

NAFICON

***Modular and Data
Center products***



Naficon was established in 1994 and is specialized in products for Passive Optic Networks (PON). Naficon is located in Nauvo, in the archipelago of Turku. Over the past three decades we have established ourselves as one of the leading operators on the field of end-products for optical fiber networks in Finland. Quality, flexibility and understanding are the three words that describe best the way we operate. Using high-class materials, the newest production equipment and continuous development of skills are the reasons for maintaining good quality year in and year out.



In July 2015 we founded subsidiary in Dubai, United Arab Emirates. The name of the company is NFOM (Naficon Fiber Optic Manufacturing) LLC. NFOM manufactures similar products as we do in Finland using the same materials and production equipment. Certain products, like trunk cables for mobile masts and other cell sites, are still made from start to finish in Nauvo. The production in NFOM started in February 2016. In April 2017 NFOM quality management system got ISO 9001 quality certification.



As said our manufacturing plant in Finland is in Nauvo. We manufacture pigtails, patch cords and multifiber cables with connectors ready-made. Used cables are for indoor and outdoor applications according to customer needs. Beside those products we manufacture pre-terminated fiber panels for different purposes.



Besides comprehensive stock of our own products, we have all the essential PON products in stock. Adapters, splice protector sleeves, attenuators, splitters, CWDM etc. We have thousands of products in stock so even bigger deliveries within a day can be made.

We manufacture products with all the most common connectors: SC, LC, FC and ST. All of them can be polished with UPC (no angle) and SC, LC and FC connectors are available as APC connectors. APC connectors feature fiber end face that is polished at an 8-degree angle. Other ready-made connectors, such as MTP/MPO and E2000, can be supplied via our partners.

Flexibility, quality and understanding

- three words that describe Naficon's products and operations

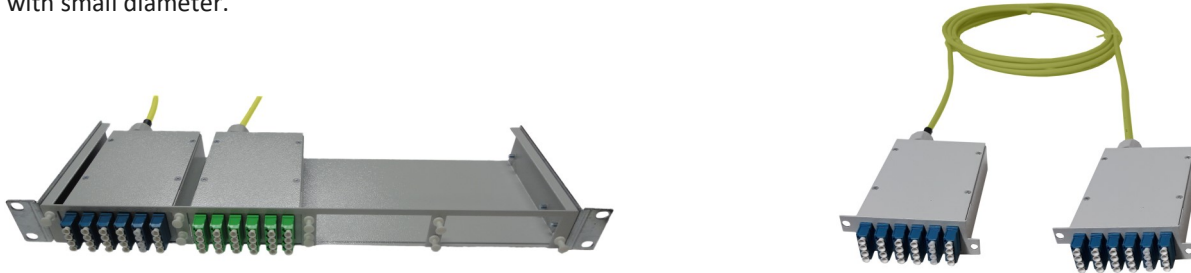


Modular and Data Center products

19" LC module

Modular design is a convenient solution when you don't want to acquire preassembled cable with 48 or 96 fibers for 19" panel. Modular structure allows you to complement the panel in four phases according to needs.

Modular structure includes 19" frame and preassembled modules. The cable used in the modules is user-friendly FTMSU cable with small diameter.



The height of the frame is 1U and it fits 4 modules. The modules are installed to the frame from behind, which enables the use of preassembled cables.

One module fits 24 LC connectors, which means the whole frame fits 96 LC connectors. The modules can be equipped with less connectors as well. With regular modules, the cable is preassembled on both ends. But if there is a difficult inlet, then the other module can be left uninstalled.

Below you can see the identification codes of the modules held in stock.

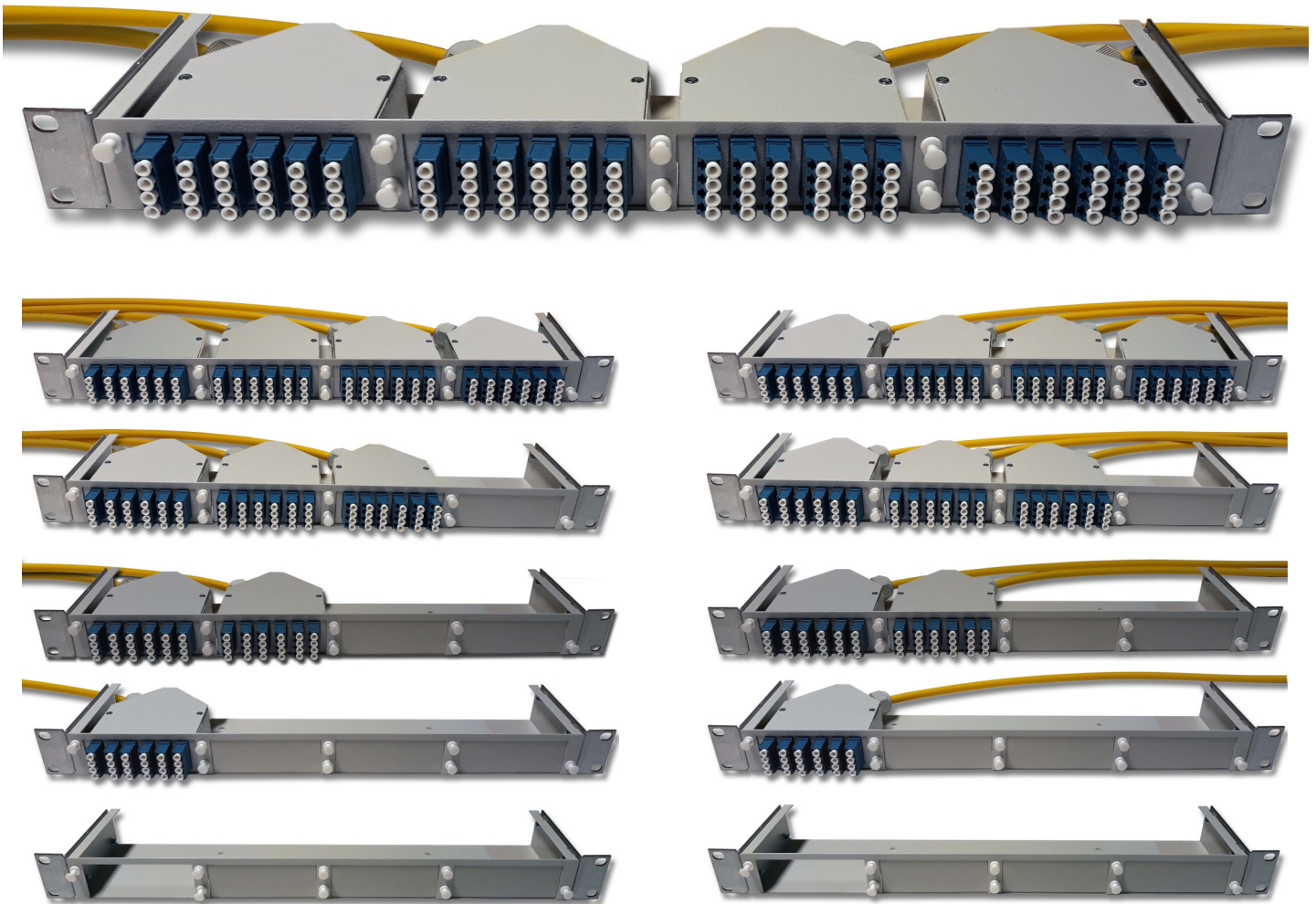
Identification code	1. Frame	
7269212	19" frame for 4 modules	
2. Cables, modules installed on both ends. LC-UPC		
Identification code	Product	Length
7269213	Mod/Mod LC FTMSU 12SMT	10m
7269214	Mod/Mod LC FTMSU 12SMT	15m
7269215	Mod/Mod LC FTMSU 12SMT	20m
7269216	Mod/Mod LC FTMSU 12SMT	25m
7269217	Mod/Mod LC FTMSU 12SMT	30m
7269218	Mod/Mod LC FTMSU 12SMT	35m
7269219	Mod/Mod LC FTMSU 12SMT	40m
7269220	Mod/Mod LC FTMSU 12SMT	45m
7269221	Mod/Mod LC FTMSU 12SMT	50m
7269222	Mod/Mod LC FTMSU 24SMT	10m
7269223	Mod/Mod LC FTMSU 24SMT	15m
7269224	Mod/Mod LC FTMSU 24SMT	20m
7269225	Mod/Mod LC FTMSU 24SMT	25m
7269226	Mod/Mod LC FTMSU 24SMT	30m
7269227	Mod/Mod LC FTMSU 24SMT	35m
7269228	Mod/Mod LC FTMSU 24SMT	40m
7269229	Mod/Mod LC FTMSU 24SMT	45m
7269230	Mod/Mod LC FTMSU 24SMT	50m

3. Cables, modules installed on both ends. LC-APC		
Identification code	Product	Length
7269231	Mod/Mod LCA FTMSU 12SMT	10m
7269232	Mod/Mod LCA FTMSU 12SMT	15m
7269233	Mod/Mod LCA FTMSU 12SMT	20m
7269234	Mod/Mod LCA FTMSU 12SMT	25m
7269235	Mod/Mod LCA FTMSU 12SMT	30m
7269236	Mod/Mod LCA FTMSU 12SMT	35m
7269237	Mod/Mod LCA FTMSU 12SMT	40m
7269238	Mod/Mod LCA FTMSU 12SMT	45m
7269239	Mod/Mod LCA FTMSU 12SMT	50m
7269240	Mod/Mod LCA FTMSU 24SMT	10m
7269241	Mod/Mod LCA FTMSU 24SMT	15m
7269242	Mod/Mod LCA FTMSU 24SMT	20m
7269243	Mod/Mod LCA FTMSU 24SMT	25m
7269244	Mod/Mod LCA FTMSU 24SMT	30m
7269245	Mod/Mod LCA FTMSU 24SMT	35m
7269246	Mod/Mod LCA FTMSU 24SMT	40m
7269247	Mod/Mod LCA FTMSU 24SMT	45m
7269248	Mod/Mod LCA FTMSU 24SMT	50m

Modular and Data Center

19" LC module 45 degrees

There is a new version of the frame which is not as deep as the regular version. The new version has its own fitting modules as well. In the modules, the cable is at an angle of 45° relative to the front edge. This saves space and the modules can also easily fit in cross-connection cabinets without the cable being unnecessary bent. The cable can be installed in the module so that the cable goes either left or right. The frame also has holes for wall mounting.



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MTP/MPO

When talking about MTP and MPO connectors we need to keep in mind that they are not the same although compatible.

MTP is developed out of MPO, but with better quality. There are many companies manufacturing parts for MPO connectors, but only US Conec manufactures parts for MTP connectors. This means that parts for MPO, for example the boot, housing and ferrules can be manufactured by anyone. And if the connector is called MTP, then all parts are manufactured by US Conec.

There are few advantages with MTP compared to MPO

- The housing is detachable, which enables ferrules to be repolished
- Floating ferrule improves the connection between couplings
- The tolerance for the guide pins in male-connectors is tighter
- The spring is focused better, and its compressive force is better

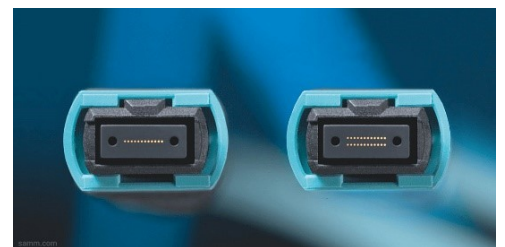
We supply both MTP and MPO products. At this moment we don't manufacture these connectors ourselves. We offer products from our partner Seikoh Giken.

Connectors



There are two types of MTP/MPO connectors, male and female. In the male connector there are guide pins and in the female connectors corresponding openings. The male connector is used among other things inside panels and in device interfaces. The female connector is commonly used in patch cords and in instrument and trunk cables.

MTP/MPO connectors are available with 8, 12 or 24 fibers. The connector is the same size with all the fiber counts. In connectors, with 8 or 12 fibers, there are 12 places for fibers. When using 8 fibers the 4 middle places remain unused. This 8-fiber connector is mainly used only in multimode products and in 40Gb systems.



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In 24-fiber connector the fibers are in two rows. See the difference in the picture beside.

12-fiber connector is the most common at the moment. 24-fiber connectors advantage is greater coupling density, which leads to halving the trunk cables needed. The challenges for using 24-fiber connectors is their manufacturing complexity, which raises their price considerably.

The insertion loss for MTP/MPO connectors is typically little higher compared to SC and LC connectors with ceramic ferrules, typically 0,25dB. Return loss is also weaker compared to regular ferrules. Therefore SM MTP/MPO connectors are almost always APC polished, and that enables them to reach the typical value of 55dBm for return loss.

Patch cords



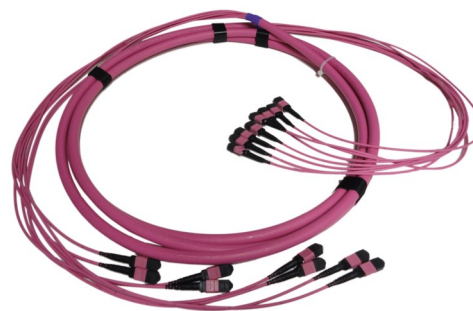
Patch cords are available for all fiber counts (8, 12 and 24). Both ends can be with MTP/MPO connectors or the other end may be with LC or SC connectors.



Trunk cables



Trunk cables are available with 12, 24, 48, 72, 96, 144 and 192 fibers. The length is customizable to needs and the connectors can be at both ends or only at the other end.



Panels and modules

Several different options are available. There are panels, where at back there are slots for 2 to 16 MTP/MPO adapters. In front of the panel there are slots for LC quattro adapters or for MTP/MPO adapters. When using MTP/MPO connectors, 1U panel can reach as many as 384 connections. In this case there are MTP/MPO connectors in front of the panel as well.



HD LC panels are also available, fitting 144 LC connector to a 1U panel. These HD panels have their own modules.

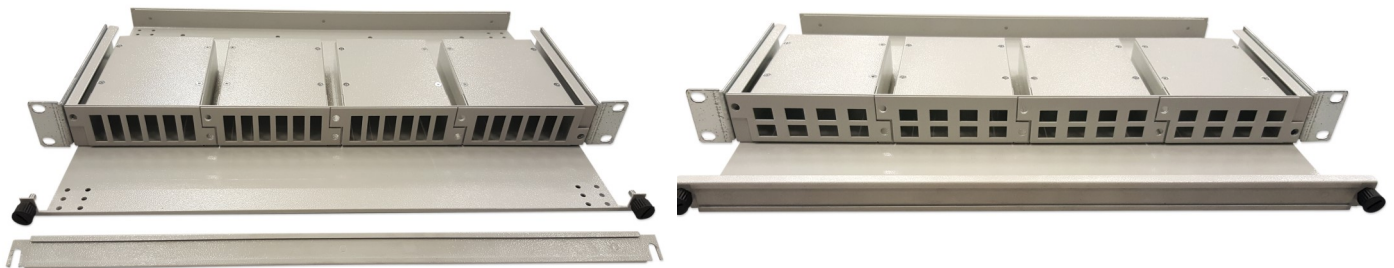


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In a traditional module there are two slots for MTP/MPO connectors at the back and 24 slots for LC connectors in front. Four of these modules can be fitted into 1U panel. Modules can be added when needed. Inside these modules, there are two short MTP/MPO-LC patch cords fitted inside.



19" 1U frames are with and without impact protection. Underneath are frames with impact protection. On the left modules have openings for LC connectors, and on the right for MPO/MTP connectors.





In the picture above, there is 19" 1U frame without impact protection and LC module fitted in.

Polarity

It is crucial to know the polarity when using MTP/MPO connectors. There are three types of polarity available (A, B and C). The choosing of adapters also depends on the polarity. More information can be found on our [website!](#)

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