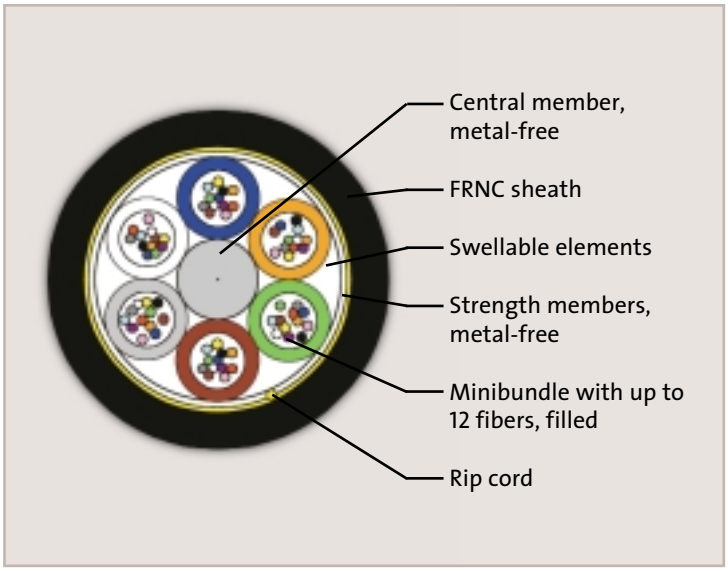
Fiber type / Features	Typ. attenuation in loose tube cable in dB/km			Typ. attenuation in tight buffer cable in dB/km			Chromatic dispersion ps / (nm x km)		Fiber Class**
	1310 nm	1383 nm	1550 nm	1310 nm	1383 nm	1550 nm	1310 nm	1550 nm	
Single-mode fiber SMF-28e™ (9 µm)	0.36	0.34	0.25	0.38	0.36	0.27	≤ 3.5	≤ 18.0	OS 1

**) According to Draft ISO/IEC 11801 (2002), status Feldafing 08.2001

Future*Link* Modular MPC

Minibundle MPC (Multi-Purpose Cable)

A-DQ(ZN)H



Application

Future*Link* MPC (multi-purpose) cables can be employed both indoors and outdoors for campus backbone and building backbone (riser) cabling as well as for the cabling between floor distributors. The cables can be installed in conduits, ducts and be buried directly in the ground.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-1 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Dry cable core
- Water blocking to IEC 60794-1-F5
- UV resistant
- Suitable for use outdoors and indoors
- Direct burial in the ground possible (microbe resistant)

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−30 °C to +70 °C
• Transport and storage	−40 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
A-DQ(ZN)H 2x6	12	11.2	115	≤2700	≥200	≥170	2.60
A-DQ(ZN)H 4x6	24	11.2	115	≤2700	≥200	≥170	2.50
A-DQ(ZN)H 2x12	24	11.2	115	≤2700	≥200	≥170	2.65
A-DQ(ZN)H 3x12	36	11.2	115	≤2700	≥200	≥170	2.60
A-DQ(ZN)H 4x12	48	11.2	115	≤2700	≥200	≥170	2.55
A-DQ(ZN)H 5x12	60	11.2	115	≤2700	≥200	≥170	2.50
A-DQ(ZN)H 6x12	72	11.2	115	≤2700	≥200	≥170	2.40

Color code Telcordia

No.	Bundle/fiber color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

A-DQ(ZN)H with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InifiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
A-DQ(ZN)H 2x6	12	**LCXLM1-L4012-B702**	**LCXLM1-M4012-A702**
A-DQ(ZN)H 4x6	24	**LCXLM1-L4024-B702**	**LCXLM1-M4024-A702**
A-DQ(ZN)H 2x12	24	**LCXLM1-L4024-B701**	**LCXLM1-M4024-A701**
A-DQ(ZN)H 3x12	36	**LCXLM1-L4036-B701**	**LCXLM1-M4036-A701**
A-DQ(ZN)H 4x12	48	**LCXLM1-L4048-B701**	**LCXLM1-M4048-A701**
A-DQ(ZN)H 5x12	60	**LCXLM1-L4060-B701**	**LCXLM1-M4060-A701**
A-DQ(ZN)H 6x12	72	**LCXLM1-L4072-B701**	**LCXLM1-M4072-A701**

A-DQ(ZN)H with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

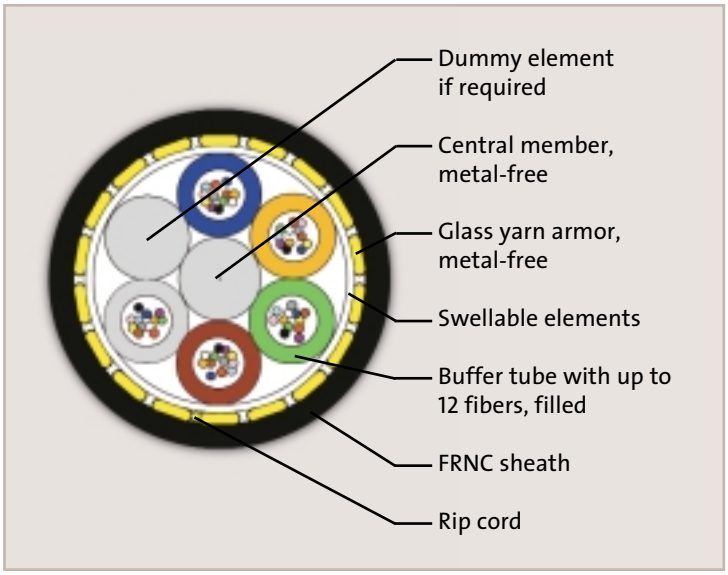
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
A-DQ(ZN)H 2x6	12	**LCXLM1-D4012-U701**	**LCXLM1-K4012-J703**	**LCXLM1-M4012-H701**
A-DQ(ZN)H 4x6	24	**LCXLM1-D4024-U701**	**LCXLM1-K4024-J705**	**LCXLM1-M4024-H701**
A-DQ(ZN)H 2x12	24	**LCXLM1-D4024-U704**	**LCXLM1-K4024-J706**	**LCXLM1-M4024-H704**
A-DQ(ZN)H 3x12	36	**LCXLM1-D4036-U701**	**LCXLM1-K4036-J703**	**LCXLM1-M4036-H701**
A-DQ(ZN)H 4x12	48	**LCXLM1-D4048-U701**	**LCXLM1-K4048-J704**	**LCXLM1-M4048-H701**
A-DQ(ZN)H 5x12	60	**LCXLM1-D4060-U701**	**LCXLM1-K4060-J703**	**LCXLM1-M4060-H701**
A-DQ(ZN)H 6x12	72	**LCXLM1-D4072-U702**	**LCXLM1-K4072-J702**	**LCXLM1-M4072-H702**

Future*Link* Modular MPC

Minibundle MPC (Multi-Purpose Cable)

A-DQ(BN)H



Application

Future*Link* MPC (multi-purpose) universal cables can be employed both indoors and outdoors for campus backbone and building backbone (riser) cabling as well as for the cabling between floor distributors. The cables can be installed in conduits, ducts and be buried directly in the ground.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-1 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Enhanced rodent protection
- Dry cable core
- Water blocking to IEC 60794-1-F5
- UV resistant
- Suitable for use outdoors and indoors
- Direct burial in the ground possible (microbe resistant)

Temperature range

• Installation and assembly	−5 °C to +50 °C
• Operation	−30 °C to +70 °C
• Transport and storage	−40 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
A-DQ(BN)H 2x6	12	11.6	135	≤4000	≥265	≥235	2.65
A-DQ(BN)H 4x6	24	11.6	135	≤4000	≥265	≥235	2.55
A-DQ(BN)H 2x12	24	11.6	135	≤4000	≥265	≥235	2.65
A-DQ(BN)H 3x12	36	11.6	135	≤4000	≥265	≥235	2.55
A-DQ(BN)H 4x12	48	11.6	135	≤4000	≥265	≥235	2.50
A-DQ(BN)H 5x12	60	11.6	135	≤4000	≥265	≥235	2.45
A-DQ(BN)H 6x12	72	11.6	135	≤4000	≥265	≥235	2.04

Color code Telcordia

No.	Bundle/fiber color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

A-DQ(BN)H with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
A-DQ(BN)H 2x6	12	**LCXLM1-L4012-B703**	**LCXLM1-M4012-A703**
A-DQ(BN)H 4x6	24	**LCXLM1-L4024-B703**	**LCXLM1-M4024-A703**
A-DQ(BN)H 2x12	24	**LCXLM1-L4024-B700**	**LCXLM1-M4024-A700**
A-DQ(BN)H 3x12	36	**LCXLM1-L4036-B700**	**LCXLM1-M4036-A700**
A-DQ(BN)H 4x12	48	**LCXLM1-L4048-B700**	**LCXLM1-M4048-A700**
A-DQ(BN)H 5x12	60	**LCXLM1-L4060-B700**	**LCXLM1-M4060-A700**
A-DQ(BN)H 6x12	72	**LCXLM1-L4072-B700**	**LCXLM1-M4072-A700**

A-DQ(BN)H with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

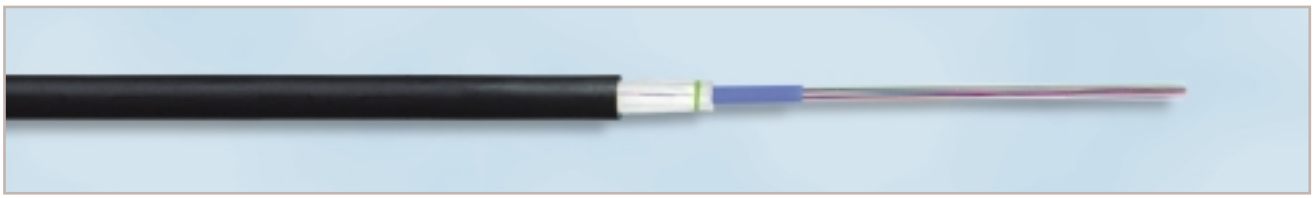
Order Numbers

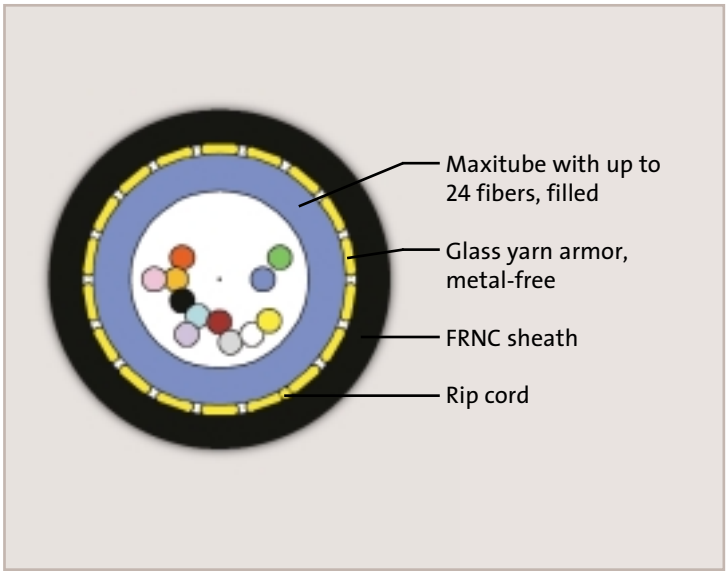
Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
A-DQ(BN)H 2x6	12	**LCXLM1-D4012-U702**	**LCXLM1-K4012-J704**	**LCXLM1-M4012-H702**
A-DQ(BN)H 4x6	24	**LCXLM1-D4024-U702**	**LCXLM1-K4024-J707**	**LCXLM1-M4024-H702**
A-DQ(BN)H 2x12	24	**LCXLM1-D4024-U703**	**LCXLM1-K4024-J708**	**LCXLM1-M4024-H703**
A-DQ(BN)H 3x12	36	**LCXLM1-D4036-U702**	**LCXLM1-K4036-J703**	**LCXLM1-M4036-H702**
A-DQ(BN)H 4x12	48	**LCXLM1-D4048-U702**	**LCXLM1-K4048-J704**	**LCXLM1-M4048-H702**
A-DQ(BN)H 5x12	60	**LCXLM1-D4060-U702**	**LCXLM1-K4060-J703**	**LCXLM1-M4060-H702**
A-DQ(BN)H 6x12	72	**LCXLM1-D4072-U701**	**LCXLM1-K4072-J703**	**LCXLM1-M4072-H701**

Future*Link* Modular MPC

Maxibundle MPC (Multi-Purpose Cable)

A-DQ(BN)H





Application

Future*Link* MPC (multi-purpose) universal cables can be employed both indoors and outdoors for campus backbone and building backbone (riser) cabling as well as for the cabling between floor distributors and the terminal equipments / workstations (fiber-to-the-desk).
The cables can be installed in conduits, ducts and be buried directly in the ground.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 (up to 12 fibers) or IEC 60 332-1 (16- and 24-fiber)and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Enhanced rodent protection
- Water blocking to IEC 60794-1-F5
- UV resistant
- Suitable for use outdoors and indoors
- Direct burial in the ground possible (microbe resistant)
- Small diameter

Special Features

- Pre-assembled lengths available

Temperature Range

• Installation and assembly	–5 °C to +50 °C
• Operation	–20 °C to +60 °C
• Transport and storage	–25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
A-DQ(BN)H 1 x 4	4	7.6	55	≤800	≥150	≥140	0.90
A-DQ(BN)H 1 x 6	6	7.6	55	≤800	≥150	≥140	0.90
A-DQ(BN)H 1 x 8	8	7.6	55	≤800	≥150	≥140	0.90
A-DQ(BN)H 1 x 12	12	7.6	55	≤800	≥150	≥140	0.90
A-DQ(BN)H 1 x 16	16	9.2	78	≤1100	≥190	≥170	1.63
A-DQ(BN)H 1 x 24	24	9.2	78	≤1100	≥190	≥170	1.63

Color code Telcordia

No.	Fiber color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

A-DQ(BN)H with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
A-DQ(BN)H 1 x 4	4	LCXLM1-L0004-B700	LCXLM1-M0004-A700
A-DQ(BN)H 1 x 6	6	LCXLM1-L0006-B700	LCXLM1-M0006-A700
A-DQ(BN)H 1 x 8	8	LCXLM1-L0008-B700	LCXLM1-M0008-A700
A-DQ(BN)H 1 x 12	12	LCXLM1-L0012-B700	LCXLM1-M0012-A700
A-DQ(BN)H 1 x 16	16	LCXLM1-L0016-B700	LCXLM1-M0016-A700
A-DQ(BN)H 1 x 24	24	LCXLM1-L0024-B700	LCXLM1-M0024-A700

A-DQ(BN)H with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

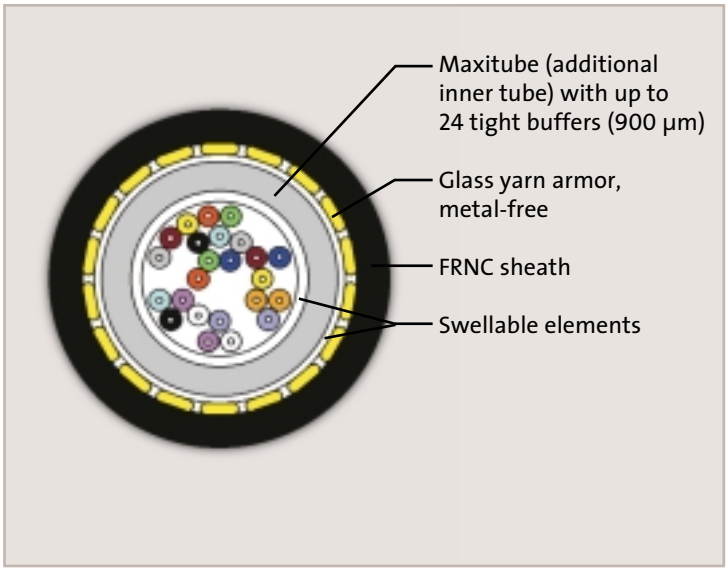
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
A-DQ(BN)H 1 x 4	4	LCXLM1-D0004-U700	LCXLM1-K0004-J701	LCXLM1-M0004-H700
A-DQ(BN)H 1 x 6	6	LCXLM1-D0006-U700	LCXLM1-K0006-J701	LCXLM1-M0006-H700
A-DQ(BN)H 1 x 8	8	LCXLM1-D0008-U700	LCXLM1-K0008-J701	LCXLM1-M0008-H700
A-DQ(BN)H 1 x 12	12	LCXLM1-D0012-U700	LCXLM1-K0012-J701	LCXLM1-M0012-H700
A-DQ(BN)H 1 x 16	16	LCXLM1-D0016-U700	LCXLM1-K0016-J701	LCXLM1-M0016-H700
A-DQ(BN)H 1 x 24	24	LCXLM1-D0024-U700	LCXLM1-K0024-J701	LCXLM1-M0024-H700

Future*Link* Modular MPC

Tight-Buffered MPC (Multi-Purpose Cable)

A-VB(BN)H ... TB3 FRNC



Application

Future*Link* MPC (multi-purpose) universal cables can be employed both indoors and outdoors for campus backbone and building backbone (riser) cabling as well as for the cabling between floor distributors and terminal equipments / workstations (fiber-to-the-desk).
The cables can be installed in conduits, ducts and be buried directly in the ground. The 900 µm tight buffer design allows direct connectorization without fanout adapters.

Features

- Tight-buffered fiber of 900 µm diameter, TB3 design (easy to strip)
- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-1 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Enhanced rodent protection
- Completely dry design, water blocking to IEC 60794-1-F5
- UV resistant
- Suitable for use outdoors and indoors
- Direct burial in the ground possible (microbe resistant)

Temperature Range

• Installation and assembly	–5 °C to +50 °C
• Operation	–30 °C to +70 °C
• Transport and storage	–30 °C to +70 °C

Special Features

- Especially suitable for field-installable UniCam® connectors
- Pre-assembled lengths available

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
A-VB(BN)H 1x4	4	12.7	140	≤1500	≥250	≥200	1.1
A-VB(BN)H 1x6	6	12.7	145	≤1500	≥250	≥200	1.2
A-VB(BN)H 1x8	8	12.7	145	≤1500	≥250	≥200	1.3
A-VB(BN)H 1x12	12	12.7	150	≤1500	≥250	≥200	1.5
A-VB(BN)H 1x24	24	14.7	195	≤1500	≥260	≥210	1.9

Color code Telcordia

No.	Tight buffer color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

A-VB(BN)H with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
A-VB(BN)H 1x4	4	**LCXLM2-L0004-B700**	**LCXLM2-M0004-A700**
A-VB(BN)H 1x6	6	**LCXLM2-L0006-B700**	**LCXLM2-M0006-A700**
A-VB(BN)H 1x8	8	**LCXLM2-L0008-B700**	**LCXLM2-M0008-A700**
A-VB(BN)H 1x12	12	**LCXLM2-L0012-B700**	**LCXLM2-M0012-A700**
A-VB(BN)H 1x24	24	**LCXLM2-L0024-B700**	**LCXLM2-M0024-A700**

A-VB(BN)H with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

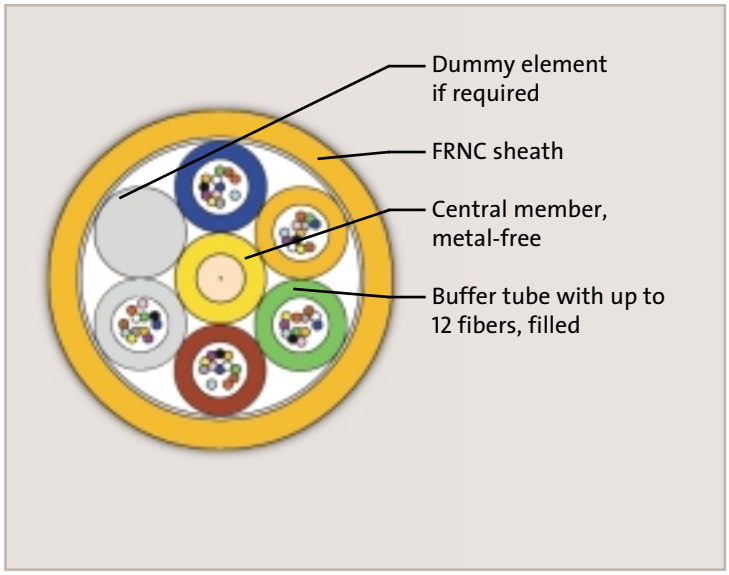
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
A-VB(BN)H 1x4	4	**LCXLM2-D0004-U700**	**LCXLM2-L0004-J701**	**LCXLM2-M0004-H700**
A-VB(BN)H 1x6	6	**LCXLM2-D0006-U700**	**LCXLM2-L0006-J701**	**LCXLM2-M0006-H700**
A-VB(BN)H 1x8	8	**LCXLM2-D0008-U700**	**LCXLM2-L0008-J701**	**LCXLM2-M0008-H700**
A-VB(BN)H 1x12	12	**LCXLM2-D0012-U700**	**LCXLM2-L0012-J701**	**LCXLM2-M0012-H700**
A-VB(BN)H 1x24	24	**LCXLM2-D0024-U700**	**LCXLM2-L0024-J701**	**LCXLM2-M0024-H700**

Future*Link* Modular Indoor Cables

Indoor Minibundle Cables

J-DH



Application

Future*Link* indoor cables are particularly suitable for placing and pulling into cable conduits and shafts inside buildings and in the building riser between floor distributors.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-1 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Small diameter
- Low weight
- Low fire load rating

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-DH 2x6	12	9.8	85	≤1000	≥175	≥150	2.05
J-DH 4x6	24	9.8	85	≤1000	≥175	≥150	1.95
J-DH 2x12	24	9.8	85	≤1000	≥175	≥150	2.00
J-DH 3x12	36	9.8	85	≤1000	≥175	≥150	1.95
J-DH 4x12	48	9.8	85	≤1000	≥175	≥150	1.90
J-DH 5x12	60	9.8	85	≤1000	≥175	≥150	1.85
J-DH 6x12	72	9.8	85	≤1000	≥175	≥150	1.75
J-DH 8x12	96	11.3	115	≤1000	≥200	≥170	2.20
J-DH 10x12	120	12.9	156	≤1000	≥230	≥195	2.45
J-DH 12x12	144	14.6	202	≤1000	≥260	≥220	2.50

Color code Telcordia

No.	Bundle/fiber color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

J-DH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-DH 2x6	12	LCXLI1-L4012-B700	LCXLI1-M4012-A700
J-DH 4x6	24	LCXLI1-L4024-B701	LCXLI1-M4024-A701
J-DH 2x12	24	LCXLI1-L4024-B700	LCXLI1-M4024-A700
J-DH 3x12	36	LCXLI1-L4036-B700	LCXLI1-M4036-A700
J-DH 4x12	48	LCXLI1-L4048-B700	LCXLI1-M4048-A700
J-DH 5x12	60	LCXLI1-L4060-B700	LCXLI1-M4060-A700
J-DH 6x12	72	LCXLI1-L4072-B700	LCXLI1-M4072-A700
J-DH 8x12	96	LCXLI1-L4096-B700	LCXLI1-M4096-A700
J-DH 10x12	120	LCXLI1-L4120-B700	LCXLI1-M4120-A700
J-DH 12x12	144	LCXLI1-L4144-B700	LCXLI1-M4144-A700

J-DH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

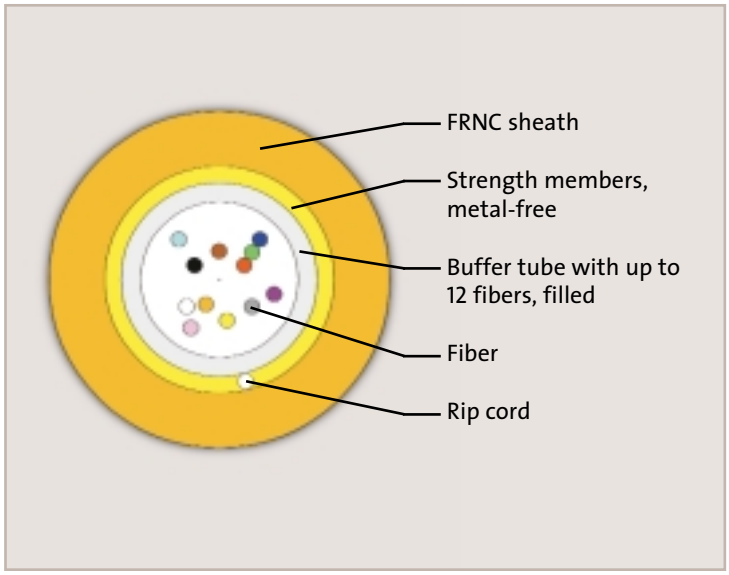
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
J-DH 2x6	12	LCXLI1-D4012-U700	LCXLI1-K4012-J703	LCXLI1-M4012-H700
J-DH 4x6	24	LCXLI1-D4024-U702	LCXLI1-K4024-J703	LCXLI1-M4024-H701
J-DH 2x12	24	LCXLI1-D4024-U701	LCXLI1-K4024-J704	LCXLI1-M4024-H702
J-DH 3x12	36	LCXLI1-D4036-U701	LCXLI1-K4036-J702	LCXLI1-M4036-H701
J-DH 4x12	48	LCXLI1-D4048-U701	LCXLI1-K4048-J702	LCXLI1-M4048-H701
J-DH 5x12	60	LCXLI1-D4060-U701	LCXLI1-K4060-J702	LCXLI1-M4060-H701
J-DH 6x12	72	LCXLI1-D4072-U700	LCXLI1-K4072-J702	LCXLI1-M4072-H700
J-DH 8x12	96	LCXLI1-D4096-U700	LCXLI1-K4096-J701	LCXLI1-M4096-H700
J-DH 10x12	120	LCXLI1-D4120-U700	LCXLI1-K4120-J701	LCXLI1-M4120-H700
J-DH 12x12	144	LCXLI1-D4144-U700	LCXLI1-K4144-J701	LCXLI1-M4144-H700

Future*Link* Modular Indoor Cables

Indoor Maxibundle (Maxitube) Cables

J-DH



Application

Future*Link* maxibundle cables are particularly suitable for placing and pulling into cable conduits and shafts inside buildings and in the building riser between floor distributors.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-1 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Small diameter
- Low weight
- Low fire load rating

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-DH 1x4	4	6.2	41	≤400	≥140	≥125	0.76
J-DH 1x6	6	6.2	41	≤400	≥140	≥125	0.76
J-DH 1x8	8	6.2	41	≤400	≥140	≥125	0.76
J-DH 1x12	12	6.2	41	≤400	≥140	≥125	0.76

Color code Telcordia

No.	Fiber color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

J-DH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-DH 1x4	4	**LCXLI1-L0004-B700**	**LCXLI1-M0004-A700**
J-DH 1x6	6	**LCXLI1-L0006-B700**	**LCXLI1-M0006-A700**
J-DH 1x8	8	**LCXLI1-L0008-B700**	**LCXLI1-M0008-A700**
J-DH 1x12	12	**LCXLI1-L0012-B700**	**LCXLI1-M0012-A700**

J-DH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

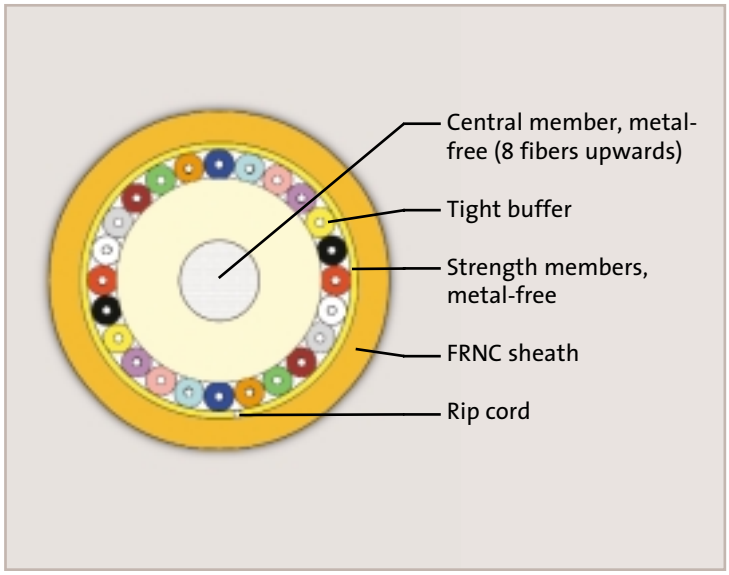
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
J-DH 1x4	4	**LCXLI1-D0004-U700**	**LCXLI1-K0004-J701**	**LCXLI1-M0004-H700**
J-DH 1x6	6	**LCXLI1-D0006-U700**	**LCXLI1-K0006-J701**	**LCXLI1-M0006-H700**
J-DH 1x8	8	**LCXLI1-D0008-U700**	**LCXLI1-K0008-J701**	**LCXLI1-M0008-H700**
J-DH 1x12	12	**LCXLI1-D0012-U700**	**LCXLI1-K0012-J701**	**LCXLI1-M0012-H700**

Future*Link* Modular Indoor Cables

Multifiber Indoor Cables (MIC)

J-VH...TB3 FRNC



Application

Future*Link* multifiber indoor (mini-breakout) cables are particularly suitable for placing and pulling into cable conduits and shafts (building backbone and horizontal subsystems), also underfloor, for use as jumper and adapter cables and for connecting workstations inside buildings (FttD).
They can also be used as inter-building cables laid in dry conduits.
The 900 µm tight buffer design allows easy and direct infield connectorization.

Features

- Tight-buffered fiber of 900 µm diameter TB3 design (easy to strip)
- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Completely dry design

Special Features

- Especially suitable for field-installable UniCam® connectors
- Pre-assembled lengths available

Temperature Range

• Installation and assembly	–5 °C to +50 °C
• Operation	–20 °C to +60 °C
• Transport and storage	–25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-VH 2	2	4.5	20	≤800	≥80	≥70	0.33
J-VH 4	4	5.1	23	≤1000	≥95	≥80	0.50
J-VH 6	6	5.4	27	≤1000	≥95	≥85	0.56
J-VH 8	8	6.1	36	≤1000	≥105	≥90	0.62
J-VH 12	12	7.4	56	≤1800	≥125	≥100	0.84
J-VH 16	16	8.3	75	≤2000	≥145	≥125	1.07
J-VH 24	24	10.6	124	≤2700	≥190	≥160	1.40

Color code Telcordia

No.	Tight buffer color
01	Blue
02	Orange
03	Green
04	Brown
05	Gray
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Turquoise

J-VH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-VH 2	2	LCXLI2-L1002-B700	LCXLI2-M1002-A700
J-VH 4	4	LCXLI2-L1004-B700	LCXLI2-M1004-A700
J-VH 6	6	LCXLI2-L1006-B700	LCXLI2-M1006-A700
J-VH 8	8	LCXLI2-L1008-B700	LCXLI2-M1008-A700
J-VH 12	12	LCXLI2-L1012-B700	LCXLI2-M1012-A700
J-VH 16	16	LCXLI2-L1016-B700	LCXLI2-M1016-A700
J-VH 24	24	LCXLI2-L1024-B700	LCXLI2-M1024-A700

J-VH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

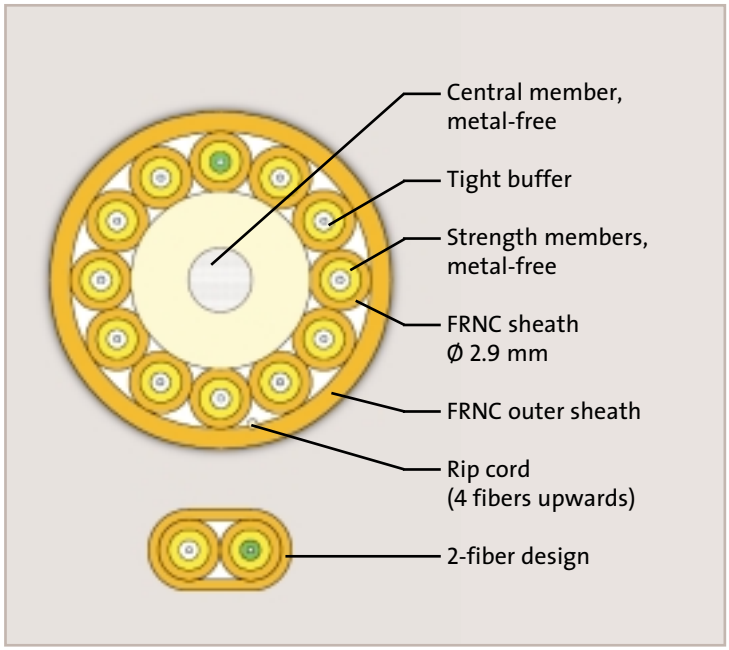
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
J-VH 2	2	LCXLI2-D1002-U700	LCXLI2-L1002-J702	LCXLI2-M1002-H700
J-VH 4	4	LCXLI2-D1004-U700	LCXLI2-L1004-J703	LCXLI2-M1004-H700
J-VH 6	6	LCXLI2-D1006-U700	LCXLI2-L1006-J701	LCXLI2-M1006-H700
J-VH 8	8	LCXLI2-D1008-U700	LCXLI2-L1008-J701	LCXLI2-M1008-H700
J-VH 12	12	LCXLI2-D1012-U700	LCXLI2-L1012-J701	LCXLI2-M1012-H700
J-VH 16	16	LCXLI2-D1016-U700	LCXLI2-L1016-J701	LCXLI2-M1016-H700
J-VH 24	24	LCXLI2-D1024-U700	LCXLI2-L1024-J701	LCXLI2-M1024-H700

Future*Link* Modular Indoor Cables

Breakout Cables with 2.9 mm Subunits

T-VHH...TB3 FRNC



Application

Future*Link* breakout cables are particularly suitable for placing and pulling into cable conduits and shafts (building backbone and horizontal sub-systems), also underfloor, for use as jumper and adapter cables and for connecting workstations inside buildings (FttD).
They can also be used as inter-building cables laid in dry conduits.
Easy and direct infield connectorization is possible with enhanced strain relief.

Features

- Tight-buffered fiber of 900 µm diameter TB3 design (easy to strip)
- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Completely dry design
- Subunits of 2.9 mm diameter and with additional strength members

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Special Features

- Especially suitable for field-installable UniCam® connectors
- Pre-assembled lengths available

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
T-VHH 2	2	3.9 x 6.8	30	≤ 400	≥ 70	≥ 60	0.52
T-VHH 4	4	8.9	75	≤ 800	≥ 160	≥ 135	1.27
T-VHH 6	6	10.7	108	≤ 1200	≥ 190	≥ 165	1.88
T-VHH 8	8	12.5	150	≤ 1600	≥ 220	≥ 190	2.64
T-VHH 12	12	16.4	260	≤ 2400	≥ 285	≥ 245	4.61

T-VHH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
T-VHH 2	2	**LCXLI2-L3002-B720**	**LCXLI2-M3002-A720**
T-VHH 4	4	**LCXLI2-L3004-B720**	**LCXLI2-M3004-A720**
T-VHH 6	6	**LCXLI2-L3006-B720**	**LCXLI2-M3006-A720**
T-VHH 8	8	**LCXLI2-L3008-B720**	**LCXLI2-M3008-A720**
T-VHH 12	12	**LCXLI2-L3012-B720**	**LCXLI2-M3012-A720**

T-VHH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

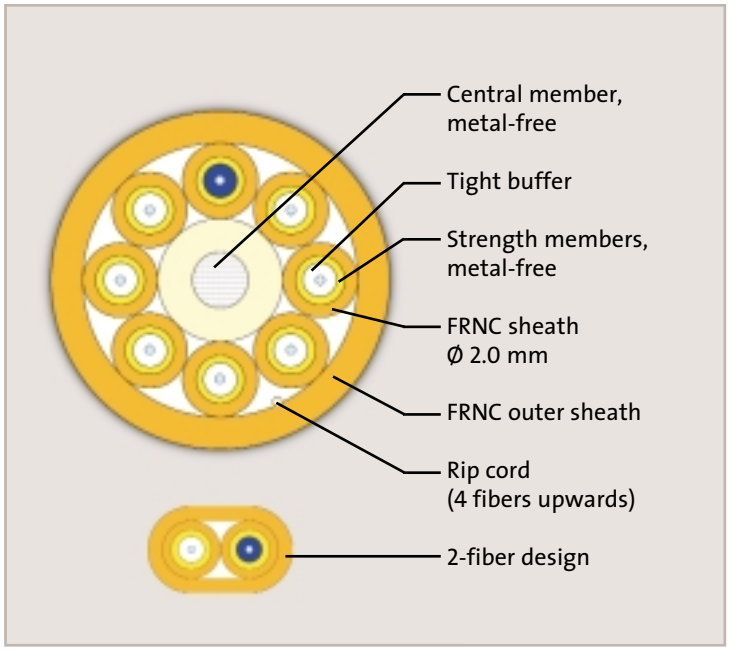
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
T-VHH 2	2	**LCXLI2-D3002-U720**	**LCXLI2-L3002-J721**	**LCXLI2-M3002-H720**
T-VHH 4	4	**LCXLI2-D3004-U720**	**LCXLI2-L3004-J721**	**LCXLI2-M3004-H720**
T-VHH 6	6	**LCXLI2-D3006-U720**	**LCXLI2-L3006-J721**	**LCXLI2-M3006-H720**
T-VHH 8	8	**LCXLI2-D3008-U720**	**LCXLI2-L3008-J721**	**LCXLI2-M3008-H720**
T-VHH 12	12	**LCXLI2-D3012-U720**	**LCXLI2-L3012-J721**	**LCXLI2-M3012-H720**

Future*Link* Modular Indoor Cables

Breakout Cables with 2.0 mm Subunits

T-VHH...TB3 FRNC



Application

Future*Link* breakout cables are particularly suitable for placing and pulling into cable conduits and shafts (building backbone and horizontal sub-systems), also underfloor, for use as jumper and adapter cables and for connecting workstations inside buildings (FttD).
They can also be used as inter-building cables laid in dry conduits.
Easy and direct infield connectorization is possible with enhanced strain relief.

Features

- Tight-buffered fiber of 900 µm diameter TB3 design (easy to strip)
- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Completely dry design
- Subunits of 2.0 mm diameter and with additional strength members

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Special Features

- Especially suitable for field-installable UniCam® LC connectors
- Pre-assembled lengths available

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
T-VHH 2	2	3.0x5.0	18	≤300	≥53	≥45	0.27
T-VHH 4	4	6.7	41	≤500	≥118	≥100	0.70
T-VHH 6	6	7.8	59	≤1000	≥136	≥118	0.92
T-VHH 8	8	9.0	78	≤1200	≥158	≥135	1.17
T-VHH 12	12	11.6	135	≤1800	≥205	≥175	1.76

T-VHH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
T-VHH 2	2	**LCXLI2-L3002-B750**	**LCXLI2-M3002-A750**
T-VHH 4	4	**LCXLI2-L3004-B750**	**LCXLI2-M3004-A750**
T-VHH 6	6	**LCXLI2-L3006-B750**	**LCXLI2-M3006-A750**
T-VHH 8	8	**LCXLI2-L3008-B750**	**LCXLI2-M3008-A750**
T-VHH 12	12	**LCXLI2-L3012-B750**	**LCXLI2-M3012-A750**

T-VHH with single-mode SMF-28™

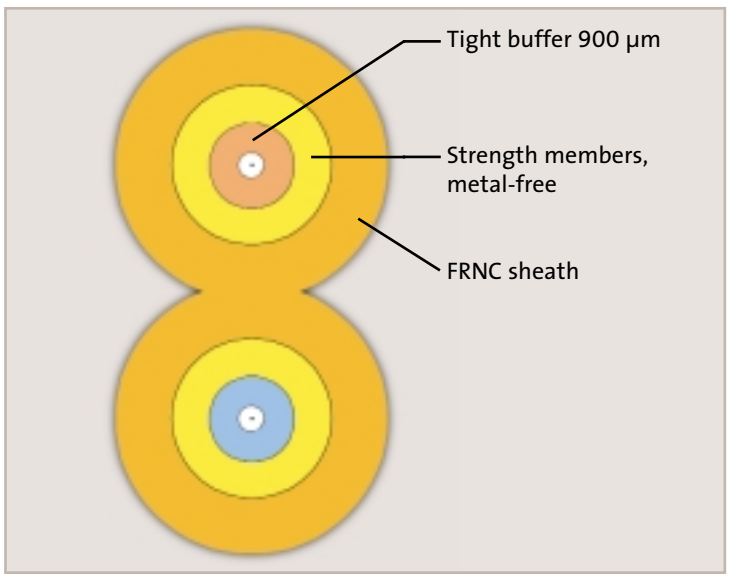
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm
T-VHH 2	2	**LCXLI2-D3002-U750**
T-VHH 4	4	**LCXLI2-D3004-U750**
T-VHH 6	6	**LCXLI2-D3006-U750**
T-VHH 8	8	**LCXLI2-D3008-U750**
T-VHH 12	12	**LCXLI2-D3012-U750**

Future*Link* Modular Indoor Cables

Duplex Cable (Zipcord)

J-VH...TB3 FRNC



Application

Future*Link* Zipcord cables are particularly suitable for placing and pulling into cable conduits and shafts, for use as jumper and adapter cables and for connecting workstations inside buildings (FttD). The 900 µm tight buffer design allows easy and direct infield connectorization.

Features

- Tight-buffered fiber of 900 µm diameter TB3 design (easy to strip)
- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Completely dry design
- Subunits of 2.9 mm diameter and with additional strength members

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Special Features

- Especially suitable for field-installable UniCam® connectors

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-VH 2x1	2	2.9x5.8	16	≤400	≥50	≥45	0.34

Color code Telcordia

No.	Tight buffer color
01	Blue
02	Orange

J-VH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-VH 2x1	2	**LCXLI2-L2002-B720**	**LCXLI2-M2002-A720**
Special colours		**Jacket colour: Green**	**Jacket colour: Blue**
J-VH 2x1	2	**LCXLI2-L2002-B721**	**LCXLI2-M2002-A721**

J-VH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

Order Numbers

Type designation	Fiber count	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
J-VH 2x1	2	**LCXLI2-D2002-U720**	**LCXLI2-L2002-J722**	**LCXLI2-M2002-H720**

Notes

FutureLink™ Modular

Pre-assembled cables

Issue 1

LANscape™

> FutureLink Modular – Pre-assembled cables

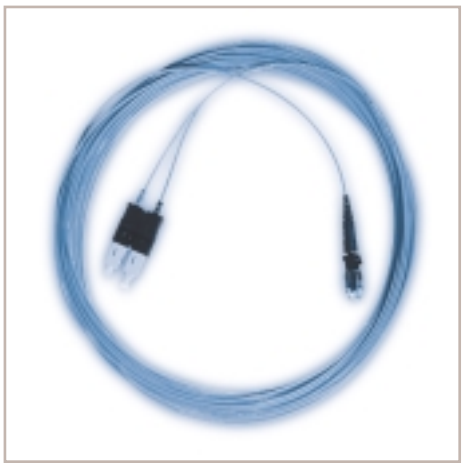
Pre-assembled multifiber cables, pigtails and patch cords

For non-permanent connections between patch panels, transmission equipment etc. patch cables are used. Already installed cables often terminated with pigtails by using fusion splicers, pigtails and patch cables are pre-assembled with connectors.

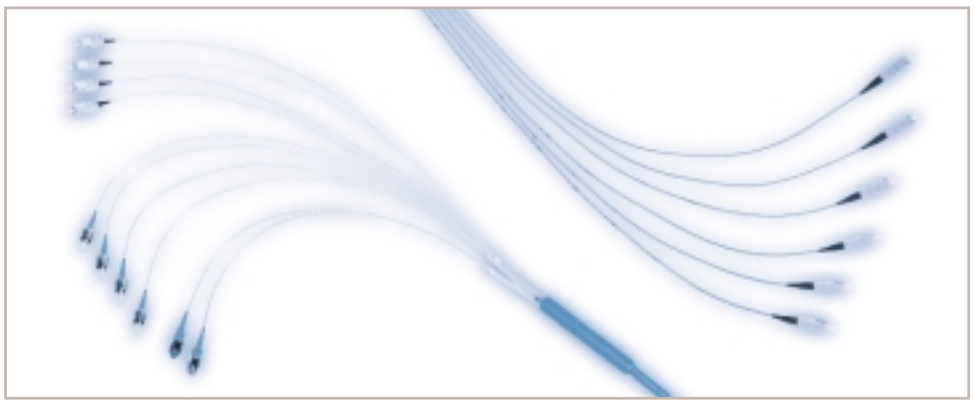
Apart from pigtails and patch cables, there are also multifiber cables available in factory pre-assembled form such as MPC and MIC (Multifiber Indoor Cable) cables.

The connectors available include not only the familiar SC and ST types but also the small form factor MT-RJ connectors that connect two fibers simultaneously. For these connectors we offer two-fiber cables that are optimized configured for the MT-RJ connector.

To make the transition from MT-RJ to SC and ST single-fiber (simplex) connectors or SC duplex connectors, appropriate connectorized MiniZip cables are available.

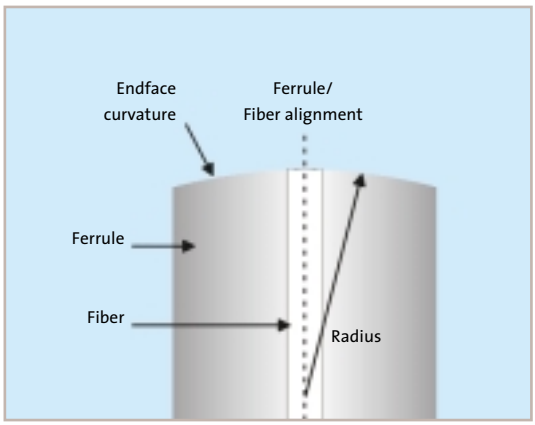


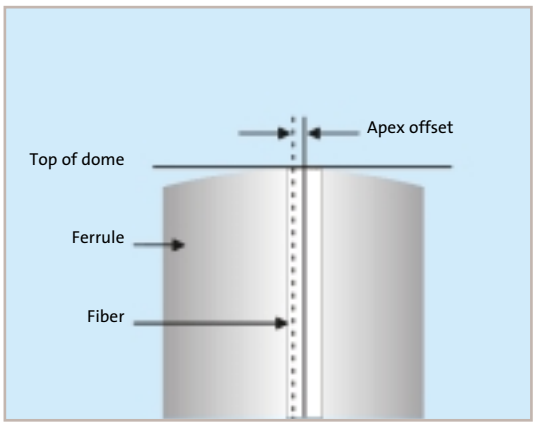
Pre-assembled cables allow for the implementation of complete “plug & play” solutions. When such a solution is adopted with accurate dimensioning and appropriate cable routing, it is possible to install even large cabling systems rapidly. A further advantage is that it eliminates the need for splicing. The “plug & play” approach is particularly suitable for cabling clean and ultra-clean rooms.

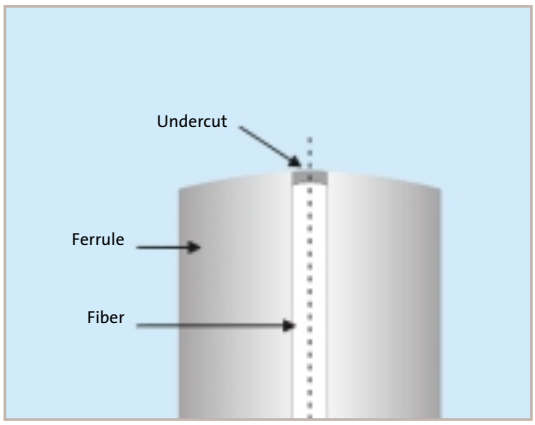


Connector performance

Controlling connector end-face geometry is key to assuring network reliability. Radius of curvature, apex offset and fiber undercut are the three critical parameters that affect long-term connector performance. These parameters are closely monitored and controlled throughout Corning’s automated process, thus assuring the highest quality in each and every connector assembly.







Radius of curvature

Radius of curvature describes the radius of the endface surface measured from the ferrule axis. The correct curvature radius and spring force are necessary to control the compressive forces on the connector endface. Radius of curvature values between 10 to 30 mm are recommended to avoid fiber damage and to assure low reflectance and insertion loss.

Apex offset

Apex offset is the displacement between the apex of the sphere that fits the ferrule endface and the center of the fiber core. Excessive apex offset can lead to a lack of physical contact of the fiber cores and cause an increase in insertion loss. An apex offset value of < 50 µm is recommended. Values greater than 50 µm can reduce fiber-to-fiber contact and cause increases in reflectance over the operating temperature.

Fiber undercut/protrusion

Fiber undercut is the distance of the fiber above or below the fitted spherical surface of the ferrule. Proper undercut guarantees that fiber-to-fiber contact will always be maintained over the operating temperature range. An undercut value of < 50 nm is recommended to avoid air gaps between the fibers. Larger undercut values can cause changes in reflectance and insertion loss. Excessive fiber protrusion of more than 50 nm can increase the compressive load at the end of the fiber causing fiber damage or failure of the fiber-ferrule epoxy bond.

Future*Link* Modular Patch Cables

Duplex Patch Cables (Zipcord) with ST, SC and SC-Duplex Single-Fiber Connectors

Order No. Scheme

	1 2 3 4 5 6	8	9	10	11	12		14	15	16	17
Part number:	LCALI2-	X	2	3	□	□	-	A	□	□	□
Fiber type X:											
SMF-28™ (single-mode 9/125 µm)		**A**									**Length in dm****
InfiniCor® 600 (MM 50/125 µm)		**B**									
InfiniCor® 300 (MM 62.5/125 µm)		**C**									
Connector type*:					**A end**	**E end**					
					Connector	**Connector**					
						0 = none					
					ST = **1**	**1** = ST					
					SC = **2**	**2** = SC					
					SC duplex = **3**	**3** = SC duplex					

*) To form the order number, first enter the larger digit at pos. 11, then the smaller one at pos. 12.
**) Other lengths and connector combinations, such as the standard patch cables below, can be produced upon request.

Ordering Examples

Duplex patch cables,

J-VH 2x1G50/125 InfiniCor® 600
TB3 FRNC,
1.5 m long, zero-halogen, orange,
A end: 2xSC connectors,
E end: 2xST connectors,

Order No.: LCALI2-B2321-A015

J-VH 2x1G62.5/125 InfiniCor® 300
TB3 FRNC,
10 m long, zero-halogen, orange,
E end: SC duplex connector,
A end: SC duplex connector,

Order No.: LCALI2-C2333-A100

Standard patch cables (Zipcord) with single-fiber connectors

Designation	Length	Order No.
FO duplex patch cables, zero-halogen,	1.0 m	**LCALI2-x2311-A010**
A end: 2xST connectors	1.5 m	**LCALI2-x2311-A015**
E end: 2xST connectors	2.0 m	**LCALI2-x2311-A020**
	2.5 m	**LCALI2-x2311-A025**
	3.0 m	**LCALI2-x2311-A030**
	4.0 m	**LCALI2-x2311-A040**
	5.0 m	**LCALI2-x2311-A050**
	6.0 m	**LCALI2-x2311-A060**
	7.0 m	**LCALI2-x2311-A070**
	8.0 m	**LCALI2-x2311-A080**
	10.0 m	**LCALI2-x2311-A100**

FO duplex patch cables, zero-halogen,	1.0 m	**LCALI2-x2321-A010**
A end: 2xSC connectors	1.5 m	**LCALI2-x2321-A015**
E end: 2xST connectors	2.0 m	**LCALI2-x2321-A020**
	2.5 m	**LCALI2-x2321-A025**
	3.0 m	**LCALI2-x2321-A030**
	4.0 m	**LCALI2-x2321-A040**
	5.0 m	**LCALI2-x2321-A050**
	6.0 m	**LCALI2-x2321-A060**
	7.0 m	**LCALI2-x2321-A070**
	8.0 m	**LCALI2-x2321-A080**
	10.0 m	**LCALI2-x2321-A100**

Standard patch cables (Zipcord) with single-fiber connectors

Designation	Length	Order No.	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x2331-A010	
A end: 1 x SC duplex connector	1.5 m	LCALI2-x2331-A015	
E end: 2 x ST connectors	2.0 m	LCALI2-x2331-A020	
	2.5 m	LCALI2-x2331-A025	
	3.0 m	LCALI2-x2331-A030	
	4.0 m	LCALI2-x2331-A040	
	5.0 m	LCALI2-x2331-A050	
	6.0 m	LCALI2-x2331-A060	
	7.0 m	LCALI2-x2331-A070	
	8.0 m	LCALI2-x2331-A080	
	10.0 m	LCALI2-x2331-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x2322-A010	
A end: 2 x SC connectors	1.5 m	LCALI2-x2322-A015	
E end: 2 x SC connectors	2.0 m	LCALI2-x2322-A020	
	2.5 m	LCALI2-x2322-A025	
	3.0 m	LCALI2-x2322-A030	
	4.0 m	LCALI2-x2322-A040	
	5.0 m	LCALI2-x2322-A050	
	6.0 m	LCALI2-x2322-A060	
	7.0 m	LCALI2-x2322-A070	
	8.0 m	LCALI2-x2322-A080	
	10.0 m	LCALI2-x2322-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x2332-A010	
A end: 1 x SC duplex connector	1.5 m	LCALI2-x2332-A015	
E end: 2 x SC connectors	2.0 m	LCALI2-x2332-A020	
	2.5 m	LCALI2-x2332-A025	
	3.0 m	LCALI2-x2332-A030	
	4.0 m	LCALI2-x2332-A040	
	5.0 m	LCALI2-x2332-A050	
	6.0 m	LCALI2-x2332-A060	
	7.0 m	LCALI2-x2332-A070	
	8.0 m	LCALI2-x2332-A080	
	10.0 m	LCALI2-x2332-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x2333-A010	
A end: 1 x SC duplex connector	1.5 m	LCALI2-x2333-A015	
E end: 1 x SC duplex connector	2.0 m	LCALI2-x2333-A020	
	2.5 m	LCALI2-x2333-A025	
	3.0 m	LCALI2-x2333-A030	
	4.0 m	LCALI2-x2333-A040	
	5.0 m	LCALI2-x2333-A050	
	6.0 m	LCALI2-x2333-A060	
	7.0 m	LCALI2-x2333-A070	
	8.0 m	LCALI2-x2333-A080	
	10.0 m	LCALI2-x2333-A100	

Future*Link* Modular Patch Cables

Duplex Patch Cables with MT-RJ Connectors

Order No. Scheme

	1 2 3 4 5 6	8	9	10	11	12		14	15	16	17
Part number:	LCALI2-	X	□	3	□	□	-	A	□	□	□
Fiber type X:											
SMF-28™ (single-mode 9/125 µm)		**A**							**Length in dm****		
InfiniCor® 600 (MM 50/125 µm)		**B**									
InfiniCor® 300 (MM 62.5/125 µm)		**C**									
Cables:											
Duplex (Mini-Zipcord)			**5**								
for hybrid version											
Duplex (Mini-Mic)			**7**								
for MT-RJ both ends											
					A end	**E end**					
Connector type*:					**Connector**	**Connector**					
						0 = none					
						1 = ST					
						2 = SC					
						3 = SC duplex					
					MT-RJ (pins) = **4**	**4** = MT-RJ (no pins)					
					MT-RJ (pins) = **5**	**5** = MT-RJ (pins)					

*) To form the order number, first enter the larger digit at pos. 11, then the smaller one at pos. 12.
**) Other lengths and connector combinations, such as the standard patch cables below, can be produced upon request.

Ordering Examples

Duplex patch cables,

J-VH 2x1G50/125 InfiniCor® 600
TB3 R FRNC,
5 m long, zero-halogen, orange,
A end: 2xSC connectors,
E end: MT-RJ connector no pins,

Order No.: LCALI2-B5342-A050

J-VH 2G62.5/125 InfiniCor® 300
TB3 R FRNC,
90 m long, zero-halogen, orange,
E end: MT-RJ connector with pins,
A end: MT-RJ connector with pins,

Order No.: LCALI2-C7355-A900

Note on terminated MT-RJ connectors:
Permanently installed cables are normally provided with pins at both ends. Patch cords do not have pins because the active components always contain pins.

On the stated standard MT-RJ patch cords connectorized at both ends the polarity is reversed (transmitter to receiver).

Standard patch cables with MT-RJ connectors

Designation

Length	Order No.
FO duplex patch cables, zero-halogen,	
A end: 1xMT-RJ connector (no pins)	
E end: 2xST connectors	
1.0 m	**LCALI2-x5341-A010**
1.5 m	**LCALI2-x5341-A015**
2.0 m	**LCALI2-x5341-A020**
2.5 m	**LCALI2-x5341-A025**
3.0 m	**LCALI2-x5341-A030**
4.0 m	**LCALI2-x5341-A040**
5.0 m	**LCALI2-x5341-A050**
6.0 m	**LCALI2-x5341-A060**
7.0 m	**LCALI2-x5341-A070**
8.0 m	**LCALI2-x5341-A080**
10.0 m	**LCALI2-x5341-A100**

Duplex patch cables with MT-RJ connectors

Designation	Length	Order No.	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x5342-A010	
A end: 1x MT-RJ connector (without pins)	1.5 m	LCALI2-x5342-A015	
E end: 2x SC connectors	2.0 m	LCALI2-x5342-A020	
	2.5 m	LCALI2-x5342-A025	
	3.0 m	LCALI2-x5342-A030	
	4.0 m	LCALI2-x5342-A040	
	5.0 m	LCALI2-x5342-A050	
	6.0 m	LCALI2-x5342-A060	
	7.0 m	LCALI2-x5342-A070	
	8.0 m	LCALI2-x5342-A080	
	10.0 m	LCALI2-x5342-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x5343-A010	
A end: 1x MT-RJ connector (without pins)	1.5 m	LCALI2-x5343-A015	
E end: 1x SC duplex connector	2.0 m	LCALI2-x5343-A020	
	2.5 m	LCALI2-x5343-A025	
	3.0 m	LCALI2-x5343-A030	
	4.0 m	LCALI2-x5343-A040	
	5.0 m	LCALI2-x5343-A050	
	6.0 m	LCALI2-x5343-A060	
	7.0 m	LCALI2-x5343-A070	
	8.0 m	LCALI2-x5343-A080	
	10.0 m	LCALI2-x5343-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x5351-A010	
A end: 1x MT-RJ connector (with pins)	1.5 m	LCALI2-x5351-A015	
E end: 2x ST connectors	2.0 m	LCALI2-x5351-A020	
	2.5 m	LCALI2-x5351-A025	
	3.0 m	LCALI2-x5351-A030	
	4.0 m	LCALI2-x5351-A040	
	5.0 m	LCALI2-x5351-A050	
	6.0 m	LCALI2-x5351-A060	
	7.0 m	LCALI2-x5351-A070	
	8.0 m	LCALI2-x5351-A080	
	10.0 m	LCALI2-x5351-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x5352-A010	
A end: 1x MT-RJ connector (with pins)	1.5 m	LCALI2-x5352-A015	
E end: 2x SC connectors	2.0 m	LCALI2-x5352-A020	
	2.5 m	LCALI2-x5352-A025	
	3.0 m	LCALI2-x5352-A030	
	4.0 m	LCALI2-x5352-A040	
	5.0 m	LCALI2-x5352-A050	
	6.0 m	LCALI2-x5352-A060	
	7.0 m	LCALI2-x5352-A070	
	8.0 m	LCALI2-x5352-A080	
	10.0 m	LCALI2-x5352-A100	

Future*Link* Modular Patch Cables

Duplex Patch Cables with MT-RJ Connectors

Designation	Length	Order No.	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x5353-A010	
A end: 1x MT-RJ connector (with pins)	1.5 m	LCALI2-x5353-A015	
E end: 1x SC duplex connector	2.0 m	LCALI2-x5353-A020	
	2.5 m	LCALI2-x5353-A025	
	3.0 m	LCALI2-x5353-A030	
	4.0 m	LCALI2-x5353-A040	
	5.0 m	LCALI2-x5353-A050	
	6.0 m	LCALI2-x5353-A060	
	7.0 m	LCALI2-x5353-A070	
	8.0 m	LCALI2-x5353-A080	
	10.0 m	LCALI2-x5353-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x7344-A010	
A end: 1x MT-RJ connector (without pins)	1.5 m	LCALI2-x7344-A015	
E end: 1x MT-RJ connector (without pins)	2.0 m	LCALI2-x7344-A020	
	2.5 m	LCALI2-x7344-A025	
	3.0 m	LCALI2-x7344-A030	
	4.0 m	LCALI2-x7344-A040	
	5.0 m	LCALI2-x7344-A050	
	6.0 m	LCALI2-x7344-A060	
	7.0 m	LCALI2-x7344-A070	
	8.0 m	LCALI2-x7344-A080	
	10.0 m	LCALI2-x7344-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x7354-A010	
A end: 1x MT-RJ connector (with pins)	1.5 m	LCALI2-x7354-A015	
E end: 1x MT-RJ connector (without pins)	2.0 m	LCALI2-x7354-A020	
	2.5 m	LCALI2-x7354-A025	
	3.0 m	LCALI2-x7354-A030	
	4.0 m	LCALI2-x7354-A040	
	5.0 m	LCALI2-x7354-A050	
	6.0 m	LCALI2-x7354-A060	
	7.0 m	LCALI2-x7354-A070	
	8.0 m	LCALI2-x7354-A080	
	10.0 m	LCALI2-x7354-A100	
FO duplex patch cables, zero-halogen,	1.0 m	LCALI2-x7355-A010	
A end: 1x MT-RJ connector (with pins)	1.5 m	LCALI2-x7355-A015	
E end: 1x MT-RJ connector (with pins)	2.0 m	LCALI2-x7355-A020	
	2.5 m	LCALI2-x7355-A025	
	3.0 m	LCALI2-x7355-A030	
	4.0 m	LCALI2-x7355-A040	
	5.0 m	LCALI2-x7355-A050	
	6.0 m	LCALI2-x7355-A060	
	7.0 m	LCALI2-x7355-A070	
	8.0 m	LCALI2-x7355-A080	
	10.0 m	LCALI2-x7355-A100	

Future*Link* Modular Pigtails

Pigtails

Order No. Scheme

	1 2 3 4 5 6	8	9	10	11	12		14	15	16	17
Part number:	LCALI2-	X	☐	1	☐	☐	-	A	☐	☐	☐
Fiber type X:											
SMF-28™ (single-mode 9/125 µm)		A									**Length in dm****
InfiniCor® 600 (MM 50/125 µm)		B									
InfiniCor® 300 (MM 62.5/125 µm)		C									
Cables:											
Pigtail 900 µm*			3								
for ST, SC and SC duplex connectors											
Pigtail 700 µm*			6								
for MT-RJ connectors only											

	A end Connector	E end Connector
Connector type:		**0** = none
	ST = **1**	
	SC = **2**	
	SC duplex = **3**	
	MT-RJ (no pin) = **4**	
	MT-RJ (pins) = **5**	

*) The pigtails are strippable 1.5 m (TB), other pigtails (TB3) upon request.
**) Other lengths and connectors, such as the standard pigtails below, can be produced upon request

Ordering examples

Pigtails,

V-E9/125 0.38F3.5 + 0.25H18 TB FRNC,
2 m long, zero-halogen, yellow,
A end: SC connector,

Order No.: LCALI2-A3120-A020

V-G62.5/125 InfiniCor® 300 TB FRNC,
2 m long, zero-halogen, orange,
A end: MT-RJ connector (with pins),

Order No.: LCALI2-C6150-A020

Tight buffer colors

9 µ	yellow
50 µ	green
62.5 µ	blue

Tight buffer pigtails

Designation

Length	Order No.
1.0 m	**LCALI2-x3110-A010**
1.5 m	**LCALI2-x3110-A015**
2.0 m	**LCALI2-x3110-A020**
2.5 m	**LCALI2-x3110-A025**
3.0 m	**LCALI2-x3110-A030**

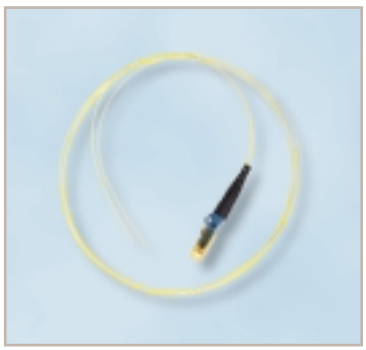
FO pigtail, zero-halogen,
A end: ST connector
Delivery unit 12 pcs.

Future*Link* Modular Pigtails

Pigtails

Designation	Length	Order No.
FO pigtail, zero-halogen,	1.0 m	**LCALI2-x3120-A010**
A end: SC connector	1.5 m	**LCALI2-x3120-A015**
Delivery unit 12 pcs.	2.0 m	**LCALI2-x3120-A020**
	2.5 m	**LCALI2-x3120-A025**
	3.0 m	**LCALI2-x3120-A030**

FO pigtail, zero-halogen,	1.0 m	**LCALI2-x6150-A010**
A end: MT-RJ connector (with pins)	1.5 m	**LCALI2-x6150-A015**
Delivery unit 2 pcs.	2.0 m	**LCALI2-x6150-A020**
	2.5 m	**LCALI2-x6150-A025**
	3.0 m	**LCALI2-x6150-A030**



Future*Link* Modular
Pre-assembled Multifiber Cables
MPC Cables (A-DQ(BN)H)

Order No. Scheme

		1 2 3 4 5 6	8	9	10	11	12		14	15	16	17
Cable type												
MPC		**LCALMA-**	□	□	□	□	□	-	□	□	□	□
A-DQ(BN)H												
up to 24 fibers												
SMF-28™ (single-mode 9/125 µm)			**A**						**Length in m**			
InfiniCor® 600 (MM 50/125 µm)			**B**						**Standard lengths**			
InfiniCor® 300 (MM 62.5/125 µm)			**C**						**in 5 m steps**			
Fiber count:	**4**			**0**	**4**							
	6			**0**	**6**							
	8			**0**	**8**							
	12			**1**	**2**							
	16			**1**	**6**							
	24			**2**	**4**							

Connector type:*	**A end**	**E end**
	Connector	**Connector**
		0 = none
	ST = **1**	**1** = ST
	SC = **2**	**2** = SC
	SC duplex = **3**	**3** = SC duplex
	MT-RJ (no pins) = **4**	**4** = MT-RJ (no pins)
	MT-RJ (pins) = **5**	**5** = MT-RJ (pins)

*) To form the order number, first enter the larger digit at pos. 11, then the smaller one at pos. 12. Other connector combinations can be produced upon request.

The pre-assembled multifiber cables are supplied as standard with a leg length of at least 0.5 m and a pulling grip at each end.
If there are more than 4 fibers, the ends are stepped in 2 cm increments (4 fibers each).

Ordering examples

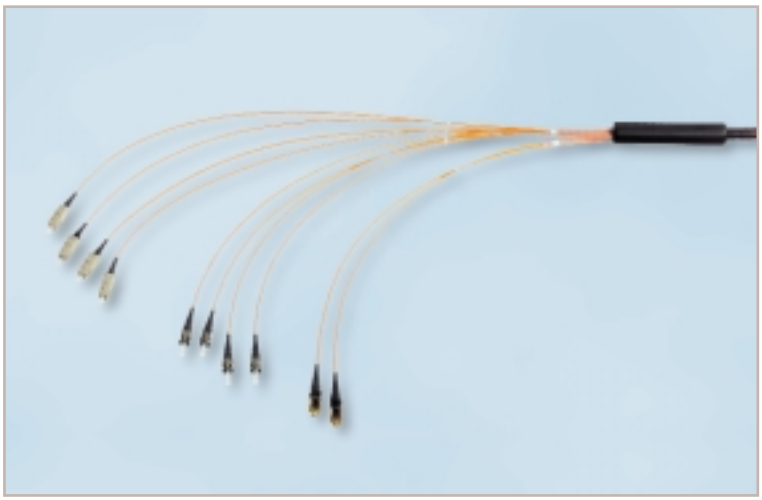
Maxibundle
MPC A-DQ(BN)H...

Pre-assembled MPC A-DQ(BN)H
1x12G50/125 InfiniCor® 600, FRNC,
80 m long, zero-halogen,
non-metallic rodent protection,
both ends terminated
with 12 SC connectors (50 µm)

Order No.: LCALMA-B1222-0080

Pre-assembled MPC A-DQ(BN)H
1x8G62.5/125 InfiniCor® 300, FRNC,
1250 m long, zero-halogen,
non-metallic rodent protection,
E end terminated with 8 ST connectors
(62.5 µm) and A end terminated
with 4 MT-RJ connectors
with pins (62.5 µm)

Order No.: LCALMA-C0851-1250



Universal cable A-DQ(BN)H 1x12G2.5/125 with InfiniCor® 300 fiber terminated with 2 MT-RJ, 4 ST and 4 SC connectors

Future*Link* Modular Pre-assembled Multifiber Cables

MPC Cables with 900 µm Tight Buffers (A-VB(BN)-H)

Order No. Scheme

		1 2 3 4 5 6	8	9	10	11	12		14	15	16	17
Cable type												
MPC with tight buffers (TB3)		**L C A L M H -**	□	□	□	□	□	**-**	□	□	□	□
A-VB(BN)H												
up to 24 fibers												
SMF-28™ (single-mode 9/125 µm)			**A**						**Length in m**			
InfiniCor® 600 (MM 50/125 µm)			**B**						**Standard lengths**			
InfiniCor® 300 (MM 62.5/125 µm)			**C**						**in 5 m steps**			
Fiber count:	**4**			**0**	**4**							
	6			**0**	**6**							
	8			**0**	**8**							
	12			**1**	**2**							
	16			**1**	**6**							
	24			**2**	**4**							

Connector type:*	**A end**	**E end**
	Connector	**Connector**
		0 = none
	ST = **1**	**1** = ST
	SC = **2**	**2** = SC
	SC duplex = **3**	**3** = SC duplex
	MT-RJ (no pins) = **4**	**4** = MT-RJ (no pins)
	MT-RJ (pins) = **5**	**5** = MT-RJ (pins)

*) To form the order number, first enter the larger digit at pos. 11, then the smaller one at pos. 12. Other connector combinations can be produced upon request.

The pre-assembled multifiber cables are supplied as standard with a leg length of at least 0.5 m and a pulling grip at each end.
If there are more than 4 fibers, the ends are stepped in 2 cm increments (4 fibers each).

Ordering examples

Tight buffer MPC A-VB(BN)H...

Pre-assembled MPC with tight buffers
A-VB(BN)H 1x24G50/125
InfiniCor® 600, FRNC,
70 m long, zero-halogen,
non-metallic rodent protection,
both ends terminated
with 24 ST connectors (50 µm)

Order No.: LCALMH-B2411-0070

Pre-assembled MPC with tight buffers
A-VB(BN)H 1x6G62.5/125
InfiniCor® 300, FRNC,
1550 m long, zero-halogen,
non-metallic rodent protection,
E end terminated
with 3 SC duplex connectors (62.5 µm)
and A end terminated
with 3 MT-RJ connectors with pins (62.5 µm)

Order No.: LCALMH-C0653-1550

Universal cable A-VB(BN)H 1x8G62.5/125 with InfiniCor® 300 fiber terminated with 2 MT-RJ and 4 ST connectors

Future*Link* Modular Pre-assembled Multifiber Cables

MIC Cables (J-VH)

Order No. Scheme

		1 2 3 4 5 6	8 9 10 11 12	14 15 16 17
Cable type				
MIC (TB3)		LCALIG-	□□□□□ -	□□□□
J-VH			▲▲▲▲▲	▲▲▲▲
up to 24 fibers				
SMF-28™ (single-mode 9/125 µm)			**A**	**Length in m**
InfiniCor® 600 (MM 50/125 µm)			**B**	**Standard lengths**
InfiniCor® 300 (MM 62.5/125 µm)			**C**	**in 5 m steps**
Fiber count:	**2**		**0 2**	
	4		**0 4**	
	6		**0 6**	
	8		**0 8**	
	12		**1 2**	
	16		**1 6**	
	24		**2 4**	

Connector type:*	**A end**	**E end**
	Connector	**Connector**
		0 = none
	ST = **1**	**1** = ST
	SC = **2**	**2** = SC
	SC duplex = **3**	**3** = SC duplex
	MT-RJ (no pins) = **4**	**4** = MT-RJ (no pins)
	MT-RJ (pins) = **5**	**5** = MT-RJ (pins)

*) To form the order number, first enter the larger digit at pos. 11, then the smaller one at pos. 12. Other connector combinations can be produced upon request.

The pre-assembled multifiber cables are supplied as standard with a leg length of at least 0.5 m and a pulling grip at each end.
If there are more than 4 fibers, the ends are stepped in 2 cm increments (4 fibers each).

Ordering examples

Multifiber indoor cable J-VH...TB3 FRNC

(Tight buffers of 900 µm dia.)

Pre-assembled MIC J-VH 4G62.5/125
InfiniCor® 300, FRNC,
40 m long, zero-halogen,
A end terminated with 4 SC connectors
(62.5 µm) and E end terminated
with 4 ST connectors (62.5 µm)

Order No.: LCALIG-C0421-0040

Pre-assembled MIC J-VH 24E9/125
0.38F3.5 + 0.25H18 TB3 FRNC,
1010 m long, zero-halogen,
E end terminated
with 12 SC duplex connectors (9 µm)
and A end terminated
with 12 MT-RJ connectors with pins (9 µm)

Order No.: LCALIG-A2453-1010

Multifiber indoor cable (MIC) J-VH 1x8G50/125 with InfiniCor® 600 fiber terminated with 2 MT-RJ and 4 ST connectors

Future*Link* Modular Pre-assembled Multifiber Cables

Breakout Cables (T-VHH)

Order No. Scheme

		1 2 3 4 5 6	8	9	10	11	12		14	15	16	17
Cable type												
Breakout (TB3)		LCALIF-	□	□	□	□	□	-	□	□	□	□
T-VHH			↑	↑	↑	↑	↑		↑	↑	↑	↑
up to 12 fibers												
SMF-28™ (single-mode 9/125 µm)			**A**						**Length in m**			
InfiniCor® 600 (MM 50/125 µm)			**B**						**Standard lengths**			
InfiniCor® 300 (MM 62.5/125 µm)			**C**						**in 5 m steps**			
Fiber count:	**2**			**0**	**2**							
	4			**0**	**4**							
	6			**0**	**6**							
	8			**0**	**8**							
	12			**1**	**2**							

Connector type:*	**A end**	**E end**
	Connector	**Connector**
		0 = none
	ST = **1**	**1** = ST
	SC = **2**	**2** = SC
	SC duplex = **3**	**3** = SC duplex

Ordering examples

Breakout cable T-VHH...
(subunits of 2.9 mm dia.)

Pre-assembled breakout cable
T-VHH 6G50/125
InfiniCor® 600, FRNC,
50 m long, zero-halogen,
both ends terminated
with 3 SC duplex connectors (50 µm)

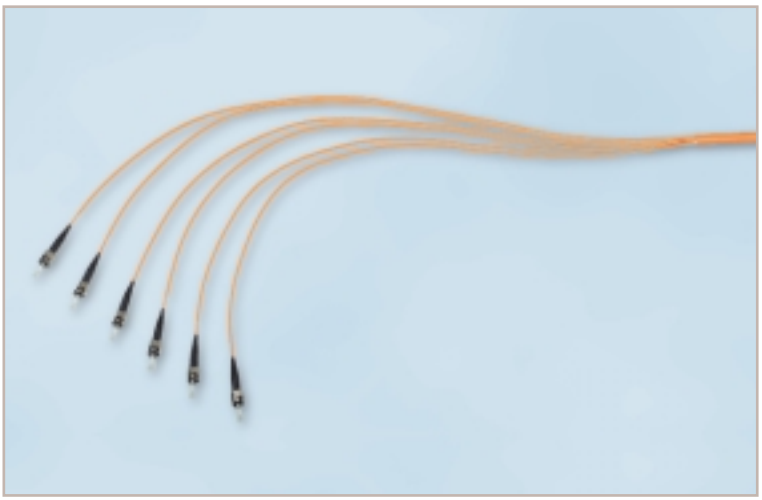
Order No.: LCALIF-B0633-0050

Pre-assembled breakout cable
T-VHH 2E9/125
0.38F3.5 + 0.25H18 TB3 FRNC,
90 m long, zero-halogen,
both ends terminated
with 2 ST connectors (9 µm)

Order No.: LCALIF-A0211-0090

*) To form the order number, first enter the larger digit at pos. 11, then the smaller one at pos. 12. Other connector combinations can be produced upon request.

The pre-assembled multifiber cables are supplied as standard with a leg length of at least 0.5 m and a pulling grip at each end.
If there are more than 4 fibers, the ends are stepped in 2 cm increments (4 fibers each).



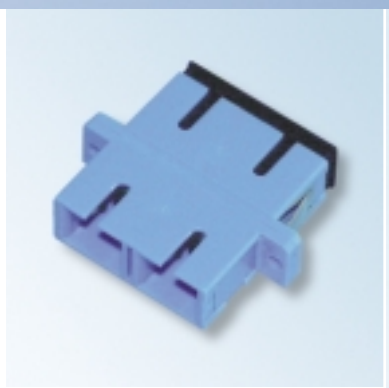
Breakout cable T-VHH 1x6G62.5/125 with InfiniCor® 300 fiber terminated with 6 x ST connectors

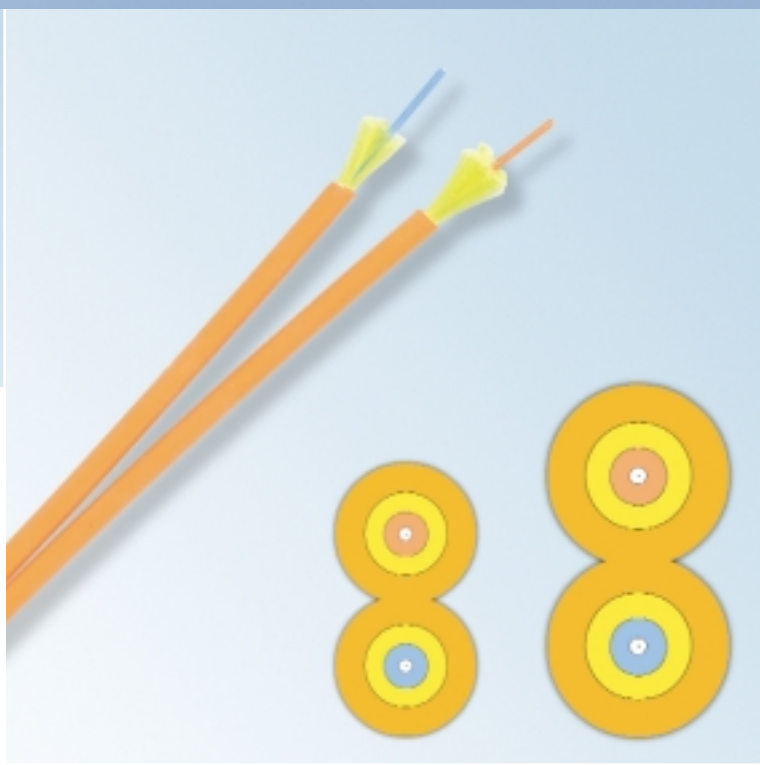
Future*Link*™ Modular

Cables, Connectors and Adapters for Assembly Houses

Issue 1

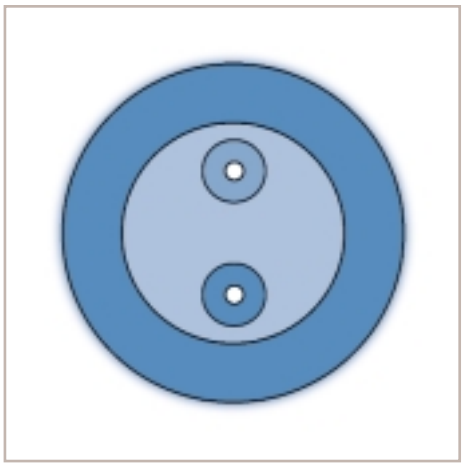
LANscape™





> FutureLink Modular – FO Bulk Cables and connecting hardware for assembly Houses

This product range is particularly suitable for assembly of multifiber optical cables, patch cords and pigtails, as well as for assemblers of partially or fully loaded FO patch panels.



FO Bulk Cables

The design of the cables is optimized for the assembly of the appropriate Corning factory-installable connectors. The special tight buffer characteristics of the cables also make them particularly suitable for other popular BoP (Bag of Parts) connectors.

FO Connectors for factory assembly

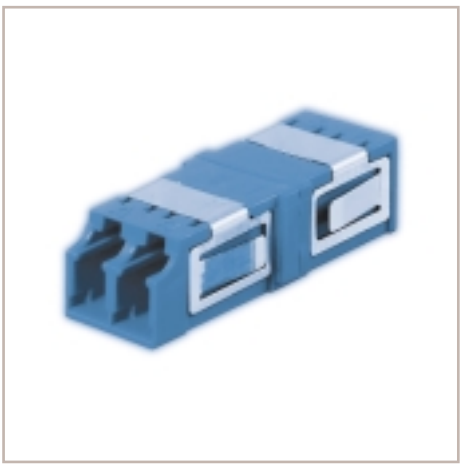
Popular connector types are available and supplied as a bag of parts in packs of a hundred. The boots must be ordered separately according to the required color and cable diameter. The color of the boots is frequently used for identifying endface quality. Separate crimp rings available for strain-relieving Aramid yarns on single-fiber connectors .
The connectors are optimized for assembly on all popular FO cables dimensions. Particular features are the high quality pre-polishing of the ferrule end and the complete pre-assembly of the connector body on the ferrule. This reduces the risk of error and hence scrap, while providing high polishing quality for low effort together with a significant time saving.

For special requirements there are connectors available with spherical prepolish (Superpolish SPC or Ultrapolish UPC) or angled prepolish (Angled Polish APC). The area of the connectors for fiber insertion is optimized for easy assembly.

Given the pre-assembled state of the connectors, it is important to ensure that any existing polishing equipment is suitable for holding the connector bodies. Suitably equipped polishing machines or adapters are available on request.

FO adapters

As the FO adapter forms the link between the connector pairs, it has direct impact on the insertion loss of the connector pairs. The high quality adapters have high precision slotted ceramic sleeves for optimum connector alignment.



For medium-grade multimode connections the listed metal or composite sleeve versions are often adequate, particularly where there are commercial constraints.

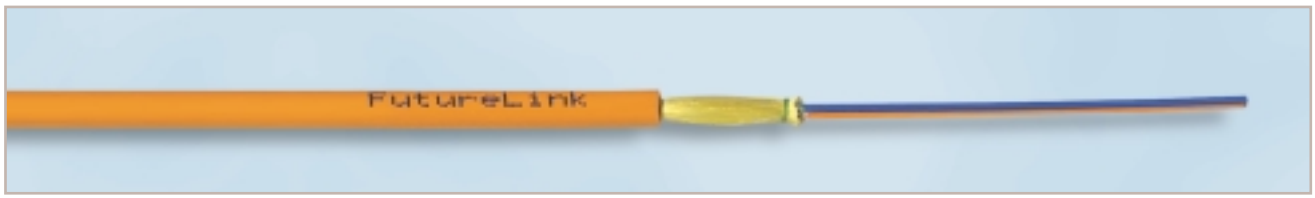
FO adapters find various applications, including the partial or full loading of FO patch panels. Depending on type, they are available in a variety of forms (single- and multimode versions as well as APC for high return loss) and corresponding colorings.

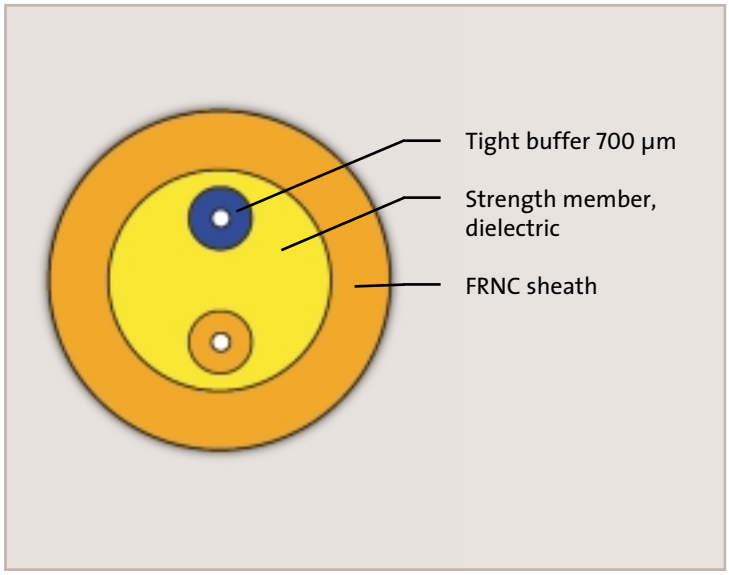
The adapters are supplied with dust covers on both ends. Some of the adapters can be rapidly and easily mounted with metal clips, but also provide the option of screw mounting.

Future*Link* Modular Pre-assembly Cables

Mini-MIC

J-VH2 TB3 R FRNC





Application

The Future*Link* Mini-MIC bulk cabling for assemblers is used primarily for terminating multifiber connectors (MT-RJ).
The bulk cabling is optimized to match the MT-RJ connector.

Features

- Tight-buffered fiber of 700 µm diameter, TB3 R design (easy to strip)
- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Metal-free, hence no ground loop problems
- Completely dry design
- Specially suitable for factory assembly with MT-RJ connectors

Temperature range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-VH2 TB3 R	2	2.9	8	≤200	≥50	≥45	0.20

Color code Telcordia

No.	Tight buffer color
01	Blue
02	Orange

J-VH with laser-optimized InfiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order No.

Type designation	Number of fibers	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-VH2 TB3 R	2	**LCXLI2-L1002-B701**	**LCXLI2-M1002-A701**

J-VH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

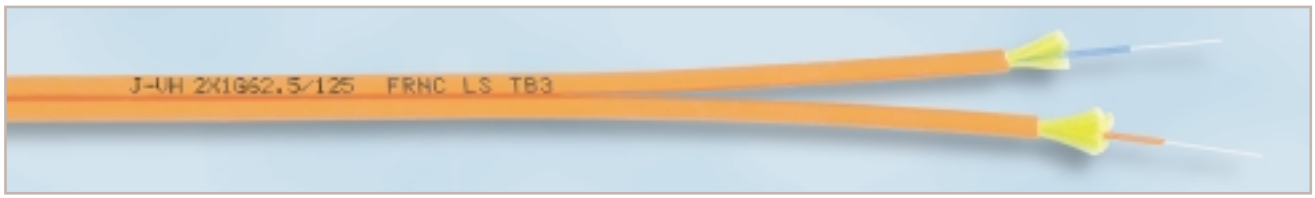
Order No.

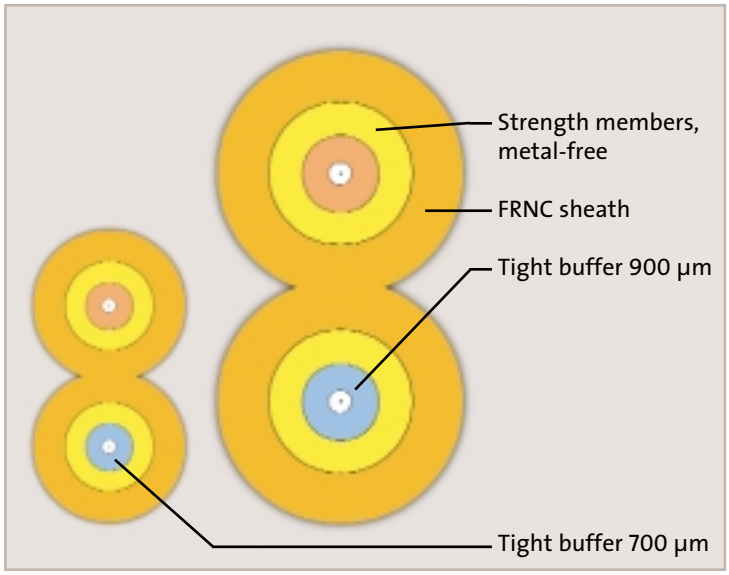
Type designation	Number of fibers	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
J-VH2 TB3 R	2	**LCXLI2-D1002-U701**	**LCXLI2-L1002-J702**	**LCXLI2-M1002-H701**

Future*Link* Modular Pre-assembly Cables

Simplex and Duplex Cables (Zipcord / Mini-Zip)

J-VH...TB3 FRNC / ...TB3 R FRNC





Application

Future*Link* simplex and duplex bulk cabling for assemblers is designed with 900 µm tight buffers for direct assembly with standard single-fiber connectors.
The Future*Link* Mini-Zip bulk cabling is particularly suitable for MT-RJ connectors.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Completely dry design
- Metal-free, hence no ground loop problems
- Tight-buffer design 900 µm (TB3) / 700 µm (TB3 R) (easy to strip)

Temperature range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-VH 1 TB3	1	2.9	9	≤200	≥50	≥45	0.17
J-VH 2x1 TB3	2	2.9x5.8	16	≤400	≥50	≥45	0.34
Special colors:							
J-VH 2x1 TB3	2	2.9x5.8	16	≤400	≥50	≥45	0.34
Mini-Zip							
J-VH 2x1 TB3 R	2	1.8x3.6	6	≤150	≥40	≥30	0.25

Color code Telcordia

No.	Tight buffer color
01	Blue
02	Orange

J-VH with laser-optimized InfiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Number of fibers	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-VH 2x1	2	**LCXLI2-L2002-B720**	**LCXLI2-M2002-A720**
Special colours		**Jacket colour: Green**	**Jacket colour: Blue**
J-VH 2x1	2	**LCXLI2-L2002-B721**	**LCXLI2-M2002-A721**
Mini-Zip			
J-VH 2x1 TB3 R	2	**LCXLI2-L2002-B740**	**LCXLI2-M2002-A740**

J-VH with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

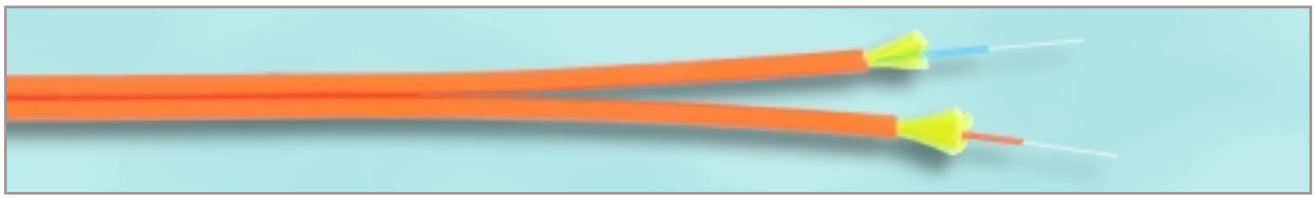
Order Numbers

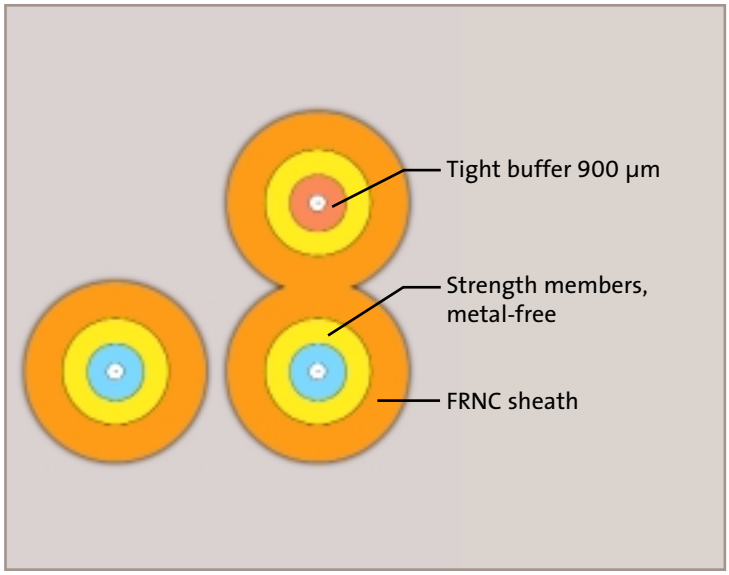
Type designation	Number of fibers	Order No. 9/125 µm	Order No. 50/125 µm	Order No. 62.5/125 µm
J-VH 2x1	2	**LCXLI2-D2002-U720**	**LCXLI2-L2002-J722**	**LCXLI2-M2002-H720**
J-VH 1	1	**LCXLI2-D2001-U720**	**LCXLI2-L2001-J721**	**LCXLI2-M2001-H720**
Mini-Zip				
J-VH 2x1 TB3 R	2	**LCXLI2-D2002-U740**	**LCXLI2-L2002-J741**	**LCXLI2-M2002-H740**

Future*Link* Modular Pre-assembly Cables

Simplex and Duplex Cables (Zipcord) with 2.0 mm Subunits

J-VH...TB3 FRNC





Application

Future*Link* simplex and duplex bulk cabling for assemblers is designed with 900 µm tight buffers for direct assembly with "Small Form Factor" single-fiber connectors.
The Future*Link* simplex and duplex bulk cabling with 2.0 mm subunits is particularly suitable for LC connectors.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3 and non-corrosive to IEC 60754-2 (FRNC) and DIN VDE0472 part 813
- Completely dry design
- Metal-free, hence no ground loop problems
- Tight-buffer design 900 µm (TB3) (easy to strip)
- Special design for LC connectors

Temperature Range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	Tensile strength (N)	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
J-VH 1 TB3	1	2.0	4.1	≤150	≥35	≥30	0.08
J-VH 2x1 TB3	2	2.0x4.0	8.2	≤300	≥35	≥30	0.17

Color code Telcordia

No.	Tight buffer color
01	Blue
02	Orange

J-VH with laser-optimized InifiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	Fiber count	Order No. InfiniCor® 600 (50/125 µm)	Order No. InfiniCor® 300 (62.5/125 µm)
J-VH 1	1	**LCXLI2-L2001-B750**	**LCXLI2-M2001-A750**
J-VH 2x1	2	**LCXLI2-L2002-B750**	**LCXLI2-M2002-A750**

J-VH with single-mode SMF-28™ fibers

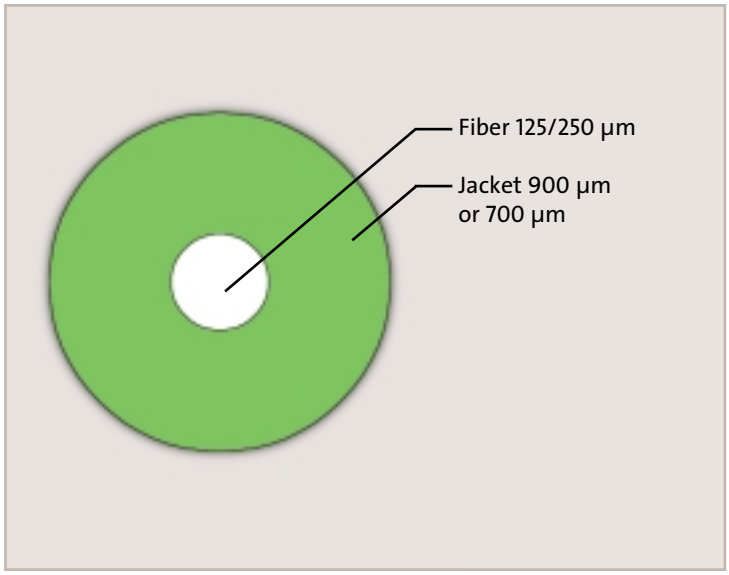
Order Numbers

Type designation	Fiber count	Order No. 9/125 µm
J-VH 1	1	**LCXLI2-D2001-U750**
J-VH 2x1	2	**LCXLI2-D2002-U750**

Future*Link* Modular Pigtail

Tight Buffer

V-E9/G50/G62.5



Application

These tight buffered fibers are used primarily by assembly houses for making pigtails.
Tight-buffered pigtails are used for connecting adapters and splice trays in patch panels where the incoming and outgoing cables are being spliced.
As the pigtails are protected in the patch panel boxes, it is possible to use 900 µm and 700 µm tight buffers instead of cable pigtails.

Features

- Low-smoke to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant to IEC 60 332-3
  and non-corrosive to IEC 60754-2 (FRNC)
  and DIN VDE0472 part 813
- Dry (no gel)
- Easy to strip
  (TB and TB3 for 900 µm and 700 µm)

Temperature range

• Installation and assembly	−5 °C to +50 °C
• Operation	−20 °C to +60 °C
• Transport and storage	−25 °C to +70 °C

Characteristics

Type designation	Fiber count	Outside dia. (mm)	Weight (kg/km)	One-piece stripping length	Bend radius for installation (mm)	Bend radius in service (mm)	Fire rating (MJ/m)
V-	1	0.9	1	≤1.5	≥30	≥30	0.14
V-	1	0.7	1	≤1.5	≥30	≥30	0.14

TB up to 1500 mm strippable
TB3 up to 150 mm strippable

V-G50/G62.5 with laser-optimized InfiniCor® fibers

Features

- Tested for their laser performance to FOTP 204
- Optimized for VCSEL launch conditions
- Guaranteed minimum distances for Gigabit Ethernet transmission

Order Numbers

Type designation	fiber type	sheath colour	sheath type	Order No.
V-G50 (900 µm)	50/125 µm	green	TB	**LCXLI2-LX001-B700-GN**
V-G62.5 (900 µm)	62.5/125 µm	blue	TB	**LCXLI2-MX001-A700-BL**
V-G50 reduced (700 µm)	50/125 µm	green	TB3 R	**LCXLI2-LX001-B701-GN**
V-G62.5 reduced (700 µm)	62.5/125 µm	blue	TB3 R	**LCXLI2-MX001-A701-BL**

V-E9/G50/G62.5 with standard fibers

Single-mode SMF-28™, multimode fibers G50 and G62.5 (for LED operation)

Order Numbers

Type designation	fiber type	sheath colour	sheath type	Order No.
V-E9 (900 µm)	9/125 µm	yellow	TB	**LCXLI2-EX001-U700-GE**
V-G50 (900 µm)	50/125 µm	green	TB	**LCXLI2-LX001-J700-GN**
V-G62.5 (900 µm)	62.5/125 µm	blue	TB	**LCXLI2-MX001-H700-BL**
V-E9 reduced (700 µm)	9/125 µm	yellow	TB3 R	**LCXLI2-EX001-U701-GE**
V-G50 reduced (700 µm)	50/125 µm	green	TB3 R	**LCXLI2-LX001-J701-GN**
V-G62.5 reduced (700 µm)	62.5/125 µm	blue	TB3 R	**LCXLI2-MX001-H701-BL**
V-E9 reduced (700 µm)	9/125 µm	yellow	TB R	**LCXLI2-EX001-U702-GE**
V-G50 reduced (700 µm)	50/125 µm	green	TB R	**LCXLI2-LX001-J702-GN**
V-G62.5 reduced (700 µm)	62.5/125 µm	blue	TB R	**LCXLI2-MX001-H702-BL**

Future*Link* Modular BoP

Connectors and Accessories

Technical Data for ST, FC and SC Epoxy & Polish Connectors

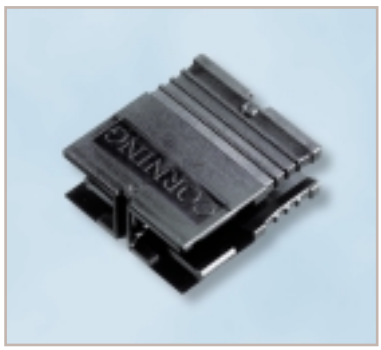
Parameters	**Epoxy & polish connectors** for single-mode fibers		**Epoxy & polish connectors** for multimode fibers
Insertion loss	≤ 0.2 dB typical*		≤ 0.2 dB typical*
Reflectance	PC:	≤ –30 dB typical	n/a
	Super PC:	≤ –40 dB typical	n/a
	Ultra PC:	≤ –55 dB typical	n/a
	APC:	≤ –65 dB typical	n/a
Durability	Typically ≤ 0.2 dB for 1000 cycles, FOTP-21		Typically ≤ 0.2 dB for 1000 cycles, FOTP-21
Tensile strength	88 N with 2.9 mm single-fiber cable with strain relief		88 N with 2.9 mm single-fiber cable with strain relief
Temperature cycling	Typically ≤ 0.3 dB for 21 cycles in a		Typically ≤ 0.3 dB for 21 cycles in a
	temperature range –40 °C to 75 °C		temperature range of –40 °C to 75 °C
Material	Ferrule: Ceramic		Ferrule: Ceramic
	Housing: Metal (ST, FC) / composite (SC)		Housing: Metal (ST, FC) / composite (SC)

*) When polishing according to Corning instructions / Standard Recommended Procedures (SRPs)

ST and FC Epoxy & Polish Connectors

Designation	Quantity per delivery unit	Order No.	
ST single-mode epoxy & polish connector, ceramic ferrule, metal housing, without boot and crimp band	100/1	**95-201-06-BP00**	
ST multimode epoxy & polish connector, ceramic ferrule, metal housing, without boot and crimp band	100/1	**95-101-44-BP00**	
FC single-mode epoxy & polish connector, ceramic ferrule, metal housing, without boot and crimp band	100/1	**95-200-10-BP00**	
FC multimode epoxy & polish connector, ceramic ferrule, metal housing, without boot and crimp band	100/1	**95-100-10-BP00**	
FC-APC single-mode epoxy & polish connector, ceramic ferrule, metal housing, without boot and crimp band	100/1	**95-211-10-BP00**	

SC Epoxy & Polish Connectors

Designation	Quantity per delivery unit	Order No.	
SC single-mode epoxy & polish connector, ceramic ferrule, composite housing, without boot and crimp band	100/1	**95-200-08-BP00**	
SC multimode epoxy & polish connector, ceramic ferrule, composite housing, without boot and crimp band	100/1	**95-100-48-BP00**	
SC-APC single-mode epoxy & polish connector, ceramic ferrule, composite housing, without boot and crimp band	100/1	**95-211-08-BP00**	
SC duplex clamp, composite black	100/1	**95-400-03-BP**	

Future*Link* Modular BoP

Connectors and Accessories

Boots for ST, SC, FC Connectors, 900 µm

Designation	Quantity per delivery unit	Order No.
Boot, 900 µm, black	100/1	**95-400-08-BP9B**
Boot, 900 µm, blue	100/1	**95-400-08-BP9N**
Boot, 900 µm, green	100/1	**95-400-08-BP9G**
Boot, 900 µm, yellow	100/1	**95-400-08-BP9Y**
Boot, 900 µm, red	100/1	**95-400-08-BP9R**
Boot, 900 µm, white	100/1	**95-400-08-BP9W**

Boots for ST and FC Epoxy and Polish Connectors

Designation	Quantity per delivery unit	Order No.
Boot for ST/FC connector, 2 mm, black	100/1	**95-400-07-BP2B**
Boot for ST/FC connector, 2 mm, blue	100/1	**95-400-07-BP2N**
Boot for ST/FC connector, 2 mm, green	100/1	**95-400-07-BP2G**
Boot for ST/FC connector, 2 mm, yellow	100/1	**95-400-07-BP2Y**
Boot for ST/FC connector, 2 mm, red	100/1	**95-400-07-BP2R**
Boot for ST/FC connector, 2 mm, white	100/1	**95-400-07-BP2W**

Boot for ST/FC connector, 3 mm, black	100/1	**95-400-07-BP3B**
Boot for ST/FC connector, 3 mm, blue	100/1	**95-400-07-BP3N**
Boot for ST/FC connector, 3 mm, green	100/1	**95-400-07-BP3G**
Boot for ST/FC connector, 3 mm, yellow	100/1	**95-400-07-BP3Y**
Boot for ST/FC connector, 3 mm, red	100/1	**95-400-07-BP3R**
Boot for ST/FC connector, 3 mm, white	100/1	**95-400-07-BP3W**

Boots for SC Epoxy and Polish Connectors

Designation	Quantity per delivery unit	Order No.
Boot for SC connector, 2 mm, black	100/1	**95-400-06-BP2B**
Boot for SC connector, 2 mm, blue	100/1	**95-400-06-BP2N**
Boot for SC connector, 2 mm, green	100/1	**95-400-06-BP2G**
Boot for SC connector, 2 mm, yellow	100/1	**95-400-06-BP2Y**
Boot for SC connector, 2 mm, red	100/1	**95-400-06-BP2R**
Boot for SC connector, 2 mm, white	100/1	**95-400-06-BP2W**

Boot for SC connector, 3 mm, black	100/1	**95-400-06-BP3B**
Boot for SC connector, 3 mm, blue	100/1	**95-400-06-BP3N**
Boot for SC connector, 3 mm, green	100/1	**95-400-06-BP3G**
Boot for SC connector, 3 mm, yellow	100/1	**95-400-06-BP3Y**
Boot for SC connector, 3 mm, red	100/1	**95-400-06-BP3R**
Boot for SC connector, 3 mm, white	100/1	**95-400-06-BP3W**

Crimp Band

Designation	Quantity per delivery unit	Order No.
Crimp band for ST, FC and SC Epoxy and Polish connector, for crimping the Aramid yarn	100/1	**95-400-09-BP**

Crimp Tool

Designation	Quantity per delivery unit	Order No.
Crimp tool for heat cured connectors ST, FC, SC ceramic polymer, anaerobic and UV GIC ferrule connectors	1/1	**3201014-01**

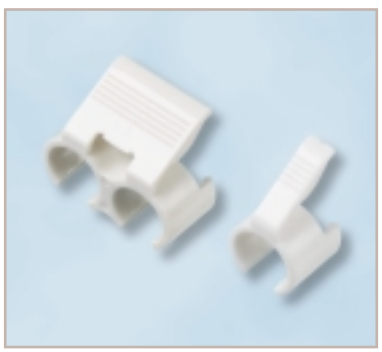
Future*Link* Modular BoP

LC Connectors and Accessories

Technical Data for LC Epoxy & Polish Connectors

Parameter	**Epoxy & polish connectors** for single-mode fibers	**Epoxy & polish connectors** for multimode fibers
Insertion loss	≤ 0.2 dB typical*	≤ 0.3 dB typical*
Reflectance	≤ –55 dB typical	n/a
Durability	Typically ≤ 0.2 dB for 1000 cycles, FOTP-21	Typically ≤ 0.2 dB for 1000 cycles, FOTP-21
Tensile strength	88 N with 2.0 mm single-fiber cable with strain relief	88 N with 2.0 mm single-fiber cable with strain relief
Temperature cycling	Typically ≤ 0.3 dB for 21 cycles in a temperature range of –40 °C to 75 °C	Typically ≤ 0.3 dB for 21 cycles in a temperature range of –40 °C to 75 °C
Material	Ferrule: Ceramic Housing: Composite	Ferrule: Ceramic Housing: Composite

*) When polishing according to Corning instructions/Standard Recommended Procedures (SRPs)

Designation	Quantity per delivery unit	Order No.	
LC single-mode epoxy & polish connector, ceramic ferrule, composite housing, without boot and crimp band	100/1	**95-250-LC-BP00**	
LC multimode epoxy & polish connector, ceramic ferrule, composite housing, without boot and crimp band	100/1	**95-100-LC-BP00**	
Trigger for LC duplex connector or LC duplex clamp, composite	50/1	**TRIGGER-BP-D**	
trigger for LC single connector, composite	100/1	**TRIGGER-BP-S**	

Boots for LC Epoxy and Polish Connectors

Designation	Quantity per delivery unit	Order No.
Boot for LC connector, 900 µm, black	100/1	**95-400-11-BP9B**
Boot for LC connector, 900 µm, blue	100/1	**95-400-11-BP9N**
Boot for LC connector, 900 µm, green	100/1	**95-400-11-BP9G**
Boot for LC connector, 900 µm, yellow	100/1	**95-400-11-BP9Y**
Boot for LC connector, 900 µm, red	100/1	**95-400-11-BP9R**
Boot for LC connector, 900 µm, white	100/1	**95-400-11-BP9W**

Designation	Quantity per delivery unit	Order No.
Boot for LC connector, 2 mm, black	100/1	**95-400-11-BP2B**
Boot for LC connector, 2 mm, blue	100/1	**95-400-11-BP2N**
Boot for LC connector, 2 mm, green	100/1	**95-400-11-BP2G**
Boot for LC connector, 2 mm, yellow	100/1	**95-400-11-BP2Y**
Boot for LC connector, 2 mm, red	100/1	**95-400-11-BP2R**
Boot for LC connector, 2 mm, white	100/1	**95-400-11-BP2W**

90° Degrees Clip for LC connectors

Designation	Quantity per delivery unit	Order No.
90° Clip for LC connectors, with 2 mm boot, black	100/1	**95-400-04-BPB**
90° Clip for LC connectors, with 2 mm boot, blue	100/1	**95-400-04-BPN**
90° Clip for LC connectors, with 2 mm boot, green	100/1	**95-400-04-BPG**
90° Clip for LC connectors, with 2 mm boot, yellow	100/1	**95-400-04-BPY**
90° Clip for LC connectors, with 2 mm boot, red	100/1	**95-400-04-BPR**
90° Clip for LC connectors, with 2 mm boot, white	100/1	**95-400-04-BPW**

Crimp Band / Crimp Tool

Designation	Quantity per delivery unit	Order No.
Crimp band for LC Epoxy and Polish connector, for crimping the Aramid yarn	100/1	**95-400-12-BP2**

Designation	Quantity per delivery unit	Order No.
Crimp tool for LC heat cured connectors	1/1	**2105616-01**

Future*Link* Modular BoP

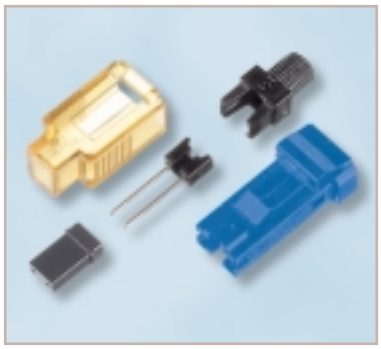
MT-RJ Connectors

Technical Data for MT-RJ Epoxy & Polish Connectors

Parameter	**Epoxy & polish connectors** for single-mode fibers	**Epoxy & polish connectors** for multimode fibers
Insertion loss	≤ 0.3 dB typical*	≤ 0.2 dB typical*
Durability	Typically ≤ 0.2 dB for 1000 cycles, FOTP-21	Typically ≤ 0.3 dB for 1000 cycles, FOTP-21
Material	Ferrule: Composite	Ferrule: Composite
	Housing: Composite	Housing: Composite

*) When polishing according to Corning instructions/Standard Recommended Procedures (SRPs)

MT-RJ Epoxy & Polish Connectors

Designation	Quantity per delivery unit	Order No.	
MT-RJ single-mode epoxy & polish connector, composite ferrule, composite housing, boot black and crimp band	100/1	**91-200-97-BP3B**	
Pins for MT-RJ single-mode epoxy & polish connector	200/1	**91-200-PIN-BP**	
MT-RJ multimode epoxy & polish connector, composite ferrule, composite housing, boot black and crimp band	100/1	**91-100-97-BP3B**	
Pins for MT-RJ multimode epoxy & polish connector	200/1	**91-100-PIN-BP**	

Crimp Tool

Designation	Quantity per delivery unit	Order No.
Crimp tool for MT-RJ heat cured connectors	1/1	**3201023-01**

Future*Link* Modular Connecting Hardware

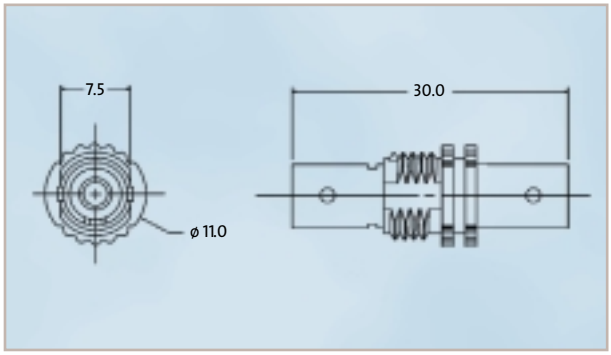
FO Adapters

ST Adapters for mounting in Patch Panels and matching feedthroughs

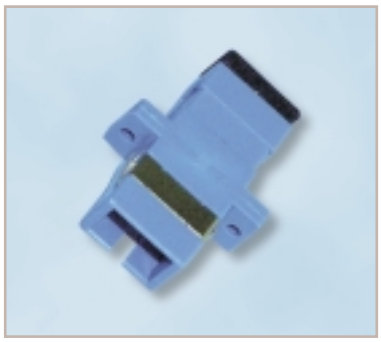
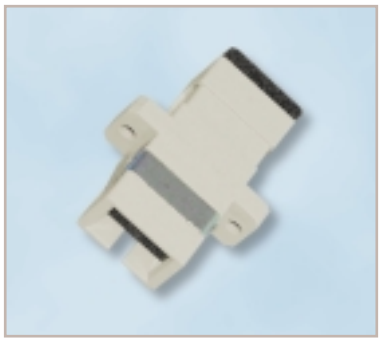
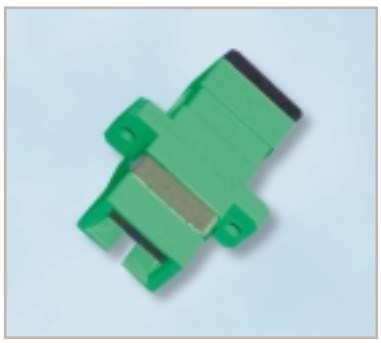
Designation	Quantity per delivery unit	Order No.	
ST adapter for single-mode connectors, metal housing, ceramic sleeve, matching feedthrough **LAXLSN-00001-C000,** with nut for screw-mounting	1/1	**TER-539**	
ST adapter for multimode connectors, metal housing, ceramic sleeve, matching feedthrough **LAXLSN-00001-C000,** with nut for screw-mounting	1/1	**TER-529**	
ST adapter for multimode connectors, composite housing, composite sleeve, matching feedthrough **LAXLSN-00001-C000,** with nut for screw-mounting	1/1	**TER-517**	

ST Adapters – Dimensions and features

- Central mounting threaded
- Locknut included
- Metal housing
- Ceramic sleeve

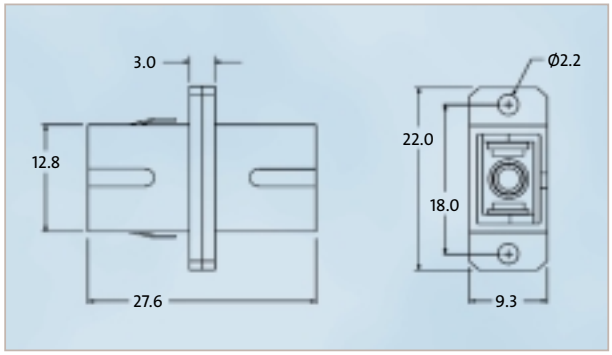


SC Adapters for mounting in Patch Panels and matching feedthroughs

Designation	Quantity per delivery unit	Order No.	
SC adapter for single-mode connectors, composite housing (blue), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-523**	
SC adapter for multimode connectors, composite housing (beige), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-522**	
SC adapter for multimode connectors, composite housing (beige), composite sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-SC-MMP**	
SC-APC adapter for single-mode angled connectors, composite housing (green), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-549**	

SC Adapters – Dimensions and features

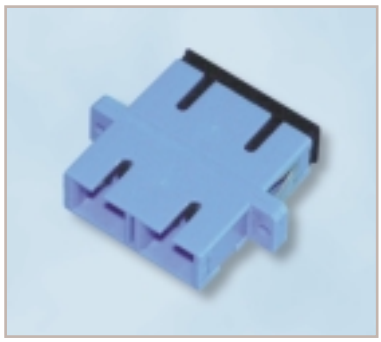
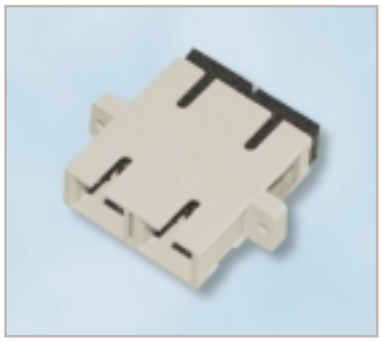
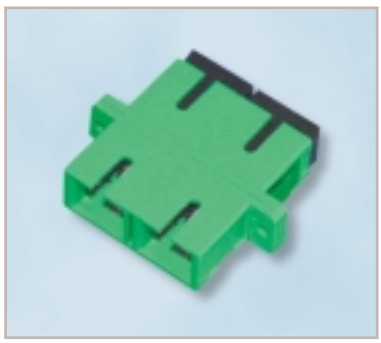
- Flanged mounting with spring plate for plug-in mounting
- Composite housing
- Ceramic sleeve/composite sleeve



Future*Link* Modular Connecting Hardware

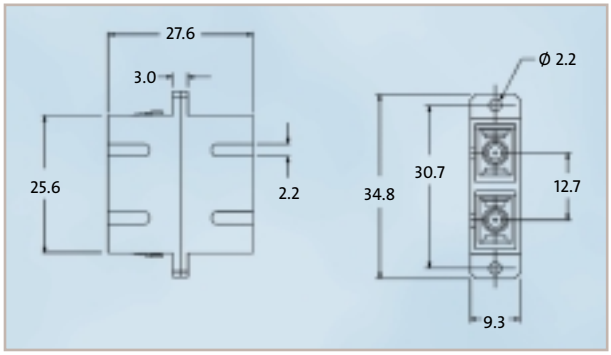
FO Adapters

SC-Duplex-Adapters for mounting in patch panels and matching feedthroughs

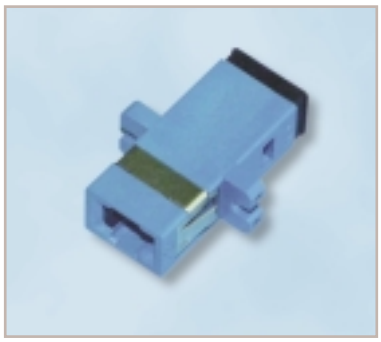
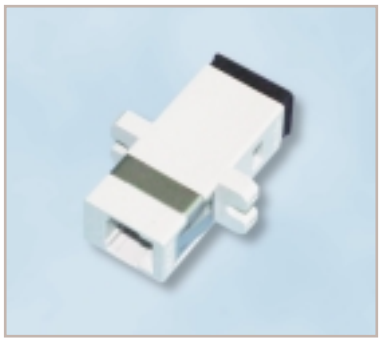
Designation	Quantity per delivery unit	Order No.	
SC-Duplex adapter for single-mode connectors, composite housing (blue), ceramic insert, matching feedthrough **LAXLSN-00201-C000,** with spring plate for plug and play mounting	1/1	**TER-520**	
SC-Duplex adapter for multimode connectors, composite housing (beige), ceramic insert, matching feedthrough **LAXLSN-00201-C000,** with spring plate for plug and play mounting	1/1	**TER-518**	
SC-Duplex adapter for multimode connectors, composite housing (beige), composite insert, matching feedthrough **LAXLSN-00201-C000,** with spring plate for plug and play mounting	1/1	**TER-SC-MMP-D**	
APC SC-Duplex adapter for single-mode angled connectors, composite housing (green), ceramic insert, matching feedthrough **LAXLSN-00201-C000,** with spring plate for plug and play mounting	1/1	**TER-556**	

SC-Duplex-Adapters – Dimensions and Features

– Flanged mounting with spring plate for plug-in mounting
– Composite housing
– Ceramic insert / composite insert

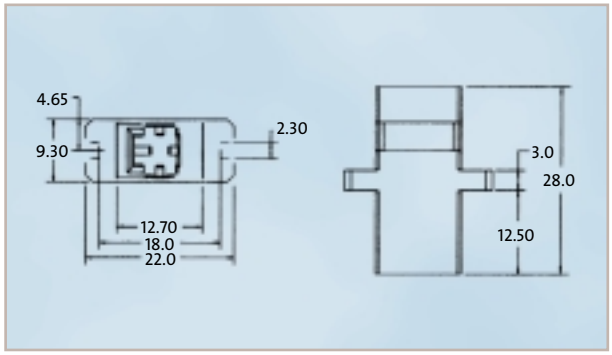


MT-RJ Adapters for mounting in Patch Panels and matching feedthroughs

Designation	Quantity per delivery unit	Order No.	
MT-RJ adapter for single-mode connectors, composite housing (blue), matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-MTRJ-S-P**	
MT-RJ adapter for multimode connectors, composite housing (beige), matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-MTRJ-M-P**	

MT-RJ Adapters – Dimensions and features

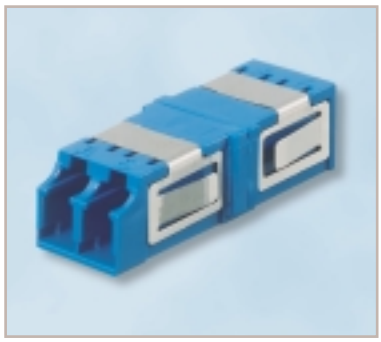
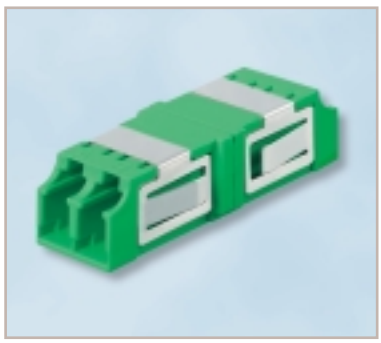
– Flanged mounting with spring plate for plug-in mounting
– Composite housing



Future*Link* Modular Connecting Hardware

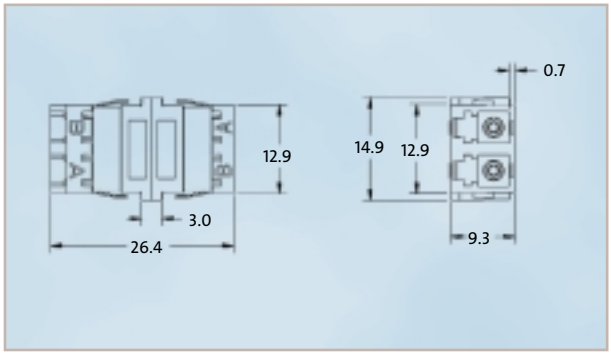
FO Adapters

LC Duplex Adapters for mounting in Patch Panels and matching feedthroughs

Designation	Quantity per delivery unit	Order No.	
LC duplex adapter (SR/JR) for single-mode connectors, composite housing (blue), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-LC-COR-JR-SM**	
LC duplex adapter (SR/JR) for multimode connectors, composite housing (beige), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-LC-COR-JR-MMZ**	
LC duplex APC adapter (SR/SR) for single-mode angled connectors, composite housing (green), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-LC-COR-SR-APC**	

LC Duplex Adapters – Dimensions and features

– Flanged mounting with spring plate for plug-in mounting
– Composite housing
– Ceramic sleeve



Future*Link* Modular Connecting Hardware

FO Hybrid Adapters

FO Hybrid Adapters for mounting in Patch Panels and matching feedthroughs

Designation	Quantity per delivery unit	Order No.	
ST-SC adapter for single-mode / multimode connectors, composite housing (black), ceramic sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-STSC-C**	
ST-SC adapter for single-mode / multimode connectors, composite housing (black), metal sleeve, matching feedthrough **LAXLSN-00001-C001,** with spring plate for plug and play mounting	1/1	**TER-STSC-M**	
ST-SC duplex adapter for single-mode / multimode connectors, composite housing (beige), ceramic sleeve, matching feedthrough **LAXLSN-00201-C000,** with spring plate for plug and play mounting	1/1	**TER-STSC-D-C**	
ST-SC duplex adapter for single-mode / multimode connectors, composite housing (beige), metal sleeve, matching feedthrough **LAXLSN-00201-C000,** with spring plate for plug and play mounting	1/1	**TER-STSC-D-M**	

Future*Link*™ Modular

Connecting Hardware: Field-installable Connectors and Modules

Issue 1

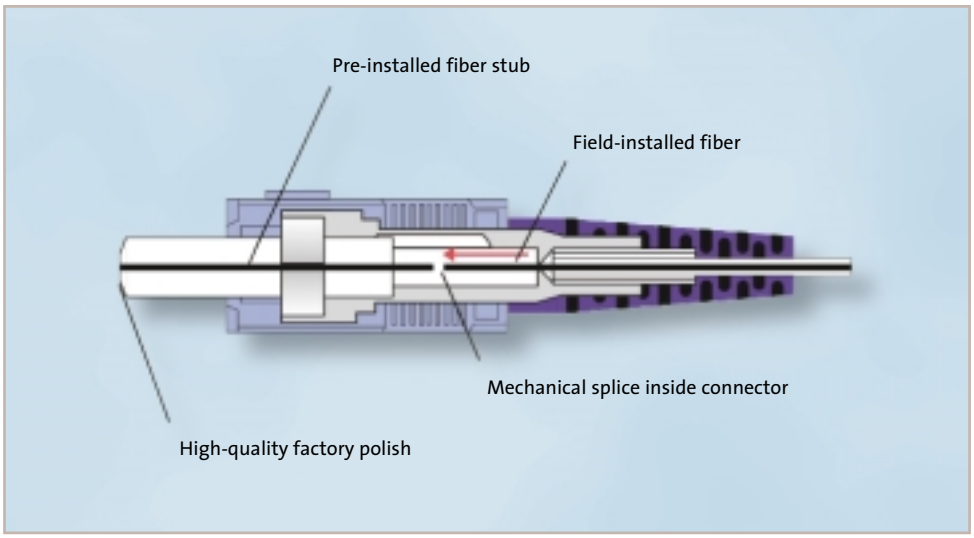
LANscape™

> FutureLink Modular UniCam® – Field-installable Connectors

Using field-installable connectors, where the connectors are mounted on site, avoids the need for accurate surveying of the often complex cable runs before placing the cables. Cable is pulled in and can be cut to the required length at the connecting hardware. As a result, field-installable connectors are often considerably more flexible than pre-assembled cables and the planning effort can be reduced significantly. In addition, the use of field-installable connectors saves installation time and effort, hardware and hence space as well as the associated costs.

Ordinary, commercial field-installable connectors using epoxy and polish techniques frequently do not meet the requirements of modern networks due to variable craftmanship and poor reproducibility. Overpolishing or underpolishing of the end face, scratches on the ferrule end surface or interfering adhesive residues frequently degrade the quality. In addition, environmental factors such as contamination or poor lighting conditions on site can also hamper installation.

The field-installable UniCam® versions provide a high-quality alternative to epoxy and polish connectors. They provide simple, quick and reliable connector installation on site. Fiber stubs are pre-installed in the ferrules of the UniCam® connectors at the factory, thus eliminating the critical epoxy and polish operations in the field. This approach also allows the necessary high-quality, controlled endface processing to be performed as part of the production process in the factory, thus reducing operator influence to a minimum. On site, the stripped and cleaved field fibers are inserted into the UniCam® connectors and retained. A mechanical splice inside the connector establishes the low-loss connection between the fiber to be assembled and the pre-installed fiber inside the connector. Strain relief is provided by crimping on the buffer coating or on the cable jacket by applying crimping sleeves in the fiber insertion area.



UniCam® principle

Field-installable UniCam® Connectors

The UniCam® connector splicing system combines the technical advantages of pigtails with the benefits of field-installable connectors.

- Extremely simple and quick installation in less than a minute
- Reproducible installation procedure producing consistent high quality
- Eliminates the critical and time-consuming steps of conventional field installation – no epoxy and no polishing
- Minimum skill and low investment in tools required
- No additional hardware, such as splice trays, splice protectors, splice boxes or slack storage, necessary
- Suitably adapted UniCam® tool sets available in compact tool bag
- No consumables, such as adhesives or polishing paper, are required-hence no waste problem.

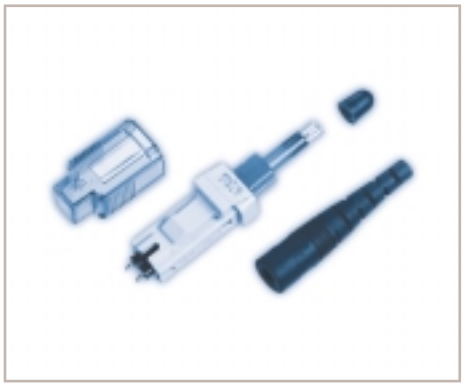
Multifiber Connector MT-RJ

This innovative two-fiber connector provides transmit and receive channels in one connector of highly compact design. It belongs to the group of so-called "Small Form Factor" (SFF) connectors. In contrast to other SFF connectors, the MT-RJ provides two fibers in one ferrule. In addition to the proven "latch" mechanism, the guide pin principle is employed to ensure high-precision alignment of the mated connectors. The MT-RJ connector permits maximum port densities in outlets and patch panels as well as in active components. The standardized MT-RJ interface (according to FOCIS 12 annex to TIA/EIA-604) is therefore supported by a large number of active component manufacturers.

In addition to being used on pre-assembled cables, the MT-RJ is increasingly being used in its field-installable versions. The no-epoxy/no-polish versions of UniCam® combine easy, quick installation with RJ45 compactness to provide a connector predestined for use in private networks right out to the horizontal cabling. Such well thought-through features as the "dual polarity" incorporated in the jacks, modules and adapters, enabling the UniCam® MT-RJ connector to be rotated through 180° to rectify crossed fiber connections, make this connector the first choice for structured building and campus cabling.

Two versions of the Field-installable MT-RJ Connector are available:

1. The UniCam® MT-RJ with the cam locking mechanism, familiar from the UniCam® single-fiber connectors. This connector is used in all network levels. The tool for preparing the fiber and locking the connector is available in a compact tool bag (see tools). Existing tool sets for UniCam® single-fiber connectors can be upgraded.



UniCam® MT-RJ

> FutureLink Modular UniCam® – Field-installable Two-Fiber Connectors

2. The completely new UniCam® QuickPress MT-RJ is used principally in the work area outlets for fiber-to-the-desk (FttD) cabling. The installation procedure for this new plug/jack combination is extremely simple, like connecting speaker wires. A button is pressed to insert and position the previously prepared field fibers. When the button is released, the fibers are aligned securely to each other in the mechanical splice. For easy installation and cleaning, the UniCam® QuickPress MT-RJ can be separated into jack and plug.

Apart from the fiber preparation tool, only a small crimping tool is required for strain relieving to the 900 µm buffer.

UniCam® QuickPress MT-RJ

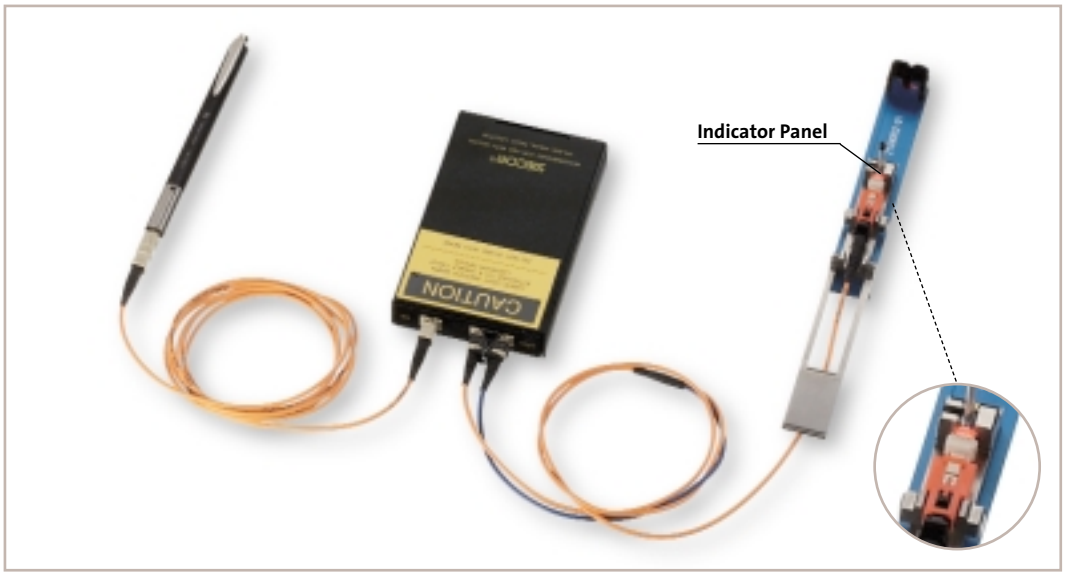
> FutureLink Modular UniCam® – Field-installable Connectors with CTS

Continuity Test System (CTS) Feature

When field-installing two-fiber connectors, it is the reliability that counts.
A special feature, therefore, of the UniCam® MT-RJ and UniCam® QuickPress MT-RJ connectors is that they confirm the state of the connection inside them with a "Go/No go" indication. This is achieved simply by launching visible light into the connector end face. The UniCam® MT-RJ connector is especially designed so that the light scattered by any fiber misalignment in the splice is extracted to an indicator panel on the installation side.
The fibers are correctly aligned when the light in the indicator panel goes out. The installer thus receives an immediate quality verdict and can realign as necessary. Direct on-site assessment of the installation means that costly, time-consuming corrective action during acceptance testing is eliminated almost entirely.

The configuration of the Continuity Test System is shown in the following illustrations.

The indicator panel of the MT-RJ UniCam® connector is behind the latch.



CTS-feature with UniCam® MT-RJ-connector

There are two indicator panels (one for each fiber) integrated in the back side of the housing of the UniCam® QuickPress MT-RJ connector.

CTS-feature with UniCam® QuickPress MT-RJ connector

The required CTS-feature components can be ordered individually or with the UniCam® Tool Set (pages 101 and 102).
The light source and its specific cord to the splitter device must be ordered separatly.

Future*Link* Modular Connecting Hardware

Field-installable UniCam® ST Connector

Designation	Quantity per delivery unit	Order No.	
ST UniCam® Connector, ceramic ferrule, 9 µm, Super PC Polish	1/1	**LAXLSS-00100-C001**	
ST UniCam® Connector, ceramic ferrule, 9 µm, Ultra PC Polish	1/1	**LAXLSS-00100-C007**	
ST UniCam® Connector, ceramic ferrule, 50 µm	1/1	**LAXLSS-00100-C008**	
ST UniCam® Connector, ceramic ferrule, 62.5 µm	1/1	**LAXLSS-00100-C009**	
ST UniCam® Connector, composite ferrule, 62.5 µm	1/1	**LAXLSS-00100-C010**	

Specification of UniCam® ST Connector

Parameter	UniCam® Multimode Connector	UniCam® Single-mode Connector
Interconnection Compatibility	Compliant with TIA/EIA 604-2 for ST compatible connectors	Compliant with TIA/EIA 604-2 for ST compatible connectors
Insertion Loss	≤ 0.3 dB typical*, FOTP-171	≤ 0.4 dB typical*, FOTP-171
Durability	≤ 0.2 dB change for 500 remainings, FOTP-21	≤ 0.3 dB change for 500 remainings, FOTP-21
Tensile Strength	44 N ≤ 0.2 dB change	44 N ≤ 0.2 dB change
Temperature Cycling	≤ 0.3 dB change,	≤ 0.3 dB change,
	–40 °C bis 75 °C, 21 cycles	–40 °C bis 75 °C, 21 cycles
Reflectance	–	Super PC: ≤ –40 dB (+18 °C to +26 °C)
	–	Ultra PC: ≤ –55 dB (+18 °C to +26 °C)
Nominal Fiber OD	125 µm	125 µm
Materials	Ferrule: Composite or Ceramic	Ferrule: Ceramic
	Housing: Composite	Housing: Composite

*) When installing according to Corning Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Field-installable UniCam® SC Connector

Designation	Quantity per delivery unit	Order No.
SC UniCam® Connector, ceramic ferrule, 9 µm, Super PC Polish, housing blue	1/1	**LAXLSS-00100-C002**
SC UniCam® Connector, ceramic ferrule, 9 µm, Ultra PC Polish, housing blue	1/1	**LAXLSS-00100-C011**
SC UniCam® Connector, ceramic ferrule, 50 µm, housing beige	1/1	**LAXLSS-00100-C012**
SC UniCam® Connector, ceramic ferrule, 62.5 µm, housing beige	1/1	**LAXLSS-00100-C013**
SC UniCam® Connector, composite ferrule, 62.5 µm, housing beige	1/1	**LAXLSS-00100-C014**

Specification of UniCam® SC Connector

Parameter	UniCam® Multimode Connector	UniCam® Single-mode Connector
Interconnection Compatibility	Compliant with TIA/EIA 604-3 for SC connectors	Compliant with TIA/EIA 604-3 for SC connectors
Insertion Loss	≤ 0.3 dB typical*, FOTP-171	≤ 0.4 dB typical*, FOTP-171
Durability	≤ 0.2 dB change for 500 remainings, FOTP-21	≤ 0.3 dB change for 500 remainings, FOTP-21
Tensile Strength	44 N ≤ 0.2 dB change	44 N ≤ 0.2 dB change
Temperature Cycling	≤ 0.3 dB change,	≤ 0.3 dB change,
	–40 °C bis 75 °C, 21 cycles	–40 °C bis 75 °C, 21 cycles
Reflectance	–	Super PC: ≤ –40 dB (+18 °C to +26 °C)
	–	Ultra PC: ≤ –55 dB (+18 °C to +26 °C)
Nominal Fiber OD	125 µm	125 µm
Materials	Ferrule: Composite or Ceramic	Ferrule: Ceramic
	Housing: Composite	Housing: Composite

*) When installing according to Corning Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Field-installable UniCam® MT-RJ Connector

Designation	Quantity per delivery unit	Order No.	
MT-RJ UniCam® Connector, 50 µm, with pins, CTS-feature, housing black	1/1	**LAXLSS-00100-C015**	
MT-RJ UniCam® Connector, 62.5 µm, with pins, CTS-feature, housing beige	1/1	**LAXLSS-00100-C016**	

Specification of UniCam® MT-RJ Connector

Parameter	UniCam® Multimode Connector
Insertion Loss	≤ 0.3 dB typical*
Durability	≤ 0.2 dB change for 500 remainings, FOTP-21
Reflectance	≤ –20 dB (minimum)
Nominal Fiber OD	125 µm
Materials	Ferrule: Composite
	Housing: Composite

*) When installing according to Corning Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Field-installable UniCam® QuickPress MT-RJ Connector

Designation	Quantity per delivery unit	Order No.	
UniCam® QuickPress MT-RJ Connector, 50 µm, with pins, CTS-feature	1/1	**LAXLSS-00100-C017**	
UniCam® QuickPress MT-RJ Connector, 62.5 µm, with pins, CTS-feature	1/1	**LAXLSS-00100-C018**	
The Keystone Adapter is necessary for integrating the **UniCam® QuickPress MT-RJ Connector** into the modular LANscape frame sets. Alternatively, **QuickPress MT-RJ module** can be used (page 105).			
KeyStone Adapter for UniCam® QuickPress MT-RJ Connector, white, RAL 9010 Needs 1 modular LANscape port in frame sets	6/1	**LAXLSN-00101-C002**	

Specification of UniCam® QuickPress MT-RJ Connector

Parameter	UniCam® Multimode Connector
Insertion Loss	≤ 0.3 dB typical*
Durability	≤ 0.2 dB change for 500 remainings, FOTP-21
Reflectance	≤ –20 dB (minimum)
Nominal Fiber OD	125 µm
Materials	Ferrule: Composite
	Housing: Composite

*) When installing according to Corning Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Field-installable UniCam® LC Connector

Designation	Quantity per delivery unit	Order No.	
LC UniCam® Connector, ceramic ferrule, 9 µm, Ultra PC, housing blue	1/1	**LAXLSS-00100-C026**	
LC UniCam® Connector, ceramic ferrule, 50 µm, housing black	1/1	**LAXLSS-00100-C027**	
LC UniCam® Connector, ceramic ferrule, 62.5 µm, housing beige	1/1	**LAXLSS-00100-C028**	
Trigger/Duplex Clip for LC, composite	50/1	**TRIGGER-BP-D**	

Specification of UniCam® LC Connector

Parameter	UniCam® Multimode Connector	UniCam® Single-mode Connector
Interconnection Compatibility	Compliant with TIA/EIA 604-10 for LC connectors	Compliant with TIA/EIA 604-10 for LC connectors
Insertion Loss	≤ 0.3 dB typical*, FOTP-171	≤ 0.4 dB typical*, FOTP-171
Durability	≤ 0.2 dB change for 500 remainings, FOTP-21	≤ 0.2 dB change for 500 remainings, FOTP-21
Reflectance	–	Ultra PC: ≤ –55 dB typisch
Nominal Fiber OD	125 µm	125 µm
Materials	Ferrule: Ceramic	Ferrule: Ceramic
	Housing: Composite	Housing: Composite
Ferrule	1.25 mm	1.25 mm

*) When installing according to Corning Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Field-installable UniCam® FC Connector

Designation	Quantity per delivery unit	Order No.
FC UniCam® Connector, ceramic ferrule, 9 µm, Super PC Polish	1/1	**LAXLSS-00100-C003**
FC UniCam® Connector, ceramic ferrule, 9 µm, Ultra PC Polish	1/1	**LAXLSS-00100-C023**
FC UniCam® Connector, ceramic ferrule, 62.5 µm	1/1	**LAXLSS-00100-C025**

Specification of UniCam® FC Connector

Parameter	UniCam® Multimode Connector	UniCam® Single-mode Connector
Interconnection Compatibility	Compliant with TIA/EIA 604-4 for FC connectors	Compliant with TIA/EIA 604-4 for FC connectors
Insertion Loss	≤ 0.3 dB typical*, FOTP-171	≤ 0.4 dB typical*, FOTP-171
Durability	≤ 0.2 dB change for 500 remainings, FOTP-21	≤ 0.3 dB change for 500 remainings, FOTP-21
Tensile Strength	44 N ≤ 0.2 dB change	44 N ≤ 0.2 dB change
Temperature Cycling	≤ 0.3 dB change,	≤ 0.3 dB change,
	–40 °C bis 75 °C, 21 cycles	–40 °C bis 75 °C, 21 cycles
Reflectance	–	Super PC: ≤ –40 dB (+18 °C to +26 °C)
	–	Ultra PC: ≤ –55 dB (+18 °C to +26 °C)
Nominal Fiber OD	125 µm	125 µm
Materials	Ferrule: Ceramic	Ferrule: Ceramic
	Housing: Composite	Housing: Composite

*) When installing according to Corning Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Tool Sets and Accessories for Field-installable UniCam® Connectors

UniCam® Tool sets

The UniCam® tool set contains all the tools required for field-installation of UniCam® connectors. It is available in two variations, without and with the CTS Test Set (strongly recommended for MT-RJ UniCam® and UniCam® QuickPress MT-RJ connectors).

Designation	Quantity per delivery unit	Order No.
UniCam® tool set for ST, FC and SC UniCam® connectors	1/1	**LAXLSN-00000-C001**

Designation	Application
1. Clauss fiber stripping tool	Stripping to 125 mm
2. Clauss stripping tool WS 5	Stripping 0.8 to 2.6 mm (jacket of single-fiber cable or Zipcord)
3. Telephone scissors 130 mm	Universal, cutting Kevlar
4. Waterproof pen, black	Markings
5. No-Nik® 203 mm stripping tool	Stripping of 900 µm buffers
6. UniCam® assembly tool	Connectorizing and crimping the 900 µm insertion tube
7. UniCam® crimp tool	For crimping the Aramid yarns of single-fiber cables
8. Insulating tape	e. g. for save fiber waste disposal
9. Tweezers	e. g. for taking fibers out of the cleaver
10. Loctite 411 adhesive	Additional cable strain relief
11. Alcohol wipes	Cleaning the fiber
12. Numeric marking	Marking the connectors
13. Installation instructions	Standard Recommended Procedures (SRPs)
14. Cleaver	Cleaving the fibers

Designation	Quantity per delivery unit	Order No.
UniCam® CTS tool set for ST, FC, SC, LC and MT-RJ UniCam® connectors, incl. CTS kit	1/1	**LAXLSN-00000-C002**

Designation	Application
1. Clauss fiber stripping tool	Stripping to 125 µm
2. Clauss stripping tool WS 5	Stripping 0.8 to 2.6 mm (jacket of single-fiber cable or Zipcord)
3. Telephone scissors 130 mm	Universal, cutting Kevlar
4. Waterproof pen, black	Markings
5. No-Nik® 203 µm stripping tool	Stripping of 900 µm buffers
6. UniCam® assembly tool	Connectorizing and crimping the 900 µm insertion tube
7. UniCam® crimp tool for single-fiber connectors	For crimping the Aramid yarns of single-fiber cables
8. Insulating tape	e. g. for save fiber waste disposal
9. Tweezers	e. g. for taking fibers out of the cleaver
10. Loctite 411 adhesive	Additional cable strain relief
11. Alcohol wipes	Cleaning the fiber
12. Numeric marking	Marking the connectors
13. Installation instructions	Standard Recommended Procedures (SRPs)
14. Cleaver	Cleaving the fibers
15. Splitter device	CTS test kit
16. Patch cord SC duplex / MT-RJ (no pins)	CTS test kit
in single- and multimode versions	

The light source and its specific connecting cord to the splitter device must be ordered separately.

Future*Link* Modular Connecting Hardware

Tool Sets and Accessories for Field-installable UniCam® Connectors

Accessories for UniCam® Tool Sets

Designation	Quantity per delivery unit	Order No.	
CTS-Upgrade Kit, for standard UniCam® tool kit LAXLSN-00000-C001	1/1	**LAXLSN-00000-C048**	
Light source, for visual fault location	1/1	**LAXLSN-00000-C000**	
Crimping tool, for UniCam® QuickPress MT-RJ Connector	1/1	**LAXLSN-00000-C003**	

Future*Link* Modular Connecting Hardware

Field-installable Fast Cure GIC Connectors

Field-installable Fast Cure GIC Connectors

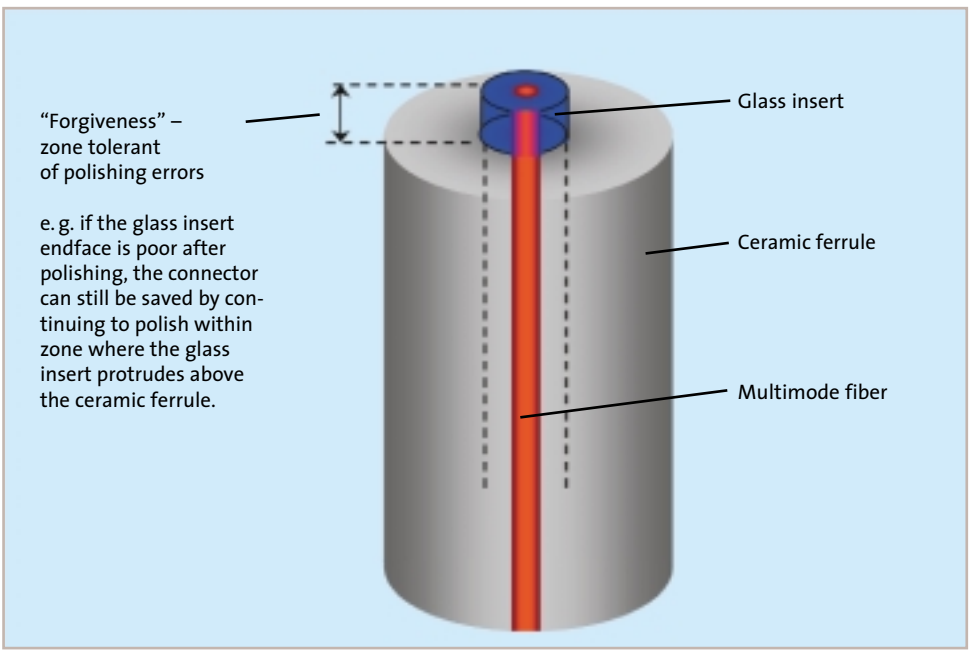
The SC and ST Fast Cure Glass-Insert Multimode Connectors (GIC) are designed to incorporate all the polishing advantages of a glass-insert ceramic ferrule with the fast-curing of two-component self-curing adhesives. The two-component adhesive allows for quick and reliable installation of the fiber in the connector ferrule, and ensures that the fiber is secured reliably all along the ferrule, including the fiber end. The connector parts are pre-assembled to save time and increase productivity.
The ferrule holder is made of metal and can come into contact with the adhesive without sustaining damage. The Fast Cure GIC can be installed on 900 µm buffers or on single-fiber cables with outside diameters of 2.0, 2.4 and 3.0 mm.

Characteristics

- No UV lamp or oven required
- Glass-insert ferrule for reliable installation of the fiber and easy, forgiving polishing
- Short installation time of less than 3 minutes
- Low cost
- Insertion loss for PC polishing typically 0.2 dB

Installation

Installation of the Fast Cure GIC can be performed quickly and easily and requires very little practice.
After preparation of cable and fiber, the adhesive is put into the ferrule. The field fiber is dipped in the hardener and inserted into the connector, then cleaved and polished with the polishing fixture and polishing film (included in the Fast Cure GIC tool set).



Future*Link* Modular Connecting Hardware

Field-installable Fast Cure GIC Connectors

Designation	Quantity per delivery unit	Order No.
ST connector for multimode fiber (metal bayonet)	1/1	**LAXLSS-00100-C019**
ST connector for multimode fiber (composite bayonet)	1/1	**LAXLSS-00100-C020**
SC connector for multimode fiber	1/1	**LAXLSS-00100-C021**

Technical Data for Fast Cure GIC Connectors

Parameter	Fast Cure GIC connectors for multimode fibers
Compatibility	Compatible with all ST (compatible) and SC connectors
Assembly time	Total time per connector: about 3 min.
	Curing: about 45 seconds
	Polishing: about 45 seconds
Insertion loss	≤ 0.2 dB typical*, FOTP-171
Fiber requirement	Multimode fiber with glass diameter of 125 µm and tight buffer diameter of 900 µm
Durability	Typically ≤ 0.2 dB for 500 cycles, FOTP-21
Cable Retention	Typically ≤ 0.2 dB at 88 N, FOTP-6
Thermal shock	Typically ≤ 0.3 dB for 10 cycles in a temperature range –40 °C to 60 °C
Temperature cycling	Typically ≤ 0.3 dB for 21 cycles in a temperature range –40 °C to 75 °C, FOTP-3
Humidity	Typically ≤ 0.3 dB at 60 °C with 95 % RH and a duration of 168 h, FOTP-5
Material	Ferrule: Glass in ceramic
	Housing: Composite or metal (ST connectors only)

*) When polishing according to Corning instructions/Standard Recommended Procedures (SRPs)

Future*Link* Modular Connecting Hardware

Tool Set and Accessories for Field-installable Fast Cure GIC Connectors

Fast Cure GIC Tool set

The Fast Cure GIC tool set contains all the tools required for field installation of Fast Cure GIC connectors. The consumable items (adhesive and polishing film) are also available separately.

Designation	Quantity per delivery unit	Order No.
Tool set for Fast Cure GIC, ST and SC connectors, contains all the necessary tools and consumables for the assembly of 500 connectors and cable/fiber preparation	1/1	**LAXLSN-00000-C004**

Fast Cure GIC Tool set accessories

Designation	Quantity per delivery unit	Order No.
Consumables set, contains adhesive and polishing film for 500 connector assemblies	1/1	**LAXLSN-00000-C005**

Future*Link* Modular Connecting Hardware

Mechanical Splice – CamSplice®

Application:

The CamSplice® is a mechanical splice for single-mode and multimode fibers that is quick and easy to use. Its principal feature is the cam locking mechanism that fixes the inserted fiber in position without the use of adhesive. Together with a precision glass V-groove this mechanism provides a unique, patented positioning method affording extremely accurate alignment of the fibers. For enhanced tensile and torsional strength on 900 µm coated fibers, the CamSplice® ATC is available to provide additional crimping on the 900 µm buffer. The CamSplice® ATC crimping tool is required for this purpose.

Features:

- For coating diameters from 250 to 900 µm
- Splice attenuation can be optimized during installation
- Reusable and can be released on one side
- No bonding necessary
- Self-centering fiber alignment
- Index-matching fluid included

Designation	Quantity per delivery unit	Order No.
CamSplice® ATC, for additional strain relief on 900 µm tight buffer	6/1	**LAXLSK-00100-C008**
CamSplice®	6/1	**LAXLSK-00100-C007**

Technical Data for CamSplice®

Parameter	Specification
Dimensions	44 mm (1.73 in) length x 4.2 mm (0.17 in) width (Cam)
Mean Splice Loss	0.15 dB
Blind Splice Loss	< 0.5 dB typical
Temperature Range	–40 to 75 °C, < 0.1 dB average variation
Vibration	10 to 55 Hz with 1.52 mm (0.06 in) maximum excursion, three planes, < 0.5 dB variation, two hours in each plane
Tensile	2.2 N
Reflectance	≥ 45 dB

Future*Link* Modular Connecting Hardware

Furcation and Fan-Out Kits

Cable Furcation Kit

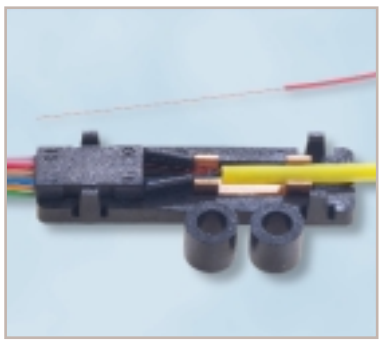
The cable furcation kit enables connectors to be applied directly to multifiber-bundle or central-tube cables with up to 24 fibers with 250 µm coating diameter. The very robust fan-out tubings (in groups of 6) with 900 µm insert, kevlar braid and 2.9 mm jacket are inserted in a composite receptacle and screwed to a retainer on the cable. The retainer has a central member strain-relief and is enclosed in a sleeve. The primary-coated fibers are inserted into the fan-out tubings. They can then be used like 2.9 mm single-fiber indoor cables and assembled with field-installable connectors.

Designation	Quantity per delivery unit	Order No.
Cable furcation kit for up to 24 fibers, single-mode (yellow), length 1 m	1/1	**LAXLSN-00000-C006**
Cable furcation kit for up to 24 fibers, multimode (orange), length 1 m	1/1	**LAXLSN-00000-C007**

Fan-Out Kit

The fan-out kit enables connectors to be applied directly to minibundle cables with up to 12 250 µm coated fibers per buffertube. The kit consists of a pre-connectorized 900 µm fan-out assembly with 6 or 12 tubings, a composite top and a bottom part into which the multifiber-buffer tube is simply clipped. The individual primary-coated fibers of the buffer tubes are inserted simultaneously into the fan-out tubes. The fan-out tubings are color-coded. They can then be used like 900 µm coated fibers and assembled with field-installable connectors.

Designation	Quantity per delivery unit	Order No.
Fan-out kit for 2 to 6 fibers, length approx. 0.6 m	1/1	**LAXLSN-00000-C056**
Fan-out kit for 2 to 6 fibers, length approx. 1.2 m	1/1	**LAXLSN-00000-C008**
Fan-out kit for 7 to 12 fibers, length approx. 0.6 m	1/1	**LAXLSN-00000-C055**
Fan-out kit for 7 to 12 fibers, length approx. 1.2 m	1/1	**LAXLSN-00000-C009**



Future*Link* Modular Connecting Hardware

FO Modules

Application

The Future*Link* fiber-optic modules and the Future*Com* copper connecting hardware have identical mechanical interfaces so they can be used in combination in the same outlets and patch panels. This means that both traditional copper-based communications (e. g. telephony/fax) and high-performance or future fiber-optic data communications can be transmitted over the horizontal cabling at the same time. It is thus possible to prepare today's cabling for tomorrow's most demanding requirements with a future-proof system right through to the desktop.
FO modules consist of an FO feedthrough with an installed or integral adapter. The modules for single-MT-RJ, MT-RJ QuickPress, SC simplex and ST adapters and for the blank cover require one mounting position, while the SC duplex and triple-MT-RJ modules occupy two mounting positions in outlets and patch panels.

Designation	Quantity per delivery unit	Order No.	
ST module, with adapter (metal housing, ceramic insert) for single-mode connectors, white, RAL 9010	1/1	**LAXLSM-00101-C000**	
ST module, with adapter (metal housing, ceramic insert) for multimode connectors white, RAL 9010 ST modules require 1 mounting position	1/1	**LAXLSM-00101-C001**	
SC module, with adapter (composite housing blue, ceramic insert) for single-mode connectors, white, RAL 9010	1/1	**LAXLSM-00101-C002**	
SC module, with adapter (composite housing beige, ceramic insert) for multimode connectors, white, RAL 9010 SC modules require 1 mounting position	1/1	**LAXLSM-00101-C003**	
SC duplex module, with adapter (composite housing blue, ceramic insert) for single-mode connectors, white, RAL 9010	1/1	**LAXLSM-00201-C000**	
SC duplex module, with adapter (composite housing beige, ceramic insert) for multimode connectors, white, RAL 9010 SC duplex modules require 2 mounting positions	1/1	**LAXLSM-00201-C001**	

"Small Form Factor" FO Modules

Designation	Quantity per delivery unit	Order No.	
1-port MT-RJ module, for single-mode and multimode connectors. The adapter is integrated and has "dual polarity" feature allowing the keying to be reversed, white, RAL 9010 Require 1 mounting position	1/1	**LAXLSM-00101-C004**	
3-port MT-RJ module, for single-mode and multimode connectors. The adapter is integrated and has "dual polarity" feature allowing the keying to be reversed, white, RAL 9010 Require 2 mounting positions	1/1	**LAXLSM-00201-C002**	
QuickPress MT-RJ module 50 µm, with pins and CTS-feature, suitable for modular LANscape frame sets, white, RAL 9010	1/1	**LAXLSM-00101-C008**	
QuickPress MT-RJ module 62.5 µm, with pins and CTS-feature, suitable for modular LANscape frame sets, white, RAL 9010 QuickPress MT-RJ modules require 1 mounting position in modular LANscape frame sets	1/1	**LAXLSM-00101-C009**	
LC duplex module, with adapter (composite housing blue) for single-mode connectors, white, RAL 9010	1/1	**LAXLSM-00101-C006**	
LC duplex module, with adapter (composite housing beige) for multimode connectors, white, RAL 9010 LC duplex modules require 1 mounting position	1/1	**LAXLSM-00101-C007**	

Future*Link* Modular Connecting Hardware

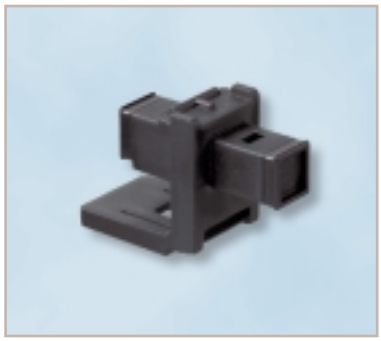
FO Modules

Design Line

The fiber-optic modules are also available with black frames for application in black face-plate frame kits and floor box solutions.
They can be used in conjunction with the black patch panels, blank panels, cable management panels and cable feedthrough panels to configure all black cabinets.

Designation	Quantity per delivery unit	Order No.	
ST module, with adapter (metal housing, ceramic insert) for single-mode connectors, black, RAL 9005	1/1	**LAXLSM-00108-C000**	
ST module, with adapter (metal housing, ceramic insert) for multimode connectors black, RAL 9005 ST modules require 1 mounting position	1/1	**LAXLSM-00108-C001**	
SC module, with adapter (composite housing blue, ceramic insert) for single-mode connectors, black, RAL 9005	1/1	**LAXLSM-00108-C002**	
SC module, with adapter (composite housing beige, ceramic insert) for multimode connectors, black, RAL 9005 SC modules require 1 mounting position	1/1	**LAXLSM-00108-C003**	
SC duplex module, with adapter (composite housing blue, ceramic insert) for single-mode connectors, black, RAL 9005	1/1	**LAXLSM-00208-C000**	
SC duplex module, with adapter (composite housing beige, ceramic insert) for multimode connectors, black, RAL 9005 SC duplex modules require 2 mounting positions	1/1	**LAXLSM-00208-C001**	

"Small Form Factor" FO Modules

Designation	Quantity per delivery unit	Order No.	
1-port MT-RJ module, for single-mode and multimode connectors. The adapter is integrated and has "dual polarity" feature allowing the keying to be reversed, black, RAL 9005 Require 1 mounting position	1/1	**LAXLSM-00108-C004**	
3-port MT-RJ module, for single-mode and multimode connectors. The adapter is integrated and has "dual polarity" feature allowing the keying to be reversed, black, RAL 9005 Require 2 mounting positions	1/1	**LAXLSM-00208-C002**	
QuickPress^{e} MT-RJ module 50 µm, with pins and CTS-feature, suitable for using in LANscape patchpanels and frame sets, black, RAL 9005	1/1	**LAXLSM-00108-C008**	
QuickPress^{e} MT-RJ module 62.5 µm, with pins and CTS-feature, suitable for using in LANscape patchpanels and frame sets, black, RAL 9005 QuickPress^{e} MT-RJ modules require 1 mounting position, **available second half of 2002**	1/1	**LAXLSM-00108-C009**	
LC duplex module, with adapter (composite housing blue) for single-mode connectors, black, RAL 9005	1/1	**LAXLSM-00108-C006**	
LC duplex module, with adapter (composite housing beige) for multimode connectors, black, RAL 9005 LC duplex modules require 1 mounting position	1/1	**LAXLSM-00108-C007**	

Notes

Future*Link*™ Modular

Outlets, Floor Box and Patch Panel Solutions

Issue 1

LANscape™

Future*Link* Modular Connecting Hardware

Outlets and Outlet Accessories

The LANscape system provides outlet solutions for all popular installation variants and mounting styles. There are various designs available for surface, flush and raceway mounting.
The LANscape system includes various frame sets which can be combined for individual requirements to produce the outlet configurations from one up to six ports.
In addition, the Future*Link* Modular System provides two inclined outlets with two ST and MT-RJ modules respectively, as well as an SC duplex module (multimode).
The frame sets, with a central plate size of 50 x 50 mm, can be combined e. g. with “DELTAprofil” and “DELTAfläche” faceplates but also with many other manufacturers.

Designation	Quantity per delivery unit	Order No.	
FO outlet, with two ST modules with adapters for multimode connectors, inclined, incl. mounting frame, central plate 50 x 50 mm, with designation window, screw fixing, (without faceplate),			
white, RAL 9010	1/1	**LAXLSD-S0201-C000**	
pearl white, RAL 1013	1/1	**LAXLSD-S0202-C000**	
FO outlet, with one SC duplex module with adapter for multimode connector, inclined, incl. mounting frame, central plate 50 x 50 mm, with designation window, screw fixing, (without faceplate),			
white, RAL 9010	1/1	**LAXLSD-S0201-C001**	
pearl white, RAL 1013	1/1	**LAXLSD-S0202-C001**	
FO outlet, with two MT-RJ modules, inclined, incl. mounting frame, central plate 50 x 50 mm, with designation window, screw fixing, (without faceplate),			
white, RAL 9010	1/1	**LAXLSD-S0201-C002**	
pearl white, RAL 1013	1/1	**LAXLSD-S0202-C002**	

Frame Sets for individual configuration of outlets

Designation

Designation	Quantity per delivery unit	Order No.
Frame set, inclined for 2 LANscape modules, comprising mounting frame and central plate 50 x 50 mm with designation window, screw fixing, for 2 simplex modules, one duplex- or one MT-RJ 3-port-module,		
white, RAL 9010	1/1	**WAXWSE-S0201-C001**
pearl white, RAL 1013	1/1	**WAXWSE-S0202-C001**

can not be used with SC simplex modules

Design Line – Special Color Variants

Designation	Quantity per delivery unit	Order No.
Frame set, inclined for 2 LANscape modules, comprising mounting frame and central plate 50 x 50 mm with designation window, screw fixing, for 2 simplex modules, one duplex- or one MT-RJ 3-port-module,		
light gray, RAL 7035	1/1	**WAXWSE-S0203-C001**
black, RAL 9005	1/1	**WAXWSE-S0208-C001**

can not be used with SC simplex modules

Designation	Quantity per delivery unit	Order No.
Frame set, projecting inclined, for 2 LANscape modules, comprising mounting frame and central plate 50 x 50 mm with designation window and protective doors, for 2 simplex modules, one duplex- or one MT-RJ 3-port-module,		
white, RAL 9010	1/1	**WAXWSE-V0201-C001**
pearl white, RAL 1013	1/1	**WAXWSE-V0202-C001**

Future*Link* Modular Connecting Hardware

Outlets and Outlet Accessories

Designation	Quantity per delivery unit	Order No.
Faceplate, "DELTAprofil", 80 x 80 mm, for LANscape outlets		
white, RAL 9010	1/1	**WAXWSE-00001-C001**
pearl white, RAL 1013	1/1	**WAXWSE-00002-C001**

Faceplate, "DELTAfläche", 75 x 75 mm, for LANscape outlets,		
white, RAL 9010	1/1	**WAXWSE-00001-C002**
pearl white, RAL 1013	1/1	**WAXWSE-00002-C002**

Surface mount housings from Siemens are available by distributors for these faceplates ("DELTAfläche"/ "DELTAprofil").

Designation	Quantity per delivery unit	Order No.
Blank cover, 1 position for installation in LANscape patch panels, outlets and floor box solutions		
white, RAL 9010	6/1	**WAXWSM-00101-C001**
black, RAL 9005	6/1	**WAXWSM-00108-C001**

Combi-frame for individual configuration of outlets

Designation	Quantity per delivery unit	Order No.
Combi-frame "DELTAprofil", 80 x 80 mm, inclined, for 3 LANscape modules		
white, RAL 9010	1/1	**WAXWSE-S0301-C001**
pearl white, RAL 1013	1/1	**WAXWSE-S0302-C001**
Combi-frame "DELTAfläche", 75 x 75 mm, inclined, for 3 LANscape modules		
white, RAL 9010	1/1	**WAXWSE-S0301-C002**
pearl white, RAL 1013	1/1	**WAXWSE-S0302-C002**

Surface mount housings from Siemens are available by distributors for these faceplates ("DELTAfläche"/"DELTAprofil").

Installation Variants (Examples)

Combi-frame "DELTAprofil" assembled

Combi-frame „DELTAprofil", 80 x 80 mm,
inclined, white, RAL 9010
WAXWSE-S0301-C001

...equipped with two simplex **MT-RJ modules,**
for multimode connectors
LAXLSM-00101-C004
...and one U100^{e} module
CAXUSM-00100-C001

Combi-frame "DELTAfläche" assembled

Combi-frame „DELTAfläche", 75 x 75 mm,
inclined, white, RAL 9010
WAXWSE-S0301-C002

...equipped with two simplex **ST modules,**
for multimode connectors
LAXLSM-00101-C001
...and one U100^{e} module
CAXUSM-00100-C001

Future*Link* Modular Connecting Hardware

Outlets and Outlet Accessories

Inclined Outlets with Protective Doors, for Simplex, Duplex or MT-RJ 3-Port Modules

Designation	Quantity per delivery unit	Order No.
Frame set, projecting, inclined, for 3 LANscape modules, comprising mounting frame and 3-port housing with designation window and protective doors, plus faceplate 80x80 mm		
white, RAL 9010	1/1	**WAXWSE-V0301-C001**
pearl white, RAL 1013	1/1	**WAXWSE-V0302-C001**

Frame set, projecting, inclined, for 6 LANscape modules, comprising mounting frame and two 3-port housings with designation window and protective doors, plus faceplate 151x80 mm		
white, RAL 9010	1/1	**WAXWSE-V0601-C001**
pearl white, RAL 1013	1/1	**WAXWSE-V0602-C001**

Installation Variant (Example)

Frame set, projecting, inclined, for 3 modules, integrated in a wall raceway

Frame set, projecting, inclined,for 3 LANscape modules, comprising mounting frame and 3-port housing with designation window and protective doors, plus faceplate 80x80 mm, white, RAL 9010.

WAXWSE-V0301-C001

... equipped with one MT-RJ module
LAXLSM-00101-C004

... two ST modules, single-mode
LAXLSM-00101-C000

... one yellow identifying icon
WAXWSE-00005-C001

... two blue identifying icons
WAXWSE-00004-C001

... one yellow ST patch cable, single-mode
LCALI2-A2311-A020

... and one orange MT-RJ patch cable, multimode
LCALI2-B7344-A010

integrated in a wall raceway

Identifying Icons and Designation Labels for individually port-coding and outlet-labeling

All frame sets with a 50x50 mm central plate as well as the three- and six-port frame sets make it possible to code each port by using identifying icons.
The icons are reversible, showing a phone on one side and a computer (LAN) on the other. They are available in six different colors.
Furthermore, these frame sets have a designation window with a clear composite cover for inserting a designation label.

Designation	Quantity per delivery unit	Order No.
Identifying icon, computer/phone, gray, RAL 7042	120/1	**WAXWSE-00003-C001**
Identifying icon, computer/phone, blue, RAL 5015	120/1	**WAXWSE-00004-C001**
Identifying icon, computer/phone, yellow, RAL 1021	120/1	**WAXWSE-00005-C001**
Identifying icon, computer/phone, green, RAL 6029	120/1	**WAXWSE-00006-C001**
Identifying icon, computer/phone, red, RAL 3000	120/1	**WAXWSE-00007-C001**
Identifying icon, computer/phone, black, RAL 9005	120/1	**WAXWSE-00008-C001**

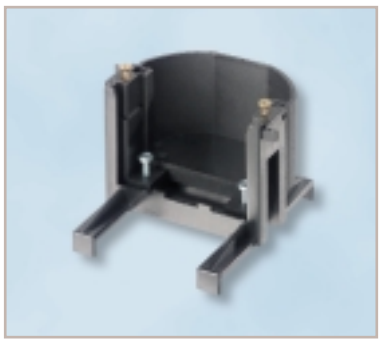
Designation sheet DIN A4, with 150 designation labels for LANscape outlets, white, e. g. for labeling via PC-printer	10/1	**WAXWSE-00001-C009**

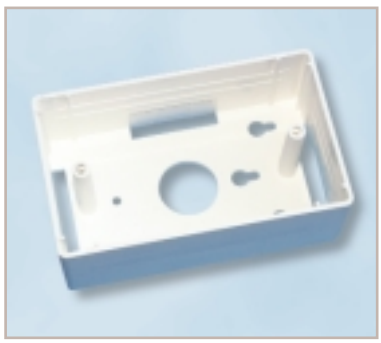
Future*Link* Modular Connecting Hardware

Outlets and Outlet Accessories

Brackets for Raceway mounting

The following brackets support quick and simple installation of outlets and frame sets in raceways. They also support compliance with the minimum bend radius requirements for copper and fiber cables.
The brackets come with an optionally insertable half-shell providing isolation from AC power systems.
The half-shell has the added advantage of providing the fiber-optic link with protection from mechanical damage when new cables are pulled in.
The brackets are suitable for Tehalit and Ackermann raceways with T-groove mounting.
All frame sets and outlets from pages 114 to 118 are compatible.

Designation	Quantity per delivery unit	Order No.	
Bracket for raceway mounting of outlets and frame sets, T-groove mounting, height 50 mm, with isolating shell, white, RAL 9010	1/1	**WAXWSE-00001-C010**	
Bracket for raceway mounting of outlets and frame sets, T-groove mounting, height 55 mm, with isolating shell, black	1/1	**WAXWSE-00008-C002**	

Designation	Quantity per delivery unit	Order No.	
Surface mount housing, 67x110 mm, for combi-frame (67x110 mm), white, RAL 9010	1/1	**WAXWSE-00001-C008**	
Combi-frame, 67x110 mm, for mounting 2 LANscape modules, inclined, (only simplex modules can be used) white, RAL 9010	1/1	**WAXWSE-V0201-C004**	
Surface combi-frame set, 67x110 mm, for mounting 2 LANscape modules, inclined (only simplex modules can be used) white, RAL 9010	1/1	**WAXWSE-V0201-C003**	

Future*Link* Modular Connecting Hardware

Outlets and Outlet Accessories

Designation	Quantity per delivery unit	Order No.	
Surface mount housing, 87x87 mm, incl. two screws for faceplate (87x87 mm), white, RAL 9010	1/1	**WAXWSE-00001-C004**	
Faceplate, 87x87 mm, for a module housing, including two screws metric and two screws whitworth, for mounting faceplate in installation outlets white, RAL 9010	1/1	**WAXWSE-00001-C005**	
Surface mount housing, 87x147 mm, incl. two screws for faceplate (87x147 mm), white, RAL 9010	1/1	**WAXWSE-00001-C006**	
Faceplate, 87x147 mm, for two module housings, including two screws metric and two screws whitworth, for mounting faceplate in installation outlets, white, RAL 9010	1/1	**WAXWSE-00001-C007**	

Designation	Quantity per delivery unit	Order No.	
Surface mount housing, 87x147 mm, incl. two screws for faceplate (87x147 mm), with two U-holes at one end for integration of PG21 glands, white, RAL 9010	1/1	**S45055-I35-A1**	
Surface mount housing, 87x147 mm, technical datas see above, however additionally with two top hat rail adapters on the rear side of housing The faceplate (WAXWSE-00001-C007) has to be ordered separatly.	1/1	**S45055-I35-A2**	
Universal module housing, projecting, inclined, for faceplate (87x87 mm and 87x147 mm) for mounting 2 LANscape modules center bar included, white, RAL 9010	1/1	**WAXWSE-V0201-C002**	

Installation Variant (Example)

2-port surface mount outlet, inclined

2-port surface mount outlet, 87 x 147 mm, inclined, white, RAL 9010
consisting of:

... Faceplate, 87 x 147 mm
WAXWSE-00001-C007
... Surface mout housing, 87 x 147 mm,
S45055-I 35-A 1
... two inserted PG21-glands for strain relief
... one universal module housing, projecting, inclined,
WAXWSE-V0201-C002

... equipped with two ST modules for single-mode connectors,
LAXLSM-00101-C000
... and one yellow ST-patch cable, single-mode,
LCALI2-A2311-A030

Future*Link* Modular Connecting Hardware

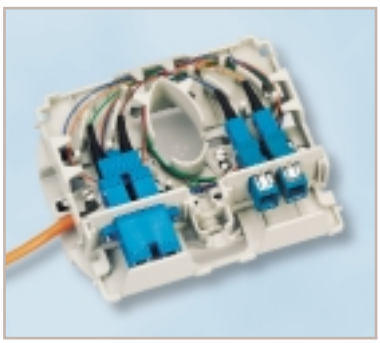
Outlets and Outlet Accessories

FO Wall Outlets for ST, SC, SC Duplex, LC or MT-RJ Adapters

- Mounts 2 FO duplex adapters or 4 simplex adapters for connecting two end equipments
- For ST, SC, SC duplex, as well as LC or MT-RJ adapters with SC simplex foot print (see pages 84, 86 to 88)
- Optimized for the use of UniCam® connectors
- Suitable for installation on wall raceways and for surface mounting
- Two outlets can be mounted side by side in standard openings
- Integral fiber management with 30 mm bend radius control
- Stores 1 m of fiber slack
- Optimum cable strain relief

Designation	Quantity per delivery unit	Order No.
Wall outlet, for mounting 2 SC duplex, 4 ST, 4 SC, 4 LC or 4 MT-RJ adapters, white similar to RAL 9010. Other color variations available on request	1/1	**LAXLSD-U0001-C000**
Mounting, for 2 ST adapters	8/1	**LAXLSE-U0001-C000**
Mounting, for 1 SC duplex adapters	8/1	**LAXLSE-U0001-C001**
Mounting, for 2 SC, 2 LC or 2 MT-RJ adapters	8/1	**LAXLSE-U0001-C002**

Installation Variant (Example)



Wall outlet FO4-W equipped

Wall outlet FO4-W, white, RAL 9010
LAXLSD-U0001-C000

... equipped with one mounting for SC duplex adapters
LAXLSE-U0001-C001
... one SC duplex adapter for single-mode connectors
TER-520
... one mounting for MT-RJ adapters
LAXLSE-U0001-C002
... and two MT-RJ adapters for single-mode connectors
TER-MTRJ-S-P

Notes

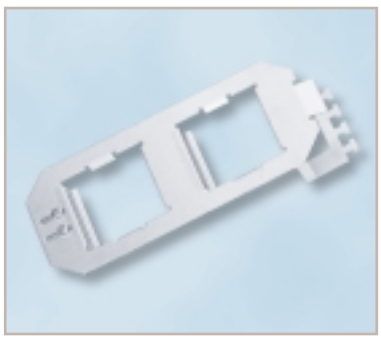
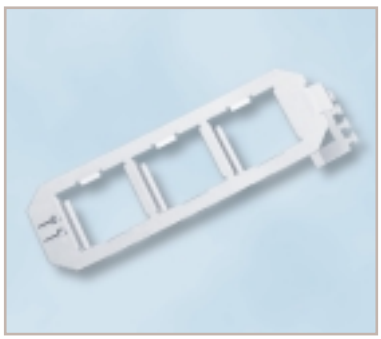
Future*Link* Modular Connecting Hardware

Accessories for Floor Box Solutions

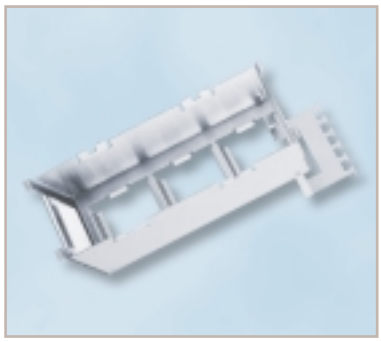
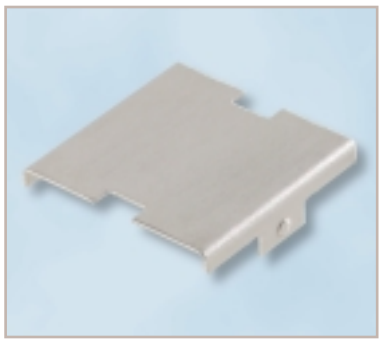
Features

- Suitable for all LANscape modules by using universal module housings (WAXWSE-V0201-C002)
- Firm metal construction
- No mounting inserts required
- Integrated strain relief
- Quick installation by snapping module housings into mounting panel
- No screws neccessary

Mounting Panels For Ackermann floor boxes

Designation	Quantity per delivery unit	Order No.	
Mounting panel for Ackermann floor boxes GES 2, GES 4, GES 4/10, GESR 4, GES 6, GES 6/10, GESR 7/10 (outer) or GES 8/10, for mounting 2 LANscape module housings (WAXWSE-V0201-C002 or CAXCSE-V0201-C001), metal version	1/1	**WAXWSU-00400-C001**	
Mounting panel for Ackermann floor boxes GESR 7/10 (center), GES 9, or GESR 9, for mounting 3 LANscape module housings (WAXWSE-V0201-C002 or CAXCSE-V0201-C001), metal version	1/1	**WAXWSU-00600-C001**	
Mounting panel for Ackermann floor boxes GESR 7/10 (center), GES 9, or GESR 9, for mounting 9 LANscape modules metal version	1/1	**WAXWSU-00900-C001**	

Mounting Panel For Kleinhuis Floor Boxes

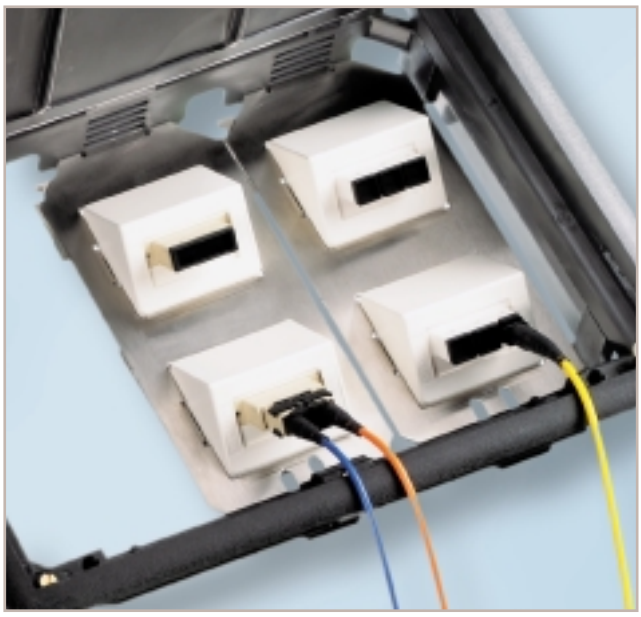
Designation	Quantity per delivery unit	Order No.	
Mounting panel for Kleinhuis floor box GR. II and GR. III (outer only for round box) for mounting 3 LANscape module housings (WAXWSE-V0201-C002 or CAXCSE-V0201-C001), metal version	1/1	**WAXWSU-00600-C002**	
Blank cover for one LANSCAPE module housing (WAXWSE-V0201-C002 or CAXCSE-V0201-C001), suitable for Ackermann and Kleinhuis mounting panels, metal version	1/1	**WAXWSU-00000-C001**	

Installation Variant (Example)

Mounting panel in the Ackermann floor box GES 6,
WAXWSU-00400-C001
The two mounting positions are equipped as follows:

1. Two Universal module housing
   WAXWSE-V0201-C002
... equipped with one MT-RJ 3port module each
   LAXLSM-00201-C002
   and one MT-RJ single-mode patchcord
   LCALI2-A5342-A030

2. Two Universal module housing
   WAXWSE-V0201-C002
... equipped with one SC duplex module each
   LAXLSM-00201-C001
   and one SC duplex multimode patchcord
   LCALI2-A2333-A020



Mounting in Ackermann floor box GES 6

Future*Link* Modular Connecting Hardware

LANscape Patch Panels (High-grade Steel)

Patch Panels

The LANscape FO cabling system offers exclusively 19-inch patch panels in 1 and 2U variants. This allows flexible configuration of building and floor distributors to suit specific needs.

Three different designs are available:

1. Patch panel frames with high-grade steel front panel and mounted strain relief, particularly suitable for use with field- or pre-assembled MIC or breakout cables.

2. Fixed, closed patch panel boxes in various designs, e. g. for splice and slack storage with PG cable entry mountings or as a breakout box with cable strain relief and brush strip in cable entry area.

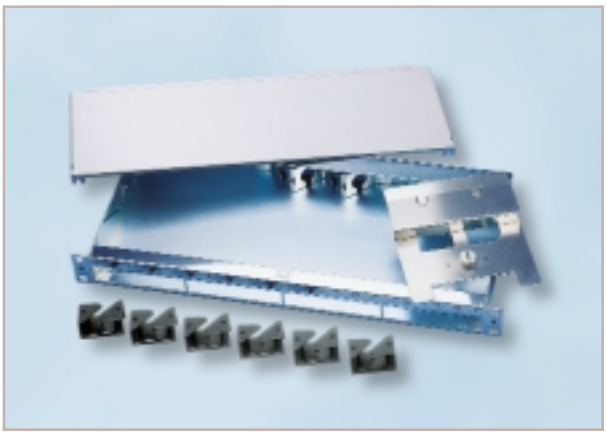
3. Pull-out, closed patch panel boxes with various splice storage options and PG feedthroughs.

All the patch panels provide 24 or 48 ports for mounting e. g. up to 48 SC simplex connectors and modules. When triple MT-RJ modules are used, as many as 72 two-fiber connections, i. e. up to 144 fibers can be accommodated in one 2U high patch panel. The patch panels are available both in high-grade steel and black finish. Here again, it is possible to combine the fiber modules with modules from the Future*Com*, copper cabling system.

Patch Panel 19" with Cable Strain Relief

Designation	Quantity per delivery unit	Order No.
Patch panel 19", for up to 24 LANscape modules, with integral cable strain relief, 1U, front panel of high-grade steel	1/1	**WAXWSV-02400-C001**

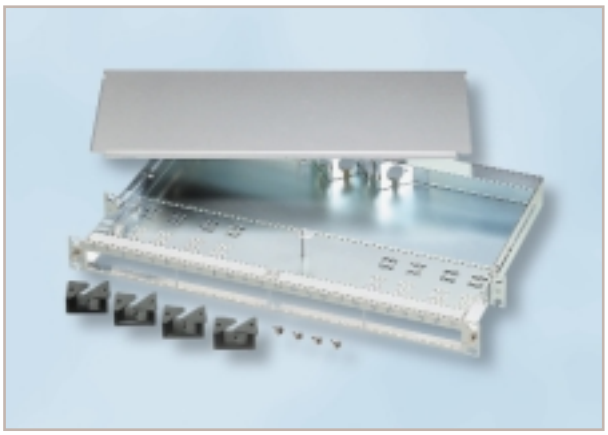
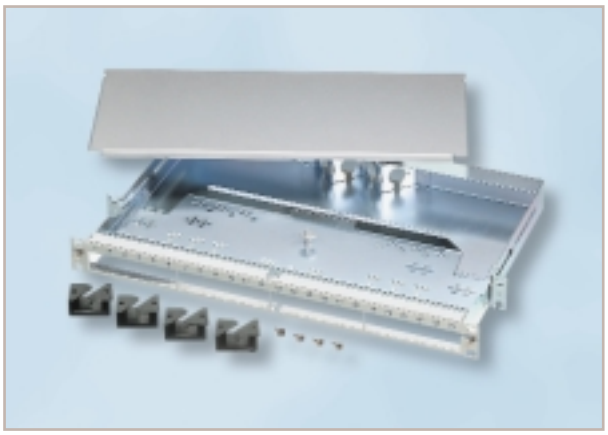
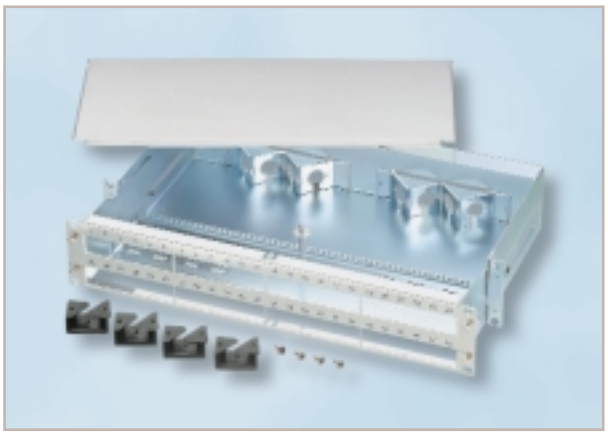
Patch Panels, Fixed

Designation	Quantity per delivery unit	Order No.	
Universal patch panel „Splice box version“ 19”, 1U, for mounting up to 24 single modules, fixed, splice tray holder for max. 2 splice trays, cable/fiber management and 2 angled entries for each direction for PG-glands, front panel high-grade steel	1/1	**WAXWSV-02400-C003**	
Universal patch panel “Empty box version” 19”, 1U, for mounting up to 24 single modules, fixed, 2 angled entries for each direction for PG-glands, front panel high-grade steel	1/1	**WAXWSV-02400-C004**	
Universal patch panel “Breakout version” 19”, 1U, for mounting up to 24 single modules, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, front panel high-grade steel	1/1	**WAXWSV-02400-C005**	

Future*Link* Modular Connecting Hardware

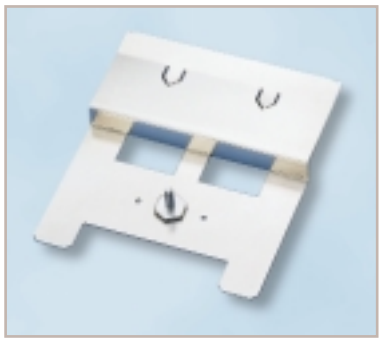
LANscape Patch Panels (High-grade steel)

Patch Panels, Pull-Out

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box" 19", 1U, for mounting up to 24 single modules, splice tray holder for max. 4 splice trays can be pulled out and removed, cable/fiber management and 2 angled entries each side for PG glands, front panel high-grade steel	1/1	**WAXWSV-02400-C006**	
Universal patch panel "Splice box 2" 19", 1U, for mounting up to 24 single modules, splice tray holder for max. 2 splice trays can be pulled out and removed, slack storage cable/fiber management and 2 angled entries each side for PG glands, front panel high-grade steel	1/1	**WAXWSV-02400-C007**	
Universal patch panel "Splice box" 19", 2U, for mounting up to 48 single modules, splice tray holder for max. 8 splice trays can be pulled out and removed, cable/fiber management and 4 angled entries each side for PG glands, front panel high-grade steel	1/1	**WAXWSV-04800-C006**	

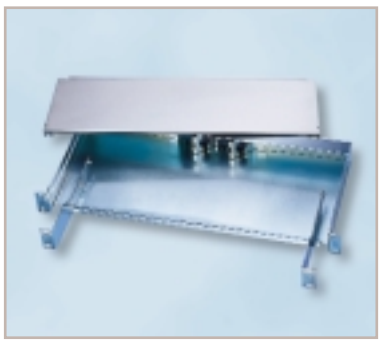
Future*Link* Modular Connecting Hardware

LANscape Patch Panel Accessories (High-grade steel)

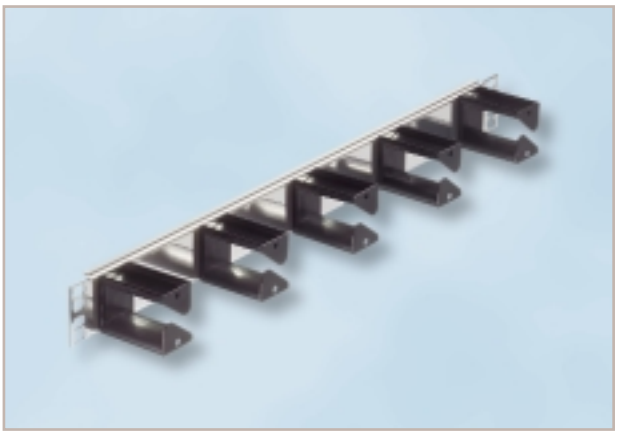
Designation	Quantity per delivery unit	Order No.	
Fiber/Cable management blocks, for fixing with two-side adhesive tape	6/1	LAXLSW-00000-C008	
Cable strain relief and brush strip, as provided with breakout box version	1/1	LAXLSW-00000-C009	
Splice tray holder for max. 2 splice trays, locked against rotation, (only for fixed universal patch panels with PG-gland mounting)	1/1	LAXLSW-00000-C006	
Splice tray holder for max. 4 splice trays, locked against rotation	1/1	LAXLSW-00000-C007	

Future*Link* Modular Connecting Hardware

LANscape Patch Panel Accessories (High-grade steel)

Designation	Quantity per delivery unit	Order No.	
Cable strain relief, additional for PG16 mounting	1/1	**LAXLSW-00000-C010**	
PG16 gland for strain relief, for 10 to 14 mm cable diameter	10/1	**WAXWSW-00000-C011**	
Front panel without breakouts, customized versions also available, subject to quantity and agreement, high-grade steel	1/1	**LAXLSW-00000-C003**	
Empty box without front panel 19”, 1 U, fixed, side brackets and 2 angled entries each side for PG glands	1/1	**LAXLSW-00000-C004**	

Blank Panels and Cable Management

Designation	Quantity per delivery unit	Order No.	
Blank panel 19”, for filling unused areas in the distribution cabinet or rack, high-grade steel			
1 U	1/1	**WAXWSW-00000-C004**	
2 U	1/1	**WAXWSW-00000-C005**	
Cable management panel 19”, 1 U, front panel high-grade steel with 5 black cable routing clips	1/1	**WAXWSW-00000-C007**	
Cable feedthrough panel 19”, for feeding the cables into the cabinet or rack, incl. edge grommeting, front panel high-grade steel	1/1	**WAXWSW-00000-C008**	

In combination with the “Empty box” without front panel 19” (page 132) is an excess length storage and protection possible

Future*Link* Modular Connecting Hardware

LANscape Patch Panels (black)

Design Line – Patch Panels and Patch Panel Accessories

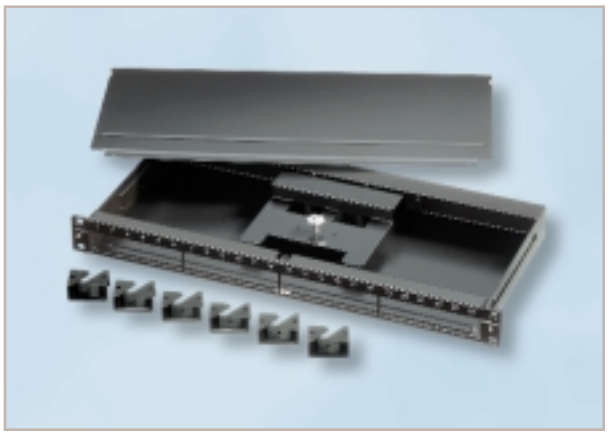
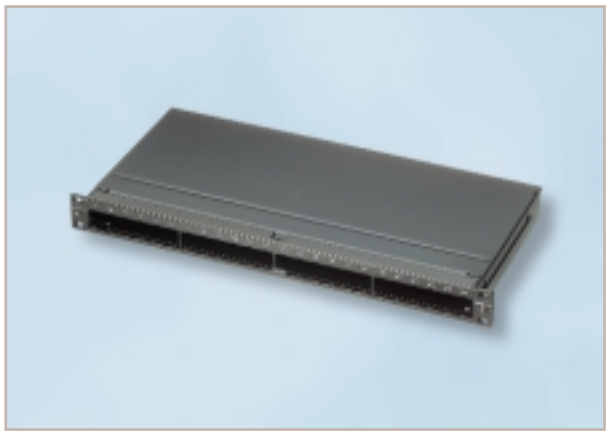
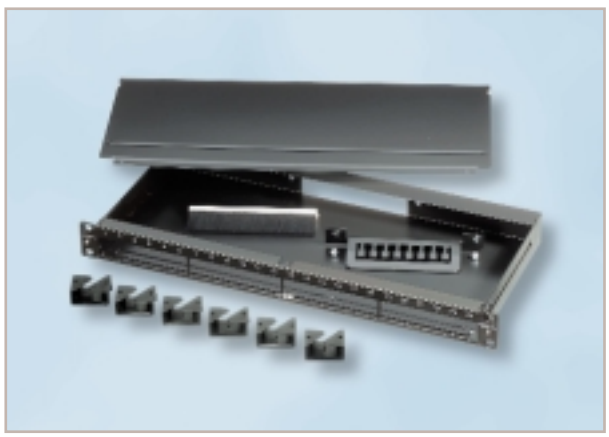
- Front panels in black
- Markings white

Like the high-grade steel version, all black patch panels provide, 24 or 48 ports for mounting. Therefore, it is possible to integrate up to 144 fibers in a 2U (Height-units) patch panel.
Due to their black colour the Design Line patch panels are particularly suitable for connections in splice technique, since fiber remainders can be very easily detected and the violation risk are thus minimized. For these patch panels the FO modules of the pages 106 and 107 are recommended. Here again, it is possible to combine the FO modules with modules from the Future*Com* copper cabling system.

Patch Panel 19" with Integrated Strain Relief

Designation	Quantity per delivery unit	Order No.
Patch panel 19" black, for up to 24 LANscape modules, with integrated strain relief, 1U, front panel black	1/1	**WAXWSV-02408-C001**

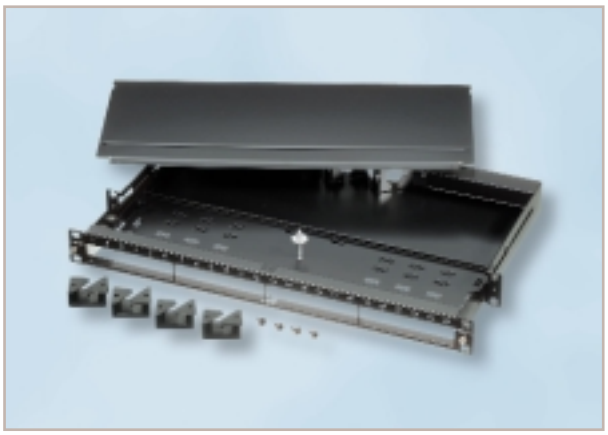
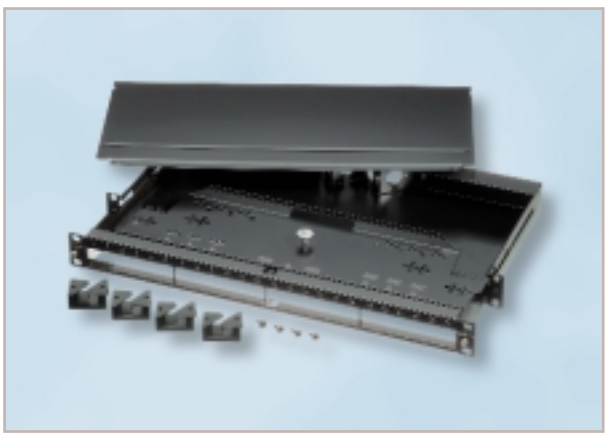
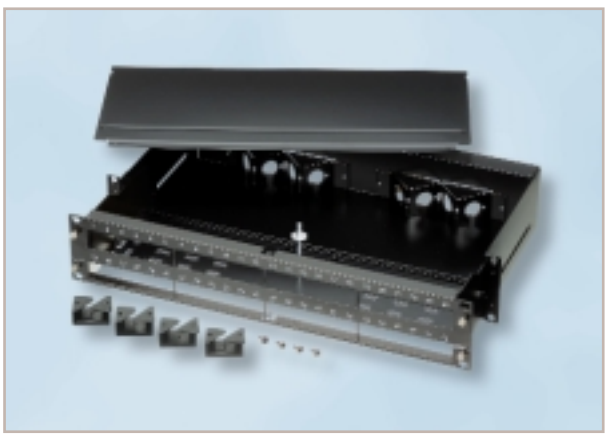
Patch Panels, Fixed

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box version" 19" black, 1U, for mounting up to 24 single modules, fixed, splice tray holder for max. 2 splice trays, cable/fiber management and 2 angled entries each side for PG glands, front panel black	1/1	**WAXWSV-02408-C003**	
Universal patch panel "Empty box version" 19" black, 1U, for mounting up to 24 single modules, fixed, 2 angled entries each side for PG glands, front panel black	1/1	**WAXWSV-02408-C004**	
Universal patch panel "Breakout version" 19" black, 1U, for mounting up to 24 single modules, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, front panel black	1/1	**WAXWSV-02408-C005**	

Future*Link* Modular Connecting Hardware

LANscape Patch Panels (black)

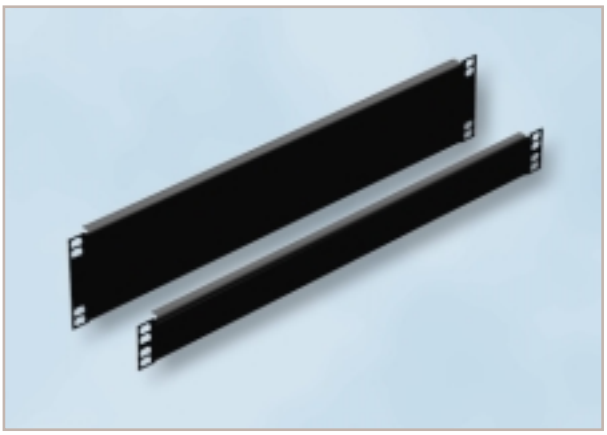
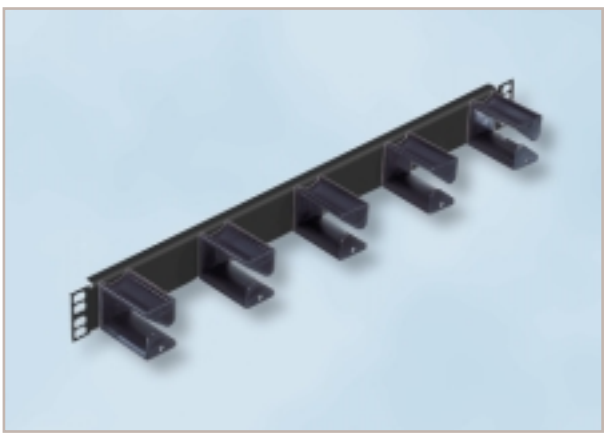
Patch Panels, Pull-Out

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box" 19" black, 1U, for mounting up to 24 single modules, splice tray holder for max. 4 splice trays can be pulled out and removed, cable/fiber management and 2 angled entries each side for PG glands, front panel black	1/1	**WAXWSV-02408-C006**	
Universal patch panel "Splice box 2" 19" black, 1U, for mounting up to 24 single modules, splice tray holder for max. 2 splice trays can be pulled out and removed, slack storage cable/fiber management and 2 angled entries each side for PG glands, front panel black	1/1	**WAXWSV-02408-C007**	
Universal patch panel "Splice box" 19" black, 2U, for mounting up to 48 single modules, splice tray holder for max. 8 splice trays can be pulled out and removed, cable/fiber management and 4 angled entries each side for PG glands, front panel black	1/1	**WAXWSV-04808-C006**	

Future*Link* Modular Connecting Hardware

LANscape Patch Panel Accessories (black)

Blank Panels and Cable Management

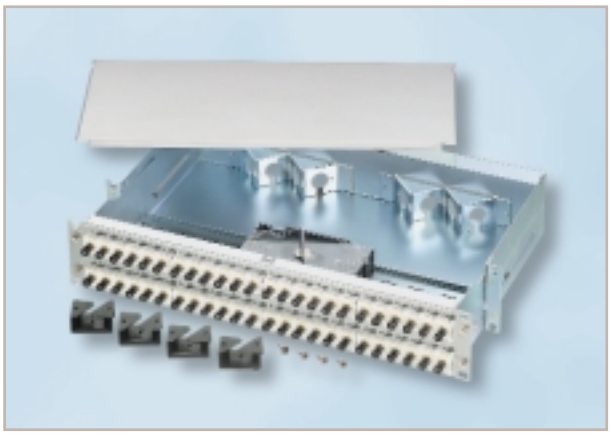
Designation	Quantity per delivery unit	Order No.	
Blank panel 19”, for filling unused areas in the distribution cabinet or rack, black			
1 U	1/1	**WAXWSW-00008-C004**	
2 U	1/1	**WAXWSW-00008-C005**	
Cable management panel 19”, 1 U, front panel black with 5 black cable routing clips	1/1	**WAXWSW-00008-C007**	
Cable feedthrough panel 19”, for feeding the cables into the cabinet or rack, incl. edge grommeting, front panel black	1/1	**WAXWSW-00008-C008**	

In combination with the “Empty box” without front panel 19” (page 132) is an excess length storage and protection possible

Future*Link* Modular Connecting Hardware

Partially loaded LANscape Patch Panels (High-grade Steel)

Patch Panels, pull-out, with ST Modules

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box" 19", 1U, pull-out, cable / fiber management and 2 angled entries each side for PG glands, loaded with 1 splice tray, 1 splice organizer, 12 crimp splice protectors, splice tray cover and			
12 ST modules single-mode + 12 blank covers	1/1	**LAXLSV-01200-C004**	
12 ST modules multimode + 12 blank covers	1/1	**LAXLSV-01200-C001**	
Universal patch panel "Splice box" 19", 1U, pull-out, cable / fiber management and 2 angled entries each side for PG glands, loaded with 2 splice trays, 2 splice organizers, 24 crimp splice protectors, splice tray cover and			
24 ST modules single-mode	1/1	**LAXLSV-02400-C004**	
24 ST modules multimode	1/1	**LAXLSV-02400-C001**	
Universal patch panel "Splice box" 19", 2U, pull-out, cable / fiber management and 4 angled entries each side for PG glands, loaded with 4 splice trays, 4 splice organizers, 48 crimp splice protectors, splice tray cover and			
48 ST modules single-mode	1/1	**LAXLSV-04800-C004**	
48 ST modules multimode	1/1	**LAXLSV-04800-C001**	

Patch Panels, pull-out, with ST Modules

Designation	Quantity per delivery unit	Order No.
Universal patch panel "Splice box2" 19", 1U, pull-out with slack storage, cable / fiber management and 2 angled entries each side for PG glands, loaded with 2 splice trays, 2 splice organizers, 24 crimp splice protectors, splice tray cover and		
24 ST modules multimode	1/1	**LAXLSV-02400-C010**

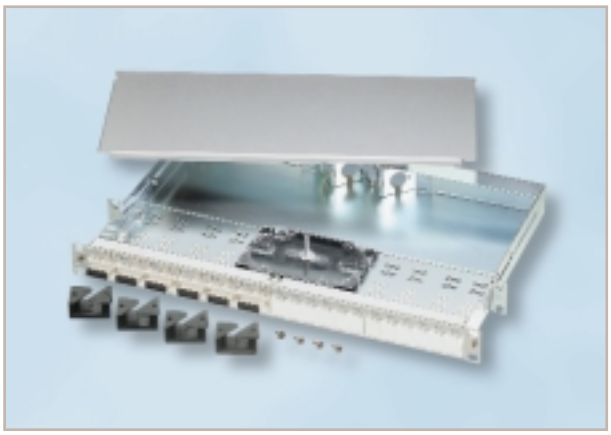
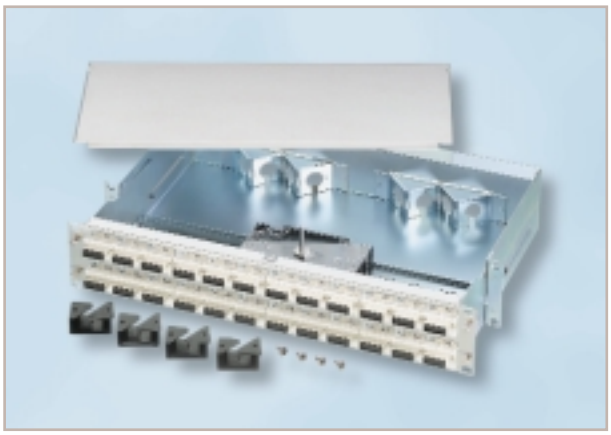
Patch Panel, fixed, with ST Modules

Designation	Quantity per delivery unit	Order No.
Universal patch panel "breakout version" 19", 1U, fixed, cable / fiber management, breakout entry (brush strip) and cable strain relief, loaded with		
24 ST modules multimode	1/1	**LAXLSV-02400-C007**

Future*Link* Modular Connecting Hardware

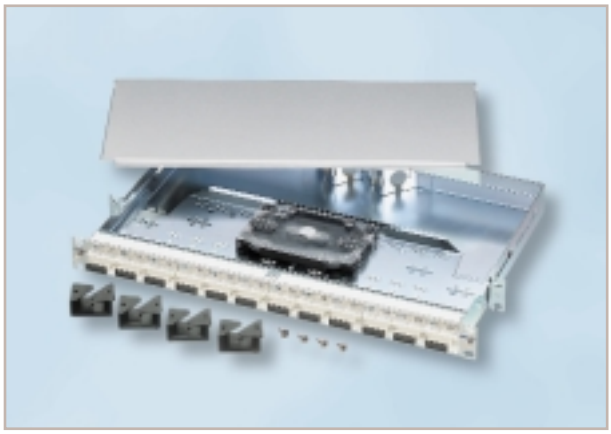
Partially loaded LANscape Patch Panels (High-grade Steel)

Patch Panels, Pull-Out, with SC duplex modules

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box" 19", 1 U, pull-out, cable/fiber management and 2 angled entries each side for PG glands, loaded with 1 splice tray, 1 splice organizer, 12 crimp splice protectors, splice tray cover and			
6 SC duplex modules single-mode + 12 blank covers	1/1	**LAXLSV-01200-C012**	
6 SC duplex modules multi-mode + 12 blank covers	1/1	**LAXLSV-01200-C002**	
Universal patch panel "Splice box" 19", 1 U, pull-out, cable/fiber management and 2 angled entries each side for PG glands, loaded with 2 splice tray, 2 splice organizer, 24 crimp splice protectors, splice tray cover and			
12 SC duplex modules single-mode	1/1	**LAXLSV-02400-C012**	
12 SC duplex modules multimode	1/1	**LAXLSV-02400-C002**	
Universal patch panel "Splice box" 19", 2 U, pull-out, cable/fiber management and 4 angled entries each side for PG glands, loaded with 4 splice tray, 4 splice organizer, 48 crimp splice protectors, splice tray cover and			
24 SC duplex modules single-mode	1/1	**LAXLSV-04800-C012**	
24 SC duplex modules multimode	1/1	**LAXLSV-04800-C002**	

Patch Panels, Pull-Out, with SC duplex modules

Designation	Quantity per delivery unit	Order No.
Universal patch panel "Splice box 2" 19", 1 U, pull-out with slack storage, cable/fiber management and 2 angled entries each side for PG glands, loaded with 2 splice tray, 2 splice organizer, 24 crimp splice protectors, splice tray cover and		
12 SC duplex modules multimode	1/1	**LAXLSV-02400-C011**



Patch Panels, Fixed, with SC duplex modules

Designation	Quantity per delivery unit	Order No.
Universal patch panel "breakout version" 19", 1U, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, loaded with		
12 SC duplex modules multimode	1/1	**LAXLSV-02400-C008**

Future*Link* Modular Connecting Hardware

Partially loaded LANscape Patch Panels (High-grade Steel)

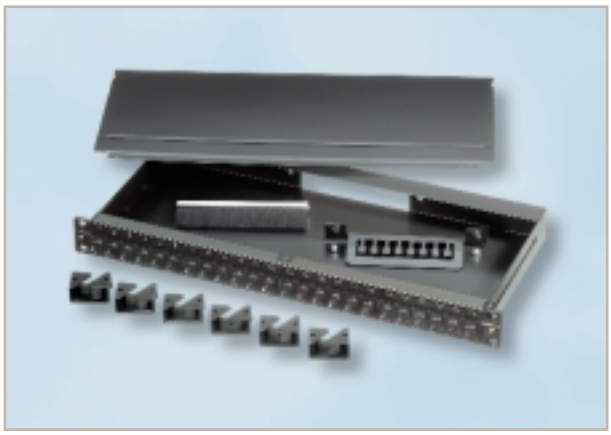
Patch Panels with MT-RJ and QuickPress MT-RJ modules

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box" 19", 1 U, pull-out, cable/fiber management and 2 angled entries each side for PG glands, loaded with 4 splice tray, 4 splice organizer, 48 crimp splice protectors, splice tray cover and			
24 MT-RJ modules single-mode/multimode	1/1	**LAXLSV-02400-C003**	
Universal patch panel "breakout version" 19", 1U, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, loaded with			
12 MT-RJ 3port modules single-mode/multimode	1/1	**LAXLSV-03600-C009**	
Universal patch panel "breakout version" 19", 1U, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, loaded with			
24 QuickPress MT-RJ modules 50 µ	1/1	**LAXLSV-02400-C006**	
24 QuickPress MT-RJ modules 62.5 µ	1/1	**LAXLSV-02400-C005**	

Future*Link* Modular Connecting Hardware

Partially loaded LANscape Patch Panels (black)

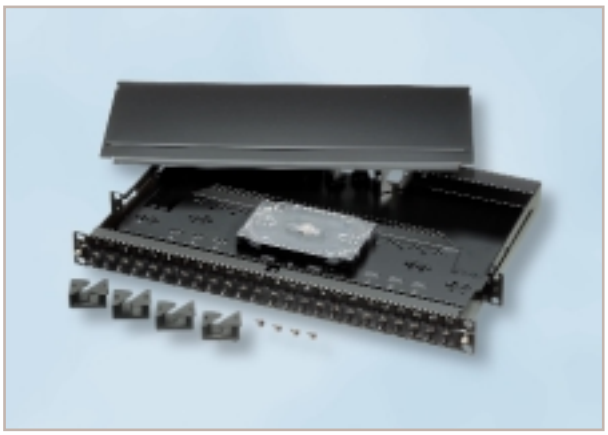
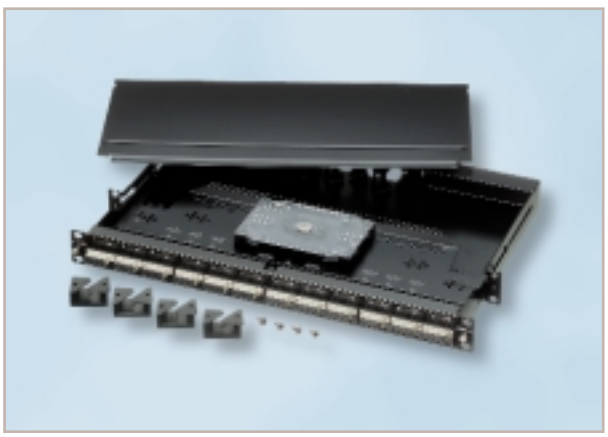
Patch Panels, Fixed

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "breakout version" 19", black, 1U, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, loaded with			
24 ST modules multimode	1/1	**LAXLSV-02408-C007**	
Universal patch panel "breakout version" 19", black, 1U, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, loaded with			
12 SC duplex modules multimode	1/1	**LAXLSV-02408-C008**	
Universal patch panel "breakout version" 19", black, 1U, fixed, cable/fiber management, breakout entry (brush strip) and cable strain relief, loaded with			
12 MT-RJ 3port modules single-mode/multimode	1/1	**LAXLSV-03608-C009**	

Future*Link* Modular Connecting Hardware

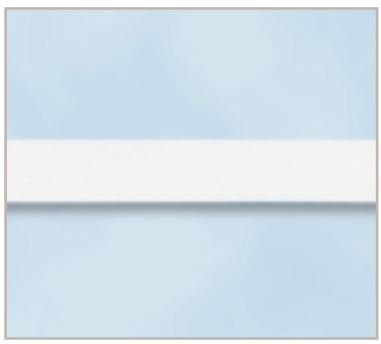
Partially loaded LANscape Patch Panels (black)

Patch Panels, Pull-Out

Designation	Quantity per delivery unit	Order No.	
Universal patch panel "Splice box 2" 19" black, 1 U, pull-out with slack storage, cable/fiber management and 2 angled entries each side for PG glands, loaded with 2 splice tray, 2 splice organizer, 24 crimp splice protectors, splice tray cover and			
24 ST modules multimode	1/1	**LAXLSV-02408-C010**	
Universal patch panel "Splice box 2" 19" black, 1 U, pull-out with slack storage, cable/fiber management and 2 angled entries each side for PG glands, loaded with 2 splice tray, 2 splice organizer, 24 crimp splice protectors, splice tray cover and			
12 SC duplex modules multimode	1/1	**LAXLSV-02408-C011**	

Future*Link* Modular Connecting Hardware

Patch Panel Accessories

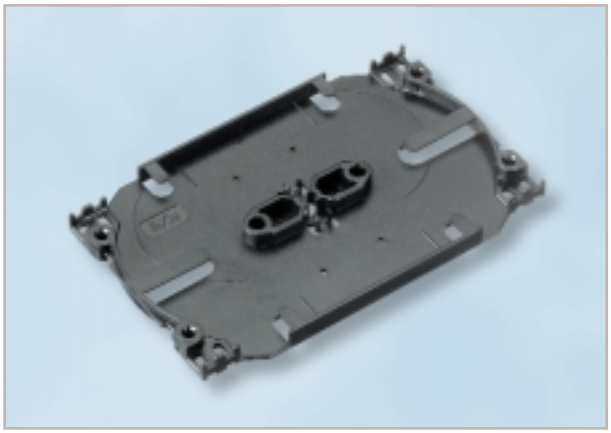
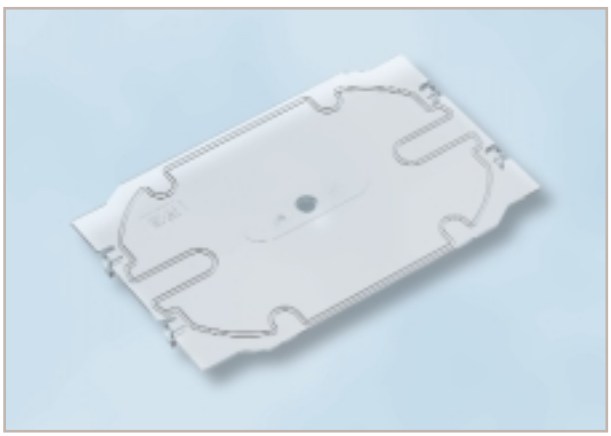
Designation	Quantity per delivery unit	Order No.	
Designation window 440 mm, self-adhesive for LANscape patch panels	10/1	WAXWSW-00000-C002	
Designation sheet DIN A4, with 20 designation labels for LANscape patch panels, white	10/1	WAXWSW-00000-C003	

Future*Link* Modular Connecting Hardware

Patch Panel Accessories

Splice trays

Splice trays are used for storing mechanical or fusion splices as well as fiber slack. Two multifiber loose buffers can be attached at each of the four tray entries. For subsequent ease of access, it is advisable to store no more than 12 splices per tray.
The fiber slack should be 1200 mm long and be stored in the tray. The bend radii are between 30 and 40 mm, ensuring safe storage of the fibers without adversely affecting the attenuation.

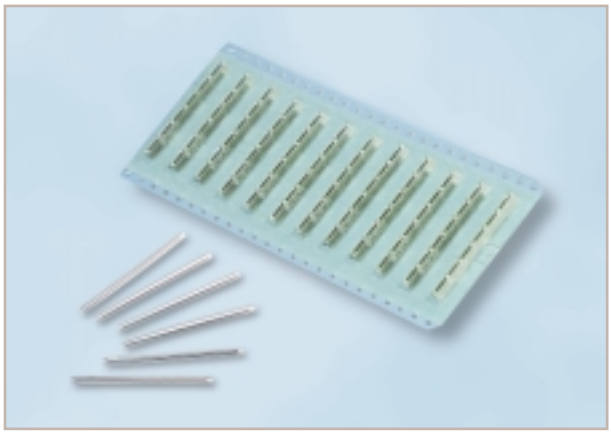
Designation	Quantity per delivery unit	Order No.	
Standard splice tray, for 12 (max. 24) crimp splice protectors or for 6 (max. 12) heatshrink splice protectors using the associated splice organizers	10/1	**LAXLSW-00008-C001**	
Splice tray cover, for standard splice tray	10/1	**LAXLSW-00009-C001**	

Splice protectors and Splice Organizers

Single fusion splices can be mechanically protected with heatshrink splice protectors or crimp splice protectors. For safe storage of the splices in the trays, there are various splice organizers available to suit the selected splice protection. The splice organizers are simply snapped into the tray.
A different type of splice organizer is used for the storage of 5 heat-shrink splice protectors for 4-fiber ribbons or for 5 mechanical splices of the type CamSplice®. A standard splice tray can accommodate two such splice organizers.

Designation	Quantity per delivery unit	Order No.
Splice organizer, for 12 crimp splice protectors	10/1	**LAXLSW-00000-C001**
Splice organizer, for 6 heatshrink splice protectors	10/1	**LAXLSW-00000-C005**
Splice organizer, for 5 CamSplice®	10/1	**LAXLSW-00000-C013**

Crimp splice protector	150/1	**LAXLSW-00000-C002**
Heatshrink splice protector, length 60 mm	100/1	**LAXLSW-00000-C014**

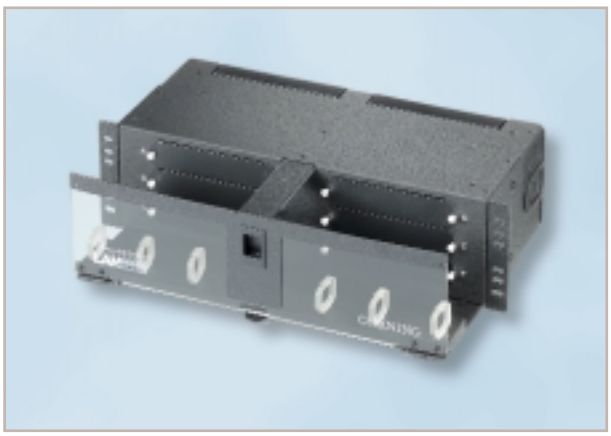


Future*Link* Modular Connecting Hardware

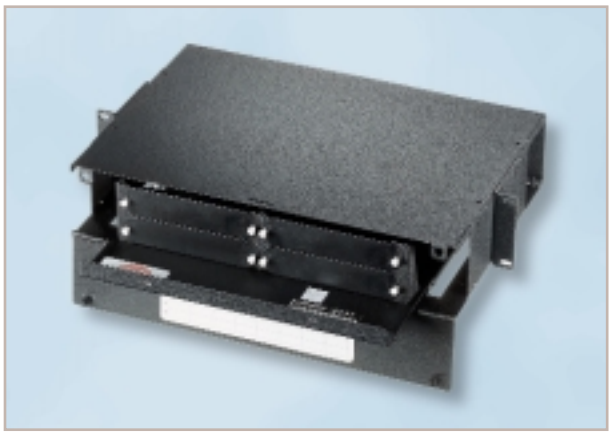
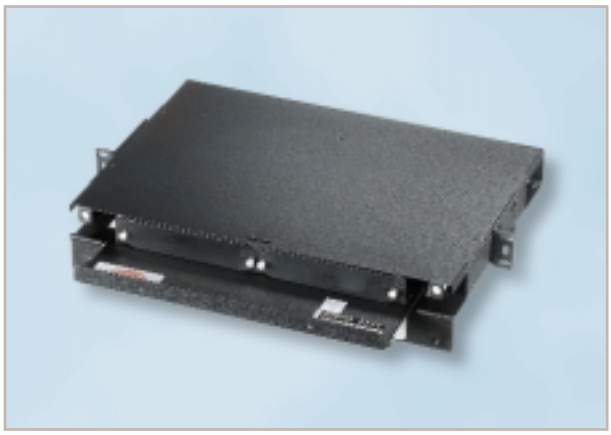
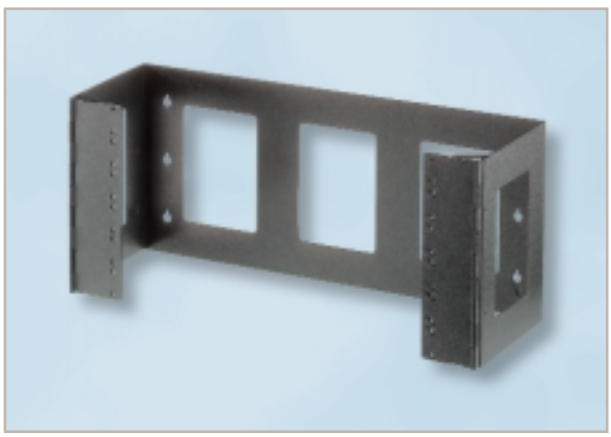
CCH Closet Connector Housings

CCH Connector Housings

The CCH rack-mountable connector housings are suitable for use in 19" or 23" distribution systems. They are available in 1, 2, 3 or 4 U (height units). Using MT-RJ connectors in the 4U housing it is possible to install up to 288 fibers.
The CCH housings can be equipped with ST, SC, SC duplex, LC, MT-RJ panels and QuickPress MT-RJ panels. The housings can be used to install both loose-tube and tight-buffer cables. They are also highly suitable for field installation. When the lock kit (HDWR-LOCK-KIT) is used, it is possible to lock the front door of the housing.

Designation	Quantity per delivery unit	Order No.	
CCH connector housing 4U, accepting up to 12 CCH panels, incl. universal cable strain relief for 2 cables, black	1/1	**CCH-04U**	
CCH connector housing 3U, accepting up to 6 CCH panels, incl. universal cable strain relief for 2 cables, black	1/1	**CCH-03U**	

CCH Patch Panel Housing

Designation	Quantity per delivery unit	Order No.	
CCH patch panel housing 2U, accepting up to 4 CCH panels, incl. universal cable strain relief for 1 cable, black	1/1	**CCH-02U**	
CCH patch panel housing 1U, accepting up to 2 CCH panels, incl. universal cable strain relief for 1 cable, black	1/1	**CCH-01U**	
CCH Wall-Mount-Kit, for CCH patch panel housings up to 6U, black	1/1	**CCH-WALLMNT-KIT**	

Future*Link* Modular Connecting Hardware

CCH Connector Housing Accessories

Lock Kit

Designation	Quantity per delivery unit	Order No.
Lock kit for CCH and WCH connector housings, for locking the front door	1/1	**HDWR-LOCK-KIT**

Identification icons for identifying individual ports on CCH Panels

Various CCH panels provide the option of using identification icons to code each port. The icons are available with telephone and computer symbols (LAN operation) in six different colors.

Designation	Quantity per delivery unit	Order No.
Identification icon for CCH panels, computer symbol, gray	24/1	**ICN-GYC-024**
Identification icon for CCH panels, telephone symbol, gray	24/1	**ICN-GYP-024**
Identification icon for CCH panels, computer symbol, blue	24/1	**ICN-BLC-024**
Identification icon for CCH panels, telephone symbol, blue	24/1	**ICN-BLP-024**
Identification icon for CCH panels, computer symbol, yellow	24/1	**ICN-YLC-024**
Identification icon for CCH panels, telephone symbol, yellow	24/1	**ICN-YLP-024**
Identification icon for CCH panels, computer symbol, green	24/1	**ICN-GRC-024**
Identification icon for CCH panels, telephone symbol, green	24/1	**ICN-GRP-024**
Identification icon for CCH panels, computer symbol, red	24/1	**ICN-RDC-024**
Identification icon for CCH panels, telephone symbol, red	24/1	**ICN-RDP-024**
Identification icon for CCH panels, computer symbol, black	24/1	**ICN-BKC-024**
Identification icon for CCH panels, telephone symbol, black	24/1	**ICN-BKP-024**

Future*Link* Modular Connecting Hardware

CCH Panels

CCH Panels

The CCH panels are available in 12 and 24 fiber versions for ST, SC, SC duplex, MT-RJ connectors and QuickPress MT-RJ connectors. They are suitable for the use of both field installable connectors and pre-assembled cables.
Various panels permit individual port identification by means of colored icons (p. 150).
In addition, there is a CCH empty panel available which can be configured individually with the various LANscape modules (FO modules – pp. 108 to 111 – or copper modules from the Future*Com* systems).
Other CCH panels are available with a variety of industry-standard connector types and different fiber counts upon request.

CCH Panel for LANscape Modules

Designation	Quantity per delivery unit	Order No.
CCH empty panel, accepting up to 6 LANscape single-port modules or 3 dual-port modules, incl. integral cable strain relief, black	1/1	**CCH-CP00-LS**

Future*Link* Modular Connecting Hardware

CCH Panels

CCH Panel with SC and SC Duplex Adapters

Designation	Quantity per delivery unit	Order No.
CCH panel with 12 SC adapters for single-mode connectors, black Adapter: Composite housing (blue), metal sleeve	1/1	**CCH-CP12-38**
CCH panel with 12 SC adapters for multimode connectors, black Adapter: Composite housing (beige), metal sleeve	1/1	**CCH-CP12-39**
CCH panel with 12 SC adapters for multimode connectors, black Adapter: Composite housing (beige), composite sleeve	1/1	**CCH-CP12-56**

CCH panel with 6 SC duplex adapters for single-mode connectors, black Adapter: Composite housing (blue), ceramic sleeve	1/1	**CCH-CP12-59**
CCH panel with 6 SC duplex adapters for multimode connectors, black Adapter: Composite housing (beige), metal sleeve	1/1	**CCH-CP12-57**
CCH panel with 6 SC duplex adapters for multimode connectors, black Adapter: Composite housing (beige), composite sleeve	1/1	**CCH-CP12-91**

Port coding with icons possible

CCH Panel with MT-RJ adapters

Designation	Quantity per delivery unit	Order No.	
CCH Panel with 6 MT-RJ adapters for single-mode connectors, black Adapter: Composite housing (blue)	1/1	**CCH-CP12-98**	
CCH Panel with 6 MT-RJ adapters for multimode connectors, black Adapter: Composite housing (beige) Port-coding with icons possible	1/1	**CCH-CP12-97**	
CCH Panel with 12 MT-RJ adapters for single-mode connectors, black Adapter: Composite housing (blue)	1/1	**CCH-CP24-98**	
CCH Panel with 12 MT-RJ adapters for multimode connectors, black Adapter: Composite housing (beige)	1/1	**CCH-CP24-97**	

Future*Link* Modular Connecting Hardware

CCH Panel

CCH Panel with MT-RJ QuickPress and ST Adapters

Designation	Quantity per delivery unit	Order No.	
CCH Panel with 6 MT-RJ QuickPress modules for multimode connectors, black	1/1	**CCH-CP12-M7**	
CCH Panel with 12 ST adapters for single-mode connectors, black Adapter: Composite housing Ceramic insert	1/1	**CCH-CP12-19T**	
CCH Panel with 12 ST adapters for multimode connectors, black Adapter: Composite housing Ceramic insert	1/1	**CCH-CP12-15T**	

Future*Link* Modular Connecting Hardware

WCH Wall-mountable Connector Housings

WCH Connector Housings

The WCH wall-mountable connector housings can be equipped with various CCH panels such as ST, SC, SC duplex, MT-RJ and MT-RJ QuickPress.
The housings can be used to install both loose-tube and tight-buffer cables. They are also highly suitable for field installation. When the lock kit (HDWR-LOCK-KIT) is used, it is possible to lock the front door of the housing.

WCH Connector Housings for 2 to 12 CCH Panels

Designation	Quantity per delivery unit	Order No.
WCH connector housing, accepting		
2 CHH panels	1/1	**WCH-02P**
4 CCH panels	1/1	**WCH-04P**
6 CCH panels	1/1	**WCH-06P**
8 CCH panels	1/1	**WCH-08P**
12 CCH panels	1/1	**WCH-12P**

Notes

FutureLink™ Modular

Optical Testers and Tools

Issue 1

LANscape™

Future*Link* Modular Optical Testers

FO Tester for ST, SC and MT-RJ Connections

Description

The Corning OTS-311D-MTRJ is part of the OTS-300 Express Series that includes intelligent, versatile optical testers that simultaneously test and store dual wavelength attenuation measurements.

The synchronized meter and source alternate between wavelengths to continually update the displayed data. This process cuts testing time in half and prevents costly errors from mismatched source and meter wavelengths. At the press of a button, dual wavelength results are stored and the next fiber measured. These test sets are used during installation, system qualification, and maintenance.

The combination of practical features, simple operation, field performance, and rugged design make them perfect for virtually all fiber optic testing environments.

The Tester OTS311D-MTRJ are specially designed for MT-RJ-equipped hardware, while the OTS311D-XX cover other common multimode connector interfaces.

The data storage system eliminates field paperwork by storing up to 900 dual wavelength fiber measurements. The stored data can be viewed and edited while in the field and later transferred to LinkLoss Windows-based PC software. LinkLoss stores, prints, and creates bi-directional charts. The flexibility of the PC software allows OTS-300 data to be processed in other spreadsheet applications.

Designed for the user, the OTS-300 Series provides quick, intuitive operation through a simple keypad and backlit graphic display with adjustable, temperature-compensated contrast. The power meters feature selectable resolution that optimizes use for both field (0.1 dB) and production or lab environments (0.01. dB). Detection of 2 kHz pulsed “tone” via both audible and visual indication allows versatile continuity testing and fiber tracing.

The OTS-311 Express testers make calibrated measurements at 850 and 1300 nm from +3 to –70 dBm using a high-performance InGaAS detector that minimizes reflection effects. A powerful microcontroller performs a self-test each time the unit is powered on to ensure reliable measurements. The OTS-311 Express testers are available with a 850/1300 nm LED for multimode testing. The rugged ABS housing and elastomeric holster, weather-resistant membrane keypad, and –18 to +50°C operating temperature enable the OTS-300 Series to be used wherever there is fiber. The three-way powering provides uninterrupted operation by automatically switching between the internal rechargeable Ni-Cads, replaceable batteries, and AC power. A selectable automatic shut-off function extends battery life.

Introduction, measurement methods

In principle, the quality of every optical fiber should be assessed after completion of the initial installation, and the individual components of the link investigated for compliance with the specification. Two different measurement methods are employed for this purpose:

- Transmitted-light measuring method
- OTDR measurement

Both measurements should be performed on newly-installed fibers as well as on fibers in service, in order to detect possible early failures and to eliminate the problem before damage occurs. It is advisable for the measurements to be performed at those wavelengths at which subsequent data transmission is also to take place.

Transmitted light measuring method

With this measuring method a defined, exactly known quantity of light is launched from stabilized light sources (using LEDs for multimode fibers and lasers for single-mode fibers). The optical power then emerging from the other end of the fiber is measured with an optical power meter. The overall attenuation of the fiber under test can then be determined very accurately from the difference between the two powers.

Since this test setup corresponds exactly to the future data transmission system comprising transmitter and receiver, the result for the overall attenuation is very precise. It is not falsified by the measuring method. The measurement itself is very simple to perform and the handling of the equipment is also extremely simple.

Designation	Quantity per delivery unit	Order No.
OTS-311D-MTRJ tester kit, includes two ST tester, 2 ST/MT-RJ hybrid patch cords, 2 MT-RJ adapters, 2 external power supplies, cleaning kit, transport case	1/1	**LAXLSN-00000-C049**
OTS-311D-SC tester kit, includes two SC tester, 3 SC patch cords, 2 SC adapters, 2 external power supplies, cleaning kit, transport case	1/1	**LAXLSN-00000-C052**
OTS-311D-ST tester kit, includes two ST tester, 3 ST patch cords, 2 ST adapters, 2 external power supplies, cleaning kit, transport case	1/1	**LAXLSN-00000-C053**

Future*Link* Modular Optical Testers

FO Tester for ST, SC and MT-RJ Connections

Technical Data

Fiber type	Multimode: 100/140 µm to 50/125 µm
Wavelength range	800 to 1300 nm
Detector type	InGaAS
Calibrated wavelengths	850, 1300 nm
Measurement range	+3 to –70 dBm
	Auto mode: +3 to –55 dBm (multimode)
Accuracy	± 0.2 dB at reference conditions, traceable to NIST calibration standards
	± 0.2 dB + MTRJ connector accuracy (± 0.75 dB)
	(23 °C, 1310 nm, and –20 dBm)
Linearity (at 23 °C)	1300/1310/1550 nm: ± 0.1dB from 0 to –60 dBm
	850 nm: ± 0.1 dB from 0 to –50 dBm
Resolution	0.01 dB / 0.1 dB (selectable)
Connector adapters	MT-RJ
	ST® compatible, FC, SC, DIN (all interchangeable)

Optical Specifications

	Tester OTS-311D with LED source for multimode fibers
Central wavelength	850/1300 nm ± 20 nm
Output power	≥ 18 dBm coupled into
	62.5/125 µm fiber
	≥ 20 dBm with MTRJ
Spectral width	< 50 nm at 850 nm
	< 125 nm at 1300 nm
	(FWHM typical)
Output stability	± 0.1 dB at 23 °C for 8 hours
Connector type	(dedicated) ST compatible, FC,
	SC, DIN, (special port for MT-RJ)

Generall Specifications

Operating temperature	–18 °C to +50 °C
Storage temperature	–40 °C to +60 °C
Display	• dBm/dB with reference value
	• 2 kHz pulsing on testers and sources
	• Active wavelength
	• Low battery (last available battery)
	• Self-test with error messages
	• Selectable automatic shut-off (30 minutes)
	• Transmitter on (TX)
	• Out-of-range (positive or negative)
	• Watts
Data storage capacity	900 fibers at both wavelengths/50 files
Power supply, three-way:	Internal rechargeable Ni-Cad, replaceable batteries (AA/LR6, 1.5 V),
AC adapter	(6 V/300 mA)
Battery life	Meter: 34 hours typical (15 Ni-Cad and 19 lithium)
	Source: 26 hours typical (11 Ni-Cad and 15 lithium)
Dimensions	5.9 in x 3.4 in x 1.6 in (150 mm x 85 mm x 40 mm)
Weight	1 lb (< 0.5 kg)

Future*Link* Modular Tools

Fiber Cleavers

Fiber Cleaver A8

Fiber cleaver A8 is suitable for precision cleaving of all popular single-mode and multimode fibers with a cladding diameter of 125 mm even under hard field conditions. It is fitted with a universal fiber guide for 250 up to 900 µm coatings. It can be used with all standard fusion splicers and field-installable connectors.
For other applications there are further fiber guides available as accessories.

Designation	Quantity per delivery unit	Order No.
Cleaver A8, for single-mode and multimode fibers, cleave angle error typically 0.5°	1/1	**FBC-006**

Fiber Cleaver

Low-cost cleaver suitable for cleaving all popular single-mode and multimode fibers. Particularly suitable for UniCam® multimode connector installation. This unit is also suitable for cleaving two fibers simultaneously and therefore specially useful for MT-RJ field termination.

Designation	Quantity per delivery unit	Order No.
Fiber cleaver, for cleaving single-mode and multimode fibers	1/1	**FBC-001**

Future*Link* Modular Tools

FO Tool Case

FO Tool Case

Special tools are required for the installation and preparation of FO cables and buffers. The high-quality tools are available both as separate items and combined in FO tool cases. The equipment variants given for the FO tool case cover the typical requirement for additional tools.

Designation	Quantity per delivery unit	Order No.
Tool case with standard equipment	1/1	**LAXLSN-00000-C010**
Tool case with complete equipment	1/1	**LAXLSN-00000-C011**

Standard version equipped with 1, 2, 8, 9, 10, 11, 13, 15, 16, 18, 19, 20, 23, 24, 28, 31, 33 and 34
Complete version equipped with all tools

Tool Designation

	Application	Order No.
1. Cleaning sticks, foam (50 pcs)	Cleaning of connector adapters	**LAXLSN-00000-C012**
2. Cleaning sticks, cotton (100 pcs)	General cleaning	**LAXLSN-00000-C013**
3. Universal fiber buffer slitter UAT (Siecor)	Fiber buffer cutting at any point, universal, adaptable to different fiber buffer diameters	**LAXLSN-00000-C014**
4. Hot-air blower, 230 Vac	Smoothing fibers, eliminating twist	**LAXLSN-00000-C015**
5. Screwdriver, slotted-head screws, size 7	Universal	**LAXLSN-00000-C016**
6. Screwdriver, crosspoint screws, size 1	Universal (e. g. for UCAO)	**LAXLSN-00000-C017**
7. Screwdriver, crosspoint screws, size 2	Universal	**LAXLSN-00000-C018**
8. Stripping tool, dia. 0.6 – 1.1 mm	Stripping the 900 µm coating	**LAXLSN-00000-C019**
9. Stripping tool, dia. 0.18 – 0.30 mm	Stripping the 250 µm coating	**LAXLSN-00000-C020**
10. Stripping tool for fiber buffers	Stripping up to 3.2 mm dia.	**LAXLSN-00000-C021**
11. Air syringe	Blowing out dirt particles	**LAXLSN-00000-C022**
12. Fiber buffer slitter OFAT (Siecor) for fiber buffers with dia. 2.4 – 3.1 mm	Fiber buffer cutting at any point	**LAXLSN-00000-C023**
13. Spot wetter PE, closable	Alcohol dispenser	**LAXLSN-00000-C024**
14. Miller stripping pliers	Stripping 125 µm	**LAXLSN-00000-C025**
15. Clauss stripping pliers WS5	Stripping 0.8 to 2.6 mm dia.	**LAXLSN-00000-C026**
16. Length/diameter measuring tape	Measurement of lengths up to 1.4 m and diameters up to 320 mm	**LAXLSN-00000-C027**
17. Gutta-percha knife	Universal	**LAXLSN-00000-C028**
18. Tweezers, metal	Universal	**LAXLSN-00000-C029**
19. Telephone cable scissors 130 mm	Universal, cutting of kevlar	**LAXLSN-00000-C030**
20. Shears, metal	Universal	**LAXLSN-00000-C031**
21. Identification rings, numbers 0 – 9	For dia. 0.8 – 1.1 mm, 300 pcs per number	**on request**
22. Identification rings, numbers 0 – 9	For dia. 2.3 – 3.4 mm, 300 pcs per number	**on request**
23. Tesa textile tape	Universal	**LAXLSN-00000-C034**
24. Waterproof pencil, black	Markings	**LAXLSN-00000-C035**
25. "Jokari" jacket stripping knife	Cutting cable jacket	**LAXLSN-00000-C036**
26. Tubular socket wrench, 8 mm	M5 screw (e. g. UCAO)	**LAXLSN-00000-C037**
27. Tubular socket wrench, 10 mm	M6 screw (e. g. UCSO)	**LAXLSN-00000-C038**
28. Thread cutter	Cutting kelvar threads and various textile buffers	**LAXLSN-00000-C039**
29. Tubular socket wrench, 13 mm	M8 screw (e. g. UCNC)	**LAXLSN-00000-C040**
30. Tubular socket wrench, 11 mm	M6 screw (e. g. UCTL)	**LAXLSN-00000-C041**
31. Combination pliers	Universal	**LAXLSN-00000-C042**
32. Diagonal pliers	Universal	**LAXLSN-00000-C043**
33. Cable cutter	Universal	**LAXLSN-00000-C044**
34. Bolt cutter	Cutting of central members with steel core	**LAXLSN-00000-C045**
35. Pipe cutter	Cutting of central tubes	**LAXLSN-00000-C046**
36. Spare wheel	For item 35	**LAXLSN-00000-C047**

Connector Cleaning Cassette

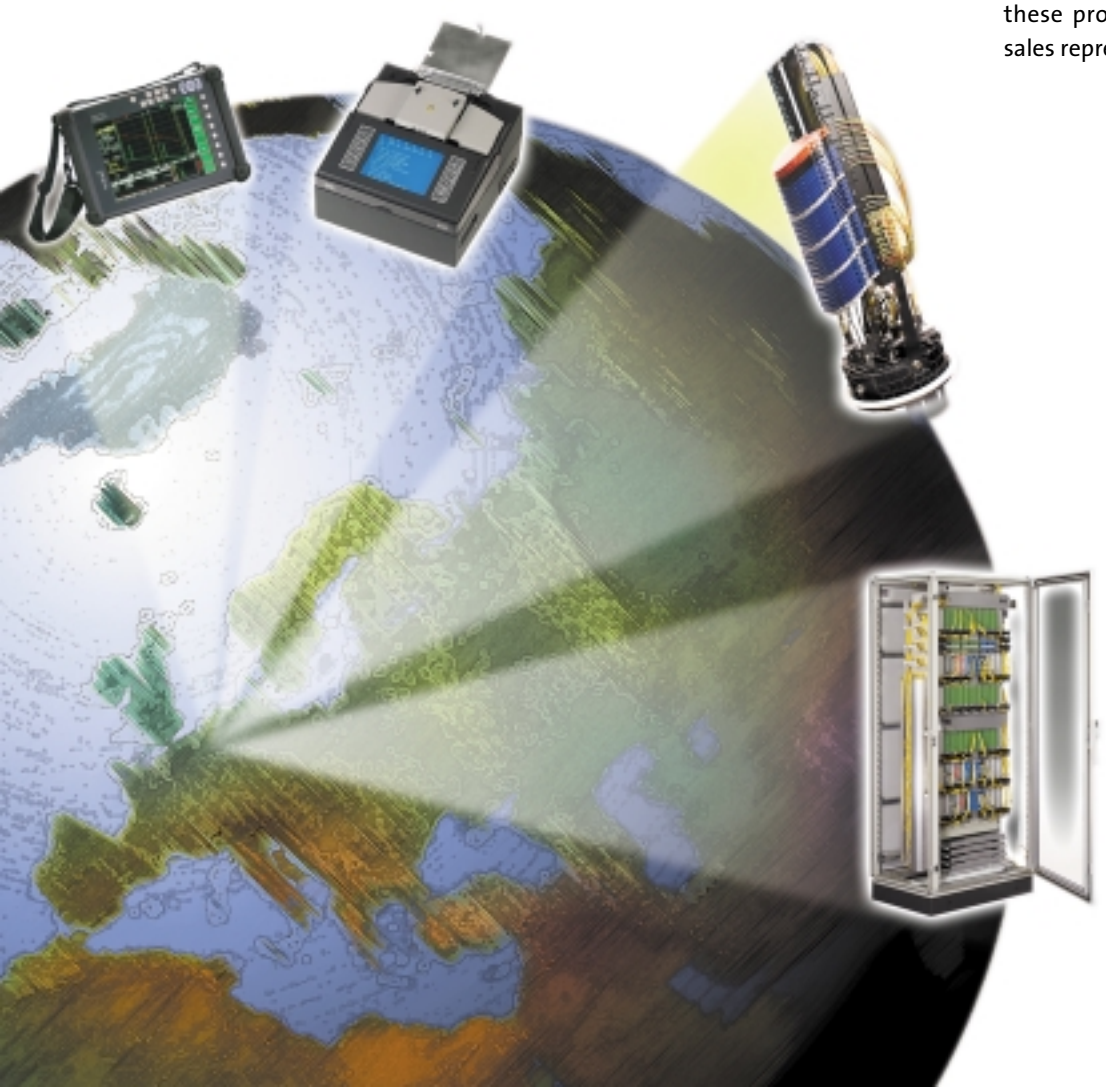
Designation	Quantity per delivery unit	Order No.
Connector Cleaning Cassette, for pinned and non-pinned connectors with ferrules	1/1	**2104359-01**

> Accessories for Communication Cables: Solutions for all Fiber Optic Networks

Corning Cable Systems offers outstanding solutions wherever cables have to be joined, branched, distributed or terminated. This applies to the transmission of voice and data over copper and fiber cable networks. The product range extends from main distribution systems in exchanges via closures for all network levels and network types through to the terminal distribution box or distribution frame. This product range makes Corning Cable Systems one of the largest system suppliers in the world. As an example of the comprehensive product range, a few products are listed here which are used by both traditional telecommunication companies as well as by private carriers worldwide:

- Closures for FO cables
- FO splicers
- Distribution systems for FO cables
- 340 OTDR Plus™ Multitester II

The full diversity of the Corning product range for FO networks is presented in our catalog “Accessories for Fiber Optic Networks“.
If you require any further information about these product groups, please consult our sales representatives.



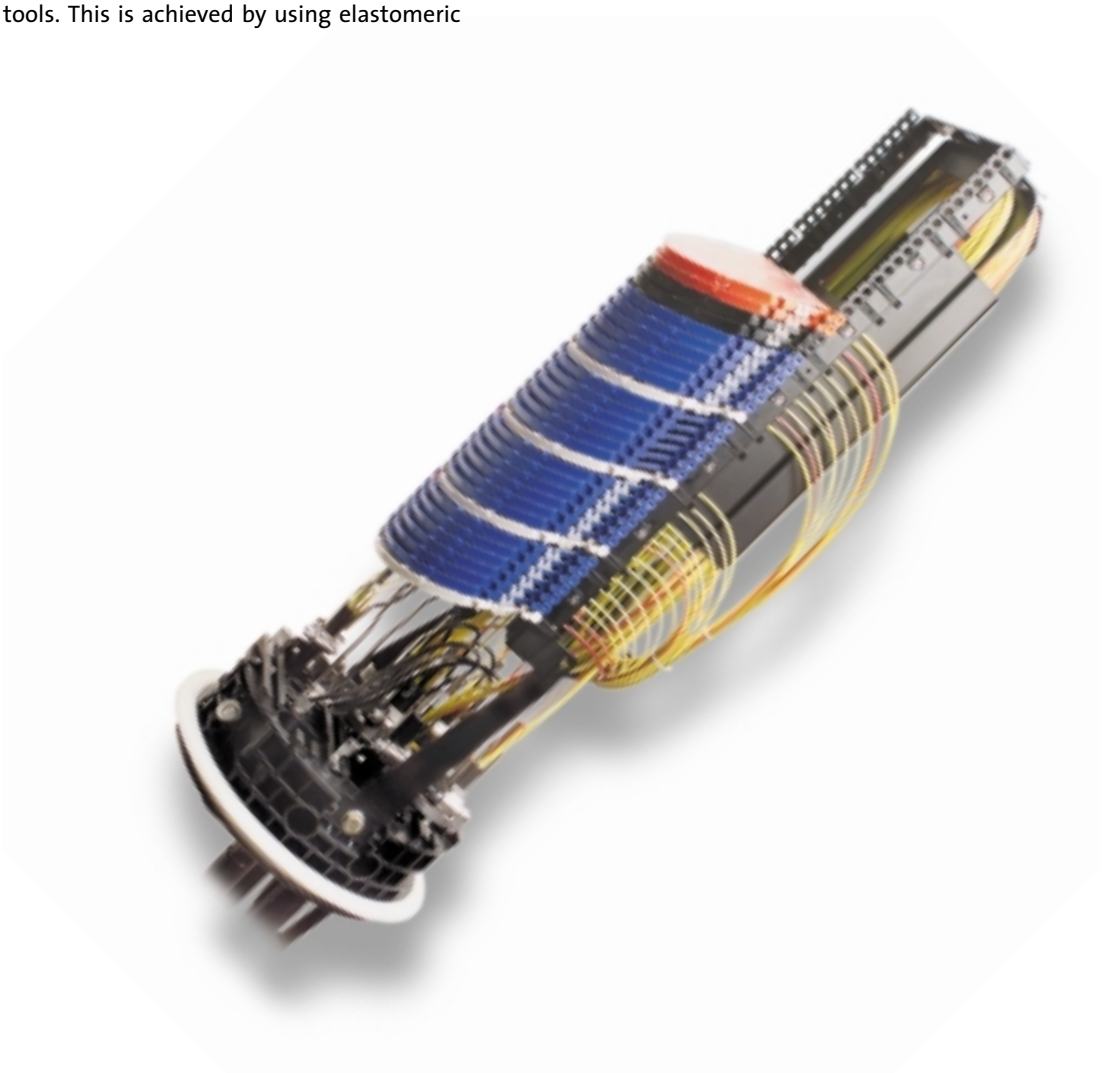
> Closures for Fiber Optic Cables

The closures from Corning Cable Systems are universally deployable in pressurized and unpressurized cable networks. They are used there as in-line closures, branching closures and vault cable closures.

Depending on the network type and level, the types that can be used are the in-line closure (tubular design), butt closure and split closure. All of these are available in different sizes.

All of our modern closures are characterized by the fact that they can be re-entered and closed again as often as required without power, consumable materials and special tools. This is achieved by using elastomeric silicone for the sealing zones of the closure. The cable entries are sealed, depending on type, with an elastomeric sealing tape, silicone or with heatshrink tubing.

The same closure family can be adapted with the aid of fiber management systems for deployment in both copper and FO cable links.



> Splicers for Optical Fibers

Corning Cable Systems offers a family of optical fiber splicers to meet the different requirements of the various networks.

The range also includes units to meet the exact splice loss demands of single-mode fibers in long-haul networks as well as special units for splicing single-mode and multi-mode fibers in LAN or CATV networks. All units can handle fibers with different core diameters and a wide variety of dopings.

The necessary tools for stripping and cleaving the fibers are, of course, also offered with the splicers.

> Distribution Systems for Fiber Optic Cables

The demands made on FO distributors employed in the various cable networks and network levels do not differ significantly from each other. The universal requirement is for high density combined with reliability, ease of service and modularity for future expansions or modifications.
Corning Cable Systems offers a modular distribution system based on 19" units which can be used in all LANs. The modules are integrated in suitable cabinets, racks or wall-mount enclosures.

> Training: Expertise for your employees

Total communication solutions are becoming increasingly important for communication networks, in particular local area networks (LANs), because the future lies in the convergence of voice, video and data.

Around the globe, as information infrastructures evolve, so the demands on the quality of networked communication solutions continue to grow. Meeting these demands calls for knowledge – knowledge that we can pass on to you.

No-one can do everything – but everything can be learned.

Techniques and products are subject to constant change. This makes it essential to have highly trained employees who know how to exploit technical progress to your advantage. This can only be achieved with continuous training.

Knowledge is precious – which is why we pass it on

As a leading provider of communication cables, hardware and services, we are working with our customers to build communication highways for the 21st century.

We realize that the planning, installation and maintenance of cable systems calls for comprehensive technical knowledge – something we want to share with you in spirit of genuine partnership.

We train – you benefit

Our worldwide knowledge in cable and network technology is channeled to our Training Center. It is from this knowledge base that we develop a wide range of seminars for your employees.

Our training is aimed at all organizations involved in constructing or operating cable systems in the private networks or carrier area.

By undertaking training before starting on a project, you can avoid costly installation errors, and take a decisive step towards ensuring a successful outcome to your project.

Practical orientation, not theoretical dreams

The balance between the two is critical: theory is necessary, but practice dictates what is done. From many years of practical experience, our trainers know which knowledge and skills are required for each task, and they are in constant contact with development, sales and project engineering teams at Corning Cable Systems.

> Training Center Corning Cable Systems

Our Training Center headquarters is located in Munich.

Standard and customized courses to meet individual requirements are held locally throughout the world, where the technical facilities permit.

Details of our current training programs and schedules are available

- on the Internet
  http://www.corning.com/cablesystems/europe
- via E-Mail
  eutraining@corning.de
- by phone under hotline number
  +49 89-5111-3165

Detailed training information is available on request.

Course Portfolio Private Networks:

Structured premises cabling

LANscape
- Future*Com* – copper
- Future*Link* – optical fiber

Cabling solutions for residential networks:
Home*Way*

LOOK AND BOOK ONLINE
www.corning.com/cablesystems/europe

If you require support:

If you require any further support, please contact one of our partners located in your area (for a list of addresses please see our Contact Center on the Internet).

Further information relating to private networks is available on the Internet at www.corning.com/cablesystems/europe.

> LANscape® CABLING SOLUTIONS
SOLUTIONS YOU CAN DEPEND ON.
A NAME YOU CAN TRUST.

The bandwidth revolution – we get you there – we make it possible.

Meeting and exceeding global standards

We guarantee that each customized Corning Cable Systems LANscape Cabling Solution meets or exceeds the global data communication and performance standards. You can be assured that your Corning Cable Systems Solution measures up to the international cabling requirements, ISO/IEC 11801 and EN 50173 (Europe).

Installation expertise and reliability

Corning Cable Systems' network of LANscape Extended Warranty Program™ (EWP) installers are carefully selected and trained. Each partner-company meets our stringent requirements for technical experience, financial strength and proven dedication to quality. EWP partners must demonstrate ongoing commitment to extensive training and are required to update training at least once every two years.

LANscape® Solutions Total Package

The LANscape end to end product offering is designed to deliver the most technologically advanced communications systems to the customer. Corning Cable Systems LANscape products withstand rigorous field and laboratory testing with continual design enhancements in response to rapidly evolving customer environments.

Ready for your growing network

Corning Cable Systems understands the critical need for flexible solutions with the rapid growth of your data communications requirements. With Corning Cable Systems' LANscape Solutions, changes and expansions are cost-effective and simple. Your cost-of-ownership is minimized!

Expert service and support

Corning Cable Systems' experts support and assist European Extended Warranty Program installers with the planning, designing, and installing of fiber optic and high-end copper cabling systems. Corning Cable Systems' Engineering Services Group provides personalized design assistance and on-site field support on many warranty projects. With world-wide distribution channels and a high class Customer Service Center, Corning Cable Systems makes it easy for EWP installers to quickly get products to your site for installation. Highly trained Sales Consultants located in your area are available for on-site evaluations and cabling recommendations.

Extended warranty – extra value

Corning Cable Systems' LANscape Extended Warranty protects your LANscape Fiber Optic and/or High-end Copper Solution for a full 25 years. The warranty covers total system performance as well as each product component of the Corning Cable Systems' solution. Corning Cable Systems guarantees to repair or replace defective products for 25 years after installation by an EWP Partner. The LANscape EWP 25-year system warranty is offered when all products in the cabling solution (cables, connectivity, and interconnecting hardware) are Corning Cable Systems products installed by an EWP Partner.

Total corporate assurance

Corning Cable Systems is the only company focusing primarily on fiber cabling solutions while also offering High-end copper solutions. Our mission is to remain the world's leading developer and manufacturer of fiber optic and High-end copper products for voice, data, and video applications. Corning Cable Systems' resources for research and product development, financial strength, and mature business focus are clearly unmatched in the communications industry. Corning Incorporated, headquartered in Corning, New York, is a multi-billion Fortune 500 company. Corning is the inventor of the first commercial optical fibers and the world leader in optical fiber manufacturing for over 25 years. Our unique heritage makes Corning Cable Systems the one company that can offer a solid corporate foundation, a tradition of quality, and a name you can trust.

How you benefit:

– LANscape 25 Years Warranty
– Installation by Corning Cable Systems Approved Partners
– Partners trained on the latest technology
– Corning Cable Systems Total Quality

> Glossary

Absorption
Weakening (loss) of radiation when it passes through a material (part of the radiant energy of light, for example, is converted into heat).

Armoring
Protective element (usually steel wire or tape) used on cables with special operational requirements e.g. direct burial, undersea, in mines and for rodent protection.

Attenuation
The factor by which the signal power at the end of the cable has decreased relative to the power at the start of the cable. Main causes in optical fibers: scattering, absorption, light losses in connectors and splices.

Backscattering technique
Technique for measuring the attenuation along an optical fiber.

Bandwidth
Frequency at which the magnitude of the transfer function of an optical fiber has fallen to half of the value that it had at 'zero' frequency; i.e. the attenuation of the light signal has risen by 3 dB.

Central member
A member running through the center of a cable; in fiber-optic cables usually a strength member.

Cladding
The dielectric material surrounding the core of an optical fiber and having a lower refractive index than the core.

Coating
Composite layer applied to the surface of the fiber cladding to provide mechanical protection.

Connector
Easily demountable plug-in connection between two optical fibers. As a rule the insertion loss (see insertion loss) of a plug-in connection is higher than that of a splice (see splice).

Core glass
Core of a glass fiber. It has a higher refractive index than the cladding glass.

Coupler
Passive component for the transmission of light between light source and fiber or between several fibers.

Crimping
Compressing a sleeve around the fiber/buffer in order to produce reliable mechanical protection.

Dispersion
Dispersion causes light pulses in a fiber to spread in time. A distinction is made between multimode distortion, material dispersion and fiber dispersion.

Doping
Controlled addition of small quantities of an impurity to a pure substance in order to change its characteristics, e.g. increase the refractive index (see refractive index) of the fiber core.

Electromagnetic compatibility EMC	Electromagnetic interference immunity and interference emission of a cable / system.
FDDI (Fiber Distributed Data Interface)	Fiber-optic network with dual, counter-rotating ring topology and 100 Mbit / s bandwidth.
Fiber multiplexing	Transmission method in which each transmission channel is assigned a fiber.
Fiber ribbon	Fibers arranged parallel to each other and equally spaced, bonded in a flat configuration by a coating. Several fiber ribbons can be placed on each other to form a stack.
FITL (Fiber in the Loop)	Fiber in the local line network. A distinction is made according to where the fiber terminates, as follows: • FTTB – fiber to the building • FTTC – fiber to the curb • FTTH – fiber to the home, and • FTTP – fiber to the pedestal.
Frequency	Number of complete cycles per second (in Hz).
FRNC	Flame Retardant Non Corrosive LS0H Material.
FTTD (Fiber to the Desk)	Cabling in which optical fibers extend to the desk.
Graded index profile	Refractive index profile of an optical fiber. The refractive index of the fiber core decreases continuously – usually parabolically – toward the cladding.
GRP element	Antibuckling and strength member made of glass filaments (GRP = glass fiber reinforced composite).
Indoor cables	Cables for applications inside buildings. They are generally unsuitable for outdoor use.
Insertion loss	Attenuation caused by the insertion of an optical component into an optical transmission path.
ISDN (Integrated Services Digital Network	Data, voice and images are switched and transmitted through the digital network via one port.
LAN (Local Area Network)	Local network for serial transmissions between independent terminal equipments.
Layer cable	Cable in which the fiber buffer tubes (transmission elements) are arranged in layers around a central member (see central member).

> Glossary

Length of lay	The pitch of the stranding of multifiber buffer tubes.
LID (Local Injection and Detection)	The "local light injection and detection system" is used for the fast, trouble-free alignment of the fibers. It consists of two bent-fiber couplers (source and detector); light is injected into the fiber on the source side and the optical power transmitted is measured on the detector side. Optimum fiber alignment is achieved when maximum optical power is detected.
L-PAS (Lens Profile Alignment System)	Video image analyzer; this system is used for positioning the fibers in x. y and z axes. The fiber ends to be fused are imaged on the sensor of a CCD camera. The electrooptically converted signal is used for displaying the fibers, for checking the fiber positions on the monitor and for image analysis.
Loose buffer tube	Several fibers in a common loose buffer tube.
Microbending	Minute curvature in a fiber causing light loss and hence increased attenuation.
Modes	All the light waves that can propagate in an optical fiber.
Multimode fiber	Optical fiber whose core diameter is large relative to the wavelength (see wavelength) of the light, thus allowing a large number of modes (see modes) to propagate.
Optical fiber	Transparent dielectric waveguide for transmitting signals using electromagnetic waves in the optical frequency range.
Optical waveguide	optical fiber (see optical fiber)
Outdoor cables	Cables designed to satisfy all the requirements for outdoor installation (e.g. buried or in ducts, in the air or under water).
OVD Method (outside vapor deposition method)	Method of producing optical fibers by deposition from the gas phase onto the outer surface of a rotating substrate rod.
Pigtail	Short length of optical fiber with a connector at one end.
PON (passive optical network)	Network for FITL (see FITL) with passive components, such as couplers, splitters and connectors.
Reflection	Return of waves due to a mismatch.
Refraction	Change in the direction of propagation of a ray (wave) at the interface between two media with different refractive index (see refractive index).
Refractive index	Factor by which the velocity of light in an optical medium (e.g. glass) is lower than it is in a vacuum.

Ribbon cable	Cable with fiber ribbons (see fiber ribbons).
Single-mode fiber	Optical fiber whose core diameter is so small relative to the wavelength (see wavelength) of the light that only one mode (see mode) can propagate.
Slotted core cable	Cable with fibers or fiber ribbons located in grooves in the surface of the central member.
Splice	Permanent connection between two optical fibers that is made by fusion or bonding.
Splitter	Optical component for dividing the optical power from one fiber among several other fibers.
Star coupler	Active or passive component which provides an even distribution of optical power in an identical number of incoming and outgoing fibers.
Step index profile	Fiber with an abrupt decrease in refractive index at the interface between core and cladding. The refractive indexes for core and cladding are constant.
Strength member	Structural element in the cable for absorbing tensile and compressive forces.
Tight-buffered fiber	Fiber with a closely fitting buffer tube.
Time-division multiplexing	Transmission method by means of which several digital signals arriving in parallel are transmitted in a serial data stream over a single fiber.
Wavelength	Length of the full cycles (period) of a wave. The three wavelength ranges normally used in optical communications are 850 nm, 1300 nm and 1550 nm.
Wavelength-division multiplexing	Transmission method by means of which several signals are transmitted simultaneously at different wavelengths over a single fiber.

> Type Codes for Fiber Optic Cables

A-	Outdoor cable
B	Armoring
(BN)	Glass yarn, non-metallic armoring, e. g. for rodent protection
D	Loose buffer tube, filled
E	Single-mode fiber
F	Filling compound in the cable core
FR	Cable with improved burning behavior
...F...	Attenuation coefficient in dB / km and dispersion in ps / (nm km) at a wavelength of 1310 nm
G	Multimode fiber
	Halogen-free jacket
H	Attenuation coefficient
...H...	in dB / km and dispersion in ps / (nm km) at a wavelength of 1550 nm
J-	Indoor cable
K	Slotted core
N	Fiber in central core tube without buffer
NC	Non-corrosive smoke fumes
(L)	Laminated Aluminum sheath
LG	Stranded in layers

S	Metallic elements in the core
Q	Dry swellable material in the cable core (dry core)
(SG)	Armoring by laminated, smooth, longitudinal, overlapped steel tape
(SR)	Armoring by laminated, corrugated, longitudinal, overlapped steel tape
Y	Jacket or protective cover of polyvinyl chloride (PVC)
2Y	Jacket or protective cover of polyethylene (PE)
4Y	Jacket or protective cover of polyamide (PA)
(ZM)	Metallic anti-buckling and strength members in the jacket
(ZN)	Non-metallic anti-buckling and strength members
(...ZN)	Number of non-metallic anti-buckling and strength members in the jacket
VDE	Association of German Electrical engineers

Notes

> Product range catalogs

The following catalogs can be ordered at any time on the Internet at www.corning.com/cablesystems/europe
or by fax on +49-89-32942288:

Title: Future*Com* UD
Cabling System Class UD (2002)
Languages: German/English
Order No.
C1-N4-P66-4-7100 (German)
C1-N4-P66-4-7600 (English)

Title: Future*Com* UE
Cabling System Class UE (2002)
Languages: German/English
Order No.
C1-P67-1-7100 (German)
C1-P67-1-7600 (English)

Title: Future*Com* D
Cabling System Class D (2002)
Languages: German/English
Order No.
C1-N4-P62-4-7100 (German)
C1-N4-P62-4-7600 (English)

Title: Future*Com* E^{Link}
Cabling System Class E (2002)
Languages: German/English
Order No.
C1-N4-P70-1-7100 (deutsch)
C1-N4-P70-1-7600 (englisch)

Title: Future*Com* E
Cabling System Class E (2002)
Languages: German/English
Order No.
C1-N4-P63-6-7100 (German)
C1-N4-P63-6-7600 (English)

Title: Future*Com* F
Cabling System Class F (2002)
Languages: German/English
Order No.
C1-N4-P65-1-7100 (German)
C1-N4-P65-1-7600 (English)

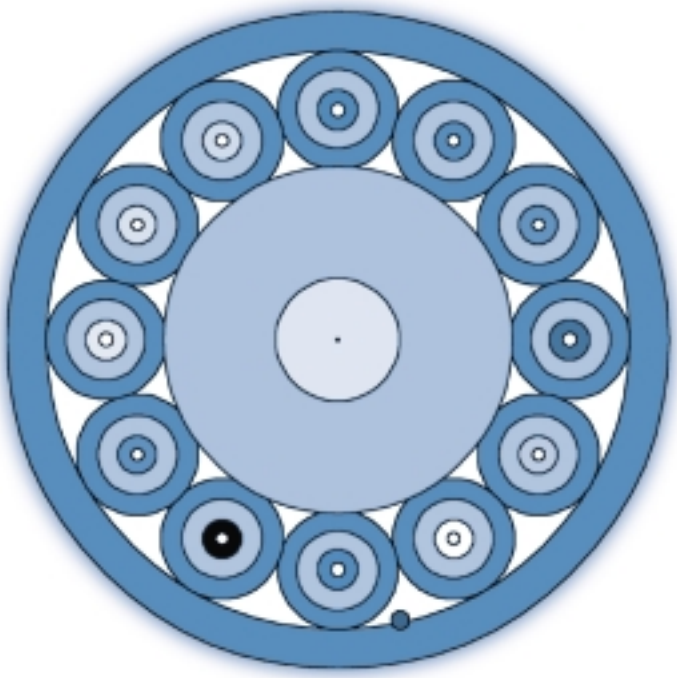
Title: Home*Way*
Multimedia Infrastructure
for the Home, Product Catalog
Languages: German/English
Order No.
C1-K19-3-7100 (German)
C1-K19-1-7600 (English)

Title: Home*Way*
An Introduction to the System
for the Private Home, Flyer
Languages: German/English
Order No.
C1-B10-1-7100 (German)
C1-B10-1-7600 (English)

Title: MCS Micro Cabling Systems/S.L.I.M.
Economical FO Cable Installation without Excavation, Flyer
Languages: German/English
Order No.
C1-B11-1-7100 (German)
C1-B8-1-7600 (English)

Title: MCS Micro Cabling Systems/S.L.I.M.
Economical FO Cable Installation without Excavation, Product Catalog
Language: German
Order No.
C1-K10-3-7100 (German)
C1-K10-3-7600 (English)

Title: Accessories for Fiber Optic Networks
Languages: German/English/French/Spanish
Order No.
C1-K22-2-7100 (German)
C1-K22-3-7600 (English)
C1-K22-1-7700 (French)
C1-K22-1-7800 (Spanish)



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Issue 1

Fiber Optic Cabling System

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Order No. C1-N4-K18-4-7600
Printed in Germany
CCS 0202.10

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