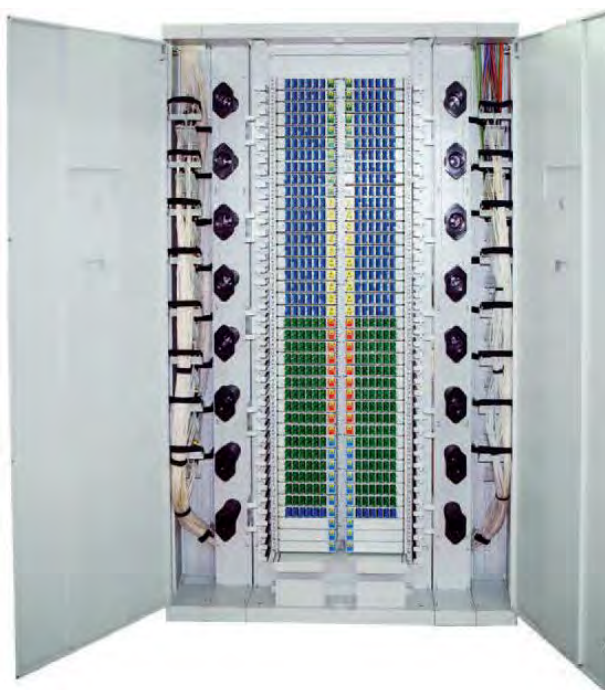


MROM series

THE COMPLETE CABINET FTTH SOLUTION

Description:

The MROM is an optical fiber distribution/patch system for Passive Optical Networks. Main application of the system is fiber termination in Central Offices of FTTH networks. MROM combines the advantages of the Central Office systems available on the market.



Features:

- EU designed and manufactured
- Maximum fiber density for standard rack: 1920/3840 (SC/LC)
- Comfortable patching with two-sided overlength patchcord storage
- 3 different rack heights: 32HU/1800 mm, 40HU/2200 mm, 48HU/2600 mm
- Rack depth is 300 mm
- 2 optional extensions (for overlength storage)
- Open and closed rack version
- Removable and rotateable splice/patch Fiber Module
- 0.5 HU as well as 1 HU Fiber Module available
- Fiber Module frontplate with two different cut-outs and adapter mounting through snap-in angled holder
- 45 degrees snap-in angled holders for all conventional adapter types: SC, LC, E2000, E2000, LX.5, FC, ST
- Possibility to blow fibers directly up to the fiber modules
- Integration of gas-blockers on incoming tubes possible

- Top or bottom cable entry possible.
- Easy expansion with side-by-side or back-to-back mounting of racks.
- Solutions for cross-connect and interconnect configurations
- Modular subunits for highest flexibility
- Backside vertical cable guidance for incoming cables
- Bending radius protection of 30 mm for fibers and patchcords
- Intelligent patchcord management:
 - Vertical patchcord cable guidance on left and right side
 - Mandrels on left and right side of the rack provide sufficient space for patchcord overlength storage
 - Integrated patchcord management to adjacent racks avoids the usage of external ducts

SINGLE ROW RACKS

Three different heights and two orientations.

Options - Two extension racks as well as side panels and one single door

Extension:

- One Mandrel Extension Rack
- One Gasblocker Extension Rack
- Combination of one Gasblocker Extension Rack and one Mandrel Rack

Installation:

- Several racks next to each other back-to-back – floor mounting
- Stand alone be fixed to both floor and ceiling or wall.



DOUBLE ROW RACKS

Three different heights.

Options - Two extension racks as well as side panels and a pair of doors, up to two extension racks on each side.

Extension:

- Mandrel Extension Rack
- Gasblocker Extension Rack
- Combination of one Gasblocker Extension Rack and one Mandrel Rack

Installation:

- Several racks next to each other back-to-back – floor mounting
- Stand alone be fixed to both floor and ceiling or wall.



Rack - Technical data:

	Single row rack			Double row rack		
	Without extensions					
	MROM 450/32HU	MROM 450/40HU	MROM 450/48HU	MROM 700/32HU	MROM 700/40HU	MROM 700/48HU
Rack height	1800 mm	2200 mm	2600 mm	1800 mm	2200 mm	2600 mm
Rack width	450 mm			700 / 750 mm closed rack		
Rack weight (open/closed)	50/77 kg	62/92 kg	74/106 kg	83/112 kg	98/133 kg	115/162 kg
	With mandrels					
	MROM 600/32HU	MROM 600/40HU	MROM 600/48HU	MROM 1000/32HU	MROM 1000/40HU	MROM 1000/48HU
Rack height	1800 mm	2200 mm	2600 mm	1800 mm	2200 mm	2600 mm
Rack width	600 mm			1000 mm closed rack		
Rack weight (open/closed)	60/88 kg	72/105 kg	84/122 kg	98/142 kg	118/170 kg	138/197 kg
	With mandrels and gasblocker integration					
	MROM 750/32HU	MROM 750/40HU	MROM 750/48HU	MROM 1300/32HU	MROM 1300/40HU	MROM 1300/48HU
Rack height	1800 mm	2200 mm	2600 mm	1800 mm	2200 mm	2600 mm
Rack width	750 mm			1300 mm		
Rack weight (open/closed)	71/99 kg	83/116 kg	98/132 kg	123/171 kg	148/205 kg	174/233 kg
Max. amount of modules (full size / half size)	32/64	40/80	48/96	64/128	80/160	96/192
Max. amount of fibers SC/LC	768/1536	960/1920	1152/2304	1536/3072	1920/3840	2304/4608

Rack - closed version:

The closed rack version provides doors and side panels, which can easily be mounted and removed on site.

Rack features:

- Robust steel metal construction, color: RAL 7035 light grey
- IP Protection: IP30
- Flammability classification: UL 94V-0
- Top or bottom cable entry possible
- Top cover provides openings for cables with brushes
- Doors have an opening angle of up to 180°
- Doors are equipped with integrated turning lever and lock
- Both doors accommodate A4 document-holder on inner side
- Easy expansion with side-by-side or back-to-back mounting of racks
- Single rack version has 1 front door, double rack version has 2 front doors
- Customized solutions regarding special dimensions, front doors, locks and colouring can be offered on request

Mandrel Extension Rack

- Cable guidance of the jumper patchcords.
- Optionally available back panel for closed version of the MROM systém

Gasblocker Extension Rack

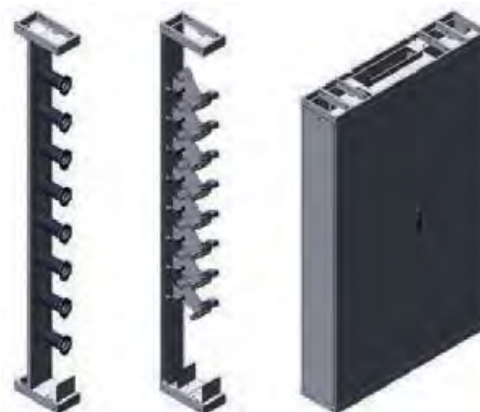
- When using blow-in systems, gasblockers are essential in order to protect the installation against gas and/or water entry.
- Gasblocker Extension Rack has a built-in back panel
- No extra back panel is needed for closed version.

Rack doors

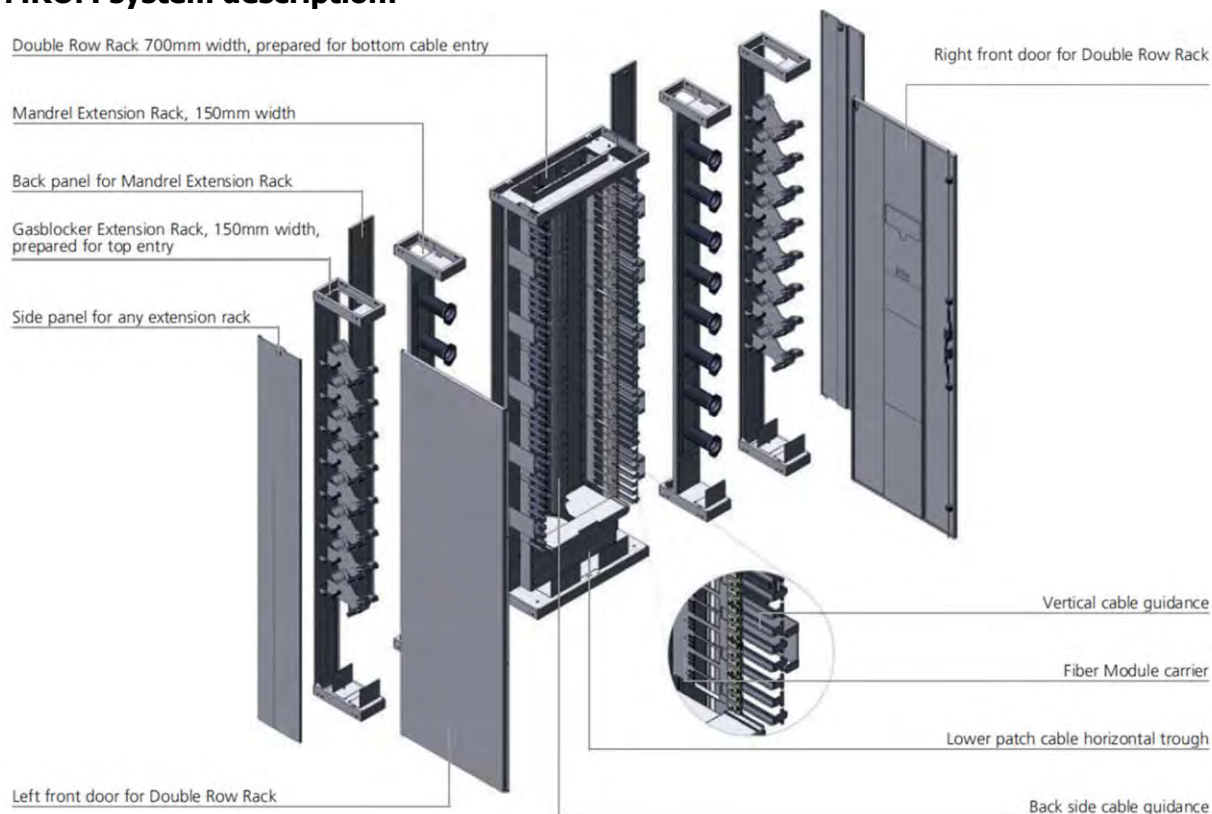
- For closed rack version doors can be attached to the single or double row rack.

Side and back panels

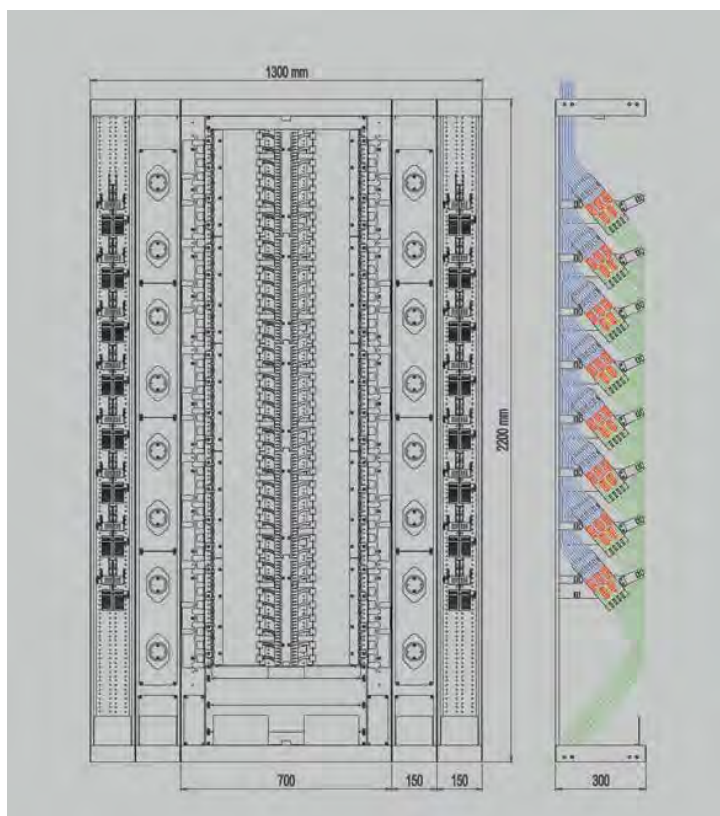
- Side and back panels mounted with screws
- Different side panels for the Single/Double Row.
- Side panel is useable for right as well as for left side mounting.



MROM system description:



Dimensions of the MROM rack:



Dimensions of MROM 700/40HU rack with Mandrel Extension Rack and Gasblocker Extension Rack.

Front view of the rack, side view and guidance of Gasblocker Extension Rack.

Fiber Modules:

The multi-circuit management fiber modules of MROM are used as combined splice & patch modules. They offer highest fiber density together with best maintainability. Maximum flexibility is guaranteed with the uniform module frontplate and the 45° angled adapter holders for all conventional adapter types.

The fiber modules are available in 2 sizes:

- as half-size fiber modules with a height of 0.5 HU
- as full-size fiber modules with a height of 1 HU

Fiber modules can be equipped with different adapter types or with a closed frontplate without adapters for a splice-through version (in this case, a loop-back connection of fibers can be provided via splices).

Fiber Modules - Technical data:

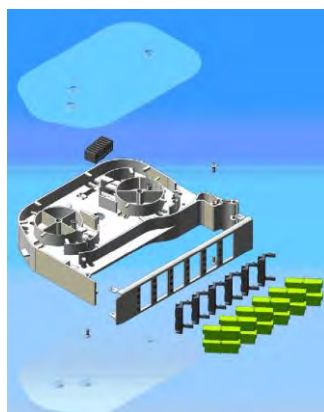
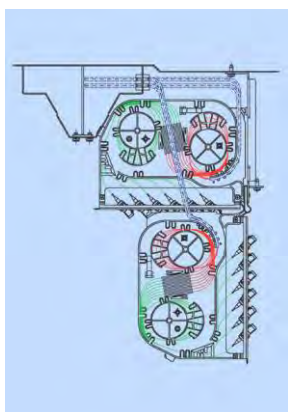
Material of the LSZH fiber modules is mixed Polycarbonat / ABS / fiberglass. The symmetrical design of the multi-circuit management fiber modules enables to use the same module for left and right side mounting. A uniform module color optimizes stockkeeping, while individual threefold color code labelling (on front, side and cover) offers fast and clear module and fiber identification.

Features:

- Fiber modules are 90 degrees rotatable and removable from the rack
- Incoming fibers and pigtails are stored in separate areas
- Easy to snap in adapter holders enable comfortable cleaning of pigtail-connector ferrules by taking off the adapter holders.
- Same splice protection holder for both shrink and crimp splice protection
- Two-sided, easy to remove transparent covers per fiber module
- Bending radius protection for all fibers and pigtails
- Up to 1.5 m overlength storage of cable conduit in the module possible
- Integration of splitters up to 1x64 possible

Scope of delivery of a fiber module is fiber tray, frontplate, adapter holders, shrink/crimp splice holder, 2 transparent covers, inserted adapters, inserted pigtails, threefold labelling.

Shrink / crimp splice protection is not delivered with the fiber module, and has to be ordered separately.



Fiber Modules - Order code:

MROS-X

Type

F Full - 1U
H Half - 0.5U

- XX

Fiber capacity

1 ÷ 24

- XXX

Frame+adapters

00
SC
DLC

- X

Adapter type

- N/A
M MM
S SM
A APC

*Note: 00 - Splice trough version without cutout, without adapter holder
Other adapters: E2000, LX.5, FC, ST – on request
Other fiber module on request: MTP module, splitter module, etc.*

MROC - Module carrier unit:



The MROC module carrier unit accommodates the fiber modules and enables a rotation and the removal of the fiber modules from the rack. A flexible mix of half-size and full-size fiber modules is possible by using 4 different sizes of carrier modules (2, 4, 6, 8 HU). The retractable clips of the carrier unit are used to fix the cable conduits.

Material: Powder coated steel.
Color: RAL 7035
Material of hinge: ABS

Module carrier unit 2HU	MROC-2
Module carrier unit 4HU	MROC-4
Module carrier unit 6HU	MROC-6
Module carrier unit 8HU	MROC-8

OFPT- Fiber protection tube:



Fiber protection tubes are necessary to protect the loose tubes of an incoming cable from the terminal point of the incoming cable to the Fiber Modules. Two different types of protection tubes are available. Euroclust offers these fiber protection tubes per meter as well as in a set. A set for fiber protection contains the necessary quantity of tubes for each rack height, including labelling of each tube, cutting to its proper length and packed in a separate cardboard packing. Alternatively a set including pre-installation can be ordered either for the pre-installation into the base rack or into the extension rack. All fiber protection tubes are made of LSZH material

High rigidity harness PBT tube

This kink-resistant tube-slit version ensures that a maximum bending radius of incoming cables is maintained.

Microduct/Primary tube

The microduct protection tubes offer the possibility to blow in fibers directly up to the Fiber Modules. When using Microduct/Primary protection tubes, a pre-installation is possible by using our cable feeding tool. When ordering sets of microduct/primary tube, each tube is pre printed with fiber module level indication (see ordering information).

Technical specifications:

High rigidity harness tube

Color: Black
Material: Polyethylene terephthalate (PBT)
Flammability: UL 94V-0
Inner diameter: 3.3 mm
Outer diameter: 5.0 mm

Microduct

Color: White
Material: LSZH material
Flammability: UL 94V-0
Inner diameter: 3.5 mm
Outer diameter: 5.0 mm

MRCC - Cable clamp sets:



The MRCC cable clamp sets are mounted either on the top or on the bottom side of the cabinet and secures the strain relief element of incoming cables. They also serve as holding point for the cable conduits. Optionally the central strength member of the incoming cable can also be fixed. Each cable clamp has 8 slots for tubes, and in one slot can be mounted 4 tubes. A cable clamp set includes the cable clamp, mounting rail, protection bar and screws.

Technical specifications

Color RAL	7035, light grey
Material	Powder coated steel
Dimensions	164,3mm x 90mm x 51.7mm (HxWxD)
Weight	250 grams

Max. amount of cable clamps and tubes:

	Single row racks			Double row racks		
	32HU	40HU	48HU	32HU	40HU	48HU
Cable clamps	4	5	6	8	10	12
Tubes	64	80	96	128	160	172

Tools, Fixing material & Pre-Installation services



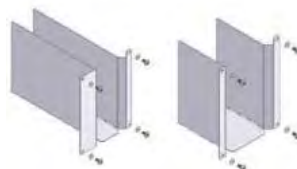
Fixing sets

Several fixing sets are available for MROM to mount the rack to the wall, on the floor or to mount multiple racks side by side or back to back to each other. Each individual fixing set contains all necessary screws, mounting brackets, washers and anchor pins



Upper connecting plate set

Upper connecting plate set is available for MROM to mount two racks back to back. Connecting plate is mount on the top side of racks. The set includes the connecting plate, screws and washers



Patch channel

Through the patch channel it is possible to connect patchcords between two racks mount back to back. The set includes the patch channel, screws and washers.

Step by step to your system MROM planning process:

Step 1 Select adapter system	The MROM planning process usually starts with the selection of the adapter system.
Step 2 Specify required capacity	The next step is to specify how many terminations (splices) are necessary on site.
Step 3 Specify incoming cable	Depending on the type and the method how the cable is fed into the system, the proper cable clamp set must be chosen.
Step 4 Choose cable management	Within this step you must specify what kind of fiber protection tube is needed and if gasblockers are required.
Step 5 Assign the connections to the modules	The next step is to assign the fiber terminations to fiber modules.
Step 6 Choose fiber modules and quantity	Based on the termination assignment you can choose which Fiber Modules are needed (0.5HU or 1HU) and which quantity is necessary.
Step 7 Define rack types and quantity	With the given limitations for the rack types (dimensions, open/closed versions) the type and amount of required racks can be calculated.
Step 8 Create a floor plan	With this figure, a floor plan can be created and the rack ordering code can be determined.

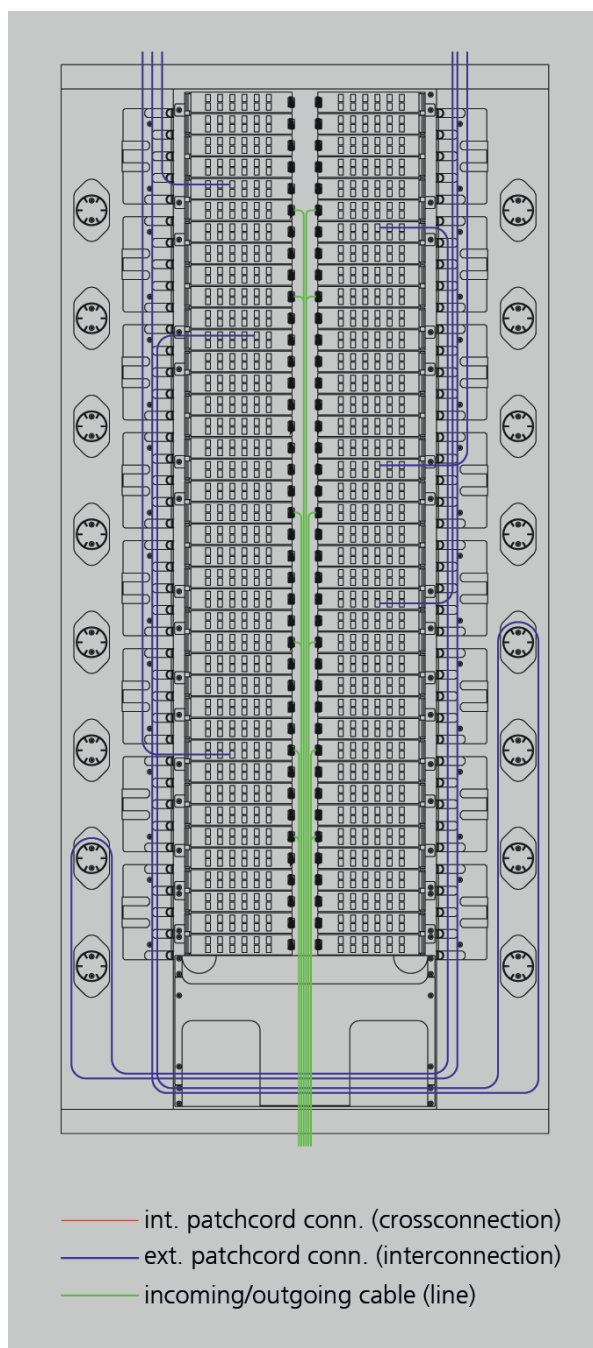
Ordering checklist:

The following checklist helps you make sure that you have ordered all parts which are required to build up MROM system.

Base rack Single row or double row	Mandatory
Extension rack, doors, side panels Mandrel or gasblocker extension racks, doors, side panels to achieve closed rack	Optional
Fiber module Fiber modules according to your needs 0.5/1.0HU, with specified adapter system	Mandatory
Module carrier unit The quantity depends on the quantity of Fiber Modules	Mandatory
Fiber protection tube Either high rigidity harness PBT tube or microduct	Mandatory
Fiber protection tube set Fiber protection tube cut to correct length with or without pre-installation	Optional
Cable clamp set The quantity depends on the type of incoming cable	Mandatory
Fixing set For installation a rack to the floor, to the wall or two racks side by side	Mandatory

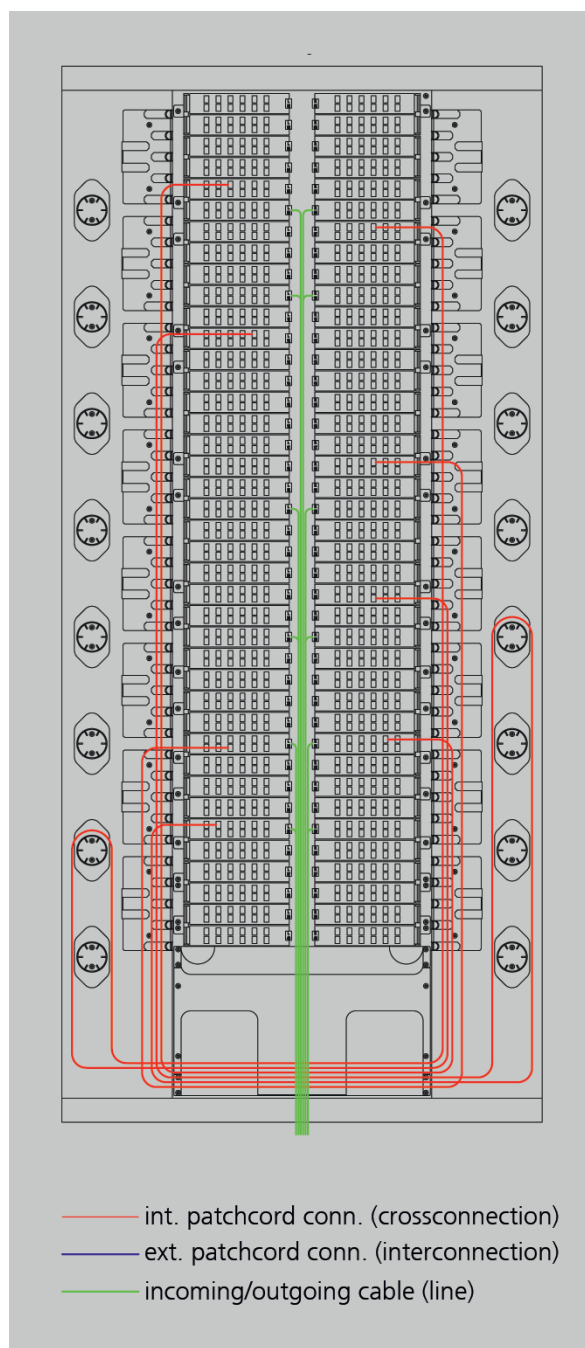
MROM Configurations:

The main application of MROM is fiber termination in Central Offices of FTTH networks. The MROM distribution/patch system can be placed as distribution node within the passive distribution network or between active components and the passive distribution network. The following sketches of connections and cabling show different approaches how to connect the subscribers to the active equipment respectively to the network backbone using one or more MROM configurations.



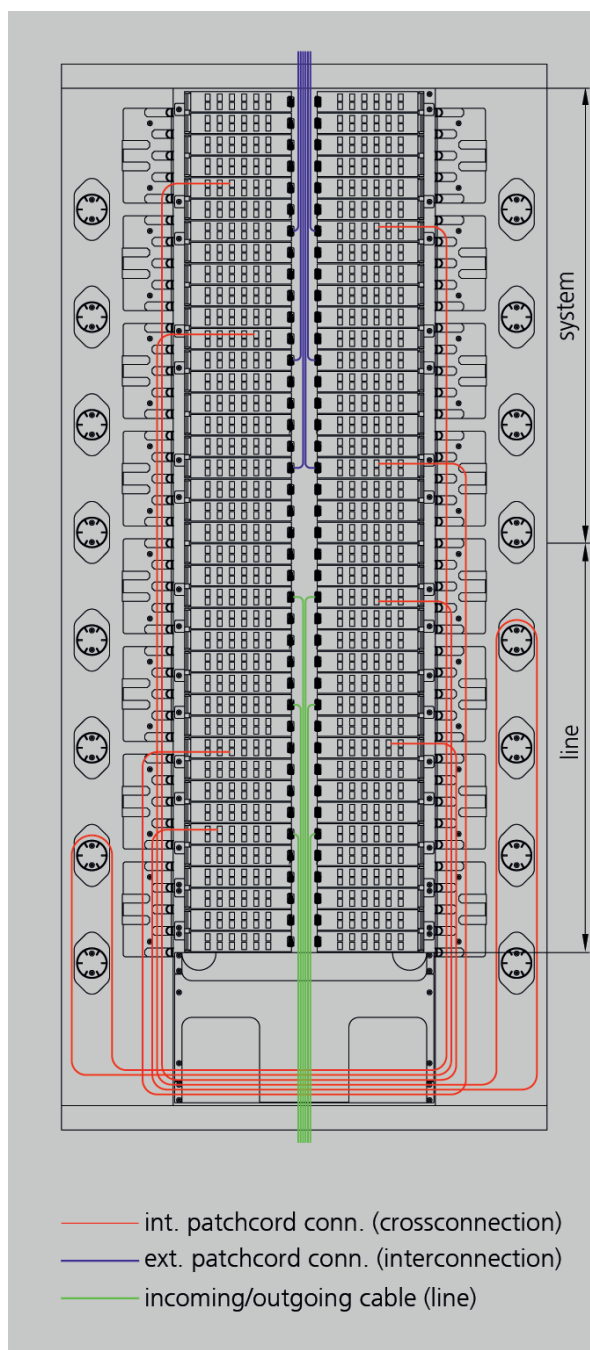
Interconnect configuration:

The line cable, which establishes the connection to the passive optical distribution network, comes from the bottom. The external patchcord connection establishes the connection to the active optical equipment such as transmitters and receivers.



Crossconnect configuration:

The line cable, which establishes the connection to the passive optical distribution network, comes from the bottom. It is for incoming as well as for outgoing signals. The MROM rack is used for patching in the distribution part of the optical network.



Crossconnect configuration:

In this configuration example the rack is split into a system's part and a line's part. The line cable, which establishes the connection to the passive optical distribution network, comes from the bottom while the external connection cable comes from the top. Both line and external cable are terminated by Fiber Modules. An internal patchcord is used to connect the system part with the line part of the network