DATA CENTER SOLUTIONS

3C3®
PERFORMANCE EXCELLENCE

www.3c3.in

Data Centre Structured Cabling Solutions

With the exponential growth, reliability and scalability data center needed to be designed, implemented and maintained as they have become a critical part of any organization. Within the increase in technologies such as AI, VR, IoT and even plant automation are the key drivers that are evolving Data Centre today.

High-density data center cabling solution can simplify deployment, provide reliable operation, and realize flexible expansion and quick upgrade with the ever-increasing business traffic requirements to adapt to changing market needs.

Today, they house numerous devices which address variety of application which define the type of Data center such as Process Based, Hosting Website, Hyperscale / Cloud Based, Maintain your financial records, Multitenant or even to route e-mails

Therefore with the Type, one needs to keep in mind in their design

- Whether the Data Centre is Scalability
- Is the Data Centre Flexibility and Manageable
- The Uptime or Availability of the Data Centre

Advantages

Stable Transmission

- 40G and 100G Ethernet applications.
- High bandwidth and low latency.
- High performance and high density MTP®/MPO solutions.

Scalability for Upgrades

- High density solution for optimizing space.
- More powerful compatibility, network upgrade without replacing the backbone cabling.
- Flexible solution for easy replacement.

Efficient Maintenance

- Modular cabling is designed for simple deployment and reliable operation.
- Reducing the cost and performance risk of changing or increasing product

Data Center Solutions

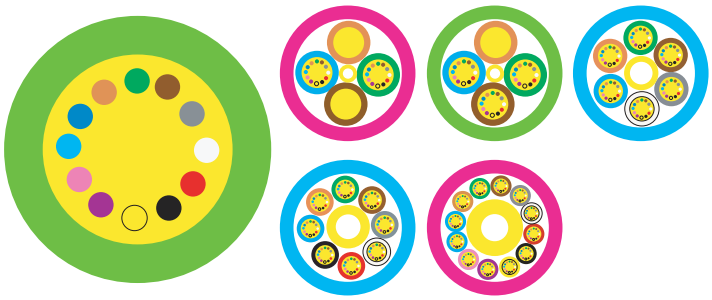
Fiber Cabling Solutions

Indoor Cable

Indoor cable designed for indoor use, primarily in datacenter or buildings where fiber optic connections are required. These cables can use different types of optical fibers, including single-mode (SM) and multi-mode (MM) fibers. The choice of fiber type depends on factors like the required data transmission distance and bandwidth.

Indoor cables usually have a tight buffer design. This means that each individual optical fiber is protected by its own buffer material, which provides additional mechanical and environmental protection.

Indoor cable typically has a PVC (Polyvinyl Chloride) or LSZH (Low Smoke Zero Halogen) jacket, which provides protection to the optical fibers inside and determines its fire safety characteristics. LSZH jackets are preferred in areas where smoke and toxic fumes need to be minimized in case of a fire.



Features

- Conformance to ANSI/TIA-568.3-D, Telcordia GR-20, IEC 60794-2 Flame retardant LSZH jacket
- Fiber count Upto 288F
- Fiber Color: blue/orange/green/brown/grey/white/red/black/yellow/purple/pink/aqua
- Aramid yarn for round strength
- Out jacket： LSZH
- Temperature range -20~70 C

Application

- Indoor applications,
- Data centers,
- Local area networks (LANs),
- Campus networks,
- Telecommunications installations within buildings.

Technical Specification

Multi Mode

ITEM	UNIT	SPECIFICATION	
Attenuation	dB/km	850 nm≤3.5 1300 nm≤1.5	
Bandwidth	MHz·km	50/125um	
		850 nm≥200	850 nm≥160
		1300 nm≥200	1300 nm≥200
Core diameter	um	50±2.5	
Cladding diameter	um	125±1.0	
Cladding non-circularity	%	≤1.0	
Coating/cladding concerntricity error	um	≤12.5	
Coating diameter	um	245±10	
Bending,dependence induced attenuation	850nm,1300nm 100turns,75mm diameter	≤0.5 at 850 nm\1300 nm	
Proof test	kpsi	≥100	

Single Mode

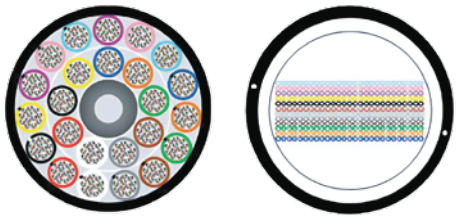
ITEM	UNIT	SPECIFICATION
Attenuation	dB/km	1310nm≤0.4 1550nm≤0.3
Dispersion	Ps/nm.km	1285~1330nm≤3.5 1550nm≤18.0
Zero dispersion wavelength	Nm	1300~1324
Zero dispersion slope	Ps/nm.km	≤0.095
Fiber cutoff wavelength	Nm	≤1260
Mode field diameter	Um	9.2±0.5
Mode field concentricity	Um	<=0.8
Cladding diameter	um	125±1.0
Cladding non-circularity	%	≤1.0
Coating/cladding concentricity error	Um	≤12.5
Coating diameter	Um	245±10
Bending, dependence induced attenuation	1turns,32mm diameter 100turns,60mm diameter	≤0.5 db
Proof test	kpsi	≥100

Data Center Solutions

Fiber Cabling Solutions

Ribbon Fiber

Ribbon fiber is a specialized type of optical fiber designed for high-density data transmission applications. It is characterized by its flat ribbon-like structure, where multiple individual optical fibers are arranged side by side in a flat configuration. Ribbon fiber is commonly used in telecommunications, data centers, and other high-capacity networking environments.



SPECIFICATION		VALUES			
FIBER COUNT		144	288	432	576
Fiber type		G657A2	G657A2	G657A2	G657A2
		12F Ribbon* 12sets	12FRibbon* 24sets	24F Ribbon* 18sets	24FRibbon* 24sets
Ribbon fiber	OD (mm)	2.9-3.1	2.9-3.1	5.9-6.2	5.9-6.2
	Thickness (mm)	0.29-0.31	0.29-0.31	0.3-0.32	0.3-0.32
Inner cable	OD (mm)	8.2 = 0.5	14.6 ± 0.5	17.9 + 0.5	17.9 + 0.5
	Material	LSZH	LSZH	LSZH	LSZH
	Color	According to the customer requirement			
Cable	OD (mm)	12.0 + 0.5	19.8 + 0.8	24.0 ± 1.0	24.0 ± 1.0
	Material	LSZH	LSZH	LSZH	LSZH
	Color	According to the customer requirement			
Max.tensile Strength (N)	Short - term	1350	2700	2700	2700
	Long - term	440	890	890	890
Min Bending Radius (mm)	Dynamic	25D			
	Static	12.5D			
Max . Crush Resistance (N /	Short - term	2000			
	Long - term	1000			
Strength Members		Water blocking glass yam			
Temperature range	Storage ortransportation	-20° C + 70 ° C			

Features

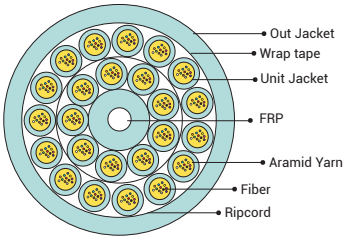
- Complies to ANSI/TIA-568.3-D, ITU-T G652.D, Telcordia GR-20, IEC 60794-2 / 60794-3-10
- HDPE Outer jacket
- Water proof layer & excellent Moisture resistance provided
- Excellent consistence performance

Application

- Long-Distance Telecommunications Networks
- Data Centers
- 5G and Mobile Backhaul
- Cable Television (CATV) and Broadcast

Mini Breakout Optical Cable

A Mini Breakout Optical Cable, also known as Mini Breakout Fiber Cable, is a specialized type of fiber optic cable designed for specific networking and data transmission applications. This cable is characterized by its design, which combines multiple individual fibers into a single cable with breakout legs, making it suitable for various installation scenarios.



Fiber type	Attenuation				OFL bandwidth	Effective model bandwidth	10G Ethenet	Min bend Min bend
Condition	1310/1550nm		850/1300nm		850/1300nm	850nm	850nm	
	Typical	Maximum	Typical	Maximum				
Unit	dB/km	dB/km	dB/km	dB/km	MHZ km	MHZ km	m	mm
G652D	0.36/0.22	04/03	—	-—	—	—	--	16
G65TAL	0.36/0.22	0.4/0.3	—	—	—	—	—	10
G657A2	036/022	04/03	—	—	—	—	—	75
50/125	—	—	23/0.6	35/1.5	≥200/500			30
62. 5/125	-—	-—	2.7/0.6	3.5/1.5	≥200/500			30
OM3	—	—	2.3/0.6	3.5/1.5	≥1500/500	≥2000	≤300	30
OM4	—	—	23/0.6	3.5/1.5	≥3500/500	≥4700	≤550	30
BLOM3	—	—	23/06	3.5/1.5	≥1500/500	≥2000	≤300	7.5
BLOM4	—	—	23/06	3.5/1.5	≥3500/500	≥4700	≤550	7.5

Features

- High strength aramid yarn strength member
- Small outer diameter,lightweight, flame-retardant
- Suitable for installation,operation, and convenient for maintenance Cable Sheath

Application

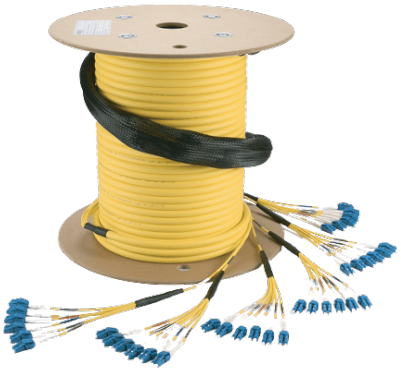
- As building to building connecting cable
- As pigtails,movable connectors and patch cords for communication equipment

Data Center Solutions

Patching Solutions

Pre Terminated Fiber Optic Assemblies

Pre Terminated Fiber Optic Assemblies are tight buffer design, offering 6 to 24 core fiber with ruggedized tails at both ends to protect the optical fiber in the demanding environments outside the patch panel or ODF and allowing direct equipment to equip ment connection. Each tail length can be a unique length and up to 1.5m long. The network topology can be reduced and simplified by direct connection, by passing wall boxes, ODFs or fiber patch panels, the end result is greatly improved fiber management



PARAMETER	VALUES
Fiber Count	6F, 12F, 24F
Fiber Types	OS2, OM3, OM4
Cable Type	Tight Buffered (Indoor)
Branch out types	Staggered or Fan-out
Connector types	SC, FC, ST, LC, MU, E2000 (UPC & APC
Insertion loss of each termination	Max: 0.50dB; Typ:0.30dB
Return loss	>50dB for UPC; >60dB for APC
Max Tensile load	1500N

Features

- 6 - 24 core full breakout cable with 1.6mm ruggedized pigtails
- Internal Low Smoke Zero Halo gen cable jacket
- Available with all standard con nectivity
- Factory terminated and tested
- Cost Savings
- Time Optimization
- Direct Connection to Equip ment/Panel

Conformance

- ISO/IEC 11801
- TIA/EIA-568.3-D
- IEC 61300-3-4, IEC 61300-3-6
- IEC 60874-1

Data Center Solutions

Patching Solutions

Fiber Optic MPO to LC Breakout Cable (40G/100G Cable)

MPO to LC Breakout cabling System is ideally suited for high density evironment that demands space saving cable density and innovative cable manage ment solutions. MPO connectors have realized multiple fiber connexions within a conventional cable, this advantage allows data center designers to deploy ten or twenty times of fiber counts in same storage. Simply install the MPO & MPO trunk cable within the building and connect to rear of a MPO Patch Panel or fan out.

TYPE	WAVELENGTH	I.L Type	I.L Max	R.L Min
MPO/PC(MM)	850nm/1300nm	0.25dB	0.35dB	≥30dB
MPO/PC (SM)	1310nm/1550nm	0.25dB	0.35dB	≥50dB
LC/PC (MM)	850nm/1300nm	0.20dB	0.35dB	≥30dB
LC/PC (SM)	1310nm/1550nm	0.20dB	0.35dB	≥50dB
LC,SC,FC,ST/APC	1310nm	≤ 0.30		≤60

SPECIFICATIONS	VALUES
MPO Cable diameter	3mm
Breakout Cable diameter	2mm
Durability	≥500times
Insert-Pull Test	1000 times<0.5 dB
Interchange	<0.5 dB
Anti-Tensile Force	15KgF
Operating Temp	-40 to +85 degree Celsius

Features

- High precision guide pins for exact alignment
- Plug and Play
- High Density interconnect with 8F, 12F, 20F, 24F options
- Removable housing for quick change of pin clamps and easy ferrule clean ing/re-polishing.
- Single-Mode and Multi-Mode color coded housings
- Alignment achieved with high precision guide pins
- Push/Pull mating for quick assembly

Conformance

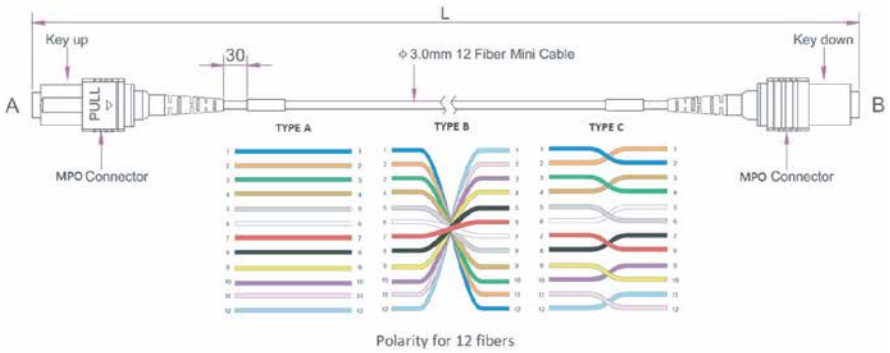
- Telecordia GR-1435 CORE
- ANSI/TIA/EIA-568.3-Dzz
- EIA/TIA-604-5
- IEC-61754-7

Data Center Solutions

Patching Solutions

MPO-MPO Patch Cord (40G/100G Patch Cables)

MPO Fiber Cabling System is ideally suited for a high density environment that demands space savings and innovative cable management solutions. The MPO connector is a high performance MPO connector with multiple engineered product enhancements to improve optical and mechanical performance when compared to generic MPO connectors.



TYPE	WAVELENGTH	IL MAX	RL Mini
MPO/PC(MM)	850n/1300nm	0.60dB	25dB
MPO/APC (SM)	1310/1550nm	0.70dB	50dB

Features

- High precision guide pins for exact alignment
- Plug and Play
- High Density interconnect
- Emerging 40 and 100Gbps protocols compatible
- Single-Mode and Multi-Mode color coded housings
- Alignment achieved with high precision guide pins
- Push/Pull mating for quick as sembly

Conformance

- Telecordia GR-1435 CORE
- ANSI/TIA/EIA-568-3.D
- EIA/TIA-604-5
- IEC-61754-7

MPO Armoured Patch Cord

MPO Fiber Cabling System is ideally suited for a high-density environment that demands space saving and innovative cable management solutions. The MPO connector is a high-performance connector with multiple engineered product enhancements to improve optical and mechanical performance. The armored Patch cords are basically a Fiber Optic Patch Cords suggested for more rugged harsh environments

SPECIFICATION	VALUE		
Type	Wavelength	I.L Max	R.L Min
MPO	850/1300nm		
Connector (MM)			
Cable Specifications			
Fiber Type	MM (OM3, OM4)		
Cable structure	0.25MM color fiber *12+Aramid Yarn+innerJacket+Stainless steel tube Aramid Yarn+OuterJacket		
Stainless Steel Tube material	SUS204		
Inner Jacket	LSZH		
Outer Jacket	LSZH		
Jacket Color	Black		

Features

- Conformance to Telcordia ANSI/ TIA-568.3-D, ANSI/TIA 604-5, IEC61754-7
- High precision guide pins for exact alignment
- Plug and Play
- High Density interconnect
- Alignment achieved with high preci sion guide pins
- Push/Pull mating for quick assembly

Data Center Solutions

Patching Solutions

High Density Fiber Optic Patch Cords

High Density Patch Cords feature high density, small form factor LC connectors mated to 2.0 mm round duplex cable. They are used to connect switches or network devices in fiber networks directly or interconnect structured cabling systems in a fiber network

PARAMETER	SINGLE-MODE	MULTI-MODE
Insertion Loss	≤ 0.35 dB	≤ 0.25 dB
Return loss	≥55 dB UPC/ ≥ 65dB APC	≥ 25dB
Durability	500 Mating	
Repeatability	< 0.20 dB	1.50dB
Operating Temperature Range	-40° C to +75° C	

Features

- True Uniboot (one boot) design push/pull tab
- Bend insensitive fiber
- 100% optical testing
- Extreme Low Loss (XL) and Low Loss (LL) performance options

High Density Traceable Patch Cord

High density traceable patch cords feature high density, small form factor LC connectors mated to 2.0 mm round duplex cable. These traceable patch cord's LED light dramatically reduces downtime by providing instant cable identification for efficient mistake resolution and maintenance. They are used to connect switches or network devices in fiber networks directly or interconnect structured cabling systems in a fiber network.

PARAMETER	PARAMETER
Insertion Loss	≤0.25 dB
Return Loss	≤0.25 dB
Durability	500 Mating
Repeatability	<0.20 dB
Operating Temprature	-40^{0}c to 75^{0}C

Features

- True Uniboot (one boot) design
- Optional push/pull tab
- Bend insensitive fiber
- Bright Traceable LED Light
- Available in OS2, OM3, OM4
- 100% optical testing
- Extreme Low Loss (XL) and Low Loss (LL) performance options

Uniboot Polarity Change Patch Cord

High density patch cords feature high density, small form factor LC connectors mated to 2.0 mm round duplex cable. They are used to connect switches or network devices in fiber networks directly or interconnect structured cabling systems in a fiber network.

PARAMETER	PARAMETER
Insertion Loss	≤ 0.35dB
Return Loss	≥ 55 dB UPC/ ≥ 65dB APC
Durability	500 Mating
Operating Temperature	< 0.20 dB -40°C to +75°C

Features

- True Uniboot (one boot) design
- Polarity Change
- Bend insensitive fiber
- Available in OS2
- 100% optical testing
- Extreme Low Loss (XL) and Low Loss (LL) performance options

Conformance

- ITU G.657.A1, G652D
- IS0/IEC 11801
- TIA/EIA-568.3-D
- IEC 61300-3-4, IEC 61300-3-6

Data Center Solutions

Patching Solutions

MPO Trunk Cables

MPO Fiber assemblies are ideally suited for a high-density environment that demands space saving cable density and innovative cable management solutions. The MPO connector is a high-performance connector with multiple engineered product enhancements to improve optical and mechanical performance. The MPO connectors offers upto 12 or 24 times the density of standard connectors, providing significant space.

SPECIFICATION	VALUES	
Type	I.L Max	R.L Min
MPO/PC(MM)	0.60dB	≥25dB
MPO/APC (SM)	0.70dB	≥50dB

Features

- Conformance to Telcordia GR-1435 Core, ANSI/TIA568.3-D, ANSI/TIA 604-5, IEC 61754-7
- High precision guide pins for exact alignment
- Plug and Play
- High Density interconnect
- Compact design upto 48,96,144 and 288 Fibers
- Single-Mode and Multi-Mode color coded housings

MPO Loopback Patch Cord

MPO loop back cable is ideal solution for optical testing of 40GbE and 100GbE applications. Available in Single Mode and Multi mode versions.

SPECIFICATION	VALUES	
Type	I.L Max	R.L Min
MPO/PC(MM)	1.5dB	25dB
MPO/APC (SM)	1.5dB	50dB

Features

- Available in SM and MM
- 12 and 24 Fiber MPO Ferrule
- LSZH Jacket
- Female and Male MPO Connector
- 40GQSFP +Transceiver

Data Center Solutions

Fiber Panel Solutions

Ultra High Density Panel Solutions

1U-144F

3C3® High Density Panel is specially designed to accommodate high density cabling in high end Data Center and Telecommunication central office environment. The shallow depth of High Density Panel makes it suitable for low depth racking systems or Telecommunication ODFs. The 1U 19" 144 fiber MPO Panel contains factory controlled and tested Modules can be installed in it.

ITEM	SPECIFICATION
Body Materials	SPCC(Cold Rolled Steel)
Painting Finish	Black fine grain sand Electrostatic spraying
Panedl Color	Black
Panel Height	1U
Fiber Mode	OS2,OM3 and OM4
Operation Temperature	-20°C ~+70°C
Storage Temperature	-20°C ~+60°C
Relative Humidity	85%(+30°C)
Air Pressure	70kPa~106kPa

Features

- 3 Layers Premium sliding rail
- High Efficient front and rear cable management
- Supports Standard LC connector and boot
- 1U upto 144LC port Connection
- 1U upto 72MPO port Connection
- 1U upto 144LC fiber splicing
- MPO tp 8LC/12LC transistion
- MPO/12F to MPTO/BF Conversion
- MPO/LC Patching
- Pigtail Splicing

Conformance

- ANSI/TIA 568.3-D

MPO-LC MODULE

PARTCODE	SPECIFICATION
Material	Plastic
Color	Black
(front)Adapter type	LC 3 X LC Quad
(front)Adapter color	Aqua: OM3/OM4
(rear)Adapter type	MPO
(rear)Adapter color	Black
Connector A	SMLC-UPC, 0.9mm or LC-APC, 0.9mm MM:LC-UPC, 0.9mm
Connector B	MPO (male)-APC MM: MPO (male)-PC
Patch cord polarity	Polarity A

Features

- Module is made of plastic.
- Module capacity up to 12F fully loaded.
- Factory pre- terminated and tested.
- High performance zirconia sleeve adaptors.
- Modular in design with high density, it comes up to 12 LC ports to MPO connection

Data Center Solutions

MPO to MPO

ITEM	SPECIFICATION
Material	Plastic
Color	Black
(front)Adapter type	MPO
(front)Adapter color	Black
(rear)Adapter type	MPO
(rear)Adapter color	Black
	MPO Male-APC
	MPO Male-PC
Connector B	MPO Male-APC
	MPO Male-PC
Patch cord Polarity	Type A, B or C

Features

- Module is made of plastic.
- Factory pre- terminated and tested.
- High performance zirconia sleeve adaptors.
- Modular in design with higher den sity, it comes up to 3MPO Duplex adapter ports which switch to MPO connectivity.

Splicing Module-LC

ITEM	SPECIFICATION
Material	Plastic
Color	Black
(front)Adapter type	3 X LC Quad
(front)Adapter color	Aqua / Blue

Optical Performance

PARAMETER	Module I.L Max	Module R.L Max
MPO (SM/APC)	≤ 0.70dB	≥ 0.50dB
MPO(MM/PC)	≤ 0.60dB	≥ 0.25dB
LC(SM/PC)	≤ 0.20dB	≥ 0.50dB
LC(MM/PC)	≤ 0.20dB	≥ 0.35dB

Features

- Module is made of plastic.
- Factory pre- terminated and tested.
- High performance zirconia sleeve adaptors.
- 12 Coloured pigtails

Data Center Solutions

Fiber Panel Solutions

High Density Panel Solutions

3C3® High Density Panel is specially designed to accommodate high density cabling in high end Data center and Telecommunication central office environment. The shallow depth of High Density Panel makes it suitable for low depth copper racking systems or Telecommunication ODFs. The 1U 19" 120 fiber MPO Panel contains factory controlled and tested Modules can be installed in it. Different types of cassettes are available to deliver optimum Performance and reliability. Integrated fiber management features are provided to secure trunk cables, separate patch cords and maintain safe bend radius during fiber routing

ITEM	SPECIFICATION
Body Materials	SPCC(cold rolled steel sheet)
Painting Finish	Black
Panel Color	RAL black
Fiber Mode	OS2, OM3, OM4
Panel Height	1U
Dimension	483mm x 364mm x 1U

Features

- Designed based on ANSI/TIA 942-B, EN 50173-5 and ISO-IEC 11801-5 standards
- Solution designed to maximize/compact space utilization within data center
- Available in MTP and MPO Offerings
- Fiber Panels designed to accommodate Accommodates 120 or 288 Cores in 1U and 2U respectively
- Available in 8F, 12F, 24F, 48F.....144F for OS2, OM3,OM4 and OM5 10GBASE-T, 25GBASE-T and 40GBASE-T cost-effective solutions on Category 6A and Category 8 connectivity.
- Plug and Play Solution which are 100% Factory Tested and Terminated to reduce Installation time

MPO-LC Module

ITEM	SPECIFICATION
Material	SPCC(cold rolled steel)
Color	Black
(front)Adapter type	LC Quad (w/o Flange) x 6Pcs
(front)Adapter color	Aqua: OM3/OM4 Beige :OM1/ OM2
	Blue: SM-UPC; Green: SM-APC
(rear)Adapter type	MPO
(rear)Adapter color	Black
Connector A	LC-UPC,0. 9mm
	LC-UPC,0.9mm
Connectors	MPO-APC
	MPO-PC
Patch cord polarity	Polarity A
Dimension{W xD X H)	88mm x 1.5mm x 34mm

Features

- Module is made of SPCC
- Module capacity come up to 24F fully loaded
- Factory pre-terminated and tested
- High performance zirconia sleeve adaptors
- Modular in design with higher density, it comes up to 24 LC ports and - Switch to 2X12 MPO connection and 12LC port and switch to 1x12 MPO Connection

MPO Adapter Plate

ITEM	SPECIFICATION
Fiber Mode	Multi Mode /Single Mode
Dimension {WxDxH)	88mm x 1.5mm x 34mm
Operating Temperature	- 20'C ~ +70'C
Storage Temperature	- 40'C ~ + 70'C

Features

- Flexible configuration, fast Installation
- Quick disassembly, easy installation, no tools required
- MTP/ MPO adapters can be selected according to

Data Center Solutions

Fiber Panel Solutions

Standard Density Panel Solutions

The Fiber Panels are designed with 4 cutouts to mount adapter plate assemblies. With the special sliding design, this panel allows easy access during installation or rework without disturbing previously terminated fiber cable,this also offers multiple cable entries to provide various customized solutions as per the customer's requirement

ITEM	SPECIFICATION
Adapter Type (Front)	6LC Quad, 6LC duplex
Adapter Type (Rare)	MPO/MTP
Adapter Color (Front)	Aqua:MM,Blue:SM
Adapter Color (Rare)	Black
Connector A	SM :LC-UPC,0.9mm or LC-APC,0.9mm MM:LC-UPC,0.9mm
ConnectorB	SM: MPO/MTP(male)-APC MM: MPO/MTP(male)-PC
Patch Cord Polarity	TypeA

TYPE	WAVELENGTH	MODULE LL.MAX
MTP-LC(MM}	850nm/1300nm	0.50dB
MTP-LC(SM}	1310nm/1550nm	1.30dB
MPO-LC(MM}	850nm/1300nm	0.75dB
MPO-LC(SM}	1310nm/1550nm	1.50dB

Features

- Standard 19-inch Rack Mountable
- Innovative and robust design
- Unique slide design, structural stability, easy to use and operate, slides smoothly without interference.
- Accepts Four LC quad cassettes
- Adapter panel is made of steel plate
- Flexible configuration, installation fast.
- Pull buckle fixed, installation MTP/MPO adapter
- 12F Cassette: 6LC Duplex at front and 1x12F MPO at rear
- 24F Cassette: 6LC Quad at front and 2x12F MPO at rear

Conformance

- ANSI/TIA 568.3-D
- IEEE802.3ba
- ANSI/TIA-942

Application

- Data Centre Infrastructure.
- Storage Area Network.
- Fiber Channel

Data Center Solutions

Fiber Panel Solutions

LGX Panel Solutions

The LGX Modular Sliding Patch Panel 1U with 3Cutout are innovative, robust and has been designed to accept up to 3 style assemblies. With the ability to use a full array of adaptor types, this panel offers a flexible solution to the end user, enabling them to incorporate a multi- functional chassis that allows easy access during installation or rework with no isturbance of the existing cable or fibers. In the addition to the array of adaptors the panel also offers multiple cable entry solutions, MPO/MTP trunk cables connected to 3 individual MPO/MTP cassettes with up to 24 fibers in each, loose tube cable to be spliced into standard splice cassettes to allow standard splicing or pre terminated solutions, making this panel one of the most flexible on the market.

Technical Specifications - Panel

SPECIFICATION	VALUES
Material	SPCC(cold rolled steel)
Dimension (HXWXD)	1UX483X260mm
Form Factor	19" 1U Rack Mount
Depth	250mm
Color	Black
Operating Temprature	-25°C ~ +75°C

Features

- Cassette is made of steel plate.
- Flexible configuration, installation fast.
- 12F Cassette: 6LC Duplex at front and 1x12F MPO at rear
- 24F Cassette:12LC Duplex at front and 2x12F MPO at rear
- 8 MPO Adapters per Plate -12F/24F
- 6 LC Quad Adapter Plate

Technical Specifications - Cassette

SPECIFICATION	VALUES
Material	Values
Adapter Type - Front	6 x LC Duplex, 12 x LC Duplex
Adapter Color -Front	Aqua : OM3, OM4
	Blue : OS2
Adapter Type - Rear	12F/24F MPO/MTP (Full Flange)
Adapter Color -Rear	Black

Data Center Solutions

Fiber Panel Solutions

Hybrid Panel Solutions

The High Density Hybrid panel accepts either or both copper and fiber modules. The Panels are designed with 4 cutouts offer fast and reliable installation, reduces required rack space and provides future proofing in system design, a rear cable management bar is supplied which acts as stress reliever for terminated cables. Patch Panel includes with mini cable ties, cage nuts and rare cable management.

Technical Specifications - Panel

ITEM	SPECIFICATION
Material	SPCC(cold rolled steel)
Dimension (HXWXD)	1UX482X135.7mm
Form Factor	19" 1U Rack Mount
Color	Black
Operating Temprature	-25°C ~ +75°C

Technical Specifications - MPO- LC Cassette

SPECIFICATION	Values
Material	High impact Flame retardant plastic UL94V-0
Dimension (WXDXH)	110.3 x 118.7 x 44 mm

Technical Specifications - Keystone Jack UTP Module Cassette

SPECIFICATION	Values
Material	High impact Flame retardant plastic UL94V-0
Dimension (WXDXH)	110.3 x 118.7 x 44 mm

Features

- Designed based on ANSI/TIA 942-B, EN 50173-5 and ISO-IEC 11801-5 standards
- Solution designed to maximize/compact space utilization within the cabinet
- Accommodates MPO(Polarity and Gender Changeable) , MTP and Pre-terminated cables and splicing solutions within the same panel
- Accommodates 4 nos cassettes or adapter plate which can be either Fiber or Copper based connectivity in 1U
- Available for U/UTP Cat6 and Cat6A as well as OS2,OM3,OM4 and OM5
- Slim Copper Patch Cord for Space Saving and effective Air Flow.
- Fiber Patch cord with a PULL TAB for high density patching and Increases density by upto 60%
- Plug and Play Solution which are 100% Factory Tested and Terminated reduce Installation time

MPO- LC Cassette

Keystone Module

Data Center Solutions

Copper 40/25G Solutions

Catagory 8 SFTP Cables

High Speed 40/25 Gigabit Ethernet S-FTP 2000 MHz Category 8 LSZH Cable is produced using 8x22 AWG Solid Bare Copper Conductors. Every pair is separately shielded - pairs in metal foil (PIMF). The twisted pairs are covered with a braided screen (S/FTP) which guarantees outstanding shielding properties and then LSZH Outer Sheath. It supports 25G Standard.

CONSTRUCTION	VALUE	
Construction	AWG	22
	Material	Solid Bare Copper
Insulation	Diameter mm	1.65 ± 0.05
	Material	Skin Form Skin
	External OD	8.4± 0.2
	Material	LSZH

Features

- Bare solid copper conductor
- Color : Coded Foam PE Insulation
- Operating Temperature: -10° C to +60° C

Conformance

- ANSI/TIA 568.2-D
- ISO/IEC 11801 Class II
- EN 50173

Data Center Solutions

Copper 40/25G Solutions

Catagory 8 S/FTP Patch Cord

High Speed 25 Gigabit S-FTP Patch Cable Grey, LSZH, C8 delivers optimal transmission and networking performance with reduced insertion loss and Alien Crosstalk. They have high performance components available in broad range of lengths and designed to meet or exceed all Cat 8 specifications. 24 AWG conductors are securely mated with Shielded RJ45 plug design to deliver superior performance.

CONSTRUCTION	VALUE	
Construction	AWG	24
	Cable Diameter	7.4± 0.2mm
	Material	Stranded Bare Copper
Cable	Type	S/FTP
Shielding	#1	Aluminum/PET
	#2	Tinned copper
Jacket	Material	LSZH

Features

- Quality 24 AWG Stranded Cable
- High Grade 50mu gold plated fully shield ed RJ45 Connectors
- Improved strain relief boot correct bend radius to ensure maximum performance
- Operating Temperature: -20°C to +60°C

Conformance

- ANSI/TIA 568.2-D
- ISO/IEC 11801 Class II
- RoHS directive 2011/65/EU compliant

Category 8 Shielded Keystone Jack

Cat8 Keystone Outlet support bandwidth of 2000Mhz at channel length upto 30 meters. Support 25G Base-T and 40G Base T applications.

CONSTRUCTION	VALUE
Housing	Zinc Die-Casting with quality Nickel Plating
Jack Wire	Phosphor bronze gold over nickel plating
IDC Conductor	Phosphor Bronze, Tin-Plating
Durability	20 Termination Cycles
Plug Insertion Life	≥ 750 Cycles with FCC Compliant RJ45-Plug
Insertion Force	30N Max (IEC 60603-7-5)
Retention Strength	13.5 kg between Jack and Plug

Features

- Provides excellent work in suppress- ing internal magnetic coupling up to bandwidth of 2000MHz at 30M channel length
- 180 degree design
- Die-cast housing provide EMI, RFI and excellent AXT suppression.
- Suitable for PoE+(IEEE802.3at) applica- tions
- Operating Temperature : -10°C to +60°C

Conformance

- ANSI/TIA/EIA 568.2-D
- ISO/IEC 11801 Class II
- ISO/IEC 60603-7 Compliant

Data Center Solutions

Copper 40/25G Solutions

V Shaped Angled Panel

High Density V-shaped Angled Patch Panel, 1U, offers fast and reliable installation of shielded/unshielded cables. A rear cable management bar is supplied which acts as stress reliever of terminated cables. Each port of the panel is numbered and having designated label area for clear port identification. Available in 24 and 48 port.

0.5U 24 Port Panel

This 24 Port 0.5U High Density Patch Panel delivers a high density offering with the benefit of a single row of keystone outlet. The single row of outlets means that the installation is straight forward and allows an individual jack to be removed if required. As the panel is only 0.5U in height it allows, by using two panels together, the ability to present 48 keystone outlets in 1U of rack space. Using two 0.5U panels ensures that the outlets are all aligned the correct way up. The Jack to be ordered separately

CONSTRUCTION	VALUE
Panel	Metal SPCC
Panel Thickness	1.5mm
Panel Color	Metallic
Port Count	24 Nos
Each port Numbering	Yes
Grounding	Yes
Compatible Outlet Type	Shielded

Features

- Compliant with ISO/IEC11801-1 Class II and ANSI/TIA 568.2-D for Cat.8
- Power over HDBaseT™ (PoH) applications up to 100 W

Cat 8 Solutions

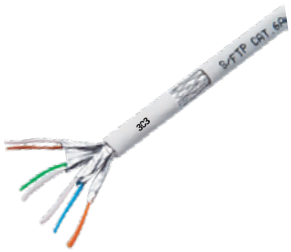
Cat 8 Solutions

Data Center Solutions

Copper 10G Solutions

Catagory 6A SFTP Cables

Category 6A High Speed 1OGigabit Ethernet Shielded Cable is produced using 8 x 23 AWG Solid Bare Copper Conductors. Every pair or the entire 04 pair are shielded - pairs in metal foil (PIMF). These Structured Cable Suitable for 10/100/1000Base-T, 155Mbps ATM, IEEE 802.3an (10GBase-T) Standard.



CONSTRUCTION		VALUE
Insulation	AWG	23
	Material	Stranded Bare Copper
Insulation	Diameter mm	1.37±0.05
	Material	Foam Polyethylene
Jacket	External DD	7.5±0.04
	Material	LSZH

Features

- Bare solid copper Conductor
- Color : Coded Foam PE Insulation
- Operating Temperature: -10°C to +60°C

Conformance

- ANSI/TIA/EIA 568.2-D
- ISO/IEC 11801 Class EA
- EN 50173
- RoHS 2011/65/EU Compliant

Data Center Solutions

Copper 10G Solutions

Catagory 6A S/FTP Patch Cord

Category 6A S/FTP Patch cords are manufactured using high quality 4 Pair Solid cable and features cable strain relief boot with plug latch protection cap. These high performance components available in broad range of lengths. They are designed to meet or exceed Cat6 specifications. Conductors are securely mated with Shielded RJ45 plug design to deliver superior performance

CONSTRUCTION		VALUE
Construction	AWG	26
	Cable Diameter	0.57+0.01
	Material	Solid Bare Copper
	Type	SF/UTP
Shielding	#1	Al-Mylar Tape with Drain Wire
	#2	Alloy Braiding
	External OD	LSZH

Features

- Quality 26 AWG Solid Cable
- High Grade 50 Gold Plated Fully Shielded RJ45 Connectors
- Transparent Strain Relief Boot with Soft Latch-cover design
- Operating Temperature : -20°C to +60°C

Conformance

- ANSI/TIA/EIA 568.2-D
- ISO/IEC 11801 Class E
- RoHS directive 2002/95/EC compliant
-

Category 6A Shielded Keystone Jack

Category 6A Shielded keystone Jacks are Press-fit Technology design which completes the insertion of the IDC and RJ45 contacts into the PTH (Plated-Through Hole) on a PCB (Printed Circuit Board). The connection is established without using solder. Press-Fit technology connections avoid quality problems such as cold spots, voids, splatters, and cracks and is highly reliable than soldering. Press-Fit technology does not use solder, it uses no lead (Pb) and there is no extra heat on the connections, it makes the connections clean, reliable, and meets RoHS standards.

CONSTRUCTION	VALUE
Housing	Zinc Die-Casting with quality Nickel Plating
Jack Wire	0.35 Phosphor bronze gold over nickel plating
IDC Conductor	0.5mm Phosphor Bronze, Tin-Plating
Durability	200 Termination Cycles
Plug Insertion Life	≥ 750 Cycles with FCC Compliant RJ45-Plug
Plug & Jack Contact Force	≥ 100 Grams with FCC Compliant RJ45-Plug
Plug Retention Force	≥ 11 lbf

Features

- Innovative press fit technology with fully RoHS Compliant (No Solder - No Leads)
- No punch down tool required.
- 180 degree design
- Die-cast housing provide EMI, RFI and excellent AXT suppression.
- Provides excellent work in suppressing internal magnetic coupling up to 500MHz.
- Operating Temperature : -10°C to +60° C

Conformance

- ANSI/TIA/EIA 568.2-D
- ISO/IEC 11801 Class EA
- EN 50773

Data Center Solutions

Copper 10G Solutions

Catagory 6A Slim Patch Cord

Category 6A Slim Patch Cords design provides a reduced diameter profile which offers a perfect solution for high density patching applications that require a smaller and more flexible cable. These high performance components available in broad range of lengths. They are designed to meet Category 6 specifications. Conductors are securely mated with unshielded RJ45 plug design to deliver superior performance. These cables support data rates up to 1Gbps for demanding high - speed voice, video and data applications

PARAMETER	VALUES
Conductor Diameter	28 AWG
Insulation Material	PE
Insulation Diameter	0.60mm ± 0.08mm
Outer Cable Diameter	3.6mm ± 0.2mm
Jacket	LSZH
Rated Temperature	75°c
Maximum Insulation Resistance	376µ/Km

Features

- 28 AWG patch cord occupy less than½ the space of commonly used patch cords.
- This enables simplified cable management and improves air flow, reducing pathway fill and operating cost

Conformance

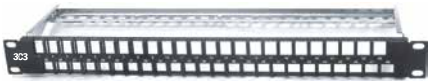
- ANSI/TIA/EIA 568.2-D
- ISO/IEC 11801 :2002 Ed.2
- IEC 60603-7

Data Center Solutions

Copper 10G Solutions

Category 6A High Density Snap-In 1U Jack Panel

Category 6A High Density Snap-In 1U Jack Panel offers fast and reliable installation of UTP/FTP cables, a rear cable Management bar is supplied which acts as stress reliever of terminated cables. Each port of the panel is numbered and has a designated label id area for clear port identification. Patch Panel comes with mini cable ties, cage nuts and rare cable management as standard package.



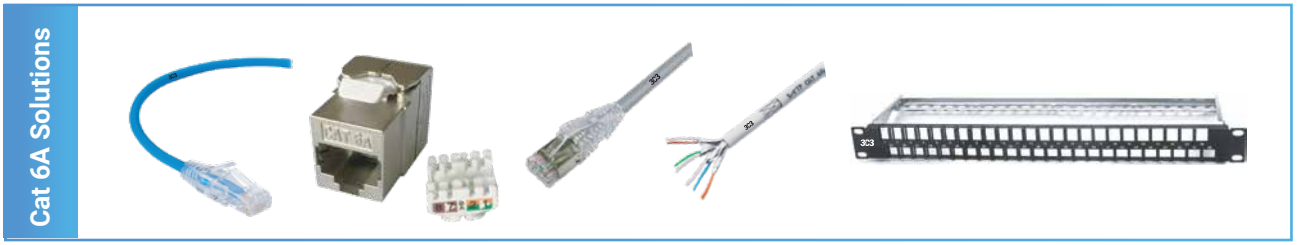
Features

- High density placement, 48 ports in 1U height rack space
- Hand screw, easy to open cover
- Maximizes connectivity per rack mount space
- Accepts all 3C3® high density data, voice modular inserts
- No tools required to install modular inserts on to patch panel

Conformance

- ANSI/TIA 568.2-D

Cat 6A Solutions



Cat.6A STP Channel Configuration

Features

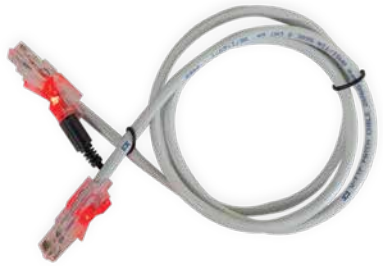
- Compliant with ISO/IEC11801-1 class EA and ANSI/TIA 568.2-D Cat.6A 4-connector channel included the Alien Cross Talk
- Power over HDBaseT™ (PoH) applications up to 100 W

Data Center Solutions

Copper 10G Solutions

Traceable Copper Patch Cord

Category 6/6A traceable Patch cord feature is highly efficient, bright LED which enables to identify the Patch Cord in no time. These Traceable Patch Cord's LED Light is powered by Micro -USB (No more hand tracing). Dramatically reduces downtime by providing instant cable identification for efficient mistake resolution and maintenance.



PARAMETER	VALUES	
Conductor	AWG	26 AWG
	Material	Solid Bare Electrolytic Grade Copper
Insulation	Material	Polyethylene
Jacket	External OD	6.23 ± 0.3mm
	Material	LSZH

Features

- Complies to IEC 61156-6 Stan dard
- Quality 26 AWG Standards flexible cable
- High Grade 50m Gold Plated RJ45 conne ctors
- Injection Molded boot/Strain Relief Boot for improved strain relief-available as option
- Bright Traceable LED Light
- Soft Latch-cover design for easy depression
- Traces Cables instantly in com plex wiring systems

Conformance

- ANSI/TIA 568.2-D

Data Center Solutions

Copper 10G Solutions

Pre-Terminated Copper Harness Cable

Pre-Terminated Copper Trunk Cables provide a quick plug-and-play solution for links between switches, servers, patch panels, and zone distribution areas in the data center. With the right upfront planning and coordination, these trunks can offer major benefits over terminating twisted- pair cable in the field, Copper trunks are typically comprised of bundles of 6, 12, or 24 and factory terminated with jacks and plugs. There are various pre-terminated copper trunk cables available in Cat 5e, Cat 6, Cat 6A and Cat 8. UTP and STP cable construction with different termination types, such as jack to jack, jack to plug, plug to plug, etc.

PARAMETER	SPECIFICATION
Transmission Media	Cat6A - Screened Twisted Pair (F/UTP)
Conductor Guage	23AWG
Insulation Diameter	1.04 ± 0.06 mm
Jack Type	8P8C (8-position, 8-contact) RJ45 style Keystone Jack
Wiring Scheme	ANSI/TIA.2-D, T568-B
Sheath Diameter/Color	7.5 ± 0.3 mm/Grey
Jack Insulation resistance	Min. 500 Mμ @ 100 VDC
IDC contact resistance	Max. 2.5 mμ
Cable Insulation resistance	Min. 150 M /Km
Conductor resistance	Max 9.38μ / 700m @ 20°C
Resistance unbalance	Max. 2%
Capacitance unbalance	Max. 160 pF/100 m
Mutual capacitance	Max 5600 pF/100 m
Operating Temperature (°C)	-10°C to+ 60°C

Features

- High-performance Cat6A, Cat6, pre-terminated patch cables with professional grade
- keystone jacks that are de signed to greatly reduce instal lation time
- Keystone jacks are compati ble with 3C3 unloaded patch panels
- Available in unshielded and shielded twisted pair cable assemblies, with either jack-to-jack or jack-to-RJ45 connector configurations to accommodate any custom application.

Conformance

- ANSI/TIA/EIA 568.2-D
- ISO/IEC 11801:2002/Amd:2:2010
- ISO/IEC 60603-7 Compliant

Data Center Solutions

Pathway Solutions

Overhead Optical Pathway Systems (OOPS)

Overhead Optical Pathway Systems (OOPS} are designed to protect and route fiber optic patch cords, cable assemblies to and from network cabinets, ODF and other terminal devices. Optical cable tray offers ideal solutions for optical raceway requirements & application with pleasing appearance and easy maintenance.

CONSTRUCTION	VALUE
Straight Section Material	Flame-retardant V0 rated material
Other Plastic Parts	ABS
Sizes	2" x 2" to 4" X 12"
Color	Yellow

SPECIFICATIONS & CABLE DIAMETER										
Accumulated Height	2"x 2", Systems		4"x4" Systems		4"x6" Systems		4"x10" Systems		4"x12" Systems	
	2mm	3mm	2mm	3mm	2mm	3mm	2mm	3mm	2mm	3mm
5cm	408	176	816	352	1224	528	2040	880	2448	1056
7.5cm	-	-	1224	528	1836	792	3060	1320	3672	1584
11 cm	-	-	1632	704	2448	1056	4080	1760	4896	2112

Features

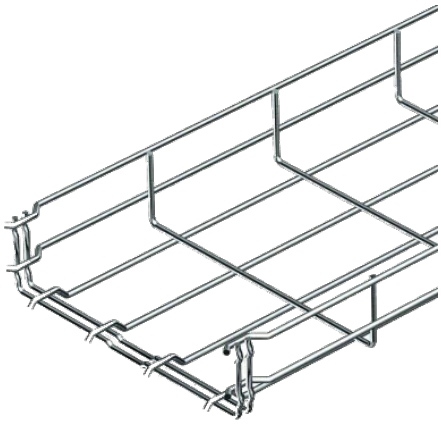
- Faster Deployment
- Quick, Easy & Speedy of Installation
- Optical Fiber Protection
- Modular & Flexibility Optical Pathway Systems
- Durable and Strong System
- Constructed with Flame-retardant V0 rated material
- Tool-less design to enhance the system for easy and quick installation including snap- on Cover, hinged over option as well as quick exists
- Push/Pull mating for quick assembly
- Available in five sizes without covers, or with regulars, or hinged covers
- Slotted ducking ideal for cable with varying exit locations
- Maintains bend radius & safely routes & guides optical fiber cables

Data Center Solutions

Pathway Solutions

Over Head Mesh System (OHMS)

Over Head Mesh System (OHMS) utilizes high quality mechanical strength wires welded in a 2" x 4" grid pattern, producing a strong, versatile & economical cable support system & is designed for maximum flexibility. These prefabricated fittings are a time-saving and cost effective and can be easily field cut bent, assembled & can have convenient cable drops.



CONSTRUCTION	VALUE
Straight Section Material	Steel
Sizes	2", to 24"(Length),1 .5" to 6"(Depth)

Features

- Faster Deployment
- Time-saving and cost effective
- Field fabrication for Easy transitions & Adaptability
- Excellent ventilation
- Maximum strength for minimum weight

Overhead Patching Frame

Overhead Patching Frame is a 19" width frame that attaches directly to overhead cable management systems above racks or enclosures for patching or installation of small switches. Patching Frame provides flexibility in network and datacenter design by decoupling the physical network cabling from the enclosure, allowing easy movement of racks and upgrades to the network.

SPECIFICATION	VALUE
Material	Powder coated, electroplated zinc
Size	2U- 6U
	2U -525 x75x139x2.0mm
	3U - 525 x75x184x2.0mm
Dimension(LXWXHXT)	4U - 525 x75x229x2.0mm
	5U - 525 x75x274x2.0mm
	6U - 525 x75x319x2.0mm
Installation Parts	2 Sets of mounting brackets, 10 sets of screws and nuts

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