

FIBER OPTIC SYSTEM



TAKING HIGH DENSITY TO THE NEXT LEVEL
WITH NEW INTEGRATED SOLUTIONS

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A RELIABLE PARTNER FOR YOUR DIGITAL INFRASTRUCTURES

The Legrand group is a world leader in communication networks for data transmission. Its investment in the development and design of structured cabling solutions enables the Group to expand its offer so as to remain at the highest level of performance for data centers and smart building installations.



THE SCOPE OF ITS OFFERING
AND ITS LEADING POSITIONS
MAKE THE LEGRAND GROUP
**A WORLDWIDE BENCHMARK
AND A RELIABLE PARTNER
FOR ALL YOUR PROJECTS**





3 DIMENSIONS OF EXCELLENCE

To provide you with ever-more cutting-edge and efficient systems, the Legrand group strengthens its LCS³ fiber optic offer with new High Density solutions! These solutions meet the three dimensions of excellence, inherent to the LCS³ solutions, that perfectly address the key challenges for digital networks: performance, scalability and efficiency!



PERFORMANCE

- 40 Gbps, 100 Gbps and 400 Gbps Ethernet applications
- Higher bandwidth & lower latency
- MTP/MPO high performance and density



SCALABILITY

- High density solutions optimizing space
- Greater connectivity capacity making way for future evolutions without modification of the installation
- Agile and flexible solutions enabling easy changes



EFFICIENCY

- Easy installation and easy maintenance reducing time, cost and risks when changing or adding solutions
- Possibility to mix fiber & copper to meet all needs with one installation
- Product Environmental Profiles for the new slim cassettes and panels



CREATING FULL HD FIBER

Legrand boosts its high density offer for building networks and data center applications within LCS³ fiber systems. From 1U to 4U, they support the fiber and equipment port density required for all networks with high and even ultra high density (UHD version see p.28)

Base 12, MTP(F) to MTP(F),
Type B, OM4 trunk in Fiber
raceway system*

4U HD panel

Cat.No 0 321 77
Can hold 32 slim cassettes
(into 16 supports) and/or MTP,
splice fiber, copper cassettes

Slim multimode OM4 cassettes

Cat.No 0 321 69
12 fibers, MTP(M)-LC duplex,
universal polarity
To be connected with OM4
duplex LC patch cord, A-B*

Support for slim cassettes

Cat.No 0 321 38
Can take up to 2 slim cassettes
12 fibers, MTP(M)-LC duplex,
universal polarity

NEAR END

SYSTEMS

1U HD panel

Cat.No 0 321 75
Can hold 8 slim cassettes
(into 4 supports) and/or MTP,
splice fiber, copper cassettes

Slim multimode OM4 cassettes

Cat.No 0 321 69
12 fibers, MTP(M)-LC duplex,
universal polarity
To be connected with OM4 duplex
LC patch cord, A-B*

Support for slim cassettes

Cat.No 0 321 38
Can take up to 2 slim cassettes
12 fibers, MTP(M)-LC duplex,
universal polarity

FAR END

* Configured offer possible on request

HIGH DENSITY MODULAR PANELS

From 1U to 4U

Optimize space and connectivity with our three new HD modular panels! These quick-fixing solutions (automatic mounting and automatic grounding on 19" uprights) offer you optimum capacities per U: 96 in LC version, 48 in SC version and 24 in ST version! Keeping link connections accessible and manageable, they offer slim and mix-media cassettes.

4U HIGH DENSITY PANEL
Can hold up to 32 slim cassettes (into 16 supports)

Rear management accessories to suit all configurations: fan out, cable glands, copper

Possibility to mix fiber and copper cassettes in one panel

Each panel can be equipped with both standard and slim High Density cassettes

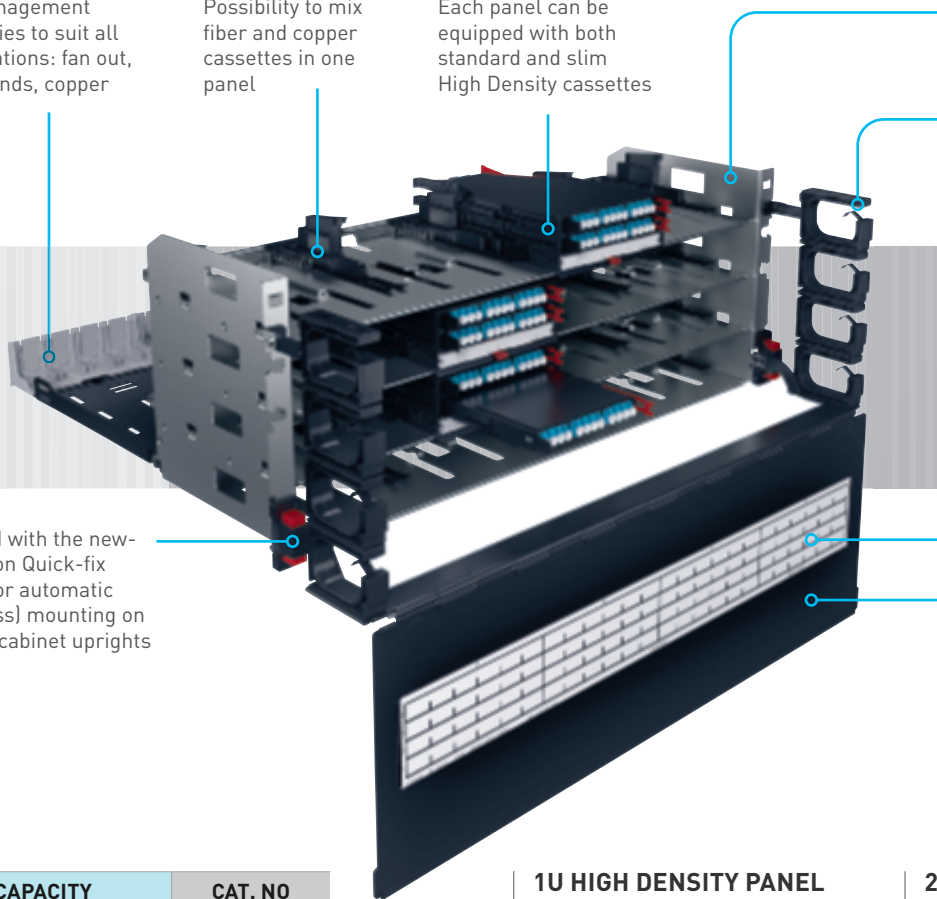
Quick fixing solutions on all the versions from 1U to 4U

Cord management system (except for the 1U panel, to be equipped with Cat.No 0 321 78) with front, side and bottom protection of the patchcords, preventing any risk of damage

Labeling system for easy identification

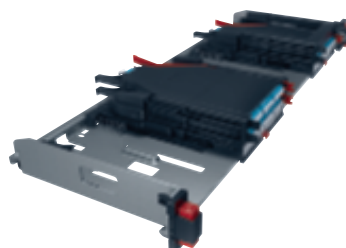
Equipped with the new-generation Quick-fix system for automatic (screwless) mounting on racks or cabinet uprights

Integrated front door for protection against intrusive patching and laser



CAPACITY	CAT. NO
1U High Density panel	0 321 75
2U High Density panel	0 321 76
4U High Density panel	0 321 77

1U HIGH DENSITY PANEL
Can hold up to 8 slim cassettes (into 4 supports)

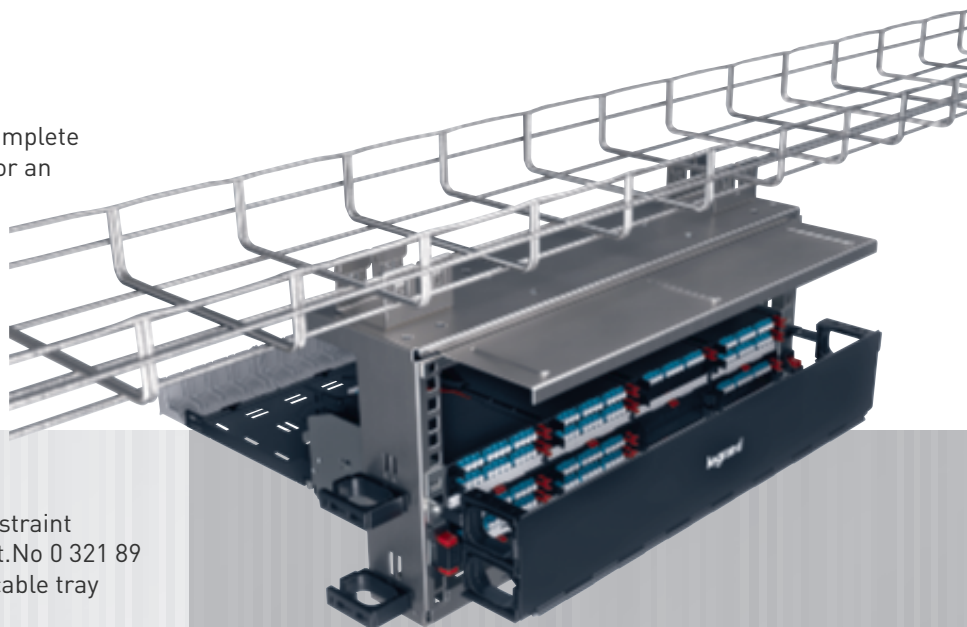


2U HIGH DENSITY PANEL
Can hold up to 16 slim cassettes (into 8 supports)



Flexibility of installation

Our new high density modular panels offer complete freedom of installation: opt for a top-of-rack or an in-rack installation depending on your site constraints and your infrastructure's configuration!



TOP-OF-RACK INSTALLATION

Optimize space and meet any technical constraint thanks to the overhead solution! The kit Cat.No 0 321 89 enables you to fix the modular panels to a cable tray (Cablofil) above of the enclosure.

IN-RACK INSTALLATION

Easily mount the modular panels directly into the LCS³ enclosures and equip them with any type of cassettes in order to meet your specific needs!

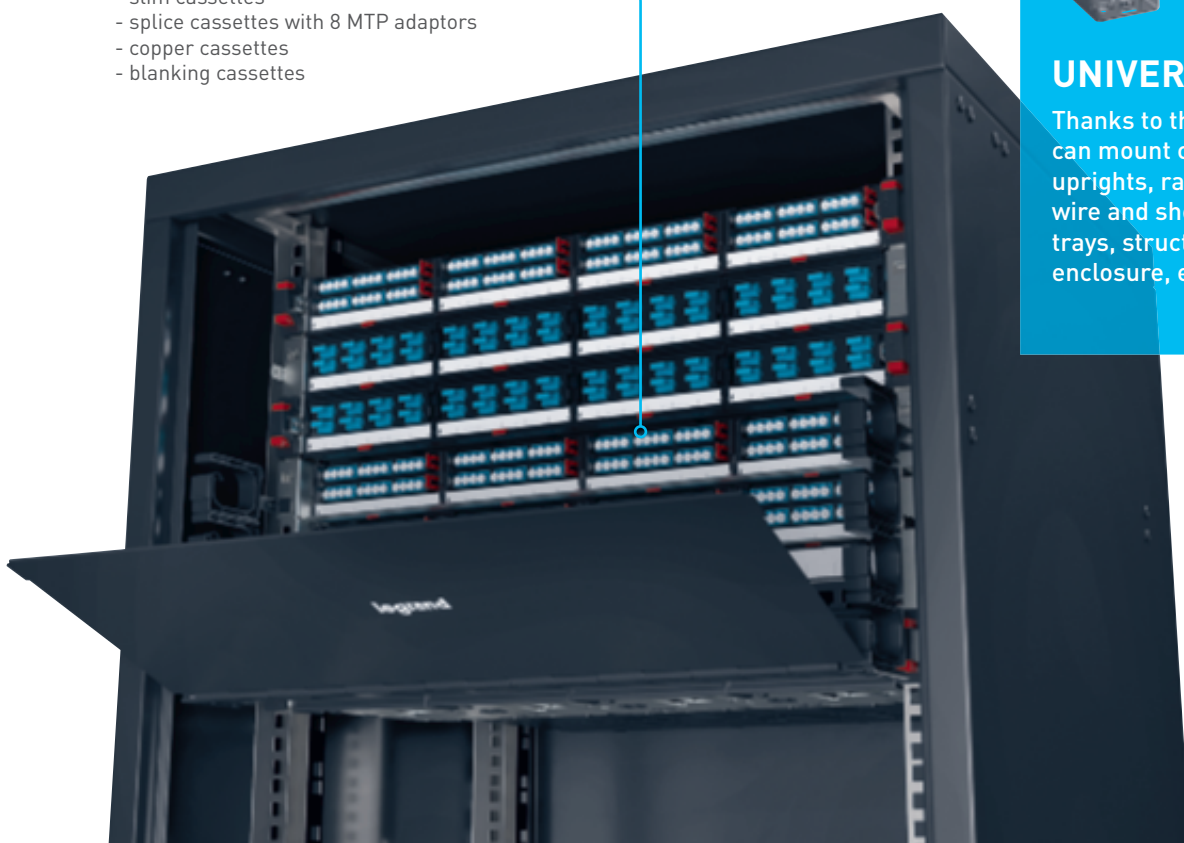
1U, 2U and 4U panels equipped with:

- slim cassettes
- splice cassettes with 8 MTP adaptors
- copper cassettes
- blanking cassettes



UNIVERSAL FIXING

Thanks to the Zero-U kit, you can mount cassettes on 19" uprights, raised access floors, wire and sheet metal cable trays, structural uprights of the enclosure, etc. (see p.9)



CASSETTES

Slim solutions for greater connectivity

Optimize space and increase the connectivity capacity of your infrastructure with the new slim cassettes! Easy to install and to maintain from rear and front, they prove to be agile and flexible under all circumstances.

- Mounting either on High Density modular panels or in Zero-U kit
- Single-mode and multimode MTP solutions that can be mixed on the same support
- Sliding cassettes individually removable from front and rear: accessible and easily manageable
- Equipped with extraction button for easy maintenance: reduced time, cost and risk of MAC
- High-performance with low insertion loss
- Universal polarity offering flexibility in case of changes

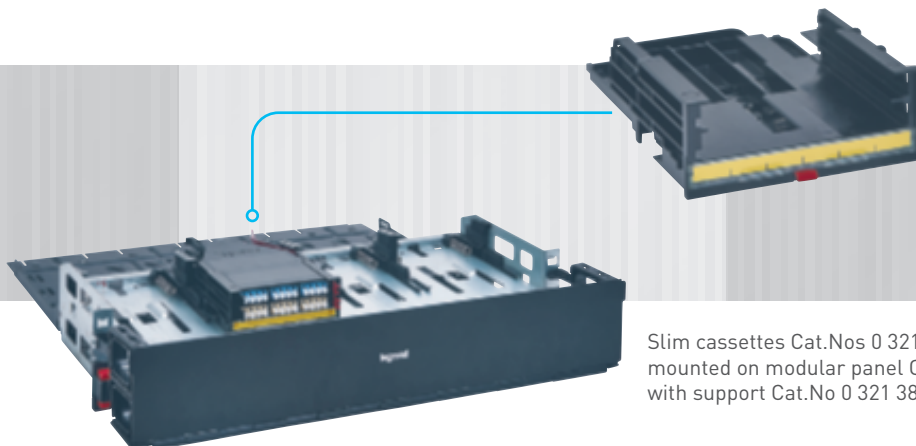
TYPE	CAT. NO
12 LC OM4 multimode	0 321 69
12 LC OM3 multimode	0 321 68
12 LC OS2 single-mode	0 321 70
Blanking module	0 321 39



OM4 multimode slim cassette - Cat.No 0 321 69



OS2 single-mode slim cassette - Cat.No 0 321 70



Slim cassettes are to be mounted on HD modular panels with support Cat.No 0 321 38. The support can take up to 2 slim cassettes.

Slim cassettes Cat.Nos 0 321 69/70 mounted on modular panel Cat.No 0 321 76 with support Cat.No 0 321 38

PATCHING KITS

Zero-U kit for universal fixing

The Zero-U kit Cat.No 0 321 03 enables you to mount cassettes on 19" uprights, raised access floors, wire and sheet metal cable trays, structural uprights of the enclosure, etc.

The kit can take up to 2 slim High Density cassettes Cat.Nos 0 321 68/69/70 or 1 universal High Density cassette Cat.No 0 321 59 or 0 321 60.

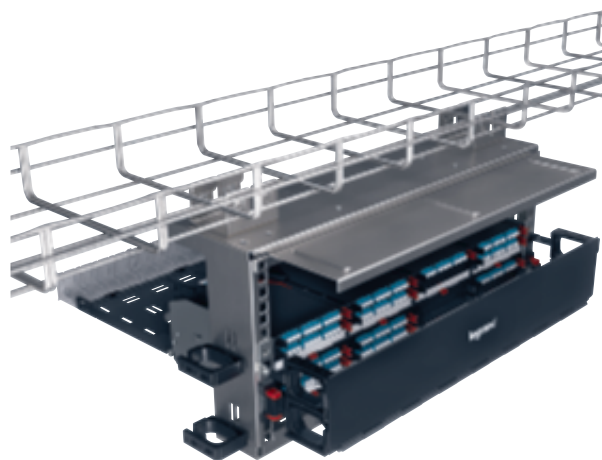
- Efficient solution to optimize space without the need to add an enclosure
- Compatible with 1U, 2U and 4U High Density modular panels
- Easy mounting on cable trays (such as Cablofil) thanks to quick-fixing solutions



1U to 4U kit for overhead fixing

No space available in your LCS³ enclosure? The innovative kit Cat.No 0 321 89 enables you to fix the High Density modular panels on wire cable trays, above the enclosure.

- Perfect toolless fitting on cable trays. Can also be installed on roofs of racks
- Maintains duplex multimode fiber architecture
- Scalable (move, add, change) and efficient (space optimization) system
- Easy installation and maintenance
- Can be equipped with fiber optic and copper solutions
- Compatible with automatically removable cassettes
- Accommodates the same solutions as 19" patch panels



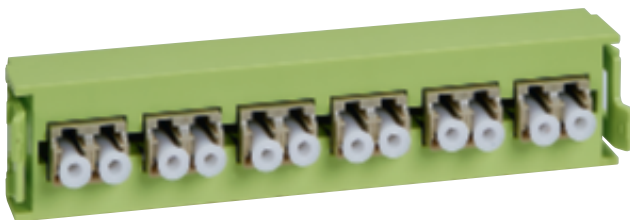
READY FOR FUTURE APPLICATIONS!

With our new on-demand OM5 offer, we meet all your requirements in terms of connectivity! The infrastructure can easily evolve from 25 G or 50 G to 100 G and to 400 G thanks to parallel and multiplexing applications.

OM5 multimode MTP adaptor

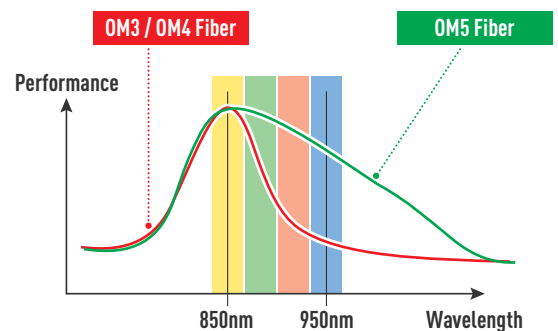
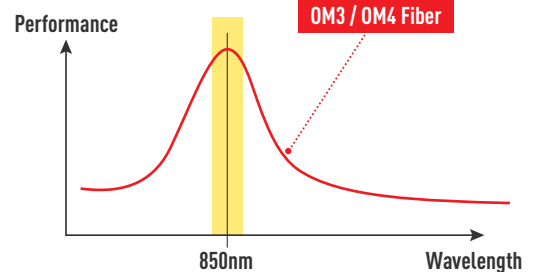


OM5 12 LC multimode block



Performance and wavelength

OM3 and OM4 fibers are optimized according to the wavelength traditionally used: 850nm. To accept the 4 signals used in multimode WDM, OM5 has been redesigned to accept wavelengths from 850nm to 950nm. The diagrams below provide a graphical representation.





Application upgrades

By considering all the current applications, either standardized or recognized through multi-source agreements, as well as draft applications to be standardized soon, we can establish the following evolutions of the applications optimized per type of multimode cabling:

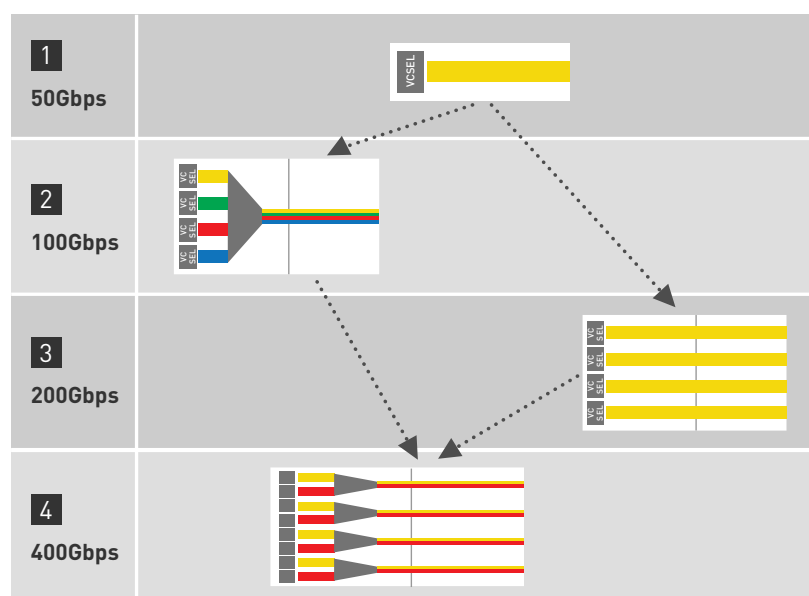
- 1** Duplex channel for single wavelength (typically duplex LC connector with OM3 or OM4 fiber):
10GBASE-SR → 25GBASE-SR → 50GBASE-SR*
- 2** Duplex channel for multiple wavelength (typically duplex LC connector with OM5 fiber):
10GBASE-SR → 25GBASE-SR → 40G-SWDM4 → 50GBASE-SR → 100G-BiDi or 100G-SWDM4*
- 3** Multiple fiber solution for parallel optics (typically MPO connector with OM3 or OM4 fiber):
40GBASE-SR4 → 100GBASE-SR4 → 200GBASE-SR4*
- 4** Multiple fiber solution for parallel optics and multiple wavelengths (typically MPO connector with OM5 fiber):
40GBASE-SR4 → 100GBASE-SR4 → 200GBASE-SR4 → 400GBASE-SR4.2 or 400G-BD4.2*

The best of both worlds

To ensure the maximum lifespan of the fiber cabling, it is important to select the right fiber type and design. Today, a duplex OM4 channel can only expect to reach 50Gbps to the maximum distance. To reach 200Gbps, two options are available: duplex channel for multiple wavelength or multiple fiber solution for parallel optics.

But to reach 400Gbps, the best solution is the combination of all technologies together.

To allow the multimode fiber infrastructure to reach 400Gbps, the best option today is to provide for the full range of technologies. This currently means using OM5 cables with MPO connectors.



*See TR ISO/IEC 11801-9908: "Guidance for the support of higher speed applications over optical fiber channels" for further information. Note that some multiple wavelength applications can function on OM3 and OM4, but to limited distance.

CONTACT US FOR MORE INFORMATION ABOUT THE CUSTOMIZED OFFER

