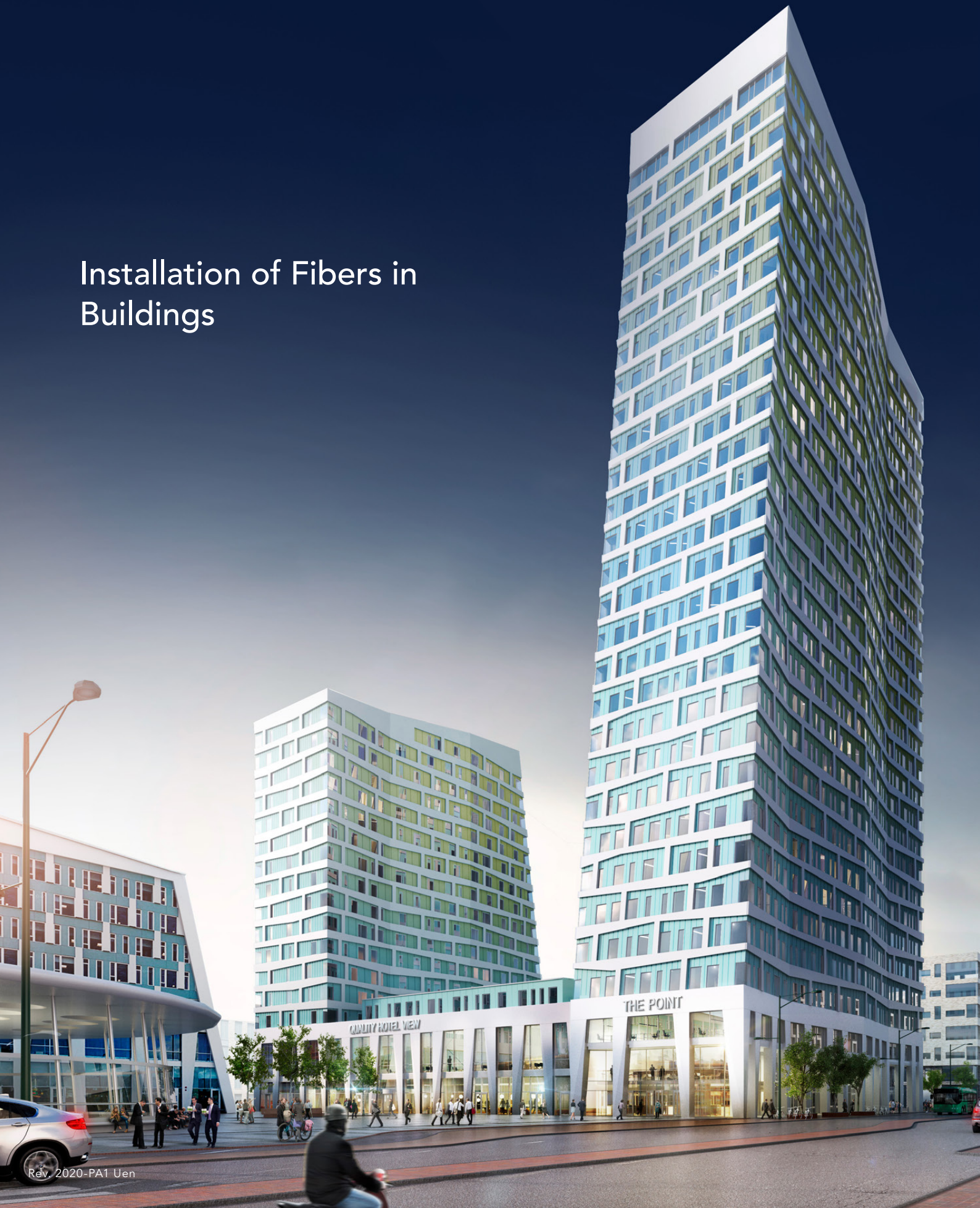
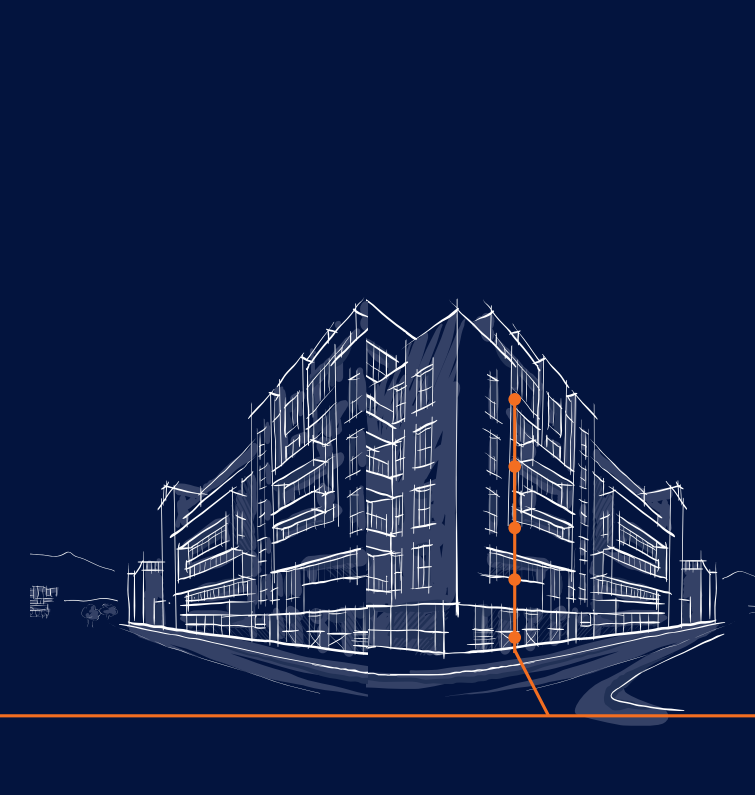


Installation of Fibers in Buildings





Property networks In businesses and homes, traditionally has been built with twisted copper cable, LAN cable of the type CAT 5, 6 or 7. Although the capacity of these networks is in many cases sufficient for today's needs, there is a limitation in transmission distances with typical cable lengths of max. 90 m. The length limitation results in networks that are more expensive and more limited than fiber optic networks.

Fiber optic networks allow transmission distances of hundreds of kilometers and have an almost infinite capacity. With smart fiber installation techniques, fiber optic networks can also be built at a significantly lower cost than the corresponding copper-based LAN networks.

What Determines the Cost?

The usual mistake in price comparisons is that you only compare the cost of the materials, e.g. cables, wall sockets and cross-connection panels. Such a comparison is very skewed because you completely overlook the major costs when performing an installation, namely the installation costs and the costs for establishing cross-connection rooms and the investment in additional network equipment for these rooms

Since a copper-based network has a maximum transmission distance of about 90 m, larger properties require connection rooms on each floor or each building where the signal is recreated in switches, to finally reach each end user. Establishing space for node rooms, equipment, cross-connection panels and switches at each level is a significant cost, often up to 70% of the total cost of the network.

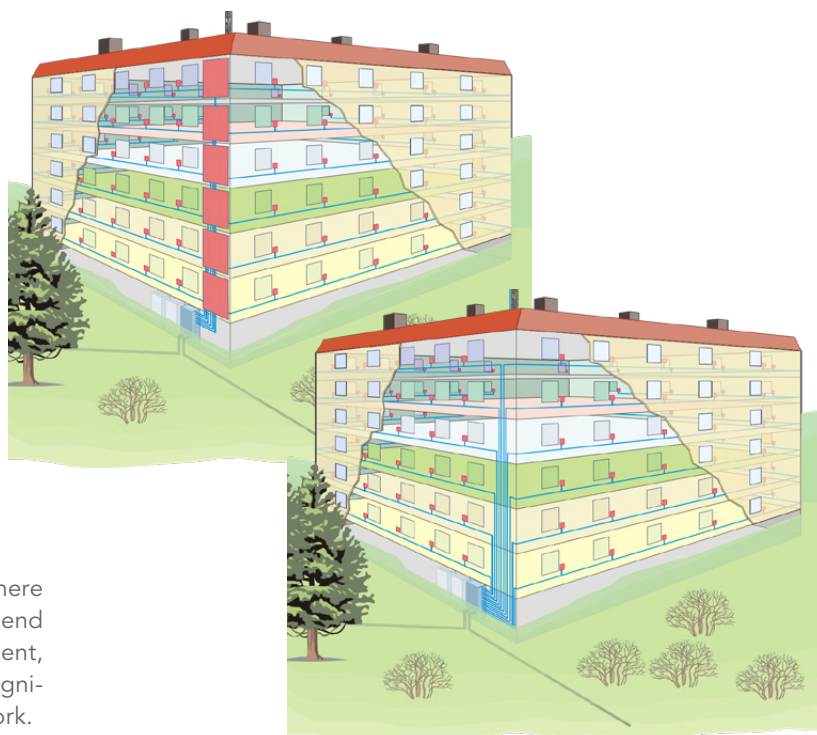
In practice, a fiber network has no limitations in transmission distance, and therefore, no connection rooms, switches and panels are needed on every floor or every building. A so-called centralized network can be built where each end user is connected directly to a central cross-connection room in a building. This connection room also connects several adjacent buildings. The savings are therefore very substantial.

The Smartest Way to Install!

Fibre networks thus offer a capacity that exceeds all traditional copper networks, and also at a significantly lower cost. What's the catch? Yes, this applies under the condition that the installation can be carried out as quickly, smoothly and safely as one would expect. Hexatronic air blow fiber system for indoor installation is designed to achieve this! The system is very easy to install and consists of a few components:

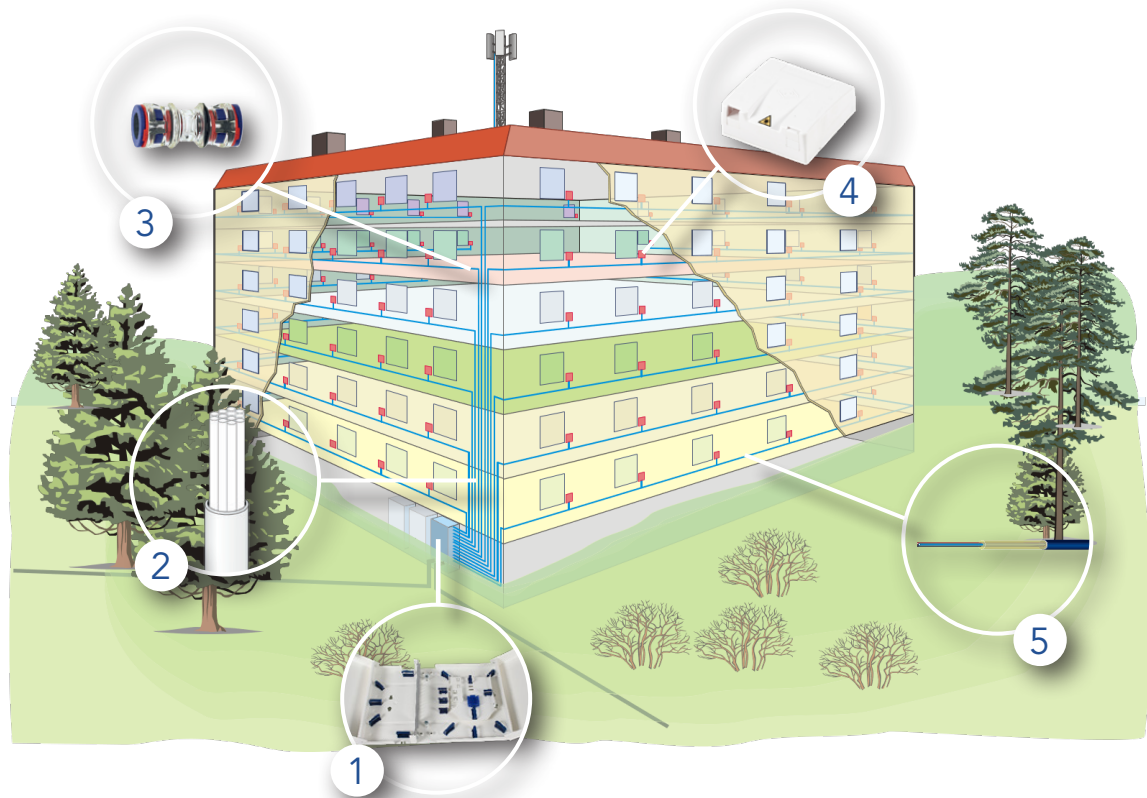
- Flame retardant nanoducts
- Connectors for ducts
- Hexatronic Stingray air blown fiber
- Customer wall boxes
- Connection closures for blown fibers

By installing empty ducts from the main cross connection room to the user's wall box, and then blowing in the fiber, unspliced all the way, the installation is carried out quickly and safely. No risk of cables being squeezed or torn and time-consuming fiber splicing is minimized. In addition, there is the option to save additional costs by using Stingray blown fiber pre-connected at one end. This makes the installation splice-free and results in even faster installations!



Structured cabling network with connection rooms on each floor (above) v.s. centralized fiber network without connection rooms (below)

Air Blown Fiber - This is How it Works!



Installing blown fiber in a building is done in a few simple steps:

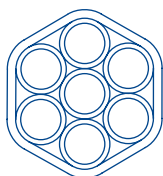
- 1** Start by identifying a common node location for the entire property or the entire group of properties. Here you mount the fiber termination closure for the building.
- 2** From the node room, the bundles of nanoducts are drawn vertically in the building. As many nanoducts as there are connection points
- 3** At each floor level the bundles of nanoducts are branched out. The jointing of ducts is done with microduct connectors and takes only a few seconds to perform.
- 4** Terminate the duct in a customer wall box or active media converter. Hexatronic offers several different options for homes, offices and industrial environments.
- 5** Finally, blow the fiber from the customer wall box all the way to the node room! If you use blown fiber that is pre-terminated at one end, you save even more time!

Nanoducts, Slimmer Ducts for Lower Installation Cost!

Hexatronic offers a unique range of extra slim tubes with a dimension of only 3/2 mm (outer/inner diameter). These "nanoducts" are much easier to install compared to standard 5/3.5 mm micro-ducts. The diameter is reduced by 40% compared to 5/3.5 mm tubes, and the cross-sectional area is up to 60% smaller! This means that e.g. hole drilling between floors will be much faster and cheaper as expensive and slow techniques such as core drilling are not needed. In most cases core drilling can be replaced with simple traditional drilling. Tight cable slits are suddenly spacious enough for pipes. In total, this results in savings of another 30% -50%!

30-50%

**LOWER
INSTALLATION
COST**



Ø17 mm
227 mm²



Ø11 mm
95 mm²

7x5/3,5 mm duct bundle (left) and 7x3/2 mm (right)



Choose Your Material and Get Started!

Nanoducts – Fire classification and dimensions

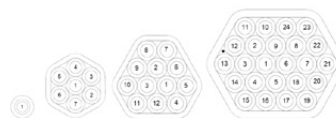
We start with the nanoducts - Installation should be done indoors, so only materials that are adapted for indoor installation should be used to avoid fire spreading in case of an accident. Hexatronic offers two series of ducts:

- High Grade
- Standard Grade

The High Grade nanoducts are extra flame retardant ducts that fulfill the most demanding standards IEC 60332-3-24 and IEC60332-1.

The Standard Grade nanoducts are cost effective ducts for indoor use designed to fulfill the fire requirements according to IEC60332-1

Hexatronic nanoducts are verified by a third-party laboratory and meet the requirements both with and without blown fiber installed.



Flame retardant nanoducts 3/2 mm High Grade (above), and Standard Grade (below)

Air blown fiber

Hexatronic Stingray air blown fiber is an extremely thin cable with a diameter of only 1 to 1.4 mm. The narrow dimension makes it possible to blow the fiber into the slim nanoducts.

The blown fiber is available in designs from 2 up to 12 fibers per unit and is delivered in lengths of up to 6 km in a practical cardboard box. The 2-fiber versions are also available in shorter lengths, from 30 m to 1000 m on a reel, and pre-terminated with connectors at one end. Select the SC or the more compact LC connectors, both UPC or APC versions available. Practical, simple and time-saving!



Tools and accessories

Always use the Hexatronic blowing tool for installation! An easy-to-use tool that can be hand-held in a pistol grip. Each tool comes with an accessory case with adapters for several dimensions of ducts, including the 3mm nanoducts.

Tools for cutting ducts and sheath removal of blown fiber are necessary for a quick and safe installation. Don't gamble with cheap tools. A good result is always obtained with good quality tools!

Accessories for jointing of ducts with snap-fit connectors facilitates the workflow.



Hexatronic micoduct connectors, adapters and end caps

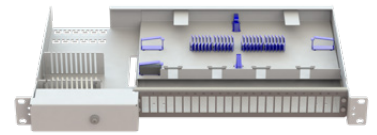
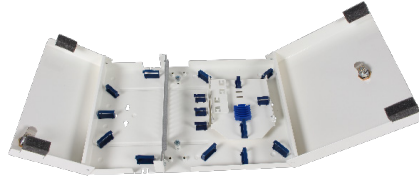


Hexatronic blowing tool

Equipment for connection rooms

Hexatronic has a large selection of network materials designed from the ground for the installation of nanoducts and blown fibers. Splice cabinets with duct entrances makes the work safe and easy!

In addition to splice cabinets, there are a large number of accessories within the Hexatronic portfolio.



Customer termination

The fiber is conveniently terminated in a customer wall box. Depending on the environment in which the box is installed, one of Hexatronic's many different boxes is chosen. All customized to work great with blown fiber and nanoducts.



Patchcords, pigtails and accessories

Even the best network fails if a single connector does not work properly. To ensure the best performance, use quality-approved cabling from Hexatronic.



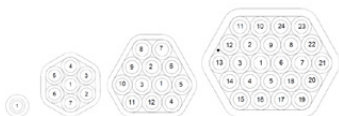
Your Safety

Our nanoducts and blown fibers are manufactured in our ISO 9001 and 14001 environmentally certified plants in Sweden. For your safety fire classifications and fire tests are performed by an independent third party laboratory.

We are so confident that you will be satisfied with our products and system solutions so that we can offer a 20-year system warranty on the functionality in your network when you choose to build this completely with Hexatronic products. For procedures and conditions, contact Hexatronic.



Our Numbers



Nanoducts, Indoor, High Grade, 3/2 mm

P. No.	Product Name
MPB30246/01	3/2 mm, for cable channels
MPB30246/1	1x3/2 mm, sheathed, 6 mm
MPB30246/7	7x3/2 mm
MPB30246/12	12x3/2 mm
MPB30246/24	24x3/2 mm



Nanoducts, Indoor, Standard Grade, 3/2 mm

P. No.	Product Name
MPB30243/01	3/2 mm, for cable channels
MPB30243/1	1x3/2 mm, sheathed, 6 mm
MPB30243/7	7x3/2 mm
MPB30243/12	12x3/2 mm
MPB30243/24	24x3/2 mm



Duct Connectors and End Caps

P. No.	Product Name
HMPB30601/3	Straight connector, 3/2 mm
HMPB30606/3	End cap, 3 mm



End Sealings

P. No.	Product Name
SRS10617/62	End sealing 3 mm



Divisible Seals

P. No.	Product Name
NDK12103	Divisible seal (100 pcs)

For instructions on how to use divisible seals on nanoducts, contact Hexatronic.



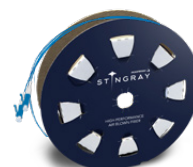
Installation tools

P. No.	Product Name
LTT1792040	Installation tool for blown fiber, set with case
NTB101116	Tripod with ball joint
LDK19501/04	Cutter for microduct assemblies
LDK20803	Microduct cutter 3-12 mm
LDK19501/08	Blown fiber sheath remover



Air Blown Fiber, Singlemode Hexatronic Stingray - TIA598

P.No.	Product Name
KRPM258019/2000M	ABF 2f G657A2, 2000 m
KRPM258019/4000M	ABF 2f G657A2, 4000 m
KRPM258019/6000M	ABF 2f G657A2, 6000 m
KRPM258022/2000M	ABF 4f G657A2, 2000 m
KRPM258022/4000M	ABF 4f G657A2, 4000 m
KRPM258022/6000M	ABF 4f G657A2, 6000 m
KRPM258034/1000M	ABF 8f G657A2, 1000 m
KRPM258034/2000M	ABF 8f G657A2, 2000 m
KRPM258034/4000M	ABF 8f G657A2, 4000 m
KRPM258044/1000M	ABF 12f G657A2, 1000 m
KRPM258044/2000M	ABF 12f G657A2, 2000 m
KRPM258044/4000M	ABF 12f G657A2, 4000 m



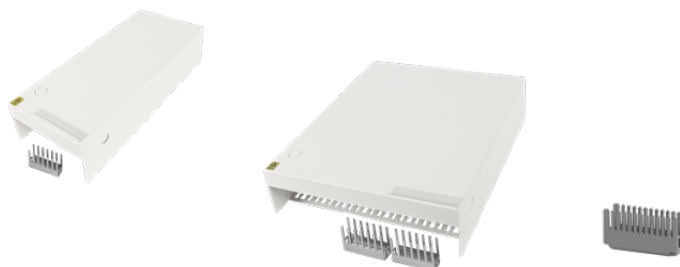
Air Blown Fiber, Pre-terminated on Reel, Singlemode - Hexatronic Stingray - TIA598

P.No	Product Name
RPM258018/30M	ABF 2LC/APC 2G657A2, 30 m
RPM258018/50M	ABF 2LC/APC 2G657A2, 50 m
RPM258018/70M	ABF 2LC/APC 2G657A2, 70 m
RPM258018/100M	ABF 2LC/APC 2G657A2, 100 m
RPM258018/150M	ABF 2LC/APC 2G657A2, 150 m
RPM258018/200M	ABF 2LC/APC 2G657A2, 200 m
RPM258018/250M	ABF 2LC/APC 2G657A2, 250 m
RPM258018/300M	ABF 2LC/APC 2G657A2, 300 m
RPM258018/350M	ABF 2LC/APC 2G657A2, 350 m
RPM258018/400M	ABF 2LC/APC 2G657A2, 400 m
RPM258018/500M	ABF 2LC/APC 2G657A2, 500 m
RPM258018/600M	ABF 2LC/APC 2G657A2, 600 m
RPM258018/700M	ABF 2LC/APC 2G657A2, 700 m
RPM258018/800M	ABF 2LC/APC 2G657A2, 800 m
RPM258018/900M	ABF 2LC/APC 2G657A2, 900 m
RPM258018/1000M	ABF 2LC/APC 2G657A2, 1000 m
RPM258026/30M	ABF 2SC/APC 2G657A2, 30 m
RPM258026/50M	ABF 2SC/APC 2G657A2, 50 m
RPM258026/70M	ABF 2SC/APC 2G657A2 70m
RPM258026/100M	ABF 2SC/APC 2G657A2 100m
RPM258026/150M	ABF 2SC/APC 2G657A2 150m
RPM258026/200M	ABF 2SC/APC 2G657A2 200m
RPM258026/250M	ABF 2SC/APC 2G657A2 250m
RPM258026/300M	ABF 2SC/APC 2G657A2 300m
RPM258026/350M	ABF 2SC/APC 2G657A2 350m
RPM258026/400M	ABF 2SC/APC 2G657A2 400m
RPM258026/500M	ABF 2SC/APC 2G657A2 500m
RPM258026/600M	ABF 2SC/APC 2G657A2 600m
RPM258026/700M	ABF 2SC/APC 2G657A2 700m
RPM258026/800M	ABF 2SC/APC 2G657A2 800m
RPM258026/900M	ABF 2SC/APC 2G657A2 900m
RPM258026/1000M	ABF 2SC/APC 2G657A2 1000m

There are several variants of blown fiber available. Contact Hexatronic for Info.

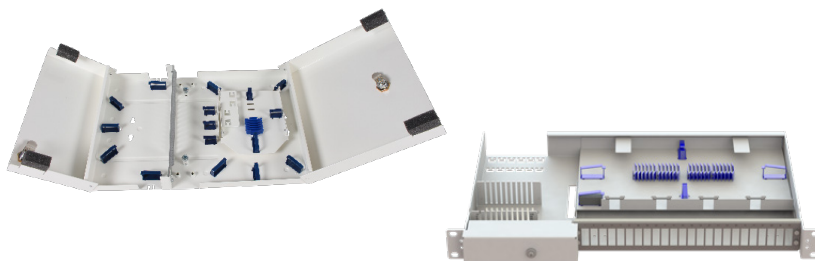
Wall Box for Termination	
P. No.	Product Name
2055140	Wall Box TD S2 incl 1 tray (max 96 fibers)
2055190	Wall Box TD S4 incl 2 trays (max 192 fibers)
2055943	3mm duct holders, 48 microducts

3 mm duct holders are ordered separately and mounted inside or outside the wall box.

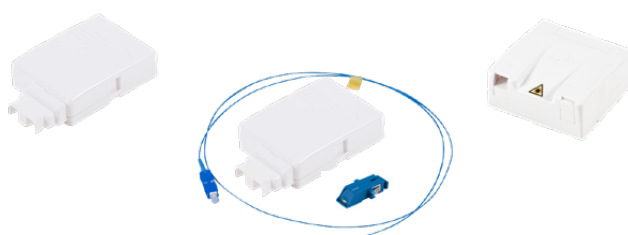


ODF and Wall Box With Panel	
P. No.	Product Name
LM-5480	LM Wall Box, panel for 12xSC Duplex
LM-5567/101	ODF for 96 microducts, front access, 24xLC Quad cutout (96 LC)

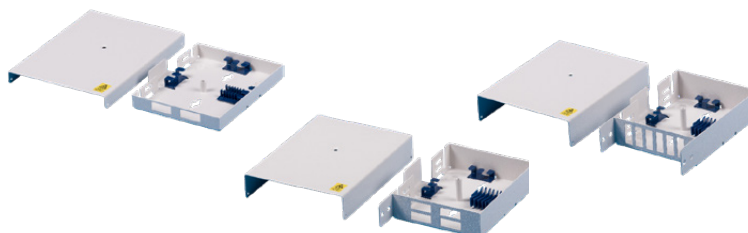
There are several variants of closures available. Contact Hexatronic for Info.



Customer Wall Box, Plastic, for Home Use	
P. No.	Product Name
206121	Customer wall box, TD V2.2, for 2xSC adapters
1/NCLA10183/F	Customer wall box, TD V2.2, 1 SC/PC (blue), with pigtail G657
206150	Customer wall box, V5, for 1-4 SC-simplex with pigtail G657

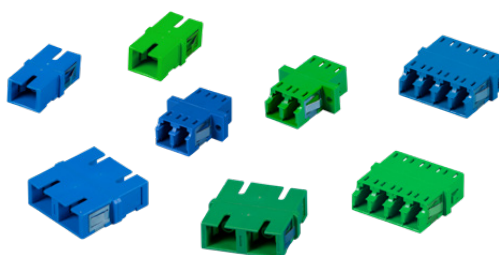


Customer Wall Box, Metal for Office or Industrial Use	
P. No.	Product Name
LM-5311	LightMate wall box 2xSC-Dpx
LM-5297	LightMate wall box 4xSC-Dpx
LM-5303	LightMate wall box 6xSC-Dpx



Adapters for ODF and Wall Closures	
P. No.	Product Name
RNT99210/23	Adapter SC/APC simplex, Green
RNT99211/13	Adapter, SC Simplex Blue
RNT99211/13	Adapter SC duplex, Blue
RNT99222/2	Adapter LC duplex, Blue
RNT99222/13	Adapter LC/APC duplex, Green
RNT99222/15	Adapter LC quadruplex, no flange, Blue
RNT99222/16	Adapter LC/APC quadruplex, Green

There are several flavors of adapters. Contact Hexatronic for Info.



Patch Cord, Simplex, G657A2, Yellow	
P. No.	Product Name
TSR3950134/1000	Patch Cord SM LC/APC-LC/APC, 1m
TSR3950134/2000	Patch Cord SM LC/APC-LC/APC, 2m
TSR3950134/3000	Patch Cord SM LC/APC-LC/APC, 3m
TSR3950134/5000	Patch Cord SM LC/APC-LC/APC, 5m
TSR3950134/10M	Patch Cord SM LC/APC-LC/APC, 10m
TSR3950127/1000	Patch Cord SM SC/APC-SC/APC, 1m
TSR3950127/2000	Patch Cord SM SC/APC-SC/APC, 2m
TSR3950127/3000	Patch Cord SM SC/APC-SC/APC, 3m
TSR3950127/5000	Patch Cord SM SC/APC-SC/APC, 5m
TSR3950127/10M	Patch Cord SM SC/APC-SC/APC, 10m

There are several flavors of patch cords and pigtails. Contact Hexatronic for Info.



Pigtails, Simplex, G657A2	
P. No.	Product Name
HTSR3950433/1000	Pigtail 1xSM LC/APC 1m
HTSR3950426/1000	Pigtail 1xSM SC/APC 1m

Industry Leading System Solutions for Fiber Optic Communications

Hexatronic develops, manufactures, markets and provides solutions within fiber optic based networks, for telecom companies, installation companies and network owners. Our products are developed and manufactured by Swedish specialists, with many years of experience and unique expertise in fiber optics, with the focus of giving our clients the best possible total cost of ownership.

A part of Hexatronic Group

Hexatronic Group specializes in product and system solutions primarily within fiber communications. The Group offers a broad range of products and system solutions with a focus on infrastructure for passive fiber optics. Hexatronic has the stability and resources of a large Group, combined with the flexibility and speed of a small company.

Hexatronic is based in Sweden, but operates in a global market. Our customers are companies in the telecommunications industry, such as telecom operators, network owners, distributors and systems integrators. The Groups headquarters are in Sweden with sales offices and subsidiaries in Sweden, Norway, Finland, Great Britain, Germany, New Zealand, the United States and China. The Hexatronic share is listed on Nasdaq Stockholm.

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



Are you installing for the first time and unsure how to do things? Our field support is here to help you, online or on site!

We never leave our customers alone. If any problems arise during installation, our experienced technical field support is there for you! This unique, free service can be the most important factor for your project success. Go to www.hexatronic.com/se/contact

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