LCS^3

3 DIMENSIONS OF EXCELLENCE

PERFORMANCE • SCALABILITY • EFFICIENCY

DATA CENTER
LOCAL AREA NETWORK

THE GLOBAL SPECIALIST
IN ELECTRICAL AND DIGITAL BUILDING INFRASTRUCTURES

legrand®

LCS³

3 DIMENSIONS
OF EXCELLENCE

PERFORMANCE • SCALABILITY • EFFICIENCY

Legrand Group

LCS³: a global offer

Technical appendices

Catalogue pages

→ See p. 92 to 167

LEGRAND
GROUP

A global player

As the global specialist in electrical and digital building infrastructures, Legrand offers a comprehensive range of solutions and services tailored to numerous applications.

IMPROVING LIVES BY TRANSFORMING SPACES, THE ESSENCE OF OUR PURPOSE

The Group's mission is to improve lives by transforming the spaces where people live, work and meet, with electrical and digital infrastructures and connected solutions that are simple, innovative and sustainable.

#LegrandImprovingLives

Transforming spaces where people live, from individual and collective housing to hotels and more.

Transforming spaces where people work, including data centers, offices and industrial sites.

Transforming spaces where people meet, from housing to shops, hospitals, schools, universities and more.

THE LEGRAND GROUP IN A NUTSHELL

SALES IN CLOSE TO **180** COUNTRIES

AN ACTIVE INTERNATIONAL PRESENCE ESTABLISHED IN OVER **90** COUNTRIES

5% OF TOTAL BUDGET USED IN R&D

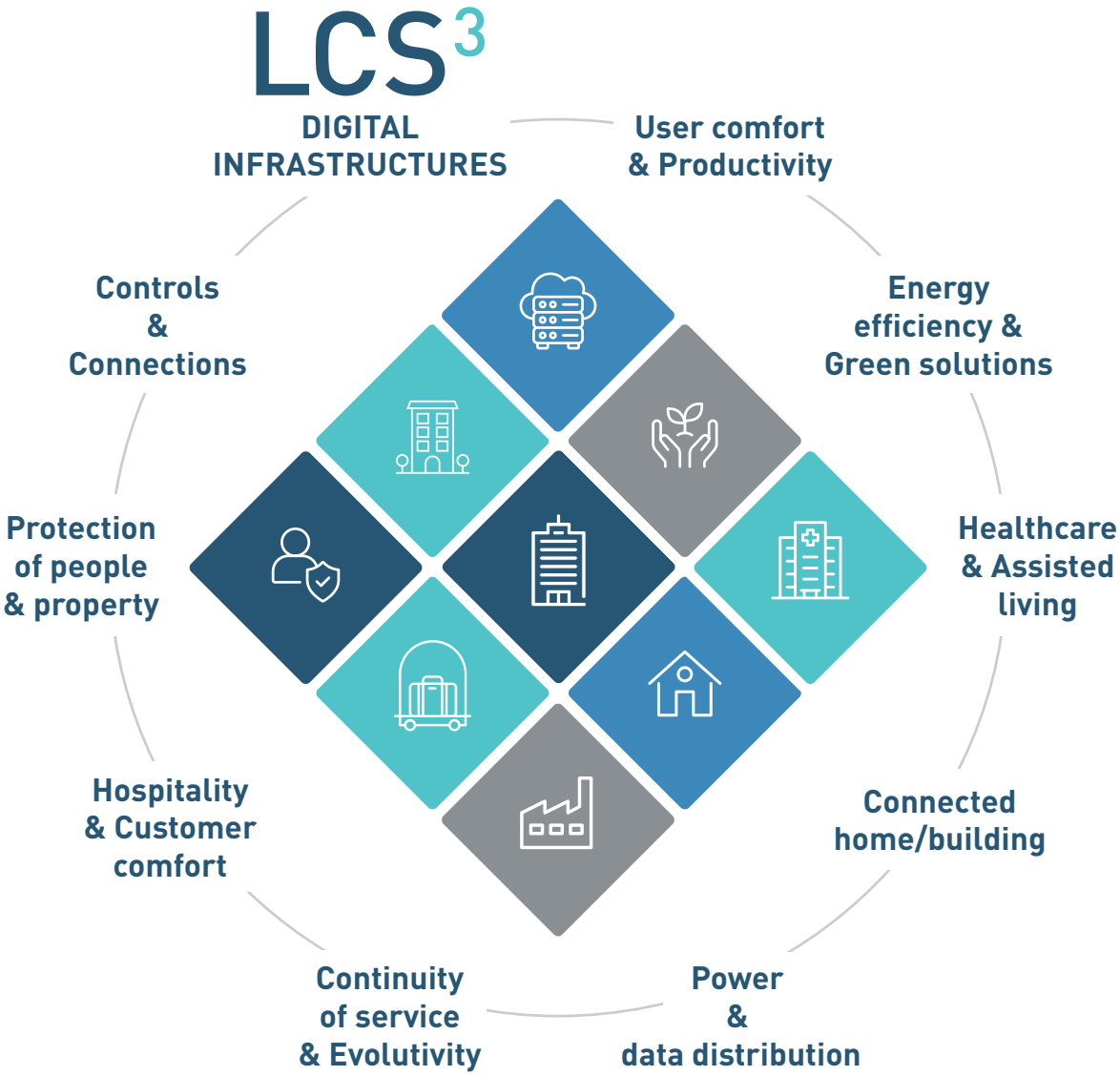
€6,994 MILLIONS IN TOTAL SALES IN 2021

OVER **36,700** EMPLOYEES WORLDWIDE

EXPERTISE AND COMMITMENTS, OUR MEANS TO ACHIEVE IT

The scope of its offering, its technological expertise, its leading positions, its international presence and the power of its brands combine to make Legrand a worldwide benchmark.
The meaning and values the Group's purpose statement conveys are integral to the development of each product and solution, and to each decision at Legrand. They also underpin the commitments the Group makes to its customers, to its employees, to its partners and to society as a whole.

By covering all needs, including emerging ones shaped by changing lifestyles and working habits, the Group's comprehensive, innovative and high-performance portfolio of solutions provides answers to the technological, societal and environmental challenges that we all face every day.

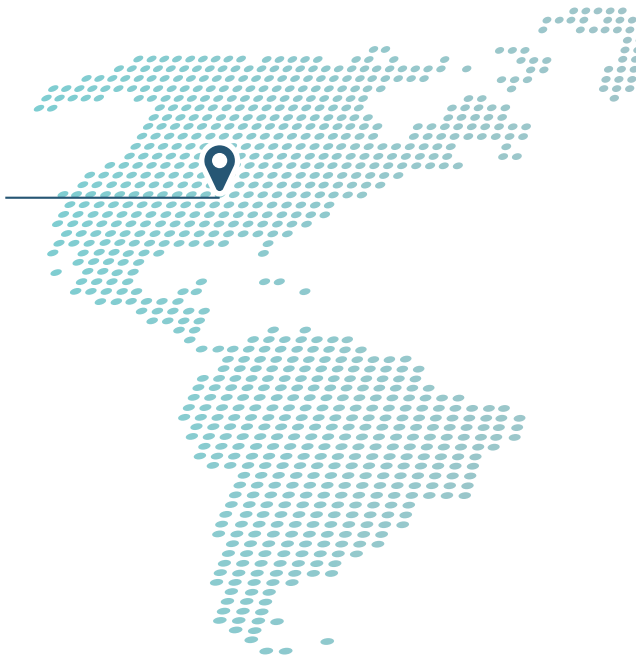


LEGRAND
GROUP

Your multi-specialist partner for all your IT networks

Its investment in the development and design of structured cabling systems and solutions has enabled the Legrand group to expand its offer and achieve the highest level of performance. Legrand cabling systems currently provide high-quality connectivity to more than 200 million devices, making the Legrand group a world leader in communication networks for data transmission.

A PORTFOLIO OF SPECIALIST BRANDS

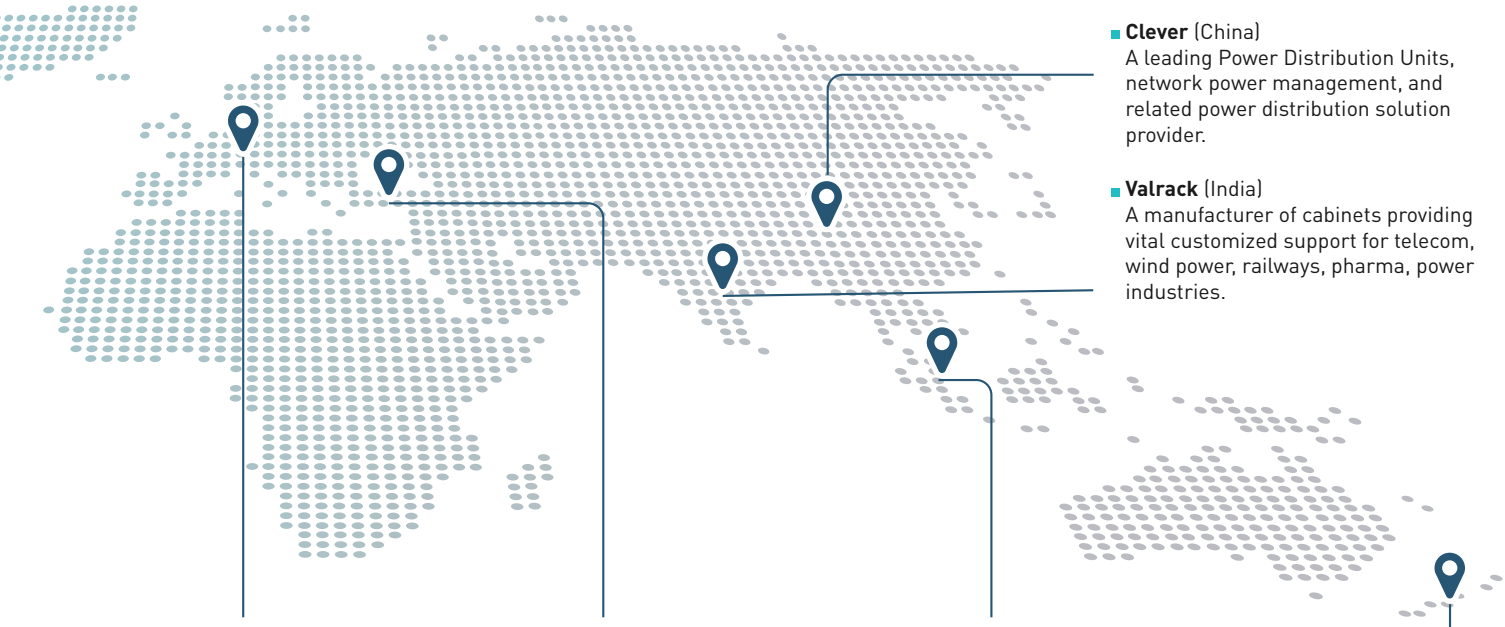


- **AFCO systems** (USA)
  An industry leader in the design, engineering and manufacture of racks, cabinets, enclosures, and air containment systems.
- **C2G** (USA)
  An industry leader in end-to-end connectivity solutions serving commercial applications in a variety of markets.
- **Electrorack** (USA)
  A leading manufacturer of enclosures, cabinets, power and cooling for commercial data communications applications.
- **Luxul** (USA)
  The leading innovator of simple-to-deploy professional grade IP networking solutions for use by custom installation professionals.
- **Middle Atlantic Products** (USA)
  A manufacturer of exceptional support and protection products to mount integrated AV systems in residential, commercial, broadcast, and security applications.
- **Milestone AV Technologies LLC** (USA)
  A frontrunner in Audio Video (AV) infrastructure and power with strong leading positions in high-value segments.
- **Server Technology** (USA)
  A leading provider of customer-driven and innovative power/access/control solutions for monitoring and managing critical IT assets for continual availability.
- **Starline** (USA)
  A worldwide provider of electrical power solutions for the data center, retail, healthcare, higher education and industrial markets.

- **Raritan** (USA)
  A leading provider of intelligent rack PDUs, transforming how companies manage their data center power chains. The solutions increase the reliability and intelligence of data centers.

- **Legrand** (France)
  A global leader in network infrastructure solutions, especially with a broad range of copper and fiber connectivity, based on decades of experience. The Legrand product line features flexible, efficient solutions, united by superior design, to ensure that your data center or building network operates flawlessly.

- **Minkels** (Netherlands)
  A knowledge-driven producer and worldwide supplier of high-quality solutions for data center infrastructure, including racks and containment solutions.



- **Clever** (China)
  A leading Power Distribution Units, network power management, and related power distribution solution provider.

- **Valrack** (India)
  A manufacturer of cabinets providing vital customized support for telecom, wind power, railways, pharma, power industries.

- **Compose** (Netherlands)
  A specialist for passive data communication solutions, relating to the cabling of data centers, buildings and fiber optic infrastructures (FTTx).

- **Geiger** (Germany)
  With its 25-year success story, Geiger is able to provide customer value in the field of scalable and highly available communication and data center infrastructure from the idea to the implementation.

- **Modulan** (Germany)
  A provider of custom cabinets for data centers.

- **Estap** (Turkey)
  A manufacturer of enclosures and cabinets for data communication equipment.

- **SJ Manufacturing** (Singapore)
  A data center specialist on racks, containment and caging now promoted under Legrand brand.

- **Trical** (New Zealand)
  A front-runner in electrical and digital enclosures and switchboards for residential and commercial buildings.

LEGRAND
GROUP

An extensive expertise in digital infrastructures

Legrand's complete global solutions for data communication perfectly address the key challenges for digital networks: network performance, protection and accessibility of every infrastructure. Our LCS³ system offers copper and fiber global solutions for structured cabling both in data center and LAN.

LOCAL AREA NETWORKS

SOLUTIONS FOR STRUCTURED CABLING

- **Housing solutions**
  (19" freestanding and wall-mounting cabinets, open racks, PDUs, micro data centers, etc.)
- **Copper solutions**
  (RJ45 connectors, patch panels, cables and patch cords, PoE switches, etc.)
- **Fiber solutions**
  (Connectors, equipped & modular panels, bend-insensitive cables, etc.)

DATA CENTER & SERVER ROOM

SOLUTIONS FOR STRUCTURED CABLING IN SERVER ROOMS

- **Housing solutions**
  (Server cabinets, aisle containment, cooling units and cold corridor, open racks, PDUs, etc.)
- **Copper solutions**
  (Preterminated, etc.)
- **Fiber solutions**
  (Preterminated, intelligent patching, high-density fiber optic solutions, etc.)

LCS³

AUDIO VIDEO SYSTEM

A WIDE RANGE OF TECHNOLOGIES TO SUIT THE LOCATION AND THE USER EQUIPMENT

- **Racks and enclosures**
- **Preterminated audio/video sockets** (HDMI, display port, USB, RCA, JACK, etc.)
- **Cords and adaptors**

A GLOBAL OFFER REACHING ALL DIMENSIONS OF EXCELLENCE:

- Performance
- Scalability & Maintenance
- Efficiency
- Astuteness
- Flexibility
- Reliability & Safety

LCS³

A GLOBAL OFFER

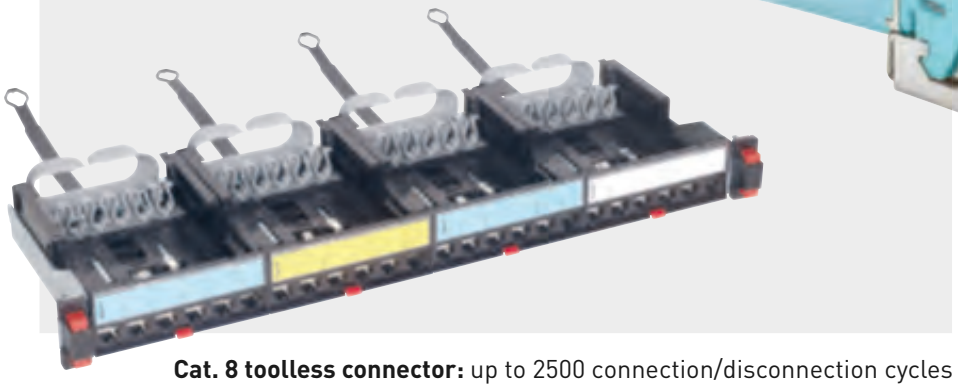
Cabling system: Performance

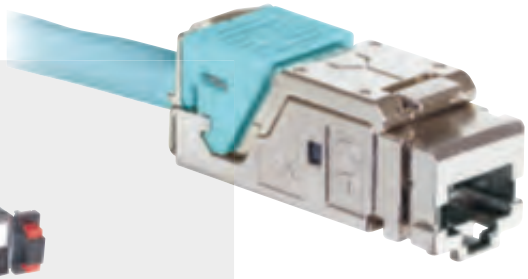
Legrand's LCS³ system offers you a complete range of copper solutions as well as fiber optic solutions designed to deliver advanced network performance:

- 25 Gbps and 40 Gbps Ethernet applications (Copper system)
- 40 Gbps, 100 Gbps and 400 Gbps Ethernet applications (Fiber optic system)
- MTP/MPO high density and up to Cat. 8 solutions (Copper and Fiber optic systems)

COPPER SYSTEM

▸ CAT. 8 TRANSMISSION **UP TO 40 GBPS**





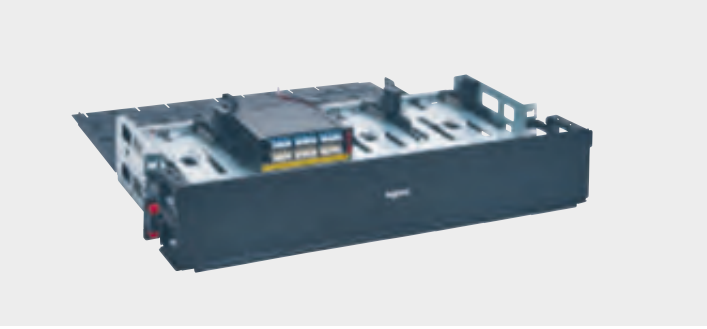
Cable & connector compliant with ISO/IEC 11801 standards

Cat. 8 toolless connector: up to 2500 connection/disconnection cycles

FIBER OPTIC SYSTEM

▸ MTP/MPO SOLUTION TRANSMISSION **UP TO 400 GBPS**

High density connection with 12 or 24 fibers compliant with IEEE 802.3ba.



MPO/MTP fiber optic drawers. Up to 96 LC on 1U. Available in 1U, 2U and 4U.

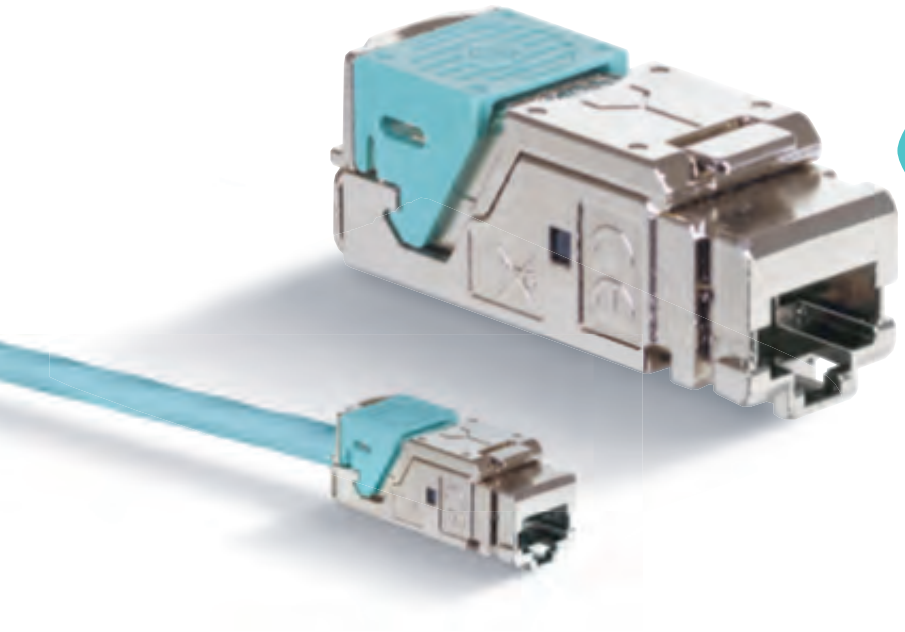
Up to 144 LC on 1U. Available in 1U, 2U and 4U.

COPPER SYSTEM OPTIMUM PERFORMANCE WITH CAT. 8

CAT.8 CONNECTORS

The toolless Cat. 8 STP connectors with transmission speed (bit rate) from 25 Gbps to 40 Gbps, are integral to the performance of the LCS³ system.

- In accordance with ISO/IEC 11801 series standards
- Tested up to 2500 connection/disconnection cycles
- A perfect connection in just a few seconds



CONNECTION & CABLING

To maximize performance, combine the Legrand Cat. 8 connector together with the Legrand Cat. 8 cable supporting up to 40 Gbps over a single cable.

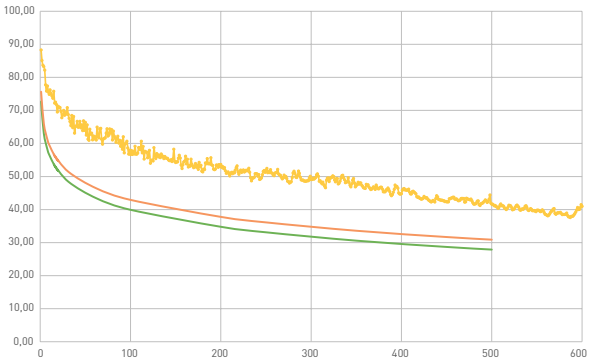
The Cat. 8 cable is terminated with an improved dedicated RJ45 connector which can support future performance.
The performance is 4 times better than that of a Cat. 6A cable with up to 2000 MHz bandwidth.

- Double screening to avoid interference and loss of data
- Dedicated to higher capacity in data centers and equipment rooms
- Compliant with ISO/IEC 11801 series standards

Legrand guarantees the following performance on end-to-end links of Cat. 6A/Class EA:
3dB margin on Channels, on Return Loss (RL) and Near End Cross Talk (NEXT) performance, for the complete frequency range, based on ISO/IEC limits.

- No marginal results (shown with Asterisk on test results) on Permanent Links
- Valid on standard compliant 2 connectors channels

NEXT



Standard limit — LCS³ Guarantee — LCS³ Typical NEXT

RETURN LOSS

Standard limit — LCS³ Guarantee — LCS³ Typical RL

APPLICATIONS DISTANCES ACCORDING TO CATEGORY OF CABLING

Application \ Frequency[1]	LCS³ Cat.5e	LCS³ Cat.6	LCS³ Cat.6A	LCS³ Cat.8
	100MHz	250MHz	500Mhz	2000MHz
1000Base-T	100m	100m	100m	100m
2.5Gbase-T	Possible[2]	Possible[2]	100m	100m
5Gbase-T	Possible[2]	Possible[2]	100m	100m
10Gbase-T	N/A[4]	Possible[3]	100m	100m
25Gbase-T	N/A[4]	N/A[4]	Possible[5]	30m
40Gbase-T	N/A[4]	N/A[4]	Possible[5]	30m

[1] Maximum frequency defined in the standards

[2] Follow ISO/IEC TR 11801-9904 or TIA TSB 5021 to evaluate possibility on installed links. Distance will depend on many factors.

[3] Follow ISO/IEC TR 24750 or TIA TSB 155-A to evaluate possibility on installed links. Distance will depend on many factors.

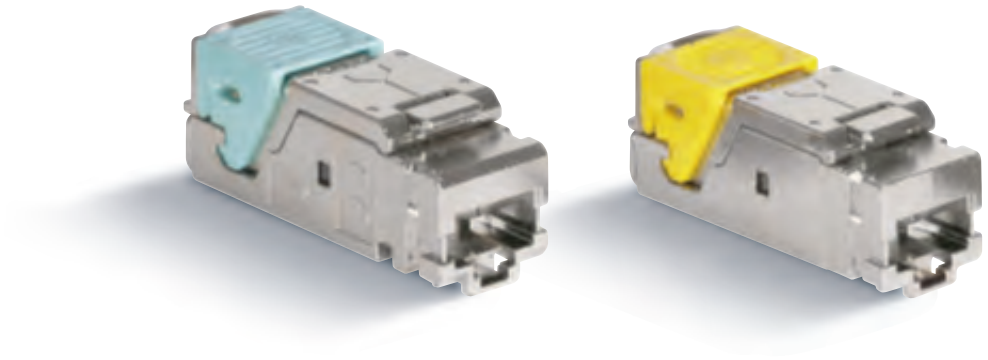
[4] Not Available.

[5] Follow ISO/IEC TR 11801-9905 to evaluate possibility on installed links. Distance will depend on many factors.

COPPER SYSTEM
PoE CERTIFICATION

Using PoE technology, devices such as Wi-Fi access points, cameras, etc. can be supplied with power by the Ethernet data cable. The cable combines data and power to supply all the PoE peripherals.

The LCS³ connectors are PoE++ Third Party certified.



PoE++ Third Party certified

TABLE OF PoE TYPES ACCORDING TO CABLING REQUIREMENTS AND POWER AVAILABILITY

Name (Common name)	Type 1 (PoE)	Type 2 (PoE+)	Type 3 (PoE++)	Type 4 (PoE++)
IEEE Standard	802.3af (2003)	802.3at (2009)	802.3bt (2018)	802.3bt (2018)
Minimum Category Required	Category 3	Category 5e	Category 5e	Category 5e
Number of Pairs for Power	2	2	2 or 4	4
Maximum Current per Pair	350 mA	600 mA	600 mA	960 mA
Guaranteed maximum Power at PSE Output	15.4 W	30.0 W	60.0 W	90.0 W
Guaranteed maximum Power at PE Input	13 W	25.5 W	51.0 W	71.3 W
Diagram with maximum current per wire (mA)	175 175 175 175	300 300 300 300	300 300 300 300 300 300 300 300	480 480 480 480 480 480 480 480

Pair with outgoing current | Pair with returning current | Pair without current

There are subdivisions of PoE called Classes. Below is a table of these Classes with correspondence to the PoE Types and the power available. It's important to note that the difference of power between the PD and the PSE does not represent an average efficiency, but only a worst case with maximum distance and highest resistance cabling.

Class	1	2	3	4	5	6	7	8
Type	Type 1			Type 2	Type 3[1]		Type 4[2]	
PSE maximum output average power (W)	4	7	15.4	30	45	60	75	90
PD Input Average Power (W)	3.8	6.5	13.0	25.5	40.0	51.0	62.0	71.3
PD Peak operating Power (P)	5.0	8.4	14.4	28.3	42.0	53.5	65.1	74.9

Notes: [1] Type 3 can also support Classes 1 to 4. [2] Only single signature PD shown

COMMITMENTS ON PoE

Legrand solutions are complying as per below:

- Cables: 802.3 bt PoE++ applications compatible according to installation standards ISO/IEC 14763-2 and EN 50174-2:2018.
- Connectors: compatible remote powering "PoE" up to 100 W (IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt). Third party certified IEC 60512-99-002 for disconnection under PoE Type 4.
- Patch cords: compatible remote powering "PoE" up to 100 W (IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt) when installed according to standards ISO/IEC 14763-2 and/or EN 50174-2:2018

Confident in the design and quality of our solutions, we overperform and guarantee the full 90m Permanent Link* under PoE maximum power of 90W for shielded LCS³ systems. Our PoE guide provides clear installation conditions and allows Legrand to give a 25-year warranty on applications including PoE.

*With 2m cord in the technical room and 5m cord at user side. Contact us for other configurations.

QUALITY & PROTECTION

Due to the high power in PoE++, the choice of a high-quality connector is essential. While disconnected, Legrand's high-quality connectors prevent damage to the contacts due to the arc generated.

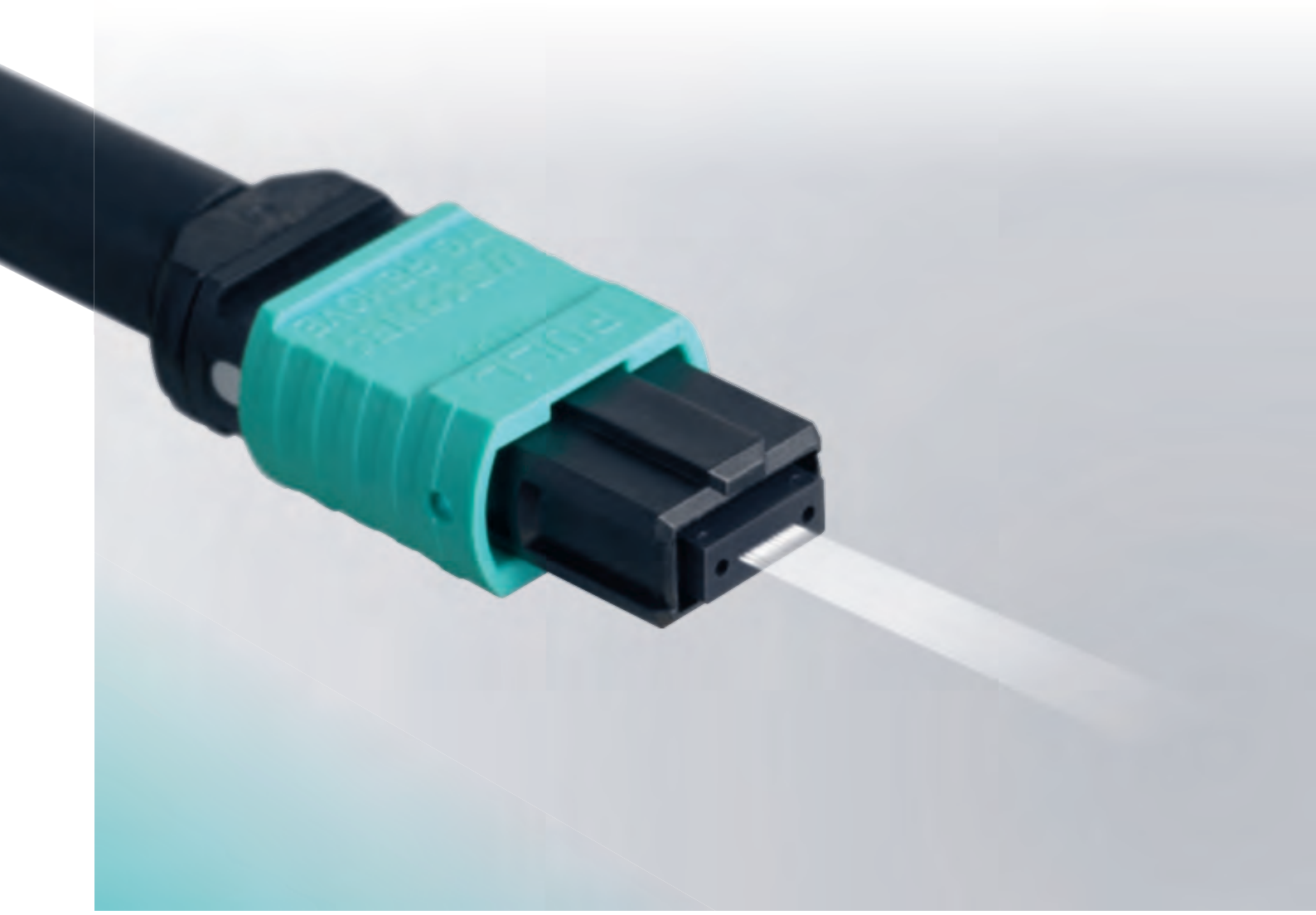
WANT TO KNOW MORE ABOUT PoE AND INCREASE THE POWER OF YOUR NETWORK?

CONTACT YOUR LOCAL SALES REP TO GET OUR PoE INSTALLATION GUIDES!

FIBER OPTIC SYSTEM LEGRAND'S MTP SYSTEM

HIGH-SPEED SOLUTION

With data centers, increased data rates have become priority requirement. The IEEE has introduced parallel optics as an alternative to higher bandwidth fiber, starting with 40Gbps and now reaching 800Gbps Ethernet.
To answer this need Legrand has introduced the MTP (Multiple-Fiber Push-On/Pull-Off compatible MPO) fiber solution to the catalogue. It guarantees speed, resistance, high performance and high density.



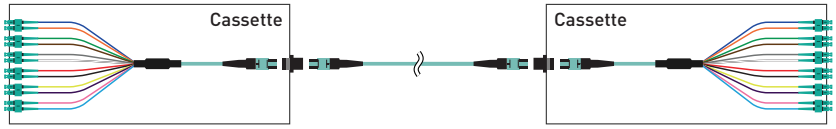
40/100/400 GIGABIT ETHERNET CONNECTIVITY AND CABLE

Identified by IEEE, TIA and ISO/IEC as the solution for non-duplex applications. The term MPO is the generic name while the term MTP is a specific higher performance version with lower insertion loss.

MTP connector features:

- a high-speed connection with 12 fibers (2x12 for 24 fibers and with cassettes 8 fibers compatible)
- precise and safe connection
- optimized cable management
- high-density fibers
- scalable system for future upgrades
- simple maintenance operations
- ease of extraction. No complex installation on site - plug and play
- the MTP is a multi-core connector. 1 cable = 1 connector

WITH STANDARD ACTIVE EQUIPMENT, WE NEED TO CONVERT THE MTP TO LC OR SC



OPTICAL PERFORMANCE

MTP® connectors	Multimode Ultra Performance*	Single-mode Ultra Performance*
IL/Master	0.1 dB typical (all fibers) 0.35 dB maximum (single fiber) [2] [3]	0.1 dB typical (all fibers) 0.35 dB maximum (single fiber) [1] [4]
IL Max/Random*	0.35 dB (single fiber)	0.35 dB (single fiber)
Optical return loss[5]	> 20 dB	> 60 dB (8° angle-polished)

[1] As tested in accordance with ANSI/TIA-455-171 Method D3 / IEC 61300-3-4
[2] As tested in accordance with ANSI/TIA-455-171 Method D1 / IEC 61300-3-4
[3] As tested on 50µm fibers at a wavelength of 850 nm in accordance with IEC 61280-4-1
[4] Complies with IEC 61755-3-31/GRADE B
[5] As tested in accordance with IEC 61300-3-6 and ANSI/TIA-455-107A

* Performance is guaranteed only with other components of the same Legrand range (Core, Ultra and Quantum). Mixing ranges or use of components of other brand may lead to a different performance of the system. The uncertainty value for field measurement with LSPM testing using a reference cord defined in ISO/IEC 14763-3 applies to field testing with proposed Legrand testing cords. Refer to the Fiber Optic Testing Guide for Legrand Solutions.

LC, SC, LC APC, SC APC connectors	Multimode Ultra Performance*	Single-mode Ultra Performance*
IL Max/Master*	0.15 dB	0.15 dB
IL Max/Random *****	0.2 dB	0.25 dB
Typ. IL/Master*	0.08 dB	0.12 dB
Typ. IL/Random *****	0.10 dB	0.12 dB
Return loss (UPC/APC)	> 25 dB	> 55/65 dB

* IEC 61300-3-4

** IEC 61300-3-34

*** Performance is guaranteed only with other components of the same Legrand range (Core, Ultra and Quantum). Mixing ranges or use of components of other brand may lead to a different performance of the system. The uncertainty value for field measurement with LSPM testing using a reference cord defined in ISO/IEC 14763-3 applies to field testing with proposed Legrand testing cords. Refer to the Fiber Optic Testing Guide for Legrand Solutions.

COMMON DATA CENTER APPROACHES

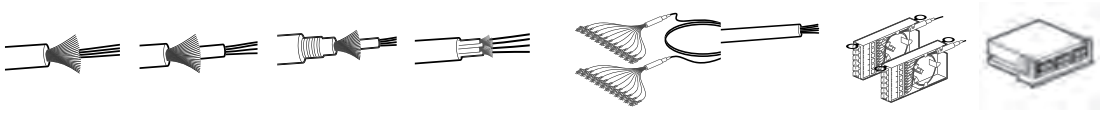
Multimode fiber systems have been the most cost-effective fiber solution to use in the data center because the transceivers are much less costly than single-mode transceivers. Multimode transceivers use a vertical cavity surface emitting laser (VCSEL) light source, which is easy to manufacture and package. Multimode fiber systems have a shorter reach than single-mode systems, however surveys have shown that more than 80% of data centers links extend to 100m or less. Although single-mode cable is less expensive, after factoring in the total system cost of multimode versus single-mode, multimode is still far more cost efficient.

MAXIMUM DATA RATE ACCORDING TO FIBER TYPE AND NUMBER OF CORES USED

	OM3	OM4	OM5	OS1a	OS2
2-core	1Gbps: 550m 10Gbps: 300m 25Gbps: 70m 50Gbps: 70m	1Gbps: 550m 10Gbps: 400m 25Gbps: 100m 50Gbps: 100m 100Gbps: 100m	1Gbps: 550m 10Gbps: 400m 25Gbps: 100m 50Gbps: 100m 100Gbps: 100m	1Gbps to 400Gbps: 2km	1Gbps: 5km 10Gbps to 400Gbps: 10km
4-core	100Gbps: 70m	100Gbps: 100m 200Gbps: 100m	100Gbps: 100m 200Gbps: 100m	100Gbps: 500m	100Gbps: 500m
8-core	40Gbps: 100m 100Gbps: 70m 200Gbps: 70m 400Gbps: 100m	40Gbps: 150m 100Gbps: 100m 200Gbps: 100m 400Gbps: 100m	40Gbps: 150m 100Gbps: 100m 200Gbps: 100m 400Gbps: 150m	200Gbps: 500m 400Gbps: 500m 800Gbps: 500m	200Gbps: 500m 400Gbps: 500m 800Gbps: 2km
16-core	400Gbps: 100m 800Gbps: 70m	400Gbps: 100m 800Gbps: 100m	400Gbps: 100m 800Gbps: 100m	800Gbps: 100m 1.6Tbps: 500m	800Gbps: 2km 1.6Tbps: 2km

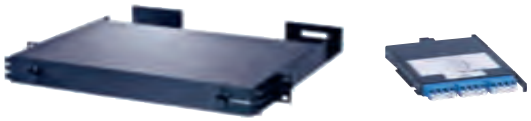
Data in orange: draft applications (distances may vary at time of publication)

HIGH PERFORMANCE ON ALL STANDARD AND ON-DEMAND PRETERMINATED SYSTEMS

<table>
<tr><th>Connectivity</th><th colspan="8">TYPES</th></tr>
<tr><td>Trunks</td><td colspan="8">
Tight buffer | Loose tube | Loose tube corrugated steel tape | Break-out | Fan-out | Micro-cable 250 microns | Cassette | Cassette Fan-out

TYPE OF FIBER
OS1/OS2, OM1, OM2, OM3, OM4, OM5, etc.

NUMBER OF FIBERS
2, 4, 6, 8, 12, 16, 24, On demand, etc.

CHOICE OF TERMINATION
LC, SC, SC APC, MTP etc.

PLEASE CONTACT US
for any specific requirements.
</td></tr>
<tr><th>Cabling</th><th colspan="4">High density (HD)</th><th colspan="4">Ultra high density (UHD)</th></tr>
<tr><td>Panels & cassettes
Splice panel</td><td colspan="4">MTP to LC or SC. Cassette to cassette without MTP
  </td><td colspan="4">MTP to LC
  </td></tr>
<tr><td>Cables/Patch cords</td><td colspan="8">OM2, OM3, OM4, OM5 & OS2
Microcable loose tube</td></tr>
</table>

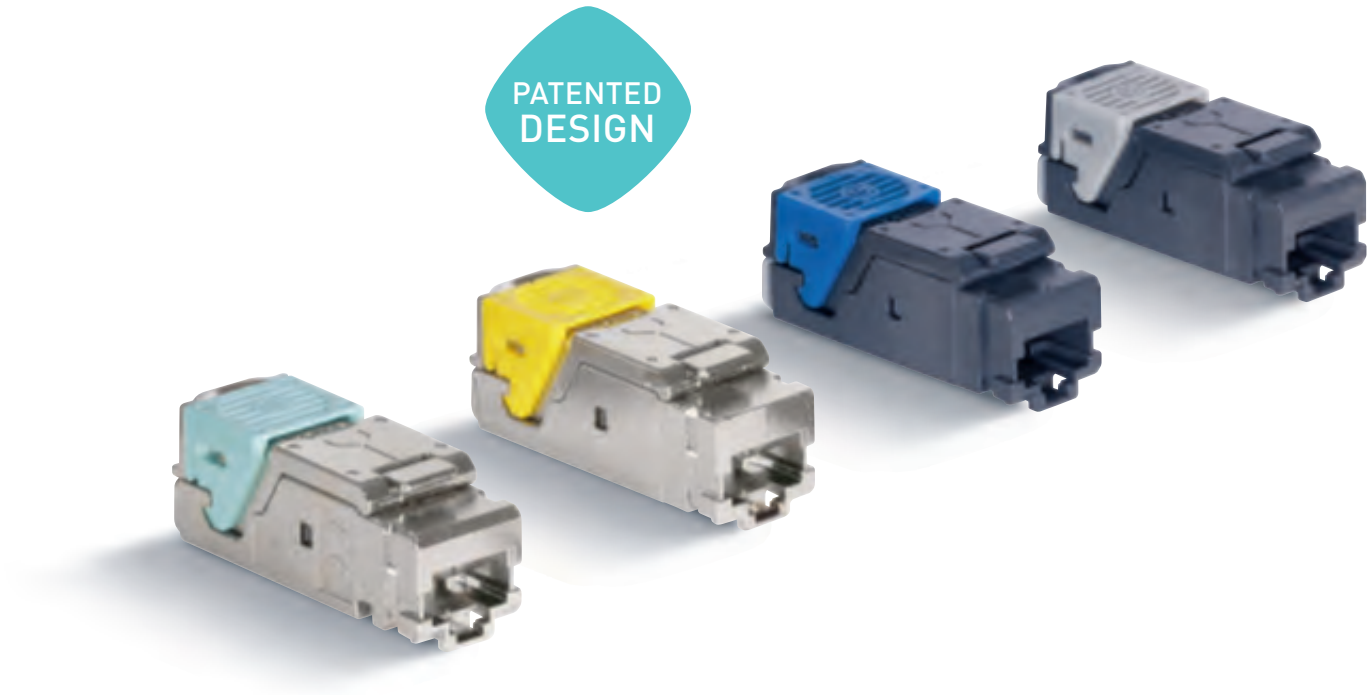
LCS³

A GLOBAL OFFER

Cabling system

Scalability & Maintenance

Legrand's LCS³ range offers you innovative systems to facilitate wiring and installation, while offering increased data rates with both the copper solution and the fiber optic solution.



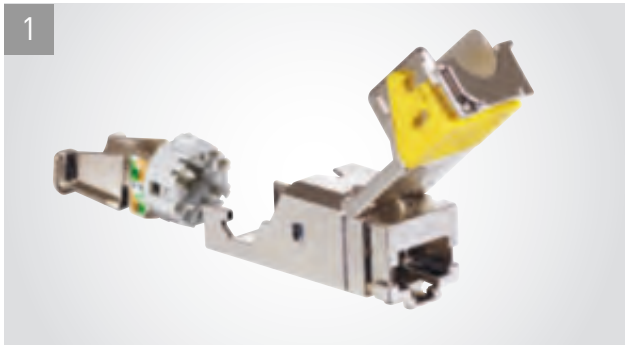
COPPER SYSTEM RJ45 CONNECTORS

The **TOOLLESS CONNECTORS** with toolless fast connection are available in all categories for installation both on patch panels and in the workstation. A perfect connection can be obtained in a few seconds, guaranteeing optimum performance of the link from the patch panel to the workstation.

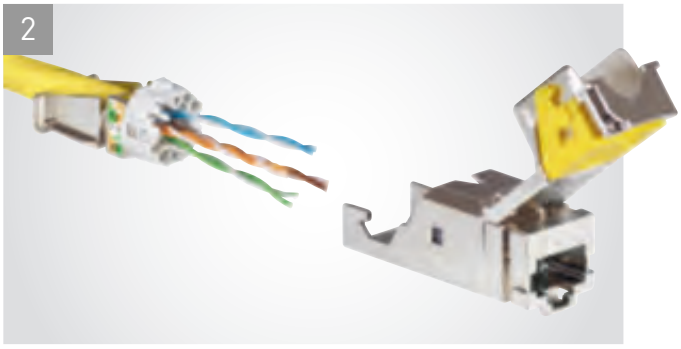
The toolless connectors are colour-coded so their category can be safely identified:

- Cat. 8: aqua
- Cat. 6A: yellow
- Cat. 6: blue
- Cat. 5e: grey

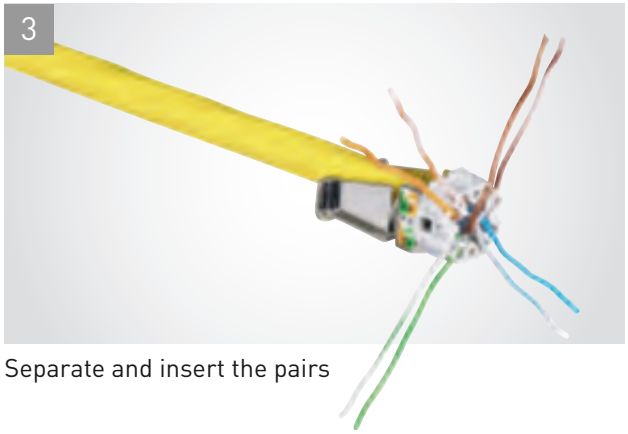
TOOLLESS CONNECTOR CONNECTION PHASES



Take the wire housing

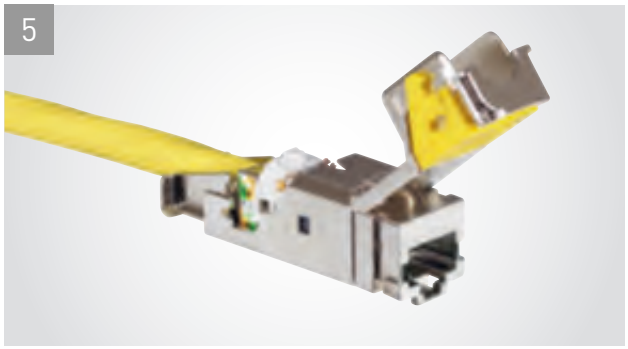


Pass the cable through the back of the wire housing



Separate and insert the pairs

Cut the pairs

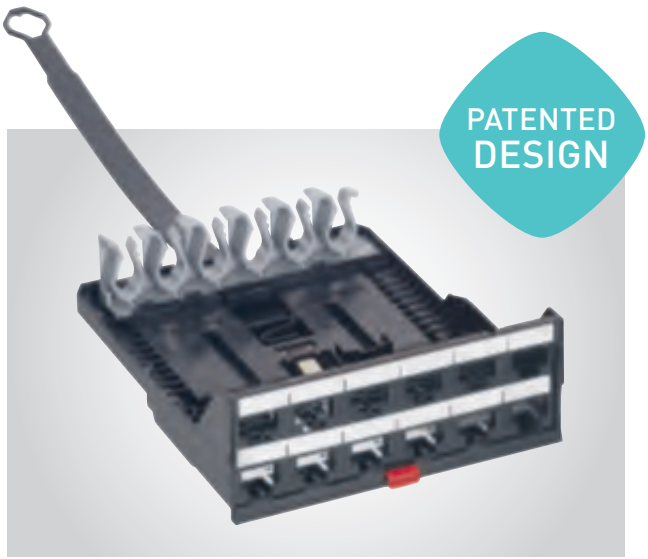


Install the wire housing without pushing

Push down the lever and lock the connector

COPPER SYSTEM PATCH PANELS

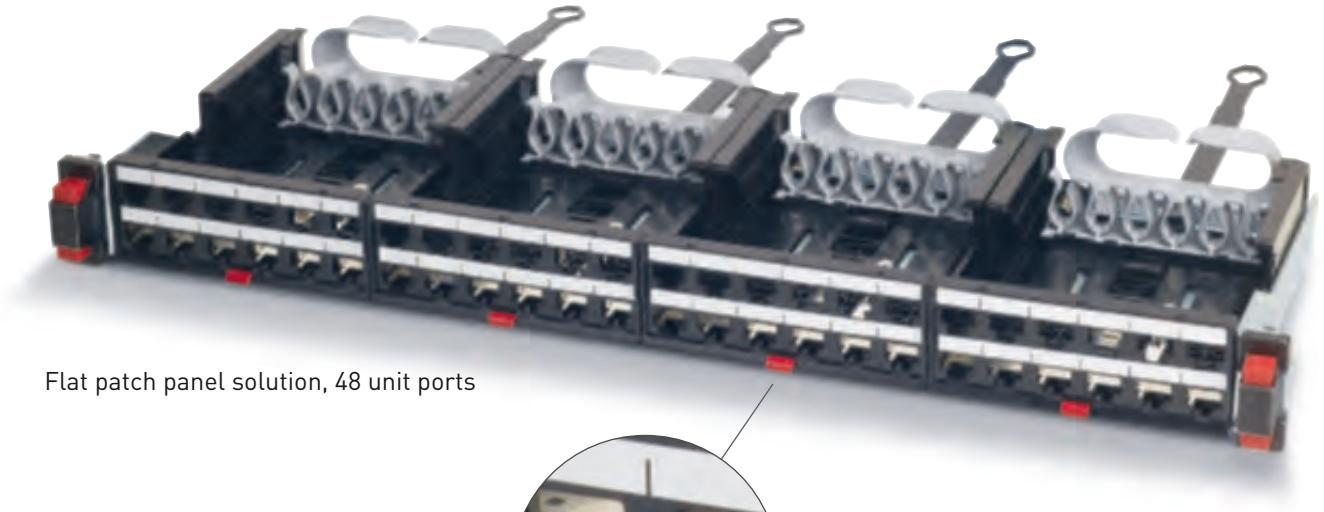
The patch panels have been designed and produced to optimize space, with up to 48 ports per unit and make maintenance and future upgrades easier.
They are available in both flat and angled versions.
They have a quick system for pulling out the unit and an innovative cable guiding system for tidy and easy cable management.



Block of 12 connectors for patch panel

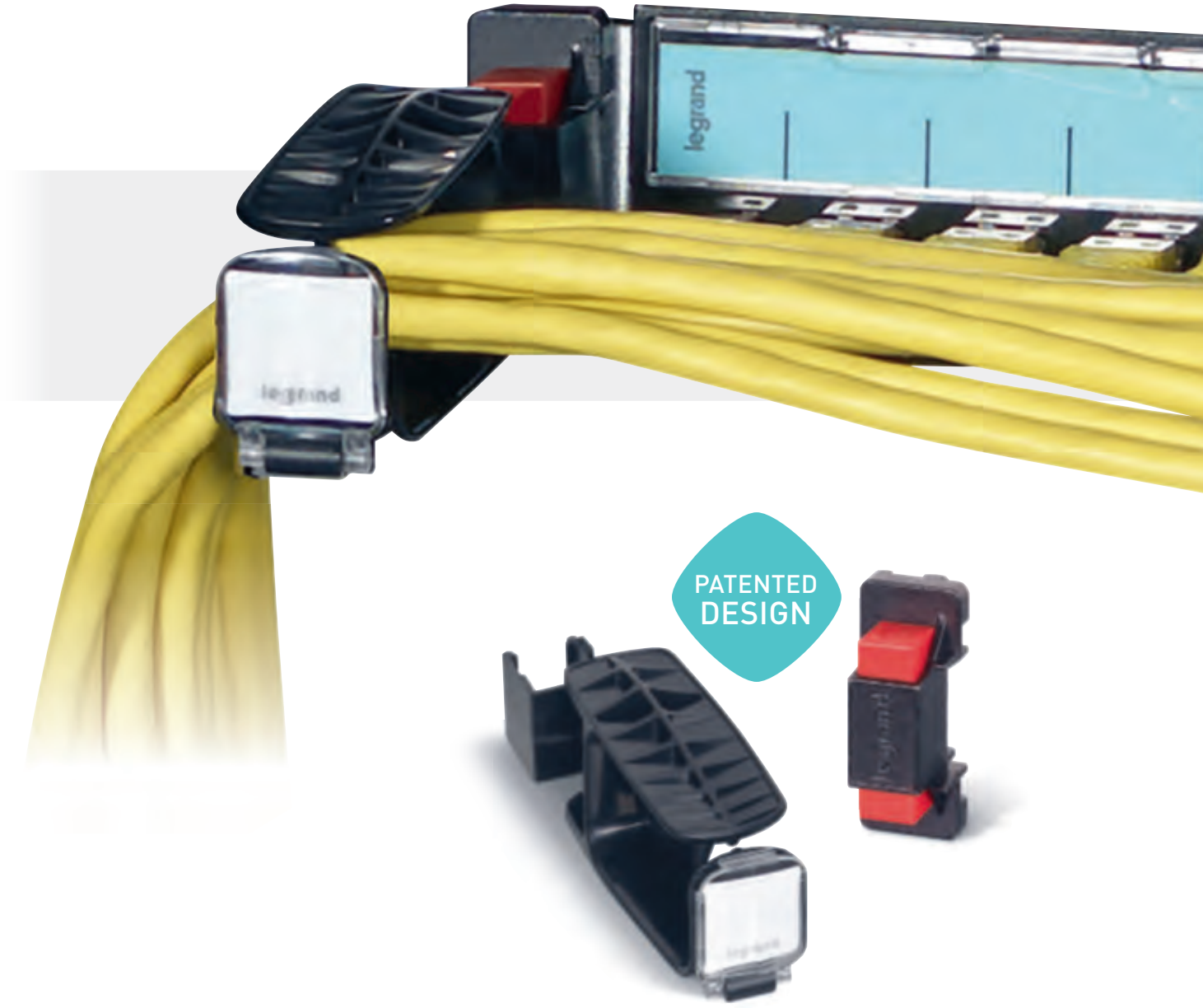
INNOVATIVE CASSETTES

- Sliding cassettes: easier maintenance
- Fast push-button extraction
- Innovative modular cassette system
- Easy maintenance: hands free solution, cassette maintained after extraction
- **Easy to mix with Legrand fiber optic solutions**



Flat patch panel solution, 48 unit ports

Fast push-button extraction



PATENTED DESIGN

QUICK-FIX SYSTEM

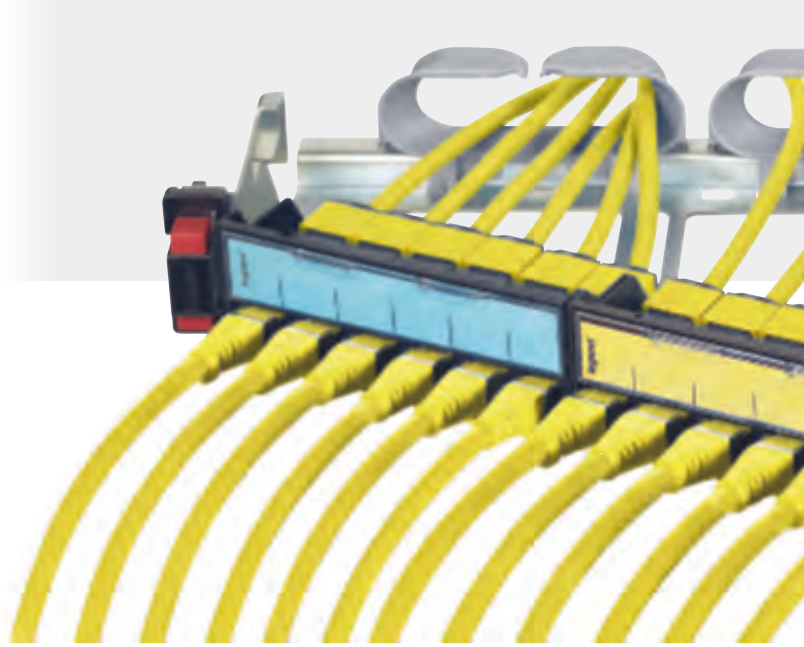
Innovative quick-fixing solution:
- Push and connect system
- Automatic earth connection
- In-rack cabling optimized
- Accessory for patch cords with rotating system for angle adjustment and label holder

Compatible with all panels (flat, angled, HD)

ANGLED PATCH PANEL SOLUTION FROM 24 TO 48 PORTS PER UNIT

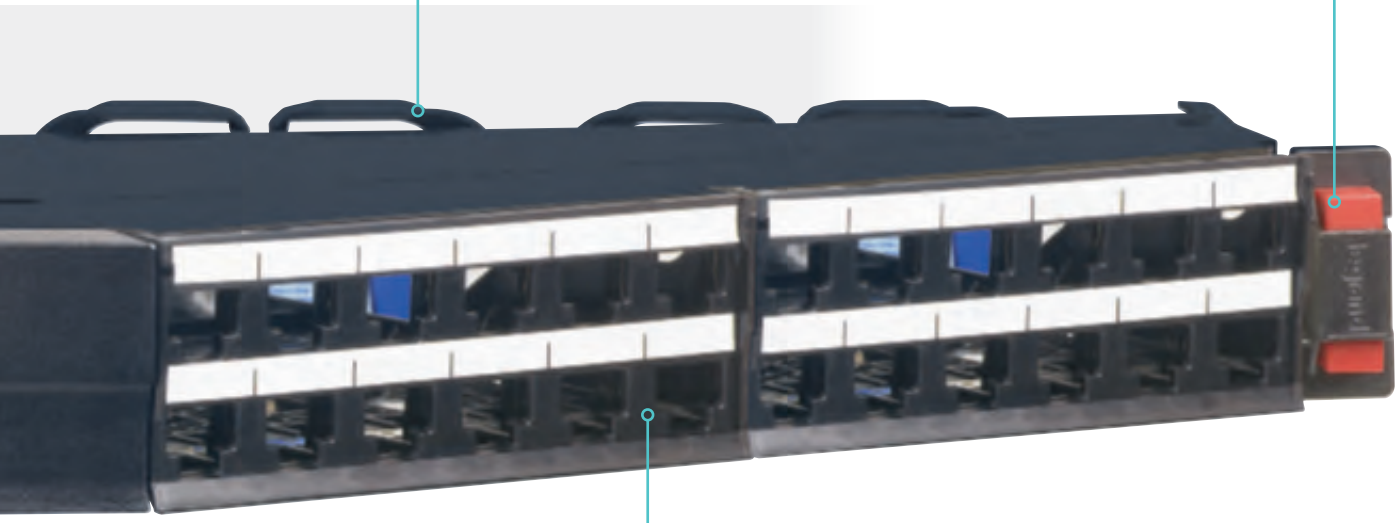
Patch panels with an angled design which allows the cable to run into each side of the rack, creating a correct cable radius of curvature.

This avoids the need to manage the cables horizontally, and allows the patch cords to be carried directly in the vertical cavities.



Tidy cable management

Quick-fix system



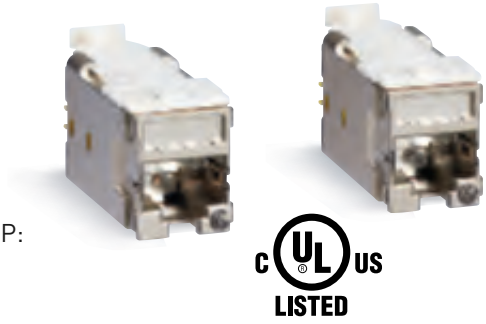
Simple and efficient
identification of the ports

Also available
in the 24-port version

COPPER SYSTEM LCS³ SERIES HDJ SYSTEM / NORTH AMERICAN SPECIFICATION COMPLIANCE

A global answer for global Customers Accounts:
- HD Jack RJ45 connectors
- LCS³ patch panel and cassettes (6-port and 12-port)

RJ 45 CONNECTORS



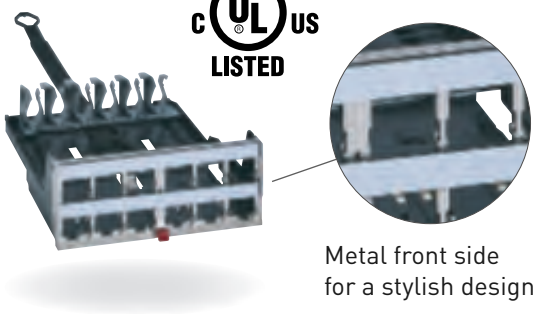
- Premium High-Density Jack (HDJ) from Cat. 5e to Cat. 6A
- ETL verified to TIA Category 5e, 6 and 6A component specification. Rear-loading, 180° exit, 8-position
- Quick and easy lacing cap termination
- Available all shielded for STP and different colours for UTP:
- Cat. 5e: dark grey
- Cat. 6: blue/white/yellow/black
- Cat. 6A: blue/yellow/black
- These products have earned the UL Listed Mark

PATCH PANELS

- Available with up to 48 ports per unit
- Make maintenance and future upgrades easier
- Available in flat versions: present the same quick system for pulling out the unit and an innovative cable guiding
- These products have earned the UL Listed Mark

STYLISH AND INNOVATIVE CASSETTES

- Sliding cassettes: easier maintenance
- Fast push-button extraction
- Innovative modular cassette system
- Easy maintenance: hands free, cassette maintained after extraction
- Easy to mix with Legrand fiber modules (HDFM)
- These products have earned the UL Listed Mark



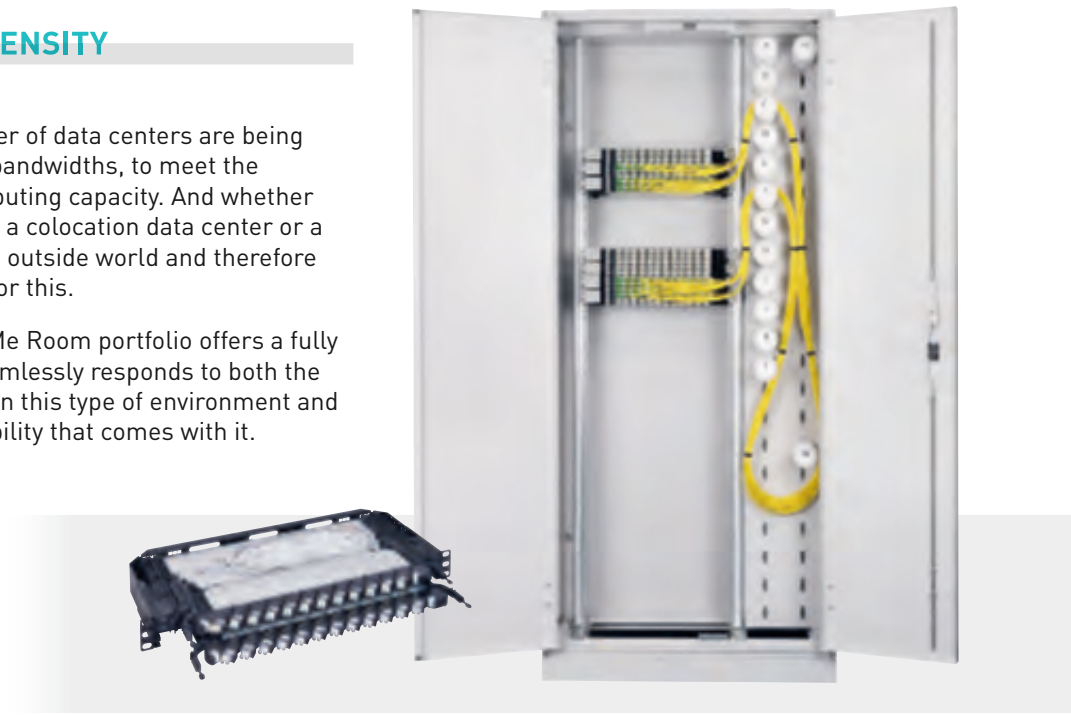
Metal front side for a stylish design

FIBER OPTIC SYSTEM
MEET-ME ROOM SOLUTIONS

COMBINING HIGH DENSITY AND HIGH QUALITY

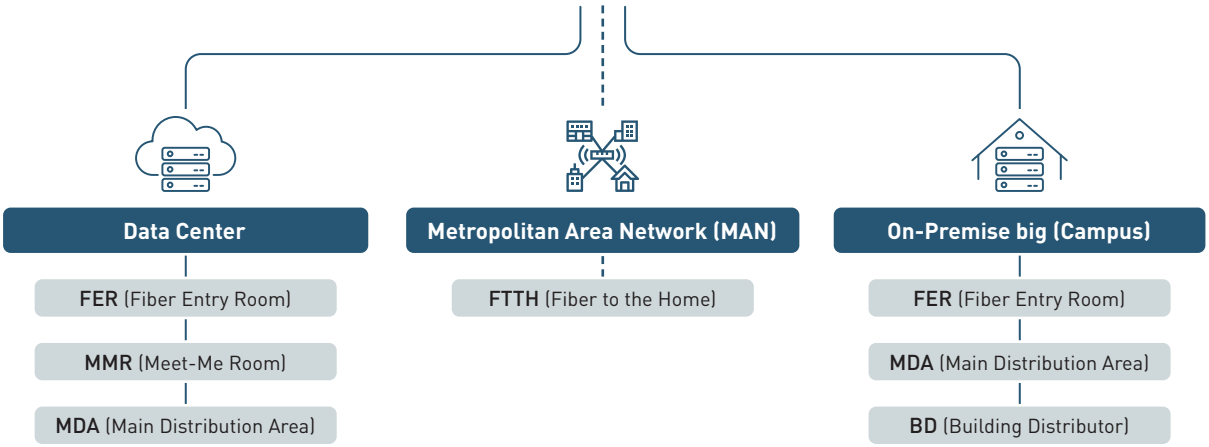
An ever-increasing number of data centers are being used, and at ever higher bandwidths, to meet the growing demand for computing capacity. And whether it's a regional data center, a colocation data center or a hyperscaler, access to the outside world and therefore fiber connectivity is vital for this.

The Legrand LCS³ Meet-Me Room portfolio offers a fully scalable solution that seamlessly responds to both the high fiber numbers used in this type of environment and the high quality and reliability that comes with it.



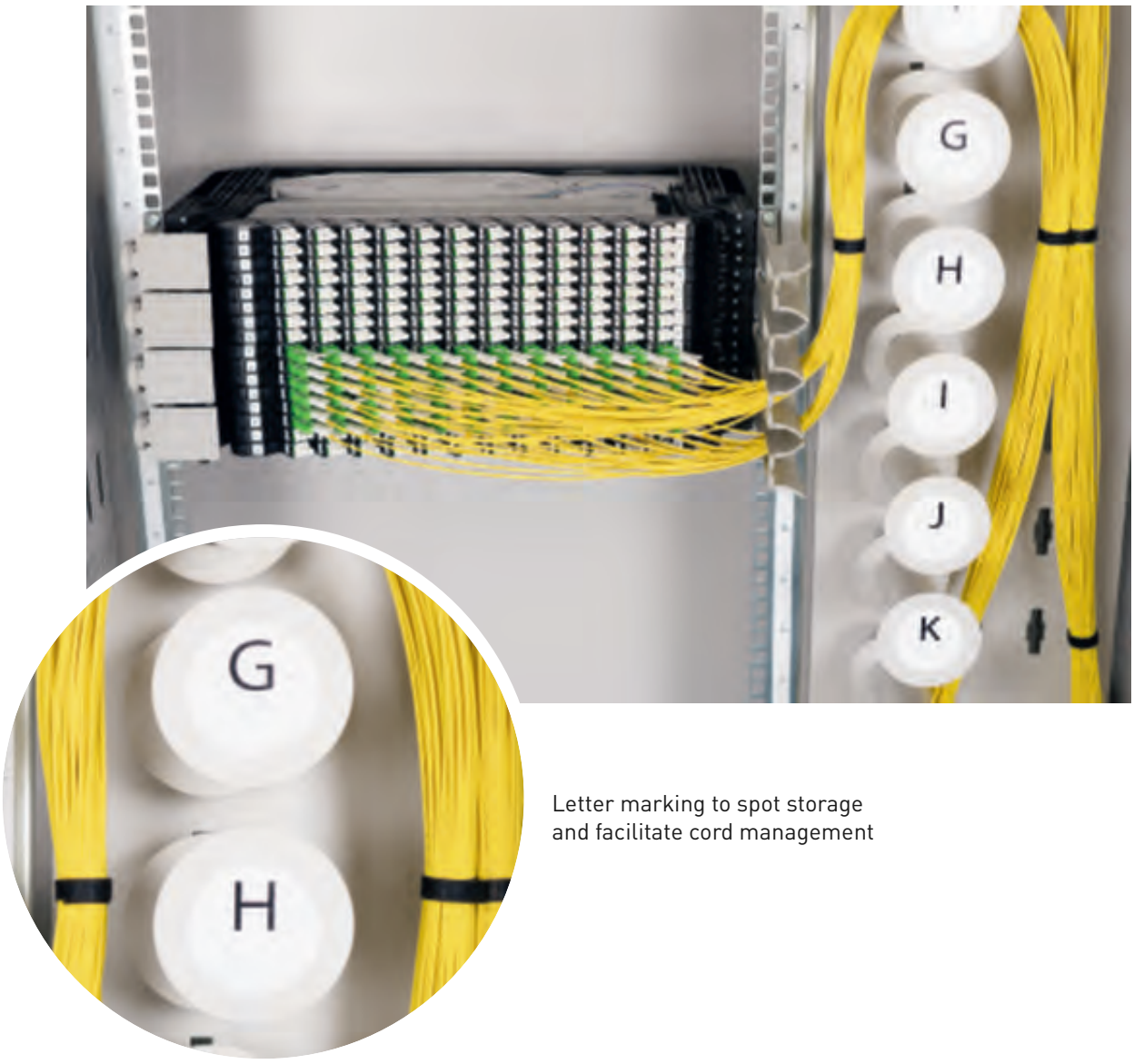
The innovative concept also offers the possibility of adding extra functionalities where necessary, such as WDM Mux/Dmux or PON integration.
With this, the concept also offers excellent application possibilities in so called Telco environments or for example on-premise connectivity.

TYPICAL DEPLOYMENT OPTIONS LEGRAND MEET-ME ROOM PORTFOLIO

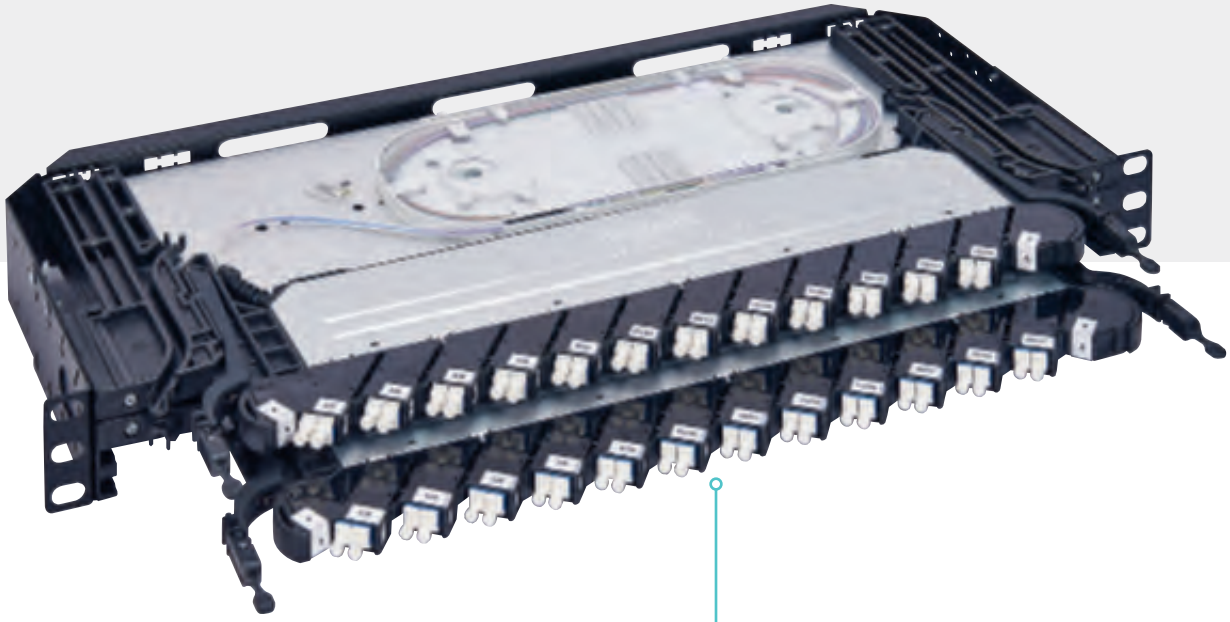


OPTIMIZED AND SIMPLIFIED PATCHING

A good network does not only stand or fall with a good connectivity solution, also all preconditions have to be fulfilled correctly. The Legrand Meet-Me Room portfolio therefore consists of an Optical Distribution Frame (ODF) with optimized patch management, especially designed for high density applications. Even with more than 4,000 patches in an ODF frame, this allows the patches to be ranked in a structured way.



Letter marking to spot storage and facilitate cord management

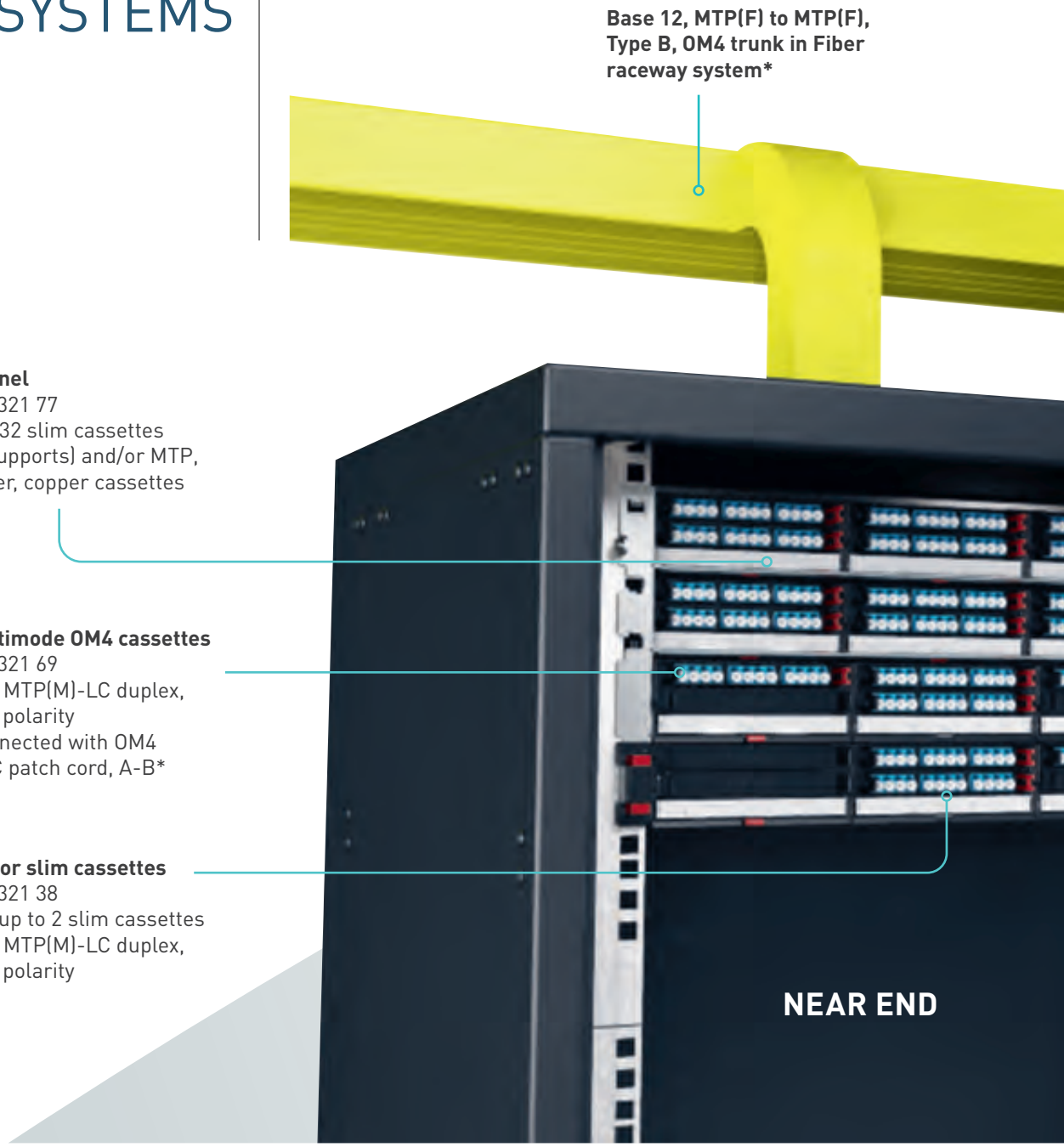


In order to simplify patching, the Meet-Me Room ODF patch panels are equipped with a slide-forward function, which makes the patch surface easily accessible, even in case of full patching.

A unique advantage of the Meet-Me Room patch panel is the ability to use it fully front loaded. Patch cabling and incoming cabling are fed in from the front, separated from each other, so that moves, adds and changes are easy to perform.

FIBER OPTIC SYSTEM CREATING FULL HD SYSTEMS

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.



* Configurated offer possible on request

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*

1U HD panel
Cat.No 0 321 75
Can hold 8 slim cassettes (into 4 supports) and/or MTP, splice fiber, copper cassettes

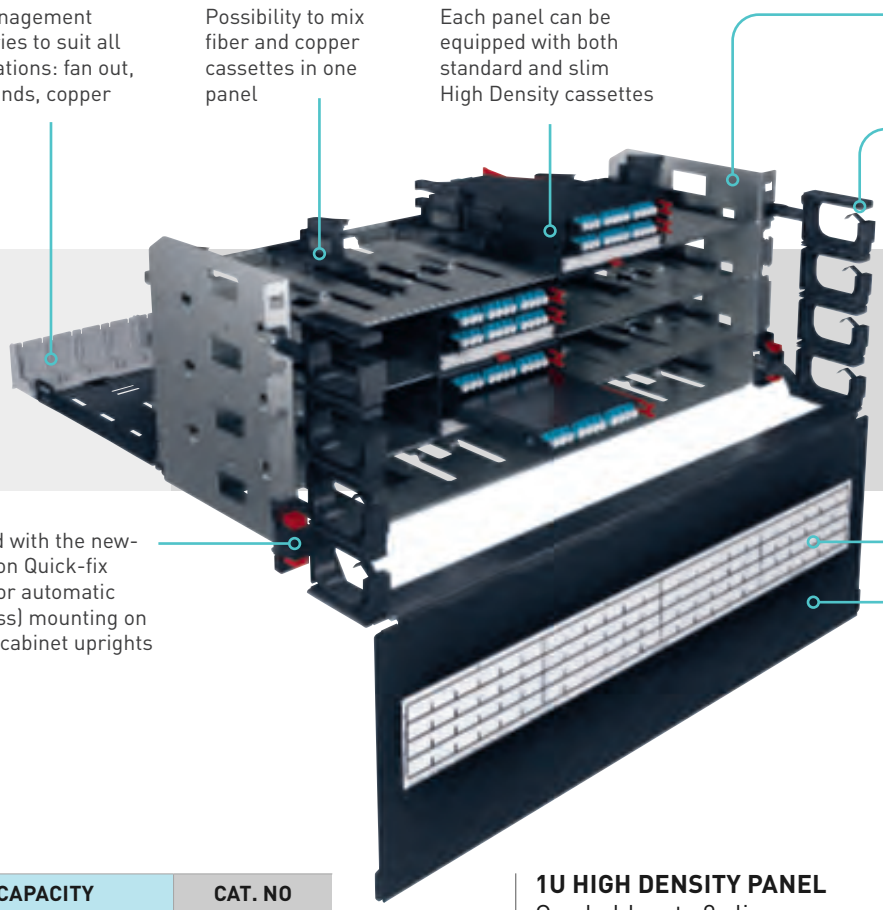
Support for slim cassettes
Cat.No 0 321 38
Can take up to 2 slim cassettes
12 fibers, MTP(M)-LC duplex, universal polarity

FIBER OPTIC SYSTEM HIGH DENSITY MODULAR PANELS

FROM 1U TO 4U

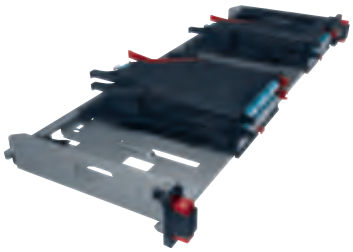
Optimize space and connectivity with our three HD modular panels! These quick-fixing solutions (automatic mounting and automatic grounding on 19'' uprights) offer you optimum capacities per U: 96 in LC version, 48 in SC version and 24 in ST version! Keeping link connections accessible and manageable,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

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



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

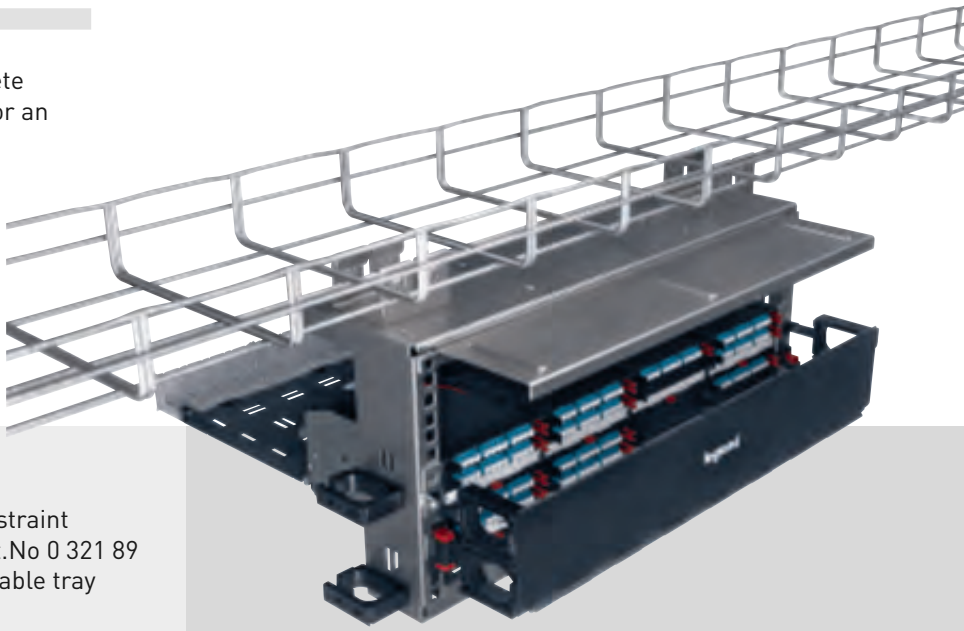
1U HIGH DENSITY PANEL
Can hold up to 8 slim cassettes (into 4 supports)



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

FLEXIBILITY OF INSTALLATION

Our 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.

FIBER OPTIC SYSTEM CASSETTES

SLIM SOLUTIONS FOR GREATER CONNECTIVITY

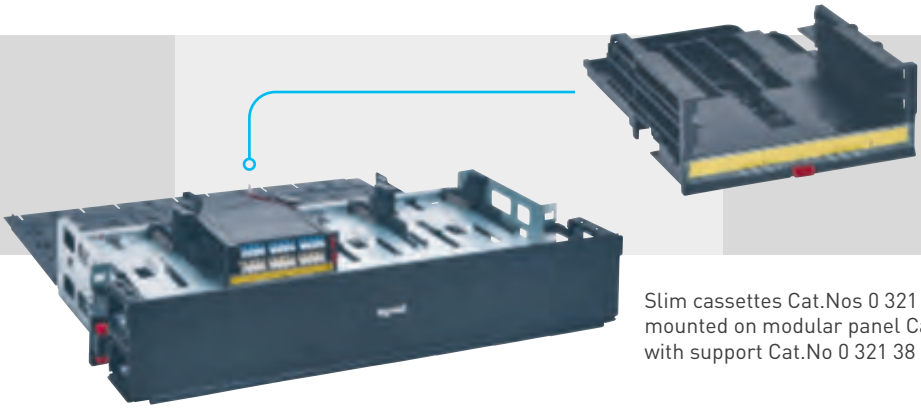
Optimize space and increase the connectivity capacity of your infrastructure with the slim cassettes! Easy to install and to maintain from rear and front, they prove to be agile and flexible under all circumstances.

- 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 OM5 multimode	On demand
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

FIBER OPTIC PATCHING KITS

ZERO-U KIT FOR UNIVERSAL FIXING

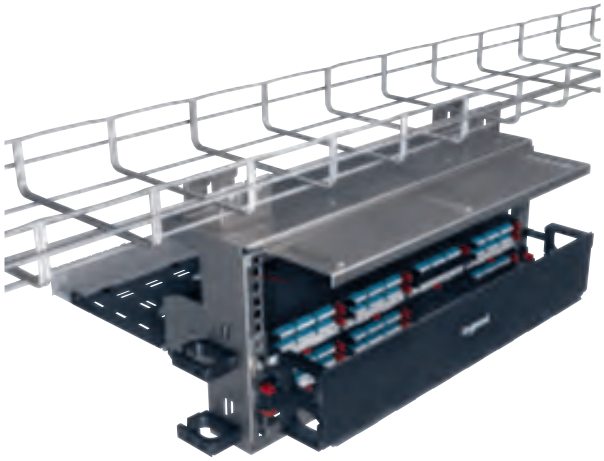
The Zero-U kit Cat.No 0 321 03 enables you to mount cassettes on 19" uprights, raised access floors, wire and sheet metal cable trays, structural uprights of the enclosure, etc.
The kit can take up to 2 slim High Density cassettes Cat.Nos 0 321 68/69/70 or 1 universal High Density cassette Cat.No 0 321 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

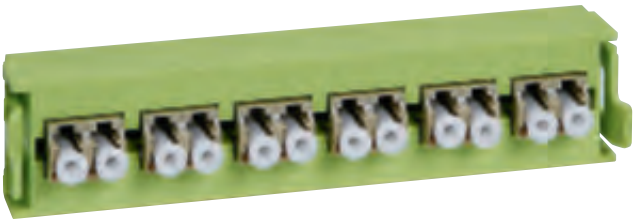


FIBER OPTIC SYSTEM READY FOR FUTURE APPLICATIONS!

With our 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.

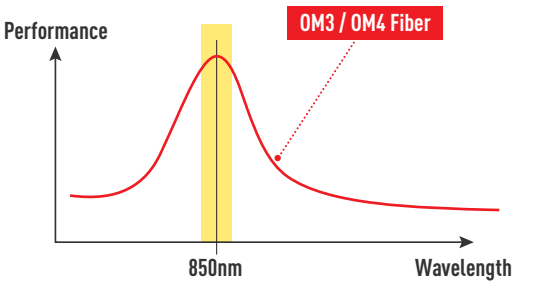
OM5 multimode MTP adaptor

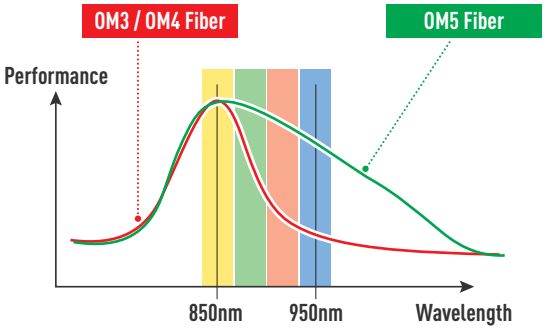
OM5 12 LC multimode block



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:

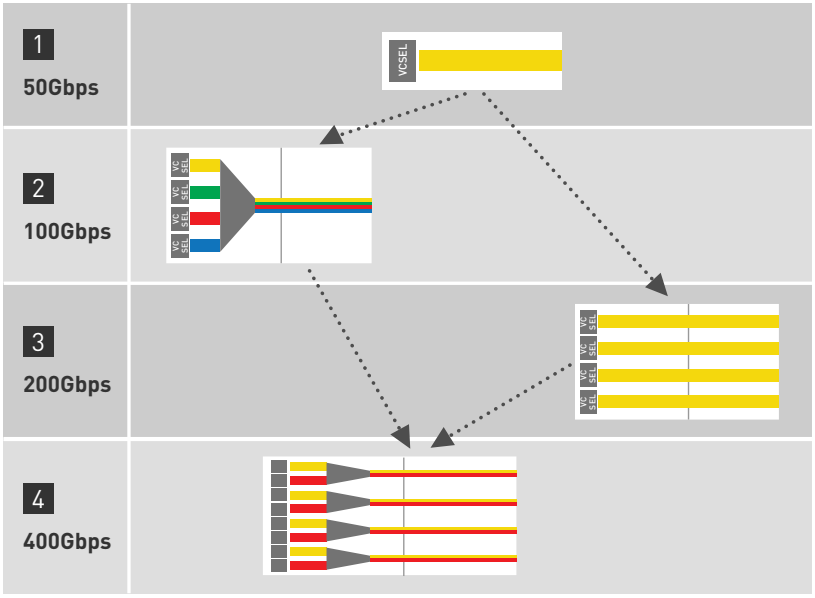
1. Duplex channel for single wavelength (typically duplex LC connector with OM3 or OM4 fiber):
   10GBASE-SR → 25GBASE-SR → 50GBASE-SR*
2. Duplex channel for multiple wavelength (typically duplex LC connector with OM5 fiber):
   10GBASE-SR → 25GBASE-SR → 40G-SWDM4 → 50GBASE-SR → 100G-BiDi or 100G-SWDM4*
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

LCS³

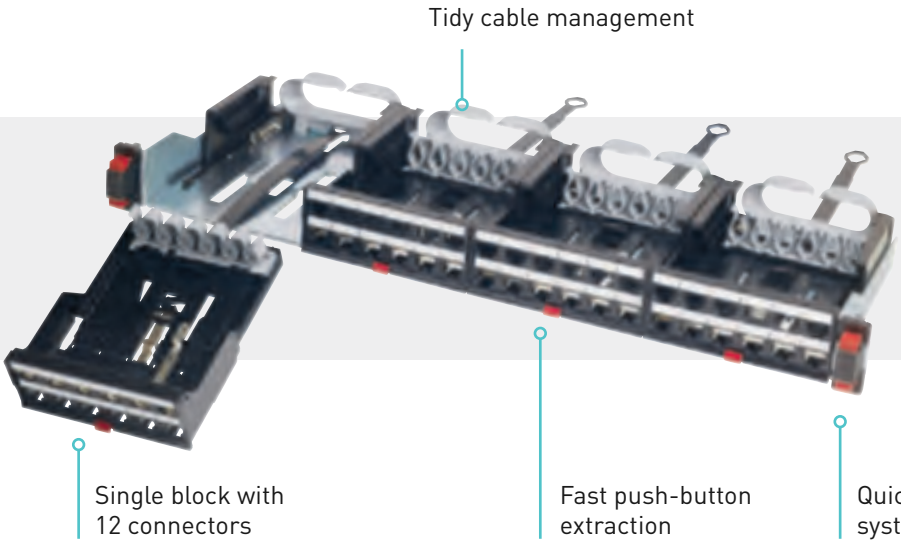
A GLOBAL OFFER

Cabling system

Efficiency

Legrand's LCS³ system offers you copper and fiber optic solutions designed to enhance your infrastructure's efficiency:

- 48 ports per unit for high density (Copper system)
- 90 LC per unit for high density (Fiber optic system)
- 144 LC per Unit for ultra-high density (Copper and Fiber optic systems)



COPPER SYSTEM PATCH PANEL HD SOLUTION UP TO 48 PORTS PER UNIT

High-density patch panel. It has changed from 24 to 48 ports, guaranteeing a reduction in space occupied and making future upgrades easier. Designed to house 4 blocks of 12 connectors each.

FIBER OPTIC SYSTEM VERY HIGH DENSITY UP TO 144 LC/1U

Since different network architectures such as top-of-rack, end-of-row and middle-of-row require different cabling densities, passive equipment needs to adapt perfectly to the active network.

The LCS³ HD cassette panel provides a mixed-media structured cabling system to support any configuration.

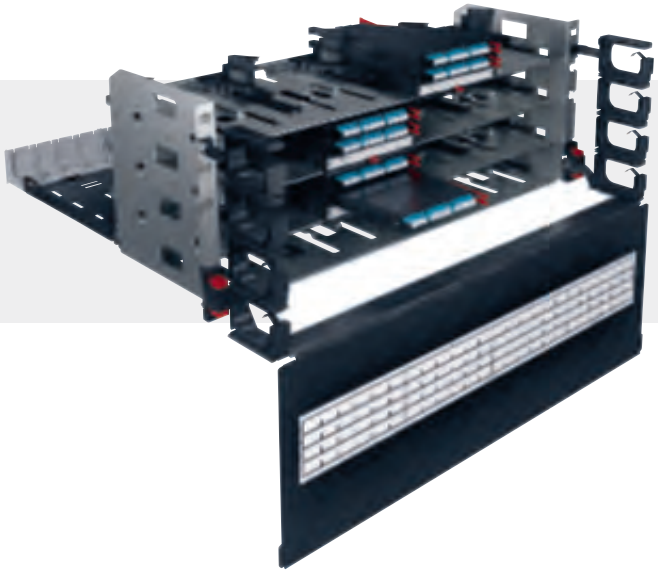
Legrand LCS³ offers an innovative UHD patch panel designed to house up to 144 connections in 1U distributed between 6 individual modules of 24 fibers each.

Each module accepts incoming fibers both from MTP® trunk cables and via predetermined components. Predetermined cables are available both as breakout cables and as distribution cables.

ULTRA HIGH DENSITY (UHD)

- Up to 144 LC/1U
- 1U, 2U, 4U
- Microcable preterms

Preterminated: the fiber optic cable termination is the addition of connectors to each optical fiber in a cable. The connectors are assembled in our factories



HIGH DENSITY (HD)

- Up to 96 LC/1U
- Available in 1U, 2U and 4U

COPPER SYSTEM
EASY INSTALLATION WITH CAT. 5e/6/6A FIELD PLUGS

These accessories are ideal for a link terminated with a plug on active equipment side (CCTV camera, Wi-Fi access point...). It provides cost savings (faster installation) whilst ensuring an increased reliability.

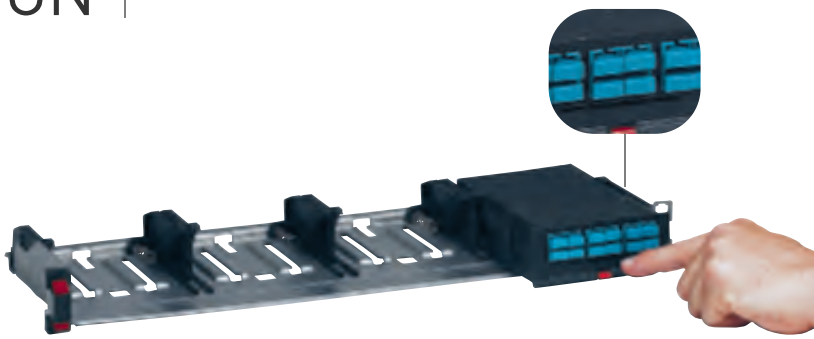
Cat. 5e & Cat. 6 UTP
RJ 45 field plugs

Cat. 5e & Cat. 6 FTP
RJ 45 field plugs

Cat. 6A STP toolless
RJ 45 field plug

FIBER OPTIC SYSTEM
INNOVATIVE CASSETTES FOR EASY INSTALLATION

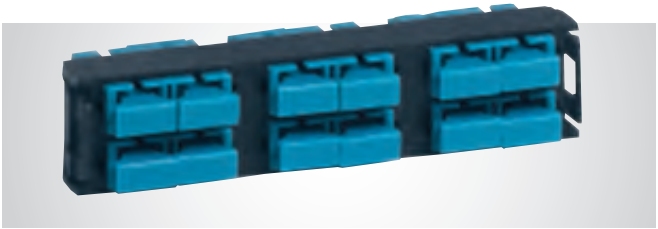
Legrand has launched innovative splicing cassettes which can be removed automatically by simply pressing them, simplifying installation and maintenance.



- For installation directly in modular panel Cat. No 0 321 40.
- The splicing cassettes are removable from the front.

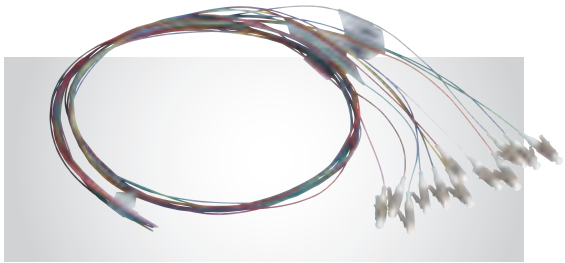
READY TO BE USED IN 1 CATALOGUE NUMBER!

- Pre-equipped cassettes with fitted fiber optic block (SC duplex or LC duplex, monomode or multimode)



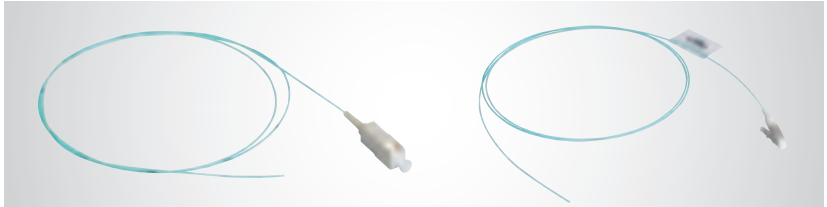
SC duplex high density fiber optic block for 12 multimode fiber optics

- Supplied with sets of 6 or 12 pigtails



Set of 12 OM3 LC-PC pigtails

- A very large offer of pigtails in 1 or 2 meters ; in OM3, OM4, OM5 on-demand, OS2 (OS1a compatible).
  Sets of 12 LC pigtails in OM3, OM4, OS2 (OS1a compatible)



OM3 (PC) pigtails, SC connectors

OM4 (PC) pigtails, LC connectors

LCS³

A GLOBAL OFFER

19" Enclosures

Astuteness

The digital revolution is happening: it's taking place both in our personal and business lives. The way we do our work, listen to music, interact with people, research products and buy services has almost entirely changed. And so have IT infrastructures to make this change possible.

An ever-increasing amount of data, faster processing speeds, larger storage requirements, the exponential rise in IoT and artificial intelligence, and so forth have posed new challenges in technical rooms and data centers; hence the need for clever solutions to ensure ever more efficient infrastructures.

19" SERVER CABINETS

Carefully thought out, for a reliable and efficient design, Legrand's range of server cabinets stands out for its inventiveness.

NEXT LEVEL SOLUTIONS

We've researched, analyzed, discussed, checked and rechecked ways we could optimize the technical room and data center infrastructures. Can they work smarter, better and more sustainably? How can we provide smart solutions to cope with the challenges in these markets? Can we develop systems to help companies comply with various environmental requirements and compliancy laws? Can we act with greater corporate social responsibility across every aspect of our business?

Our mission with the development of our new platform was to create something that's smart, solid, secure & sustainable.

WHAT WE PROMISE

A technical room or data center must accommodate IT infrastructure in the most efficient way possible. Infrastructure needs the space to grow and evolve with new circumstances, technology, and user requirements. Therefore, modifications and innovations are also necessary for next level cabinets to help ensure improved uptime, efficiency, security, and sustainability.

The LCS³ cabinet platform offers you the space to accommodate whatever comes next!

SMART: UNLIMITED POSSIBILITIES

A smart design was one of the main requirements by developing the LCS³ platform. With LCS³ we went the extra mile with the flexibility and modularity of the installation and infinite adjustment of accessories and components. It’s truly the next level in technical room and data center infrastructures.

This is a huge leap forward for our customers. The design has been achieved by working closely with our customers for many years. During the design we constantly looked to expand possibilities and provide high levels of scalability. The functionality has been seamlessly integrated into the aluminium frame providing a fully integrated platform and the opportunity to be combined with systems and products from the Legrand portfolio.

Stepless adjustability

EFFICIENT, MODULAR EXTENSION

For the interior of the server cabinet, aluminium extrusions are used, in which mounting rails are installed that are adjustable in the full width and depth. All the accessories can be mounted flexibly across all three dimensions and infinitely adjusted. In that way, the interior of the server cabinet can be custom designed without being dependent on specific holes or modular dimensions of holes. These holes would also negatively impact air tightness.

INTEGRATION

Within the new cabinet it is easy to add power distribution units and sensors which make it possible to remotely monitor your data center and cabinets. This enables users to stay in control (remotely) of the condition of the IT equipment and the environmental factors in the cabinet that relate to air humidity, temperature and air circulation.

Smart products from the Legrand portfolio can perfectly be integrated into our server and network cabinet platform. In this way, we deliver a total solution with which we can meet your every need.

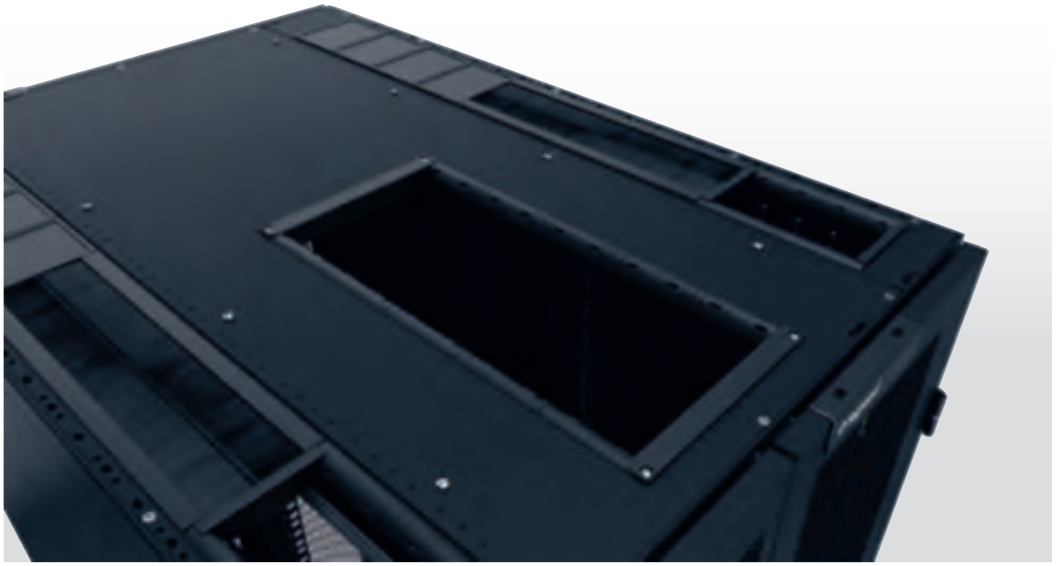
EASY MAINTENANCE

Another unique property is the option to mount and remove all the accessories and components located in the cabinet from the inside. That means that – even if a cabinet is bayed or is closed – it is easy to change, remove or add practically everything from inside. System administrators or data center managers in particular can benefit tremendously from the flexibility that the interior offers. The interior makes cable management, adding components and making changes much easier.

SMART TOP-OF-CABINET DESIGN

The amount of cabling in cabinets has increased considerably. To be able to continue to meet the changing needs, we have developed a cabinet with a smart, optimized design. For example, the top-of-cabinet section contains more space to guide the cables through and the positioning of the entries is improved.

Modular roof



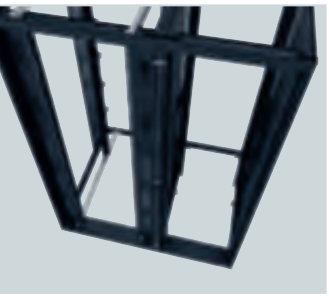
SOLID: NEXT LEVEL RELIABILITY

The LCS³ platform enables a solid structure to perfectly house your IT-equipment. The interior of our server and network cabinets has a light and solid aluminium frame to bear the weight of IT equipment and to deal effectively with airflow management. The sturdiness of the frame and door, the full integration of the locking system and the cabling are unique on the market.

UNIQUE DOOR DESIGN

The full integration of the locking mechanism is unique. It is also easier to mount and remove the door, which can be useful during work in the cabinet. The door can also be easily reversed to make the door right-opening rather than left-opening.

A solid double door is also part of the LCS³ platform, which can be very practical in case of limited space



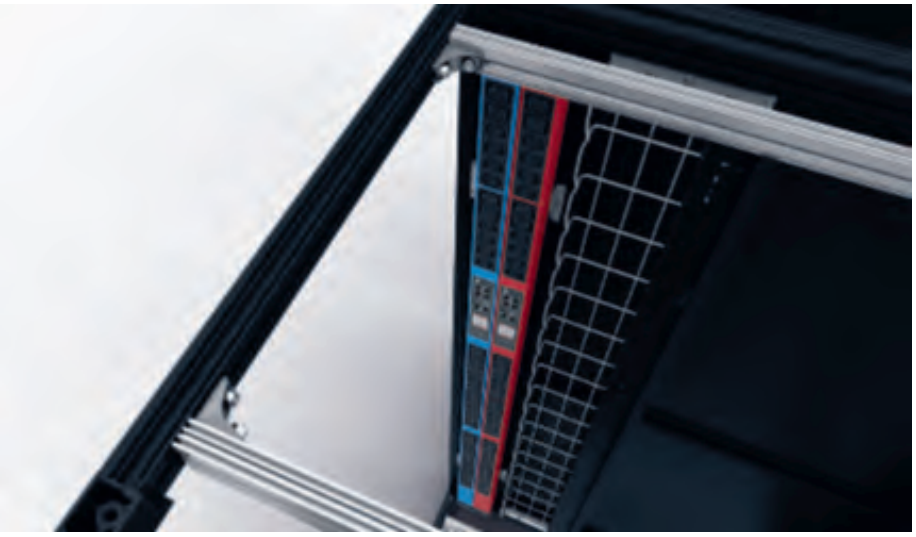
LIGHT AND SOLID FRAME

The light and solid aluminium frame offers ultimate flexibility because mounting and T-slot rails are placed in aluminium extrusions. In that way, the interior of the cabinet can be perfectly adjusted to the user’s requirements without being dependent on certain holes or modular dimensions of holes. It is therefore possible to install all the accessories that are intended for cabling or for holding IT equipment in exactly the spot where it can be used most effectively. It is important that the interior is easily adjustable – because not all the IT equipment that is placed in a cabinet is always delivered with the same standard dimensions.

Another unique property of the interior is the option to mount and remove all the accessories and components located in the cabinet from the inside. That means that – even if a cabinet is bayed or is closed – it is easy to change, remove or add practically everything from inside.

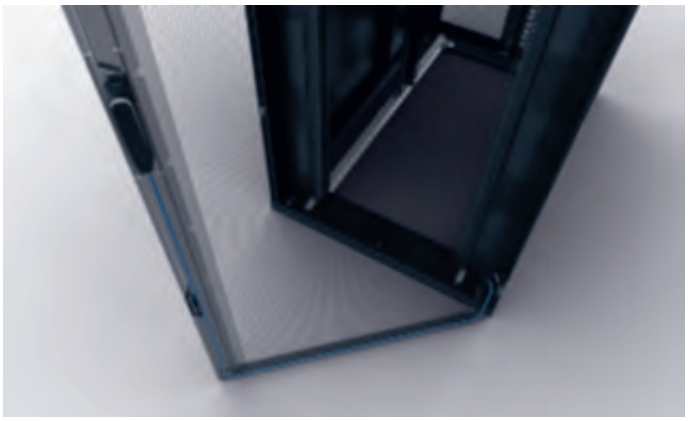
SECURE: KEEP YOUR DATA SAFE

The greatest risk of any technical room or data center is downtime. The new platform enables the highest levels of access security and reliable intelligent power distribution. Innovative monitoring tools and sensors reliably work around the clock to detect and alert technical room or data center operators in case of sudden changes in and around the rack to prevent outages.



RELIABLE POWER DISTRIBUTION

Power is an operationally critical component of any technical room or data center. Even the slightest interruption of the power supply can have a huge impact. The new cabinet platform makes it possible to manage the risks of power outages by using PDUs from the Legrand portfolio.



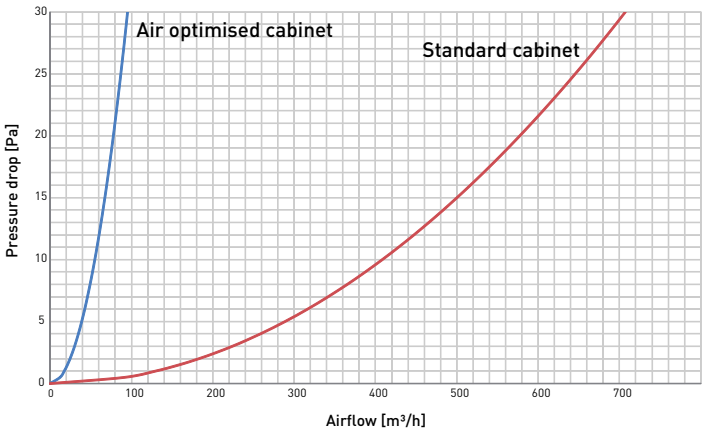
Full integration of the locking mechanism

SUSTAINABLE: NEXT LEVEL ENERGY EFFICIENCY

With server cabinets in particular, the requirements in the area of energy efficiency are high. After all, the IT equipment in server cabinets produces a great deal of heat that must be removed efficiently. Indeed, in order to function as effectively as possible, the IT equipment must be adequately cooled, because the more efficient the cooling process is, the more reliably the IT equipment works, and the less energy is required to enable the data center to run.

The design of our server and network cabinets is specifically geared towards optimizing the energy efficiency of technical rooms and data centers. Increasing the energy efficiency was one of the most important reasons for developing this cabinet platform. By reducing energy consumption, technical rooms and data centers can not only save on costs, but can also reduce the impact on the environment.

Efficiency comparison between a standard and an airflow optimized cabinet

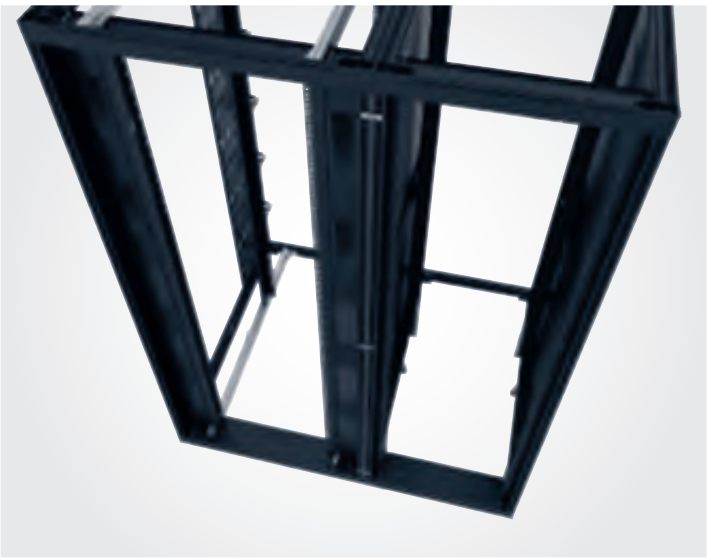


PREVENTING COOL AIR LEAKAGE

• Airtightness at vertical mounting rail perimeter

It is extremely important that air leakage and recirculation is minimized so that the cool air is guided exclusively through the IT equipment. To do this, the space between the frame of the cabinet and the steel profiles (in which the IT equipment is installed) must be perfectly sealed. In that way, the separation between the hot and cold airflows can be optimized.

To do this, airflow management packages can be used that consist of a bottom, top, left and right plate. These plates connect the cabinet with the profiles in which the IT equipment is installed.



Airflow management for 600 mm and 800 mm wide cabinets

• Airtightness at cabinet perimeter

Special accessories have also been developed such as sealing strips. These strips are used to perfectly seal the spaces between the cabinets. If a cabinet is leveled or placed on castors the gap can be sealed with an airtight plinth.

Once we had established the platform's functionality, we needed to establish the function of every component. We had a simple philosophy: if there is no clear added customer value, it isn't part of LCS³! Every element plays a key role in the system's functionality and performance.

The server and network cabinets have been designed based on the following principles:
Design for Manufacturability, Design for Assembly and Environmentally Oriented Development.

Design for Manufacturability
is a methodology in which the emphasis is on the producibility of the design.

Design for Assembly
is a methodology for improving the 'producibility' of a product design.

Environmentally Oriented Development
is about being mindful of the impact that the development of a product has on the environment. We can demonstrate this with a Product Environmental Profile.

MANUFACTURING PROCESS

Our server and network cabinets have been specifically designed to help create technical rooms and data centers that are more environmentally friendly. The impact on the environment was also considered by using the most environmentally friendly materials possible in the manufacturing process of the cabinets and by avoiding the use of materials that are harmful to the environment. Additionally, several process steps are carried out internally rather than being outsourced, which contributes to a more environmentally friendly manufacturing process for the cabinets.

DESIGN

The design is geared towards a more efficient use of energy in technical rooms and data centers by ensuring that the heat-generating IT equipment can be cooled as efficiently as possible. The cabinets have been designed in such a way that they enable optimal airflow management. This is because, by using airflow management packages and a wide range of accessories, air leakage and recirculation, and in turn excessive changes in temperature, can be avoided. This optimizes the reliability of the IT equipment, and ensures that less energy is required to enable the technical room or data center to operate. This can lead to cost savings.

19" CABLING RACKS AND CABINETS

With the development of connected solutions comes an ever-growing need for secure data and secure access, as well as reliability of the infrastructure. Legrand's VDI enclosures for LANs have been designed to adapt to these developments and accommodate increasingly high-performance solutions, both for your small installations and highly critical structures.

LCS³ CABLING OPENRACK

Open racks provide greater flexibility and optimum efficiency in any data center. The fixed racks provide an economical mounting platform for switches and servers while the adjustable rack allows all 4 mounting rails to be adjusted even after the rack has been fastened to the floor. Front waterfalls allow for equipment patching and server patching. Vertical managers can be mounted front and rear for a perfect management of patch cords.

LCS³ CABLING CABINET

Given how quickly IT technology evolves, a flexible, future-proof concept is essential. The LCS³ cabling cabinet is specifically designed to meet these needs and stands out due to its versatility, ease of installation and ease of use.

The LCS³ cabling cabinet is a multifunctional system, specifically designed for ease of installation.
The system is ultimately suitable for housing copper patch panels, fiber optic drawers, telephone panels, switches, routers and other IT equipment. Of course it is also possible to include a small number of servers.

LCS³ WALL-MOUNTING CABINETS

The basic frame is made up of a wall-mounting plate with integrated strain relief bar, four depth rails, two cable-entry plates (base and top) and a set of 19-inch rails. The assembly consists of two equal top and base panels with ventilation slots to the rear, two equal side panels and a safety glass door with an EK-333 cylinder lock with grip.

LCS³

A GLOBAL OFFER

Power Distribution Units

Flexibility

The PDU offer combines Legrand's quality and innovation with a wide range of applications. A standalone solution, this range integrates seamlessly into any installation, ensuring compliance with applicable standards.

SOLUTIONS FOR ANY CONFIGURATION

ZERO-U PDU

For data centers/server rooms

These are used in server cabinets where:
- there is a high density of active equipment
- electrical distribution quality is crucial

For vertical installation

1-U PDU 19"

For data centers, edge server rooms and computer rooms

These are used in patching and server enclosures where:
- there is a low density of active equipment to be powered
- ease of installation is an advantage

For vertical or horizontal installation

1-U PDU 10"

For small IT environments

These are mainly used in small-scale commercial applications where there are a limited number of computer workstations and a 10" cabinet is sufficient: small businesses, freelance professions, administrative services, etc.

For horizontal installation

ABOUT LEGRAND'S PDUS

GENERAL CHARACTERISTICS

- Anodized aluminium chassis: high-quality material, lightweight and rigid
- Modular design: expandable socket and function modules

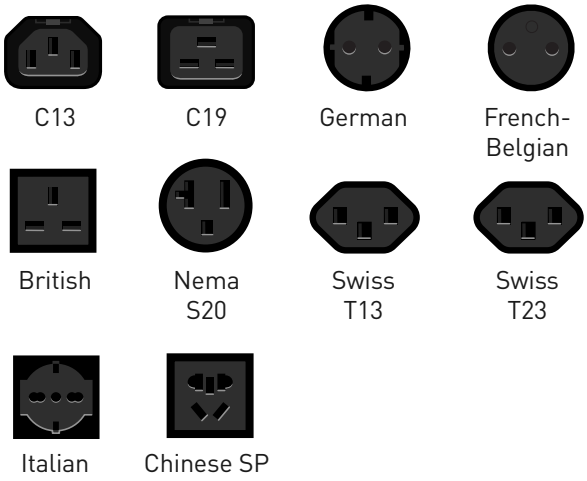
SAFETY

- High-quality electrics
- High-quality connection
- Sockets equipped with safety shutter
- Cord Locking system

POWER SUPPLY

- 16 A to 32 A, single - or three - phase
- PDUs incorporating both international and local type sockets

SOCKET STANDARDS



STANDARDS

IEC 60950 - Information technology equipment - Safety

IEC 60297-3 - Dimensions of mechanical structures of the 482.6 mm series (19 in)

IEC 60320-2-2 - Appliance couplers for C13 and C19 electrical equipment

IEC 60884-1 - French/Belgian and German standard plugs/sockets

BS 1363-2 - British standard plugs/sockets

IEC 60309 - Industrial plugs

Certification: CE, TSE, CCC

Environmentally-friendly products
Eco-design

RoHS

LCS³

A GLOBAL OFFER

Power Distribution Units

Reliability & Safety

By bringing intelligence and innovation to the heart of networks, Legrand's PDU range ensures both reliability and safety in all types of infrastructure, from complete data centers to small-scale deployments.

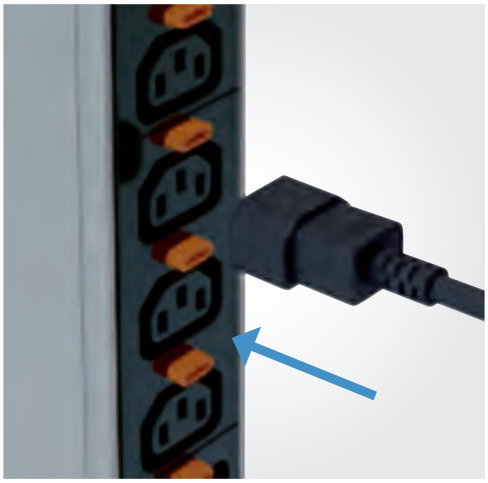
CORD LOCKING SYSTEM INNOVATION AT THE HEART OF PDUS FOR C13 & C19 SOCKET OUTLETS

Security of cable connection at rack level is a critical element which must be considered to ensure longevity of the installation. All Legrand PDUs have a power supply cord locking system which prevents accidental disconnection due to human error or vibration and guarantees absolute safety.

EASY IDENTIFICATION

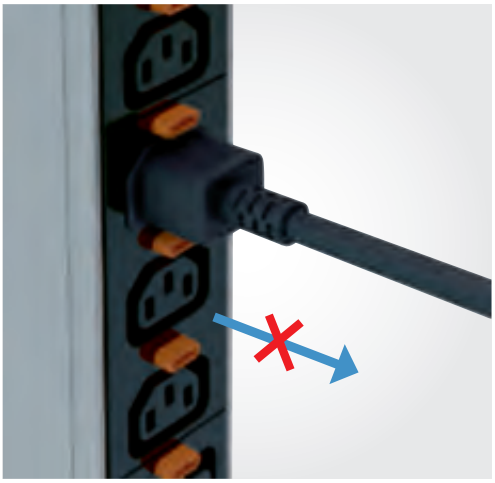
Very easy to identify thanks to the orange buttons next to each socket outlet

AN INNOVATIVE TECHNICAL SOLUTION



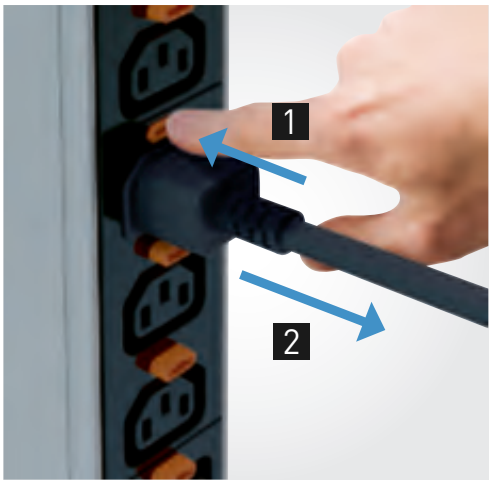
CORD CONNECTION

The cord is connected to the socket naturally in one smooth action



AUTO LOCKING

Cord held in place: once the power supply cord is connected, it locks automatically and cannot be removed

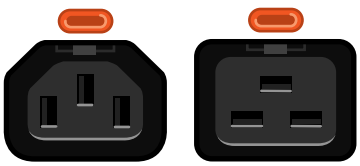


UNLOCKING

Easy removal: simply pressing the unlock button releases the cord from the socket

UNIVERSAL SYSTEM

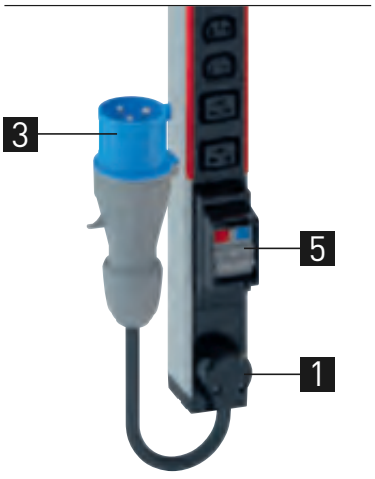
Takes all cords for standard C13 and C19 sockets

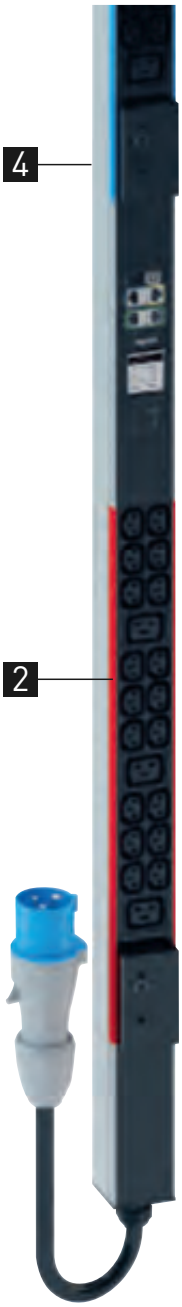


EXCLUSIVE TO LEGRAND

ZERO-U PDUS INNOVATION & PERFORMANCE: EXCLUSIVE INNOVATIONS

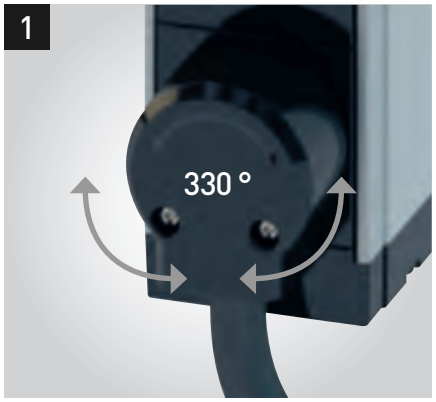
Every detail matters! Legrand's unique and original innovations help ensure optimum performance for the ZERO-U range of PDUs, in terms of safety, simplified setup and integration, consumption indicators, etc.





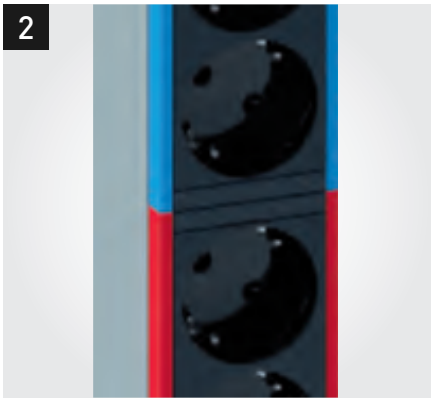
STANDARD STRUCTURE FOR BASIC PDUS

ROTATIVE CABLE ENTRY



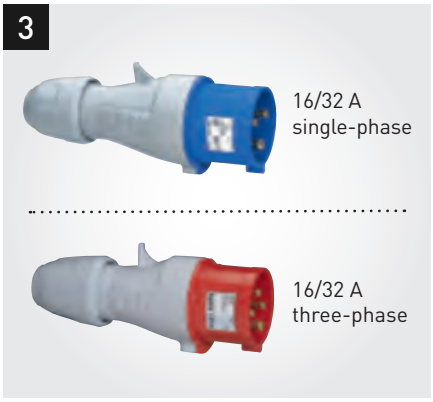
Cable orientation
330° rotatable cable entry for perfect cable orientation and no interference in the cabinet

CIRCUIT MARKING



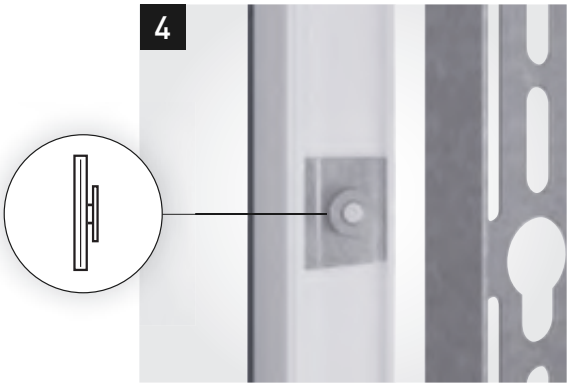
Circuit identification
Each circuit is colour-coded, with the colour visible on the front panel and along the edges of a module.
The colour corresponds to the specific MCB protecting the circuit.

ROTATIVE CABLE ENTRY



Enhanced protection
There are multiple solutions depending on power supply requirements

SCREWLESS MOUNTING



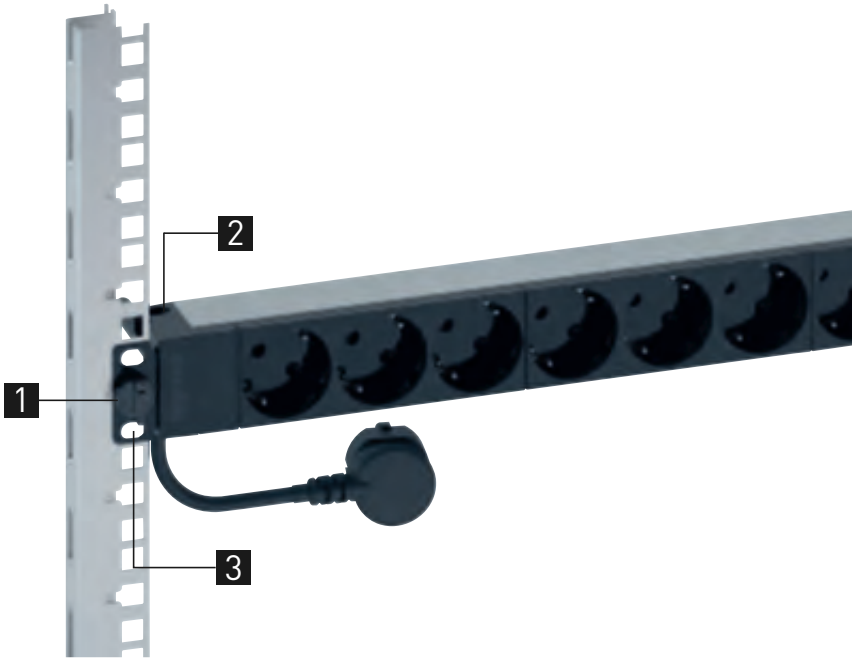
Fixed in buttonhole slots
ZERO-U PDUs simply clip vertically into buttonhole slots on the mounting bracket without the need for any screws.

CIRCUIT BREAKER HOLDER

Enhanced protection
Circuits protected by a circuit breaker.
Holder with overhanging edges to prevent accidental breakages.
(Cover available on request)

1-U PDUS INNOVATION & CONVENIENCE: SIMPLE SETUP & INTEGRATION

The 19'' PDUs designed for installation in server cabinets and patch panels also incorporate the latest innovations for facilitating integration and maintenance, with clever mounting and operating features.



PDU 1 U 10”

Specially designed for local area networks, these PDUs feature the same innovations as the 19” range.

HORIZONTAL INSTALLATION

HORIZONTAL OR VERTICAL INSTALLATION

CORD LOCKING SYSTEM

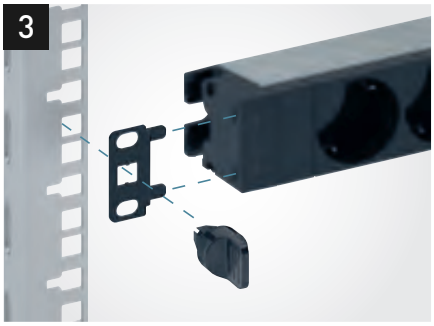
SNAP-ON FIXING

Toolless installation
Snap-on fixing on 19" uprights
No need for screws or nuts.
Toolless installation.

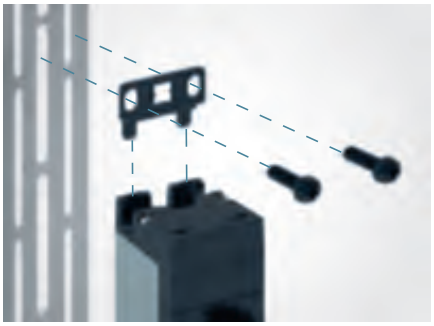
CABLE GUIDE

Optimising space
Cables are held firmly in place by a cable guide.

MOUNTING BRACKETS



Horizontal or vertical
Designed for horizontal toolless mounting, 1-U PDUs can also be mounted vertically simply by rotating the mounting lugs.



Vertical mounting requires a bolt and nut to fix the PDU securely to the bracket.

EXCLUSIVE TO LEGRAND

ACCESSORIES FOR PROTECTION: ENHANCED SAFETY CONTROL

Compatible with all the PDUs in the Legrand range, the complementary accessories allow you to control the socket power supply and protect against overvoltages.

SOCKET LOCKING CAP

Controlling access to the power supply
The locking cap can be used to lock access to a socket. A special key is required to unlock it. Locking caps are available for the following socket standards: C13, C19, German, French-Belgian, British.

SURGE PROTECTIVE DEVICE

Modular Surge Protection
The surge protection module protects equipment against overvoltages and incorporates hot swap technology. It can be used to replace a used module without interrupting the power supply to the other equipment connected to the PDU.

This is an essential accessory for business servers which need continuous protection. The module is equipped with a warning LED which indicates when it needs replacing.

EXCLUSIVE TO LEGRAND

LCS³
A GLOBAL OFFER

Services & tools

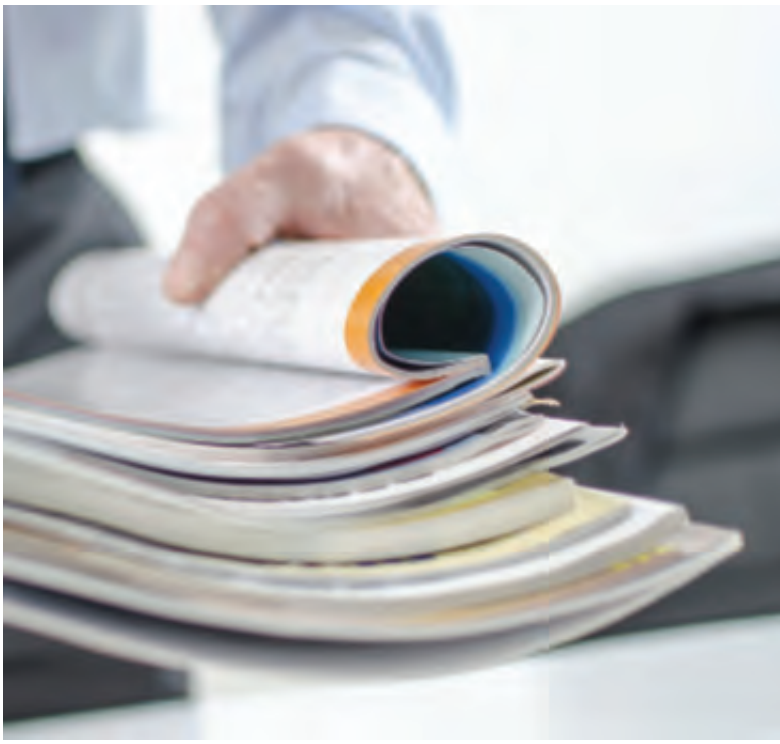
Support you can rely on

It takes more than just sophisticated technological solutions to manage international projects successfully. What is really needed is the comprehensive and expert support of an experienced partner: from project design and choice of the right solution through to on-site logistics, installation and configuration, including any subsequent troubleshooting and maintenance.

YOUR PARTNER EVERY STEP OF THE WAY!

Legrand is ideally placed to offer this type of support, as all its products and solutions are developed and produced in close proximity to its customers.
Legrand also offers a wide range of special services and support tools which create genuine added value by making customers' day-to-day business significantly easier. This support is available at every stage of the project, whatever the customer touchpoint.

A diverse range of digital tools including websites, social media and news feeds so you can contact Legrand at any time and stay up to date with all essential news that is relevant to your projects.



Personal advice, technical support and documents, white papers, catalogues and e-catalogues, and BIM objects to help with product choice or drawing up bills of materials.

Training courses covering actual product expertise as well as the latest developments in technology, standards and regulations. Customized training courses available on request, either face to face or in virtual online classes.

Confident in the quality of its solutions, Legrand offers to warranty continuity of performance of its cabling system for copper and/or fiber optic over 25 years.

Technical appendices

Standards

Introduction to standards

Standards, by definition, are voluntary. Projects must always be compliant to:

- Laws
- Regulations
- Codes

Then standards are used as methods to ensure inter-operability of the systems used. These are chosen according to the needs of the project.

The international standard for telecommunications cabling infrastructure is the ISO/IEC 11801 series.

This standard is adopted by many countries after eventual translation.

The EN 50173 series is the equivalent European standard. It is adopted by all European countries.

While there are multiple national standards, the most significant is the ANSI/TIA, from North America (for both USA and Canada), and is voluntarily used in many other countries. These 3 series are described below.

In general, a project should be compliant to the national standard, if existing, and it may also be chosen to be compliant to the international standard to ensure full compatibility. But it would be unusual for a project in a country with a national standard to require only compliance to a national standard for another country. This would increase risks of noncompliance to national regulations and could add difficulty to source the products.

For example, some of the installation standards are adapted to specific construction methods or fire codes.

Below is a table of recommended and not recommended compliance options, for a project in country "A":

Condition	Recommended	Not recommended
Country "A" has a national standard	Compliance to country "A" standard only*	Compliance to country "B" standard only
	Compliance to country "A" standard and international standard	Compliance to country "A" standard and country "B" standard
Country "A" does not have a national standard	Compliance to international standard only	Compliance to country "B" standard only

* This is assuming that country "A" has absolutely all requirements in the standards. This is extremely rare and very often the national standards will cite international standard for information not available in national documents.

For performance measurements, compliance to multiple standards can be required for specific customer needs, provided that they can be done with a harmonized test method and compared to various test limits in the software after testing.

Because PoE compliance is linked not only to the performance standards, but also to electrical standards, codes and regulations, it is critical to always chose the correct framework to avoid safety risk.

This document does not state all standards but only the primary ones needed for a compliant installation.

In the process of a Legrand 25-year warranty outside of North America, compliance to ISO/IEC or CENELEC is required.

This warranty is not applicable in North America. Contact Legrand local support to obtain the correct documents if needed for this region.

ISO/IEC 11801 series

GENERAL INFORMATION

ISO/IEC 11801 series is the international standard for generic cabling for customer premises. It is the most extensive series and is directly linked to IEC documents.

GENERAL REQUIREMENTS

The general architectures and the performance are in the **ISO/IEC 11801-1**: General requirements. It covers:

- Balanced cabling channels and links performance
- Coaxial cabling channels and links performance
- Fiber cabling channels and links performance
- Component requirements to meet those needs, citing the IEC documents for details

DEFINITION OF THE PROJECT

First the project type must be selected:

- **ISO/IEC 11801-2**: Office premises
- **ISO/IEC 11801-3**: Industrial premises
- **ISO/IEC 11801-4**: Single tenant homes
- **ISO/IEC 11801-5**: Data centers

The **ISO/IEC 11801-6**: Distributed building services, may also be added as part of the project requirements if the cabling infrastructure covers not only cabling for information technology but also building services.

DESIGN AND INSTALLATION

These following 3 standards are required for compliance:

- **ISO/IEC 14763-2**: Planning and installation implementation.
- **ISO/IEC 14763-2-1**: Identifiers within administration systems
- **ISO/IEC 30129**: Telecommunications bonding networks for buildings and other structures

The ISO/IEC 11801-6: Distributed building services, may also be added as part of the project requirements if the cabling infrastructure covers not only cabling for information technology but also building services.

TESTING

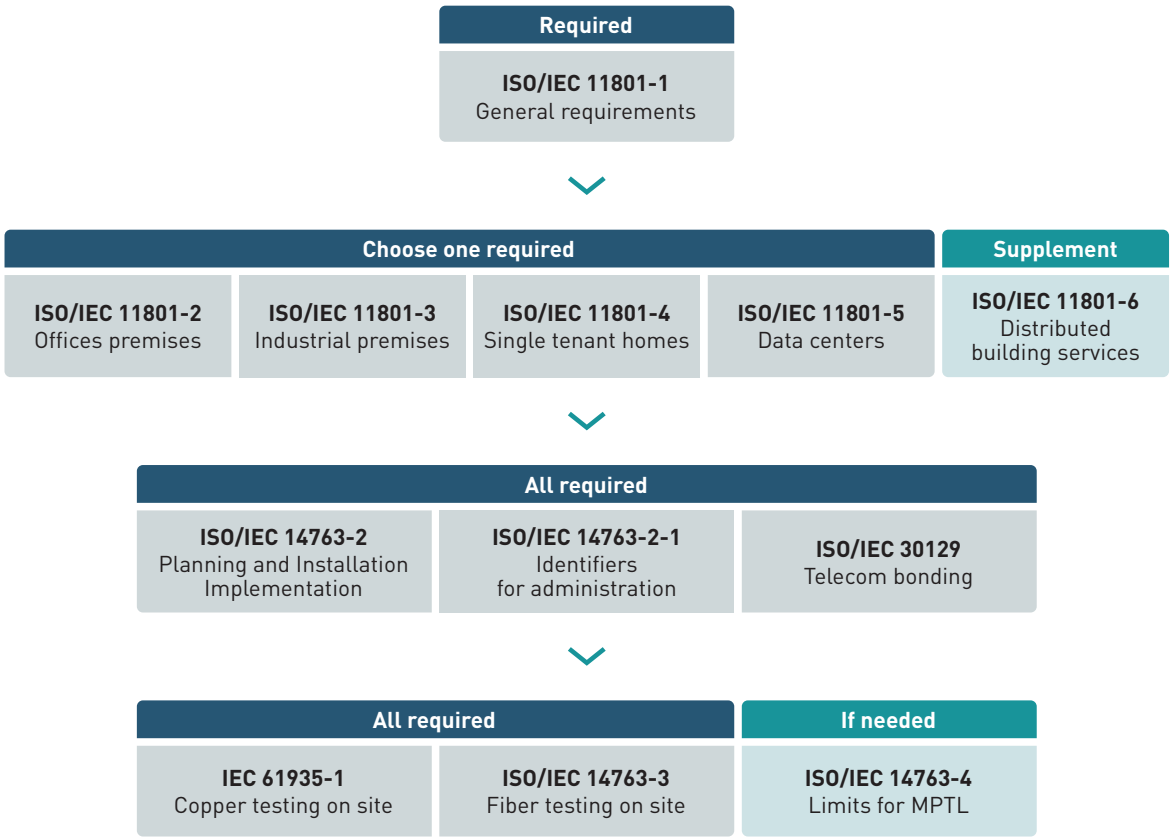
The copper testing is found in an IEC document: **IEC 61935-1**: Installed balanced cabling as specified in ISO/IEC 11801-1 and related standards.

ISO/IEC 14763-4 is a new addition covering limits for MPTL (Modular Plug Terminated Links).

The fiber testing is found in **ISO/IEC 14763-3**: Testing of optical fiber cabling.

DIAGRAM

The diagram of compliance is the following:



CENELEC EN 50173 series

GENERAL INFORMATION

The CENELEC EN 50173 series is the European standard for generic cabling for customer premises. It is extremely similar to ISO/IEC 11801 series with some adaptation for the European market. It is also linked to the IEC standards.

GENERAL REQUIREMENTS

The general architectures and the performance are in the EN 50173-1: General requirements. It covers:

- Balanced cabling channels and links performance
- Coaxial cabling channels and links performance
- Fiber cabling channels and links performance
- Component requirements to meet those needs, citing the IEC documents for details

DEFINITION OF THE PROJECT

First the project type must be selected:

- **EN 50173-2**: Office premises
- **EN 50173-3**: Industrial premises
- **EN 50173-4**: Single tenant homes
- **EN 50173-5**: Data centers

The **EN 50173-6**: Distributed building services, may also be added as part of the project requirements if the cabling infrastructure covers not only cabling for information technology but also building services.

DESIGN AND INSTALLATION

These following 4 standards are required for compliance:

- **EN 50174-1**: Installation specifications and quality assurance
- **EN 50174-2**: Planning and installation implementation
- **EN 50174-3**: Installation planning and practices outside buildings
- **EN 50310**: Telecommunications bonding networks for buildings and other structures

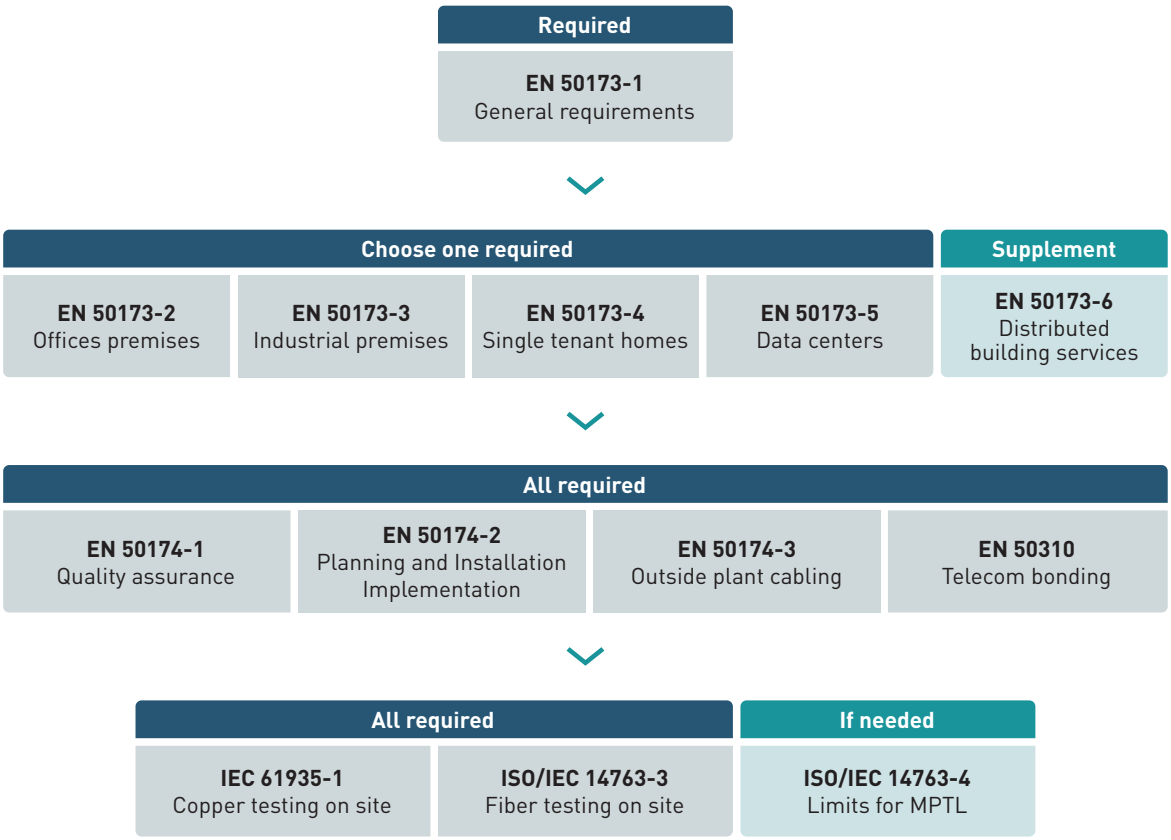
Indeed, the system must be installed properly, and the bonding network needs to be adapted.

TESTING

Testing is mostly absent or obsolete in the CENELEC documents. So testing should follow the same documents as ISO/IEC: **IEC 61935-1, ISO/IEC 14763-3, and ISO/IEC 14763-4.**

DIAGRAM

The diagram of compliance is the following:



ANSI/TIA 568 series

GENERAL INFORMATION

The ANSI/TIA 568 series is the North American standard for generic cabling for customer premises. It is also similar to ISO/IEC 11801 series but with some variations in the structure and details of performance. It is also linked to the IEC standards for copper inter-operability and reliability as well as for fiber performance and testing.

GENERAL REQUIREMENTS

The general architectures are found in the ANSI/TIA 568.0. The performances are in the:

- **ANSI/TIA 568.2**: Balanced cabling channels and links performance
- **ANSI/TIA 568.3**: Fiber cabling channels and links performance
- **ANSI/TIA 568.4**: Coaxial cabling channels and links performance

These include the component requirements to meet those needs, citing the IEC documents for details of reliability and inter-operability.

DEFINITION OF THE PROJECT

The ANSI/TIA documents have the following premise definitions:

- **ANSI/TIA 568.1**: Commercial buildings
- **ANSI/TIA 1005**: Industrial premises
- **ANSI/TIA 570**: Residential
- **ANSI/TIA 942**: Data centers
- **ANSI/TIA 1179**: Healthcare
- **ANSI/TIA 4966**: Educational

The **ANSI/TIA 862**: Intelligent building systems may also be added as part of the project requirements if the cabling infrastructure covers not only cabling for information technology but also building services.

DESIGN AND INSTALLATION

These following 4 standards are required for compliance:

- **ANSI/TIA 569**: Pathways and spaces
- **ANSI/TIA 606**: Administration
- **ANSI/TIA 758**: Outside plant cabling
- **ANSI/TIA 607**: Telecommunications bonding networks

Indeed, the system must be installed properly, and the bonding network needs to be adapted.

TESTING

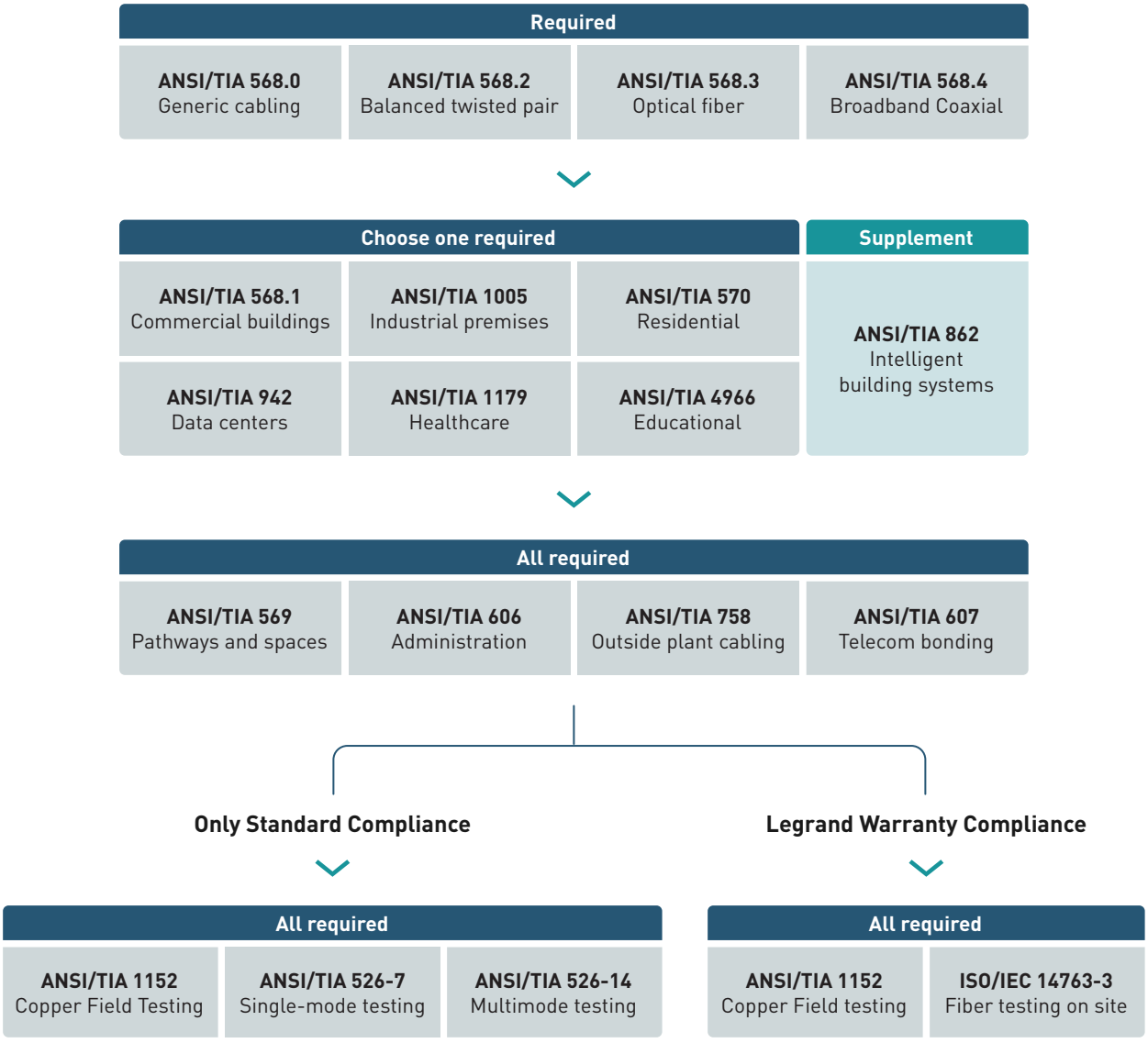
Copper testing limits are found in the **ANSI/TIA 568-2**, but the equipment requirements and the measurement methods are in the ANSI/TIA 1152.

Fiber testing is defined in the **ANSI/TIA 526-7** and **ANSI/TIA 526-14**. However, those are created from the **IEC 61280** series, which are also the base for the **ISO/IEC 14763-4** document.

The main concern of the ANSI/TIA documents is the lack of mandatory use of reference grade connectors for testing. The use of standard connectors leads to an uncertainty too high to ensure performance. So although there are currently available ANSI/TIA fiber testing documents, Legrand requires the use of reference cords for fiber testing, and therefore recommends the use of the **ISO/IEC 14763-3** standard, even for ANSI/TIA 568 compliance.

DIAGRAM

The diagram of compliance is the following:



Performance and architecture

Within customer premises, the importance of the cabling infrastructure is similar to that of other fundamental building utilities such as heating, lighting and mains power. As with other utilities, interruptions to service can have a serious impact. Poor quality of service due to lack of design foresight, use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten an organization's effectiveness.

The standards for structured cabling systems provide:

a) users with an application-independent generic cabling system capable of supporting a wide range of applications.

b) users with a flexible cabling scheme making modifications both easy and economical.

c) building professionals (for example, architects) with guidance allowing the accommodation of cabling before specific requirements are known; that is, in the initial planning for either new construction or refurbishment.

d) industry and application standardization bodies with a cabling system which supports current products and provides a basis for future product development.

Such standards are, for example, ISO/IEC 11801 series, CENELEC 50173 series, ANSI/TIA 568 series.

They specify a multi-vendor cabling system which can be implemented with material from single and multiple sources, and related to:

a) standards for cabling components developed by committees, for example copper cables and connectors as well as fiber optic cables and connectors.

b) standards for the installation and operation of information technology cabling as well as for the testing of installed cabling (see Clause 2 and bibliography).

c) applications such as those developed by study groups of IEEE 802,

d) planning and installation standards which take into account the needs of specific applications for the configuration and the use of cabling systems on customer premises.

FIBER OPTIC

In fiber, the following are recognized in the standards:

Type		Comments
Multimode	OM1	Obsolete 62.5micron fiber. No longer recognized
	OM2	Legacy 50micron fiber. No longer recommended
	OM3	Original fiber designed for 10Gbps. Minimal recommended fiber
	OM4	Provides the same applications as OM3, but for longer distances
	OM5	New fiber optimized for multiple wavelengths (WDM) for new and future applications
Single-mode	OS1a	Indoor single-mode fiber
	OS2	Outdoor single-mode fiber

In general, although it supports legacy applications to longer distances, OM4 is installed for short links up to 100m for current applications, while OM5 is installed to allow a wider recent and future application compatibility.

For long distance, OS1a/OS2 is used depending on the environment.

COPPER

In copper, the following are recognized:

ANSI/TIA		ISO/IEC and CENELEC	
Components	Systems	Components	Systems
Category 3	Category 3	Category 3	Class C
Category 5e	Category 5e	Category 5	Class D
Category 6	Category 6	Category 6	Class E
Category 6A	Category 6A	Category 6A	Class EA
		Category 7	Class F
		Category 7A	Class FA
Category 8	Category 8	Category 8.1	Class I
		Category 8.2	Class II

However, for new installations, only Cat. 6 and better can be used for horizontal cabling, while only Cat. 6A and better can be used for data centers.

Categories 7, 7A and 8.2 are not recognized in ANSI/TIA standards since they do not use the universal RJ45 connector but rather 2 alternative non-compatible connectors that are not existing on active equipment. Legrand recommends not using those solutions as the global market share of less than 1% (source BSRIA) proves the lack of interest of the industry.

These Categories allow the following applications:

	Class D (Cat.5e)	Class E (Cat.6)	Class EA (Cat.6A)	Class I (Cat.8)
1000Base-T	100m	100m	100m	100m
2.5Gbase-T	Possible[1]	Possible[1]	100m	100m
5Gbase-T	Possible[1]	Possible[1]	100m	100m
10Gbase-T	N/A[3]	Possible[2]	100m	100m
25Gbase-T	N/A[3]	N/A[3]	Possible[4]	30m
40Gbase-T	N/A[3]	N/A[3]	Possible[4]	30m

[1] Follow ISO/IEC TR 11801-9904 or TIA TSB 5021 to evaluate possibility on installed links. Distance will depend on many factors
[2] Follow ISO/IEC TR 24750 or TIA TSB 155-A to evaluate possibility on installed links. Distance will depend on many factors
[3] Not Available
[4] Follow ISO/IEC TR 11801-9905 to evaluate possibility on installed links. Distance will depend on many factors

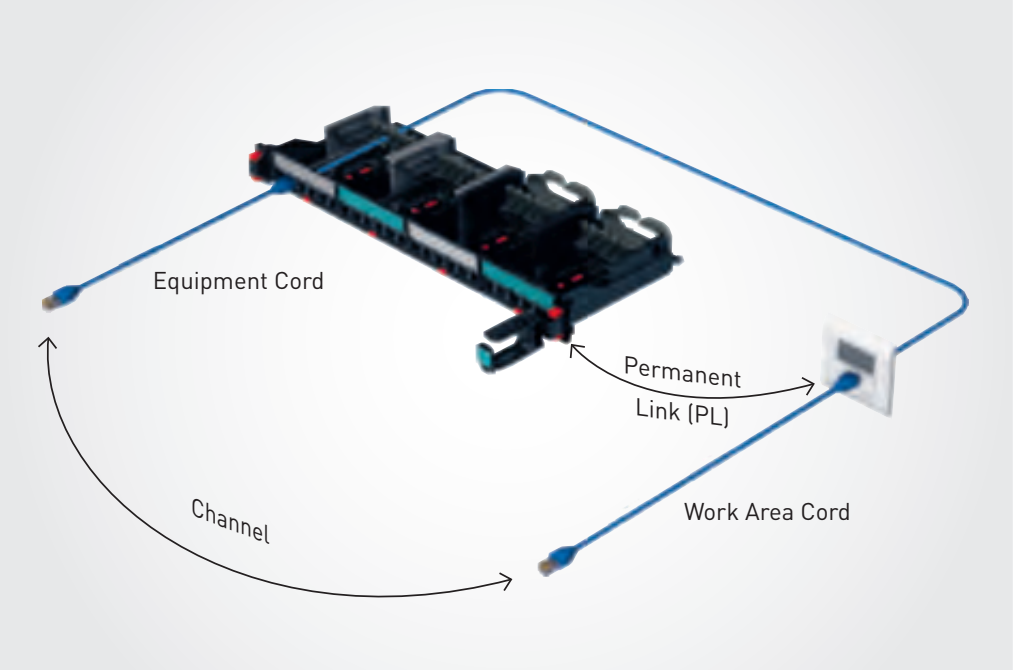
HORIZONTAL CABLING TOPOLOGIES

The standards recognize 2 main types of RJ45 copper connectors:

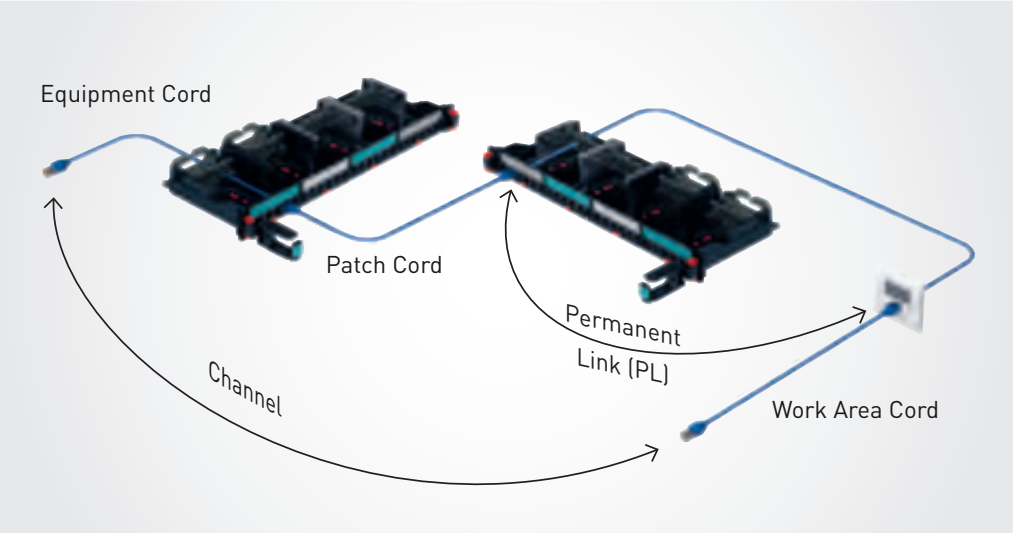
- The Fixed Connector: this is the female, also called a jack, that would be found in the patch panel or in the outlet
- The Free Connector: this is the male, also called a plug, that is used in cords

Until recently, a fixed cable of the Permanent Link could only be terminated on fixed connectors. This allowed testing of the permanent part of the cabling. Cords could then be connected on both sides to create a Channel to allow connection of the equipment.

Below is the basic configuration.



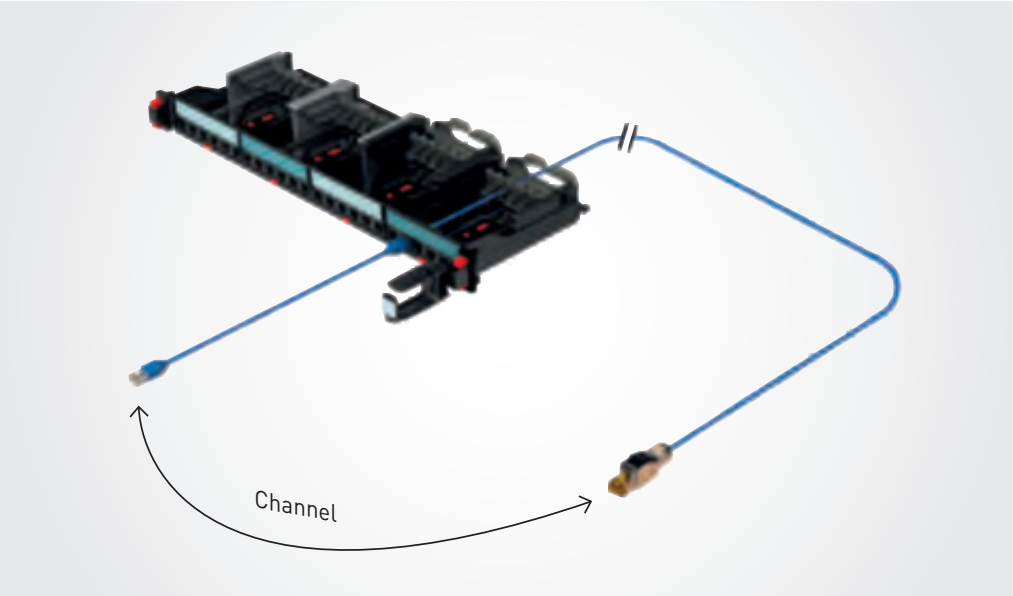
To provide better flexibility, the Channels were allowed up to 4 connectors as shows in the diagram below:



But they were never allowed fewer than the 2 connectors in the basic configuration.

The evolution of technologies has led to a growth of devices connected semi-permanently. This is generally in the false ceiling, and a connection is always done by a professional, rather than by anyone for typical outlets. Examples of such devices and Wi-Fi access points and IP cameras.

This leads to questions whether the mandatory outlet is justified: why not avoid it and connect a plug (free connector) at the end of the cable to directly attach the end device? This is called the Modular Plug Terminated Link (MPTL) and has been recently added as a recognized solution in the standards. Below is a diagram of an MPTL:



The MPTL requires a specific plug (free connector) of the same Category of the link. In exchange for lowering the flexibility which is not required in such application, it provides an increased reliability with fewer products, less space required, simplified compliance to fire reaction requirements, and last but not least, a cost saving.

Legrand field installable plugs for MPTL

Cat. 5e & Cat. 6 UTP
RJ 45 field plugs

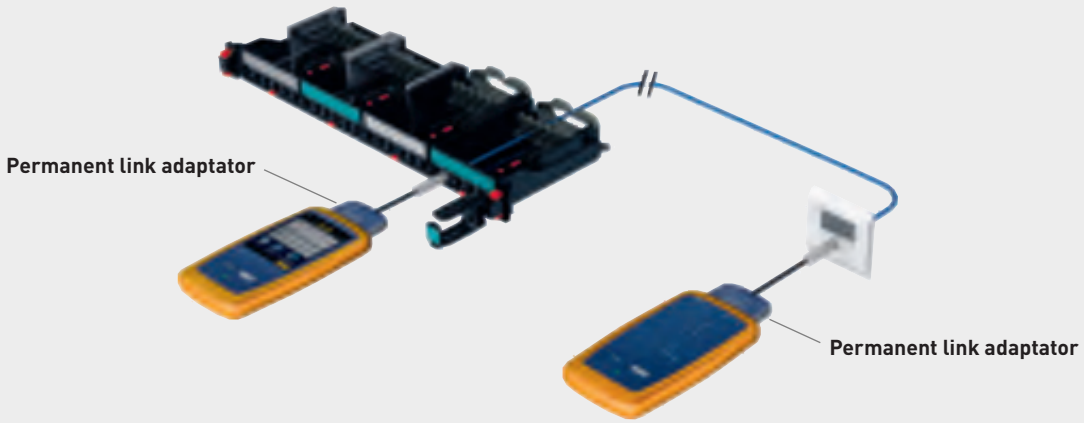
Cat. 5e & Cat. 6 FTP
RJ 45 field plugs

Cat. 6A STP toolless
RJ 45 field plug

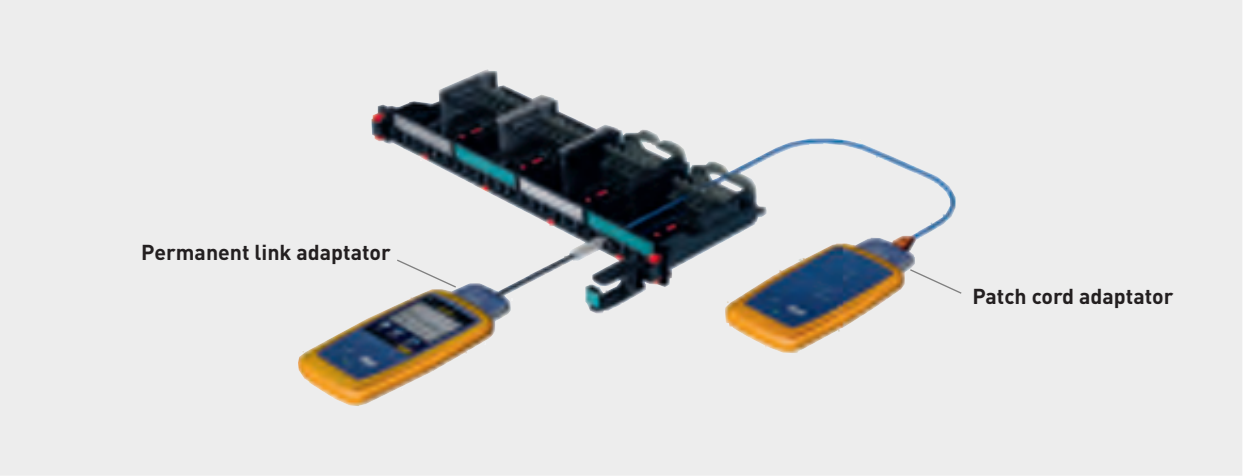
Caution must be used when testing such links. It is not a Permanent Link and is not a Channel. It must be tested as an MPTL with the correct adaptors and test limits.

For certification of a new cabling, only Permanent Link, and now MPTL, are recognized.

Below is the diagram of the Permanent Link testing:



Below is the diagram of the MPTL testing:



Channel can be tested for verification only, before connection of the active equipment, but it is not a certification test as it's linked to the cords used.

CONCLUSION

Structured cabling standards are intended to provide inter-operability and flexibility in the communications infrastructure. Since technologies evolve, so do standards.

Customers should always consider using the latest products for the best life expectancy of the infrastructure.

They should also consider the recent architectures to provide solutions best adapted to their needs, such as the MPTL extremely well adapted for devices connected semi permanently.

Fiber considerations when migrating to 100 Gigabit Ethernet and higher

Multimode fiber systems have been the most cost-effective fiber solution to use in the data center because the transceivers are much less expensive than single-mode transceivers. Multimode transceivers use a vertical cavity surface emitting laser (VCSEL) light source, which is easy to manufacture and package. Multimode fiber systems have a shorter reach than single-mode systems, however most distances are less than 150 m; surveys have shown that more than 80% of data centers extend to 100 m or less. Although single-mode cable is less expensive, after factoring in the total system cost of multimode versus single-mode, multimode is still much less expensive.

Some common approaches used in data centers are summarized in Table 6. Each approach uses short-wavelength (850 nm) transmission over multimode fiber.

The fiber system should be designed around OM3 or better MMF if there are plans to support applications beyond 10 Gbps.

OM3 supports 10 GbE up to 300 m, but only supports 40 GbE up to 100 m. OM3 supports the 100GBASE-SR10 PMD up to 100 m but only supports 100GBASE-SR4 up to 70 m so that is another important consideration. OM4 supports 10 GbE up to 400 m, but only supports 40 GbE up to 150 meters. OM4 supports the 100GBASE-SR10 PMD up to 150 m but only supports 100GBASE-SR4 up to 100 m.

If planning to support 100 GbE and higher in the future, the channel cannot be designed for the maximum distances over which 10G can be supported. Always design for the application that has the most stringent requirements (usually the fastest data rates) even if the application is a future installation.

In addition to selecting the type of fiber, there are several other important considerations when selecting components for a fiber optic cabling system. These include channel insertion loss, polarity and alignment pins.

Channel Insertion Loss/Loss Budget

The channel insertion loss is made up of the insertion loss (IL) of the cable, specified as decibels per kilometer (dB/km), the insertion loss of all mated connector pairs and the insertion loss of splices in that channel. As can be seen in the Table 7, as the data rate increases from 10 Gbps to 40/100 Gbps, the total channel insertion loss or loss budget decreases noticeably.

Table 6: Common Data Center Approaches Using Short Wavelength Transmission

Data rate (Gbps)	IEEE standard	Fiber pairs	Wavelengths
25	Ratified Standard	1	1
40	Ratified Standard	4	1
	Non-Standard	1	2
		1	4
50	Ratified Standard	1	1
100	Ratified Standard	10	1
		4	1
		2	1
	Non-Standard	1	4
		1	2
	Draft Standard	1	1
200	Ratified Standard	4	1
	Draft Standard	2	1
400	Ratified Standard	4	2
		16	1
		8	1
	Draft Standard	4	1

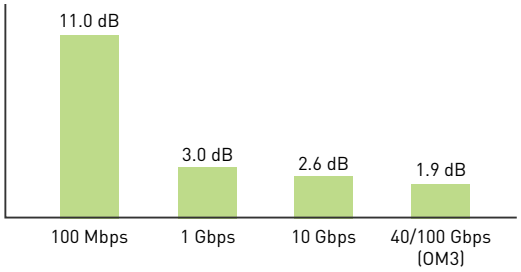
Table 7: Maximum Channel Insertion Loss for short wavelengths applications

	Application	Fiber type	Maximum distance	Maximum channel loss
2-core applications LC duplex or equivalent	10GBASE-SR	OM3	300 m	2.6dB
		OM4/OM5	400 m	2.6dB
	25GBASE-SR	OM3	70 m	1.8dB
		OM4/OM5	100 m	1.9dB
	40G-SWDM4[1]	OM3	240 m	2.1dB
		OM4	350 m	2.5dB
		OM5	440 m	2.5dB
	50GBASE-SR	OM3	70 m	1.8dB
		OM4/OM5	100 m	1.9dB
	100G-BIDI[1]	OM3	70 m	1.8dB
		OM4	100 m	1.9dB
		OM5	150 m	2.0dB
	100G-SWDM4[1]	OM3	70 m	1.8dB
		OM4	100 m	1.9dB
		OM5	150 m	2.0dB
4-core applications LC duplex or equivalent	100GBASE-SR2	OM3	70 m	1.8dB
		OM4/OM5	100 m	1.9dB
8-core applications Typically MPO	40GBASE-SR4	OM3	100 m	1.9dB
		OM4/OM5	150 m	1.5dB
	100GBASE-SR4	OM3	70 m	1.8dB
		OM4/OM5	100 m	1.9dB
	200GBASE-SR4	OM3	70 m	1.8dB
		OM4/OM5	100 m	1.9dB
	400G-BD4.2[1]	OM3	70 m	1.8dB
		OM4	100 m	1.9dB
		OM5	150 m	2.0dB
	400GBASE-SR4.2	OM3	70 m	1.8dB
		OM4	100 m	1.9dB
		OM5	150 m	2.0dB
16-core applications Typically MPO	400GBASE-SR8	OM3	70 m	1.8dB
		OM4/OM5	100 m	1.9dB
20-core applications Typically MPO	100GBASE-SR10	OM3	100 m	1.9dB
		OM4/OM5	150 m	1.5dB
32-core applications Typically MPO	400GBASE-SR16	OM3	70 m	1.9dB
		OM4/OM5	100 m	1.9dB

[1] Not an IEEE standard. Application available as multi-source agreement

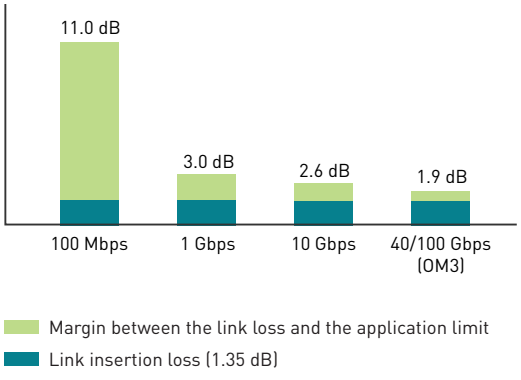
Understanding the impact of each component in the channel loss budget is extremely important when selecting cables and connectors. Often, the cable attenuation performance and bandwidth drive the design of the channel. The impact that a connector can have on the total channel budget can be significant.
The figure below shows the total loss budgets for a 100 m channel at different data rates common to current Ethernet applications. As data rates progress from 100 Mbps Ethernet-based systems to today's 10 Gbps Ethernet-based systems, the fiber optic loss budgets have shrunk considerably from 11 dB to 2.6dB. 40/100 Gbps Ethernet systems have an even smaller budget of 1.9 dB when using OM3 or 1.5dB when using OM4.

Total Channel Insertion Loss by Application



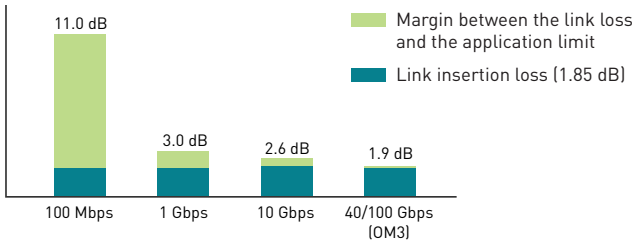
If we look at two channel insertion loss budget examples for 2 and 3 mated pairs, including the cable loss for a 100 m link at 850 nm, the importance of connector loss is apparent.
Using the standard loss for a multimode fiber cable (OM3/OM4, 850 nm) of 3 dB/km (ISO/IEC 11801 3rd Edition-Q2 2017) and an average of 0.50 dB loss per mated connector pair (standards allow up to a maximum 0.75 dB loss and up to 4 connections), the calculated loss for a 100 m channel with 2 mated connector pairs is 1.35 dB ((3.5db/km * 0.1km) + (0.5 * 2)). Applied to the loss budgets, as shown in the figure below, this is not significant for 100 Mbps systems. However, the insertion loss takes up a little more than half of the 10G budget and almost three-quarters of the 40/100 Gbps budget.

Channel Insertion Loss In a 100 M Channel with 2 Mated Connector Pairs



If we look at a 3-connector-pair channel, the loss budget rises to 1.85 dB ((3.5db/km * 0.1km) + (0.5 * 3)), as shown in the figure below. This is more than 70% of the 10 Gbps budget and almost the entire 40/100 Gbps budget. This would exceed the loss budget using OM4 for 150 m, which is 1.5 dB because of the longer distance, proving the insertion loss of a connector is very important.

Channel Insertion Loss In a 100 M Channel with 3 Mated Connector Pairs



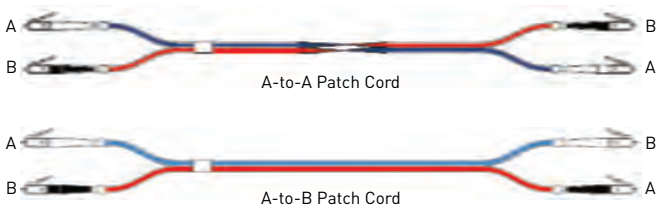
It is important to consider the trade-off. If the IL of one component can be reduced, there will be room for extra loss in another component. For example, if using OM4 at only 100 m instead of 150 m, the loss of the cable will be less because IL is directly related to distance (dB/km). This can make room for more mated connector pairs. However, all of the IL gain can easily be negated with inferior connector components.

Polarity

Don't forget to plan for the correct polarity. Maintaining correct polarity guarantees an optical path from the transmit port of one device to the receive port of another device, known as the polarity flip. There are several different methods to maintain polarity, but the different methods may not be interoperable. There are three methods depicted in the standard ISO/IEC 14763-2 "planning and installation"; methods A, B and C. There are other proprietary methods used by various manufacturers.
Each method requires a specific combination of components to maintain polarity. Assuming duplex signaling, using an MPO backbone cable, cassettes and patch cords, the following list shows the component options that are used in specific combinations for each of the polarity methods.

The options for components are:

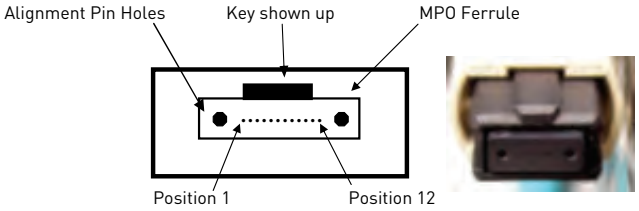
- MPO-to-MPO backbone cables: Type A, B or C
- MPO-to-LC cassettes: Method A or Method B
- Patch cords: Type A-to-A or Type A-to-B



For example, with duplex signaling, a Method A polarity scheme uses a Method A cassette, Type A trunk cable and a type A-to-B patch cord on one end of the channel and a type A-to-A patch cord on the other end. The transmit to receive flip occurs in the patch cord at one end. Method B uses a Method B cassette and trunk cable and an A-to-B patch cord at each end because the flip occurs in the cassette and trunk cable. Method C uses a Method A cassette with a Type C trunk cable and A-to-B patch cords at each end. The flip occurs in the trunk cable only.

Polarity becomes more complicated when migrating to 40/100 GbE because parallel transmission replaces duplex transmission. Parallel fiber optic links integrate multiple transmitters in one transmitter module, multiple fibers in fiber array connectors and multiple receivers in one receiver module. Multiple transmitters and receivers may also be integrated together in a transceiver module.
The three methods, A, B and C, are expanded in the ISO/IEC 14763-2 standard to include links that use parallel signaling in one row. Array connectors are keyed to maintain polarity. A keyed MPO connector is shown in the figure below.

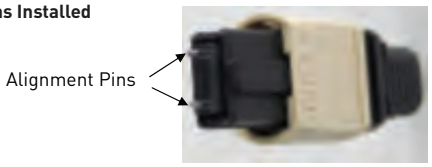
MPO Plug Fiber Positions Looking at the Ferrule End with Key Up



Alignment pins

When mating connector plugs that use alignment pins, like the MPO connector, it is critical that one plug is pinned and the other plug is unpinned. Because all known transceivers that accept MPO plugs are pinned, they accept only unpinned plugs.

MPO Connector With Pins Installed



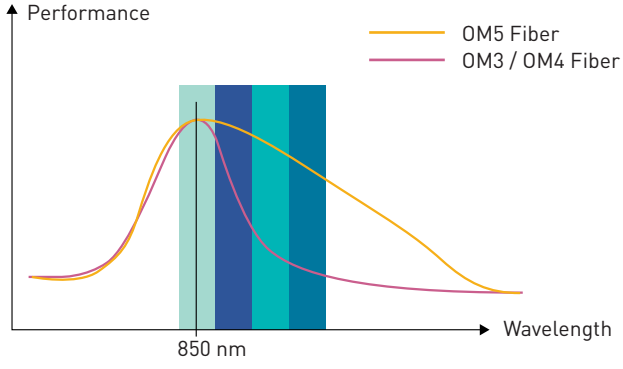
The pinned connector is typically located inside the panel to help protect the pins from being damaged (i.e. the fixed connector is pinned and the connector that is frequently removed and handled is unpinned). For example, cassettes are typically pinned and trunk cables are typically unpinned.

Consult the manufacturer since there may be exceptions required for your design.
If not properly cleaned, alignment pins can collect debris around the pins, resulting in the two components not mating correctly.

A new fiber

The wideband MMF TIA standard was approved for publication in the middle of 2016. The standard specifies high bandwidth 50 µm core diameter/125 µm cladding diameter, laser-optimized optical fiber that is optimized to enhance performance for single wavelength or multi-wavelength transmission systems with wavelengths in the vicinity of 850 nm to 950 nm. The actual operating band is from 850 nm to 953 nm. The effective modal bandwidth (EMB) for this new fiber is specified at the lower and upper wavelengths: 4700 MHz•km at 850 nm and 2470 MHz•km at 953 nm. ISO/IEC has assigned the OM5 designation for this type of fiber and it was ratified under IEC 60793-2-10 type A1a.4.

This is a significant standard for multimode fiber because it makes wavelength division multiplexing (WDM) possible over multimode fiber. Since the fiber is optimized for short wavelengths, the wavelength division multiplexing used over multimode fiber is commonly called short wavelength division multiplexing (SWDM). Up until now, WDM has only been used with single-mode fiber. WDM is important because it is one of four ways to increase the data rate: WDM, parallel transmission with multiple fibers, increased modulation and using multi- level coding.
To show how this new standard can influence fiber optic plant for current and in-progress Ethernet standards refer to Table 8. The current 40 GbE (40GBASE-SR4) standard, using short wavelength over multimode fiber (MMF), uses a channel rate of 10 Gbps with eight fibers; four fibers for transmission and four fibers for reception. Using OM5 that supports four wavelengths (in effect four channels) the four transmit fibers are reduced to one fiber, as are the receive fibers. The fiber optic cable plant is reduced from eight fibers to two. 100GbE is an even better example because the original standard released in 2010 (100GBASE-SR10) required a total of 20 fibers, 10 transmit and 10 receive, using a 10Gbps channel rate. A new 100GbE standard (100GBASE-SR4) was published in 2015 specifying a 25Gbps channel rate which allowed the fiber count to be reduced to a total of eight fibers; the same fiber count as 40GbE. This is an example of how increased modulation reduces the fiber count. Using SWDM with the new OM5 can reduce the fiber optic plant to two fibers for 100 GbE using a 25 Gbps channel rate. With the 50Gbps channel rate, it can allow 200Gbps on 2 cores, and with the future 100Gbps channel rate, it could allow 400Gbps on 2 cores.



As was mentioned, Phase I of the 400GbE (IEEE 802.3bs) standard ratified transmission over multimode using parallel transmission with a channel rate of 25 Gbps. This requires a total of 32 fibers. Employing SWDM over OM5 reduces the fiber count to 8 fibers, 25% of the number of fibers required in Phase I.

What's coming?

IEEE 802.3 has provided the 50Gbps channel rate, allowing 100Gbps on 4 cores and 200Gbps on 8 cores using parallel optics, and later on 400Gbps on 16 cores.
IEEE 802.3db working group has now started work on the 100Gbps channel rate which will be used to create the following applications:

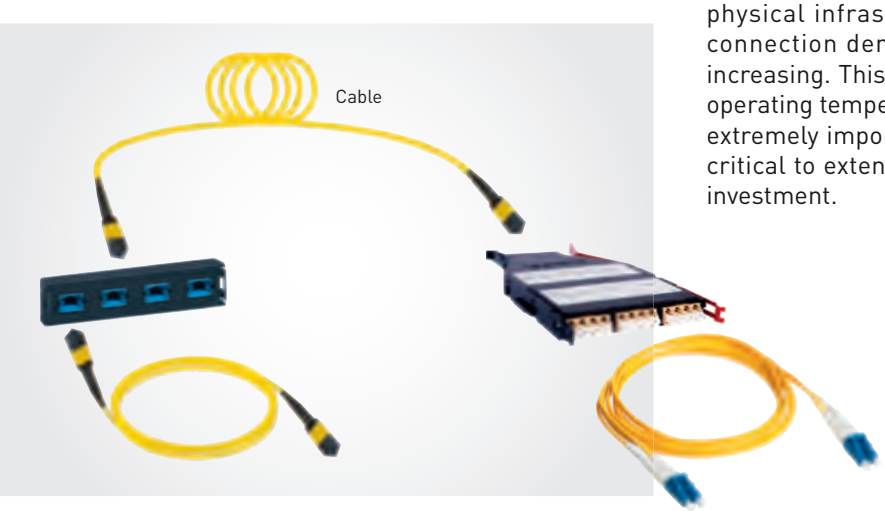
- 100Gbps on 2 cores
- 200Gbps on 4 cores
- 400Gbps on 8 cores

These are specifically designed for end-of-row cabling, with 2 distances: 50m and 100m variations.
In the meantime, a new architecture as developed in the active equipment: Breakout mode. This involves using a single MPO connection in a switch, which then is split into multiple connections with duplex connectors. The advantages are multiple:

- Fewer switch ports needed for a given number of devices connected.
- Fewer ports needed on the fiber patching
- Fewer cords needed for patching
- Lower connector attenuation than when using parallel-to-duplex (MPO-to-LC) cassettes on both sides.

An example is a current 200G port that can breakout into 4 duplex ports of 50Gbps each.
These new IEEE 802.3db applications are specifically designed to allow the breakout mode, for example allowing a 400Gbps port to breakout into 4 ports of 100G.

Example of cabling for Breakout mode:



This leads to a new cabling architecture, where instead of having the same connectors on both ends, would have an MPO/MTP connector at one end, and duplex connectors of type LC or equivalent on the other end. This architecture can allow the following evolutions on multimode fiber:

- 40Gbps to 4 x 10Gbps
- 100Gbps to 4 x 25Gbps
- 200Gbps to 4 x 50Gbps

Conclusion

Before selecting a product for your data center design, establish the fastest application your structured cabling will need to support. Multimode fiber systems are more common than single-mode systems for short distances because they are more cost-effective. Selecting OM4 will provide longer-distance support or more connections over shorter distances compared to OM3. And selecting OM5 will additionally ensure compatibility for new SWDM applications that allow the increase of data rates without increasing the number of fibers needed.

The type of connector is determined by the transmission; LC for duplex transmission and MPO/MTP® for parallel transmission. And new architectures take advantage of the breakout mode, allowing the reduction of ports on the switches.

Channel insertion loss is the foundation for design, so consider high-performance, low-loss components.

You will also need to consider the polarity method to be used and then select the correct components to support that method. If using array connectors for parallel transmission, consider which components require pins and which do not. The best option is to work with the manufacturer to make sure the correct components are selected.

Don't forget to put as much thought into designing your physical infrastructure as the structured cabling. The connection density in switches, servers and routers is increasing. This means more cable to manage and higher operating temperatures, making properly managed airflow extremely important. The correct infrastructure design is critical to extend the life of the network and protect your investment.

The next step in fiber connectors

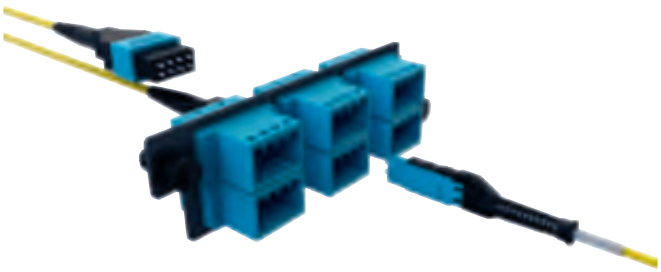
Fiber connectivity has gone through a couple of evolutions. First generation in data networking were the SC and the ST connectors. The next generation, providing higher density, where the Small Form Factor (SFF) duplex connectors. This was our introduction to the LC connector. The MPO came later for supporting parallel transmission. There were other fiber connectors in both the 1st generation and SFF footprint, however the ones mentioned have become the most common in data networks.

Data center growth and transceiver design that requires a duplex optical connector with a smaller footprint, than the LC, are driving a 3rd generation of duplex connectivity—very small form factor (VSFF) optical fiber connectors. These new VSFF connectors include the CS, SN and MDC. All are a push-pull style to make insertion and extraction easier. The CS was developed as a replacement for the LC connector enabling higher density. The SN fiber connector provides increased density over the CS and enables breakout at the transceiver. The MDC connector supports the highest density of the three, supports breakout at the transceiver and enables simple polarity reversal in the field.

Connector	Density in 1 RU (rack unit)	Comparison
LC	72-duplex ports / 144 fibers	Highest density available today
CS	168-duplex ports / 336-fibers	More than 2x LC density
SN	192-duplex ports / 384-fibers	Higher density than CS
MDC	216-ports / 432-fibers	Highest density; 3x LC density; polarity reversal

Along with these new VSFF connectors, new ways to break out parallel to duplex transmission is becoming available. Traditionally, breakout from a higher to a lower data rate was done with a cassette or a harness. Cassettes make management easier but add two connections to the channel. Harnesses only add one connection however, they are more difficult to manage than patch cords. New solutions in the market are providing options that offer the advantages of the cassette and harness in one—breakout to patch cords for easy management with only one connection added.

The example shown breaks out an 8-fiber trunk to four MDC connectors. This provides very high density with only one connection in the channel. Yes, you can have your cake and eat it too! Use of the MDC connector makes polarity easily reversable without the need for special tools. Polarity can be changed for both multimode and single-mode, which is usually not possible because of the angled polish.



Historically, equipment has driven the adoption of new connectors. With new breakout options, like the one shown here, both connectivity and the equipment manufacturers will drive market adoption.

Knowing the right questions to ask is the key. Technology is always evolving, inspiring new ideas and ways to do things. Keeping up with changes can be challenging and time consuming. You don't need to know every option available; you just need to ask the right questions to select the best connectivity for your application. Nothing is "future-proof" but making the right connectivity decisions lengthens the life of the structured cabling through several generations of equipment.

Cable fire ratings - Construction Projects Regulation (CPR) Applied to Structured Cabling

What is the CPR?

The Construction Projects Regulation (CPR) is a European law published in 2011, with a classification ratified in 2016, to impose minimum fire performance to products installed permanently in buildings. It covers, among other items, the communications cables fixed in the building, but not the removable items such as patch cords and user cords. Vendors are required to comply since July 1st, 2017 and the fire rating must be identified on the cable packaging along with the CE mark. The associated declaration of performance (DoP) must be made available to customers.

The EU regulation enforcing the standard by law is applicable to all European Economic Area (E.E.A.) member states: Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

It also applies in the countries voluntarily participating to be part of the single market: Iceland, Liechtenstein, Norway and Switzerland. In addition, four other countries are E.U. candidates and in the process of incorporating EU legislation into national law: Montenegro, Macedonia, Serbia and Albania. Finally, Turkey is an associate member, voluntarily following EU regulations.

Why do we care since we already have LSZH?

Previously, cables sold in Europe were classified in 2 types depending on their outer jacket:

• PVC: Poly Vinyl Chloride. A type of plastic that, in case of fire, usually burns very fast and emits large amounts of thick and irritating smoke. Translation: fire spreading quickly, people can't see the exit because of the smoke, and can't breathe because that smoke is burning their lungs.

• LSZH: Low Smoke Zero Halogens. The "Low Smoke" means that people should be able to still see in case of fire. Fluorine, Chlorine, Bromine, Iodine and Astatine are highly reactive in case of fire and are the principal irritating components of the cable sheaths. The "Zero Halogens" means avoiding them and thus cables are less irritating to the human lungs in case of fire.

The problem is that these terms imply only the type of material of the jacket, but not the conductor isolation material, and do not impose any actual fire resistance of the cable. Some manufacturers chose to comply with certain IEC fire rating tests, but those were insufficient and not mandatory.
A second issue was discovered more recently with less reputable suppliers: non-compliance. Some cables claimed to meet the ratings, but when tested they failed miserably. So, there was a necessity to also introduce a solution to guarantee the rating rather than simply rely on manufacturer claims.

Details of the CPR

The CPR now classifies cables according to the characteristics of flame propagation and heat release, as well as additional characteristics: smoke production, smoke acidity, and flaming particles. Then it also introduces various levels of conformity control over the results. As an example, a CPR classification is written "D_{CA} s2 d2 a1". D_{CA} is the Euroclass and "s2 d2 a1" are additional criteria.
The classification consists of 7 Euroclasses which define the fire reaction performance. Below is a table summarizing the classification:

TESTING AND LEVEL OF CONTROL:

		A_{CA}	$B1_{CA}$	$B2_{CA}$	C_{CA}	D_{CA}	E_{CA}	F_{CA}
Euro classification	Gross heat of combustion	yes						
	Flame propagation		yes	yes	yes	yes	yes	no
	Heat release		yes	yes	yes	yes	no	no
Additional criteria	Smoke production, flaming droplets, smoke acidity		yes	yes	yes	yes	no	no
Control of compliance	Type Testing by independent lab	yes	yes	yes	yes	yes	yes	no
	Production sampling by certification body	yes	yes	yes	yes	no	no	no

Cable fire ratings - Construction Projects Regulation (CPR) Applied to Structured Cabling

EXPLANATION OF THE EUROCLASSES:

Euroclass	Reaction to fire	Comments
A_{CA}	Non combustible	It is near-impossible to produce non-combustible communication cable.
$B1_{CA}$	Various level of flame propagation and heat release	D_{CA} is the lowest cable type with all aspect tested and certified by an independent laboratory. Higher classes offer improved resistance to flame propagation and heat release but their additional criteria could be identical.
$B2_{CA}$		
C_{CA}		
D_{CA}		
E_{CA}	Minimum flame propagation testing	Heat release is not tested. Additional requirements are not tested, so the spread of fire is controlled, but the evacuation of people is limited due to toxic fumes. This is the first level of cable to require independent testing.
F_{CA}	No testing	Offers absolutely no guarantees. Should be avoided.

DEFINITIONS OF THE ADDITIONAL CRITERIA:

Smoke production	Performance
s1	Very low smoke production
s1a	Very low smoke production and high transmittance
s1b	Very low smoke production and medium transmittance
s2	Average smoke production
s3	No performance guaranteed

Particles / Droplets	Performance
d0	No droplets / flaming particles
d1	Low droplets / flaming particles
d2	No performance guaranteed

Smoke acidity	Performance
a1	Very low smoke acidity
a2	Low smoke acidity
a3	No performance guaranteed

These additional criteria are added after the letter of the Euroclass in order s, d, a. and they allow for more than 200 combinations. For obvious reasons, most will not exist, and only the most useful ones will be used.

It is important to understand that the lowest rating in each type means that the product actually does not meet the requirements.

The smoke production can impair visibility and restrict people from finding the exit. If the cable is compliant to "s1", then an additional test of transmittance measure exactly how far a person can see. This factor can be important in fire escape routes, but less in closed rooms where the exit is known.

The acidity is the primary danger in case of evacuation and is the main cause of death.as it seriously impairs breathing. However, it's only an important factor with large quantities of cables in area where people cannot exit rapidly.
The flaming particles pose two risks: spreading the fire to other areas and burning people nearby. So, when contained inside cable management, this aspect has far lower risk than with apparent cables.

How to choose?

The European Union imposes the cables to comply with this classification, but it does not impose any specific requirement. This is the decision of each country and will depend on building types. Some countries have already defined their requirements, but for the others, the advice below can help designers make informed decisions.

If it were possible, all installations would use only the highest fire resistance possible. Unfortunately, there are always tradeoffs to obtain an optimal balance between safety, ease of installation and cost.

Euroclass A_{CA} will most likely not exist in communication cables.
Euroclass $B1_{CA}$ and $B2_{CA}$ are generally limited to "protected" emergency exits. These are areas used strictly for emergency and with no burning material inside. The only cables entering this space are to connect fire safety equipment such as fire escape signs or fire detection. Any other cables crossing that space should be enclosed in a fire rated pathway.
Euroclass C_{CA} is the first level to require regular product sampling by a certification body, so the cable not only has added cost of manufacturing but also cost of control. This can be justified for high density public areas, or when mandated by law.
Euroclass D_{CA}, offers adequate reaction to fire with a certification of compliance from an independent lab. This is the most common cable.

At the bottom of the list, Euroclass F_{CA} is not guaranteed for anything, and Euroclass E_{CA}, although tested for fire propagation, is not tested for heat or for any additional criteria. These cannot be recommended, although E_{CA} could be used where a very limited quantity of cables is installed as these would have a low impact in case of fire.

Then additional criteria must be decided. In Europe, the majority of cables are installed either in the false ceiling, in walls or in closed wall mount containment. This is an important aspect for selecting the right options. The smoke should be controlled but it's not so critical inmost areas since there are already barriers.
We can generally see the D_{CA} associated with the "s2", and C_{CA} and above associated with the "s1" requirement. The "s1a" and "s1b" are generally applied only in very specific contained fire exits and associated to the highest Euroclasses.

While the cables are not directly inside the user space, the particles have marginal influence on the ability for people to evacuate. These could have an impact in an open containment directly above a main exit corridor where flaming droplets could pose a threat, but in most cases, "d2" is perfectly acceptable. If the cables are crossing a critical area, the simplest is to enclose them in fire resistant containment for that area.

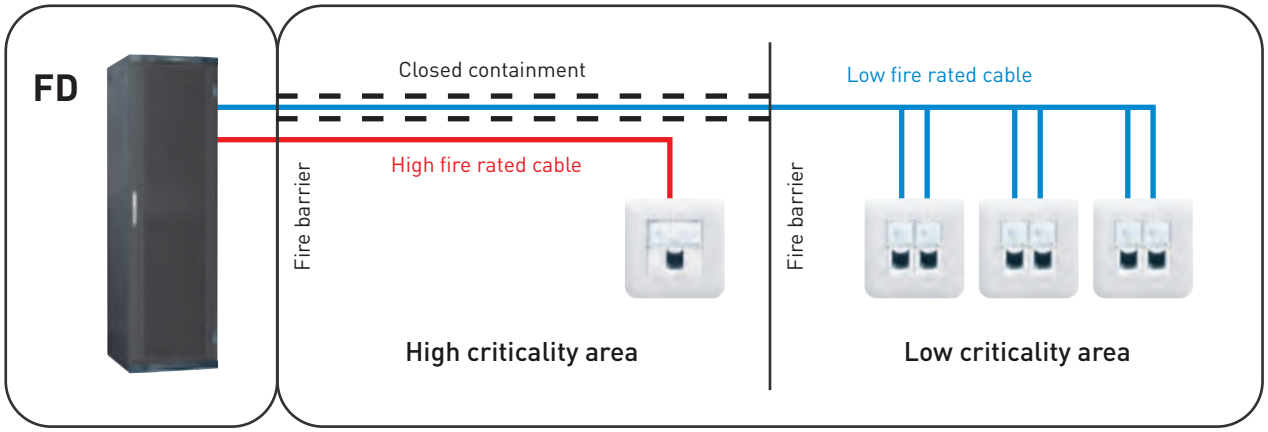
Acidity: it's obvious that a single cable enclosed in a conduit does not have the same effect as a bundle on an open cable tray in a corridor. The general market acceptance is that some acidity is tolerated for low quantity of cables in conduits in residential but is never allowed for any common areas or public buildings. "a1" is the only safe choice if acidity needs to be controlled.

Cable fire ratings - Construction Projects Regulation (CPR) Applied to Structured Cabling

Design

The CPR is a European regulation to categorize cables according to their reaction to fire. Each country in E.U. can define its own requirements for each type of building based on the classification provided.

In countries where no specification is imposed, it is up to the designers to lead the industry in providing secure installations, allowing people to safely exit building in case of fire.



Unlike electrical cables, data cables cannot be spliced, so it's impossible to have a single circuit with various fire ratings according to areas crossed. It could seem simplest to always use the cable with the highest fire rating for the complete installation, but this will have significant impacts on cost and installation methods. The most practical solution is to choose the lowest acceptable rated cable for most of the project, then adapt to specific cases such as containment when crossing a sensitive area or specific cables only for certain needs. A smarter design can improve both costs and safety.

PoE standards and architecture

Standards

Applications converging over IP allow communications to occur over Ethernet, a common standard which has evolved to support both data and low voltage power over industry standard category cabling. Many of the applications mentioned previously are also leveraging devices that have become more power efficient. With these devices having lower power requirements, they are now able to be powered using low-voltage direct current (DC) over a single Ethernet cable.

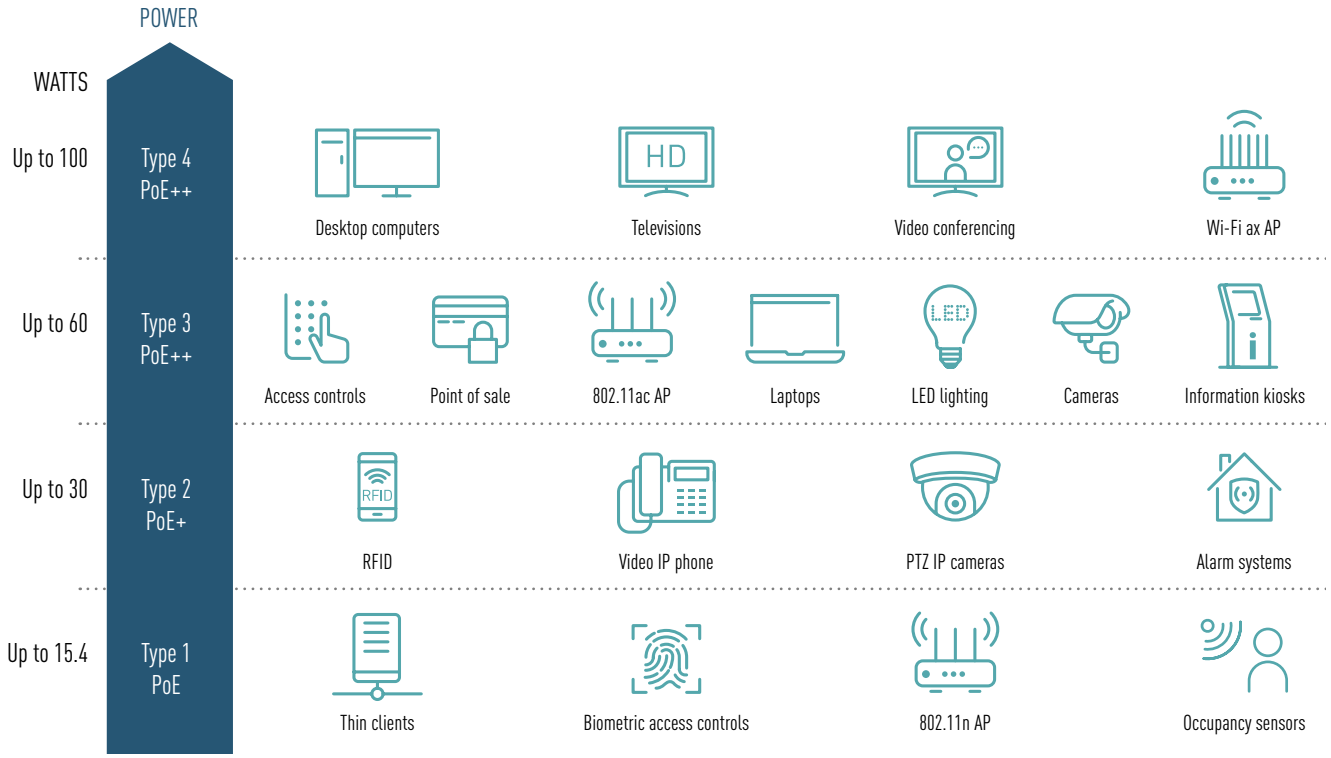
The IEEE sets the standard for Power over Ethernet (PoE) which allows for the simultaneous transmission of data and low-voltage power over Ethernet cabling.

With the ratification of 4-pair PoE, 802.3bt, the latest IEEE standard allow up to almost 100 Watts of DC power to be delivered from the power source equipment alongside data transmissions in a single category cable.

STANDARDS AND APPLICATIONS

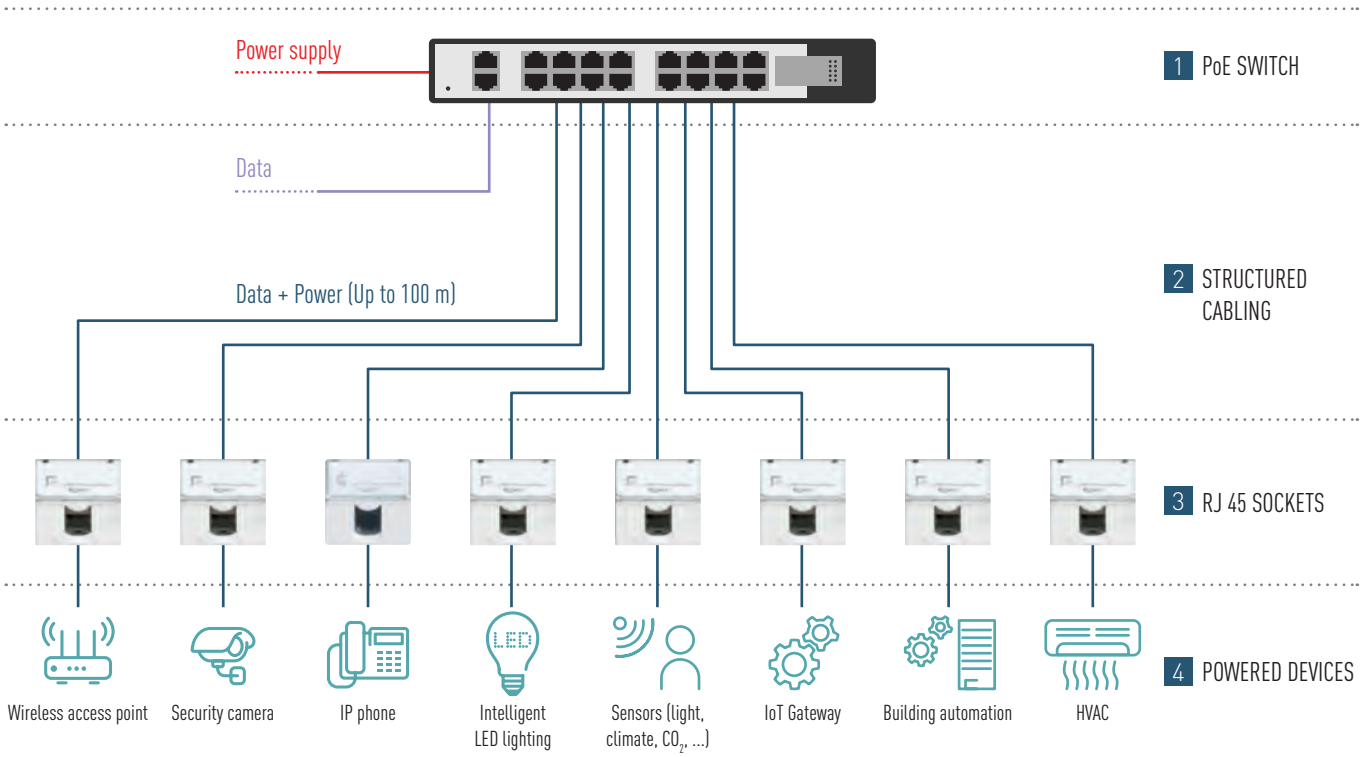
Organisation/standard	Watts from power source equipment
IEEE 802.3af 2-pair PoE	Up to 15.4 W
IEEE 802.3at 2-pair PoE+	Up to 30 W
IEEE 802.3bt (Type 3) 4-pair PoE	Up to 60 W
IEEE 802.3bt (Type 4) 4-pair PoE	90 W

When considering a connected infrastructure design, it is important to start by determining the type of applications that will be implemented, both now and in the future, and then determine the power supply requirements needed to power the connected devices.



Architecture

BUILDING SYSTEMS ARE MOVING TO A SINGLE IP NETWORK



1 PoE SWITCH

A Power over Ethernet switch is a device which supplies power and data on Ethernet cabling. It is draw power from its own conventional power source and provide power to the rest of the PoE system.

2 STRUCTURED CABLING

The twisted pairs cable is the power and data transmission medium of a PoE system. It is used to provide the link between two devices enabling bi-directional communication and uni-directional supply of power.

3 RJ 45 SOCKETS

Universal RJ 45 socket to connect devices.

4 POWERED DEVICES

A powered device is a device which receives power from the power sourcing equipment. It does not require its own conventional power source.

Shielded Category 6A cabling is recommended for optimum future-proofing and is the best choice for the Internet of Things and is recommended by current design standards for BIoT.

Compliance of the cabling to PoE

The international installation standard ISO/IEC 14763-2 imposes consideration of PoE for any new installation.

It defines three Categories:

Category	I_c - average	i_c	Controls required during...	
			attachment of remote powering equipment	planning of subsequent cabling installation
RP1	⩽ 212 mA	⩽ 500 mA	Yes	Yes
RP2	> 212 mA < 500 mA	⩽ 500 mA	Yes	Yes
RP3	-	⩽ 500 mA	No	Yes

The infrastructure must be of type RP3 to comply to residential, commercial and industrial environments.

"For installation of cabling in accordance with ISO/IEC 11801-2, ISO/IEC 11801-3, ISO/IEC 11801-4 and ISO/IEC 11801-6, the planning, installation and administration requirements of Category RP3 shall be applied."

This means that it allows the maximum PoE (Type 4 90w) on 100% of the links without overheating and without disrupting the Ethernet signal.

In order achieve the RP3 category, multiple heat calculations must be made considering the environment temperature, types of cables, type of cable management, the number of cables per bundles, shape of the bundles and separation of the bundles. This is then used to calculate the maximum achievable distance of the channels at the estimated cable temperature.

Legrand has made the PoE guide for simplified installation conditions by making some assumptions. Following this guide provides guaranteed distances and compliance to RP3 Category.
As a reminder, all PoE assumption and calculations must be documented and kept in the technical specifications for reference in future additions to the cabling.

WANT TO KNOW MORE ABOUT PoE AND INCREASE THE POWER OF YOUR NETWORK?

CONTACT YOUR LOCAL SALES REP TO GET OUR PoE GUIDE!

Structured cabling: the Legrand 25-year application warranty

Almost all manufacturers now offer their warranty on the structured cabling systems. Because these warranties can have significant difference, and with promises ranging from 15 years to 25 years or even "lifetime", it can be complicated for the end user to understand the concept.

What the warranty really means

The duration of the warranty is actually the least important part of the contract. Anyone can assume that a warranty above 15 years simply means that the manufacturer trusts his product. In fact, products are only a part of the warranty, but not the main aspect. It's actually about creating a trust relationship between the end user and the manufacturer. It's about the manufacturer making the following statement: "If you choose my products, I will ensure that everything functions properly so that you don't have to worry about any risks." Now let's look at what needs to be covered.

> "IF YOU CHOOSE MY PRODUCTS, I WILL ENSURE THAT EVERYTHING FUNCTIONS PROPERLY SO THAT YOU DON'T HAVE TO WORRY ABOUT ANY RISKS."

Actors

Since the objective is for the end user to obtain support from the manufacturer, he must be the beneficiary of the contract. The installation company can and must be stated in the contract but can be neither the benefactor nor the beneficiary. In either of those two cases, the end user would lose the relationship with the manufacturer.

Questions to ask about the manufacturer

How long has the manufacturer been in existence? Will that company still exist in 25 years to honor the warranty? Does the company have local legal representation in the country to support this warranty? And do they have the sufficient financial strength in case of warranty claim?

The end user should therefore first verify the capacity of the manufacturer to honor that warranty based on the size of company, historical background, and reputation.

What about the labor?

The best of products cannot guarantee any performance unless the installation is done in the proper way. For this reason, manufacturers have created a training and certification program for installers.

It generally includes hands-on product practices, but most important, it covers the standards and rules of installation. This ensures the manufacturer that his products will be installed according to best practices and therefore offer the optimal performance. And by having the tight relationship with the installer, the manufacturer is aware of the progress of the installation and may make site visits and on-site support.

> THE COMMON PERFORMANCE WARRANTY THEREFORE LEAVES SIGNIFICANT RESPONSIBILITY ON THE END USER

Generally, each person having passed the training receives a certificate of success, and the company obtains a "Certified Installer" certificate. It is not uncommon for end users to verify these documents during the tender process.
In this sense, by requesting a warranty, the end user is actually ensuring the right technical support as well as project control from the manufacturer.

Local support

Local support is a critical aspect of a warranty program. In case of technical problem, how long will it take the manufacturer to visit the site? What legal rights does the end user have when he received a warranty from an overseas supplier without a local office. In most countries, the company legally responsible is the importer, which might be the distributor and not the manufacturer. The end user should always consider how he will be able to communicate with the manufacturer, how he'll obtain the right support, and what means he may have to protect his interests in case of disagreement.

The application warranty

The most common warranty is the Performance Warranty. In this version, the manufacturer ensures that the installer is properly trained, and request him to sign a contract where he confirms that he has followed the proper methods.

A very simplistic explanation of this warranty is the following:

- The products are all compliant
- The installation is compliant
- The performance of the links is compliant (Class EA for example)

At first glance this may seem sufficient, but although this does confirm the confidence of the manufacturer in his products and in the installation from the installer, it may not actually correspond to the expectations of the customer. Here are some details not covered:

- In fiber, the links are only required to meet standard values, which may not actually allow the applications expected. For example, multimode OM4 links of 3 connectors with Insertion Loss 2.25dB are perfectly compliant to standards, but none of the recent applications will function due to a budget limited to around 1.8dB.

- In copper, a Channel is defined for 100m maximum. But this is only at 20°C. As temperature increases, due to environment or to PoE, performance degrades. If the link no longer functions because the temperature increased, the manufacturer does not consider this a defect and will remind the customer that he's responsible for respecting standards during operations. The customer would therefore be expected to either maintain the temperature at 20°C, or to have designed with shorter links to compensate for temperature.

The common Performance Warranty therefore leaves significant responsibility on the end user. For this reason, Legrand has innovated with a 25-year Application Warranty. It's intended to ensure the customer that not only everything is compliant, but also that all applications will function on the system.

Here are the key features:

FIBER

Legrand supervises the design and architecture to ensure that all the fiber links have adequate lengths to support the applications. Then the standard test limit used for testing are replaced with far stricter limits not only reflecting the superior performance of Legrand products, but also assuring all the requested applications.

A list of applications is made available to the customer.

COPPER

The temperature has never been such an issue until the appearance of PoE. Sending power in a cable always creates heat, which in the case of PoE, could increase the temperature of more than 30°C. The installation standards provide all necessary information to ensure that the applications still function under PoE. But in some cases, the customer may need to assess the existing power through the cables for every new connection of a device. This can be extremely complex to implement in the operations processes. Below is a table of the Remote Powering Categories as defined in the International installation standard ISO/IEC 14763-2:

Category	I_c - average	i_c	Controls required during...	
			attachment of remote powering equipment	planning of subsequent cabling installation
RP1	⩽ 212 mA	⩽ 500 mA	Yes	Yes
RP2	> 212 mA < 500 mA	⩽ 500 mA	Yes	Yes
RP3	-	⩽ 500 mA	No	Yes

Compliance to the ISO/IEC 11801 series requires an installation compliant to ISO/IEC 14763-3, which mandates compliance to Category RP3.

This allows the maximum PoE (Type 4 90w) on 100% of the links without overheating and without disrupting the Ethernet signal, but most of all, without the need to control during connection of devices.

In order achieve the RP3 category, multiple heat calculations must be made considering the environment temperature, types of cables, type of cable management, the number of cables per bundles, shape of the bundles and separation of the bundles. This is then used to calculate the maximum achievable distance of the channels at the estimated cable temperature.

> THE CUSTOMER MAY NEED TO ASSESS THE EXISTING POWER THROUGH THE CABLES FOR EVERY NEW CONNECTION OF A DEVICE

This can be quite a challenging work, so Legrand has made a guide for simplified installation conditions by making some assumptions. Following this guide provides guaranteed distances and compliance to RP3 Category.

As part of the Application Warranty, Legrand provides the customer with the initial installation conditions so that the installer can provide a compliant installation. This information is recorded as part of the warranty, and all measurements are verified to comply to stated lengths. This means that Legrand is guaranteeing all applications, including PoE on the structured cabling, as part of the 25-year Application Warranty.

Legrand is therefore able to remove this responsibility from the customer and include it in the warranty.

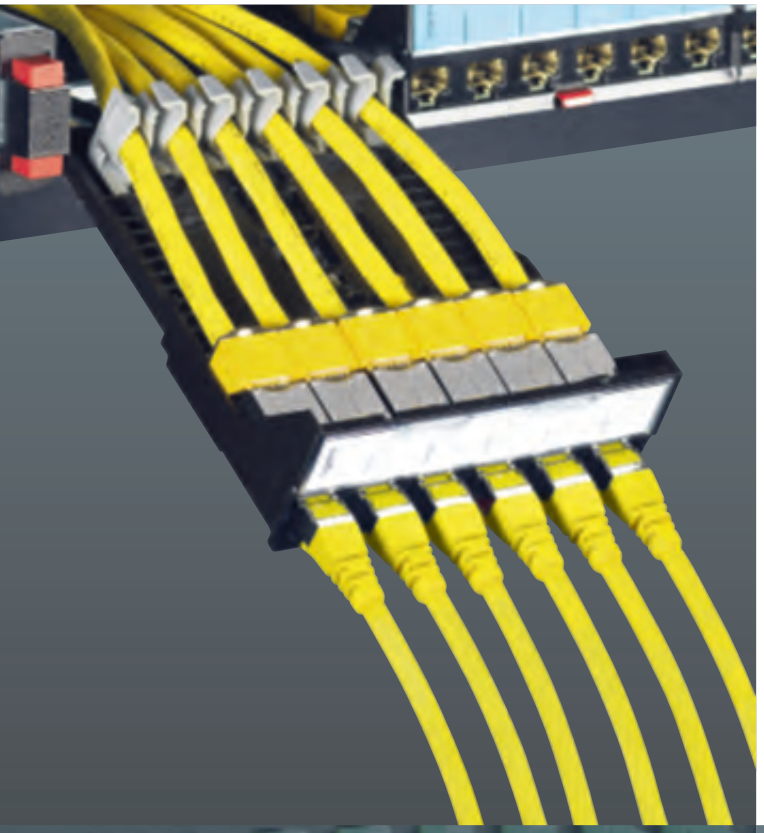
The customer can then be confident that all stated applications function on the copper cabling, including PoE, if the environment remains withing the assumptions stated.

> LEGRAND IS GUARANTEEING ALL APPLICATIONS, INCLUDING PoE ON THE STRUCTURED CABLING, AS PART OF THE 25-YEAR APPLICATION WARRANTY

Conclusion

Warranties are not all alike. The customer should check the details such as the local presence and reliability of the manufacturer, and most important, the warranty coverage.

The Legrand 25-year Application Warranty goes far beyond the traditional Performance Warranties and offers what's really important to the customer: peace of mind.



LCS³
STRUCTURED CABLING

NEW PRODUCTS

LCS³ copper system
LCS³ Series HDJ flat panels, cassettes and RJ 45 HD Jack connectors
(p. 132)

LCS³ copper system
PoE Ethernet tablet switches, 5 ports :
- with EU power supply cord
- with BS power supply cord
(p. 133)

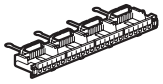
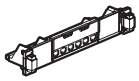
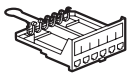
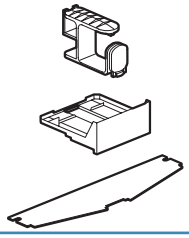
LCS³ fiber optic

Meet-Me Room solutions: cassettes, frames and accessories

(p. 139)

Legrand cabling system, LCS³ copper selection chart

patch panels and connectors

			Cat. 8	Cat. 6A	Cat. 6	Cat. 5e
LCS³ 1U 19" FLAT PATCH PANELS						
	1U patch panels equipped with 24 connectors	STP	0 337 82	0 337 72	0 337 62	-
		UTP	-	0 337 70	0 337 60	0 337 50
		FTP	-	-	0 337 61	0 337 51
	1U patch panels to be equipped	With cassette	0 337 90	0 337 90	0 337 90	0 337 90
		Without cassette	0 337 91	0 337 91	0 337 91	0 337 91
	1U High Density patch panel to be equipped with 48 ports		-	0 337 93	0 337 93	0 337 93
LCS³ 1U 10" FLAT PATCH PANELS						
	1U 10"patch panels to be equipped	Up to 6 connectors	0 337 98	0 337 98	0 337 98	0 337 98
		Up to 12 connectors	0 337 99	0 337 99	0 337 99	0 337 99
LCS³ 1U 19" ANGLED PATCH PANELS						
	1U angled patch panel to be equipped		0 337 92	0 337 92	0 337 92	0 337 92
	1U High Density angled patch panel to be equipped		-	0 337 94	0 337 94	0 337 94
LCS³ RJ 45 CONNECTORS AND CASSETTES TO BE EQUIPPED						
	6 RJ 45 connectors for flat and angled panel	STP	0 337 85	0 337 75	0 337 65	-
		UTP	-	0 337 73	0 337 63	0 337 53
		FTP	-	-	0 337 64	0 337 54
	Cassette for flat panels to be equipped		0 337 55	0 337 55	0 337 55	0 337 55
	Cassette with shutters for flat panels to be equipped		0 337 66	0 337 66	0 337 66	0 337 66
	High Density cassette for flat panels to be equipped		-	0 337 95	0 337 95	0 337 95
ACCESSORIES						
	Cord guide		0 337 59			
	Blanking cassette		0 337 57			
	Port blanking modules		0 337 56			
	Cover		0 337 58			

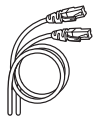
Legrand cabling system, LCS³ copper selection chart

telephone patch panels, PoE switches and Wi-Fi Access Point

LCS³ 1U 19" TELEPHONE PATCH PANEL			
	1 U telephone patch panel 50 ports 110 connect		0 335 79
PoE SWITCHES			
	Tablet PoE Gigabit switches - non manageable	6 ports (4 PoE+ RJ 45 outputs) - EU power supply cord	0 334 93
		5 RJ 45 ports (4 PoE+ RJ 45 outputs) - EU power supply cord	4 131 11
		5 RJ 45 ports (4 PoE+ RJ 45 outputs) - BS power supply cord	4 131 13
	19" PoE Gigabit switches - manageable	10 RJ 45 ports (8 PoE+ RJ 45 outputs) - EU power supply cord	0 334 90
		26 RJ 45 ports (24 PoE+ RJ 45 outputs) - EU power supply cord	0 334 92
PoE WI-FI ACCESS POINT			
	PoE Wi-Fi Access Point		0 335 23

Legrand cabling system, LCS³ copper selection chart

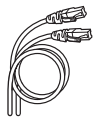
RJ 45 patch cords and user cords

RJ 45 PATCH CORDS AND USER CORDS					LCS³			
					Cat. 8	Cat. 6A	Cat. 6	Cat. 5e
	LSZH	S/FTP	100 Ω impedance	0.5 m	-	0 515 50(1)	-	-
				1 m	-	0 518 70 0 518 66 0 515 51(1)	-	-
				2 m	0 337 03	0 518 71 0 518 67 0 515 52(1)	-	-
				3 m	0 337 04	0 518 72 0 518 68 0 515 53(1)	-	-
				5 m	-	0 518 73 0 518 69 0 515 54(1)	-	-
		F/UTP	100 Ω impedance	0.5 m	-	-	0 515 40(1)	-
				1 m	-	-	0 515 41(1) 0 518 54 0 518 50	-
				2 m	-	-	0 515 42(1) 0 518 55 0 518 51	-
				3 m	-	-	0 515 43(1) 0 518 56 0 518 52	-
				5 m	-	-	0 515 44(1) 0 518 57 0 518 53	-
		U/UTP	100 Ω impedance	0.5 m	-	-	0 515 45(1)	-
				1 m	-	- 0 518 78 0 518 74	0 515 46(1) 0 518 62 0 518 58	-
				2 m	-	- 0 518 79 0 518 75	0 515 47(1) 0 518 63 0 518 59	-
				3 m	-	- 0 518 80 0 518 76	0 515 48(1) 0 518 64 0 518 60	-
				5 m	-	- 0 518 81 0 518 77	0 515 49(1) 0 518 65 0 518 61	-

1: High Density

Legrand cabling system, LCS³ copper selection chart

RJ 45 patch cords and user cords, copper cables

RJ 45 PATCH CORDS AND USER CORDS (CONTINUED)					LCS³			
					Cat. 8	Cat. 6A	Cat. 6	Cat. 5e
	PVC	S/FTP	100 Ω impedance	0.5 m	-	0 518 16	-	-
				1 m	-	0 517 80	-	-
				2 m	-	0 517 81	-	-
				3 m	-	0 517 82	-	-
				5 m	-	0 517 83	-	-
		SF/UTP	100 Ω impedance	1 m	-	-	0 517 52	-
				2 m	-	-	0 517 53	-
				3 m	-	-	0 517 54	-
				5 m	-	-	0 517 55	-
		F/UTP	100 Ω impedance	0.5 m	-	-	0 518 15	0 518 14
				1 m	-	-	0 517 62	0 516 40
				2 m	-	-	0 517 63	0 516 41
				3 m	-	-	0 517 64	0 516 42
				5 m	-	-	0 517 65	0 516 43
		U/UTP	100 Ω impedance	0.5 m	-	-	0 518 18	0 518 17
				1 m	-	0 518 82	0 517 72	0 516 36
				2 m	-	0 518 83	0 517 73	0 516 37
				3 m	-	0 518 84	0 517 74	0 516 38
				5 m	-	0 518 85	0 517 75	0 516 39
COPPER CABLES (305 M OR 500 M REELS)								
	LSZH	S/FTP	4 pairs	500 m	0 337 88	0 327 77(1)	-	-
			4 pairs (indoor/outdoor)	500 m	-	0 338 90	-	-
			2 x 4 pairs	500 m	-	0 327 79(1)	-	-
		SF/UTP	4 pairs	500 m	-	-	0 327 57	-
		F/UTP	4 pairs	305 m	-	-	0 328 56	0 327 52
				500 m	-	0 327 78	0 327 56	0 328 50
			2 x 4 pairs	500 m	-	0 328 78	0 327 76	-
		F/FTP	4 pairs	500 m	-	0 327 99	-	-
			2 x 4 pairs	500 m	-	0 327 98	-	-
		U/UTP	4 pairs	305 m	-	-	0 327 54	0 327 50
				500 m	-	0 327 87	0 328 61	0 328 53
		U/FTP	4 pairs	500 m	-	0 328 84	-	-
	PVC	SF/UTP	4 pairs	500 m	-	-	0 327 59	-
		F/UTP	4 pairs	305 m	-	-	0 328 57	0 327 53
				500 m	-	-	0 327 58	-
		U/UTP	4 pairs	305 m	-	-	0 327 55	0 327 51

1: Cat. 7 cable

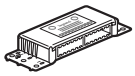
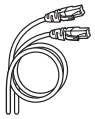
Legrand cabling system, LCS³ copper selection chart

RJ 45 sockets

WHITE MOSAIC RANGE RJ 45 SOCKETS			Cat. 6A	Cat. 6	Cat. 5e
	1 module	**STP**	0 765 73	0 765 63	-
		UTP	0 765 71	0 765 61	0 765 51
		FTP	-	0 765 62	0 765 52
	2 modules	**STP**	0 765 76	0 765 66	-
		UTP	0 765 74	0 765 64	0 765 54
		FTP	-	0 765 65	0 765 55
	2 x 45° tilted modules	**STP**	0 765 08	0 765 07	-
		UTP	0 765 09	0 765 03	0 765 01
		FTP	-	0 765 05	-
	90° socket	**STP**	-	0 765 93	-
		FTP	-	0 765 92	-
	Antimicrobial	**STP**	0 765 84	0 765 83	-
		UTP	-	0 765 81	-
		FTP	-	0 765 82	-
	Controlled access	**STP**	0 765 99	0 765 96	-
		UTP	0 765 90	0 765 94	0 765 97
		FTP	-	0 765 95	0 765 98
	Green flap	**STP**	0 765 24	-	-
		UTP	0 765 26	-	-
		FTP	-	0 765 22	-
	Orange flap	**STP**	0 765 25	-	-
		UTP	0 765 27	-	-
		FTP	-	0 765 23	-
	2 RJ 45 sockets for trunking	**FTP**	-	0 765 46	0 765 42
	Copper feedthrough	**STP**	0 786 28	-	-
		UTP	-	0 786 22	0 786 20
		FTP	-	0 786 23	0 786 21

Legrand cabling system, LCS³ copper selection chart

zone distribution boxes

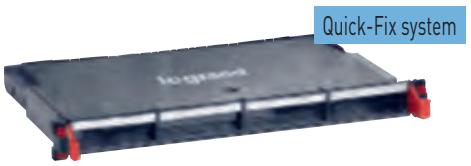
ZONE DISTRIBUTION BOXES / CONSOLIDATION POINT					Cat. 6A	Cat. 6	Cat. 5e
	Zone distribution box to be equipped		**12 ports**		0 337 96	0 337 96	0 337 96
			24 ports		0 337 97	0 337 97	0 337 97
RJ 45 CONNECTORS FOR ZONE DISTRIBUTION BOXES							
	6 RJ 45 connectors		**STP**		0 337 75	0 337 65	-
			UTP		0 337 73	0 337 63	0 337 53
			FTP		-	0 337 64	0 337 54
RJ 45 CORDS FOR ZONE DISTRIBUTION BOXES							
	S/FTP cords	100 Ω impedance	RJ 45/stripped	8 m	0 517 86	-	-
				15 m	0 517 87	-	-
				20 m	0 517 88	-	-
			RJ 45 - RJ 45	8 m	0 515 23	-	-
				15 m	0 515 24	-	-
				20 m	0 515 25	-	-
	U/UTP cords	100 Ω impedance	RJ 45/stripped	8 m	-	0 517 57	-
				15 m	-	0 517 58	-
				20 m	-	0 517 59	-
			RJ 45 - RJ 45	8 m	-	0 515 10	0 515 00
				15 m	-	0 515 11	0 515 01
				20 m	-	0 515 12	0 515 02
	F/UTP cords	100 Ω impedance	RJ 45/stripped	8 m	-	0 517 96	-
				15 m	-	0 517 97	-
				20 m	-	0 517 98	-
			RJ 45 - RJ 45	8 m	-	0 515 13	0 515 03
				15 m	-	0 515 14	0 515 04
				20 m	-	0 515 15	0 515 05

Legrand cabling system, LCS³ fiber optic selection chart

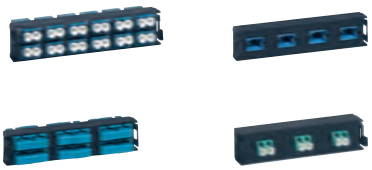
19" standard solutions

CONFIGURE YOUR LCS³ FIBER OPTIC SYSTEM

Example:

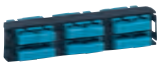


Modular drawer



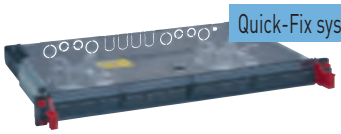
Blocks

DRAWERS TO BE EQUIPPED (p. 137)



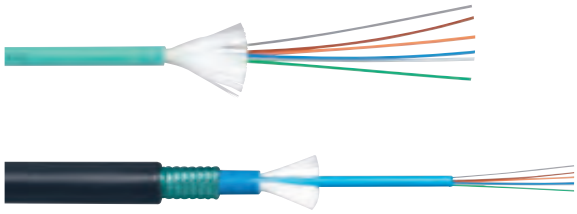
FIBER OPTIC DRAWERS				FIBER OPTIC BLOCKS								
Size	Type	Cat.No	Max. number of blocks	Number of fibers	SC duplex		SC duplex HD		SC APC duplex	LC duplex		
					Multimode	Single-mode	Multimode	Single-mode	Single-mode	Multimode	Single-mode	
19" modular	FLAT DRAWERS - QUICK-FIX SYSTEM											
	To be equipped with fiber optic blocks	0 321 00	4	6	0 321 20	0 321 10	-	-	0 321 12	0 321 23 0 321 36 (aqua)	0 321 13	
				12	-	-	0 321 21	0 321 11	-	0 321 24 0 321 37 (aqua)	0 321 14	
				24	-	-	-	-	-	-	-	
	ANGLED DRAWERS - QUICK-FIX SYSTEM											
	To be equipped with fiber optic blocks	0 321 01	4	6	0 321 20	0 321 10	-	-	0 321 12	0 321 23 0 321 36 (aqua)	0 321 13	
				12	-	-	0 321 21	0 321 11	-	0 321 24 0 321 37 (aqua)	0 321 14	
				24	-	-	-	-	-	-	-	

EQUIPPED DRAWERS (p. 137)



Size	Type	Capacity (fibers)	SC duplex		SC APC duplex
			Multimode	Single-mode	Single-mode
19" modular	SLIDING				
	Quick-Fix system	24	0 321 02	0 321 06	-
		48	-	-	-
19"	SLIDING				
	Screw fixing	24	0 321 61	0 321 64	0 321 66
		48	-	-	-
	ROTATING				
	Screw fixing	36	0 321 72	0 321 74	-
		72	-	-	-

1 : MTP is a registered trademark of US Conec Ltd



Cables

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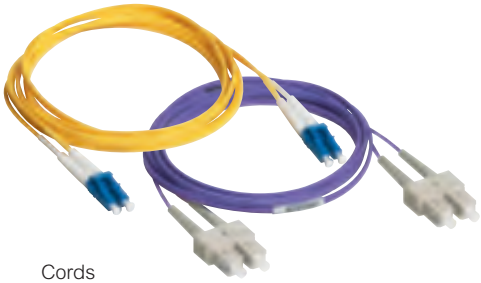
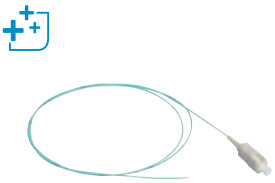
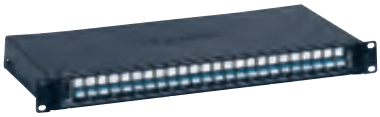


Cords



Pigtails (p. 141)

											ACCESSORIES	
	LC duplex HD		LC APC duplex	ST		4 MTP[1] feedthrough adaptor		Blanking plate	Copper block for 5 RJ 45	Cassette for pigtail	Coiling kit	Accessory for fan-out
	Multimode	Single-mode	Single-mode	Multimode	Single-mode	Multimode	Single-mode					
	-	-	-	0 321 27	0 321 17	0 321 34	0 321 33	0 321 29	0 321 32	0 321 30	0 321 31	0 321 28
	-	-	0 321 16	-	-							
	0 321 25	0 321 15	-	-	-							
	-	-	-	0 321 27	0 321 17	0 321 34	0 321 33	0 321 29	-	0 321 30	0 321 31	0 321 28
	-	-	0 321 16	-	-							
	0 321 25	0 321 15	-	-	-							



	LC duplex		LC APC duplex	ST
	Multimode	Single-mode	Single-mode	Multimode
	-	-	-	-
	0 321 04	-	-	-
	-	-	-	0 321 63
	0 321 62	0 321 65	0 321 67	-
	-	-	-	-
	0 321 71	0 321 73	-	-

Legrand cabling system, LCS³ fiber optic selection chart

19" High Density solutions

CONFIGURE YOUR LCS³ HIGH DENSITY FIBER OPTIC SYSTEM

Example:

Modular panel

+

Cassettes

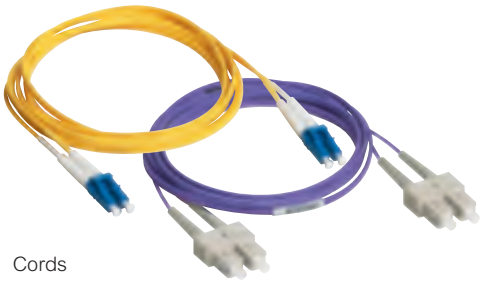
+

HIGH DENSITY PANELS TO BE EQUIPPED (p. 138)

HIGH DENSITY PANELS														
Size	Type	Cat.No			Capacity for 1U	Cat.No	Number of fibers	SC		SC HD		SC APC	LC	
		1 U	2 U	4 U				Multimode	Single-mode	Multimode	Single-mode	Single-mode	Multimode	
High Density 19" modular	To be equipped with cassettes to be equipped with fiber optic blocks	0 321 75	0 321 76	0 321 77	CASSETTES TO BE EQUIPPED		FIBER OPTIC BLOCKS							
					4	0 321 41	6	0 321 20 (duplex)	0 321 10 (duplex)	-	-	0 321 12	0 321 23 (duplex) 0 321 36 (duplex-aqua)	
							12	-	-	0 321 21 (duplex)	0 321 11 (duplex)	-	0 321 24 (duplex) 0 321 37 (duplex-aqua)	
							24	-	-	-	-	-	-	
	To be equipped with pre-equipped cassettes (supplied with set of 6 or 12 OM3 pigtails)				PRE-EQUIPPED CASSETTES		PRETERMINATED (A/C POLARITY)							
					4	-	12	-	-	0 321 43 (OM4)	0 321 45 (OS2)	-	0 321 48 (OM4)	
							24	-	-	0 321 59 (OM4)	0 321 60 (OS2)	-	-	
							WITH FIBER OPTIC BLOCKS + PIGTAILS							
							6	-	-	0 321 80 (duplex-OM3)	0 321 84 (duplex-OM3)	-	-	
							12	-	-	0 321 82 (duplex-OM3)	0 321 86 (duplex-OM3)	-	-	
	To be equipped with slim cassettes				SUPPORT FOR SLIM CASSETTES		PRETERMINATED - SLIM CASSETTES (UNIVERSAL POLARITY)							
					4	0 321 38	12	-	-	-	-	-	-	
Zero-U kit	To be equipped with slim cassettes	0 321 03			SUPPORT FOR SLIM CASSETTES		PRETERMINATED - SLIM CASSETTES (UNIVERSAL POLARITY)							
					1	0 321 38	12	-	-	-	-	-	-	
	To be equipped with pre-equipped cassettes (supplied with set of 6 or 12 OM3 pigtails)				PRE-EQUIPPED CASSETTES		PRETERMINATED (A/C POLARITY)							
					1	-	12	-	-	-	-	-	-	
							24	-	-	-	-	-	-	
							WITH FIBER OPTIC BLOCKS + PIGTAILS							
							6	-	-	0 321 80 (duplex-OM3)	0 321 84 (duplex-OM3)	-	-	
							12	-	-	0 321 82 (duplex-OM3)	0 321 86 (duplex-OM3)	-	-	

1 : MTP is a registered trademark of US Conec Ltd

Links (p. 136)



Cords

Pigtails (p. 141)

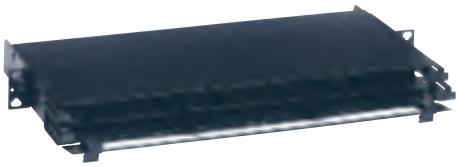
											ACCESSORIES	
		LC HD		LC APC	ST		8 MTP[1] feedthrough adaptor		Blanking cassette	RJ 45 copper cassette to be equipped	Cable management accessory	Front management HD modular panel
	Single-mode	Multimode	Single-mode	Single-mode	Multimode	Single-mode	Multimode	Single-mode				
	0 321 13	-	-	-	0 321 27	0 321 17	0 321 18	0 321 19	0 337 57	0 337 55 (to be equipped with copper connectors)	0 321 46 (for 1 U panel only, supplied for 2 U and 4 U panels)	0 321 78 (for 1 U panel only, supplied for 2 U and 4 U panels)
	0 321 14 (duplex)	-	-	0 321 16	-	-						
	-	0 321 25 (duplex)	0 321 15 (duplex)	-	-	-						
	0 321 49 (OS2)	-	-	-	-	-	-	-	0 337 57	0 337 55 (to be equipped with copper connectors)	0 321 46 (for 1 U panel only, supplied for 2 U and 4 U panels)	0 321 78 (for 1 U panel only, supplied for 2 U and 4 U panels)
	-	0 321 42 (OM4)	0 321 44 (OS2)	-	-	-						
	-	0 321 81 (duplex-OM3)	0 321 85 (duplex-OM3)	-	-	-						
	-	0 321 83 (duplex-OM3)	0 321 87 (duplex-OM3)	-	-	-						
	-	0 321 69 (OM4) 0 321 68 (OM3)	0 321 70 (OS2)	-	-	-	-	-	0 321 39	0 337 55 (to be equipped with copper connectors)	0 321 46 (for 1 U panel only, supplied for 2 U and 4 U panels)	0 321 78 (for 1 U panel only, supplied for 2 U and 4 U panels)
	-	0 321 69 (OM4) 0 321 68 (OM3)	0 321 70 (OS2)	-	-	-	-	-	0 321 39	-	-	-
	-	0 321 48 (OM4)	0 321 49 (OS2)	-	-	-	-	-	-	0 337 55 (to be equipped with copper connectors)	-	-
	-	0 321 42 (OM4)	0 321 44 (OS2)	-	-	-						
	-	0 321 81 (duplex-OM3)	0 321 85 (duplex-OM3)	-	-	-						
	-	0 321 83 (duplex-OM3)	0 321 87 (duplex-OM3)	-	-	-						

Legrand cabling system, LCS³ fiber optic selection chart

19" Ultra High Density solutions

CONFIGURE YOUR LCS³ ULTRA HIGH DENSITY FIBER OPTIC SYSTEM

Example:



Modular drawer

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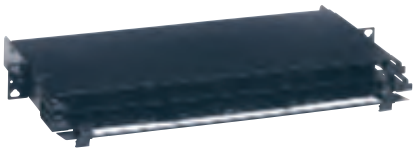
Cassettes

+

ULTRA HIGH DENSITY DRAWERS TO BE EQUIPPED (p. 140)



Ultra High Density drawers					Ultra High Density cassettes		
Size	Type	Height	Number of cassettes per U	Cat.No	Number of fibers (links)	Multimode OM4	
Ultra High Density 19" modular	Cord management from the front and the back						
	To be equipped with 8-fiber cassettes	1 U	18	0 321 90	8	0 321 93	
		2 U		0 321 91			
		4 U		0 321 92			
	To be equipped with 12-fiber cassettes	1 U	12	0 321 50	12	0 321 54	
		2 U		0 321 52			
		4 U		0 321 53			
	Cord management from the front						
	To be equipped with 12-fiber cassettes	1 U	12	0 321 51	12	0 321 54	

1 : MTP is a registered trademark of US Conec Ltd

Links (p. 136)

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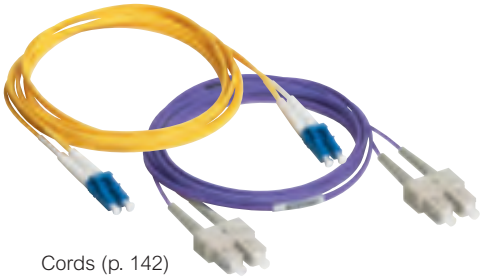


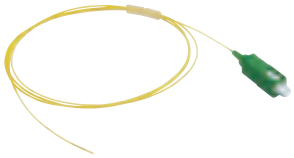
Cords (p. 142)

		Adaptors				
	Single-mode OS2	LC			4 MPO (MTP[1] compatible)	
		Multimode	Single-mode	APC single-mode	Multimode	Single-mode
	0 321 94	0 321 97	0 321 98	0 321 99	0 321 95	0 321 96
	0 321 55	0 321 58	-	-	0 321 56	0 321 57
	0 321 55	0 321 58	-	-	0 321 56	0 321 57

Legrand cabling system, LCS³ fiber optic selection chart

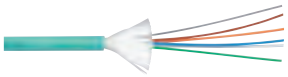
pigtails, cables and patch cords

PIGTAILS (p. 141)



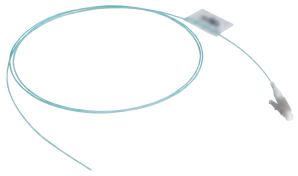
Length (m)	OS2 - 9/125 µm					OM3 - 50/125 µm		
	SC - APC	LC - APC	SC - UPC	LC - UPC	ST - UPC	SC	LC	ST
1	0 322 40	0 322 42	0 322 41	0 322 43 0 326 24 (set of 12 pigtails)	0 322 44	0 322 20	0 322 21 0 326 26 (set of 12 pigtails)	0 322 22
2	0 322 45	0 322 48	0 322 46	0 322 47	0 322 49	0 322 23	0 322 24	-

CABLES (p. 135)

Drum 2000m except information	OS2 - 9/125 µm				
	Number of fibers				
	4	6	8	12	24
Tightbuffer LSZH sheath Indoor/Outdoor 				0 325 50	
Loose LSZH sheath Indoor/Outdoor 	0 325 02	0 325 12	0 325 03	0 325 14 (Dca) 0 325 26 (Cca)	0 325 51
Loose PE sheath corrugated steel OUTDOOR CORRUGATED STEIL 	0 325 23	0 325 13	0 325 24	0 325 15	0 325 25

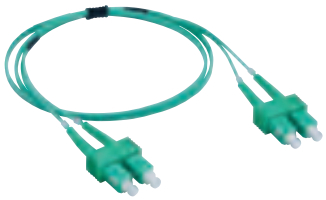
PATCH CORDS (p. 142)

Length (m)	OS2 - 9/125 µm						
	Core™ fiber patch cords			Ultra™ fiber patch cords			
	SC/SC duplex	SC/LC duplex	LC/LC duplex	SC/SC duplex	SC/LC duplex	LC/LC duplex	LC/LC Uniboot duplex
0.5	-	-	0 326 28	-	-	-	-
1	0 326 00	0 326 03	0 326 06	0 325 27	0 325 30	0 325 33	0 326 86
2	0 326 01	0 326 04	0 326 07	0 325 28	0 325 31	0 325 34	0 326 87
3	0 326 02	0 326 05	0 326 08	0 325 29	0 325 32	0 325 35	0 326 88
5	-	-	0 326 29	-	-	0 325 36	0 326 89
10	-	-	-	-	-	-	0 326 92



	OM4 - 50/125 µm			Heat-shrinkable sleeve	50/125 and 62.5/125 µm glue-on connectors		Fan-out units	
	SC	LC	ST		SC	LC	6 fibers	12 fibers
	0 322 30	0 322 31 0 326 71 (set of 12 pigtails)	0 322 32	0 327 44 (pack of 50 sleeves)	0 331 47	0 331 00	0 330 48	0 330 49
	0 322 33	0 322 34	-					

	OM3 - 50/125 µm					OM4 - 50/125 µm				
	Number of fibers					Number of fibers				
	4	6	8	12	24	4	6	8	12	24
		0 325 10		0 325 11	0 325 52		0 326 65 (drum of 500m) 0 326 66 (drum of 1000m)		0 325 67 (drum of 1000m)	0 326 68 (drum of 1000m)
	0 325 37		0 325 38	0 325 39	0 325 53	0 325 43		0 325 44	0 325 45 (Dca) 0 325 49 (Cca)	
			0 325 40	0 325 41	0 325 42	0 325 46		0 325 47	0 325 48	



	OM3 - 50/125 µm			OM4 - 50/125 µm					
	Core™ fiber patch cords			Core™ fiber patch cords			Ultra™ fiber patch cords		
	SC/SC duplex	SC/LC duplex	LC/LC duplex	SC/SC duplex	SC/LC duplex	LC/LC duplex	SC/SC duplex	LC/LC duplex	LC/LC Uniboot duplex
	-	-	-	-	-	-	-	0 326 33	0 326 95
	0 326 09	0 326 12	0 326 15	0 322 60	0 322 63	0 322 66	0 326 30	0 326 34	0 326 96
	0 326 10	0 326 13	0 326 16	0 322 61	0 322 64	0 322 67	0 326 31	0 326 35	0 326 97
	0 326 11	0 326 14	0 326 17	0 322 62	0 322 65	0 322 68	0 326 32	0 326 36	0 326 98
	-	-	-	-	-	-	-	0 326 37	0 326 99
	-	-	-	-	-	-	-	-	-

Other configurations
On request

Euroclasses
see p. 162

Legrand cabling system, LCS³ fiber optic selection chart

simplex preterminated links and High Density preterminated links

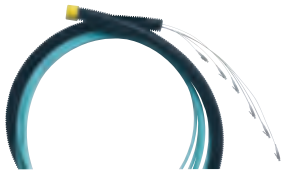
LCS³ SIMPLEX PRETERMINATED LINKS (p. 136)

Length (m)	Tight-buffer OM3		
	6 SC - 6 SC	12 SC - 12 SC	
10	1 320 01	1 320 21	
20	1 320 02	1 320 22	
30	1 320 03	1 320 23	
40	1 320 04	1 320 24	
50	1 320 05	1 320 25	
60	1 320 06	1 320 26	
70	1 320 07	1 320 27	
80	1 320 08	1 320 28	
90	1 320 09	1 320 29	
100	1 320 10	1 320 30	
120	1 320 12	1 320 32	
140	1 320 14	1 320 34	
160	1 320 16	1 320 36	
180	1 320 18	1 320 38	
200	1 320 20	1 320 40	

LCS³ HIGH DENSITY PRETERMINATED LINKS (p. 46)

Length (m)	Fan-out - Fan-out OS2		Fan-out - Fan-out OM3	
	6 LC duplex - 6 LC duplex	12 LC duplex - 12 LC duplex	6 LC duplex - 6 LC duplex	12 LC duplex - 12 LC duplex
10	0 324 21	0 324 31	0 324 01	0 324 11
20	0 324 22	0 324 32	0 324 02	0 324 12
30	0 324 23	0 324 33	0 324 03	0 324 13
40	0 324 24	0 324 34	0 324 04	0 324 14
50	0 324 25	0 324 35	0 324 05	0 324 15

1 : MTP is a registered trademark of US Conec Ltd



	6 LC - 6 LC	12 LC - 12 LC
	1 320 41	1 320 61
	1 320 42	1 320 62
	1 320 43	1 320 63
	1 320 44	1 320 64
	1 320 45	1 320 65
	1 320 46	1 320 66
	1 320 47	1 320 67
	1 320 48	1 320 68
	1 320 49	1 320 69
	1 320 50	1 320 70
	1 320 52	1 320 72
	1 320 54	1 320 74
	1 320 56	1 320 76
	1 320 58	1 320 78
	1 320 60	1 320 80

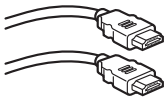
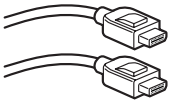
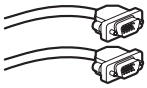
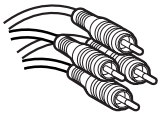
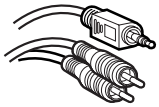
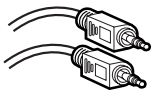
OM4 and OM5 simplex preterminated links
On request

	MTP(1) OS2	MTP(1) OM3
	MTP(1) - MTP(1) 12 fibers	MTP(1) - MTP(1) 12 fibers
	0 324 51	0 324 41
	0 324 52	0 324 42
	0 324 53	0 324 43
	0 324 54	0 324 44
	0 324 55	0 324 45

OM4 and OM5 High Density preterminated links
On request

Legrand cabling system, LCS³ audio/video selection chart

cords

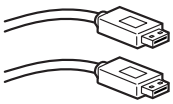
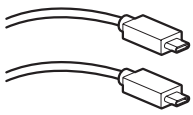
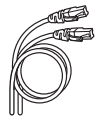
CORDS FOR AUDIO/VIDEO AND DATA APPLICATIONS			
	High Speed HDMI cords with Ethernet	1 m	0 517 32/0 398 51[1]
		2 m	0 517 33/0 398 52[1]
		3 m	0 517 34/0 398 53[1]
		5 m	0 517 27/0 398 54[1]
		7 m	0 517 35/0 398 55[1]
	Standard HDMI cords with Ethernet	10 m	0 517 20
		15 m	0 517 36
	HDMI to micro HDMI cord	2 m	0 398 56[1]
	DisplayPort cords	2 m	0 514 00/0 398 58[1]
	HD15 male/male cords	2 m	0 517 29/0 398 50[1]
		5 m	0 517 30
		10 m	0 517 23
		15 m	0 517 31
	HD15 cord + Jack 3.5 mm	2 m	0 517 22
	RCA male/male cords	2 m	0 514 03/0 398 67[1]
		5 m	0 514 04/0 398 68[1]
	Jack 3.5 mm male to 2 RCA male Y cords	2 m	0 514 05/0 398 69[1]
		5 m	0 514 06/0 398 70[1]
	Jack 3.5 mm male/male cords	2 m	0 514 07/0 398 71[1]
		5 m	0 514 08/0 398 72[1]
	TOSLINK optical digital cable	2 m	0 398 73[1]

1: Supplied in a plastic bag with hook

Mosaic and Arteor audio/video sockets
p. 145-146

Legrand cabling system, LCS³ audio/video selection chart

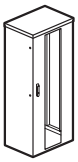
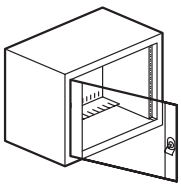
cords and cables

CORDS FOR AUDIO/VIDEO AND DATA APPLICATIONS (CONTINUED)				
 	USB data cords	USB 3.0 A male / A male cords	2 m	0 514 01/0 398 59(1)
		USB 3.0 A male / B male cords	2 m	0 514 02/0 398 60(1)
		USB 2.0 A male / Micro B male cord	1 m	0 398 61(1)
		USB 3.0 A male / Lightning male cord	1 m	0 398 62(1)
		USB 3.1 male Type-C / male Type-C cords	1 m	0 514 10/0 398 63(1)
		USB 2.0 male Type-C / male USB-A cords	2 m	0 514 11/0 398 64(1)
		USB 2.0 male Type-C / USB male Micro B cord	1 m	0 398 65(1)
	Adaptors	USB 3.1 male Type-C / HDMI female		0 514 12/0 398 66(1)
RJ 45 CABLES				
	Cat. 6 U/UTP		2 m	0 398 74(1)
			5 m	0 398 75(1)
			10 m	0 398 76(1)
			15 m	0 398 77(1)
			20 m	0 398 78(1)
			30 m	0 398 79(1)
CABLES FOR AUDIO/VIDEO APPLICATIONS				
	VGA cable		20 m	0 327 81
	Loudspeaker cable		15 m	0 514 09

1: Supplied in a plastic bag with hook

Legrand cabling system, LCS³ enclosures selection chart

server cabinets, side panels, cabling and wall-mounting cabinets

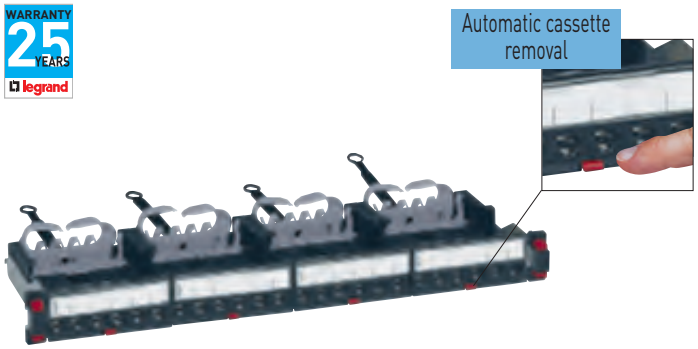
LCS³ 19" SERVER CABINETS (WITHOUT SIDE PANELS)			Depth 1000 mm	Depth 1200 mm
	42 U	Width 600 mm	4 464 00	4 464 01
	42 U	Width 800 mm	4 464 02	4 464 03
	47 U	Width 600 mm	4 464 04	4 464 05
	47 U	Width 800 mm	4 464 06	4 464 07
LCS³ 19" SERVER CABINETS (WITHOUT SIDE PANELS) - WITH AIR FLOW MANAGEMENT				
	42 U	Width 600 mm	4 464 10	4 464 11
	42 U	Width 800 mm	4 464 12	4 464 13
	47 U	Width 600 mm	4 464 14	4 464 15
	47 U	Width 800 mm	4 464 16	4 464 17
LCS³ 19" SIDE PANELS - SET OF 2, INCLUDING PLINTHS				
	42 U	-	4 464 20	4 464 21
	47 U	-	4 464 22	4 464 23
LCS³ 19" SERVER CABINETS - FLAT PACK (WITH SIDE PANELS)				
	42 U	Width 800 mm	4 464 25	4 464 26
LCS³ 19" CABLING CABINETS			Depth 800 mm	Depth 1000 mm
	24 U	Width 800 mm	4 464 30	4 464 31
	42 U	Width 800 mm	4 464 32	4 464 33
	47 U	Width 800 mm	4 464 34	4 464 35
LCS³ 19" WALL-MOUNTING CABINETS			Depth 525 mm	Depth 625 mm
	6 U	Width 600 mm	4 461 80	-
	9 U	Width 600 mm	4 461 81	4 461 82
	12 U	Width 600 mm	4 461 83	4 461 84
	15 U	Width 600 mm	4 461 85	4 461 86
	21 U	Width 600 mm	-	4 461 87

Legrand cabling system, LCS³ Power Distribution Units selection chart

BASIC POWER DISTRIBUTION UNITS (PDUS)						
	IEC 60320 standard	6 sockets (C19)	Aluminium 1U 19"	3.7 kW	Cordless	6 468 07
		10 sockets (C13)	Aluminium 1U 19"	3.7 kW	Cordless	6 468 44
		12 sockets (C13)	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 15
		24 sockets (C13)	Aluminium Zero-U	7.4 kW	3 m cord	6 468 57
					Cordless	6 468 56
		8 sockets (6 C13 + 2 C19)	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 09
		24 sockets (20 C13 + 4 C19)	Aluminium Zero-U	7.4 kW	3 m cord	6 468 61
					Cordless	6 468 60
		24 sockets (18 C13 + 6 C19)	Aluminium Zero-U	11 kW	3 m cord	6 468 70
	French standard	4 sockets	Aluminium 1U 10"	3.7 kW	1 m cord	6 468 00
		6 sockets	Aluminium 19" 1U	3.7 kW	3 m cord	6 468 05
		6 sockets + MCB	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 30
		6 sockets + RCBO	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 33
		6 sockets + surge protection module	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 35
		8 sockets	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 22
		9 sockets	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 10
		9 red tamperproof sockets	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 11
		9 sockets + power indicator	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 20
		24 sockets	Aluminium Zero-U	7.4 kW	3 m cord	6 468 51
					Cordless	6 468 50
	German standard	4 sockets	Aluminium 1U 10"	3.7 kW	1 m cord	6 468 01
		6 sockets	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 06
		6 sockets + MCB	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 31
		6 sockets + surge protection module	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 36
		8 sockets	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 23
		9 sockets	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 12
		9 sockets + power indicator	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 21
		9 sockets + MCB	Aluminium 2U 19"	3.7 kW	3 m cord	6 468 32
		24 sockets	Aluminium Zero-U	7.4 kW	3 m cord	6 468 53
					Cordless	6 468 52
	British standard	6 sockets	Aluminium 1U 19"	3 kW	3 m cord	6 468 24
		8 sockets	Aluminium 1U 19"	3 kW	3 m cord	6 468 13
		24 sockets	Aluminium Zero-U	7.4 kW	Cordless	6 468 54
	Italian standard	24 sockets	Aluminium Zero-U	7.4 kW	3 m cord	6 468 59
	Swiss standard	12 sockets (T13)	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 18
		12 sockets (T23)	Aluminium 1U 19"	3.7 kW	3 m cord	6 468 19

Legrand cabling system, LCS³ cat. 8

flat patch panels - equipped and to be equipped



0 337 82

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 bundles guides fixed at the rear

Pack	Cat.Nos	Cat. 8 patch panel equipped with 24 RJ 45 connectors
		19" panel - 1U Equipped with 4 cassettes of 6 pre-fitted Cat. 8 LCS³ RJ 45 connectors Automatic cassette removal by simple pressure Each connector can be removed individually T568A and B marking with colour codes Equipped with rear cable guide to hold cable during maintenance Supplied with coloured labels Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
1	0 337 82	**Flat panel** STP panel - Metal shielding - PoE++
		Patch panels 24 connectors - to be equipped 19" panels - 1U Equipped with rear cable guide to hold cables during maintenance
1	0 337 90	**Flat panel with empty cassettes to be equipped with connectors** With 4 automatically removable cassettes to be equipped with Cat. 5e to Cat. 8 RJ 45 connectors
1	0 337 91	**Flat panel without connectors to be equipped with cassettes** Can take a maximum of 4 automatically removable cassettes: - copper to be equipped with Cat. 5e to Cat. 8 RJ 45 connectors - fiber optic

Legrand cabling system, LCS³ cat. 8

angled patch panel to be equipped with connectors

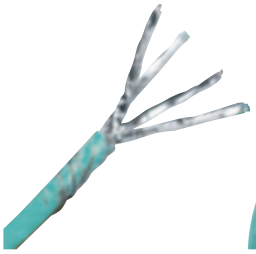
0 337 92

Pack	Cat.Nos	Angled patch panel with 24 connectors
		19" panel - 1U Equipped with new-generation Quick-Fix for automatic mounting (screwless) on cabinet and enclosure uprights Universal mounting on all cabinets or enclosures Panels ensure automatic earthing of each connector Equipped with rear cable guide to hold cables during maintenance
1	0 337 92	**Angled patch panel to be equipped with connectors** Can take up to 24 Cat. 5e to Cat. 8 RJ 45 connectors

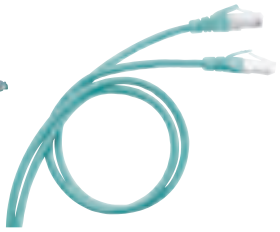
Legrand cabling system, LCS³ cat. 8

connector, cords and cables

0 337 85



0 337 88



0 337 03

Pack	Cat.Nos	
		Cat. 8 RJ 45 connector for flat or angled STP panel
6	0 337 85	Set of 6 STP RJ 45 Quick-connect connectors (no tools required) T568A and B marking with colour codes Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards To be installed in cassettes for flat panels or directly in an angled panel or a zone distribution box to be equipped
		Cat. 8 cable for local networks
		Performance 2000 MHz Cable with 4 twisted pairs 100 Ω LSZH sheath: zero halogen EIA/TIA colour code Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards Product conforming to the CPR regulations **S/FTP - 4 pairs**
500[1]	0 337 88	Length 500 m, supplied on a drum Weight 45 kg
		Cat. 8 RJ 45 patch cords
	LSZH RAL 6027	RJ 45/RJ 45 - straight Compliant with ISO/CEI 11801 and EIA/TIA 568 standards
		Shielded S/FTP, impedance 100 Ω
1	0 337 03	Length 2 m
1	0 337 04	Length 3 m
		Marking kit
200	0 518 90	Kit of 200 coloured rings for marking RJ 45 cords 4 colors (green/red/yellow/blue). 50 pieces of each color Rings to be clipped onto the patch cords

1: in metre(s)

Legrand cabling system, LCS³ cat. 8

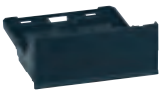
accessories

0 337 56

0 337 59

0 337 55

0 337 66



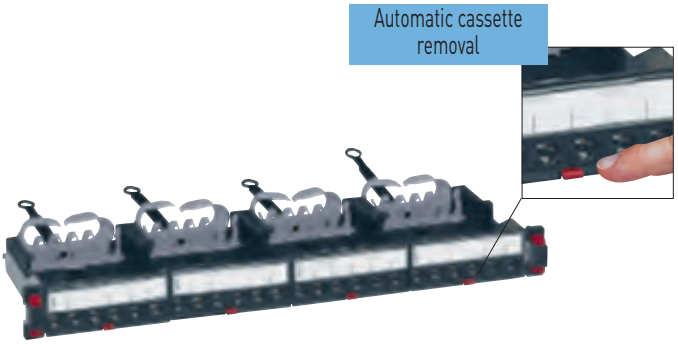
0 337 57

0 337 58

Pack	Cat.Nos	
		Common accessories for flat and angled panels
10	0 337 56	**Port blanking modules** Separable blanking plate For covering 1 to 6 ports or 1 to 12 ports individually (High Density solutions)
1	0 337 59	**Cord management** 2 cable guides to be clipped onto new-generation Quick-Fix Provide side cord management Label-holder for identification
		Specific accessories for flat panels
1	0 337 55	**Cassette for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
1	0 337 66	**Cassette with shutters for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance Equipped with 6 individual shutters to protect RJ 45 connectors contacts For equipping flat panels
1	0 337 57	**Blanking cassette** To be used to fill gaps in the panel
		Specific accessory for angled panels
1	0 337 58	**Cover** Optimises air flow management in the enclosure

Legrand cabling system, LCS³ cat. 6A

flat patch panels - equipped



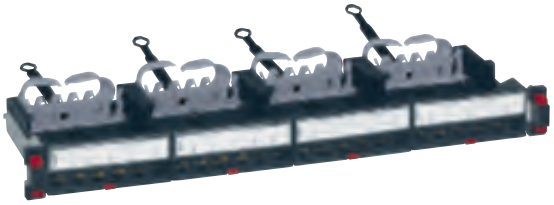
0 337 72

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 bundles guides fixed at the rear

Pack	Cat.Nos	**Cat. 6A patch panels equipped with 24 RJ 45 connectors**
		19" panel - 1U Equipped with 4 cassettes of 6 pre-fitted Cat. 6A LCS³ RJ 45 connectors Automatic cassette removal by simple pressure Each connector can be removed individually T568A and B marking with colour codes Equipped with rear cable guide to hold cables during maintenance Supplied with coloured labels Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
		Flat panels 24 RJ 45 connectors - 1U - PoE++
1	0 337 70	UTP
1	0 337 72	STP

Legrand cabling system, LCS³ cat. 6A

flat patch panels, to be equipped



0 337 90

0 337 98

0 337 99

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 bundles guides fixed at the rear

Pack	Cat.Nos	**19" flat patch panels - to be equipped**
		19" panels - 1U Equipped with rear cable guide to hold cables during maintenance Automatic cassette removal by simple pressure Each connector can be removed individually
		Flat panel with empty cassettes to be equipped with connectors
1	0 337 90	Equipped with 4 automatically removable cassettes, takes up to 24 Cat. 5e to Cat. 8 RJ 45 connectors
		Empty flat panel to be equipped with cassettes
1	0 337 91	Takes a maximum of 4 automatically removable cassettes: - copper to be equipped with Cat. 5e to Cat. 8 RJ 45 connectors - fiber optic
		High Density flat panel with empty cassettes to be equipped with connectors
1	0 337 93	Equipped with 4 High Density cassettes, takes up to 48 Cat. 5e to Cat. 6A RJ 45 connectors
		10" flat patch panels - to be equipped
		10" panels - 1U
1	0 337 98	Takes up to 6 Cat. 5e to Cat. 8 RJ 45 connectors
1	0 337 99	Takes up to 12 Cat. 5e to Cat. 6A RJ 45 connectors

Legrand cabling system, LCS³ cat. 6A

angled patch panels to be equipped, connectors

0 337 92

0 337 94

0 337 75

PoE+ Third Party certified

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights.
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 concentric strand guides fixed at the rear

Pack	Cat.Nos	Angled patch panels - to be equipped
		19" panels - 1U
1	0 337 92	**Angled patch panel to be equipped with connectors** Takes up to 24 Cat. 5e to Cat. 8 RJ 45 connectors
1	0 337 94	**High Density angled panel to be equipped with connectors** Takes up to 48 Cat. 5e to Cat. 6A RJ 45 connectors

Pack	Cat.Nos	Cat. 6A High Density RJ 45 connectors
		Quick-connect connection (no tools required) T568A and B marking with colour codes Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards To be installed in cassettes for flat panels or directly in an angled panel or a zone distribution box to be equipped Set of 6 RJ 45 connectors
6	0 337 73	UTP
6	0 337 75	STP

Legrand cabling system, LCS³ cat. 6A

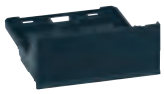
accessories

0 337 56

0 337 59

0 337 55

0 337 66



0 337 57

0 337 58

Pack	Cat.Nos	Common accessories for flat and angled panels
10	0 337 56	**Port blanking modules** Separable blanking plate For covering 1 to 6 ports or 1 to 12 ports individually (High Density solutions)
1	0 337 59	**Cord management** 2 cable guides to be clipped onto new-generation Quick-Fix Provide side cord management Label-holder for identification

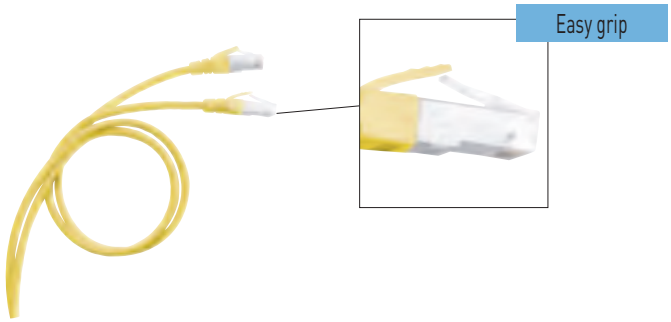
Pack	Cat.Nos	Specific accessories for flat panels
1	0 337 55	**Cassette for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
1	0 337 66	**Cassette with shutters for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance Equipped with 6 individual shutters to protect RJ 45 connectors contacts For equipping flat panels
1	0 337 95	**High Density cassette for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 12 Cat. 5e to Cat. 6A connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
1	0 337 57	**Blanking cassette** To be used to fill gaps in the panel

Pack	Cat.Nos	Specific accessory for angled panels
1	0 337 58	**Cover** Optimises air flow management in the enclosure

Legrand cabling system, LCS³ cat. 6A and cat. 7

cables and cords

0 327 77



0 517 82

Cat. 6A cables for local networks

Pack	Cat.Nos	
		Performance 500 MHz 4 twisted pair cables, 100 Ω LSZH sheath: zero halogen ANSI/TIA colour code Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards Products conforming to the CPR regulations
	LSZH	
		U/UTP - 4 pairs
500[1]	0 327 87	Length 500 m. Supplied on reel. Weight 35 kg Euroclass Dca
500[1]	0 328 28	Length 500m. Supplied on reel. Weight 36 kg Euroclass Cca
500[1]	0 328 38	Length 500m. Supplied on reel. Weight 33kg Euroclass B2ca
		F/UTP - 4 pairs
500[1]	0 327 78	Length 500 m. Supplied on reel. Weight 29.2 kg Euroclass Dca
		F/UTP - 2 x 4 pairs
500[1]	0 328 78	Length 500 m. Supplied on reel. Weight 58 kg Euroclass Dca
		F/FTP - 4 pairs
500[1]	0 328 83	Length 500 m. Supplied on reel. Weight 32 kg Euroclass Cca
500[1]	0 327 99	Length 500 m. Supplied on reel. Weight 26 kg Euroclass Dca
		F/FTP - 2 x 4 pairs
500[1]	0 327 98	Length 500 m. Supplied on reel. Weight 62 kg Euroclass Dca
		U/FTP - 4 pairs
500[1]	0 328 84	Length 500 m. Supplied on reel. Weight 39 kg Euroclass Cca

Cat. 7 cables for local networks

		Performance 600 MHz 4 twisted pair cables, 100 Ω LSZH sheath: zero halogen ANSI/TIA colour code Compliant with ISO/IEC 11 801 and EN 50173 standards Products conforming to the CPR regulations
	LSZH	
		S/FTP - 4 pairs
500[1]	0 328 82	Length 500 m. Supplied on reel. Weight 33 kg Euroclass B2 ca
500[1]	0 328 49	Length 500m. Supplied on reel. Weight 31 kg Euroclass Cca
500[1]	0 327 77	Length 500 m. Supplied on reel. Weight 30 kg Euroclass Dca
		S/FTP - 2 x 4 pairs
500[1]	0 327 79	Length 500 m. Supplied on reel. Weight 63 kg Euroclass Dca

Cat. 7 indoor/outdoor cable for local networks

		Performance 600 MHz 4 twisted pair cable, 100 Ω LSZH sheath: zero halogen ANSI/TIA colour code Compliant with ISO/IEC 11 801 and EN 50173 standards Product conforming to the CPR regulations
	LSZH	
		S/FTP - 4 pairs - indoor/outdoor
500[1]	0 338 90	Length 500 m. Supplied on reel. Weight 26 kg Euroclass Eca

Cat. 6A RJ 45 patch cords and user cords

Pack	Cat.Nos	
		RJ 45/RJ 45 - flat With special "easy grip" plug Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
	PVC	
		Unscreened U/UTP, impedance 100 Ω
1	0 518 82	Length 1 m
1	0 518 83	Length 2 m
1	0 518 84	Length 3 m
1	0 518 85	Length 5 m
	LSZH	
1	0 518 78	Length 1 m
1	0 518 79	Length 2 m
1	0 518 80	Length 3 m
1	0 518 81	Length 5 m
1	0 518 74	Length 1 m
1	0 518 75	Length 2 m
1	0 518 76	Length 3 m
1	0 518 77	Length 5 m
	PVC	
		Shielded S/FTP, impedance 100 Ω
1	0 518 48	Length 0.3 m
1	0 518 16	Length 0.5 m
5	0 517 80	Length 1 m
5	0 517 81	Length 2 m
5	0 517 82	Length 3 m
5	0 517 83	Length 5 m
1	0 518 49	Length 10 m
	LSZH	
1	0 518 70	Length 1 m
1	0 518 71	Length 2 m
1	0 518 72	Length 3 m
1	0 518 73	Length 5 m
1	0 518 66	Length 1 m
1	0 518 67	Length 2 m
1	0 518 68	Length 3 m
1	0 518 69	Length 5 m

Cat. 6A RJ 45 patch cords and user cords - High Density

		RJ 45/RJ 45 - flat With special "easy grip" plug Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
	LSZH	
		Shielded S/FTP, impedance 100 Ω
1	0 515 50	Length 0.5 m
1	0 515 51	Length 1 m
1	0 515 52	Length 2 m
1	0 515 53	Length 3 m
1	0 515 54	Length 5 m

Marking kit

200	0 518 90	Kit of 200 coloured rings for marking RJ 45 cords 4 colors (green/red/yellow/blue). 50 pieces of each color Rings to be clipped onto the patch cords

1: in metre(s)

Legrand cabling system, LCS³ cat. 6A

RJ 45 sockets - Mosaic™


0 765 73


0 765 76


0 794 76


0 765 24


0 765 25


0 765 99

Can be integrated in any support
Mechanisms to be equipped with support frames and plates
Equipped with connectors with quick toolless connection
Take single-core cables from AWG 22 up to AWG 26, and AWG 26 multicore cables
T568A and B marking with colour codes
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Pack	Cat.Nos	Cat. 6A RJ 45 sockets - Mosaic
		STP - 1 module
		Metal shielding
10	0 765 73	○ White
10	0 765 84	○ White antimicrobial(1)
10	0 794 73	● Aluminium
10	0 791 73L	● Matt Black
		STP - 2 modules
		Metal shielding
10	0 765 76	○ White
10	0 794 76	● Aluminium
10	0 791 76L	● Matt Black
10	0 765 24	○ White with green shutter
10	0 765 25	○ White with orange shutter
		STP with controlled access - 2 modules
		Metal shielding
		Supplied with 2 keys for 5 sockets
5	0 765 99	○ White with red shutter
		STP 45° - 2 modules
		Metal shielding
10	0 765 08	○ White
		UTP - 1 module
10	0 765 71	○ White
10	0 794 71	● Aluminium
10	0 765 26	○ White with green shutter
10	0 765 27	○ White with orange shutter
		UTP - 2 modules
10	0 765 74	○ White
10	0 794 74	● Aluminium
		UTP with controlled access - 2 modules
		Supplied with 2 keys for 5 sockets
5	0 765 90	○ White with red shutter
		UTP 45° - 2 modules
10	0 765 09	○ White

1: Contains a silver compound which prevents the growth of bacteria on the surface

Legrand cabling system, LCS³ cat. 6A

RJ 45 sockets - Arteor


5 723 06


5 723 50


5 728 49

Can be integrated in any support
Mechanisms to be equipped with support frames and plates
Equipped with connectors with quick toolless connection
Take single-core cables from AWG 22 up to AWG 26, and AWG 26 multicore cables
T568A and B marking with colour codes
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Pack	Cat.Nos	Cat. 6A RJ 45 sockets - Arteor
		Metal shielding
		STP - 1 module
10	5 723 06	○ White
10	5 728 06	● Magnesium
10	5 728 46	● Champagne
10	5 728 45	● Soft Alu
10	5 723 51	○ White with orange shutter
10	5 728 51	● Magnesium with orange shutter
10	5 728 48	● Champagne with orange shutter
10	5 728 47	● Soft Alu with orange shutter
10	5 723 52	○ White with green shutter
10	5 728 52	● Magnesium with green shutter
10	5 728 61	● Champagne with green shutter
10	5 728 60	● Soft Alu with green shutter
		STP with controlled access - 2 modules
		Supplied with 2 keys for 5 sockets
5	5 723 50	○ White with red shutter
5	5 728 50	● Magnesium with red shutter
5	5 728 63	● Champagne with red shutter
5	5 728 62	● Soft Alu with red shutter
		UTP - 1 module
10	5 723 49	○ White
10	5 728 49	● Magnesium
10	5 728 65	● Champagne
10	5 728 64	● Soft Alu
10	5 723 58	○ White with orange shutter
10	5 728 58	● Magnesium with orange shutter
10	5 728 69	● Champagne with orange shutter
10	5 728 68	● Soft Alu with orange shutter
10	5 723 59	○ White with green shutter
10	5 728 59	● Magnesium with green shutter
10	5 728 67	● Champagne with green shutter
10	5 728 66	● Soft Alu with green shutter
		UTP with controlled access - 2 modules
		Supplied with 2 keys for 5 sockets
5	5 723 57	○ White with red shutter
5	5 728 57	● Magnesium with red shutter
5	5 728 72	● Champagne with red shutter
5	5 728 71	● Soft Alu with red shutter

Legrand cabling system, LCS³ cat. 6A

other RJ 45 connectors


6 327 79


0 337 49


0 695 59

Pack	Cat.Nos	Cat. 6A Keystone RJ 45 sockets
10	0 331 54	STP socket - metal shielding with quick toolless connection
10	0 331 55	UTP connector - with quick toolless connection
1	6 327 79	**Surface mounting box - 1 or 2 ports** For Keystone connectors For surface mounting installations Can be fixed to a table or used in conjunction with mini-trunking
1	0 337 43	**STP Cat. 6A cable extender** To be used to extend a cable quickly and easily
1	0 337 49	**STP Cat. 6A field plug** To be used to make a direct connection on any IP equipment (switch, PoE LED panel, camera, Wi-Fi access point, etc) No tools required
5	0 695 59	**STP Cat. 6A Plexo RJ 45 socket** IP 55 closed flap IK 07  Grey

Legrand cabling system, LCS³ cat. 6A

zone distribution box solution


0 337 97

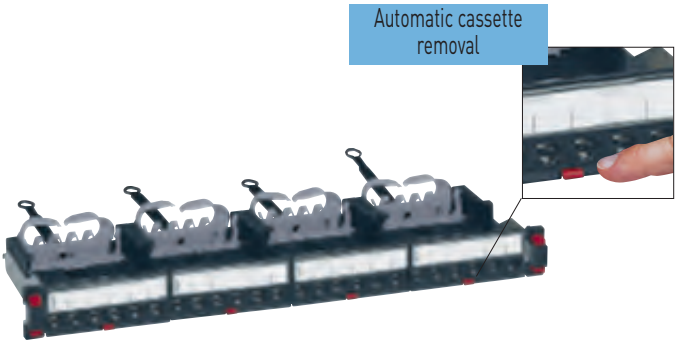

0 337 75


0 786 28

Pack	Cat.Nos	Zone distribution boxes to be equipped
		For distributing data in an area equipped with 1 to 24 RJ 45 sockets Centralise connections to ensure flexibility and scalability of the installation For installation in false ceilings or raised access floors The boxes connect to the patching enclosure or floor cabinet Connection to an RJ 45 socket with an RJ 45/stripped cord or to a Mosaic RJ 45 socket with copper feedthrough with an RJ 45/RJ 45 cord IP 21 - IK 07 Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards T568A and B marking with colour codes Technical characteristics: polycarbonate cover (PC), polypropylene base (PP), RAL 7035 To be equipped directly with High Density RJ 45 connectors
1	0 337 96	12 ports to be equipped
1	0 337 97	24 ports to be equipped
		Cat. 6A High Density RJ 45 connectors Set of 6 RJ 45 connectors
6	0 337 73	UTP
6	0 337 75	STP
		Cat. 6A cords - RJ 45/stripped RJ 45/stripped - straight Plug in and out of the zone distribution boxes and connect to an LCS³ connector of an RJ 45 socket via the stripped side Cables prepared in factory, "ready for wiring" Compliant with ISO/IEC 11801 Ed. 2.0 (2011), EN 50173-1 and EIA/TIA 568 C2 standards LSZH RAL 1018 **Shielded S/FTP, impedance 100 Ω**
1	0 517 86	Length 8 m
1	0 517 87	Length 15 m
1	0 517 88	Length 20 m
		Cat. 6A cords - RJ 45/RJ 45 For direct connection via RJ 45 male plug to the zone distribution box and to the RJ 45 socket with copper feedthrough to ensure safe connection, plus speed and reliability of connection Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards LSZH RAL 1018 **Shielded S/FTP, impedance 100 Ω**
1	0 515 23	Length 8 m
1	0 515 24	Length 15 m
1	0 515 25	Length 20 m
		Cat. 6A sockets with copper feedthrough **Cat. 6A STP - Mosaic**
10	0 786 28	 White
10	0 786 29	Aluminium

Legrand cabling system, LCS³ cat. 6

flat patch panels - equipped



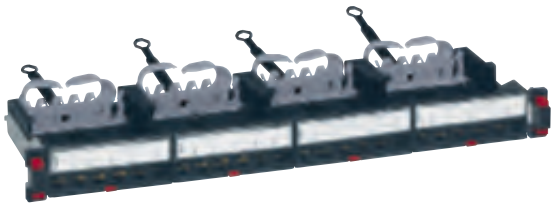
0 337 61

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 bundles guides fixed at the rear

Pack	Cat.Nos	**Cat. 6 patch panels equipped with 24 RJ 45 connectors**
		19" panels - 1U Equipped with 4 cassettes of 6 pre-fitted Cat. 6 LCS³ RJ 45 connectors Automatic cassette removal by simple pressure Each connector can be removed individually T568A and B marking with colour codes Equipped with rear cable guide to hold cables during maintenance Supplied with numbered colour labels Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
		Flat panels 24 RJ 45 connectors - 1U - PoE++
1	0 337 60	UTP
1	0 337 61	FTP
1	0 337 62	STP

Legrand cabling system, LCS³ cat. 6

flat patch panels, to be equipped



0 337 90

0 337 98

0 337 99

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 bundles guides fixed at the rear

Pack	Cat.Nos	**19" flat patch panels - to be equipped**
		19" panels - 1U Equipped with rear cable guide to hold cables during maintenance Automatic cassette removal by simple pressure Each connector can be removed individually
		Flat panel with empty cassettes to be equipped with connectors
1	0 337 90	Equipped with 4 automatically removable cassettes, takes up to 24 Cat. 5e to Cat. 8 RJ 45 connectors
		Empty flat panel to be equipped with cassettes
1	0 337 91	Can take a maximum of 4 automatically removable cassettes: - copper to be equipped with Cat. 5e to Cat. 8 RJ 45 connectors - fiber optic
		High Density flat panel with empty cassettes to be equipped with connectors
1	0 337 93	Equipped with 4 High Density cassettes, takes up to 48 Cat. 5e to Cat. 6A RJ 45 connectors
		10" flat patch panels - to be equipped
		10" panels - 1U
1	0 337 98	Takes up to 6 Cat. 5e to Cat. 8 RJ 45 connectors
1	0 337 99	Takes up to 12 Cat. 5e to Cat. 6A RJ 45 connectors

Legrand cabling system, LCS³ cat. 6

angled patch panels to be equipped, connectors

0 337 92

0 337 94

0 337 63

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 concentric strand guides fixed at the rear

Pack	Cat.Nos	Angled patch panels - to be equipped
		19" panels - 1U
		Angled patch panel to be equipped with connectors
1	0 337 92	Takes up to 24 Cat. 5e to Cat. 8 RJ 45 connectors
		High Density angled panel to be equipped with connectors
1	0 337 94	Takes up to 48 Cat. 5e to Cat. 6A RJ 45 connectors

Pack	Cat.Nos	Cat. 6 High Density RJ 45 connectors
		Quick-connect connection (no tools required) T568A and B marking with colour codes Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards To be installed in cassettes for flat panels or directly in an angled panel or a zone distribution box to be equipped Set of 6 RJ 45 connectors
6	0 337 63	UTP
6	0 337 64	FTP
6	0 337 65	STP

Legrand cabling system, LCS³ cat. 6

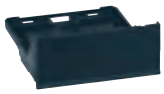
accessories

0 337 56

0 337 59

0 337 55

0 337 66



0 337 57

0 337 58

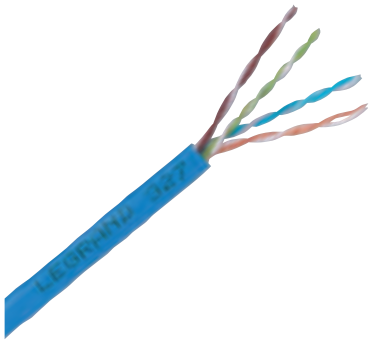
Pack	Cat.Nos	Common accessories for flat and angled panels
		Port blanking plate
10	0 337 56	Separable blanking plate For covering 1 to 6 ports or 1 to 12 ports individually (High Density solutions)
		Cord management
1	0 337 59	2 cable guides to be clipped onto new-generation Quick-Fix Provide side cord management Label-holder for identification

Pack	Cat.Nos	Specific accessories for flat panels
		Cassette for flat panels to be equipped
1	0 337 55	Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
		Cassette with shutters for flat panels to be equipped
1	0 337 66	Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance Equipped with 6 individual shutters to protect RJ 45 connectors contacts For equipping flat panels
		High Density cassette for flat panels to be equipped
1	0 337 95	Removable empty cassette to be equipped with connectors, takes 12 Cat. 5e to Cat. 6A connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
		Blanking cassette
1	0 337 57	To be used to fill gaps in the panel

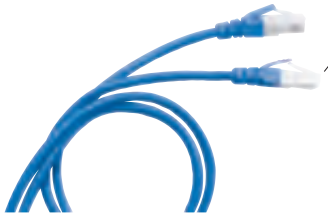
Pack	Cat.Nos	Specific accessory for angled panels
		Cover
1	0 337 58	Optimises air flow management in the enclosure

Legrand cabling system, LCS³ cat. 6

cables and cords



0 327 54



0 517 54

0 515 41

Cat. 6 cables for local networks

Performance 250 MHz
Cables with 4 pairs or 2 x 4 twisted pairs, 100 Ω
Blue RAL 5015
ANSI/TIA colour code
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
Products conforming to the CPR regulations
Euroclass Dca for LSZH cables (except Cat No 0 328 86: Euroclass Cca and Cat No 0 328 79 : Euroclass B2ca), Euroclass Eca for PVC cables

Pack	Cat.Nos LSZH	Cat.Nos PVC	
			U/UTP - 4 pairs
305[1]	0 327 54		Length 305 m Supplied in cardboard box. Weight 14 kg
305[1]	0 328 86		Length 305 m Supplied in cardboard box. Weight 15 kg
305[1]	0 328 79		Length 500m Supplied on reel. Weight 24 kg
500[1]	0 328 61		Length 500 m Supplied on reel. Weight 19 kg
305[1]		0 327 55	Length 305 m Supplied in cardboard box. Weight 13 kg
			F/UTP - 4 pairs
305[1]	0 328 56		Length 305 m Supplied in reel in box. Weight 19 kg
500[1]	0 327 56		Length 500 m Supplied on reel. Weight 27 kg
			F/UTP - 4 pairs
305[1]		0 328 57	Length 305 m Supplied in reel in box. Weight 20 kg
500[1]		0 327 58	Length 500 m Supplied on reel. Weight 25 kg
			F/UTP - 2 x 4 pairs
500[1]	0 327 76		Length 500 m Supplied on reel. Weight 51 kg
			SF/UTP - 4 pairs
500[1]	0 327 57		Length 500 m Supplied on reel. Weight 31 kg
500[1]		0 327 59	Length 500 m Supplied on reel. Weight 30 kg

1: in metre(s)

Cat. 6 RJ 45 patch cords and user cords

RJ 45/RJ 45 - straight
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Pack	Cat.Nos PVC RAL 5015	
		Shielded SF/UTP, impedance 100 Ω
1	0 517 52	Length 1 m
1	0 517 53	Length 2 m
1	0 517 54	Length 3 m
1	0 517 55	Length 5 m
		Screened F/UTP, impedance 100 Ω
1	0 518 15	Length 0.5 m
1	0 517 62	Length 1 m
1	0 517 63	Length 2 m
1	0 517 64	Length 3 m
1	0 517 65	Length 5 m

Pack	Cat.Nos LSZH RAL 3020	Cat.Nos LSZH RAL 6026	
1	0 518 54	0 518 50	Length 1 m
1	0 518 55	0 518 51	Length 2 m
1	0 518 56	0 518 52	Length 3 m
1	0 518 57	0 518 53	Length 5 m

Pack	Cat.Nos PVC RAL 5015	
		Unscreened U/UTP, impedance 100 Ω
1	0 518 18	Length 0.5 m
1	0 517 72	Length 1 m
1	0 517 73	Length 2 m
1	0 517 74	Length 3 m
1	0 517 75	Length 5 m

Pack	Cat.Nos LSZH RAL 3020	Cat.Nos LSZH RAL 6026	
5	0 518 62	0 518 58	Length 1 m
5	0 518 63	0 518 59	Length 2 m
5	0 518 64	0 518 60	Length 3 m
5	0 518 65	0 518 61	Length 5 m

Cat. 6 RJ 45 patch cords and user cords - High Density

RJ 45/RJ 45 - straight
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Pack	Cat.Nos LSZH RAL 5015	
		Screened F/UTP, impedance 100 Ω
1	0 515 40	Length 0.5 m
1	0 515 41	Length 1 m
1	0 515 42	Length 2 m
1	0 515 43	Length 3 m
1	0 515 44	Length 5 m
		Unshielded U/UTP impedance 100 Ω
1	0 515 45	Length 0.5 m
1	0 515 46	Length 1 m
1	0 515 47	Length 2 m
1	0 515 48	Length 3 m
1	0 515 49	Length 5 m

Marking kit

Pack	Cat.Nos	
200	0 518 90	Kit of 200 coloured rings for marking RJ 45 cords 4 colors (green/red/yellow/blue). 50 pieces of each color Rings to be clipped onto the patch cords

Legrand cabling system, LCS³ cat. 6

RJ 45 sockets - Mosaic™


0 791 65L


0 794 33


0 765 63


0 765 96

Can be integrated in any support
Mechanisms to be equipped with support frames and plates
Equipped with connectors with quick toolless connection
Take single-core cables from AWG 22 up to AWG 26, and AWG 26 multicore cables
T568A and B marking with colour codes
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Pack	Cat.Nos	Cat. 6 RJ 45 sockets - Mosaic
		UTP - 1 module
10	0 765 61	○ White
10	0 794 61	● Aluminium
10	0 794 61L	● Matt Black
10	0 765 81	○ White antimicrobial(1)
		UTP - 2 modules
10	0 765 64	○ White
10	0 794 64	● Aluminium
10	0 791 64L	● Matt Black
		UTP with controlled access - 2 modules
		Supplied with 2 keys for 5 sockets
5	0 765 94	○ White with red shutter
		UTP 90° - 2 modules
		Vertical snap-on socket for column module
10	0 765 91	○ White
		UTP 45° - 2 modules
10	0 765 03	○ White
		UTP 45° - 2 x RJ 45 - 2 modules
5	0 765 04	○ White
		UTP with retractable cord - 4 modules
		With integrated retractable cord (0.9 m)
		Automatically winds back in at the press of a button
1	0 765 32	○ White
		UTP 2 x RJ 45 with Soluclip accessory - 4 modules
		For snap-on mounting on DLP trunking with 45 mm cover
5	0 765 44	○ White
		FTP - 1 module
10	0 765 62	○ White
10	0 794 62	● Aluminium
10	0 791 62L	● Matt Black
10	0 765 82	○ White antimicrobial(1)
		FTP - 2 modules
10	0 765 65	○ White
10	0 794 65	● Aluminium
10	0 791 65L	● Matt Black
10	0 765 22	○ White with green shutter
10	0 765 23	○ White with orange shutter
		FTP 2 x RJ 45 with Soluclip accessory - 4 modules
		For snap-on mounting on trunking with 45 mm cover
5	0 765 46	○ White

Pack	Cat.Nos	Cat. 6 RJ 45 sockets - Mosaic (continued)
		FTP with controlled access - 2 modules
		Supplied with 2 keys for 5 sockets
5	0 765 95	○ White with red shutter
		FTP 45° - 2 modules
10	0 765 05	○ White
		FTP 45° - 2 x RJ 45 - 2 modules
5	0 765 06	○ White
		FTP with retractable cord - 4 modules
		With integrated retractable cord (0.9 m)
		Automatically winds back in at the press of a button
1	0 765 33	○ White
1	0 794 33	● Aluminium
		FTP 90° - 2 modules
		Vertical snap-on socket for column module
10	0 765 92	○ White
10	0 794 92	● Aluminium
		Shielded STP - 1 module
10	0 765 63	○ White
10	0 765 83	○ White antimicrobial(1)
		Shielded STP - 2 modules
10	0 765 66	○ White
		Shielded STP with controlled access - 2 modules
		Supplied with 2 keys for 5 sockets
5	0 765 96	○ White with red shutter
		STP 45° - 2 modules
10	0 765 07	○ White
		Shielded STP 90° - 2 modules
		Vertical snap-on socket for column module
10	0 765 93	○ White

1: Contains a silver compound which prevents the growth of bacteria at the surface

Legrand cabling system, LCS³ cat. 6

RJ 45 sockets (Arteor, Soliroc and Plexo) and other connectors


5 728 02


5 700 57


5 710 57


5 728 16


0 695 69


6 327 79

Can be integrated in any support
Equipped with connectors with quick toolless connection
Take single-core cables from AWG 22 up to AWG 26, and AWG 26 multicore cables
T568A and B marking with colour codes
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Cat. 6 RJ 45 sockets - Arteor

Mechanisms supplied with square rocker plates, to be equipped with support frames and plates

UTP - 1 module

Pack	Cat.Nos	
10	5 723 02	White
10	5 728 02	Magnesium
10	5 700 57	Champagne
10	5 710 57	Soft Alu
10	5 723 54	White with orange shutter
10	5 728 54	Magnesium with orange shutter
10	5 728 74	Champagne with orange shutter
10	5 728 73	Soft Alu with orange shutter
10	5 723 55	White with green shutter
10	5 728 55	Magnesium with green shutter
10	5 728 80	Champagne with green shutter
10	5 728 79	Soft Alu with green shutter

UTP - 2 modules

Pack	Cat.Nos	
10	5 723 14	White - square version
10	5 728 14	Magnesium - square version
10	5 700 59	Champagne - square version
10	5 710 59	Soft Alu - square version

UTP with controlled access - 2 modules

Supplied with 2 keys for 5 sockets

Pack	Cat.Nos	
5	5 723 53	White with red shutter
5	5 728 53	Magnesium with red shutter
5	5 728 87	Champagne with red shutter
5	5 728 86	Soft Alu with red shutter

UTP with retractable cord - 4 modules

With integrated retractable cord (0.9 m)
Automatically winds back in at the press of a button

Pack	Cat.Nos	
1	5 723 39	White
1	5 728 39	Magnesium
1	5 728 89	Champagne
1	5 728 88	Soft Alu

FTP - 1 module

Pack	Cat.Nos	
10	5 723 22	White
10	5 728 22	Magnesium
10	5 728 91	Champagne
10	5 728 90	Soft Alu

FTP - 2 modules

Pack	Cat.Nos	
10	5 723 16	White
10	5 728 16	Magnesium
10	5 728 93	Champagne
10	5 728 92	Soft Alu

Shielded STP - 1 module

Pack	Cat.Nos	
10	5 723 23	White
10	5 728 23	Magnesium
10	5 728 95	Champagne
10	5 728 94	Soft Alu

Shielded STP - 2 modules

Pack	Cat.Nos	
10	5 723 17	White
10	5 728 17	Magnesium
10	5 728 97	Champagne
10	5 728 96	Soft Alu

Cat. 6 Soliroc RJ 45 socket - IK 10

FTP - 2 modules

Pack	Cat.Nos	
1	0 778 91	IP 20 - IK 10 For at-risk areas or areas without surveillance

Cat. 6 Plexo RJ 45 sockets - IP 55 closed flap IK 07

RJ 45 sockets

Protection against water, dust
For industrial sites
Grey

Pack	Cat.Nos	
5	0 695 69	FTP socket
1	0 695 61	UTP socket

Adaptor for RJ 45 socket

Pack	Cat.Nos	
1	0 695 81	RJ 45 to be ordered separately Guaranteed weatherproof seal (IP 44) with the plug inserted Grey

Cat. 6 Plexo 66 RJ 45 socket - IP 66 - IK 08

FTP socket

Pack	Cat.Nos	
1	0 904 67	9 contacts Guaranteed weatherproof seal (IP 66) with the plug inserted Inclined 90° Grey RAL 7016/T029

Cat. 6 Keystone RJ 45 socket

Pack	Cat.Nos	
10	0 331 81	UTP socket with fast connection

Surface mounting box - 1 or 2 ports

Pack	Cat.Nos	
1	6 327 79	For Keystone connectors For surface mounting installations Can be fixed to a table or used in conjunction with mini-trunking

Cable extenders

To be used to extend a cable quickly and easily

Pack	Cat.Nos	
1	0 337 48	For FTP Cat. 6 cables
1	0 337 42	For UTP Cat. 6 cables

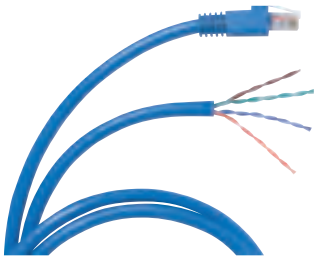
Audio/video sockets
Arteor and Mosaic
p. 145-146

Legrand cabling system, LCS³ cat. 6

zone distribution box solution

0 337 97

0 337 63



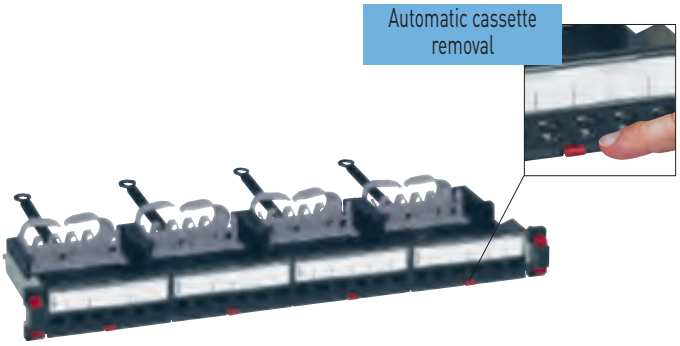
0 517 57

Pack	Cat.Nos	Zone distribution boxes to be equipped
		For distributing data in an area equipped with 1 to 24 RJ 45 sockets Centralise connections to ensure flexibility and scalability of the installation For installation in false ceilings or raised access floors The boxes connect to the patching enclosure or floor cabinet Connection to an RJ 45 socket with an RJ 45/ stripped cord or to a Mosaic RJ 45 socket with copper feedthrough with an RJ 45/RJ 45 cord IP 21 - IK 07 Compliant with ISO/IEC 11 801, EN 50173 and ANSI/ TIA 568 standards T568A and B marking with colour codes Technical characteristics: polycarbonate cover (PC), polypropylene base (PP), RAL 7035 To be equipped directly with RJ 45 High Density connectors
1	0 337 96	12 ports to be equipped
1	0 337 97	24 ports to be equipped
		Cat. 6 High Density RJ 45 connectors
		Set of 6 RJ 45 connectors
6	0 337 63	UTP
6	0 337 64	FTP
6	0 337 65	STP
		Cat. 6 cords - RJ 45/stripped
		RJ 45/stripped - straight Plug in and out of the zone distribution boxes and connect to an LCS³ connector of an RJ 45 socket via the stripped side Cables prepared in factory, "ready for wiring" Compliant with ISO/IEC 11801 Ed. 2.0 (2011), EN 50173-1 and EIA/TIA 568 C2 standards
	RAL 5015	
		Screened F/UTP, impedance 100 Ω
1	0 517 96	Length 8 m
1	0 517 97	Length 15 m
1	0 517 98	Length 20 m
		Unscreened U/UTP, impedance 100 Ω
1	0 517 57	Length 8 m
1	0 517 58	Length 15 m
1	0 517 59	Length 20 m

Pack	Cat.Nos	Cat. 6 cords - RJ 45/RJ 45
		For direct connection via RJ 45 male plug to the zone distribution box and to the RJ 45 socket with copper feedthrough to ensure safe connection, plus speed and reliability of connection
	LSZH	
	RAL 5015	
		Screened F/UTP, impedance 100 Ω
1	0 515 13	Length 8 m
1	0 515 14	Length 15 m
1	0 515 15	Length 20 m
		Unscreened U/UTP, impedance 100 Ω
1	0 515 10	Length 8 m
1	0 515 11	Length 15 m
1	0 515 12	Length 20 m
		Cat. 6 sockets with copper feedthrough
		Cat. 6 UTP - Mosaic
10	0 786 22	○ White
10	0 786 26	● Aluminium
		Cat. 6 FTP - Mosaic
10	0 786 23	○ White
10	0 786 27	● Aluminium
		Cat. 6 UTP - Arteor
10	5 723 31	○ White
10	5 728 31	● Magnesium
10	5 729 10	● Champagne
10	5 729 09	● Soft Alu
		Cat. 6 FTP - Arteor
10	5 723 33	○ White
10	5 728 33	● Magnesium
10	5 729 12	● Champagne
10	5 729 11	● Soft Alu

Legrand cabling system, LCS³ cat. 5e

flat patch panels - equipped



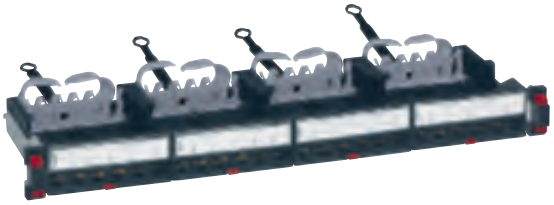
0 337 51

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 bundles guides fixed at the rear

Pack	Cat.Nos	**Cat. 5e patch panels equipped with 24 RJ 45 connectors**
		19" panels - 1U Equipped with 4 cassettes of 6 pre-fitted Cat. 5e LCS³ RJ 45 connectors Automatic cassette removal by simple pressure Each connector can be removed individually T568A and B marking with colour codes Equipped with rear cable guide to hold cables during maintenance Supplied with coloured labels Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards
		Flat panels 24 RJ 45 connectors - 1U - PoE++
1	0 337 50	UTP
1	0 337 51	FTP

Legrand cabling system, LCS³ cat. 5e

flat patch panels, to be equipped



0 337 90

0 337 98

0 337 99

Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector

Pack	Cat.Nos	**19" flat patch panels - to be equipped**
		19" panels - 1U Equipped with rear cable guide to hold cables during maintenance Automatic cassette removal by simple pressure Each connector can be removed individually
		Flat panel with empty cassettes to be equipped with connectors
1	0 337 90	Equipped with 4 automatically removable cassettes, takes up to 24 Cat. 5e to Cat. 8 RJ 45 connectors
		Empty flat panel to be equipped with cassettes
1	0 337 91	Takes a maximum of 4 automatically removable cassettes: - copper to be equipped with Cat. 5e to Cat. 8 RJ 45 connectors - fiber optic
		High Density flat panel with empty cassettes to be equipped with connectors
1	0 337 93	Equipped with 4 High Density cassettes, takes up to 48 Cat. 5e to Cat. 6A RJ 45 connectors
		10" flat patch panels - to be equipped
		10" panels - 1U
1	0 337 98	Takes up to 6 Cat. 5e to Cat. 8 RJ 45 connectors
1	0 337 99	Takes up to 12 Cat. 5e to Cat. 6A RJ 45 connectors

Legrand cabling system, LCS³ cat. 5e

angled patch panels to be equipped, connectors

0 337 92

0 337 94

0 337 53

Equipped with new-generation Quick-Fix for automatic (screwless) mounting on enclosure and cabinet uprights
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with 4 concentric strand guides fixed at the rear

Pack	Cat.Nos	Angled patch panels - to be equipped
		19" panels - 1U
1	0 337 92	**Angled patch panel to be equipped with connectors** Takes up to 24 Cat. 5e to Cat. 8 RJ 45 connectors
1	0 337 94	**High Density angled panel to be equipped with connectors** Takes up to 48 Cat. 5e to Cat. 6A RJ 45 connectors
		Cat. 5e High Density RJ 45 connectors
		Quick-connect connection (no tools required) T568A and B marking with colour codes Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards To be installed in cassettes for flat panels or directly in an angled panel or a zone distribution box to be equipped Set of 6 RJ 45 connectors
6	0 337 53	UTP
6	0 337 54	FTP

Legrand cabling system, LCS³ cat. 5e

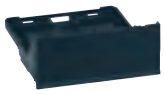
accessories

0 337 56

0 337 59

0 337 55

0 337 66



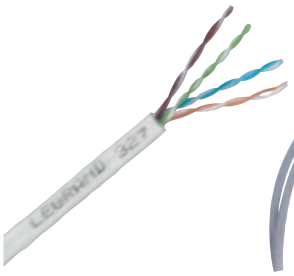
0 337 57

0 337 58

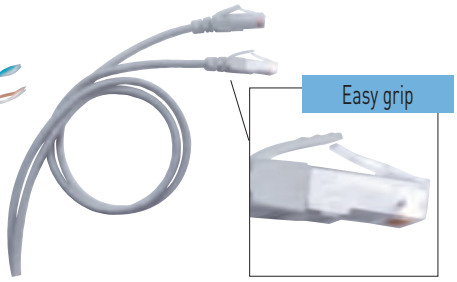
Pack	Cat.Nos	Common accessories for flat and angled panels
10	0 337 56	**Port blanking modules** Separable blanking plate For covering 1 to 6 ports or 1 to 12 ports individually (High Density solutions)
1	0 337 59	**Cord management** 2 cable guides to be clipped onto new-generation Quick-Fix Provide side cord management Label-holder for identification
		Specific accessories for flat panels
1	0 337 55	**Cassette for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
1	0 337 66	**Cassette with shutters for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 8 connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance Equipped with 6 individual shutters to protect RJ 45 connectors contacts For equipping flat panels
1	0 337 95	**High Density cassette for flat panels to be equipped** Removable empty cassette to be equipped with connectors, takes 12 Cat. 5e to Cat. 6A connectors Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
1	0 337 57	**Blanking cassette** To be used to fill gaps in the panel
		Specific accessory for angled panels
1	0 337 58	**Cover** Optimises air flow management in the enclosure

Legrand cabling system, LCS³ cat. 5e

cables and cords



0 327 50



0 516 40

Pack	Cat.Nos		Cat. 5e cables for local networks
			Cable with 4 twisted pairs, 100 Ω LSZH sheath: zero halogen Grey RAL 7035 ANSI/TIA colour code Compliant with ISO/IEC 11 801, EN 50173, ANSI/TIA 568 standards Products conforming to the CPR regulations Euroclass Dca for LSZH cables, Euroclass Eca for PVC cables
	LSZH	PVC	
305[1]	0 327 50		**U/UTP - 4 pairs** Length 305 m Supplied in cardboard box. Weight 9 kg
500[1]	0 328 53		Length 500 m Supplied on reel. Weight 15 kg
305[1]		0 327 51	Length 305 m Supplied in cardboard box. Weight 9 kg
			F/UTP - 4 pairs
305[1]	0 327 52		Length 305 m Supplied in cardboard box. Weight 12 kg
500[1]	0 328 50		Length 500 m Supplied on reel. Weight 21 kg
305[1]		0 327 53	Length 305 m Supplied in cardboard box. Weight 11 kg

Pack	Cat.Nos	Cat. 5e RJ 45 patch cords and user cords
		RJ 45/RJ 45 - straight Compliant with ISO/IEC 11 801, EN 50173, ANSI/TIA 568 standards Grey RAL 7035
	PVC	
		Unscreened U/UTP, impedance 100 Ω
1	0 518 17	Length 0.5 m
1	0 516 36	Length 1 m
1	0 516 37	Length 2 m
1	0 516 38	Length 3 m
1	0 516 39	Length 5 m
		Screened F/UTP, impedance 100 Ω
1	0 518 14	Length 0.5 m
1	0 516 40	Length 1 m
1	0 516 41	Length 2 m
1	0 516 42	Length 3 m
1	0 516 43	Length 5 m

Pack	Cat.Nos	Marking kit
200	0 518 90	Kit of 200 coloured rings for marking RJ 45 cords 4 colors (green/red/yellow/blue). 50 pieces of each color Rings to be clipped onto the patch cords

1: in metre(s)

Legrand cabling system, LCS³ cat. 5e

RJ 45 sockets (Arteor, Soliroc and Plexo) and other connectors


0 765 52


0 695 57


6 327 79

Can be integrated in any support
Equipped with connectors with quick connection
Take single-core cables from AWG 22 up to AWG 26, and AWG 26 multicore cables
T568A and B marking with colour codes
Compliant with ISO/IEC 11 801, EN 50173 and ANSI/TIA 568 standards

Cat. 5e RJ 45 sockets - Mosaic

Mechanisms to be equipped with support frames and plates

UTP - 1 module

Pack	Cat.Nos	
10	0 765 51	○ White
10	0 794 51	● Aluminium

UTP - 2 modules

Pack	Cat.Nos	
10	0 765 54	○ White
10	0 794 54	● Aluminium

UTP with controlled access - 2 modules
Supplied with 2 keys for 5 sockets

Pack	Cat.Nos	
5	0 765 97	○ White with red shutter

UTP - 2 x RJ 45 with Soluclip accessory - 3 modules
For snap-on mounting on DLP trunking with 45 mm cover

Pack	Cat.Nos	
5	0 765 41	○ White

UTP with retractable cord - 4 modules
With integrated retractable cord (0.9 m)
Automatically winds back in at the press of a button

Pack	Cat.Nos	
1	0 765 30	○ White

UTP 45° - 2 modules

Pack	Cat.Nos	
10	0 765 01	○ White

UTP 45° - 2 x RJ 45 - 2 modules

Pack	Cat.Nos	
5	0 765 02	○ White

FTP - 1 module

Pack	Cat.Nos	
10	0 765 52	○ White
10	0 794 52	● Aluminium

FTP - 2 modules

Pack	Cat.Nos	
10	0 765 55	○ White
10	0 794 55	● Aluminium

FTP with controlled access - 2 modules
Supplied with 2 keys for 5 sockets

Pack	Cat.Nos	
5	0 765 98	○ White with red shutter

FTP - 2 x RJ 45 with Soluclip accessory - 3 modules
For snap-on mounting on Mosaic trunking with 45 mm cover

Pack	Cat.Nos	
5	0 765 42	○ White

Cat. 5e RJ 45 sockets - Arteor

Mechanisms supplied with square rocker plates, to be equipped with support frames and plates

UTP - 1 module

Pack	Cat.Nos	
10	5 723 03	○ White
10	5 728 03	● Aluminium
10	5 700 58	● Champagne
10	5 710 58	● Soft Alu

UTP - 2 modules

Pack	Cat.Nos	
10	5 723 15	○ White
10	5 728 15	● Aluminium
10	5 728 99	● Champagne
10	5 728 98	● Soft Alu

FTP - 1 module

Pack	Cat.Nos	
10	5 723 04	○ White
10	5 728 04	● Aluminium
10	5 729 08	● Champagne
10	5 729 07	● Soft Alu

Cat. 5e Plexo RJ 45 sockets - IP 55 closed flap IK 07

RJ 45 sockets
Protection against water, dust
For industrial sites
● Grey

Pack	Cat.Nos	
1	0 695 57	FTP socket
1	0 695 56	UTP socket

Adaptor for RJ 45 socket
RJ 45 to be ordered separately.
Guaranteed weatherproof seal (IP 44) with plug inserted
● Grey

Pack	Cat.Nos	
1	0 695 81	

Cat. 5e Keystone RJ 45 socket

Pack	Cat.Nos	
10	0 331 80	UTP with quick toolless connection

Surface mounting box - 1 or 2 ports

Pack	Cat.Nos	
1	6 327 79	For Keystone connectors For surface mounting installations Can be fixed to a table or used in conjunction with mini-trunking

Audio/video sockets
Arteor and Mosaic
p. 145-146

Legrand cabling system, LCS³ Cat. 5e

zone distribution box solution

0 337 97

0 337 53

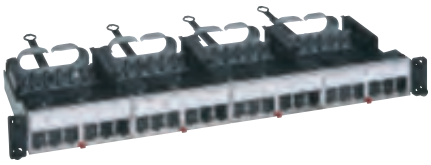
0 786 25

Pack	Cat.Nos	Zone distribution boxes to be equipped
		For distributing data in an area equipped with 1 to 24 RJ 45 sockets Centralise connections to ensure flexibility and scalability of the installation For installation in false ceilings or raised access floors The boxes connect to the patching enclosure or floor cabinet Connection to an RJ 45 socket with an RJ 45/ stripped cord or to a Mosaic RJ 45 socket with copper feedthrough with an RJ 45/RJ 45 cord IP 21 - IK 07 Compliant with ISO/IEC 11 801, EN 50173 and ANSI/ TIA 568 standards T568A and B marking with colour codes Technical characteristics: polycarbonate cover (PC), polypropylene base (PP), RAL 7035 To be equipped directly with RJ 45 High Density connectors
1	0 337 96	12 ports to be equipped
1	0 337 97	24 ports to be equipped
		Cat. 5e High Density RJ 45 connectors
		Set of 6 RJ 45 connectors
6	0 337 53	UTP
6	0 337 54	FTP

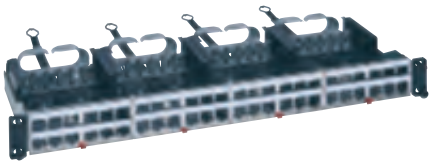
Pack	Cat.Nos	Cat. 5e cords - RJ 45/RJ 45
		PVC RAL 7035 For direct connection via RJ 45 male plug to the zone distribution box and to the RJ 45 socket with copper feedthrough to ensure safe connection, plus speed and reliability of connection
		Screened F/UTP, impedance 100 Ω
1	0 515 03	Length 8 m
1	0 515 04	Length 15 m
1	0 515 05	Length 20 m
		Unscreened U/UTP, impedance 100 Ω
1	0 515 00	Length 8 m
1	0 515 01	Length 15 m
1	0 515 02	Length 20 m
		Cat. 5e sockets with copper feedthrough
		Cat. 5e UTP - Mosaic
10	0 786 20	○ White
10	0 786 24	● Aluminium
		Cat. 5e FTP - Mosaic
10	0 786 21	○ White
10	0 786 25	● Aluminium
		Cat. 5e UTP - Arteor
10	5 723 30	○ White
10	5 728 30	● Magnesium
10	5 729 18	● Champagne
10	5 729 17	● Soft Alu
		Cat. 5e FTP - Arteor
10	5 723 32	○ White
10	5 728 32	● Magnesium
10	5 729 20	● Champagne
10	5 729 19	● Soft Alu

Legrand cabling system, LCS³ Series HDJ

flat panels, cassettes and connectors



0 336 83



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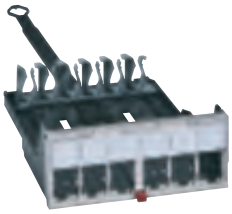


0 336 80

0 336 81

HDJ6A-44

HDJ6-44

Standard fixing
Universal mounting on all cabinets or enclosures
Panels ensure automatic earthing of each connector
Equipped with rear cable guides to hold cables during maintenance

Pack	Cat.Nos	Flat patch panels - to be equipped
1	0 336 83	19" panels - 1U Equipped with 4 automatically removable cassettes, takes up to 24 Cat. 5e to Cat. 6A RJ 45 HD Jack connectors
1	0 336 84	Equipped with 4 automatically removable HD cassettes, takes up to 48 Cat. 5e to Cat. 6A RJ 45 HD Jack connectors
		Empty flat patch panels - to be equipped
1	0 336 82	**19" panel - 1 U - standard fixation** Takes a maximum of 4 automatically removable cassettes to be equipped with up to 24 Cat. 5e to Cat. 6A RJ 45 HD Jack connectors
1	0 337 91	**19" panel - 1 U - automatic fixation (Soluclip)** Takes a maximum of 4 automatically removable cassettes to be equipped with up to 24 Cat. 5e to Cat. 6A RJ 45 HD Jack connectors
		Cassettes for flat panels to be equipped Can be removed by simple pressing on the cassette, for ease of installation and maintenance For equipping flat panels
1	0 336 80	Removable empty cassette to be equipped with connectors, takes 6 Cat. 5e to Cat. 6A RJ 45 HD Jack connectors
1	0 336 81	Removable empty cassette to be equipped with connectors, takes 12 Cat. 5e to Cat. 6A RJ 45 HD Jack connectors
		Blanking cassette
1	0 336 85	To be used to fill gaps in the panel

Pack	Cat.Nos	RJ 45 HD Jack connectors
		Quick-connect connection (no tools required) T568A and B marking with colour codes Compliant with following standards: ISO/IEC 11 801 ; EN 50173 ; ANSI/TIA-568-C.2 ; UL 1863 (and UL 2043 for Cat.Nos HDJS) ; IEEE 802.3af/802.3at/802.3bt Type 1 to Type 4 ; FCC part 68 subpart F ; IEC-603-7 Intertek ETL Verified component To be installed in cassettes Cat.Nos 0 336 80 and 0 336 81 for flat panels Set of 20 connectors except for Cat.Nos HDJS625 and HDJS6A25 (set of 25 connectors)
		Cat. 6A RJ 45 HD Jack connectors
20	HDJ6A-00	UTP - Black
20	HDJ6A-36	UTP - Blue
20	HDJ6A-44	UTP - Yellow
25	HDJS6A25	STP
		Cat. 6 RJ 45 HD Jack connectors
20	HDJ6-00	UTP - Black
20	HDJ6-36	UTP - Blue
20	HDJ6-44	UTP - Yellow
20	HDJ6-88	UTP - White
25	HDJS625	STP
		Cat. 5e RJ 45 HD Jack connector
20	HDJ5E-78	UTP - Dark gray
		Blank module for RJ 45 HD Jack connectors
10	HDJBL10-00	HDJ - Black

Legrand cabling system, LCS³

PoE WAP and switches


0 335 23


0 334 92


4 131 11

Pack	Cat.Nos	PoE Wi-Fi Access Point
1	0 335 23	Plug & play product to be installed on any RJ 45 socket connected to a Power over Ethernet switch Self-powered with PoE Easy configuration with a smartphone or computer (browser based) Possibility to choose Wi-Fi signal strength (only in room or beyond) WPS (Wi-Fi Protected Setup) and On/Off functions White

Pack	Cat.Nos	PoE Ethernet switches
		Ethernet switches with PoE and PoE+ EndSpan injector (standard IEEE 802.3af and 802.3at) For supplying power to the Ethernet ports of devices (Wi-Fi access point, IP camera, etc) Supplied with power supply
		19" switches
1	0 334 90	Ethernet switch with 10 RJ 45 ports (8 PoE+ outputs) Gigabit - Manageable
1	0 334 92	Ethernet switch with 26 RJ 45 ports (24 PoE+ outputs) Gigabit - Manageable
		Tablet switch - 6 ports
1	0 334 93	Ethernet switch with 6 ports including: - 1 Gigabit RJ 45 and 1 fiber optic SFP uplinks - 4 Gigabit PoE+ RJ 45 outputs Non manageable Whole device power: 65W Max power: 30W per port
		Tablet switches - 5 ports Ethernet switches with 5 ports including: - 1 RJ 45 uplink - 4 Gigabit PoE+ RJ 45 outputs Non manageable Whole device power : 58W
1	4 131 11	EU power supply cord
1	4 131 13	BS power supply cord

Legrand cabling system

doublers and weatherproof adaptors


0 327 47


0 539 49

Pack	Cat.Nos	Mobile doublers
		Clip into RJ 45 sockets to double up applications
10	0 327 83	TV/computer network or telephone doubler
10	0 327 47	Telephone/telephone doubler
10	0 327 45	Computer network/telephone doubler
10	0 327 46	L1/L2 telephone doubler
10	0 327 48	Computer network/computer network doubler

Pack	Cat.Nos	Weatherproof adaptors
		Plexo adaptors
		IP 55 - IK 07 Take 2-module Mosaic mechanisms without a support (RJ 45 socket, telephone socket, coded keypad, etc) except special surface mounting type
	Grey/White	
10	0 695 80	Adaptor with smoked flap
1	0 695 79	Adaptor with smoked flap lockable by means of a special tool
1	0 695 81	Adaptor for RJ socket ensuring IP 44 sealing of the cable when already connected
1	0 919 45	Locking tool (used for changing vandal-proof screws)
		Soliroc adaptors Used for adapting all functions 2-module Mosaic mechanisms (except special surface mounting type) IK 10 - IP 55
1	0 778 80	Adaptor with flap
1	0 778 81	Adaptor without flap
		Hypra adaptor
5	0 539 49	IP 55 adaptor base

Legrand cabling system, LCS³

sockets, panel and cables for telephone application

0 787 31

0 335 79

Pack	Cat.Nos Mosaic	Cat.Nos Arteor	
			Telephone sockets
			RJ 11 and RJ 12 sockets Equipped with a modular Jack connector with 1/4-turn terminal for fast connection Tap-off possible
10	0 787 30	5 723 00	○ White - RJ 11, 4 contacts, 1 module
10	0 792 31		● Aluminium - RJ 11, 4 contacts, 1 module
10		5 728 00	● Magnesium - RJ 11, 4 contacts, 1 module
10	0 787 31	5 723 13	○ White - RJ 11 - 4 contacts, 2 modules
10		5 728 13	● Magnesium - RJ 11 - 4 contacts, 2 modules
10	0 787 32	5 723 12	○ White - RJ 12 - 6 contacts, 2 modules
10		5 728 12	● Magnesium - RJ 12 - 6 contacts, 2 modules-
			ISDN socket Self-stripping 1/4 turn terminals for fast connection. Tap-off possible
10	0 787 34		○ White - 8 contacts, 2.5 mm² earth terminal
			Single master - 2 modules With IDC connection Conform to British Telecom
10		5 723 10	○ White
10		5 728 10	● Magnesium
			Single secondary - 1 module With IDC connection Conform to British Telecom
5		5 723 01	○ White
5		5 728 01	● Magnesium

Pack	Cat.Nos	
		Telephone patch panel - 50 ports 110 connect
1	0 335 79	19" panel - 1U

Pack	Cat.Nos	
		Cables for telephone networks
		Cables - Cat. 3. Colour: white TIA/EIA colour code
	LSZH	
1	0 328 91	**U/UTP - 50 pairs** Length 500 m Supplied on reel
1	0 328 88	**U/UTP - 100 pairs** Length 500 m Supplied on reel

Legrand cabling system, LCS³

accessories

0 517 09

0 327 60

Pack	Cat.Nos	
		110 tool
1	0 332 60	110 tool
5	0 332 61	Replacement blade
		Crimping tool for RJ 45 plugs For crimping RJ plugs with 4/6/8/9 contacts Ratchet control of crimping mechanism Possibility to cut and strip cables
1	0 517 09	Tool with 3 crimping points High resistance steel material
		RJ plugs for round cables - for crimping Gold-coated contacts, 1.2 µm
50	0 517 01	**RJ 11** 4 contacts
50	0 517 02	**RJ 12** 6 contacts
		RJ 45 Cat. 5e
50	0 517 03	8 contacts
50	0 517 04	9 contacts
		RJ 45 Cat. 6
50	0 517 10	8 contacts
50	0 517 11	9 contacts
		RJ 45 sleeves
50	0 517 06	Black
50	0 517 07	White
		Cable protection accessories Plastic material IP 66/67 guaranteed when paired with Cat.Nos 0 533 02 IP 55 when not connected for base with shutter Protection for shielded or unshielded RJ 45 cords to create a Cat. 5 connection Compliant with IEC 60603-7 series and IEC 61076-3-106 (version 5) standards Compatible with commercially-available products conforming to the aforementioned standards
3	0 533 00	**Plug** Integrated cable gland with sealing ring and clamping blades Toolless assembly Can protect RJ 45 cords
3	0 533 01	**Flush-mounting base** Locking base Supplied with Cat. 5e female/female RJ 45 coupler
3	0 533 02	**Kit** Flush-mounting base + plug
3	0 533 03	**Protective flap** Fits on base Cat.No 0 533 01
		Stripping tools Slit the sheath and release the conductors by rotation For twisted pair cables Don't damage the conductors
1	0 332 62	**Stripper** For twisted pair
1	0 327 60	**Cutting pliers** Cut wires cleanly without damaging the copper

Legrand cabling system, LCS³ fiber optic

cables

0 325 13

0 325 10

0 326 66

Selection chart p. 106-107

Colour code: FOTAG
Compliant with EN 50173-2 and ISO IEC 11801 standards
Packed on a 2000 m reel except for tight-buffer OM4
Tight-buffer: "easy strip"
Other configurations on request

Single-mode OS2 fiber optic cables (9/125 µm) - (OS1 compatible)

For 9/125 µm single-mode installations, OS2 type

Indoor/Outdoor
Yellow LSZH sheath
Glass strands

Pack	Cat.Nos Loose tube	Cat.Nos Tight-buffer 900 µm	
2000[1]	0 325 02		4 fibers - Euroclass Dca
2000[1]	0 325 12		6 fibers - Euroclass Dca
2000[1]	0 325 03		8 fibers - Euroclass Dca
2000[1]	0 325 14	0 325 50	12 fibers - Euroclass Dca
2000[1]	0 325 26		12 fibers - Euroclass Cca
2000[1]	0 325 51		24 fibers - Euroclass Dca
1000[1]	0 325 18		24 fibers - Euroclass Cca

Outdoor
Black PE sheath
Glass strands for rodent-proofing, reinforced with corrugated steel

2000[1]	0 325 23		4 fibers
2000[1]	0 325 13		6 fibers
2000[1]	0 325 24		8 fibers
2000[1]	0 325 15		12 fibers
2000[1]	0 325 25		24 fibers

Multimode OM4 fiber optic cables (50/125 µm)

For 50/125 µm multimode installations, OM4 type
Suitable for 10 Gb Ethernet networks
Bend insensitive

Indoor/Outdoor
Aqua LSZH sheath
Glass strands

Pack	Cat.Nos Loose tube	Cat.Nos Tight-buffer 900 µm	
2000[1]	0 325 43		4 fibers - Euroclass Dca
500[1]		0 326 65	6 fibers - Euroclass Dca - 500 m drum
1000[1]		0 326 66	6 fibers - Euroclass Dca - 1000 m drum
2000[1]	0 325 44		8 fibers - Euroclass Dca
2000[1]	0 325 45		12 fibers - Euroclass Dca
2000[1]	0 325 49		12 fibers - Euroclass Cca
1000[1]		0 326 67	12 fibers - Euroclass Dca - 1000 m drum
1000[1]		0 326 68	24 fibers - Euroclass Dca - 1000 m drum
1000[1]	0 325 19		24 fibers - Euroclass Cca - 1000 m drum

Outdoor
Black PE sheath
Glass strands for rodent-proofing, reinforced with corrugated steel

2000[1]	0 325 46		4 fibers
2000[1]	0 325 47		8 fibers
2000[1]	0 325 48		12 fibers

Multimode OM3 fiber optic cables (50/125 µm)

For 50/125 µm multimode installations, OM3 type
Suitable for 10 Gb Ethernet networks
Bend insensitive

Indoor/Outdoor
Aqua LSZH sheath
Glass strands
Euroclass Dca

Pack	Cat.Nos Loose tube	Cat.Nos Tight-buffer 900 µm	
2000[1]	0 325 37		4 fibers
2000[1]		0 325 10	6 fibers
2000[1]	0 325 38		8 fibers
2000[1]	0 325 39	0 325 11	12 fibers
2000[1]	0 325 53	0 325 52	24 fibers

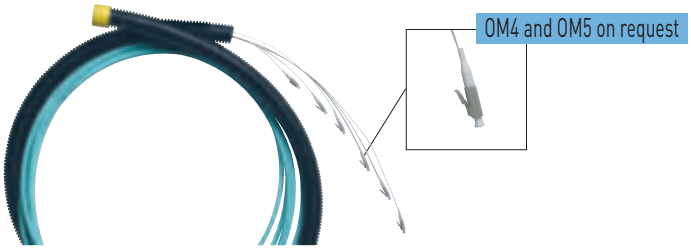
Outdoor
Black PE sheath
Glass strands for rodent-proofing, reinforced with corrugated steel

2000[1]	0 325 40		8 fibers
2000[1]	0 325 41		12 fibers
2000[1]	0 325 42		24 fibers

1: in metre(s)

Legrand cabling system, LCS³ fiber optic

preterminated links



1 320 41

Selection chart p. 108-109

Supplied with pulling element. In coil up to 50 m, on a small drum between 51 m and 150 m, on a large drum over 151 m and up to 200 m
Connection in fiber optic drawers. OM3 aqua LSZH sheaths. Supplied with test reports
Possible to obtain customised preterminated links: cable type, structure, length, connector type, etc

Pack	Cat.Nos	Core™ SC/SC tight-buffer OM3 links
		6 SC simplex - 6 SC simplex
1	1 320 01	Length 10 m
1	1 320 02	Length 20 m
1	1 320 03	Length 30 m
1	1 320 04	Length 40 m
1	1 320 05	Length 50 m
1	1 320 06	Length 60 m
1	1 320 07	Length 70 m
1	1 320 08	Length 80 m
1	1 320 09	Length 90 m
1	1 320 10	Length 100 m
1	1 320 12	Length 120 m
1	1 320 14	Length 140 m
1	1 320 16	Length 160 m
1	1 320 18	Length 180 m
1	1 320 20	Length 200 m
		12 SC simplex - 12 SC simplex
1	1 320 21	Length 10 m
1	1 320 22	Length 20 m
1	1 320 23	Length 30 m
1	1 320 24	Length 40 m
1	1 320 25	Length 50 m
1	1 320 26	Length 60 m
1	1 320 27	Length 70 m
1	1 320 28	Length 80 m
1	1 320 29	Length 90 m
1	1 320 30	Length 100 m
1	1 320 32	Length 120 m
1	1 320 34	Length 140 m
1	1 320 36	Length 160 m
1	1 320 38	Length 180 m
1	1 320 40	Length 200 m

Pack	Cat.Nos	Core™ LC/LC tight-buffer OM3 links
		6 LC simplex - 6 LC simplex
1	1 320 41	Length 10 m
1	1 320 42	Length 20 m
1	1 320 43	Length 30 m
1	1 320 44	Length 40 m
1	1 320 45	Length 50 m
1	1 320 46	Length 60 m
1	1 320 47	Length 70 m
1	1 320 48	Length 80 m
1	1 320 49	Length 90 m
1	1 320 50	Length 100 m
1	1 320 52	Length 120 m
1	1 320 54	Length 140 m
1	1 320 56	Length 160 m
1	1 320 58	Length 180 m
1	1 320 60	Length 200 m
		12 LC simplex - 12 LC simplex
1	1 320 61	Length 10 m
1	1 320 62	Length 20 m
1	1 320 63	Length 30 m
1	1 320 64	Length 40 m
1	1 320 65	Length 50 m
1	1 320 66	Length 60 m
1	1 320 67	Length 70 m
1	1 320 68	Length 80 m
1	1 320 69	Length 90 m
1	1 320 70	Length 100 m
1	1 320 72	Length 120 m
1	1 320 74	Length 140 m
1	1 320 76	Length 160 m
1	1 320 78	Length 180 m
1	1 320 80	Length 200 m

Legrand cabling system, LCS³ fiber optic

High Density preterminated links

0 324 41

Selection chart p. 108-109

Supplied on a drum
Micro cables for high density cassettes
Aqua (OM3) and yellow (OS2) LSZH sheaths
Supplied with test reports (photometry)
Other configurations on request

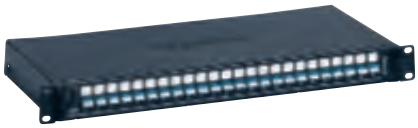
Pack	Cat.Nos	Ultra™ Fan-out/Fan-out preterminated High Density fiber optic links
		With fan-out (2 mm output) for secure transition between the cable and the ends Low insertion loss for LC connector < 0.15 dB/ connector
		Fan-out/Fan-out OM3 micro cables
		Description / Length (m)
1	0 324 01	6 LC duplex - 6 LC duplex / 10
1	0 324 02	6 LC duplex - 6 LC duplex / 20
1	0 324 03	6 LC duplex - 6 LC duplex / 30
1	0 324 04	6 LC duplex - 6 LC duplex / 40
1	0 324 05	6 LC duplex - 6 LC duplex / 50
1	0 324 11	12 LC duplex - 12 LC duplex / 10
1	0 324 12	12 LC duplex - 12 LC duplex / 20
1	0 324 13	12 LC duplex - 12 LC duplex / 30
1	0 324 14	12 LC duplex - 12 LC duplex / 40
1	0 324 15	12 LC duplex - 12 LC duplex / 50
		Fan-out/Fan-out OS2 micro cables
		Description / Length (m)
1	0 324 21	6 LC duplex - 6 LC duplex / 10
1	0 324 22	6 LC duplex - 6 LC duplex / 20
1	0 324 23	6 LC duplex - 6 LC duplex / 30
1	0 324 24	6 LC duplex - 6 LC duplex / 40
1	0 324 25	6 LC duplex - 6 LC duplex / 50
1	0 324 31	12 LC duplex - 12 LC duplex / 10
1	0 324 32	12 LC duplex - 12 LC duplex / 20
1	0 324 33	12 LC duplex - 12 LC duplex / 30
1	0 324 34	12 LC duplex - 12 LC duplex / 40
1	0 324 35	12 LC duplex - 12 LC duplex / 50

Pack	Cat.Nos	Ultra™ MTP¹/MTP¹ High Density preterminated fiber optic links
		For connecting cassettes in High Density fiber optic panels and Ultra High Density drawers Female MTP¹, A polarity Low insertion loss for MTP¹ connector < 0.35 dB/ connector
		MTP¹ OM3 micro cables
		Description / Length (m)
1	0 324 41	12 MTP¹-MTP¹ fiber optics / 10
1	0 324 42	12 MTP¹-MTP¹ fiber optics / 20
1	0 324 43	12 MTP¹-MTP¹ fiber optics / 30
1	0 324 44	12 MTP¹-MTP¹ fiber optics / 40
1	0 324 45	12 MTP¹-MTP¹ fiber optics / 50
		MTP¹ OS2 micro cables
		Description / Length (m)
1	0 324 51	12 MTP¹-MTP¹ fiber optics / 10
1	0 324 52	12 MTP¹-MTP¹ fiber optics / 20
1	0 324 53	12 MTP¹-MTP¹ fiber optics / 30
1	0 324 54	12 MTP¹-MTP¹ fiber optics / 40
1	0 324 55	12 MTP¹-MTP¹ fiber optics / 50

1: MTP is a registered trademark of US Conec Ltd

Legrand cabling system, LCS³ fiber optic

19" fiber optic drawers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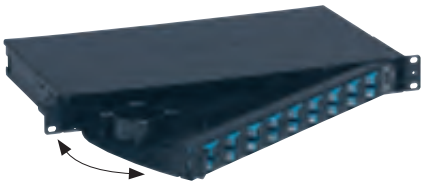
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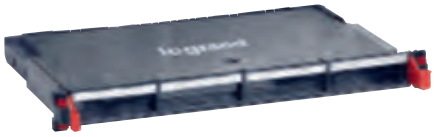
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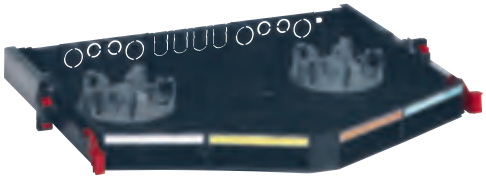
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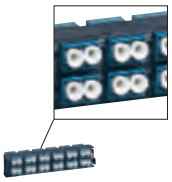
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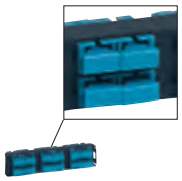
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Selection chart p. 100-101

Pack	Cat.Nos	Equipped 19" fiber optic drawers
		Metal 19" pre-equipped fiber optic drawers, 4 cable entries, supplied with screw fixing kit, 2 cable glands (Ø 13.5 and 16 mm), coiling system and splice cassette Panel and optical ports marked on dedicated marking area
		Sliding End stop at a 30° angle Maximum capacity: 48 fibers in LC version, 24 fibers in ST and SC versions Depth 220 mm, height 1 U
1	0 321 61	SC duplex for 24 multimode fibers
1	0 321 62	LC duplex for 48 multimode fibers
1	0 321 63	ST duplex for 24 multimode fibers
1	0 321 64	SC duplex for 24 single-mode fibers
1	0 321 65	LC duplex for 48 single-mode fibers
1	0 321 66	SC APC duplex for 24 single-mode fibers
1	0 321 67	LC APC duplex for 48 single-mode fibers
		Rotating Supplied with reversible left or right opening Maximum capacity: 72 fibers in LC version, 36 fibers in SC version Depth 260 mm, height 1 U
1	0 321 71	LC duplex for 72 multimode fibers
1	0 321 72	SC duplex for 36 multimode fibers
1	0 321 73	LC duplex for 72 single-mode fibers
1	0 321 74	SC duplex for 36 single-mode fibers

Pack	Cat.Nos	Flat and angled 19" modular fiber optic drawers
		Metal 19" modular fiber optic drawers, 8 cable entries, supplied with 2 cable glands (Ø 13.5 and 9 mm), coiling system Equipped with the new-generation Quick-Fix system for automatic (screwless) mounting on enclosure or cabinet uprights Supplied with numbered labels Maximum capacity: 96 fibers in LC version, 48 in SC version or 24 in ST version Depth 290 mm, height 1U
		Sliding, equipped End stop at a 20° angle
1	0 321 02	SC duplex for 24 multimode fibers
1	0 321 04	LC duplex for 48 multimode fibers
1	0 321 06	SC duplex for 24 single-mode fibers
		Sliding, to be equipped with fiber optic blocks Takes any fiber optic block, up to 4 blocks maximum. End stop at a 20° angle
1	0 321 00	Empty drawer
		Sliding, to be equipped with fiber optic blocks - angled Takes any fiber optic block, up to 4 blocks maximum. End stop at a 20° angle
1	0 321 01	Empty drawer

Pack	Cat.Nos	Fiber optic blocks
		To be clipped directly onto modular fiber optic drawers to be equipped Cat.Nos 0 321 00/01 or onto fiber optic splice cassette Cat.No 0 321 41
		Single-mode fiber blocks (9/125 µm)
1	0 321 17	ST block for 6 single-mode fibers
1	0 321 10	SC duplex block for 6 single-mode fibers
1	0 321 11	SC duplex High Density block for 12 single-mode fibers
1	0 321 12	SC APC duplex block for 6 single-mode fibers
1	0 321 13	LC duplex block for 6 single-mode fibers
1	0 321 14	LC duplex block for 12 single-mode fibers
1	0 321 15	LC duplex High Density block for 24 single-mode fibers
1	0 321 16	LC APC duplex block for 12 single-mode fibers
1	0 321 33	Single-mode 4 MTP[1] feedthrough adaptor, key up/key down
1	0 321 19	Single-mode 8 MTP[1] feedthrough adaptor, key up/key down
		Multimode fiber blocks (62.5 and 50/125 µm)
1	0 321 27	ST block for 6 multimode fibers
1	0 321 20	SC duplex block for 6 multimode fibers
1	0 321 21	SC duplex High Density block for 12 multimode fibers
1	0 321 23	LC duplex block for 6 multimode fibers
1	0 321 24	LC duplex block for 12 multimode fibers
1	0 321 25	LC duplex High Density block for 24 multimode fibers
1	0 321 34	Multimode 4 MTP[1] feedthrough adaptor, key up/key down
1	0 321 18	Multimode 8 MTP[1] feedthrough adaptor, key up/key down
1	0 321 36	LC duplex block for 6 multimode fibers - aqua
1	0 321 37	LC duplex block for 12 multimode fibers - aqua

Pack	Cat.Nos	RJ 45 copper block for fiber optic drawer
1	0 321 32	To be clipped directly onto modular fiber optic drawers to be equipped Cat.Nos 0 321 00/01 Allows the mixing of fiber optic and copper Takes up to 5 RJ 45 connectors

Pack	Cat.Nos	Accessories for fiber optic drawer to be equipped
		Accessory for receipt of a fan-out
1	0 321 28	To be clipped onto the back of the drawer Enables the entry of preterminated links
		Blanking plate
1	0 321 29	Blanking plate
		Cassette for pigtails
1	0 321 30	Capacity: 24 fibers
		Coiling kit
1	0 321 31	1 accessory

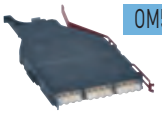
1: MTP is a registered trademark of US Conec Ltd

Legrand cabling system, LCS³ fiber optic

19" High Density fiber optic panels (1/2/4 U) and patching kits

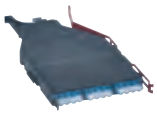
Panel 0 321 76 equipped with support 0 321 38 and slim cassettes 0 321 69/70

0 321 38



OM5 on request

0 321 69



0 321 70

Selection chart p. 102-103

Pack	Cat.Nos	19" High Density fiber optic panels
		Panels to be equipped with cassettes
		Equipped with Quick-Fix system for automatic (screwless) mounting on enclosure or cabinet uprights To be equipped directly with a maximum of 4 automatically removable cassettes or 4 supports for slim cassettes Cat. No 0 321 38 per U Maximum capacity per U: 48 fibers in SC version, 24 fibers in ST version or 96 fibers in LC version 2U and 4U versions equipped with door and cord management at the front, and with cable management at the back
1	0 321 75	1 U height, depth 182 mm
1	0 321 76	2 U height, depth 393 mm
1	0 321 77	4 U height, depth 393 mm
		Accessories for panels
1	0 321 78	Front cord management kit for 1 U panel Fits on 1 U modular panel Cat.No 0 321 75 2 side cord guides and front door with integrated marking to ensure correct front and side cord management Cord holder to be mounted on cassette to make it easier to pass cords through the side
1	0 321 46	Rear cable management accessory Fits on 1 U panel Cat. No 0 321 75
1	0 321 28	Accessory for receipt of a fan-out To be clipped onto the back of the drawer Enables the entry of preterminated links
1	0 321 22	Copper cable management accessory
4	0 321 26	Set of 4 cord holders To be mounted on any cassette to make it easier to pass cords through the side
1	0 321 05	Rear accessory for fixing 4 cable glands

Ultra™ preterminated MTP[1] High Density cassettes (MPO compatible)

For installation in modular panels
Cat. Nos 0 321 75/76/77 and in Zero-U kit Cat. No 0 321 03
Slim cassettes to be installed with support Cat. No 0 321 38
Sliding cassettes which can be removed automatically by simply pressing them, simplifying installation and maintenance
Removable from the front and back
Multimode - Insertion Loss Max/Random[2]: 0.55 dB
Single-mode - Insertion Loss Max/Random[2]: 0.6 dB
Prewired, equipped at the rear with one or two male MTP[1] connectors with 12 fibers
LC or SC connectors at the front

		Ultra™ cassettes
1	0 321 42	Multimode OM4 cassette (50/125 µm) 24 LC fibers, A/C polarity
1	0 321 48	Multimode OM4 cassette (50/125 µm) 12 LC fibers, A/C polarity
1	0 321 43	Multimode OM4 cassette (50/125 µm) 12 SC fibers, A/C polarity
1	0 321 59	Multimode OM4 cassette (50/125 µm) 12 SC fibers, universal
1	0 321 44	Single-mode OS2 cassette (9/125 µm) 24 LC fibers, A/C polarity
1	0 321 49	Single-mode OS2 cassette (9/125 µm) 12 LC fibers, A/C polarity
1	0 321 45	Single-mode OS2 cassette (9/125 µm) 12 SC fibers, A/C polarity
1	0 321 60	Single-mode OS2 cassette (9/125 µm) 12 SC fibers, universal

1: MTP is a registered trademark of US Conec Ltd
2: When mated with the same Legrand range (Ultra & Core) trunks and patch cords

Pack	Cat.Nos	Preterminated MTP[1] High Density cassettes (MPO compatible) (continued)
		Ultra™ slim cassettes
1	0 321 38	Support for High Density slim cassettes Takes up to 2 High Density slim cassettes Cat.Nos 0 321 68/69/70 and up to 2 blanking cassettes Cat.No 0 321 39 or 1 cassette + 1 blanking cassette Possibility to mix slim single-mode and multimode cassettes on the same support
1	0 321 69	Slim multimode OM4 cassette (50/125 µm) 12 LC fibers, Universal polarity
1	0 321 68	Slim multimode OM3 cassette (50/125 µm) 12 LC fibers, Universal polarity
1	0 321 70	Slim single-mode OS2 cassette (9/125 µm) 12 LC fibers, Universal polarity
1	0 321 39	Slim blanking module to be mounted (x2) on support Cat.No 0 321 38 to fill gaps in the panel

Core™ pre-equipped cassettes

For installation in modular panels
Cat. Nos 0 321 75/76/77 and Zero-U kit Cat.No 0 321 03
Pre-equipped cassettes with fitted fiber optic block + sets of 6 or 12 OM3 pigtails
Sliding cassettes which can be removed automatically by simply pressing them, simplifying installation and maintenance
Removable from the front

		Pre-equipped cassettes for multimode installation (50/125 µm)
1	0 321 80	Equipped with 1 SC duplex block for 6 fibers
1	0 321 81	Equipped with 1 LC duplex block for 6 fibers
1	0 321 82	Equipped with 1 SC duplex block for 12 fibers
1	0 321 83	Equipped with 1 LC duplex block for 12 fibers
		Pre-equipped cassettes for single-mode installation (9/125 µm)
1	0 321 84	Equipped with 1 SC duplex block for 6 fibers
1	0 321 85	Equipped with 1 LC duplex block for 6 fibers
1	0 321 86	Equipped with 1 SC duplex block for 12 fibers
1	0 321 87	Equipped with 1 LC duplex block for 12 fibers

Cassettes to be equipped and blanking plate

For installation in modular panels
Cat. Nos 0 321 75/76/77 and Zero-U kit
Cat. No 0 321 03
Sliding cassettes which can be removed automatically by simply pressing them, simplifying installation and maintenance
Removable from the front

		Fiber optic splice cassette
1	0 321 41	Takes any modular fiber optic block
		Blanking cassette
1	0 337 57	To be used to fill gaps in the panel
		Copper cassette to be equipped
1	0 321 55	Takes six Cat. 5e, 6 and 6A copper connectors

Patching kits

		1 U to 4 U patching kit
1	0 321 89	Compatible with all LCS³ fiber optic and copper 19" panels Supplied with top protection, cable guides and specific accessories for installation on cable trays, wire meshed cable trays (Cablofil) and cabinets
		Zero-U patching kit
1	0 321 03	To bring few fiber optic or copper connections outside 19" panels Takes 1 cassette (fiber optic preterminated cassettes, pre equipped cassettes, fiber optic splice cassette or RJ 45 copper cassette) Supplied with a comprehensive range of accessories for fixing in or outside enclosures (raised access floors, cable trays, walls, ceiling)

Legrand cabling system, LCS³ Meet-Me Room solutions - cassettes, frames and accessory

C49001 (equipped with cassettes)

C42002

Can be used in combination with other LCS³ solutions to create an optimal connectivity solution for the entire data center

Pack	Cat.Nos	ODF splice-patch cassettes
		Designed for fast and easy splicing of large amounts of fibers Fully scalable: up to four cassettes on 1U allow for finishing up to 96 fibers, including Air Blown Fibers Completely preloaded delivery including adapters, pigtails, splice trays, heat shrink splice protectors and mounting materials
		24 fibers - single-mode - LC/PC cassettes
1	C40001	Left splice-patch cassette
1	C40002	Right splice-patch cassette
		24 fibers - single-mode - LC/APC cassettes
1	C40003	Left splice-patch cassette
1	C40004	Right splice-patch cassette
		Empty base panel
1	C49001	Empty base panel (1U) for ODF splice-patch cassettes
		ODF patch-open end cassettes
		Designed for situations where a distribution box or outside-plant splice box is used for splicing Cable diameter 4.5 mm: can be used outside plant in combination with a (multi)duct Cassettes equipped with an open-end cable length 15 m (other lengths available on request)
		24 fibers - single-mode - LC/PC cassettes
1	C42001	Left patch-open end cassette
1	C42002	Right patch-open end cassette
		24 fibers - single-mode - LC/APC cassettes
1	C42003	Left patch-open end cassette
1	C42004	Right patch-open end cassette
		Mounting plates
1	C49002	19'' mounting plates for ODF patch-open end cassettes
		ODF frames
		Dimensions: H 2050 x W 900 x D 400 mm 42U Completely closed: the most critical connections in the data center are well protected against external influences Delivered fully pre-assembled including side panels, back panel, doors, roof and integrated cable management
1	C44001	Frame with cable management on the left
1	C44002	Frame with cable management on the right
		Accessory
25	C49004	Heat shrink splice protectors 40mm

LCS³

NEXT LEVEL DATA CENTER SOLUTIONS!

A data center must accommodate IT infrastructure in the most efficient way possible. Infrastructure needs the space to grow and evolve with new circumstances, technology, and user requirements.

With LCS³, Legrand offers an extremely flexible and modular cabinet platform that grows and evolve with you, no matter what your requirements are now and in the future.

SMART
Unlimited possibilities

SOLID
Next level reliability

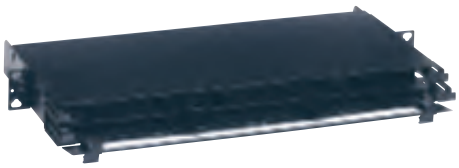
SECURE
Keep your data safe

SUSTAINABLE
Next level energy efficiency

Legrand cabling system, LCS³ fiber optic

19" UHD¹ fiber optic drawers

0 321 50



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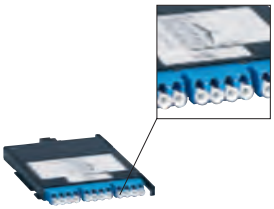

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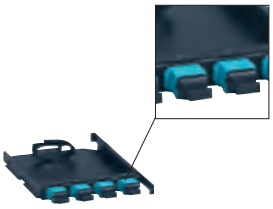

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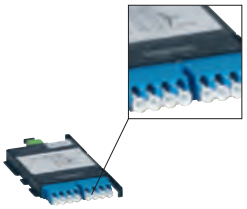

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Selection chart p. 104-105

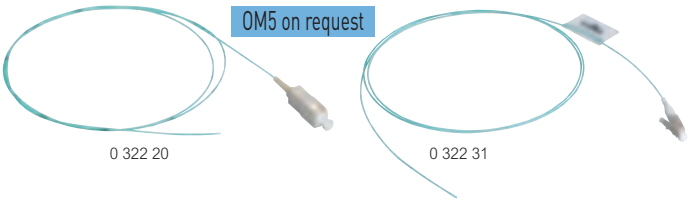
Pack	Cat.Nos	UHD¹ modular fiber optic drawers, to be equipped with 12-fiber cassettes
		Fixed modular chassis for holding cassettes 4 U maximum capacity (holds up to 48 cassettes): 576 LC fibers 2 U maximum capacity (holds up to 24 cassettes): 288 LC fibers 1 U maximum capacity (holds up to 12 cassettes): 144 LC fibers
		Fiber optic drawer with cord management at the front for 12-fiber cassettes
1	0 321 51	1 U
		Fiber optic drawers with cord management at the front and back for 12-fiber cassettes Depth: 595 mm
1	0 321 50	1 U
1	0 321 52	2 U
1	0 321 53	4 U
		UHD¹ 12-fiber cassettes
		Clip directly into fiber optic drawers Cat.Nos. 0 321 50/51/52/53 Cassettes slide into above chassis Cassettes can be removed from the front and back MPO high-performance cassettes Low insertion loss < 0.35 dB A/C polarity
		Multimode OM4 cassettes (50/125 µm) For 50/125 µm multimode installation, OM4 type
1	0 321 54	MPO cassette (MTP² compatible) 12 OM4 LC fibers, polarity A/C
		Single-mode OS2 cassette (9/125 µm) For 9/125 µm single-mode installation, OS2 type
1	0 321 55	MPO cassette (MTP² compatible) 12 OS2 LC fibers, polarity A/C
		Adaptors for 12-fiber UHD¹ installation
		Clip into UHD¹ fiber optic drawers for 12-fiber cassettes Cat.Nos 0 321 50/51/52/53
		MPO adaptors (MTP² compatible)
	0 321 56	Multimode 4 MTP² adaptor - key up/key down
1	0 321 57	Single-mode 4 MTP² adaptor - key up/key down
		LC adaptor
1	0 321 58	12 LC multimode adaptor

Pack	Cat.Nos	UHD¹ modular fiber optic drawers, to be equipped with 8-fiber cassettes
		Fixed modular chassis for holding cassettes 4 U maximum capacity (holds up to 72 cassettes): - 576 LC fibers 2 U maximum capacity (holds up to 36 cassettes): - 288 LC fibers 1 U maximum capacity (holds up to 18 cassettes) - 144 LC fibers
		Fiber optic drawers with cord management at the front and back for 8-fiber cassettes Depth: 595 mm
1	0 321 90	1 U
1	0 321 91	2 U
1	0 321 92	4 U
		UHD¹ 8-fiber cassettes
		Clip directly into fiber optic drawers Cat.Nos. 0 321 90/91/92 Cassettes slide into above chassis Cassettes can be removed from the front and back MPO high-performance cassettes Low insertion loss < 0.35 dB Universal polarity
		Multimode OM4 cassettes (50/125 µm) For 50/125 µm multimode installation, OM4 type
1	0 321 93	MPO cassette (MTP² compatible) 8 OM4 LC fibers, universal polarity
		Single-mode OS2 cassette (9/125 µm) For 9/125 µm single-mode installation, OS2 type
1	0 321 94	MPO cassette (MTP² compatible) 8 OS2 LC fibers, universal polarity
		Adaptors for 8-fiber UHD¹ installation
		Clip into UHD¹ fiber optic drawers for 8-fiber cassettes Cat.Nos 0 321 90/91/92
		MPO adaptors (MTP² compatible)
1	0 321 95	Multimode 4 MTP² adaptor - key up/key down
1	0 321 96	Single-mode 4 MTP² adaptor - key up/key down
		LC adaptors
1	0 321 97	8 LC multimode adaptor
1	0 321 98	8 LC single-mode adaptor
1	0 321 99	8 LC-APC single-mode adaptor

1: Ultra High Density
2: MTP is a registered trademark of US Conec Ltd

Legrand cabling system, LCS³ fiber optic

pigtails, glue-on connectors and fan-out units



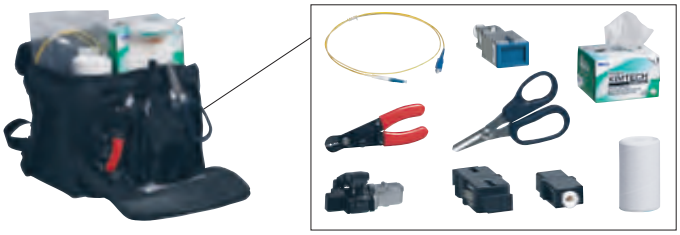
0 322 20 0 322 31

Selection chart p. 106-107

Pack	Cat.Nos	
		Core™ pigtails
		LSZH For making quick, reliable and high-performance fiber optic cable connections on site: - OM2/OM3/OM4 IL Typical/Master = 0.15 dB - OS2 IL Typical/Master = 0.18 dB Compatible with all commercially-available splicers
	1 m / 2 m	**50/125 µm - OM3 (PC)**
1	0 322 20 / 0 322 23	SC connectors
1	0 322 21 / 0 322 24	LC connectors
1	0 322 22	ST connectors
		50/125 µm - OM4 (PC)
1	0 322 30 / 0 322 33	SC connectors
1	0 322 31 / 0 322 34	LC connectors
1	0 322 32	ST connectors
		9/125 µm - OS2 (APC or UPC) - OS1 compatible
1	0 322 40 / 0 322 45	SC-APC connectors
1	0 322 41 / 0 322 46	SC-UPC connectors
1	0 322 42 / 0 322 48	LC-APC connectors
1	0 322 43 / 0 322 47	LC-UPC connectors
1	0 322 44 / 0 322 49	ST-UPC connectors
		Sets of 12 LC pigtails
		1m length - 12 different colors
1	0 326 24	12 OS2 LC-UPC pigtails
1	0 326 26	12 OM3 LC-UPC pigtails
1	0 326 71	12 OM4 LC-UPC pigtails
		Heat-shrinkable sleeve for pigtails
1	0 327 44	40 mm - pack of 50 sleeves
		50/125 and 62,5/125 µm glue-on connectors
		Supplied with 900 µm sleeve Connectors with ceramic ferrule Typical attenuation: 0.3 dB
10	0 331 47	SC connectors
10	0 331 00	LC connectors
		Fan-out units
		For 900 µm sheathing of optical fibers Take 250 µm fiber diameters
1	0 330 48	6-fiber fan-out unit
1	0 330 49	12-fiber fan-out unit

Legrand cabling system, LCS³ fiber optic

case and quick-connect connectors



0 322 70

0 322 72

0 322 73

0 322 75

0 322 83

0 322 81

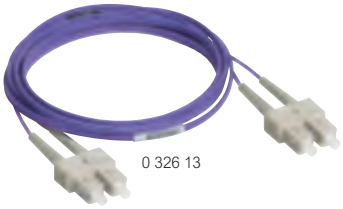
0 322 85

Pack	Cat.Nos	
		Tool case for preparing optical fiber for quick-connect fiber optic connectors
1	0 322 70	Provides the tools required for preparing optical cables, for carrying out initial tests of the connection of fibers to connectors and accessories for easy connection in all situations Comprises: - Precision cleaver - Kevlar stripping and cutting tool - Visual fault locator - Installation instructions and video - Accessories (cleaners, felt tip pen, bin, etc)
		Quick-connect connectors
		Connection can be made with case Cat.No 0 322 70 Quick-connect, reliable and reusable up to 5 times To be used to lock the fiber inside the connector An indicator light is used to test the connection No glue or polishing needed Can be installed on 900 µm fiber optics For 250 µm fiber, use the special tubes supplied with the connectors; typical IL: multimode OM3/OM4 = 0.1 dB and single-mode OS2 = 0.2 dB (PC) and 0.3 dB (APC)
		OM3/OM4 multimode connectors Set of 12 connectors
12	0 322 71	LC PC 50/125 µm, 900/250 µm
12	0 322 72	SC PC 50/125 µm, 900/250 µm
		OS2 single-mode connectors Set of 12 connectors
12	0 322 73	LC UPC 9/125 µm, 900/250 µm
12	0 322 74	SC UPC 9/125 µm, 900/250 µm
12	0 322 75	SC APC 9/125 µm, 900/250 µm
		Precision cleaver for updating case Cat.Nos 0 326 90
1	0 322 80	Enables precision-cutting of fiber optics and the use of quick-connect connectors Cat.Nos 0 322 71 to 0 322 75 with case Cat.No 0 326 90
		Fiber optic cleaning accessories
1	0 322 83	MPO/MTP[1] ferrule cleaner
1	0 322 81	LC ferrule cleaner (PC/APC)
1	0 322 82	SC ferrule cleaner (PC/APC)
1	0 322 84	LC replacement cartridge
1	0 322 85	SC replacement cartridge
1	0 322 76	Fiber stripper
1	0 322 77	Wipes
1	0 322 78	Cleaning spray

1: MTP is a registered trademark of US Conec Ltd

Legrand cabling system, LCS³ fiber optic

Core™ fiber patch cords



Selection chart p. 106-107

Fitted at each end with 2 connectors with ceramic ferrule
Individually packed and tested (report supplied)
Max. optical losses/Master: 0.25 dB
LSZH Zipcord sheath

Pack	Cat.Nos	OS2 single-mode fiber optic cords (9/125 µm)
		For 9/125 µm single-mode installations, OS2 type Yellow sheaths
		SC/SC duplex cords
3	0 326 00	Length: 1 m
3	0 326 01	Length: 2 m
3	0 326 02	Length: 3 m
		SC/LC duplex cords
3	0 326 03	Length: 1 m
3	0 326 04	Length: 2 m
3	0 326 05	Length: 3 m
		LC/LC duplex cords
3	0 326 28	Length: 0.5 m
3	0 326 06	Length: 1 m
3	0 326 07	Length: 2 m
3	0 326 08	Length: 3 m
3	0 326 29	Length: 5 m
		OM3 multimode fiber optic cords (50/125 µm)
		For 50/125 µm multimode installations, OM3 type Aqua sheaths
		SC/SC duplex cords
3	0 326 09	Length: 1 m
3	0 326 10	Length: 2 m
3	0 326 11	Length: 3 m
		SC/LC duplex cords
3	0 326 12	Length: 1 m
3	0 326 13	Length: 2 m
3	0 326 14	Length: 3 m
		LC/LC duplex cords
3	0 326 15	Length: 1 m
3	0 326 16	Length: 2 m
3	0 326 17	Length: 3 m
		OM4 multimode fiber optic cords (50/125 µm)
		For 50/125 µm multimode installations, OM4 type Aqua sheaths
		SC/SC duplex cords
5	0 322 60	Length: 1 m
5	0 322 61	Length: 2 m
5	0 322 62	Length: 3 m
		SC/LC duplex cords
5	0 322 63	Length: 1 m
5	0 322 64	Length: 2 m
5	0 322 65	Length: 3 m
		LC/LC duplex cords
5	0 322 66	Length: 1 m
5	0 322 67	Length: 2 m
5	0 322 68	Length: 3 m

Legrand cabling system, LCS³ fiber optic

Ultra™ fiber patch cords

Selection chart p. 106-107

Fitted at each end with 2 connectors with ceramic ferrule
Individually packed and tested (report supplied)
Max. optical losses/Master: 0.15 dB
LSZH Zipcord sheath

Pack	Cat.Nos	OS2 single-mode fiber optic cords (9/125 µm)
		For 9/125 µm single-mode installations, OS2 type Yellow sheaths
		SC/SC duplex cords
5	0 325 27	Length: 1 m
5	0 325 28	Length: 2 m
5	0 325 29	Length: 3 m
		SC/LC duplex cords
5	0 325 30	Length: 1 m
5	0 325 31	Length: 2 m
5	0 325 32	Length: 3 m
		LC/LC duplex cords
5	0 325 33	Length: 1 m
5	0 325 34	Length: 2 m
5	0 325 35	Length: 3 m
5	0 325 36	Length: 5 m
		LC/LC Uniboot duplex cords Reversible polarity
3	0 326 86	Length: 1 m
3	0 326 87	Length: 2 m
3	0 326 88	Length: 3 m
3	0 326 89	Length: 5 m
3	0 326 92	Length: 10 m
		OM4 multimode fiber optic cords (50/125 µm)
		For 50/125 µm multimode installations, OM4 type Aqua sheaths
		SC/SC duplex cords
3	0 326 30	Length: 1 m
3	0 326 31	Length: 2 m
3	0 326 32	Length: 3 m
		LC/LC duplex cords
3	0 326 33	Length: 0.5 m
3	0 326 34	Length: 1 m
3	0 326 35	Length: 2 m
3	0 326 36	Length: 3 m
3	0 326 37	Length: 5 m
		LC/LC Uniboot duplex cords Reversible polarity
3	0 326 95	Length: 0.5 m
3	0 326 96	Length: 1 m
3	0 326 97	Length: 2 m
3	0 326 98	Length: 3 m
3	0 326 99	Length: 5 m

Legrand cabling system, LCS³ fiber optic

feedthrough sockets


0 786 16


0 786 17


0 786 18


0 786 14

Pack	Cat.Nos	Fiber optic feedthrough sockets
		Equipped with a duplex feedthrough To be used to connect two fibers (equipped with their connector) Supplied with protection caps Equipped with a transparent marker-holder 2 modules
		2 x ST socket Bayonet connection (STII compatible)
1	0 786 16	○ White
		2 x SC socket Push-pull connection
1	0 786 17	○ White
		2 x LC socket Push-pull connection
1	0 786 18	○ White
		2 x SC/APC socket Push-pull connection With shutters
1	0 786 14	○ White
1	0 794 15L	◉ Aluminium
1	0 791 14L	● Matt Black

The right system to meet your needs

A wide range of technologies (HDMI, Display Port, HD15, Jack, RCA) to suit the location and the user requirements.


■ MediaHub


■ HDMI preterminated female socket


■ Audio socket


■ Cords and cables

- **Quick installation**
- **Easy connection**
- **Optimum performance**

0 789 12

5 722 69 + plate

For technical information, **see e-catalogue**

Pack	Cat.Nos	
	Mosaic	Arteor
1	0 789 12	5 720 98
1	0 789 13	5 720 99
1		5 722 69
1		5 727 69

Multiparticipant HDMI audio/video projection

Selector switch transmitters

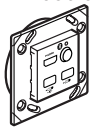
Allows different participants in the room to play the presentation on their PC by pressing the control takeover button without disconnecting the video projector cable
For use with other transmitters (up to 8 max.) and a receiver connected to the video projector. High Speed HDMI® with Ethernet cords are used for connection (not supplied, see p. 147)
2 modules

Receivers

Transmits audio/video from the transmitters to the video projector and supplies power to the receivers. The receiver and the first transmitter are connected by a High Speed® Ethernet cable (not supplied, see p. 147)
24 V power supply (supplied)
2 modules

MediaHub

Allows the users to:
- watch films located on a PC or a camcorder on their TV:
HDMI connector
- watch the contents of a USB stick on their TV: USB data connection
- charge devices: USB sockets (total power: 3 A)
- listen to music currently located on their smartphone/tablet, etc. : Bluetooth function
Inputs: 2 USB chargers including 1 USB data, HDMI, Bluetooth audio
Output: HDMI and USB data
Power supply with transformer (supplied)
Supplied with cover plate and support
2 modules

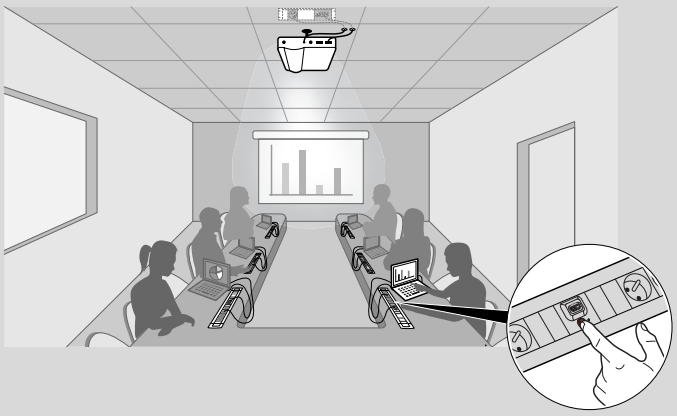


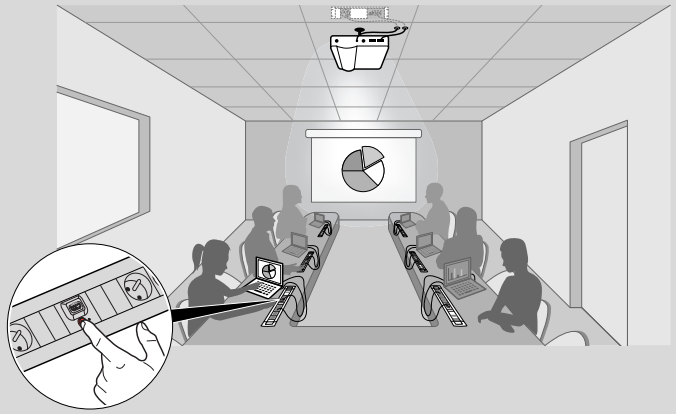
○ White
● Magnesium

Audio/video system

audio/video sockets

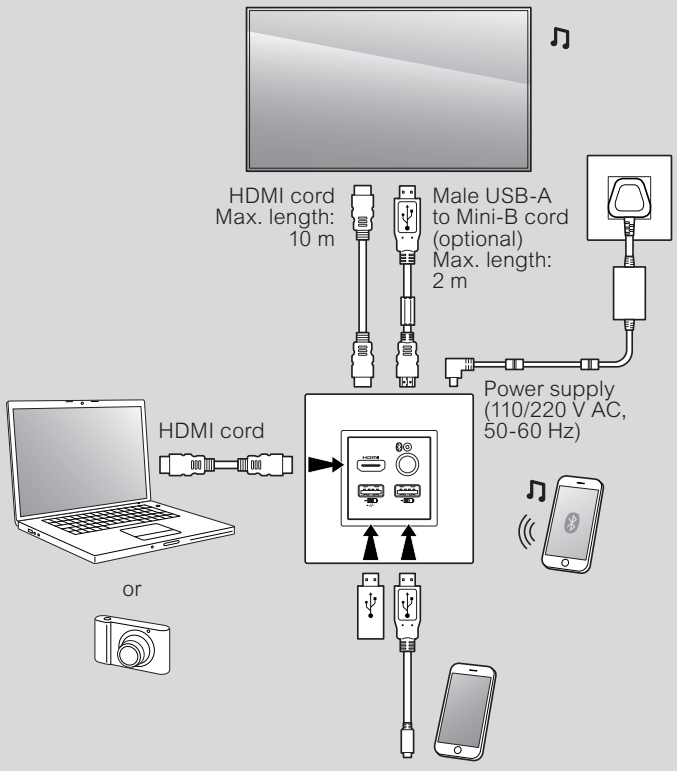
Multiparticipant HDMI audio/video projection





MediaHub

Charger, Bluetooth data, HDMI and USB in 1 product: connect these devices to view their contents on your TV



Audio/video system

audio/video sockets (continued)


0 787 78


0 789 79L


0 517 38


0 787 77


0 787 99

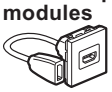
Type-A HDMI sockets

For transmitting High Definition digital audio/video streams between a source (computer, DVD or Blu-Ray player, etc) and a compatible receiver (TV, video projector, etc)
Max. length between 2 sockets: 10 m

HDMI 2.0 preterminated sockets - 1 module
Equipped with a 15 cm cord and 2 female connectors

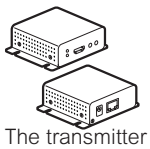
Pack	Mosaic	Arteor	
1	0 787 78	5 720 96	○ White
1	0 793 78		● Aluminium
1	0 794 78L		● Matt Black
1		5 725 96	● Magnesium
1		5 725 18	● Champagne
1		5 725 17	● Soft Alu

HDMI 2.0 preterminated sockets - 2 modules



Pack			
1	0 789 79L	5 722 99	○ White
1	0 792 79L		● Aluminium
1	0 794 79L		● Matt Black
1		5 725 99	● Magnesium
1		5 723 46	● Champagne
1		5 723 45	● Soft Alu

HDMI audio/video extender



Pack	Cat.Nos
1	0 517 38

For connecting HDMI terminals up to 60 m apart
The kit comprises transmitter and receiver units as well as power supplies
The transmitter and receiver are linked by an RJ 45/RJ 45 cable (not supplied)
Compatible with 4K, 3D, EDID and HDCP
Infrared controller included
Certified HDBaseT

Display Port sockets

For transmitting High Definition digital audio/video streams between a source (laptop computer, DVD or Blu-Ray player, etc) and a compatible receiver (video projector, TV, etc)
Max. length between 2 sockets: 10 m

Preterminated sockets - 1 module
Equipped with a 15 cm cord and 2 female connectors

Pack	Mosaic	Arteor	
1	0 787 91	5 720 90	○ White
1		5 725 90	● Magnesium

Female HD15 sockets

For transmitting analogue video streams between a source (computer) and a compatible receiver (video projector, TV, computer screen, etc)
VGA to UXGA resolution
Max. length between 2 sockets: 15 m

Preterminated sockets - 1 module
Equipped with a 15 cm cord and 2 female connectors

Pack	Mosaic	Arteor	
1	0 787 77	5 720 97	○ White
1	0 793 77		● Aluminium
1		5 725 97	● Magnesium

Screw-type sockets - 2 modules

Pack			
1	0 787 57[1]	5 722 82	○ White

Screw-type sockets + 3.5 mm Jack - 2 modules

Pack			
1	0 787 74	5 722 88	○ White
1		5 727 88	● Magnesium

Solder-type sockets - 1 module

Pack			
1	0 787 72	5 722 79	○ White

Infrared ON/Standby controls for video projector

To be used to switch on a video projector or set it to standby
Must be combined with a push-button
Work with any infrared video projector or other product with an infrared remote control (TV, air conditioning, games console, etc) using a learning process
Installed near the switch controlling the lighting in a room, the push-button sends the command to the IR ON/Standby control which replaces the manufacturer's remote control and makes it easier to switch the video projector on and off

Pack	Mosaic	
1	0 787 99	○ White

1: Can be installed in receptacles for floor sockets

Audio/video cords,
See p. 147-148

Multiparticipant HDMI audio/video projection,
See p. 144

Audio/video system

audio/video sockets (continued)


0 787 79


0 787 47


0 787 54


0 792 55


0 787 60


0 787 50


0 787 76

3.5 mm female Jack sockets

For making audio links

Preterminated sockets - 1 module
Equipped with a 15 cm cord and 2 female connectors

Pack	Mosaic	Arteor	
1	0 787 79	5 720 91	○ White
1	0 793 79		● Aluminium
1	0 795 79L		● Matt Black
1		5 725 91	● Magnesium
1		5 725 59	● Champagne
1		5 725 55	● Soft Alu

Screw-type sockets - 1 module

Pack	Mosaic	Arteor	
1	0 787 64	5 722 74	○ White
1	0 795 64L		● Matt Black
1		5 727 74	● Magnesium
1		5 724 91	● Champagne
1		5 724 90	● Soft Alu

Solder-type sockets - 1 module

Pack	Mosaic	Arteor	
1	0 787 73	5 722 78	○ White

2 female RCA sockets

Provide the stereo audio link for any peripheral device such as a DVD player, camera, video recorder, etc
1 module

Preterminated
Equipped with a 15 cm cord and 2 female connectors

Pack	Mosaic	Arteor	
1	0 787 47	5 720 92	○ White
1		5 725 92	● Magnesium
1		5 724 79	● Champagne
1		5 724 75	● Soft Alu

Connection via screw terminals

Pack	Mosaic	Arteor	
1	0 787 53	5 722 72	○ White
1		5 727 72	● Magnesium
1		5 724 95	● Champagne
1		5 724 94	● Soft Alu

3 female RCA sockets

Provide the stereo audio link and composite video for any peripheral device such as a DVD player, camera, video recorder, videoconferencing, etc.
1 module

Connection via screw terminals

Pack	Mosaic	Arteor	
1	0 787 54	5 722 73	○ White
1	0 792 54		● Aluminium
1		5 727 73	● Magnesium
1		5 724 97	● Champagne
1		5 724 96	● Soft Alu

3-pole XLR sockets

Provide the stereo link for any peripheral device, microphone, amplifier, mixing console, etc
Recommended cable: 1 shielded audio pair 0.14 mm² to 0.50 mm²
Max. cable length: 50 m (without amplifier)
Fast screw connection
2 modules

Female sockets

Pack	Mosaic	Arteor	
1	0 787 55	5 722 83	○ White
1	0 792 55		● Aluminium
1	0 795 55L		● Matt Black
1		5 727 83	● Magnesium
1		5 724 99	● Champagne
1		5 724 98	● Soft Alu

Male sockets

Pack	Mosaic	Arteor	
1	0 787 56	5 722 77	○ White

Speakon socket - 4 contacts

To be used to connect powered speakers
Recommended cable: 2 audio pairs 4 mm² max.
Max. cable length: 50 m (without amplifier)
2 modules

Pack	Mosaic	
1	0 787 60	○ White

Loudspeaker sockets

For loudspeaker stereo audio link
4 mm² terminal

Sockets - 1 module

Pack	Mosaic	Arteor	
10	0 787 50	5 722 70	○ White
10	0 792 50		● Aluminium
10	0 795 50L		● Matt Black
10		5 727 70	● Magnesium
10		5 726 97	● Champagne
10		5 726 96	● Soft Alu

Sockets - 2 modules

Pack	Mosaic	Arteor	
10	0 787 51	5 722 80	○ White
10	0 795 51L		● Matt Black
10		5 727 80	● Magnesium
10		5 726 99	● Champagne
10		5 726 98	● Soft Alu

100 V line attenuators

25 W - 2 modules
To be used to control the power from a 100 V PA system line

Pack	Mosaic	Arteor	
1	0 787 76	5 722 84	○ White
1		5 727 84	● Magnesium

Female BNC 75 sockets - 1 module

Provide the composite video link for any peripheral device such as a DVD player, camera, video recorder, etc.

Pack	Mosaic	Arteor	
1	0 787 58	5 722 76	○ White
1		5 727 76	● Magnesium

USB Data socket,
See p. 148

Audio/video system

HDMI cords and adaptors, HD15 cords and audio cords


0 517 33


0 517 27


0 514 03

HDMI cords, booster and adaptors

Pack	Cat.Nos: Plastic bag	Cat.Nos: Plastic bag with hook	
			High Speed HDMI® cords with Ethernet For connecting an HDMI socket to the audiovideo terminal (TV, DVD or Blu-Ray player, Home Cinema, games console, etc) HDMI 2.0 cords Support 4K and 1080P video resolution Gold-plated connectors
1	0 517 32	0 398 51	Length 1 m
1	0 517 33	0 398 52	Length 2 m
1	0 517 34	0 398 53	Length 3 m
1	0 517 27	0 398 54	Length 5 m
1	0 517 35	0 398 55	Length 7 m
			Standard HDMI® cords with Ethernet For connecting an HDMI socket to the audio video terminal (TV, DVD or Blu-Ray player, Home Cinema, games console, etc) HDMI 2.0 cords Support 1080i and 720P video resolution Gold-plated connectors
1	0 517 20		Length 10 m
1	0 517 36		Length 15 m
			HDMI to micro HDMI cord
1		0 398 56	Length 2 m
			90° HDMI adaptors
1	0 517 37	0 398 57	Male HDMI to female HDMI with 90° angle To be used to make a connection when space is limited
			Display Port cords
1	0 514 00	0 398 58	Length 2 m For connecting a Display Port socket to an audio/video terminal (PC, monitor, etc)

HD15 cords

Pack	Cat.Nos: Plastic bag	Cat.Nos: Plastic bag with hook	
			Male/male HD15 cords For connecting an HD15 socket to a video terminal (PC, video projector, etc) Support QXGA resolution (2048x1536)
1	0 517 29	0 398 50	Length 2 m
1	0 517 30		Length 5 m
1	0 517 23		Length 10 m
1	0 517 31		Length 15 m
			HD15 cord + 3.5 mm Jack
1	0 517 22		Length 2 m For connecting an HD15 video socket and a 3.5 mm audio jack to a terminal (PC, video projector)

Audio cords

Pack	Cat.Nos: Plastic bag	Cat.Nos: Plastic bag with hook	
			RCA male/male stereo audio cords
1	0 514 03	0 398 67	Length 2 m
1	0 514 04	0 398 68	Length 5 m
			Jack 3.5 mm male to 2 RCA male Y audio cords
1	0 514 05	0 398 69	Length 2 m
1	0 514 06	0 398 70	Length 5 m
			Jack 3.5 mm male / male audio cords
1	0 514 07	0 398 71	Length 2 m
1	0 514 08	0 398 72	Length 5 m
			TOSLINK optical digital cable
1		0 398 73	Length 2 m

HDMI extender
p. 145

Audio/video system

USB Type-C adaptors and cords, data cords and cables

0 514 12

0 514 10

0 514 02

Pack	Cat.Nos		
			USB Type-C adaptors
	Plastic bag	Plastic bag with hook	
1	0 514 12	0 398 66	**Male USB 3.1 Type-C/female HDMI adaptors** For connecting a USB Type-C device to the HDMI port of a video projector or TV set to play audio and video
			USB 3.1 Type-C cords
	Plastic bag	Plastic bag with hook	
1	0 514 10	0 398 63	Male USB 3.1 Type-C/male Type-C cord - length 1 m To be used to load, transfer data and play audio/video
			USB data cords
	Plastic bag	Plastic bag with hook	To be used to transfer data between a USB Data socket and a peripheral (hard disk, printer, scanner, etc)
			Length 1 m
1		0 398 61	Male USB 2.0 A/male Micro B cord
1		0 398 62	Male USB 3.0 A/male Lightning cord
1		0 398 65	Male USB 2.0 Type-C/male micro B USB cord
			Length 2 m
1	0 514 01	0 398 59	Male USB 3.0 A/male A cord
1	0 514 02	0 398 60	Male USB 3.0 A/male B cord
1	0 514 11	0 398 64	Male USB 2.0 Type-C/male USB-A cord
			Cat. 6 U/UTP RJ 45 cords
	Plastic bag with hook		RJ 45 - RJ 45 flat
1	0 398 74		Length 2 m
1	0 398 75		Length 5 m
1	0 398 76		Length 10 m
1	0 398 77		Length 15 m
1	0 398 78		Length 20 m
1	0 398 79		Length 30 m
			Cables
1	0 327 81		**VGA cable** Length 20 m For full pin connection of HD15 sockets at a distance of up to 15 m
1	0 514 09		**Loudspeaker cable** Length 15 m For connecting an amplifier and speakers

HDMI extender
p. 145

Audio/video system

USB Data and SUB D data sockets

0 787 46

0 787 48

Pack	Cat.Nos		
			Female USB Data sockets
			For connecting USB devices (printer, scanner, external hard drive, interactive panel) 1 module
	Mosaic	Arteor	**Preterminated - USB 2.0** Max. cable length: 5 m Recommended cable: USB A Equipped with cable length 15 cm
1	0 787 46	5 720 94	○ White
1		5 725 94	● Magnesium
1		5 725 76	Champagne
1		5 725 75	Soft Alu
			Screw-type - USB 2.0 Max. cable length: 5 m Recommended cable: USB A Connection using screw terminal blocks with 1 mm² cross-section
1	0 787 61	5 722 75	○ White
1		5 727 75	● Magnesium
1		5 725 53	Champagne
1		5 725 52	Soft Alu
			Female USB Data Type-A extender - for data transfer
	Mosaic	Arteor	○ White
1	0 787 48	5 720 23	For connecting a USB peripheral (keyboard, mouse, digital control panel, etc) to a source (computer) located more than 5 m away (up to 30 m) The kit contains a transmitter (1 module) and a receiver (1 module) The transmitter and receiver are linked by an RJ 45/RJ 45 cable (not supplied)
			SUB D socket
	Mosaic		○ White
1	0 787 65		2 modules 9 contacts with screw-type connector for RS 232 serial link

Legrand cabling system LCS³ enclosures

server cabinets

4 464 07

4 464 17

Colour: Black RAL 9005
Frame: aluminium, demountable
Load capacity: 1500 kg (static)
80 % perforated front door and 80 % perforated double rear doors: all doors are fitted with a Fix-easy swivel handle with a EK333 locking
Roof: 3 cut-outs (the left and right ones have blindplates and brushes, the center one has a blind plate)
Interior: cabinet equipped with 4 x 19" profiles including height (U) indication
Distance to the cabinet with airflow front: set to 80 mm (pitch set to 100 mm)
Distance to the cabinet front: set to 175 mm (pitch set to 100 mm)
Server cabinets supplied without side panels. Flatpack server cabinets supplied with side panels
Server cabinets with airflow management are supplied with an airflow management package keeping the loss of air to a minimum, thus improving energy efficiency
Cabinets equipped with leveling feet
Server cabinets with airflow management are supplied with a sideskirt with cut-outs and blind panels

LCS³ 19" server cabinets

Pack	Cat.Nos	Capacity	Width (mm)	Depth (mm)
1	4 464 00	42 U	600	1000
1	4 464 01	42 U	600	1200
1	4 464 02	42 U	800	1000
1	4 464 03	42 U	800	1200
1	4 464 04	47 U	600	1000
1	4 464 05	47 U	600	1200
1	4 464 06	47 U	800	1000
1	4 464 07	47 U	800	1200

LCS³ 19" server cabinets with air flow management

		Capacity	Width (mm)	Depth (mm)
1	4 464 10	42 U	600	1000
1	4 464 11	42 U	600	1200
1	4 464 12	42 U	800	1000
1	4 464 13	42 U	800	1200
1	4 464 14	47 U	600	1000
1	4 464 15	47 U	600	1200
1	4 464 16	47 U	800	1000
1	4 464 17	47 U	800	1200

Side panels for server cabinets

Set of 2, with plinths

		Capacity	Depth (mm)
2	4 464 20	42 U	1000
2	4 464 21	42 U	1200
2	4 464 22	47 U	1000
2	4 464 23	47 U	1200

LCS³ Flatpack server cabinets, including side panels

Flatpack cabinets have the same configuration as Cat.Nos 4 464 02 and 4 464 03 respectively, only with side panels

		Capacity	Width (mm)	Depth (mm)
1	4 464 25	42 U	800	1000
1	4 464 26	42 U	800	1200

Legrand cabling system LCS³ enclosures

cabling cabinets

4 464 34

Colour: Black RAL 9005
Frame: aluminium, demountable
Load capacity: 1500 kg (static)
Glass front door and blind steel door in the back: all doors are fitted with a Fix-easy swivel handle with a EK333 locking
Roof: 3 cut-outs (the left and right ones have blindplates and brushes, the center one has a blind plate)
Interior: cabinet equipped with 4 x 19" profiles including height (U) indication
Distance to the cabinet front: set to 175 mm (pitch set to 100 mm)
Cabinets delivered with side panels
Cabinets equipped with leveling feet

LCS³ 19" cabling cabinets - 800 mm wide

Pack	Cat.Nos	Capacity	Width (mm)	Depth (mm)	Height (in mm)
1	4 464 30	24 U	800	800	1300
1	4 464 31	24 U	800	1000	1300
1	4 464 32	42 U	800	800	2000
1	4 464 33	42 U	800	1000	2000
1	4 464 34	47 U	800	800	2200
1	4 464 35	47 U	800	1000	2200

Legrand cabling system LCS³ enclosures

accessories for server cabinets and cabling cabinets


4 464 94


4 464 99


4 464 75


4 464 63


4 464 62


4 464 72


4 464 78


4 464 80


4 464 82 (mounted on height profile)

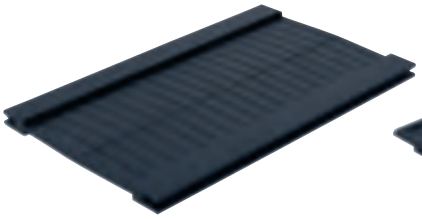
Pack	Cat.Nos	Accessories for airflow management
		Front panels
25	4 464 94	1U front panels (set of 25). Plastic To be mounted in between the 19'' profiles. No tools needed to secure the panel
		Sideskirt brush
1	4 464 75	Sideskirt brush, depth 200 mm
		Plinths
		Front-rear sheet metal plinths to be added in order to increase the level of airtightness To be associated with leveling feet Black
1	4 464 99	Width 600 mm. Height 0-25 mm
1	4 464 59	Width 800 mm. Height 0-25 mm
1	4 464 57	Width 600 mm. Height 22-47 mm
1	4 464 58	Width 800 mm. Height 22-47 mm

Pack	Cat.Nos	Accessories for cable management
		Cable trays
		Powdercoated cable trays, width 200 mm Black
1	4 464 63	Height: 24U
1	4 464 64	Height: 42U
1	4 464 65	Height: 47U
		Wiremesh cable trays
		Zinc-blue passivated wiremesh cable trays, width 200 mm
1	4 464 62	Height: 24U
1	4 464 60	Height: 42U
1	4 464 61	Height: 47U
		Strips
		U-shaped sheet metal strips for toolless mounting of cable management accessories in front of VMRs Black
1	4 464 70	Height: 24U
1	4 464 71	Height: 42U
1	4 464 72	Height: 47U
		Cable guides
		To be mounted on vertical cable management profiles that attach to the VMRs Include a snap-on feature enabling the installation of bend radius cover Cat.No 4 464 76
1	4 464 91	Height: 24U
1	4 464 92	Height: 42U
1	4 464 93	Height: 47U
1	4 464 76	Bend radius cover To be installed (no tools required) on cable guides Cat.Nos 4 464 91/92/93
		Cable rings
		Set of 10 cable rings to be mounted on cable trays or vertical cable management profiles Black
10	4 464 77	Cable ring
10	4 464 78	Cable ring with brackets
		Tying brackets
		Set of 10 pull and relief brackets
10	4 464 79	For mounting on frames (top or bottom)
10	4 464 80	For mounting on roof
		Steel cable rings
		Set of 10 cable rings, for assembling cable bundles Zinc - Hot Dip
10	4 464 82	To be mounted on cable trays and height profiles Width 100 mm. Depth 80 mm
10	4 464 81	To be mounted on height profiles Width 85 mm. Depth 165 mm
10	4 464 83	To be mounted on VMRs Width 85 mm. Depth 165 mm

Legrand cabling system LCS³ enclosures

accessories for server cabinets and cabling cabinets (continued)


4 464 69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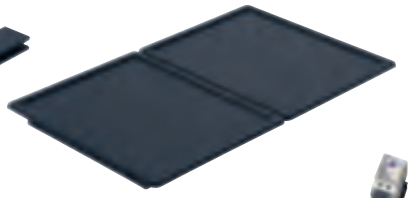
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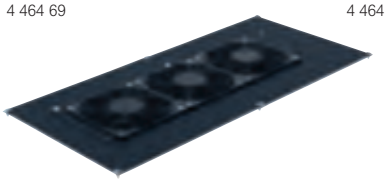
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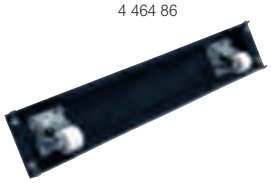

4 464 84

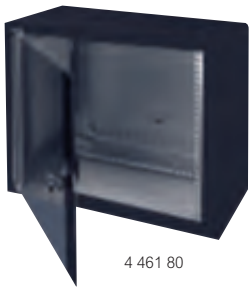

4 464 85

Pack	Cat.Nos	Mechanical accessories
		Frame couplers
6	4 464 69	Set of 6 frame couplers To be used to connect two cabinets
		Roof brushes
1	4 464 87	Roof brush to be installed on right/left roof cut-outs Depth 200 mm
1	4 464 95	Roof brush to be installed on middle roof plates (the roof layout must include a cut-out in the middle plate) Black
		Plastic blind plate
1	4 464 86	Plastic blind plate, depth 200 mm To be installed on right/left roof cut-outs to completely cover gaps
		Roof inserts - cable guides
2	4 464 88	Cable guide, set of 2 To be installed on right/left roof cut-outs to facilitate the management of top-of-cabinet cables
2	4 464 89	Cable guide end plate, set of 2 To be installed on right/left roof cut-outs to facilitate the management of top-of-cabinet cables
1	4 464 90	Cable guide set, 100 mm To be installed on right/left roof cut-outs to facilitate the management of top-of-cabinet cables
1	4 464 96	Roof middle cable guide, black To be installed on middle roof plates (the roof layout must include a cut-out in the middle plate)
		Roof fan unit
1	4 464 68	Roof fan unit - black Comprises 3 axial fans Flow with no load: 480 m³/h Flow under normal loads: over 300 m³/h To be connected using IEC-320 C13 connectors Can be combined using a cable with IEC-320 C13 / C14 connectors
		Adjustable base legs
4	4 464 98	Set of 4, height 61 mm
2	4 464 97	Set of 2, height 61 mm To be used with cabinets equipped with ligth duty casters
		Casters
4	4 464 84	Light duty casters (set of 4 wheels) Maximum dynamic load: 200 kg Black
		Temperature management
1	4 464 85	Thermostat, to be used to ensure the fan switches on at a selected temperature

Pack	Cat.Nos	Accessories for PDUs
		Frames
		Set of 2 PDU brackets
2	4 464 73	1-fold
2	4 464 74	2-fold
		Cable trays
		Powdercoated PDU cable trays to be used for installing PDUs or for vertical cable management Width 170 mm: allows installation of up to three 1U PDUs, 2 intelligent PDUs or 1 High-Density PDU Cables can be attached to the tray using tie-wraps and/or Velcro Black
1	4 464 66	Height: 42U
1	4 464 67	Height: 47U

Legrand cabling system LCS³ enclosures

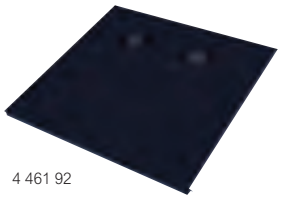
wall-mounting cabinets



4 461 80

4 461 90

4 461 91



4 461 92

Pack	Cat.Nos	Wall-mounting cabinets with glass door				
		Comprise: - a wall element with integrated strain relief profile - 4 front and rear bars - 2 cable entry plates (top and bottom) - a set of two 19" profiles with adjustable depth (in steps of 50 mm) and a pattern of holes on the side allowing accessories to be fitted. The casing consists of two identical upper and lower panels with ventilation slots at the rear, two identical side panels and a Securit glass door with an EK-333 lock and a handle. Possibility to adjust the cable holes' size on the spot thanks to the handy bend-away fingers Width: 600 mm Colour: RAL 9011 Finish: powder coating Max. load: 100 kg Supplied with 1 rear plate, 4 depthwise bars, 2 cable entry plates, 2 x 19" profiles, 2 roof and floor plates, 2 side panels, 1 glass door, 1 assembly set, including assembly guide				
		Capacity	Width (mm)	Depth (mm)	Height (mm)	
1	4 461 80	6 U	600	525	342	
1	4 461 81	9 U	600	525	476	
1	4 461 82	9 U	600	625	476	
1	4 461 83	12 U	600	525	609	
1	4 461 84	12 U	600	625	609	
1	4 461 85	15 U	600	525	742	
1	4 461 86	15 U	600	625	742	
1	4 461 87	21 U	600	625	1009	

Accessories

1	4 461 90	**Cable entry strip for wall-mounting cabinet** For dust-free cable entry. To be used in replacement of a top and/or bottom cable entry plate Supplied with 1 cable entry brush (360 mm), including fastenings
1	4 461 91	**Corner guide set** Comprises 2 corner guide supports (left and right) and fastening materials To be fitted specifically to the sides of the 19" profiles Supports heavy 19" equipment Suitable for a wall-mounting cabinet Material: galvanized sheet steel
		Roof plates with built-in fan unit Can be added as an option to generate a forced cooling air flow in the wall-mounting cabinet Replace an existing roof panel Can be used in conjunction with thermostat Cat.Nos 4 460 98 Supplied with assembly materials
1	4 461 92	Depth: 525 mm
1	4 461 93	Depth: 625 mm

Legrand cabling system LCS³ enclosures

accessories for wall-mounting cabinets

6 466 69

4 461 95

Pack	Cat.Nos	LCS³ accessories
1	4 460 98	Thermostat
1	6 466 68	Horizontal cable ring
1	6 466 69	Vertical cable ring

		19" profiles
		Can be used when equipment shelves need to be installed (with fixings at front and rear) Supplied in sets of 2
1	4 461 95	Height: 6 U
1	4 461 96	Height: 9 U
1	4 461 97	Height: 12 U
1	4 461 98	Height: 15 U
1	4 461 99	Height: 21 U

		Glass doors
		Width: 600 mm
1	9 004 73	6 U glass door
1	9 004 74	9 U glass door
1	9 004 75	12 U glass door
1	9 004 76	15 U glass door
1	9 004 77	21 U glass door

Legrand cabling system LCS³ enclosures

19" accessories


0 465 22


0 465 23

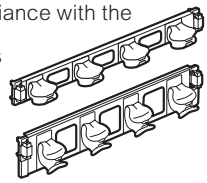

0 465 29


0 465 32


0 464 91

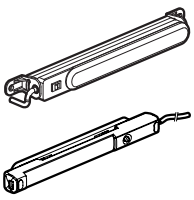

0 363 81

Pack	Cat.Nos	19" cable feedthrough panels
		For organising and running patch cords. Black RAL 9005
		Metal, 2 axes, Quick-Fix
		Horizontal feedthrough passage. With cable rings plastic cable guide with controlled radius for optimum cord protection (compliance with the bending radius)
		Quick installation without screws
1	0 465 22	1 U
1	0 465 23	2 U
		Plastic with brush, snap on
1	0 465 28	1 U
1	0 465 29	2 U
		Metal with brush, Soluclip
		Quick installation without screws
1	0 465 30	1 U
1	0 465 31	2 U



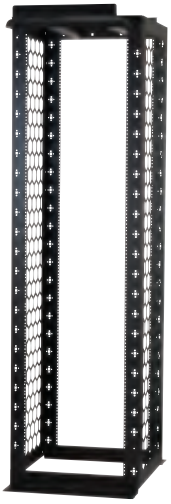
Pack	Cat.Nos	19" blanking plates
		Black RAL 9005
		Plastic, direct clipping
1	0 465 32	1 U
1	0 465 33	2 U
		Metal, Quick-Fix
		Quick installation without screws
1	0 465 38	1 U
1	0 465 39	2 U
1	0 465 40	3 U

Pack	Cat.Nos	LED Lighting
		Prewired with 2 m length power cord
		Magnets fastening
1	0 464 91	With switch
		60° swivel
1	0 363 81	With presence sensor
		120° swivel



Legrand cabling system LCS³ enclosures

cabling openrack and accessories


4 461 50


4 461 52


4 461 54


4 461 57


4 461 55


4 461 58


4 461 56

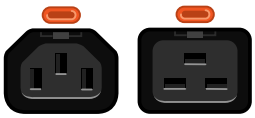

4 461 59

Pack	Cat.Nos	Cabling openrack and accessories
1	4 461 50	Punched hole channel rack, 2130 mm x 609 mm (7 ft x 24"), black, square hole 9 mm (3/8")
1	4 461 52	Cable duct with door
6	4 461 54	Hexagonal cable feedthroughs (set of 6)
12	4 461 55	Bend limiting clips (set of 12)
4	4 461 56	Cable management spools (set of 4)
1	4 461 57	Cable management rings
1	4 461 58	Cable duct mounting brackets (top of rack Cablofil)
1	4 461 60	Overhead cable tray, 5 U, 19"
1	4 461 59	Horizontal cable management system
1	0 465 70	19" closed panel for cord management with pivoting cover - 1U - black - depth 172 mm
1	0 465 71	19" closed panel for cord management with pivoting cover - 2U - black - depth 172 mm
50/25	0 464 23	Set of 50 special screws for racks + 25 earthing claws

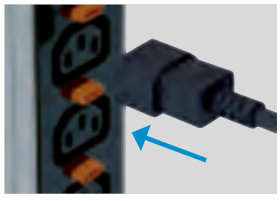
Innovation at the heart of PDUs to prevent accidental disconnection

A major addition to the range and exclusive to Legrand, C13 and C19 outlets have a power supply cord locking system which prevents accidental disconnection and gaurantees absolute safety!

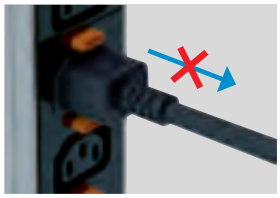
An innovative technical solution: very easy to identify thanks to the orange buttons next to each socket.



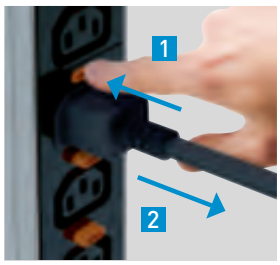
A universal system: takes all cords for standard C13 and C19 outlets.



CONNECTION



AUTO LOCKING



UNLOCKING

Legrand cabling system LCS³ energy distribution - single-phase Zero-U Basic PDUs

6 468 53

6 468 61

To provide ∿ electric power for IT equipment in 19" enclosures
Single phase Zero-U PDUs for vertical mounting in the cabinet
230 V - 50/60 Hz power supply
PDUs with 2 circuits protected by 16 A uni + neutral MCB (except Cat.Nos 6 469 00/01/02 with 1 circuit) in a support with projecting edges to avoid accidental breakdown. Each circuit is identified by color coding. The total number of outlets is distributed equally between the 2 circuits. 2P+E outlets: C13 and C19 standard outlets,French/German/British standards outlets equipped with safety shutters, French/German standards outlets inclined at 55°
330° rotating cable input for a perfect orientation of the cable and no interference in the cabinet
C13 and C19 standard outlets are equipped with cord locking system to avoid any accidental disconnection. Universal solution compatible with all the cords (C14 plugs for C13 and C20 plugs for C19)
Delivered with 2 sets of metallic mounting brackets: button brackets (for quick fixing and variable pitch) and standard brackets (for screw fixing)
Black modules (outlets and functions)
Aluminium profile

Pack	Cat.Nos	PDU Basic
		German standard
1	6 468 52	24 outlets Connection on terminal block up to 6 mm²
1	6 468 53	24 outlets 3 m power supply cord with IEC 60309 32 A 2P+E plug
1	6 469 00	12 outlets With surge protection 3 m power supply cord with 16 A French/German 2P+E plug
1	6 469 01	14 outlets With power indicator 3 m power supply cord with 16 A French/German 2P+E plug
		British standard
1	6 468 54	24 outlets Connection on terminal block up to 6 mm²
		French standard
1	6 468 50	24 outlets Connection on terminal block up to 6 mm²
1	6 468 51	24 outlets 3 m power supply cord with IEC 60309 32 A 2P+E plug
		Italian standard
1	6 468 59	24 outlets 3 m power supply cord with IEC 60309 32 A 2P+E plug
		CORD LOCKING SYSTEM **IEC 60320 standard**
1	6 468 56	24 C13 outlets with cord locking system Connection on terminal block up to 6 mm²
1	6 468 57	24 C13 outlets with cord locking system 3 m power supply cord with IEC 60309 32 A 2P+E plug
1	6 469 02	24 C13 outlets + 12 C19 outlets with cord locking system. With 1 power indicator module per phase. 3 m power supply cord with IEC 60309 32 A 3P+N+E plug
1	6 468 60	20 C13 outlets + 4 C19 outlets with cord locking system. Connection on terminal block up to 6 mm²
1	6 468 61	20 C13 outlets + 4 C19 outlets with cord locking system. 3 m power supply cord with IEC 60309 32 A 2P+E plug

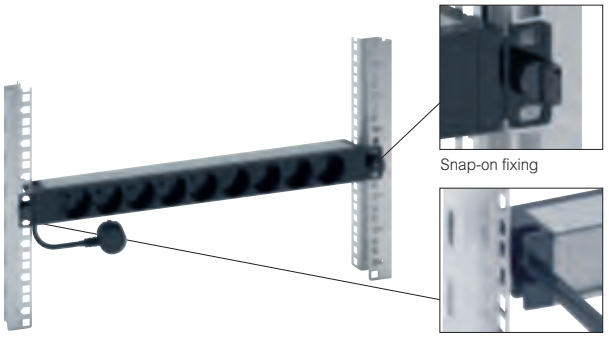
Legrand cabling system LCS³ energy distribution - three-phase Zero-U Basic PDU

6 468 70

To provide ∿ electric power for IT equipment in 19" enclosures
Three phases Zero-U PDU for vertical mounting in the cabinet
400 V - 50/60 Hz power supply
Each circuit is protected by 16 A single pole MCB in a support with projecting edges to avoid accidental breakdown. 1 circuit per phase, each with 6 IEC 60320 C13 outlets and 2 IEC 60320 C19 outlets
330° rotating cable input for a perfect orientation of the cable and no interference in the cabinet
C13 and C19 standard outlets are equipped with cord locking system to avoid any accidental disconnection. Universal solution compatible with all the cords (C14 plugs for C13 and C20 plugs for C19)
Delivered with 2 sets of metallic mounting brackets: button brackets (for quick fixing and variable pitch) and standard brackets (for screw fixing)
Black modules (outlets and functions)
Aluminium profile

Pack	Cat.Nos	PDU Basic
		IEC 60320 standard
1	6 468 70	18 C13 outlets + 6 C19 outlets with cord locking system. 3 m power supply cord with IEC 60309 16 A 3P+N+E plug

Legrand cabling system LCS³ energy distribution - horizontal (1U/2U) Basic PDUs

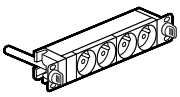


6 468 12

To provide ∿ electric power for IT equipment in enclosure. 230 V - 50/60 Hz power supply. 1U aluminium profile. End cap with metallic brackets and cable holder shape. Quick fixing (no screws) on 19" fixing centers. Can also be installed vertically by reverting the brackets (no screws)
2P+E outlets:
- C13 and C19 standard outlets are equipped with cord locking system to avoid any accidental disconnection. Universal solution compatible with all the cords (C14 plugs for C13 and C20 plugs for C19).
- French, German and British standard outlets are equipped with safety shutters
- French and German standard outlets are inclined at 55°
Black modules (outlets and functions)

Pack	Cat.Nos	19" - PDU Basic
		German standard
		3 m power supply cord with 16 A 2P+E French/ German plug
1	6 468 06	6 outlets
1	6 468 12	9 outlets
		British standard
		3 m power supply cord with 13 A 2P+E British plug
1	6 468 13	8 outlets
		French standard
		3 m power supply cord with 16 A 2P+E French/ German plug
1	6 468 05	6 outlets
1	6 468 10	9 outlets
1	6 468 11	9 tamperproof red outlets
		Swiss standard
		3 m power supply cord with Swiss plug
1	6 468 18	12 T13
1	6 468 19	12 T23
		IEC 60320 standard
		Connection on terminal block (except Cat.Nos 6 468 15)
1	6 468 14	10 C13 outlets with cord locking system
1	6 468 15	12 C13 outlets with cord locking system
		3 m power supply cord with IEC 60309 16 A 2P+E plug
1	6 468 09	6 C13 outlets + 2 C19 outlets with cord locking system
1	6 468 07	6 C19 outlets with cord locking system

		10" - PDU Basic
		1 m power supply cord with French/German 2P+E plug
		4 x 2P+E outlets
1	6 468 01	German standard
1	6 468 00	French standard



Legrand cabling system LCS³ energy distribution - horizontal (1U/2U) Basic PDUs (continued)

6 468 24

To provide ∿ electric power for IT equipment in enclosure. 230 V - 50/60 Hz power supply. 1U aluminium profile. End cap with metallic brackets and cable holder shape. Quick fixing (no screws) on 19" fixing centers. Can also be installed vertically by reverting the brackets (no screws)
2P+E outlets:
- C13 and C19 standard outlets are equipped with cord locking system to avoid any accidental disconnection. Universal solution compatible with all the cords (C14 plugs for C13 and C20 plugs for C19).
- French, German and British standard outlets are equipped with safety shutters
- French and German standard outlets are inclined at 55°
Black modules (outlets and functions)

Pack	Cat.Nos	19" - PDU Basic with power indicator or luminous switch
		LED indicator: signals whether the PDU is supplied with power or not LED indicator switch: powers on/off the PDU
		German standard 3 m power supply cord with 16 A 2P+E French/ German plug
1	6 468 21	9 outlets and 1 power indicator
1	6 468 23	8 outlets and 1 luminous switch
		British standard 3 m power supply cord with 13 A 2P+E British plug
1	6 468 24	6 outlets and 1 luminous switch
		French standard 3 m power supply cord with 16 A 2P+E French/ German plug
1	6 468 20	9 outlets and 1 power indicator
1	6 468 22	8 outlets and 1 luminous switch

Legrand cabling system LCS³ energy distribution - 1U Basic Power Distribution Units (PDU)

6 468 36

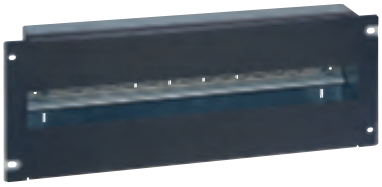
To provide ∿ electric power for IT equipment in enclosures. 230 V - 50/60 Hz power supply. 1U aluminium profile. End cap with metallic brackets and cable holder shape. Quick fixing (no screws) on 19" fixing centers. Can also be installed vertically by reverting the brackets (no screws)
2P+E outlets:
- C13 and C19 standard outlets are equipped with cord locking system to avoid any accidental disconnection. Universal solution compatible with all the cords (C14 plugs for C13 and C20 plugs for C19).
- French, German and British standard outlets are equipped with safety shutters
- French and German standard outlets are inclined at 55°
Black modules (outlets and functions)

Pack	Cat.Nos	19" Basic PDU with protection devices
		MCB and RCBO support with projecting edges to avoid accidental breakdown 3 m power supply cord with 16 A 2P+E French/ German plug
		German standard
1	6 468 31	6 outlets and a 16 A single pole Micro Circuit Breaker
1	6 468 32	9 outlets nd a 16 A single pole Micro Circuit Breaker, 2 U height
		French standard
1	6 468 30	6 outlets and a 16 A single pole Micro Circuit Breaker
1	6 468 33	6 outlets and a 16 A 30 mA Residual-current Circuit

		19" Basic PDU with surge protection
		Protect against mains overvoltages while keeping outlets energised With light indicators: - one LED (white) gives information whether the PDU is supplied with power or not - one LED (green) indicates when surge protection module is efficient or must be replaced Equipped with hotswappable surge protection module Cat.No 6 468 97: even when the module is being replaced, the PDU and its outlets are still powered on 3 m power supply cord with 16 A 2P+E French/ German plug
1	6 468 36	6 outlets - German standard - with switch
1	6 468 35	6 outlets - French standard - with switch
1	6 469 03	7 outlets - German standard

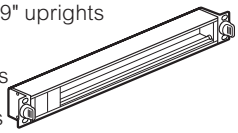
Legrand cabling system LCS³ energy distribution - PDUs to be equipped, accessories and DIN rails

6 468 90



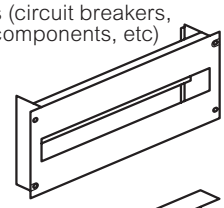
0 465 46 + 0 465 47

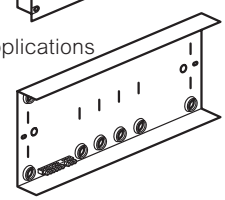
Pack	Cat.Nos	PDUs to be equipped
		Quick fixing (no screws) on 19" uprights Aluminium profile
1	6 468 99	19'' PDU Capacity: 16 Mosaic modules
1	6 468 98	10'' PDU Capacity: 8 Mosaic modules



		PDU accessories
		Locking caps To block the use of an outlet. A key is necessary to remove the cap and free the access Light grey RAL 7035
6	6 468 90	Set of 6 locking caps for French, Italian and German standard outlet + 1 key
6	6 468 92	Set of 6 locking caps for British standard outlet + 1 key
6	6 468 96	Set of 6 locking caps for Swiss standard T13 or T23 outlet + 1 key
6	6 468 94	Set of 6 locking caps for C13 outlet + 1 key
6	6 468 95	Set of 6 locking caps for C19 outlet + 1 key
		Surge protection module
1	6 468 97	To replace used module on PDU With light indicators: - 1 LED (white) to indicate voltage presence - 1 LED (green/red) to indicate the status of the surge protection module Hotswappable surge protection module: even when the module is being replaced, the PDU and its outlets are still powered on

		Multi-application DIN rail
		For mounting modular devices (circuit breakers, Legrand multimedia network components, etc) Capacity: 24 modules Height 4 U Screw fixing on 19" uprights
1	0 465 46	DIN profile rail with front panel Supplied with blanking plates 24 modules Black RAL 9005
1	0 465 47	Rear cover To be used for high current applications (greater than 50 V) To be associated with DIN profile rail Cat.No 0 465 46 Ensures IP XXB Supplied with terminal block (8 + 1 connections)





METERED AND SWITCHED PDUS

Intelligent PDUs
for even more reliable
data centers!

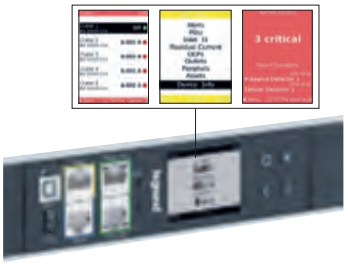
Meeting your needs for energy while incorporating intelligent functions, including real-time power metering and environmental monitoring? It's possible with Legrand's connected PDUs (iPDUs)!

ACCURATE +/-1% POWER INPUT MEASUREMENT

Accurate energy consumption measurements with multiple configurations possible.

BEST-IN-CLASS CONTROLLER FEATURES

- Dual 10/100 Ethernet ports
- USB Type-A and Type-B ports
- CLI management port
- Color Coded Alert Screen

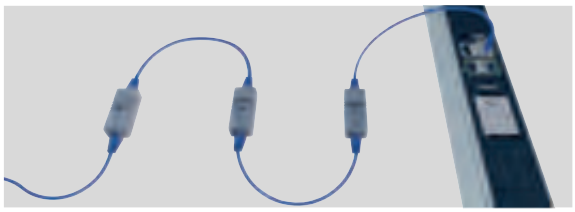


REMOTE OUTLET MANAGEMENT GROUPING

- For checking that devices are only plugged in on available circuits.
- Switched models allow users to deactivate unavailable sockets remotely for load shedding or protection.

COMPATIBLE WITH RARITAN SMARTSENSORS

All Raritan SmartSensors work out of the box with Legrand intelligent PDUs, are easily integrated in the cabinet, can be connected in a daisy chain and can be replaced without having to rewire the cabinet.



All Legrand intelligent PDUs can be monitored and managed remotely through a secured Web User Interface !

Contact your local sales rep for more information!

Legrand cabling system LCS³ - copper

Applications distances according to category of cabling

Application \ Frequency[1]	LCS³ Cat.5e 100MHz	LCS³ Cat.6 250MHz	LCS³ Cat.6A 500Mhz	LCS³ Cat.8 2000MHz
1000Base-T	100m	100m	100m	100m
2.5Gbase-T	Possible[2]	Possible[2]	100m	100m
5Gbase-T	Possible[2]	Possible[2]	100m	100m
10Gbase-T	N/A[4]	Possible[3]	100m	100m
25Gbase-T	N/A[4]	N/A[4]	Possible[5]	30m
40Gbase-T	N/A[4]	N/A[4]	Possible[5]	30m

1: Maximum frequency defined in the standards
2: Follow ISO/IEC TR 11801-9904 or TIA TSB 5021 to evaluate possibility on installed links. Distance will depend on many factors.
3: Follow ISO/IEC TR 24750 or TIA TSB 155-A to evaluate possibility on installed links. Distance will depend on many factors.
4: Not Available.
5: Follow ISO/IEC TR 11801-9905 to evaluate possibility on installed links. Distance will depend on many factors.

Compliance of LCS³ systems with standards and certifications

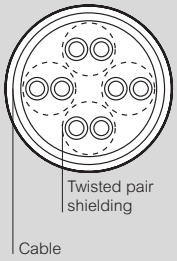
LCS³ systems and components (de-embedded) conform to the following standards:
- ANSI/TIA 568
- EN 50173-1
- ISO/IEC 11801 Edition 3 (2017)

The LCS³ system supports 10 G applications Base-T up to 100 m in a transmission channel
Conforming to standards: ISO/IEC 11 801, EN 50173, ANSI/TIA 568
LCS³ systems are certified by the 3P independent laboratory, a reference body on the subject

Names for LAN cables (according to ISO 11801-2)

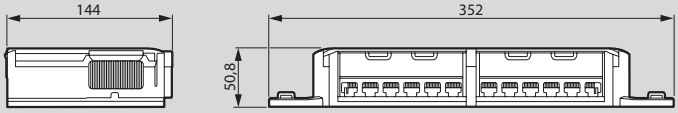
They correspond to: "type of cable shielding"/"type of twisted pair shielding" followed by TP (for twisted pairs)

Type of cable old name	Type of cable new name	Cable shielding	Shielding of twisted pairs
SSTP	S/FTP	S: screen made of copper braid	F: screen formed from an alu/ polyester ribbon
SFTP	SF/UTP	SF: combination of ribbon + braid	U: no screen
STP	U/FTP	U: no screen	F: screen formed from an alu/ polyester ribbon
FTP	F/FTP	F: screen formed from an alu/ polyester ribbon	F: screen formed from an alu/ polyester ribbon
FTP	F/UTP	F: screen formed from an alu/ polyester ribbon	U: no screen
UTP	U/UTP	U: no screen	U: no screen

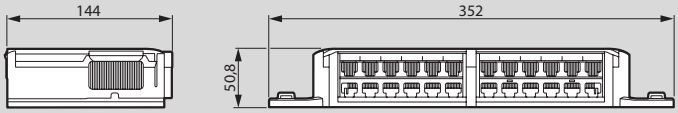


Dimensions (in mm)

Cat.No 0 337 96



Cat.No 0 337 97



The Innoval training centre offers LCS³ certification, see **our website**

25-year guarantee: Legrand is committed to delivering a durable LCS³ system, see **our website**

Performance when installed with a zone distribution box (consolidation point)

Maximum recommended lengths of links to ensure high performance of systems when using RJ 45 sockets with copper feedthroughs and/ or RJ 45 sockets

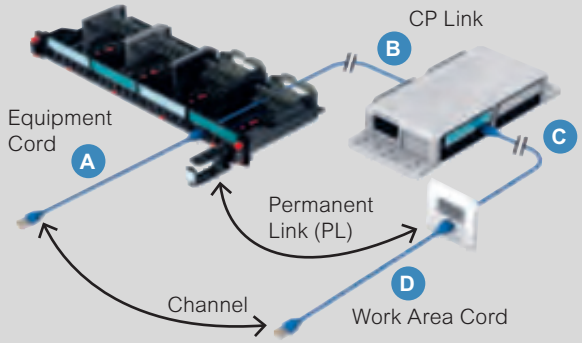
Performances for use of zone distribution boxes in 20°C environment

The distances below correspond to the most typical cases using preterminated solutions

All other standard-compliant configurations are possible, including configurations with use of cables to be connected on site

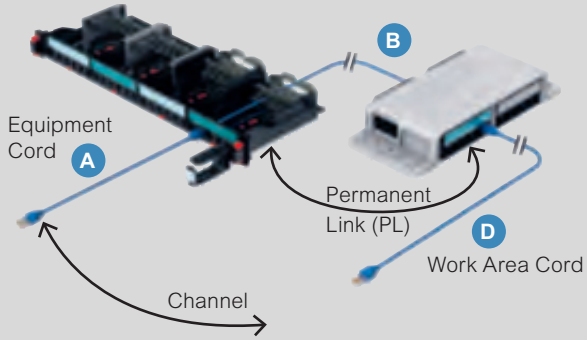
Refer to technical sheets for more information

a) Use of the area cabling cord in a channel with a Consolidation Point:



CP Cord C	CP Link B	Equipment Cord A	Work Area Cord D	Total Channel
8 m	74 m	5 m	5 m	92 m
15 m	63 m	5 m	5 m	88 m
20 m	56 m	5 m	5 m	86 m

b) Use of the area cabling cord in a channel with a MUTOA (Multi-User Telecommunications Outlet Assembly):



Work Area Cord D	Permanent Link B	Equipment Cord A	Total Channel
8 m	82 m	5 m	90 m
15 m	72 m	5 m	87 m
20 m	64 m	5 m	84 m

Legrand cabling system LCS³ - copper (continued)

PoE certification

Using PoE technology, devices such as Wi-Fi access points, cameras, etc. can be supplied with power by the Ethernet data cable. The cable combines data and power to supply all the PoE peripherals. The LCS³ connectors are PoE++ Third Party certified.

Legrand solutions are complying as per below:
- Cables: 802.3 bt PoE++ applications compatible according to installation standards ISO/IEC 14763-2 and EN 50174-2:2018
- Connectors: Compatible remote powering "PoE" up to 100 W (IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt). Third party certified IEC 60512-99-002 for disconnection under PoE Type 4
- Patch cords: Compatible remote powering "PoE" up to 100 W (IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt)" when installed according to standards ISO/IEC 14763-2 and/or EN 50174-2:2018

Table of PoE types according to cabling requirements and power availability

Name (Common name)	Type 1 (PoE)	Type 2 (PoE+)	Type 3 (PoE++)	Type 4 (PoE++)
IEEE Standard	802.3af (2003)	802.3at (2009)	802.3bt (2018)	802.3bt (2018)
Minimum Category Required	Category 3	Category 5e	Category 5e	Category 5e
Number of Pairs for Power	2	2	2 or 4	4
Maximum Current per Pair	350 mA	600 mA	600 mA	960 mA
Guaranteed maximum Power at PSE Output	15.4 W	30.0 W	60.0 W	90.0 W
Guaranteed maximum Power at PE Input	13 W	25.5 W	51.0 W	71.3 W
Diagram with maximum current per wire (mA)	175 175 175 175	300 300 300 300	300 300 300 300 300 300 300 300	480 480 480 480 480 480 480 480

Pair with outgoing current

Pair with returning current

Pair without current

There are subdivisions of PoE called Classes. Below is a table of these Classes with correspondence to the PoE Types and the power available. It's important to note that the difference of power between the PD and the PSE does not represent an average efficiency, but only a worst case with maximum distance and highest resistance cabling.

Class	1	2	3	4	5	6	7	8
Type	Type 1			Type 2	Type 3[1]		Type 4[2]	
PSE maximum output average power (W)	4	7	15.4	30	45	60	75	90
PD Input Average Power (W)	3.8	6.5	13.0	25.5	40.0	51.0	62.0	71.3
PD Peak operating Power (P)	5.0	8.4	14.4	28.3	42.0	53.5	65.1	74.9

1: Type 3 can also support Classes 1 to 4
2: Only single signature PD shown

High-performance maintenance

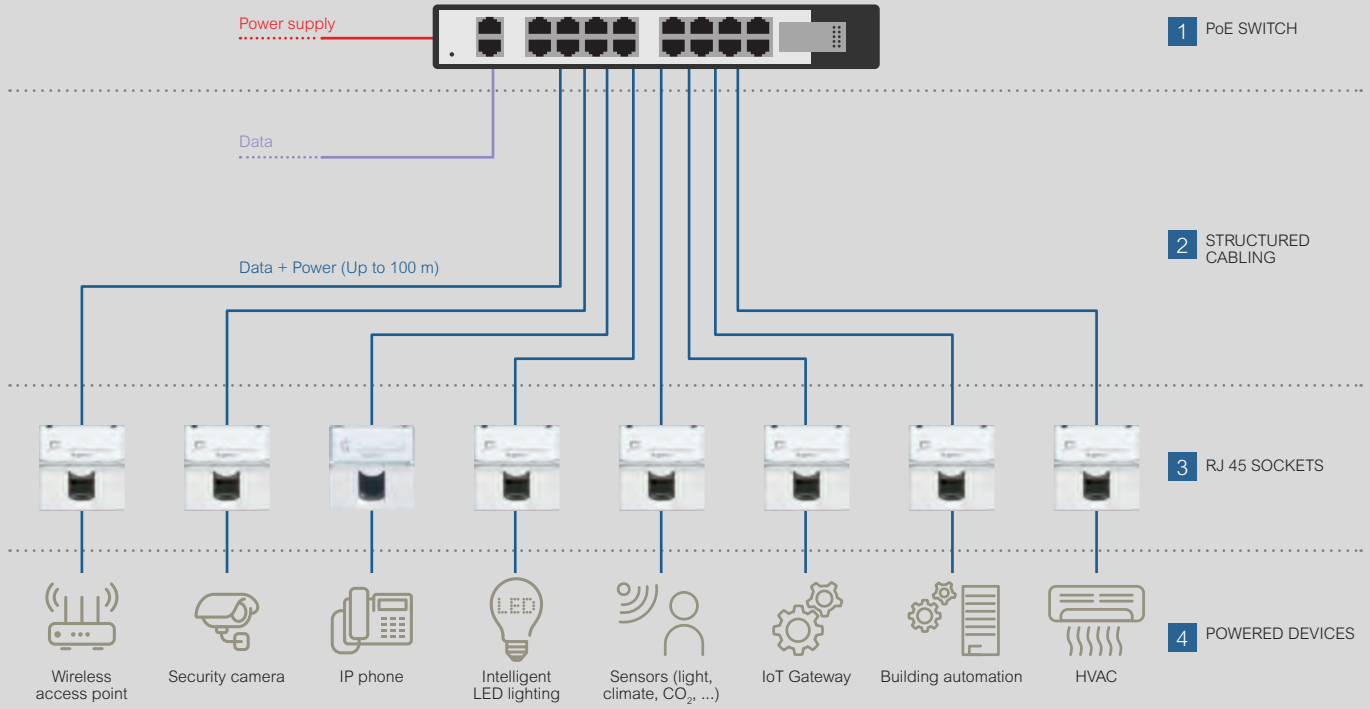
WARRANTY 25 YEARS legrand

Being committed to delivering a durable LCS³ system, Legrand gives a 25-year guarantee on its performance and applications, PoE included

Legrand cabling system LCS³ - copper (continued)

PoE architecture

Building systems are moving to a single IP Network



PoE switch

A Power over Ethernet switch is a device which supplies power and data on Ethernet cabling. It is draw power from its own conventional power source and provide power to the rest of the PoE system.

Structured cabling

The twisted pairs cable is the power and data transmission medium of a PoE system. It is used to provide the link between two devices enabling bidirectional communication and uni-directional supply of power.

RJ 45 sockets

Universal RJ 45 socket to connect devices.

Powered devices

A powered device is a device which receives power from the power sourcing equipment. It does not require its own conventional power source.

Shielded Category 6A cabling is recommended for optimum future-proofing and is the best choice for the Internet of Things and is recommended by current design standards for BIoT.

Legrand cabling system LCS³ - copper (continued)

Construction Products Regulation (CPR)

The CPR is a European law published in 2011, with a classification ratified in 2016, to impose minimum fire performance to products installed permanently in buildings. It covers, among other items, the communications cables fixed in the building, but not the removable items such as patch cords and user cords. Vendors are required to comply since July 1st, 2017 and the fire rating must be identified on the cable packaging along with the CE mark. The associated declaration of performance (DoP) must be made available to customers.

The EU regulation enforcing the standard by law is applicable to all European Economic Area (E.E.A.) member states: Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

It also applies in the countries voluntarily participating to be part of the single market: Iceland, Liechtenstein, Norway and Switzerland. In addition, four other countries are E.U. candidates and in the process of incorporating EU legislation into national law: Montenegro, Macedonia, Serbia and Albania. Finally, Turkey is an associate member, voluntarily following EU regulations.

The classification consists of 7 Euroclasses which define the fire reaction performance. Below is a table summarizing the classification:

Testing and level of control		A_{CA}	$B1_{CA}$	$B2_{CA}$	C_{CA}	D_{CA}	E_{CA}	F_{CA}
Euro classification	Gross heat of combustion	yes	-	-	-	-	-	-
	Flame propagation	-	yes	yes	yes	yes	yes	no
	Heat release	-	yes	yes	yes	yes	no	no
Additional criteria	Smoke production, flaming droplets, smoke acidity	-	yes	yes	yes	yes	no	no
Control of compliance	Type Testing by independent lab	yes	yes	yes	yes	yes	yes	no
	Production sampling by certification body	yes	yes	yes	yes	no	no	no

Explanation of the Euroclasses

Euroclass	Reaction to fire	Comments
A_{CA}	Non combustible	It is near-impossible to produce non-combustible communication cable.
$B1_{CA}$	Various level of flame propagation and heat release	Dca is the lowest cable type with all aspect tested and certified by an independent laboratory. Higher classes offer improved resistance to flame propagation and heat release but their additional criteria could be identical.
$B2_{CA}$		
C_{CA}		
D_{CA}		
E_{CA}	Minimum flame propagation testing	Heat release is not tested. Additional requirements are not tested, so the spread of fire is controlled, but the evacuation of people is limited due to toxic fumes. This is the first level of cable to require independent testing.
F_{CA}	No testing	Offers absolutely no guarantees. Should be avoided.

Definitions of the additional criteria

Smoke production	Performance
s1	Very low smoke production
s1a	Very low smoke production and high transmittance
s1b	Very low smoke production and medium transmittance
s2	Average smoke production
s3	No performance guaranteed

Particles / Droplets	Performance
d0	No droplets / flaming particles
d1	Low droplets / flaming particles
d2	No performance guaranteed

Smoke acidity	Performance
a1	Very low smoke acidity
a2	Low smoke acidity
a3	No performance guaranteed

These additional criteria are added after the letter of the Euroclass in order s, d, a. and they allow for more than 200 combinations.
For obvious reasons, most will not exist, and only the most useful ones will be used.

It is important to understand that the lowest rating in each type means that the product actually does not meet the requirements.

Legrand cabling system LCS³ - copper (continued)

Euroclass table

Cat.Nos	Description	Euroclass (A_{ca}; $B1_{ca}$; $B2_{ca}$; C_{ca}; D_{ca}; E_{ca}; F_{ca})	Additional criteria (smoke production, flaming droplets, acidity)		
0 327 50	C5e U/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 51	C5e U/UTP 4P PVC CABLE	E_{ca}	-	-	-
0 327 52	C5e F/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 53	C5e F/UTP 4P PVC CABLE	E_{ca}	-	-	-
0 327 54	C6 U/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 55	C6 U/UTP 4P PVC CABLE	E_{ca}	-	-	-
0 327 56	C6 F/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 57	C6 SF/UTP 4P LSZH CABLE	D_{ca}	s1	d1	a1
0 327 58	C6 F/UTP 4P PVC CABLE	E_{ca}	-	-	-
0 327 59	C6 SF/UTP 4P PVC CABLE	E_{ca}	-	-	-
0 327 76	C6 F/UTP 2x4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 77	C7 S/FTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 78	C6A F/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 79	C7 S/FTP 2X4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 87	C6A U/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 98	C6A F/FTP 2X4P LSZH CABLE	D_{ca}	s2	d2	a1
0 327 99	CÂBLE C6A F/FTP 4P LSZH	D_{ca}	s2	d2	a1
0 328 28	C6A U/UTP 4P LSZH CABLE	C_{ca}	s1a	d1	a1
0 328 38	C6A U/UTP 4P LSZH CABLE	$B2_{ca}$	s1a	d1	a1
0 328 49	C7 S/FTP 4P LSZH CABLE	C_{ca}	s1a	d1	a1
0 328 50	C5e F/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 328 53	C5e U/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 328 56	C6 F/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 328 57	C6 F/UTP 4P PVC CABLE	E_{ca}	-	-	-
0 328 61	C6 U/UTP 4P LSZH CABLE	D_{ca}	s2	d2	a1
0 328 78	C6A F/UTP 2X4P LSZH CABLE	D_{ca}	s2	d2	a2
0 328 79	C6 U/UTP 4P LSZH CABLE	$B2_{ca}$	s1a	d1	a1
0 328 82	C7 S/FTP 4P LSZH CABLE	$B2_{ca}$	s1a	d1	a1
0 328 83	C6A F/FTP 4P LSZH CABLE	C_{ca}	s1a	d1	a1
0 328 84	C6A U/FTP 4P LSZH CABLE	C_{ca}	s1a	d1	a1
0 328 86	C6 U/UTP 4P LSZH CABLE	C_{ca}	s1a	d1	a1
0 328 88	C6 U/UTP 100P LSZH CABLE	E_{ca}	-	-	-
0 338 90	C7 S/FTP 4P LSZH CABLE	E_{ca}	-	-	-
0 328 91	C3 U/UTP 50P LSZH CABLE	E_{ca}	-	-	-
0 337 88	C8 S/FTP 4P LSZH CABLE	D_{ca}	s2	d2	a1

Duplex applications, functioning on Duplex LC

Duplex	OM3	OM4	OM5	OS1a	OS2
10Gbps	300m(1)	400m(1)	400m(1)	2km(1)	10km(1)
25Gbps	70m(1)	100m(1)	100m(1)	2km(1)	10km(1)
40Gbps	240m(2)	350m(2)	440m(2)	2km(1)	10km(1)
50Gbps	70m(1)	100m(1)	100m(1)	2km(1)	10km(1)
100Gbps	70m(2)	100m(2)	150m(2)	2km(1)	10km(1)
200Gbps	N/A(3)	N/A(3)	N/A(3)	2km(1)	10km(1)
400Gbps	N/A(3)	N/A(3)	N/A(3)	2km(1)	10km(1)

1: Standard
2: Multi-Source Agreement
3: Not applicable

Parallel optics applications, functioning on 12-core MPO/MTP

Parallel	OM3	OM4	OM5	OS1a	OS2
10Gbps	N/A(2)	N/A(2)	N/A(2)	N/A(2)	N/A(2)
25Gbps	N/A(2)	N/A(2)	N/A(2)	N/A(2)	N/A(2)
40Gbps	100m(1)	150m(1)	150m(1)	N/A(2)	N/A(2)
50Gbps	N/A(2)	N/A(2)	N/A(2)	N/A(2)	N/A(2)
100Gbps	70m(1)	100m(1)	100m(1)	500m(1)	500m(1)
200Gbps	70m(1)	100m(1)	100m(1)	500m(1)	500m(1)
400Gbps	100m(1)	100m(1)	150m(1)	500m(1)	500m(1)

1: Standard
2: Not applicable

16, 20 and 32 core applications not shown as they are not compatible with single 12-core MPO links
Note that any duplex application can also function on MPO/MTP parallel optics infrastructure

Optical performance

MTP® connectors

	Multimode Ultra Performance*	Singlemode Ultra Performance*
IL/Master	0.1 dB typical (all fibres) 0.35 dB maximum (single fibre) (2.3)	0.1 dB typical (all fibres) 0.35 dB maximum (single fibre) (1.4)
IL Max/Random*	0.35 dB (single fibre)	0.35 dB (single fibre)
Optical return loss (5)	> 20 dB	> 60 dB (8° anglepolished)

1: As tested in accordance with ANSI/TIA-455-171 Method D3 / IEC 61300-3-4
2: As tested in accordance with ANSI/TIA-455-171 Method D1 / IEC 61300-3-4
3: As tested on 50µm fibres at a wavelength of 850 nm in accordance with IEC 61280-4-1
4: Complies with IEC 61755-3-31/GRADE B
5: As tested in accordance with IEC 61300-3-6 and ANSI/TIA-455-107A

* Performance is guaranteed only with other components of the same Legrand range (Core, Ultra and Quantum). Mixing ranges or use of components of other brand may lead to a different performance of the system. The uncertainty value for field measurement with LSPM testing using a reference cord defined in ISO/IEC 14763-3 applies to field testing with proposed Legrand testing cords. Refer to the Fiber Optic Testing Guide for Legrand Solutions.

LC, SC, LC APC, SC APC connectors

Optical performance	Singlemode Ultra Performance	Multimode Ultra Performance
IL Max/Master (*)	0.15 dB	0.15 dB
IL Max/Random (**)(***)	0.25 dB	0.2 dB
Typ. IL/Master (*)	0.12 dB	0.08 dB
Typ. IL/Random (**)(***)	0.12 dB	0.10 dB
Return loss (UPC/APC)	> 55/65 dB	> 25 dB

* IEC 61300-3-4
** IEC 61300-3-34
*** Performance is guaranteed only with other components of the same Legrand range (Core, Ultra and Quantum). Mixing ranges or use of components of other brand may lead to a different performance of the system. The uncertainty value for field measurement with LSPM testing using a reference cord defined in ISO/IEC 14763-3 applies to field testing with proposed Legrand testing cords. Refer to the Fiber Optic Testing Guide for Legrand Solutions.
Storage and operating temperature: -10°C to +60°CSolutions.

Production quality control

- For MTP:
Optical performance: 100% factory tested
3D endface geometry (interferometry): 100% factory products controlled

- For LC, SC, LC APC, SC APC:
Optical performance: 100% factory tested
3D endface Geometry (interferometry): sampling quality control

Technical characteristics

Multimode cable

OM5 fiber is designed for wavelength multiplexing

Type of cable	OM3	OM4	OM5
Type of fiber[1]	A1a.2	A1a.3	A1a.4
Maximum attenuation at 850 nm, dB/km	3	3	3
Effective bandwidth at 850 nm, MHz x km	2000	4700	4700
Effective bandwidth at 953 nm, MHz x km	N/A	N/A	2470

1: According to IEC 60793-2-10

Single-mode cable

Type of cable	OS1a	OS2
Environment	Indoor	Indoor/ Outdoor
Type of fiber(1)	B1,3 or B6	
Maximum attenuation at 1310, 1383 and 1550 nm	1.0	0.4

1: According to IEC 60793-2-50

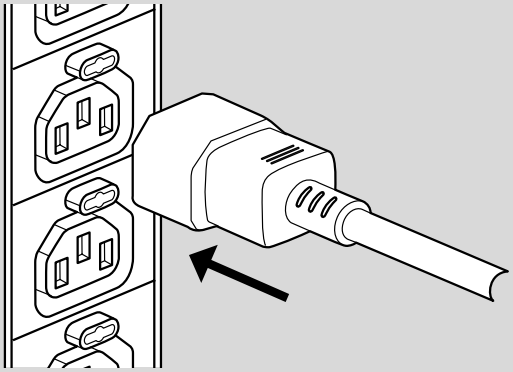
Euroclass table

Cat.Nos	Euroclass (A_{ca}; $B1_{ca}$; $B2_{ca}$; C_{ca}; D_{ca}; E_{ca}; F_{ca})	Additional criteria (smoke production, flaming droplets, acidity)		
		s1, s1a, s1b, s2, s3	d0, d1, d2	a1, a2, a3
0 325 02	D_{ca}	s2	d2	a1
0 325 03	D_{ca}	s2	d2	a1
0 325 10	D_{ca}	s2	d2	a1
0 325 11	D_{ca}	s2	d2	a1
0 325 12	D_{ca}	s2	d2	a1
0 325 13	Not applicable	-	-	-
0 325 14	D_{ca}	s2	d2	a1
0 325 15	Not applicable	-	-	-
0 325 18	C_{ca}	s1a	d1	a1
0 325 19	C_{ca}	s1a	d1	a1
0 325 23	Not applicable	-	-	-
0 325 24	Not applicable	-	-	-
0 325 25	Not applicable	-	-	-
0 325 26	C_{ca}	s1a	d1	a1
0 325 37	D_{ca}	s2	d2	a1
0 325 38	D_{ca}	s2	d2	a1
0 325 39	D_{ca}	s2	d2	a1
0 325 40	Not applicable	-	-	-
0 325 41	Not applicable	-	-	-
0 325 42	Not applicable	-	-	-
0 325 43	D_{ca}	s2	d2	a1
0 325 44	D_{ca}	s2	d2	a1
0 325 45	D_{ca}	s2	d2	a1
0 325 46	Not applicable	-	-	-
0 325 47	Not applicable	-	-	-
0 325 48	Not applicable	-	-	-
0 325 49	C_{ca}	s1a	d1	a1
0 325 50	D_{ca}	s2	d2	a1
0 325 51	D_{ca}	s2	d2	a1
0 325 52	D_{ca}	s2	d2	a1
0 325 53	D_{ca}	s2	d2	a1
0 326 65	D_{ca}	s2	d2	a1
0 326 66	D_{ca}	s2	d2	a1
0 326 67	D_{ca}	s2	d2	a1
0 326 68	D_{ca}	s2	d2	a1

	Euroclass	Classification criteria	Additional criteria	AV CP system
Non-combustible (for example mineral-insulated)	A_{ca}	EN ISO 1716 Gross combustion heat	-	"1+" including: - initial type test and continuous monitoring - audit and sampling test by a third-party certification body Manufacturer's factory production controls
Cables with low fire risk (different levels)	$B1_{ca}$	EN 50399 Heat release Flame spread EN 60332-1-2 Flame propagation	Smoke production (s1a, s1b, s2, s3) EN50399/ EN61034-2 Acidity (a1, a2, a3) EN 50267-2-3 Flaming droplets (d0, d1, d2) EN 50399	
	$B2_{ca}$			
	C_{ca}			
	D_{ca}			"3+" including: - initial type test by a third-party laboratory Manufacturer's factory production controls
Standard cables	E_{ca}	EN 60332-1-2 Flame propagation	-	
No determined performance	F_{ca}	EN 60332-1-2 Flame propagation	-	"4": initial type test and manufacturer's factory production controls

Cord locking system on C13 and C19 sockets

1



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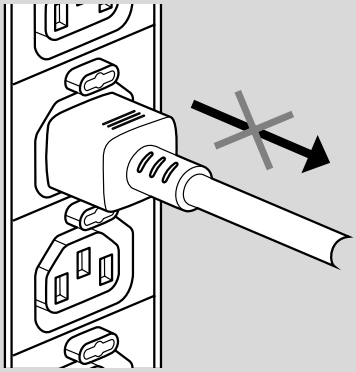

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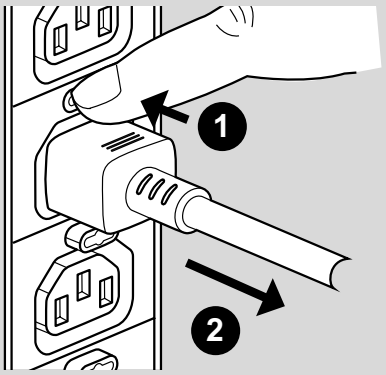
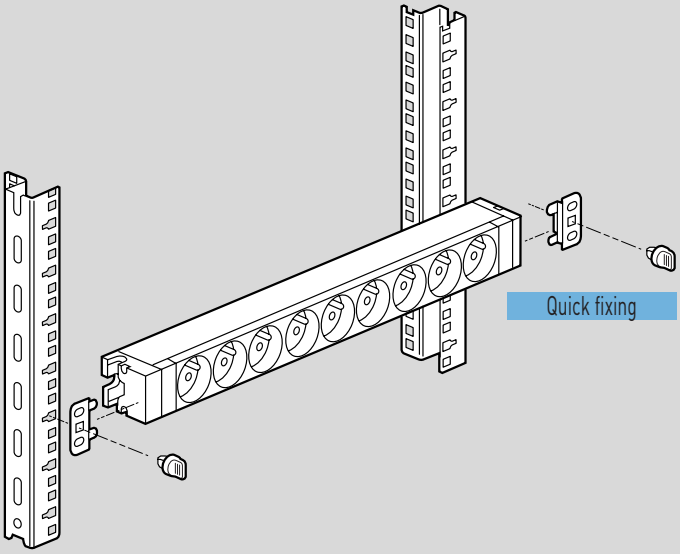


Energy distribution

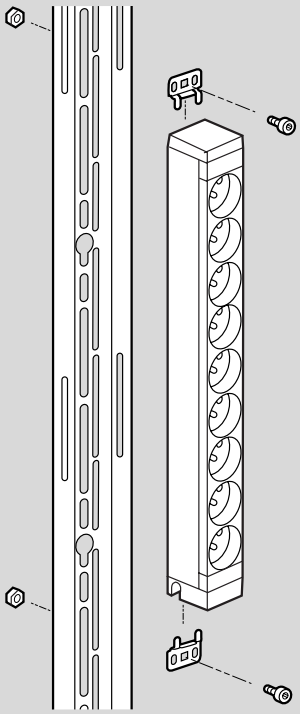
19" 1U PDU mounting

Horizontal mounting in Legrand 19" cabinets

Can be mounted in all Legrand 19" cabinets except for 19" HD racks which require the use of equipment screws Cat.No 0 464 23



Vertical mounting in freestanding cabinets with support



Energy distribution

19" and 10" 1U PDU configurations

19" 1U PDU configurations

6 468 05

6 468 06

6 468 07

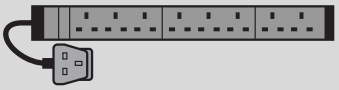
6 468 09

6 468 10

6 468 11

6 468 12

6 468 13



6 468 14

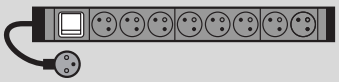
6 468 15

6 468 18/19

6 468 20

6 468 21

6 468 22



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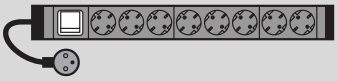

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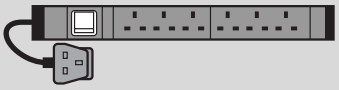

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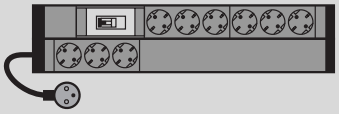
6 468 31

6 468 32



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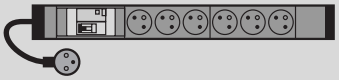
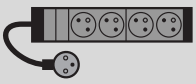


6 468 35

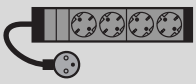
6 468 36

10" 1U PDU configurations

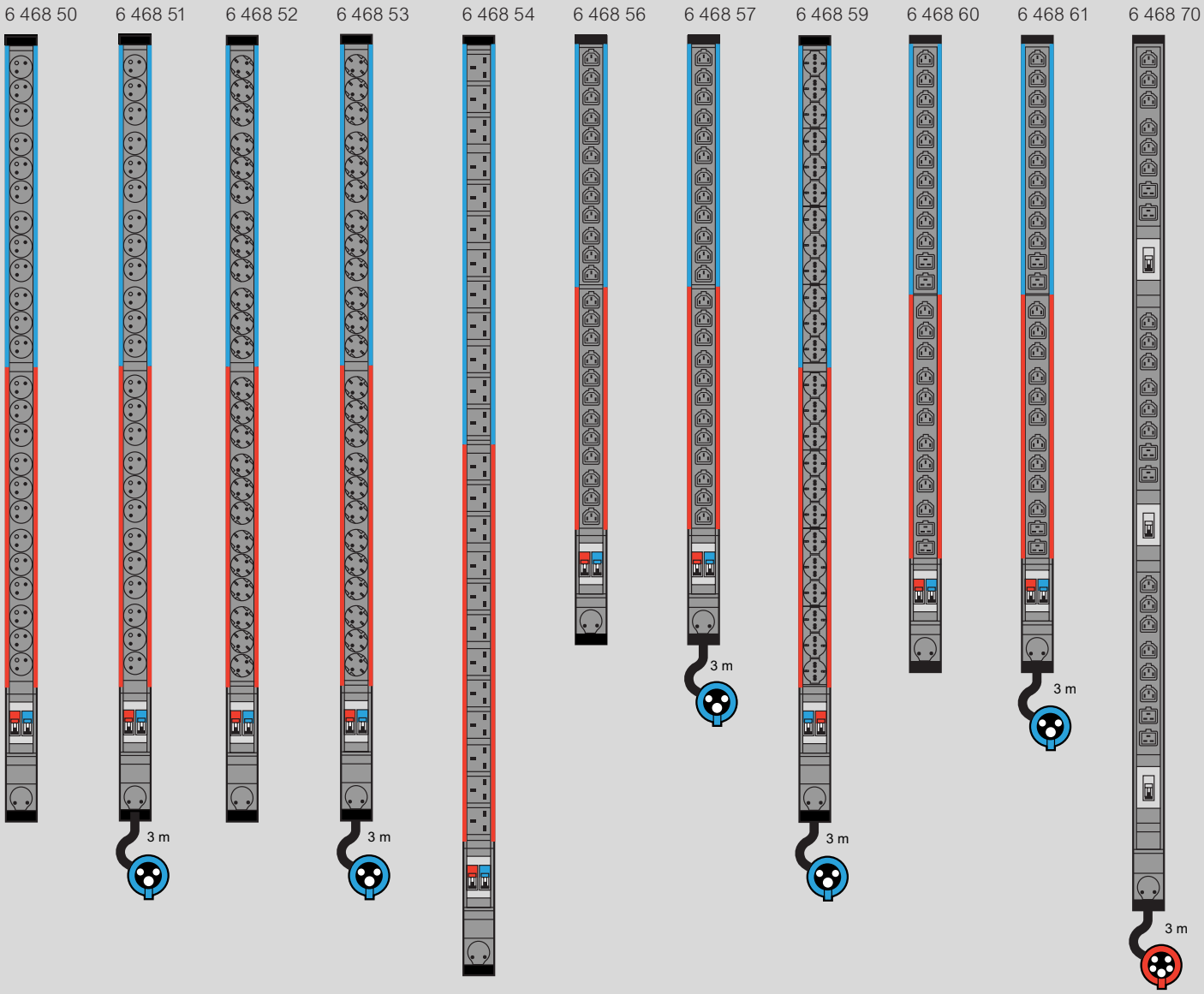
6 468 00



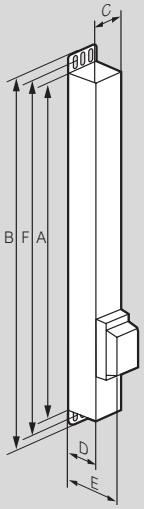
6 468 01



Zero-U PDU configurations



Zero-U PDU dimensions (mm)

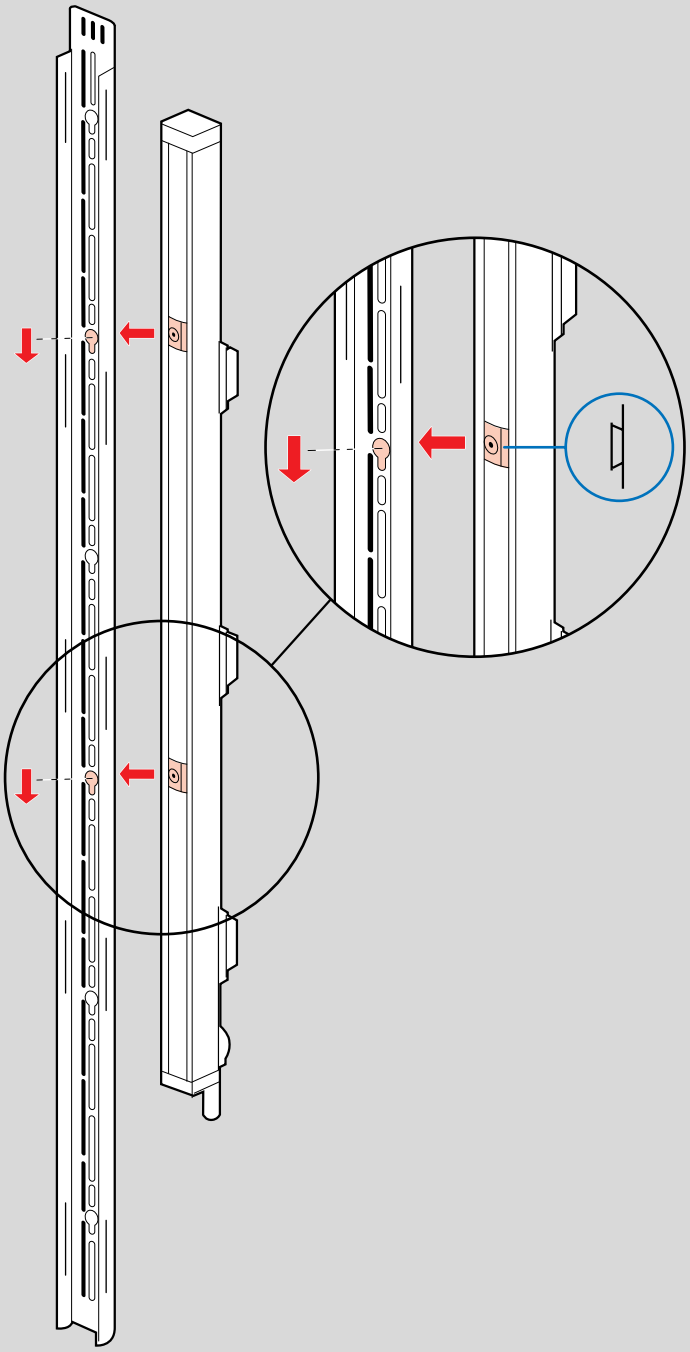


Cat.Nos	Height		Width	Depth		Fixing centres (min.-max.)	
	A	B(1)	C	D	E(2)	F(1)	
6 468 50	1247	1291	52	52.5	87	1259	1279
6 468 51	1247	1291	52	52.5	87	1259	1279
6 468 52	1247	1291	52	52.5	87	1259	1279
6 468 53	1247	1291	52	52.5	87	1259	1279
6 468 54	1463	1507	52	52.5	87	1475	1495
6 468 56	1031	1075	52	52.5	87	1043	1063
6 468 57	1031	1075	52	52.5	87	1043	1063
6 468 59	1319	1363	52	52.5	87	1331	1351
6 468 60	1067	1111	52	52.5	87	1079	1099
6 468 61	1067	1111	52	52.5	87	1079	1099
6 468 70	1340	1384	52	52.5	87	1352	1372

1: With standard lugs for screw mounting
2: Total depth at circuit breaker position

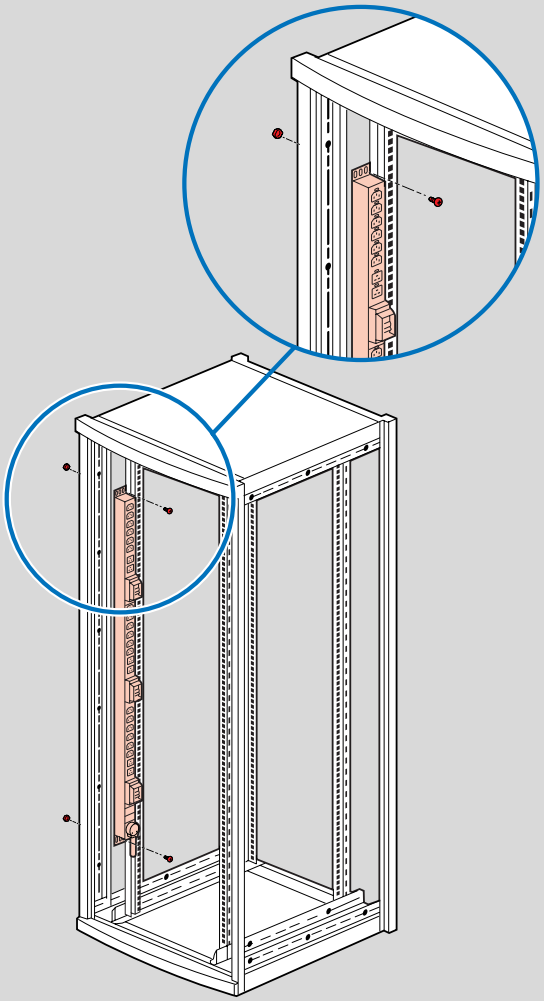
Solution with button brackets

Quick fixing without screws with support



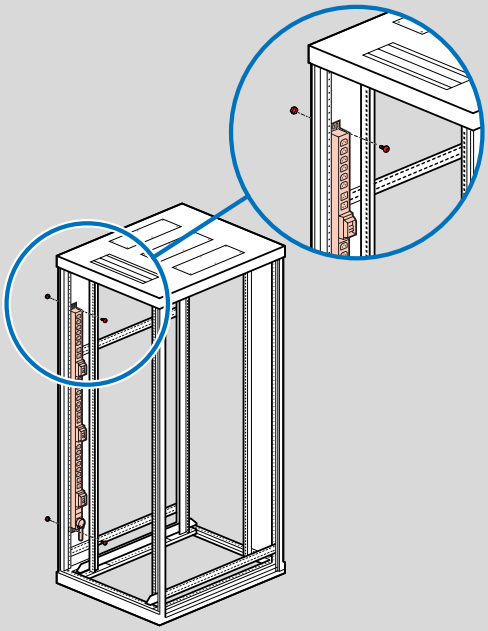
Solution with standard brackets

Screw fixing with support



Solution with LCS³ brackets

Screw fixing with support



Notes

Headquarters
128, avenue de Lattre de Tassigny
87045 Limoges Cedex
France
Tel.: + 33 (0) 5 55 06 87 87
Fax: + 33 (0) 5 55 06 88 88