Fiber Solutions for Access and Transport Networks – Product Overview
The passive infrastructure in any fiber optic network is a long-term investment. It needs to be built on scalable and future-proof technology that is optimized in terms of capacity, quality and operational expenditure.

This catalogue presents an overview of our Passive Fiber Infrastructure offering. All products are designed and tested to meet the highest quality and environmental standards.

The catalogue covers the main areas:

- **Central Office Related Equipment** covers products that are common in any type of network, regardless of application. Equipment racks, Optical Distribution Frames (ODFs), patch cords and other fiber optic accessories are found here.

- **Fiber Access Network** covers the air blown fiber system Ribbonet® and the Hexatronic Micronet micro cable systems used for efficient installation of access networks including Fiber-to-the-Home (FTTH) and similar architectures. This section also covers products for scalable campus and metro networks as well as components for efficient splicing and termination of access networks.

- **Fiber Transport Network** covers products for general network applications such as fiber optic cables for underground and aerial as well as local site cabling installation. This section also includes associated cables and components for splicing and termination of cables.

- **Submarine Cable Systems**

  The range of cables for submarine installations is based on extensive experience from several submarine-cable projects.

- **Local Site Cabling and FTTA** covers installation cables for various interconnect applications as well as cables for Fiber To The Antenna (FTTA) systems. This section also includes components used for indoor and outdoor installations.

You can find all our products on [www.hexatronic.com](http://www.hexatronic.com).

Contact the Hexatronic sales team to find your nearest wholesaler +46 (0) 10 - 453 02 00, order@hexatronic.com.

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**ONLINE CATALOGUE**

Please find catalogues in digital format and more information about our products and services at: [www.hexatronic.com](http://www.hexatronic.com)

Hexatronic catalogues are also available in: [issuu.hexatronicpartners.se](http://issuu.hexatronicpartners.se)
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EQUIPMENT RACK SYSTEMS

The Central Office offering features fiber management systems to efficiently and cost-effectively organize and terminate large quantities of fiber. The application in the central office environment is characterized by a minimum footprint in combination with class-leading capacity that allows well-organized and safe fiber termination to minimize operating errors.

Multifiber Management System – 1/BFM 108 213

The Multifiber Management System is a high-capacity, telecom grade fiber termination rack for central office applications. The rack is equipped with fiber management through vertical and horizontal cable guides.

- Type: 19” mounting frame
- Size: 800x1800x400 mm
- Capacity, equipment: 36U
- Capacity, connections: up to 1536 (SC)
  * Overhead cable channel adds 150mm to height

Compact Fiber Management System – BAB 327 300

This rack system offers unique benefits for high density fiber optic termination applications such as FTTH.

- Type: 14” frame
- Size: 600x1800 / 2200x300 mm
- Capacity, equipment: 24/36U
- Capacity, connections: 1152/1536 (SC)

Mounting Frame System – NBF 110 03

The mounting rack system is a multi-purpose, wall mounted frame system for smaller sites. The frame is designed for 19” equipment. The depth of the frame can be adjusted with brackets.

- Type: 19” mounting frame, wall mounted
- Size: 500x2200x240x600 mm
- Capacity, equipment: 48 U
**Fiber Jointing Cabinet, High Capacity – NCD 518 8005**

This high capacity cabinet is intended for handling of cable splices between incoming cables entering the central office and the cables from pre-terminated ODFs. The cabinet can be wall mounted or mounted in a 19" or ETSI rack.

**TYPE:** Cable installation, 19", ETSI or wall mount  
**SIZE:** 440x600x220 mm  
**CAPACITY:** 768 splices (single fiber) or 2600 splices (8-f ribbon)

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**Fiber Jointing Cabinet, Small – NCD 518 1098**

This extra small cabinet is useful for smaller sites. It is intended for wall mounting. The cabinet includes 2 splice trays. To increase the splice capacity, 6 additional trays can be added (optional accessories).

**TYPE:** Cable installation, wall mount  
**SIZE:** 350x300x130 mm  
**CAPACITY:** 24 to 96* splices (single fiber) or 48 to 192* splices (4-f ribbon)  
* With additional splice trays (optional)
Optical Distribution Frames (ODFs) are integrated components in any fiber management system. They are available as rack-mounted units for 14", 19" or ETSI racks, or as wall-mounted cabinets. The ODFs are available in a range of configurations depending on application:

**Pre-terminated ODFs** with stub cables are pre-installed with connectors and cable for quick and easy installation. Units with pre-terminated cables offer advantages such as faster installation, resulting in shorter time to revenue as well as guaranteed quality and performance. Several cable options are available. ODFs with stub micro cables are especially suitable for high packing density applications such as the Multifiber Management System (MMS).

**ODFs for cable installation** are intended for installation and termination of all kinds of fiber optic cables. The units are suitable for splicing pigtails or fiber ribbon fanouts as well as field-installable connectors. The ODFs are delivered empty, allowing the customer to order the pigtails/fanouts, adapters, splice protection sleeves and installation kit that best suit the specific application. The units can also be installed with pre-connectorized cable assemblies.

**ODFs for air blown fiber** are designed to handle termination of microducts for air blown fibers. They are typically used in FTTx applications when blowing fibers directly to a central office or other distribution point. The air blown technology enables incremental installation when needed.

### ODF Pre-terminated, with Stub Cable, 2U – NCD 513+

Pre-terminated ODF with a capacity from 24 to 96 SC (192 LC) connectors. Options include: halogen-free, flame-retardant, loose tube, ribbon or micro cable. Optional accessories include horizontal patch cord guides for space-saving mounting directly onto the front of the ODF.

**Type:** Pre-terminated, 19" or ETSI mount, 2U  
**Size:** 400x249x86 mm  
**Capacity:** 24-96 SC, 24-192 LC  
**Cable Options:** Halogen-free, flame-retardant loose tube, ribbon or micro cable, 10-100 m  
**Connector Options:** SC, SC/APC, LC, LC/APC

### ODF for Cable Installation, 2U – NCD 513+

High capacity ODF with up to 96/192 connectors. Optional accessories include horizontal patch cord guides for space-saving mounting directly onto the front of the ODF, pigtails, fanouts, adapters, splice sleeves, etc.

**Type:** Cable installation, 19" or ETSI mount, 2U  
**Size:** 400x249x86 mm excluding reel  
**Capacity:** 96 SC, 192 LC  
**Connector Options:** SC, SC/APC, LC, LC/APC, E2000, FC, ST

### ODF for Cable Installation, 1.5U – NCD 513+

ODF with a capacity of up to 48/96 connectors. Optional accessories include horizontal patch cord guides for rack mounting directly under the ODF, pigtails, fanouts, adapters, splice sleeves etc.

**Type:** Cable installation, 19" or ETSI mount, 1.5U  
**Size:** 440x247x66 mm excluding reel  
**Capacity:** 48 SC, 96 LC  
**Connector Options:** SC, SC/APC, LC, LC/APC, E2000, FC

### ODF for Air Blown Fiber installation, 1U – NCD 520 0013

Compact ODF with front access for simplified incremental installation of air blown fiber. The ODF has a capacity up to 48 SC (96 LC) connectors and clamps for up to 48 microducts. Optional accessories include horizontal patch cord guides, pigtails, fanouts, adapters, splice sleeves etc.

**Type:** 19" mount for air blown fiber installation, front access  
**Size:** 450x280x44 mm  
**Capacity:** 48 SC, 96 LC  
**Connector Options:** SC, SC/APC, LC, LC/APC
ODF Patch Panels – NCD 520 5000

This is a multi-purpose patch panel system when no or limited access from the rear of the rack is allowed. The panel offers total front access for both incoming and outgoing cables. The light-weight panel is divided in a left and right swiveling section. It is designed for pre-connected incoming cable assemblies.

Type: Pre-connected cable assemblies
Size: 485x200x43 mm
Capacity: 6 basic versions with 48 or 32 SC adapters

Pre-connected ODF 14”/19” – NCD 520 0072 and NCD 520 0075

These compact and pre-connected ODF:s are intended for 14” rack systems such as the BAB327 300. The connectors are terminated to a stub cable consisting of 8-f ribbons. Two versions are available: 1U with 48 SC or 2U with 96 SC.

Type: Pre-terminated, 14” mount, 1U or 2U
Size: 310x220x44/88 mm
Capacity: 48 or 96 SC
Cable Options: Halogen-free, flame-retardant ribbon cable, 15-150 m
Connector Options: SC

ODF for Cable Installation, Wall Mounted – NCD 518 1200

Two-sided wall mounted ODF with a capacity of up to 48 SC or 96 LC connectors. The ODF consists of two compartments with separate locks and is therefore suitable as a demarcation cabinet between different network owners. The cabinet can also be used as a jointing box. Optional accessories include patch panels for different adapter types.

Type: Cable installation, wall mount
Size: 475x300x130 mm
Capacity: 48 SC, 96 LC
Connector Options: SC, SC/APC, LC, LC/APC, ST, FC

Patch Handling Unit Wall Mounted – NBL 323 01

This patch handling unit stores excess lengths of patch cords connected to ODF:s. 24 slots provide storage of up to 6 m of cable in each slot.

Type: 19” mount patch cord storage unit
Size: 482x234x88 mm
Capacity: 24 slots

Horizontal Cable Guide – NTM 504 036

There are a number of accessories available for handling of patch cables in rack systems. This guide is mounted under ODF:s to guide patch cords to the side of the rack.

Type: 19” mount patch cord guide, 1U
Size: 482x70x41 mm
PATCH CORDS, PIGTAILS AND CABLE ASSEMBLIES

The range of fiber optic patch cords, pigtails and cable assemblies cover all interconnect needs in any kind of environment. We provide virtually any type of fiber optic connector. Some examples are shown below.

Supported fiber types are singlemode G.657 (compatible to G.652), and multimode 50μm OM3 and OM4. The product range is divided into four main categories:

**Patch cords** that are used for quick and easy interconnect between line equipment or for cross connection between network interface equipment such as ODFs. Patch cords are available as simplex (1 fiber), duplex (2 fiber).

**Pigtails**, stub fibers with a fitted connector on one end, are normally spliced towards a cable or other type of fiber unit inside an ODF, wall outlet or other type of network equipment. The standard pigtail is made of a 0.9mm tight secondary protected fiber. Pigtails are available for all connector options.

**Fanouts**, fiber ribbons that are branched out in one end and fitted with connectors, enable ribbon-fiber splicing, minimize splice cost and increase packing density in network equipment.

**Multifiber cable assemblies**, or fiber optic patch cables, for interconnect applications are preferred when a high number of interconnections and a high packing density is required. The cable assemblies are available with 4-48 fibers and are delivered pre-terminated in one or both ends. To facilitate installation and to maximize packing density, the multifiber cable assemblies use extra-slim micro cables, typically 6-8mm in diameter.
Patch Cords, Pigtails and Fanouts, Blue Grade – HTSR 395+

A series of patch cords, pigtails and fanouts for demanding telecom applications with high requirements for low-loss and stability. The products are made of highly bend resistant G657A2 fibers to minimize operating errors and enable highest packing density in interconnect applications.

CONNECTOR OPTIONS: SC, SC/APC, LC, LC/APC
PERFORMANCE: IL*≤0.30, RL (PC)≥50, RL (APC)≥60
STANDARD LENGTH: 1, 2, 3, 5, 7, 10 m
* Insertion Loss according to IEC 61300-3-4 method B

Patch Cords, Pigtails and Fanouts, Standard Grade – HTSR 395+

A series of patch cords, pigtails and fanouts that offers best price/performance ratio for access networks as well as general data communication applications. The products are made of bend resistant G657A fibers to minimize operating errors and enable high packing density in interconnect applications.

CONNECTOR OPTIONS: SC, SC/APC, LC, LC/APC
PERFORMANCE: IL*≤0.35, RL (PC)≥50, RL (APC)≥60
STANDARD LENGTH: 1, 2, 3, 5, 10 m
* Insertion Loss according to IEC 61300-3-4 method B.

Patch Cords, Pigtails and Fanouts – TSR 394+

Multimode patch cords, pigtails and fanouts for various applications such as telecommunication equipment, and data communication networks.

TYPES: Multimode 50μm OM3 or OM4
CONNECTOR OPTIONS: SC, LC
PERFORMANCE: IL Max*≤0.3, RL ≥ 30
* Insertion Loss according to IEC 61300-3-4 method B.

Multifiber Cable Assemblies – 253+

Patch cables with 4 to 48 fibers, for high density interconnect applications. All cable assemblies are manufactured from ultra slim micro cables.

CONNECTOR OPTIONS: SC, SC/APC, LC, LC/APC, FC, E2000
PERFORMANCE: IL*≤0.30, RL (PC)≥50, RL (APC)≥60
* Insertion Loss according to IEC 61300-3-4 method B
Fiber optic splitters or couplers provide division of optical power from one or two input ports into several output ports. Symmetric optical power splitters are used for fiber optic communication systems such as PON FTTx networks. Asymmetric power splitters are used for monitoring of transmission signals in fiber networks.

**Fiber Optic Splitter Shelf – NCD 5200+**

Splitter shelf for 19” rack mounting with pre-installed fiber optic splitters. The shelves are available in different configurations with split ratios of 1x2 to 1x64. The standard connector option is SC/APC. Available in both standard and high grade.

<table>
<thead>
<tr>
<th>Type: Splitter Shelf, 19”, 1U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector options: SC/APC, SC</td>
</tr>
<tr>
<td>Size: 410x195x44 mm</td>
</tr>
<tr>
<td>Split ratio: 1x2 to 1x64</td>
</tr>
</tbody>
</table>

**Splitter Frames – NBA 301 04 and NBA 301 05**

The splitter frames are designed for compact mounting of splitter modules in 19” racks. The most common use is for central office applications or larger distributed PON sites. There are two frame heights available.

<table>
<thead>
<tr>
<th>Type: (04) Splitter frame 1U for up to 9 splitter modules (05) Splitter frame 4U for up to 35 splitter modules</th>
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</thead>
<tbody>
<tr>
<td>Mounting: 19” or ETS</td>
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</table>

**Splitter Modules – RDJ 901 200+**

Splitters to be used for splitter frames. The splitters are pre-terminated with protected fanouts and with fitted connectors. The splitters can also be installed in ODFs or other compartments. Available in both high grade and standard grade and with different connector options.

<table>
<thead>
<tr>
<th>SPLIT RATIO: 1x4 to 1x64, 2x4 to 2x64</th>
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<tbody>
<tr>
<td>INPUT/OUTPUT: 2 mm patch, G657A1</td>
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<tr>
<td>Type: Optical splitters, PLC</td>
</tr>
<tr>
<td>SPLIT RATIO: 1x2 to 1x64, 2x2 to 2x64</td>
</tr>
<tr>
<td>INPUT/OUTPUT: 2 mm patch, G657A1</td>
</tr>
<tr>
<td>Connector options: SC/APC, SC, LC, LC/APC</td>
</tr>
</tbody>
</table>

**Asymmetric Fiber Optic Splitter Shelf – NBA 102 0001/023**

The asymmetric division of the signal power is in a proportion of 10:90 split ratio which gives the ability to monitor or measure the transmission signal. The optical power splitter is mounted in a standard 2U ODF chassis and fits both 19” and ETSI rack systems. It is designed for both the 1550nm and 1310 nm wavelength band. The unit has 24 channels and is equipped with SC/APC connectors for minimum back reflections.

<table>
<thead>
<tr>
<th>Type: Monitor splitter</th>
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<tbody>
<tr>
<td>Size: 440x249x86 mm</td>
</tr>
<tr>
<td>SPLIT RATIO: 10:90</td>
</tr>
<tr>
<td>Connector options: SC/APC</td>
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</tbody>
</table>
FIBER OPTIC ACCESSORIES

Typical accessories for fiber optic interconnect and splicing applications include various essential and optional products such as fiber optic adapters for Optical Distribution Frames (ODFs), splice sleeves and connector cleaners.

Adapters – RNT 992+
Fiber optic adapters for ODFs and termination units, all of premium grade to fit any kind of application. Simplex, duplex and quadruplex connector options.

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<tbody>
<tr>
<td>SC/APC</td>
<td>SC/MM</td>
<td>LC/APC</td>
<td>LC</td>
<td></td>
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<tr>
<td>E2000</td>
<td>FC</td>
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</table>

End Plugs – NDM 501+
Plugs to cover unused slots in ODF panels.

<table>
<thead>
<tr>
<th>slot options: SC, SC-duplex, FC, ST cut-out</th>
</tr>
</thead>
</table>

Splice Protection Sleeves – NTA 162 12+
Sleeves for protection of fiber optic fusion splices, available as single fiber sleeves or as fiber ribbon sleeves.

| SLEEVE TYPES: Single fiber 40 mm Single fiber 40 mm or 60 mm Ribbon 2-12 fiber |
|---|---|---|

Cleaning Sticks – LFS 150 101 and LFS 150 102
Dust-free, high-grade cleaning sticks specially developed to minimize the risk of cotton nap getting onto connectors during cleaning. The sticks are suitable for 2.5 mm respectively 1.25 mm adapter types.

| APPLICATION: SC, FC, ST, E2000 (101) or LC, MU (102) connector and adapter cleaning TYPE: High-grade, dust-free |
|---|---|

Connector Cleaner – LTT 179 001
This handy tool contains a dust-removing tape for quick and easy cleaning of connector tips. For each cleaning cycle, a new section of tape is dispensed. Refill tapes are available.

| APPLICATION: Connector top cleaning TYPE: High-grade, dust-free |
|---|---|
Hexatronic’s solutions for Access Networks consist of the air blown microduct systems Micronet and Ribbonet® as well as traditional fiber optic cables. The products are specially developed for access networks with the highest requirements for scalability, performance and reliability.

Fiber-to-the-Home (FTTH) refers to fiber optic broadband connections to individual homes. FTTH networks are deployed either as a passive optical network (PON) with a partially shared fiber infrastructure, or as a point-to-point network (P2P) with dedicated fibers to each end user. Regardless of network type, the chosen technology must be able to support a variety of changes in the future as capacity and services evolve.

**TO BUILD FOR THE FUTURE**

**Scalability**

The access networks built today must be scalable, not just regarding capacity, but also regarding topology. Typical examples of scalable technologies are the Ribbonet® and Micronet air-blown fiber and micro cable systems, where incremental installation of fiber, easy repair and upgrade are key elements. The system scalability minimizes the total cost of ownership.

**Versatility**

It is not possible to predict all technological changes in the future. Therefore, network components are designed for any topology or combination of topologies, for example PON and P2P. They will also support a full transformation from PON to P2P (or vice versa) without the need for additional civil works.

All of our major network components can handle any cabling type, for example air-blown fiber, micro cable, drop cables or traditional cable (a mix of the above).

**Sustainability**

All products are designed to minimize the environmental impact, from the manufacturing phase and through the whole lifecycle of the products. Total RoHS compliance and halogen-free materials are features of the entire product range. Packing materials are minimized or fully recyclable.
MICRONET MICRO CABLE SYSTEM

Feeder Network and Distribution Network

The Feeder and Distribution Network is the foundation of any fiber access network. The feeder network connects any central office to Fiber Distribution Hubs (FDHs). Passive fiber optic devices such as fiber optic splitters and/or cross connection facilities are located in the FDH. The distribution network distributes fiber from the FDH to the drop network.

Air blown micro cable technology offers great benefits when deploying the feeder and distribution network. A microduct system enables quick, easy installation and minimizes the number of fiber splice joints in the network compared to traditional solutions. The network capacity can quickly be increased by inserting new cables in the spare microducts. As an alternative, traditional loose tube and ribbon cables can be used for the feeder and distribution networks, see section Fiber Transport Network Solutions.

MICRONET MICRO CABLE

Micro Cable – TOL 401 90+

Micro cable based on a slim loose tube design with up to eight tubes per cable. The design facilitates fiber preparation and mid-span access. The cable is suitable for long-distance, air blown installation in microducts, with an inner diameter of as little as 8 mm. The cable has excellent bend performance and extremely wide operational temperature range.

- DESIGN: Loose tube
- TYPE: Dielectric, slim
- DIMENSIONS: Ø5.7 - 8.1 mm
- CAPACITY: 12 - 192 fibers

Micro Cable, Indoor – TOL 405 9011+

Micro cable based on a slim loose tube design with up to eight tubes per cable. The design facilitates fiber preparation and mid-span access. The cable is designed for indoor installation and has excellent bend performance.

- DESIGN: Loose tube
- TYPE: Halogen-free, flame-retardant
- DIMENSIONS: Ø 8.3 - 8.6 mm
- CAPACITY: 12 - 96 fibers

Micro Cable, Aerial Applications – TOL 401 90+

Micro cable based on a slim loose tube design with up to eight tubes per cable. The design is optimized for the maximum strength required for air blown aerial applications. The cable is specially designed for long-distance, air blown installation in microducts with an inner diameter of as little as 8 mm.

- DESIGN: Loose tube
- TYPE: Dielectric, extra slim for aerial applications
- DIMENSIONS: Ø 5.7 - 6.7 mm
- CAPACITY: 12 - 96 fibers
MICRODUCTS AND MULTIDUCTS FOR MICRO CABLES

Microducts and microduct assemblies are available for several installation environments such as direct buried installation, into existing pipes or indoor installation. Ducts for aerial applications are presented in the section Ribbonet® Air Blown Fiber System.

Protected Microducts for Direct Buried Installation – MPB 302 7+
Ducts composed of 10/8 mm or 12/10 mm microducts with a heavy-duty HDPE sheath that enables direct installation in the ground. The microducts have a solid, low-friction inner surface coating for best installation performance.

Type: Direct buried installation
Dimensions, microducts: Ø 10/8 mm or 12/10 mm
Capacity: 1, 4, 7-way

Microducts for Duct Installation – MPB 302 6+
Ducts composed of 10/8 mm or 12/10 mm microducts. The ducts are designed for installation in existing pipes or cable shafts. The microducts have a solid, low-friction inner surface coating for best installation performance.

Type: Installation in existing pipes
Dimensions, microducts: Ø 10/8 mm or 12/10 mm

Protected Microducts for Duct Installation – MPB 302 9+
Ducts based on 10/8 mm or 12/10 mm microducts with a single HDPE sheath for easy installation of microduct bundles into existing pipes or cable shafts. The microducts have a solid low friction inner surface coating for best installation performance.

Design: Installation in existing pipes
Dimensions, microducts: Ø 10/8 mm or 12/10 mm
Capacity: 4, 7-way

Thick Walled Microduct Assemblies – MPB 302+
These thick walled ducts are made of 14/10 mm microducts. Compared to conventional tight protected duct assemblies, thick walled microducts offer lower splicing and branching cost.

Type: Direct buried installation or installation in existing pipes
Dimensions, microducts: Ø 14/10 mm
Capacity: 2, 4, 7-way

Thick Walled Microducts – MPB 302 85+
Thick walled microducts, 14/10 mm to be used in combination with thick walled microduct assemblies.

Type: Direct buried installation or installation in existing pipes
Dimensions, microducts: Ø 14/10 mm

Protected Microducts for Indoor Use – MPB 302 71+ and MPB 302 73+
Microduct with a sheath made of halogen-free, flame-retardant material that enables installation of outdoor rated micro cables in indoor environments. Fiber splicing between indoor and outdoor environments can therefore be eliminated.

Type: Indoor Installations
Dimensions, microducts: Ø 10/8 mm or 12/10 mm
Capacity: 1, 4, 7-way
**Straight Connector – MPB 306 01/142 and /152**

Microduct snap-in connectors for quick and easy splicing of microducts. The body is transparent for easy fault location during installation. The connector is available for 12/10 mm and 10/8 mm ducts.

**Type:** Straight connector, Easy Connect  
**Dimensions, Microducts:** Ø10/8mm or 12/10 mm

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**Straight Connector – MPB 306 05/142**

Microduct snap-in connectors for quick and easy splicing of microducts. The connector is available for 14/10 mm ducts and can be direct buried. It is equipped with safety locks for unaccidental opening during installation.

**Type:** Straight connector  
**Dimensions, Microducts:** Ø14/10 mm

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**Gas Block Connector – MPB 306 07+**

Gas block microduct snap-in connectors are used to seal around cables at the end of the duct. After cable installation, the connector can be gas sealed by pushing the connector ends together.

**Type:** Gas block straight connector  
**Dimensions, Microducts:** Ø10/8 mm, 12/10 mm or 14/10 mm

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**End Stop Connector – SXA 113 9137/142 and /152**

Microduct snap-in, end-stop connectors for permanent or temporarily sealing of unused microducts to prevent water and dust getting into the duct.

**Type:** End stop  
**Dimensions, Microducts:** Ø10/8 mm, or 12/10 mm

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**End Stop Connector – MPB 306 06/142**

Microduct snap-in, end-stop connectors for permanent or temporarily sealing of unused microducts to prevent water and dust getting into the duct. This type is intended for thick walled ducts.

**Type:** End stop for TWD  
**Dimensions, Microducts:** Ø 14/10 mm

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**Divisible Seals – MPB 306 08+**

The divisible seals for microducts provide a gas and watertight seal for open duct ends installed with micro cables. The seals are designed to be installed after the fiber or cable has been blown in to the microduct.

**Type:** Divisible seal for micro cables  
**Dimensions, Microducts:** Ø 10/8, 12/10 or 14/10 mm, cables Ø2.5 - 3.9 mm, 5.0 - 6.5 mm, or 6.5 - 8 mm

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**Duct Joint Closure – NDE 451 15+**

A series of straight duct closures for maximum protection of duct joints for direct buried applications. Heat shrink technology is used for maximum protection. The closure is available in three different sizes and includes microduct snap-in connectors for 1, 4 or 7 microducts. Connectors for 10/8 mm ducts are included.

**Type:** Heat shrink, straight joint  
**Sealing:** IP class 68  
**Capacity:** 1, 4, or 7
Duct Joint Closure – NDE 451 25+
A series of straight duct closures for quick and easy installation without the need for heat. The closure is available in several sizes. Microduct snap-in connectors are not included.

Duct Joint and Branch Closures – NDE 451 26+
Closure suitable for branching as well as jointing ducts. The closure provides mechanical protection of the duct joints.

Duct Joint and Branch Kit – NDE 451 40+
Flexible kit including materials and tools for jointing, branching and mid-span of microducts/multiducts. A vulcanizing cloth is used for sealing, and strong and flexible PVC tape provides mechanical protection. Refill kits are available. Microduct snap-in connectors are not included. NDE 451 40/2 is a kit without tools.

End Caps – SRS 106 17+
Rubber covers used for temporary sealing of unused multiducts to prevent water and dust from getting into the ducts. The caps are available in several versions for different types of ducts.
The Fiber Distribution Hub (FDH) is the location of passive fiber optic devices such as fiber optic splitters and/or cross connection facilities. In this section, FDHs for cable and microduct systems are presented with associated accessories.

Fiber Distribution Hub, Outdoor – 2/NBD 116 200+

This FDH combines unique features in a compact cabinet. The FDH handles in-cabinet splicing of cable as well as incremental installation of air blown micro cable or air blown fiber. The FDH is designed for both PON and P2P FTTx connections and is designed for the RDJ 901 + splitter modules.

<table>
<thead>
<tr>
<th>TYPE:</th>
<th>Outdoor pad or pole mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPACITY:</td>
<td>up to 288 end users</td>
</tr>
<tr>
<td>SIZE:</td>
<td>830 (1080*)x700x426 mm</td>
</tr>
</tbody>
</table>
* Height including pad

Fiber Distribution Hub, Indoor – 1/NBD 116 200+

The indoor FDH, for up to 64 end-users, is designed to handle fiber optic terminations and passive optical splitters in PON FTTx networks but can also be used for Point to Point (P2P) applications or combinations of both. The FDH can handle air blown fiber in microducts, micro cables as well as drop cables and other fiber optic cables. It can also be used as a medium sized fiber optic splice box for various applications.

<table>
<thead>
<tr>
<th>TYPE:</th>
<th>Indoor closure, wall mount.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE:</td>
<td>500x 76x182mm</td>
</tr>
<tr>
<td>SEALING:</td>
<td>IP class 54</td>
</tr>
<tr>
<td>CAPACITY:</td>
<td>64 end users (SC)</td>
</tr>
</tbody>
</table>

Fiber Distribution Hub/Access Terminal – NCD 507 500

The main application for this closure is fiber distribution in PON networks with optical splitters, but it can also be used in a P2P system as a cross connection distribution point. The closure is designed for outdoor, underground installation in manholes, above ground installation on poles or installations inside pedestals. The closure can handle air-blown fibers in microducts, micro cables and traditional cables. The closure is equipped with a holder for up to three RDJ 901+ splitter modules.

<table>
<thead>
<tr>
<th>TYPE:</th>
<th>Outdoor, underground use</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPACITY:</td>
<td>96 end-users</td>
</tr>
<tr>
<td>DIMENSIONS:</td>
<td>520x280 mm</td>
</tr>
</tbody>
</table>

Splitter Modules – RDJ 901 20+

Splitters to be used in the FDH. The splitters are pre-terminated with protected fanouts and with fitted connectors. Available in both high grade and standard grade and with different connectors. These splitter modules also fits in splitter frames.

<table>
<thead>
<tr>
<th>TYPE:</th>
<th>Optical splitters, PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPLIT RATIO:</td>
<td>1x2 to 1x64, 2x2 to 2x64</td>
</tr>
<tr>
<td>INPUT/OUTPUT:</td>
<td>2 mm patch, G657A1</td>
</tr>
<tr>
<td>CONNECTOR OPTIONS:</td>
<td>SC/APC, SC, LC, LC/APC</td>
</tr>
</tbody>
</table>
RIBBONET® AIR BLOWN FIBER SYSTEM

Drop and Premises Network

The Drop Network connects end users to splicing and branching points, or Fiber Access Terminals (FATs) where the ducts or cables are connected to the feeder and distribution network. The Ribbonet® Air Blown Fiber (ABF) system or the Hexatronic offering of drop cables are two options for connecting fibers from end users to the FAT.

The Premises Network refers to the network within a customer’s premises such as a home or office environment. Typical products within the premises network are Fiber Access Terminals (FATs) and Fiber Termination Units Boxes (FTBs).

The Ribbonet® system, consisting of ducts forming the infrastructure into which the fiber units are blown, can be used outdoors, indoors and underground, as well as in aerial applications. The Ribbonet® system covers both the Drop Network and the Premises Network. The system consists of air blown fibers, ducts, duct joints and accessories and Hexatronic’s patented lightweight air blowing tool. The Ribbonet installation comes with a 20 year system warranty.

RIBBONET® AIR BLOWN FIBER

Pre-connected Air Blown Fiber – RPM 258+

Pre-connected air blown fiber (ABF), consisting of fibers encapsulated in a round multi-layer, high-performance coating. The connected ABF is delivered on lightweight reels, optimized for use with the Ribbonet® fiber blowing tool. The ABF is made of bend-resistant G657A2 fiber. The pre-connected ABF is available with 2 or 4 fibers.

| TYPE | 2 or 4 fibers, G657A2 |
| CONNECTOR OPTIONS | SC, SC/APC, LC, LC/APC |
| STANDARD LENGTHS | 30, 50, 70, 100, 150, 200, 250, 300, 350, 400, 500...1000 m |

Air Blown Fiber, in Pan – RPM 258+

Air blown fiber (ABF), consisting of fibers encapsulated in a round multi-layer, high-performance coating. The ABF is delivered in pans in lengths from 1000 to 6000 m and is available in configurations from 2 to 12 fibers, in bend resistant G657A2 fiber or multimode 50 μm OM3 or OM4 fiber.

| TYPE | 2, 4, 8 or 12 fibers, G657A2 or 50 μm OM3, OM4 |
| STANDARD LENGTHS | 1000, 2000, 4000, 6000 m |
MICRODUCTS AND MULTIDUCTS FOR AIR BLOWN FIBER

Protected Microducts, Direct Buried – MPB 302 44+
Ducts composed of 5/3.5 mm microducts with a heavy-duty HDPE sheath that enables direct buried installation. The ducts are available dielectric or with a moisture barrier of aluminum foil to prevent water diffusion when permanently submersed. The microducts have a solid, low-friction inner surface coating for best installation performance.

Microduct for Installation in Existing Pipes – MPB 302+
Ducts composed of 5/3.5 mm microducts. The ducts are designed for installation in existing pipes or cable shafts. The ducts are available dielectric or with a moisture barrier of aluminum foil to prevent water diffusion when permanently submersed. The microducts have a solid, low-friction inner surface coating for best installation performance.

Microducts, Indoor, High Grade or UL Riser – MPB 302+
Microducts with a sheath made of halogen-free, flame-retardant material. The ducts are also available in a UL Riser rated series. The microducts have a solid, low-friction inner surface coating for best installation performance. There is also a single microduct available with an extra protection sheath for mounting directly onto walls with cable clamps.

Microducts for Indoor Installation, Standard Grade – MPB 302 09+
Microducts with a sheath made of halogen-free, flame-retardant material with Standard Grade classification for installations with normal fire requirements.

Nano-ducts Microducts for Indoor Installation, Standard Grade – MPB 302 43+
Microducts with a sheath made of halogen-free, flame-retardant material with Standard Grade classification for installations with normal fire requirements. These ducts are made of ultra-slim 3 mm microducts that enable easier installation in narrow shafts and is the preferred option for most multi dwelling units.
**Protected Microducts, Aerial – MPB 302+**

Microducts for aerial installation on poles that are self-supporting, non-metallic and lightweight to ensure quick and easy installation. The tubes include a stabilized sheath to resist the aging effects of UV radiation. The ducts are part of the Hexatronic’s Aerial Air Blown Fiber System and include both 5 mm and 10 mm ducts.

<table>
<thead>
<tr>
<th>Type: Aerial Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions, Microducts: 5/3.5 mm and 10/8 mm</td>
</tr>
<tr>
<td>Capacity: 1, 4, 12, 8+2, 19, 9+1-way</td>
</tr>
</tbody>
</table>

---

**Thick Walled Microduct Assemblies – MPB 302 78+**

These thick walled ducts are made of 7/3.5 mm microducts. Compared to conventional tight protected duct assemblies, thick walled microducts offer lower splicing and branching cost.

| Type: Direct buried installation or installation in existing pipes |
| shores, Microducts: Ø 7/3.5 mm |
| Capacity: 1, 2, 4, 7, 12, 19, 24-way |

---

**Thick Walled Microducts – MPB 302 84+**

Thick walled microducts, 7/3.5 mm to be used in combination with thick walled microduct assemblies.

| Type: Direct buried installation or installation in existing pipes |
| shores, Microducts: Ø 7/3.5 mm |

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DUCT JOINTS AND OTHER DUCT EQUIPMENT

**Straight Connector – MPB 306 01/32 and /132**
Microduct snap-in connectors for quick and easy splicing of microducts. The body is transparent for easy fault location during installation. The connector is available for 5/3.5 mm and 3/2 mm ducts.

**Type:** Straight connector, Slim  
**Dimensions, Microducts:** Ø 5/3.5 mm or 3/2 mm

**Straight Connector for Thick Walled Ducts – MPB 306 05/72**
Microduct snap-in connectors for quick and easy splicing of microducts. The connector is available for 7/3.5 mm ducts and can be direct buried. It is equipped with safety locks for unaccidental opening during installation.

**Type:** Straight connector  
**Dimensions, Microducts:** Ø 7/3.5 mm

**Gas Block Connector 5 mm – MPB 306 02/1**
The gas block microduct snap-in connector is normally used between indoor and outdoor environments to prevent air flow that may result in condensed water getting into the ducts. After cable installation, the connector can be gas sealed by turning a ring on the body.

**Type:** Gas block straight connector  
**Dimensions, Microducts:** 5/3.5 mm

**Gas Block Connector 7 mm – MPB 306 07/72**
The gas block microduct snap-in connector is normally used between indoor and outdoor environments to prevent air flow that may result in condensed water getting into the ducts. After cable installation, the connector can be gas sealed by pushing the connector ends together. This version is intended for 7 mm thick walled ducts.

**Type:** Gas block straight connector  
**Dimensions, Microducts:** 7/3.5 mm

**End stop Connector – SXA 113 9137/132**
Microduct snap-in end stop connectors for permanent or temporarily sealing of unused microducts to prevent water and dust from getting into the duct.

**Type:** End stop  
**Dimensions, Microducts:** Ø 5/3.5 mm

**End Stop Connector for Thick Walled Ducts – MPB 306 06/72**
Microduct snap-in, end-stop connectors for permanent or temporarily sealing of unused microducts to prevent water and dust getting into the duct. This type is intended for thick walled ducts.

**Type:** End stop for TWD  
**Dimensions, Microducts:** Ø 7/3.5 mm

**Divisible Seals – MPB 306 08+**
The divisible seals for microducts provide a gas and watertight seal for open duct ends installed with air blown fiber. The seals are designed to be installed after the fiber or cable has been blown in to the microduct.

**Type:** Divisible seal for micro cables  
**Dimensions, Microducts:** Ø 5/3.5 or 7/3.5 mm
Microduct End Caps – NDK 121 03

End caps for microducts to prevent dirt and moisture entering the tubes. The end cap also locks the installed fiber to prevent it from moving in the tube. End caps should be used for all open ends in 5 mm microduct installations. The end cap is made of rubber and has a slit that allows the fiber unit to pass through.

Duct Joint Closure – NDE 451 15+

A series of straight duct closures for maximum protection of duct joints for direct buried applications. Heat shrink technology is used for maximum protection. The closure is available in five different sizes and includes microduct snap-in connectors for 1 to 24 microducts.

Duct Joint Closure – NDE 451 25+

A series of straight duct closures for quick and easy installation without the need for heat. The closure is available in several sizes. Microduct snap-in connectors are not included.

Duct Joint and Branch Kit – NDE 451 40+

Flexible kit including materials and tools for jointing, branching and mid-span of microducts/multiducts. A vulcanizing cloth is used for sealing, and strong and flexible PVC tape provides mechanical protection. Microduct snap-in connectors are not included. NDE 451 40/2 is a kit without tools.

Duct Branch Closure, Compact – 3/NDE 451 200

The closure is intended for fast and easy branching of direct buried microduct assemblies for air-blown fiber. The typical application is to branch out 1 to 4 drop ducts to connect single family units from a main duct assembly. The closure is intended for mounting directly into the ground or in manholes, but can also be installed above ground.

Duct Branch Closure, High Capacity – NDE 451 100+

Branch joint closure suitable for multiducts in direct buried applications. It can be used for a large number of duct branches. The box has alternative entrances, allowing a large number of possible joint combinations, as well as mid-span access.
Duct Branch Closure, Gel – NDE 451 22/3

Easy-to-use fast to install closure, intended for Hexatronic’s Aerial Air Blown Fiber System, and for underground branching of ducts. The closure uses “gel-seal” technology for quick and safe installation.

- **Type:** Cold seal, re-enterable branch joint for aerial or underground applications
- **Sealing:** IP class 67
- **Capacity:** Up to 4x1-way branch off

End Caps – SRS 106 17+

Rubber covers used for temporarily sealing of unused multiducts to avoid water and dust from getting into the ducts. The caps are available in several versions for different types of ducts.

- **Type:** Rubber end caps

Anchoring Clamp – NSF 151 601 and NSF 151 701

Designed for ducts with a Fiber Reinforced Plastic (FRP) messenger figure-8 shaped duct assembly. The 701 can also be mounted directly on aerial drop ducts.

- **Type:** Anchoring Clamp
- **Capacity:** (601) 8-10 mm FRP or (701) 6-8 mm FRP or reinforced duct

Suspension Clamp – NSF 151 502

Designed for ducts with a Fiber Reinforced Plastic (FRP) messenger figure-8 shaped duct assembly.

- **Type:** Suspension Clamp
- **Capacity:** 7-11 mm FRP

Hook for Suspension Clamp – NSF 151 100

This hook is designed for the NSF 151 502 suspension clamp and enables a secure fastening of the clamp when mounted on wooden poles.

- **Type:** Hook for suspension clamp, pole mounted

Universal Pole Bracket – NSF 151 611

Designed for securing cable or ducts on wooden, concrete or metallic poles.

- **Type:** Pole Bracket
FIBER ACCESS TERMINALS AND FIBER TERMINATION BOXES

Fiber Access Terminals (FAT) are designed for Ribbonet® Air Blown Fiber and for changeover from fibers emerging from microducts or drop cables to all types of fiber optic distribution cables. The FATs consist of jointing cabinets and joint closures that are designed for easy access and good protection of fibers. Products for direct splicing of distribution and drop cabling sections as well as closure with connection panels are available.

**FAT Fiber Jointing Cabinet – NCD 518 8002**

Small sized cabinet intended for fiber splicing and termination of up to 48 microducts (subscribers) or drop cables. The supplied fiber organizers can typically handle up to 96 fibers.

- **Type:** Indoor cabinet, 19”, ETSI or wall mount
- **Size:** 350x300x120 mm
- **Sealing:** IP class 45
- **Capacity:** 96 splices, 48 microducts

**FAT Fiber Jointing Cabinet – NCD 518 8004+**

Medium-sized cabinet designed for fiber splicing and termination of up to 96 microducts (5 mm) or drop cables. The organizers typically handle up to 192 fibers.

- **Size:** 440x300x160 mm
- **Sealing:** IP class 45
- **Capacity:** 192 splices, 96 microducts

**FAT Fiber Jointing Cabinet – NCD 518 8003**

Large cabinet suitable for fiber splicing and termination of up to 192 microducts (5 mm) or drop cables. The supplied fiber organizers can typically handle up to 384 fibers.

- **Type:** Indoor cabinet, 19”, ETSI or wall mount
- **Size:** 440x600x220 mm
- **Sealing:** IP class 45
- **Capacity:** 384 splices, 192 microducts

**FAT Fiber Jointing Cabinet – NCD 518 8006**

This is a medium sized cabinet for both traditional 5 mm microducts and 7 mm thick walled ducts. The closure is intended for mounting inside an outer protective cabinet or for indoor use.

- **Type:** Indoor or protected outdoor use, wall mount
- **Size:** 289x493x140 mm
- **Capacity:** 96 (single)/192 (ribbon) splices, 96 microducts

**Fiber Access Terminal, Indoor or Outdoor – NCD 507 200+**

FATs for indoor or outdoor applications with up to 24 end-user connections. It can handle air-blown fiber in microducts, micro cables as well as drop cables and other fiber optic cables. It can also be used as a fiber optic splice box for various applications.

- **Type:** Indoor closure, wall mount, Outdoor closure, wall or pole mount
- **Size:** 368x275x114 mm
- **Sealing:** (indoor) IP class 54, (outdoor) IP class 56
- **Capacity:** 24 connectors (SC)
Fiber Access Terminal, Indoor – NCD 507 201/1

FAT for indoor applications with up to 96 end-user connections. It can handle air-blown fiber in microducts, micro cables as well as drop cables and other fiber optic cables. It can also be used as a fiber optic splice box for various applications.

**TYPE:** Indoor closure, wall mount. Outdoor closure, wall or pole mount

**SIZE:** 500x76x182 mm

**SEALING:** IP class 54

**CAPACITY:** 96 connectors (SC)

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FAT Fiber Jointing Cabinet – NBD 116 501

Outdoor street cabinet designed for blown fiber or cable splicing. It consists of an outer cabinet and an inner splicing compartment. The cabinet is made of aluminum. The cabinet can be used with traditional microducts, thick walled ducts or any type of fiber optic cables.

**TYPE:** Outdoor cabinet

**SIZE:** 430x250x860 mm (above ground)

**SEALING:** IP class 54

**CAPACITY:** 96 (single)/192 (ribbon) splices, 96 microducts

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Fiber Joint Closure, High Capacity – NCD 507 550

This compact, high capacity joint closure handles up to 576 fiber splices. The closure is designed for outdoor underground installation in manholes but can also be mounted above ground on poles or inside pedestals. The closure can handle air-blown fibers in microducts, micro cables and traditional cable.

**TYPE:** Outdoor, underground use

**SEALING:** IP class 68

**CAPACITY:** 576 splices

**DIMENSIONS:** 520x280 mm

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Fiber/Duct Joint Closure – NCD 504+

Plastic joint closure for outdoor, direct buried installations. The closure is designed for outdoor, underground installation in manholes. It can handle air-blown fibers in microducts, micro cables as well as traditional cables.

**TYPE:** Outdoor, plastic closure for cables and microducts

**CAPACITY:** 96 (single)/192 (ribbon) splices, 24 microducts

**SIZE:** 342x262x140 mm

**SEALING:** IP class 68

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Fiber Termination Box – 5/NEG 203 200

The fiber termination box (FTB) designed for termination of fibers outside premises in FTTx applications. The box terminates and protects fiber or duct connections for the final drop cabling. It can also be used as a multi-purpose outdoor fiber optic wall outlet. The box is suitable for both air blown fiber installations and drop cables.

**TYPE:** FTTH Fiber Optic Termination Box, Outdoor/indoor use

**DIMENSIONS:** 190x130x45 mm

**SEALING:** IP class 54

**CAPACITY:** 4xSC, 4xLC

**TYPE:** Outdoor plastic closure for cables and microducts
Air Blown Fiber (ABF) Installation Tool – LTT 179 2011

The Air Blown Fiber Installation Tool is used for the installation of Air Blown Fibers into microducts. This unique, easy-to-handle and lightweight tool is designed for optimal performance in combination with all available fiber units and microducts in the Ribbonet® Air Blown Fiber System. The tool uses both compressed air and an electric motor to feed the fiber. An adjustable magnetic coupling limits feeding force on fiber to avoid damage in case of a sudden stop. The motor speed and direction is controlled by a trigger switch on the handle.

The tool is delivered with a case including nozzles for 3/2 mm, 5/3.5 mm and 7/3.5 mm microducts.

Blowing Beads – NTK 102 245+

Beads that can be mounted on the tip of the air blown fiber unit for optimal blowing. This is recommended for long installation distances with many duct connectors or sharp bends. The beads come in two different sizes to suit the different blown fiber units.

Cleaning Sponges – NTM 502 07+

Cleaning sponges are used when cleaning dust or moisture from a microduct. The sponge is simply blown through the microduct by the air pressure from the installation tool.

Duct Sheath Cutter – LDK 195 02

Used for quick and easy removal of any sheath from multiducts, this is an excellent tool for performing mid-span access on ducts.

Double Sheath Cutter – LDK 195 01

Cutter to use when dismantling the outer sheath of a double-sheathed HDPE multiduct (direct buried).

Single Sheath Cutter – LDK 195 1

A small and handy tool primarily for removing single-sheathed ducts.
**Microduct Cutter – LDK 208 03 and LDK 195 01/03**

Provides a clean and straight cut necessary to perform a smooth duct splice prior to the mounting of microduct snap-in connectors.

**Micro Cable Sheath Cutter – LDK 195 03**

Used for removal of the sheath on micro cables. The tool is delivered with three straight and one round blade. Cutting depth is adjustable.

**Toolkit for Microducts – LTT 179 003**

The toolkit contains all necessary tools for removal of sheath on microduct assemblies as well as for cutting assemblies and microducts. Included in the kit is also a pair of pliers for removal of duct connectors. The tools are delivered in a protective hard case.

**ABF Stripping Scissors – LDK 195 1/07**

Used for removal of the acrylate coating on air blown fiber (ABF). The scissors are also a handy tool for various applications.
**DROP CABLES**

Designed for quick and easy installation Hexatronic’s Drop Cables connect end users in FTTx networks to a nearby Fiber Access Terminal. Drop cables are usually a good choice for shorter distances and where there is easy access for the cable installation. To facilitate installation and minimize attenuation when cable is installed around sharp corners, all Hexatronic’s drop cables are based on extra bend resistant G657A2 fiber. The fiber is compatible with standard G652D fiber used in feeder and distribution cables.

### Drop Cable for Indoor and Outdoor Use – TOL 406 3007+

Halogen-free, flame-retardant drop cables with tight secondary coated fiber for quick and easy splicing and fitting of connectors. The cable is designed with G657A2 extra high bend-resistant fiber and a robust design to facilitate mounting with brackets directly on the wall. The cable has a flame retardant and UV protected sheath and is suitable for both indoor and outdoor use.

**Type:** Indoor and outdoor use, HFFR, IEC60332-3  
**Capacity:** 1 - 4 fibers  
**Diameter:** 4.8 mm to be used with cable clamps  
**Fiber Type:** G657A2

### Drop Cable, Indoor – TOL 406 3006+

Halogen-free, flame-retardant drop cable for FTTx applications. The cable is used for both vertical (riser) and horizontal installations in buildings. To facilitate installation, G657A2 extra high bend-resistant fiber is used.

**Type:** Indoor use, HFFR, IEC60332-3  
**Capacity:** 1 - 4 fibers  
**Diameter:** 4.8 mm  
**Fiber Type:** G657A2 (G652D compatible)

### Drop Cable, Indoor – TOL 406 3005/1A

Extra slim drop cable with excellent bend performance, for indoor installations in cable chutes or directly on the wall with cable clamps. Fits easily to standard connectors bend protection.

**Type:** Indoor use, HFFR, IEC60332-3  
**Capacity:** 1 fiber  
**Diameter:** 2.9 mm  
**Fiber Type:** G657A2 (G652D compatible)

### Drop Cable, Outdoor, Duct or Direct Buried – TOL 406 9001+

Durable loose tube drop cable for outdoor installation in ducts or direct-buried applications. Two fiber reinforced glass rods guarantee highest crush performance. The cable is longitudinally water blocked.

**Type:** Duct or direct-buried  
**Capacity:** 1 - 12 fibers  
**Diameter:** 6.1x3.3 mm  
**Fiber Type:** G657A2

### Drop Cable, Aerial – TOL 406 9002+

Self-supporting figure-8 drop cable with loose tube design for aerial installation.

**Type:** Aerial figure-8  
**Capacity:** 1 - 12 fibers  
**Diameter:** 4x8 mm  
**Fiber Type:** G657A2
Fiber optic cables for trunk networks. The fiber transport site related offering includes a range of fiber optic cables, joint closures and accessories for all kinds of installation environments such as installation in conduits, direct installation in ground as well as aerial installation.

All products have been designed and tested for optimal installation properties, as well as resistance to fire, chemicals and environmental damage.

CABLES FOR DUCT INSTALLATION

The range of cables for duct installation includes all our five basic designs: concentric core, slotted core, slotted core ribbon, DryTech and ribbon in loose tubes.

The duct installation cables include both metallic and dielectric cables with fiber counts of up to several hundred fibers. The fibers can be of different types and different types of fiber can be mixed in the same cable. The duct cables can be supplied with aluminum foil as a moisture barrier. Aramid or glass yarn can be added for extra axial pulling strength. Glass yarn or polyamide can be used as protection against rodents.

**GRCLDV DryTech – TOL 401 2084+**

Slim loose tube cable with concentric core design, with up to six tubes per cable. The cable is all dielectric. DryTech filling compound is used in the cable core.

- **Design:** Concentric core, extra slim
- **Type:** Dielectric, DryTech
- **Capacity:** 1 - 48 fibers
- **Diameter:** 10 mm

**GRCLDV DryTech – TOL 401 2098+**

Slim loose tube cable with concentric core design, with up to six tubes per cable. The cable is all dielectric. DryTech filling compound is used in the cable core.

- **Design:** Concentric core, extra slim
- **Type:** Dielectric, DryTech
- **Capacity:** 12 - 192 fibers
- **Diameter:** 11 - 18.5 mm

**GRCLDV DryTech – TOL 401 2017+**

Loose tube cable with concentric core design, resulting in a cost-effective solution. The cable is all dielectric. DryTech filling compound is used in the cable core. Maximum capacity is 16 tubes with 4-12 fibers in each.

- **Design:** Concentric core
- **Type:** Dielectric, DryTech
- **Capacity:** 2 - 192 fibers
- **Diameter:** 11 - 23 mm

**GRCALV DryTech – TOL 401 2064+**

Loose tube cable with concentric core design and aluminum foil, which provides an excellent moisture barrier, making the cable suitable for humid environments. DryTech filling compound is used in the cable core. Maximum capacity is 16 tubes with 12 fibers in each.

- **Design:** Concentric core
- **Type:** Aluminum barrier, DryTech
- **Capacity:** 2 - 192 fibers
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Design</th>
<th>Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRHLDV – TOL 401 2012+</strong></td>
<td>Loose tube cable with concentric core design, resulting in a cost-effective solution. The cable is dielectric, making it suitable for environments with a high risk of electrical interference. Maximum capacity is 12 tubes with 12 fibers in each.</td>
<td>Concentric core</td>
<td>Dielectric, slim, low weight</td>
<td>2 - 144 fibers</td>
</tr>
<tr>
<td><strong>GNGQBDU Drop Cable, Outdoor – TOL 406 9001+</strong></td>
<td>Durable loose tube drop cable for outdoor installation in ducts or direct-buried applications. Two fiber reinforced glass rods guarantee highest crush performance. The cable is longitudinally water blocked.</td>
<td>Duct or direct-buried</td>
<td>Dielectric, slim</td>
<td>2 - 12 fibers</td>
</tr>
<tr>
<td><strong>GNHLDV Micro Cable – TOL 401 90+</strong></td>
<td>Micro cable based on a slim loose tube design with up to eight tubes per cable. The design facilitates fiber preparation and mid-span access. The cable is suitable for long-distance, air blown installation in microducts, with an inner diameter of as little as 8 mm. The cable has excellent bend performance and extremely wide operational temperature range.</td>
<td>Loose tube</td>
<td>Dielectric</td>
<td>12 - 192 fibers</td>
</tr>
<tr>
<td><strong>GASLDV – TOL 401 1013+ and TOL 401 1001+</strong></td>
<td>4-fiber ribbon cable using slotted core design. The design reduces installation costs and gives superior fiber protection. The cable is dielectric, making it suitable for installation where there is electrical interference.</td>
<td>Slotted core ribbon</td>
<td>Dielectric</td>
<td>Ø 9.5 mm 4 - 48 fibers, Ø 12.5 mm 4 - 48 fibers, Ø 14 mm 48 - 96 fibers</td>
</tr>
<tr>
<td><strong>GASLDV – TOL 401 1002+ and TOL 401 1020+</strong></td>
<td>8-fiber ribbon cable using slotted core design. The design allows high packing density that reduces installation costs and gives superior fiber protection. Water-blocking filling compound in the TOL 401 1002 cable and dry water-blocking tape in the TOL 410 1020 cable prevents water penetration along the cables. The cable is dielectric, making it suitable for installation where there is electrical interference.</td>
<td>Slotted core ribbon</td>
<td>Dielectric</td>
<td>Ø 15.5 mm 8 - 192 fibers, Ø 20 - 22.5 mm 288 - 640 fibers</td>
</tr>
<tr>
<td><strong>GASALV – TOL 401 1018+</strong></td>
<td>4-fiber ribbon cable using slotted core design, which reduces installation costs and gives superior fiber protection. The cable uses 4-fiber ribbons. Aluminum foil provides an excellent moisture barrier, making the cable suitable for humid environments.</td>
<td>Slotted core ribbon</td>
<td>Aluminum barrier</td>
<td>4 - 96 fibers</td>
</tr>
<tr>
<td><strong>GASALV – TOL 401 1019+</strong></td>
<td>8-fiber ribbon cable with slotted core design, which reduces installation costs and gives superior fiber protection. The cable uses 8-fiber ribbons. Aluminum foil provides an excellent moisture barrier, making the cable suitable for humid environments.</td>
<td>Slotted core ribbon</td>
<td>Aluminum barrier</td>
<td>8 - 192 fibers</td>
</tr>
<tr>
<td><strong>GASALV – TOL 401 1018+</strong></td>
<td>4-fiber ribbon cable using slotted core design, which reduces installation costs and gives superior fiber protection. The cable uses 4-fiber ribbons. Aluminum foil provides an excellent moisture barrier, making the cable suitable for humid environments.</td>
<td>Slotted core ribbon</td>
<td>Aluminum barrier</td>
<td>4 - 96 fibers</td>
</tr>
<tr>
<td><strong>GASALV – TOL 401 1019+</strong></td>
<td>8-fiber ribbon cable with slotted core design, which reduces installation costs and gives superior fiber protection. The cable uses 8-fiber ribbons. Aluminum foil provides an excellent moisture barrier, making the cable suitable for humid environments.</td>
<td>Slotted core ribbon</td>
<td>Aluminum barrier</td>
<td>8 - 192 fibers, Ø 17 mm</td>
</tr>
</tbody>
</table>
CABLES FOR DIRECT BURIED INSTALLATION

The range of cables for direct buried installation includes all our five basic designs: concentric core, slotted core, slotted core ribbon, DryTech and ribbon in loose tubes. The cables are reinforced with corrugated steel tape, steel wire, or foamed thermoplastic elastomer, providing excellent mechanical protection. The range of cables includes both metallic and dielectric cables and covers fiber counts up to several hundred fibers.

GRCLWLV, DryTech – TOL 402 2038+
Slim loose tube cable with concentric core design, a corrugated steel tape layer and a second outer sheath. The corrugated steel tape reinforcement provides good mechanical protection, but the cable is still easy to install. DryTech™ filling compound is used in the cable core. Maximum capacity is 6 tubes with 4 or 8 fibers in each.

Design: Concentric core  
Type: Corrugated steel tape reinforced, DryTech  
Capacity: 24 - 48 fibers  
Diameter: 16 - 24 mm

GRCLWLV, DryTech – TOL 402 2039+
Slim loose tube cable with concentric core design, a corrugated steel tape layer and a second outer sheath. The corrugated steel tape reinforcement provides good mechanical protection, but the cable is still easy to install. DryTech™ filling compound is used in the cable core. Maximum capacity is 16 tubes with 12 fibers in each.

Design: Concentric core  
Type: Corrugated steel tape reinforced, DryTech  
Capacity: 72 - 192 fibers  
Diameter: 16 - 24 mm

GRCLWLV, DryTech – TOL 402 2040+
Slim loose tube cable with concentric core design, a corrugated steel tape layer and a second outer sheath. The corrugated steel tape reinforcement provides good mechanical protection, but the cable is still easy to install. DryTech™ filling compound is used in the cable core. Maximum capacity is 24 tubes with 12 fibers in each.

Design: Concentric core  
Type: Dielectric, thermoplastic cushion layer, DryTech  
Capacity: 288 fibers  
Diameter: 24.5 mm

GRCLLDV, DryTech – TOL 402 2042+
Slim loose tube cable with concentric core design, a thermoplastic cushion layer and a second outer sheath. The thermoplastic cushion layer makes the non-metallic cable suitable for installation along power lines, e.g. railway embankments. DryTech™ filling compound is used in the cable core. Maximum capacity is 6 tubes with 4 or 8 fibers in each.

Design: Concentric core  
Type: Dielectric, thermoplastic cushion layer, DryTech  
Capacity: 24 - 48 fibers

GRCLLDV, DryTech – TOL 402 2041+
Slim loose tube cable with concentric core design, a thermoplastic cushion layer and a second outer sheath. The thermoplastic cushion layer makes the non-metallic cable suitable for installation along power lines, e.g. railway embankments. DryTech™ filling compound is used in the cable core. Maximum capacity is 16 tubes with 12 fibers in each.

Design: Concentric core  
Type: Dielectric, thermoplastic cushion layer, DryTech  
Capacity: 72 - 192 fibers
GRCLLDV, DryTech – TOL 402 2043/288
Slim loose tube cable with concentric core design, a thermoplastic cushion layer and a second outer sheath. The thermoplastic cushion layer makes the non-metallic cable suitable for installation along power lines, e.g. railway embankments. DryTech™ filling compound is used in the cable core. Maximum capacity is 24 tubes with 12 fibers in each tube.

GASQWQBUV – TOL 402 1014+
Ribbon cable with slotted core design and corrugated steel tape protection providing superior fiber protection against rodents. Ideal for duct and direct buried installation in tunnels. The cable comes in two configurations; up to 96 fibers with 4-fiber ribbons and more than 96 fibers with 8-fiber ribbons.

GRCLLDV – TOL 402 1001+
4-fiber ribbon cable with slotted core design, a thermoplastic cushion layer and a second outer sheath. The thermoplastic cushion layer makes the non-metallic cable suitable for installation along power lines, e.g. railway embankments.

GRCLLDV – TOL 402 1005+
8-fiber ribbon cable with slotted core design, a thermoplastic cushion layer and a second outer sheath. The thermoplastic cushion layer makes the non-metallic cable suitable for installation along power lines, e.g. railway embankments.

GASQWQBUV – TOL 402 1014+
Ribbon cable with slotted core design and corrugated steel tape protection providing superior fiber protection against rodents. Ideal for duct and direct buried installation in tunnels. The cable comes in two configurations; up to 96 fibers with 4-fiber ribbons and more than 96 fibers with 8-fiber ribbons.

GASQWQBUV – TOL 402 1014+
Ribbon cable with slotted core design and corrugated steel tape protection providing superior fiber protection against rodents. Ideal for duct and direct buried installation in tunnels. The cable comes in two configurations; up to 96 fibers with 4-fiber ribbons and more than 96 fibers with 8-fiber ribbons.
## Cables for Aerial Installations

Self-supporting aerial fiber cables. Hexatronic’s range of Fiber Optic Cables for aerial installation includes self-supporting All Dielectric Self Support (ADSS) and figure-8 types, designed for pole installation. The cables come in different types for different span lengths.

All ADSS and figure-8 cables can be supplied with bulletproof material (aramid tape), or with extra protection against rodents (nylon sheath). Hexatronic also offers a complete range of installation support material for aerial cables.

### GRHSLDV – TOL 403 2003+

ADSS, non-metallic cable with concentric core design. This extremely slim and low-weight cable, which can be ordered with 4 to 144 fibers, is suitable for span lengths from 60-170 m. It can be installed adjacent to power lines with up to 120 kV. It contains standard filling compound and utilizes aramid yarn to increase strength.

**Design:** ADSS, concentric core  
**Type:** Dielectric  
**Capacity:** 4 - 144 fibers

### GRHSLDV – TOL 403 2002+

ADSS, non-metallic cable with concentric core design that utilizes aramid yarn and a second outer sheath for an extra robust cable design. It is suitable for installation in harsh climates with high ice loads, and for span lengths of 100-250 m. Like the GRHSLDV, this cable contains standard filling compound and can be ordered with 4 to 144 fibers.

**Design:** ADSS, concentric core  
**Type:** Dielectric  
**Capacity:** 4 - 144 fibers, max 7 kN

### GRHSLDV – TOL 403 2008+

ADSS, non-metallic cable with concentric core design that utilizes aramid yarn and a second outer sheath for an extra robust cable design. It is suitable for installation in harsh climates with high ice loads, and for span lengths of 200-500 m. Like the GRHSLDV, this cable contains standard filling compound and can be ordered with 4 to 144 fibers.

**Design:** ADSS, concentric core  
**Type:** Dielectric  
**Capacity:** 4 - 144 fibers, max 14.5 kN

### GRCLCV – TOL 403 2024+

Self-supporting figure-8 cable with concentric core design. The cable has patented DryTech filling compound and includes suspension steel wire integrated into the sheath. The cable is suitable for span lengths up to 75 m. The GRCLCV can be ordered with 4 to 192 fibers.

**Design:** Fig-8, concentric core  
**Type:** DryTech  
**Capacity:** 4 - 192 fibers

### GRCLCDV – TOL 403 2010+

Non-metallic figure-8 cable using concentric core design, with a glass-fiber reinforced plastic rod integrated into the sheath. The self-supporting cable is suitable for span lengths of up to 75m. Being dielectric, the cable can be installed adjacent to power lines with up to 120kV. The GRCLCDV can be ordered with 4 to 192 fibers.

**Design:** Fig-8, concentric core  
**Type:** Dielectric  
**Capacity:** 4 - 192 fibers
Joint closures for optimal protection. Hexatronic has developed a range of cost-effective joint closures for every installation environment.

The offering, for both indoor and outdoor installation, includes boxes optimized for virtually all conditions, and for small, medium and large fiber counts. Made in a variety of materials to suit environments ranging from simple to very demanding, the boxes are designed to join most types of fiber cables. Hexatronic offers a complete line of accessories, including tool kits, protection sleeves, shrink-on hoses, mounting brackets and expansion kits, suitable for various types of installation.

**Fiber Joint Closure – NCD 504+**

Versatile fiber closure made of durable plastic to meet most environmental demands. The standard box can handle up to 96 single fibers or 48 ribbon sleeves, and is expandable to manage higher fiber counts and a greater number of entrances. The closure can also handle mid-span access.

**Type:** Underground, plastic  
**Sealing:** IP class 68  
**Capacity:** 96 single fiber splices or 48 ribbon fiber splices with 4 extra cassettes. Up to 144 single splices with extension ring and 8 extra cassettes.

**Fiber Joint Closure, High Capacity – NCD 507 550**

This compact, high capacity joint closure handles up to 576 fiber splices. The closure is designed for outdoor underground installation in manholes but can also be mounted above ground on poles or inside pedestals. The closure can handle air-blown fibers in microducts, micro cables and traditional cable.

**Type:** Outdoor, underground use  
**Sealing:** IP class 68  
**Capacity:** 576 splices  
**Dimensions:** 520x280 mm

**Fiber Joint Closure, Stainless Steel – NCD 506+**

Closure for higher fiber counts in harsh outdoor environments. The generous size of the fiber organizers makes installation fast and trouble free. The design is compact but easy to expand to accommodate very large fiber counts. The closure can also handle mid-span access. Several versions and accessories are available resulting in a total capacity of 144 fibers to more than 2000 fibers depending on configuration.

**Type:** Underground, stainless steel  
**Sealing:** IP class 68  
**Capacity:** ≤ 576 single fiber splices  
≤ 288 ribbon fiber splices

**Fiber Joint Closure, Indoor, Wall Mount – NCD 502 5000**

Compact indoor closure that provides mechanical protection in situations where jointing and branching of cables needs to be carried out cost-effectively. It can be mounted inside a cabinet, container or directly on a wall.

**Type:** Indoor, alu-zinc  
**Size:** 369x185x40 mm  
**Capacity:** 24 single fiber splices  
12 ribbon fiber splices
Hexatronic’s range of cables for submarine installation is based on extensive experience in submarine-cable projects, including design, project management and installation. The offering comprises cables using unitube loose tube as well as ribbon fiber design for depth down to 3000 m.

LOOSE TUBE CABLES

Hexatronic’s submarine loose tube cables provide superior mechanical protection, easy handling and reliable performance. All cables have steel wire armoring in one or several layers and/or stainless steel tube to provide the highest protection and water blocking properties.

The cables are resistant to tensile forces and impact caused by anchoring, recovery operations and handling. All loose tube cables and joints are built with the highest quality protection to ensure a long life span for maximum efficiency over long distances.

Single Armored

GJMLTV, 10-ton SA – TOL 404 1050+

Single-armored, unitube cable where moderate protection is required in submarine applications. This design includes a hermetically sealed stainless tube (3.7 mm outer diameter). Inside the tube the fibers are free to move in the thixotropic water blocking compound. The tube is protected by a polyethylene sheath, one layer of galvanized steel wires and wrapped in a layer of polypropylene yarn. The unitube technique results in a high packing density. This permits a small outer diameter and easy handling.
Double Armored

**GJMLTV, 15-ton DAL – TOL 404 1051+**

Double-layer armored, unitube cable where high protection is required in submarine applications. This design includes a hermetically sealed stainless tube (3.7 mm outer diameter). Inside the tube the fibers are free to move in the thixotropic water blocking compound. The tube is protected by a polyethylene sheath, two layers of galvanized steel wires and wrapped in a layer of polypropylene yarn.

**Design:** Loose tube, double armor  
**Type:** 15 ton, ≤ 3000 m  
**Capacity:** 12 - 96 fibers

**GJMLTV, 25-ton DA – TOL 404 1062+**

Double-layer armored, unitube cable with the same principal design as the GJMLTV, 15-ton DA.

**Design:** Loose tube, double armor  
**Type:** 25 ton, ≤ 3000 m  
**Capacity:** 12 - 96 fibers

**GJMLTV, 40-ton DAH – TOL 404 1054+**

Double-layer armored with the same principal design as the GJMLTVa, 15-ton DA.

**Design:** Loose tube, double armor  
**Type:** 40 ton, ≤ 3000 m  
**Capacity:** 12 - 96 fibers

Electroding / Toning – Single Armored

**GJMLTV, 10-ton SA – TOL 404 1080+**

Double-layer armored with the same principal design as the GJMLTV, 10-ton DA. The cable incorporates a copper layer wrapped around the stainless tube for electroding and toning.

**Design:** Loose tube, single armor, electroding  
**Type:** 10 ton, ≤ 3000 m  
**Capacity:** 12 - 96 fibers
**Electroding / Toning – Double Armored**

**GJMMLTV, 25-ton DA – TOL 404 1082+**

Double-layer armored with the same principal design as the GJMLTV, 25-ton DA. The cable incorporates a copper layer wrapped around the stainless tube for electroding and toning.

<table>
<thead>
<tr>
<th>DESIGN:</th>
<th>Loose tube, double armor, electroding</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE:</td>
<td>25 ton, ≤ 3000 m</td>
</tr>
<tr>
<td>CAPACITY:</td>
<td>12 - 96 fibers</td>
</tr>
</tbody>
</table>

**GJMMLTV, 40-ton DAH – TOL 404 1083+**

Double-layer armored with the same principal design as the GJMMLTV, 15-ton DA.

<table>
<thead>
<tr>
<th>DESIGN:</th>
<th>Loose tube, double armor, electroding</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE:</td>
<td>40 ton, ≤ 3000 m</td>
</tr>
<tr>
<td>CAPACITY:</td>
<td>12 - 96 fibers</td>
</tr>
</tbody>
</table>

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**Submarine Joints for Loose Tube Cables**

**NCD 601 0014 Submarine Joint Closure – NCD 601 00+**

Closure made of heavy-duty stainless steel and hermetically sealed cable joints for loose tube fiber optic submarine cables. The joint can host up to 48 fibers.

<table>
<thead>
<tr>
<th>DESIGN:</th>
<th>Straight joint for GJMLTV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPACITY:</td>
<td>1 - 48 fibers</td>
</tr>
</tbody>
</table>

**NCD 601+ Universal Joint for Submarine Cables – NCD 601+**

Universal Joint is a technology developed by the Universal Joint Consortium to facilitate efficient maintenance of installed submarine cable systems. Most of Hexatronic’s submarine cables are qualified for this technology and for some cable types this joint type is used in installation projects of new systems.

<table>
<thead>
<tr>
<th>DESIGN:</th>
<th>UJ for 10-, 25-, 40 ton submarine cables</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPACITY:</td>
<td>1 - 96 fibers</td>
</tr>
</tbody>
</table>
Hexatronic’s submarine ribbon cables offer high packing density and efficient fiber management as well as high protection for fiber in the harsh conditions under the sea. Exceptional mechanical and water blocking properties are provided by a slotted cable core design, protected by a copper tube and with steel wire armoring. This combination has a good resistance to crushing and heavy impacts, such as anchoring, recovery operations or manhandling. Protection from the water is achieved by the copper tube acting as a water barrier. The cable core is also filled with a water repelling compound for extra reassurance. The cable design enables extremely long delivery length with a minimum number of bulky joint closures.

**RIBBON CABLES**

**Single Armored**

**GASLMLTV Submarine Cables 5 ton SAL Single Armored – TOL 404 1010+**

GASLMLTV, 5-ton SAL is a single armored light fiber ribbon cable for submarine installations where light to moderate protection is required. This submarine cable is based on our well-proven 4- or 8-fiber ribbon cable design. Added on to the inner PE-jacket is a waterproof copper tube, followed by a second outer polyethylene jacket and a layer of galvanized steel wires. The complete cable is wrapped with a layer of polypropylene yarn.

**GASLMLTV Submarine Cables 10 ton SA Single Armored – TOL 404 10+**

Single-layer armored with the same principal design as the GASLMLTV, 5-ton SAL.

**GASLMLTV Submarine Cables 15 ton SAH Single Armored – TOL 404 10+**

Single-layer armored with the same principal design as the GASLMLTV, 5-ton SAL.

**Double Armored**

**Submarine Cables 20 ton DA Double Armored – TOL 404 10+**

GASLMLTV, 20-ton DA is a double armored fiber ribbon cable for submarine installation where high protection is required. This submarine cable is based on our well-proven 4- or 8-fiber ribbon cable design. Added on to the inner PE-jacket is a waterproof copper tube, followed by a second outer polyethylene jacket and two layers of galvanized steel wires. The complete cable is wrapped with a layer of polypropylene yarn.

**GASLMLTV Submarine Cables 40 ton DAH Double Armored – TOL 404 10+**

Double-layer armored with the same principal design as the GASLMLTV, 20-ton DA.
Rock Armored

Submarine Cables 20 ton RA Rock Armored – TOL 404 10+

The GASLMLTV, 20-ton RA is a rock armored fiber ribbon cable for submarine installation in areas where the cable is exposed to severe mechanical wear and tear. For example, installation direct on rock or shore landings where the cable is hit by forces from waves and tides. This submarine cable is based on our well-proven 4- or 8-fiber ribbon cable design. Added on to the inner PE-jacket is a waterproof copper tube, followed by a second outer polyethylene jacket and a triple layer of galvanized steel wires. The complete cable is wrapped with a layer of polypropylene yarn.

**DESIGN:** Slotted core ribbon, triple armor, rock  
**TYPE:** 20 ton, ≤ 500 m  
**CAPACITY:** 12 - 192 fibers

Submarine Joints

Submarine Cable Joint – NCD 601 00+

The NCD 601 joint is designed for jointing of Hexatronic fiber optic submarine cables, maintaining the mechanical, optical and electrical properties of the cable. The joint closure is made of corrosion resistant stainless steel alloy. The watertight outer housing provides the mechanical strength and protection. An inner sealed box contains the fiber organizers and can accommodate splice sleeves for up to 96 fibers in the NCD 601 0010 model and up to 192 fibers in the NCD 601 0008 model.

**NCD 601 0010**  
**Design:** Straight joint for GASLMLTV  
**Capacity:** 1 - 192 fibers

**NCD 601 0008**  
**Design:** Straight joint for GASLMLTV  
**Capacity:** 1 - 192 fibers

CABLE PARTS FOR INTEGRATION

Throughout our history of supplying high quality, reliable cable solutions, we have developed a long track record with leading power cable suppliers. Fiber optic submarine cable parts for integration into power cables, enables global suppliers to meet the growing need for more power over greater distances.

**GJMLV Submarine Optical Cable Part 12-96 Fibers**

The cable part is based on a hermetically sealed stainless tube of 3.7mm outer diameter. Inside the tube the fibers are free to move in thixotropic water blocking compound. The steel tube is protected by a semiconductive polypropylene sheath. The fibers are easy to identify due to color and colored yarns. The cable part is designed to be integrated in submarine electrical power cables.

**Design:** Loose tube  
**Type:** For integration, ≤ 3000 m  
**Capacity:** 12 - 96 fibers

**GASLMLV Submarine Optical Cable Part 12-192 Fibers, Ribbon**

This submarine cable part is based on our well-proven 4- or 8- fiber ribbon cable design. Added on to the inner polyethylene jacket is a waterproof copper tube, followed by a second outer semiconductive polyethylene jacket.

**Design:** Slotted core ribbon  
**Type:** For integration, ≤ 500 m  
**Capacity:** 12 - 192 fibers
CABLES FOR INDOOR INSTALLATION

The range of indoor installation cables is intended for various telecommunication applications and especially for interconnection between the optical line interface and the optical distribution frames. The indoor cables are also suitable for use in LAN networks or other types of data networks. All indoor cables are halogen-free and flame-retardant, and consequently generate no corrosive gases during combustion. All cables are also completely dielectric. The fibers in the cable can be of different types and different fiber types can be mixed in the same cable.

GNGQBDU, 1-fiber – TOL 405 3001/1A

Simplex, buffered patch cord cable, non-jelly filled with an outer diameter of 2.0mm as standard. It can be delivered pre-terminated with a variety of connector types. The cable has low shrinkage of less than 0.5% for reliable high performance.

| DESIGN: | Tight-buffered |
| TYPE: | Halogen-free, flame-retardant, EC60332-3 cat C (LSZH), UL 1666 (CMR/Riser) |
| CAPACITY: | 1 fiber |

GNGQBDU, 2-fibers – TOL 405 3001/2A

Two-fiber, tight-buffered duplex patch cord cable, non-jelly filled and aramid reinforced. The cable has a figure-8 design with single fibers laid in parallel, which makes it easy to split into two simplex patch cables.

| DESIGN: | Tight-buffered |
| TYPE: | Halogen-free, flame-retardant, EC60332-3 cat C (LSZH), UL 1666 (CMR/Riser) |
| CAPACITY: | 2 fibers |

GNGQBDU, 2-fibers – TOL 405 3006/2A

Two fiber, tight-buffered duplex patch cord cable, non-jelly filled and aramid reinforced. Two single fiber cables are enclosed in an outer sheath forming a flexible and dry cable with an outer dimension of 4.8x2.8 mm. It can be delivered pre-terminated with a variety of connector types.

| DESIGN: | Tight-buffered, break-out |
| TYPE: | Halogen-free, flame-retardant, EC60332-3 cat C (LSZH), UL 1666 (CMR/Riser) |
| CAPACITY: | 2 fibers |

GNGQBDU, 4-fibers – TOL 405 3018/4A

Break-out cable where simplex cables are assembled into one cable, with aramid yarn as central strength member. The construction results in a robust cable combined with high flexibility. The cable can be delivered pre-terminated with a variety of connector types.

| DESIGN: | Tight-buffered, break-out |
| TYPE: | Halogen-free, flame-retardant, EC60332-3 cat C (LSZH), UL 1666 (CMR/ Riser) |
| CAPACITY: | 4 fibers |
CABLES FOR INDOOR/OUTDOOR INSTALLATION, FTTA APPLICATIONS

The cables for combined indoor/outdoor installation are all halogen-free and flame-retardant (HFFR); consequently, no corrosive gases are generated during combustion. The fibers can be of different types and different fiber types can be mixed in the same cable. The indoor/outdoor cables are often used between a pre-terminated indoor optical distribution frame and an outdoor joint closure as well as for Fiber To The Antenna (FTTA) applications.

GNGQBDU Drop Cable for Indoor and Outdoor Use – TOL 406 3007+

Halogen-free, flame-retardant drop cables with tight secondary coated fiber for quick and easy splicing. The cable is designed with G657A2 high bend-resistant fiber and has a robust design to facilitate mounting with brackets directly on the wall. A flame retardant and UV protected sheath makes it suitable for both indoor and outdoor use. The cable is water blocked.

| TYPE: Indoor and outdoor use, halogen-free, flame-retardant, IEC60332-3, bend resistant G657A2 |
| CAPACITY: 1 - 4 fibers |
| DIAMETER: 4.8 mm to be used with cable clamps |
| FIBER TYPE: G657A2 |

GRHQBDUV – TOL 405 2003+

Loose tube cable with concentric core design, resulting in a cost-effective solution. Each tube contains up to 12 fibers and the cable contains up to 16 tubes. Dry water blocking makes the cable jointing procedure clean and easy.

| DESIGN: Concentric core |
| TYPE: Dielectric, halogen-free, flame-retardant |
| CAPACITY: 4 - 144 fibers |

GNGQQBDV – TOL 406 3004/2A

Fiber optic cable designed for FTTA applications in both indoor and outdoor environments. The cable is flame resistant. Water blocking tape guarantees that no water can pass through the cable and the outer sheath is specially designed for highest protection in outdoor environments. The cable is suitable for pre-terminated delivery and has extremely good bending performance due to the use of bend-resistant G657A2 fiber.

| DESIGN: Tight-buffered |
| TYPE: Dielectric, halogen-free, flame-retardant, bend resistant G657A2 |
| CAPACITY: 2 fibers |

GASQBDUV – TOL 405 1001+

Ribbon cable with slotted core design, which reduces installation costs and ensures superior fiber protection. Each of the six slots contains 1-2 ribbons of the 4-fiber ribbon type. The cable is dielectric, very slim and flexible, making it very versatile. Dry water blocking makes the cable jointing procedure clean and easy. The cable is offered in two variants: standard and extra slim.

| DESIGN: Slotted core ribbon |
| TYPE: Dielectric, halogen-free, flame-retardant |
| CAPACITY: Ø 13 mm, 4 - 48 fibers |

GASQBDUV – TOL 405 1014+

Ribbon cable with slotted core design which enables a cable design with reduced installation cost and superior fiber protection. Each of the six slots contains 1-2 ribbons of the 4-fiber ribbon type. The cable is dielectric, very slim and flexible, making it very versatile. Dry water blocking makes the cable jointing procedure clean and easy. The cable is offered in two variants: standard and extra slim.

| DESIGN: Slotted core ribbon |
| TYPE: Dielectric, halogen-free, flame-retardant |
| CAPACITY: Ø 9.9 mm, 4- 48 fibers |
**GASQBDUV – TOL 405 1024+**

4 or 8-fiber ribbon cable with slotted-core design providing superior fiber protection and high fiber count. Each of the slots contains ribbons of 4 or 8 fibers. The 8-fiber ribbon can easily be split into two 4-fiber ribbons. The versatility of the cable and the inherent benefits of ribbon fiber technology reduce installation costs. The cable is provided in two configurations: ≤96 fibers with 4-fiber ribbons and >96 fibers with 8-fiber ribbons.

- **Design:** Slotted core ribbon
- **Type:** Dielectric, halogen-free, flame-retardant
- **Capacity:** 72 - 96 fibers (4-f ribbon)
  
  192 - 640 fibers (8-f ribbon)

**GNGQBDUV, High Temperature Performance – TOL 405 9009/2A**

Fiber optic cable designed for FTTA applications in both indoor and outdoor environments. This cable has extremely good heat resistance and operates -40 to +95 (degrees) C. The cable is flame resistant so it can be installed indoors at the same time the outer sheath is robust enough to cope with outdoor environments. It is suitable for pre-terminated delivery.

- **Design:** Tight-coated, with aramid yarn
- **Type:** Dielectric, halogen-free, flame-retardant, IEC60332-3, UL 1666 (CMR/Riser), bend resistant G657. A2*
- **Capacity:** 2 fibers

**GNGQBDUV – TOL 406 3008/2A**

Fiber optic cable designed for FTTA applications for both indoor and outdoor environments. Water blocking aramid yarns guarantees that no water can pass through the cable and the outer sheath is specially designed for highest protection in outdoor environments. It is suitable for pre-terminated delivery.

- **Design:** Tight-coated, with aramid yarn
- **Type:** Dielectric, halogen-free, flame-retardant, IEC60332-3, UL 1666 (CMR/Riser)
- **Capacity:** 2 fibers
A guarantee for the future:
20 year warranty on the **Ribbonet®**
Air Blown Fiber System

Hexatronic offers a 20 year system warranty, for product quality assurance and peace of mind when installing the Ribbonet® system.

The guarantee is an assurance that Hexatronic has the best quality products and that the operating performance is a high priority, long after the system has been installed.

The functionality warranty applies to the entire delivered Ribbonet® system and its relevant optical specifications in the rare event of an unexpected fault, with the following conditions:

- A Ribbonet® certified installer has performed the installation.
- The installation is done according to the installation instructions and recommendations for the Ribbonet® products.
- All products within the Ribbonet® system are delivered by Hexatronic.
- The fiber units are installed with the Ribbonet® fiber installation tool.
- The system is registered, as required.

The 20 year warranty is only valid for the product and its functionality not for damages caused outside the product, faulty handling or procedures outside of Hexatronic's control.

For a full description of the scope of the warranty, registration and claim procedure, contact Hexatronic Cables & Interconnect Systems AB at sales@hexatronic.com or +46 650 54 01 50.
Industry Leading System Solutions for Fiber Optic Communications

Hexatronic Cables & Interconnect Systems develops, manufactures, markets and provides solutions within the fiber optic cable infrastructure, for telecom companies. Hexatronic Cables & Interconnect Systems manufacture fiber optic cable, duct, copper cable and network accessories. The company originates from the former Ericsson site in Hudiksvall. Our products are developed and manufactured by Swedish specialists, with many years of experience and unique expertise in fiber optics. The product portfolio includes the industry leading brands Ribbonet® and Micronet.

A part of Hexatronic Group

Hexatronic Cables & Interconnect Systems is a part of Hexatronic which is an innovative Swedish technology group, specializing in fiber communications. The Group provides products and solutions for the fiber optic network and together, the independent, entrepreneurial companies offer a full range of passive infrastructure. We combine our large corporate stability and resources with small company flexibility and speed.

Our customers are companies within the telecommunications industry such as communications and telecom suppliers, operators and network owners. The other companies within The Group are, Memoteknik in Skellefteå, Hexatronic Elektronik & Data in Gothenburg, The Blue Shift and Proximion in Stockholm and TD Fiberoptik in Örebro.

For more information about Hexatronic Group: www.hexatronicgroup.com