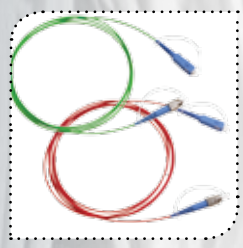
OPTRONICS

Guide to Patch Cords and Pigtails



About Us

Optronics is a brand of fibre optic and copper networking products, for use in local and wide area networking and telecommunications applications.

Since 1974, Optronics has used it's expertise to build a comprehensive range of high quality network communications products which includes patch cords, pigtails (multimode and singlemode), patch panels, wall and splice boxes (unloaded and customised), and a full range of accessories.

Based in Milton Keynes, UK, we have the facilities to support a vast array of customers; from small distributors and supporting specialist installers.

Optronics products are available directly or from distributors all over the world.

Our History

- Optronics founded in 1974
- Established a Base in Milton Keynes, which is central to all the major UK national and international transport hubs
- Moved to a purpose built building in 2002

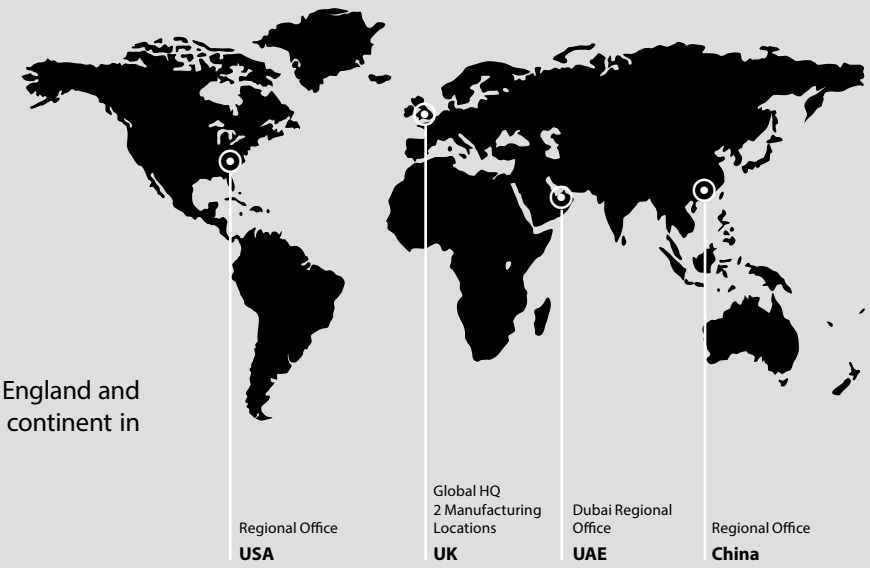
Our Capabilities

- Multilingual sales personnel
- Largest termination capacity in Europe
- Manufacturing across two continents
- Several partnerships globally
- Proactively aiding our clients to secure new and existing customers through designing and manufacturing bespoke products in necessary quantites

Optronics Global HQ, Milton Keynes, UK

A Global Company

- 120 Sales Executives employed
- 18 Languages spoken
- 24 hour design and engineering support capability
- Global logistics service
- Regions Covered
  - North South America
  - Europe
  - Africa
  - Middle East
  - Australasia
- Optronics Limited. is registered in England and has regional offices in each major continent in the world.



Optronics

Guide to Patch Cords and Pigtails

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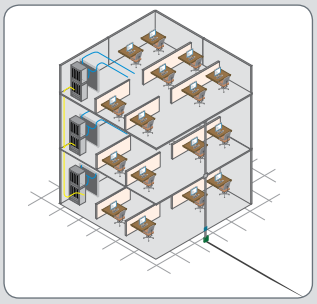
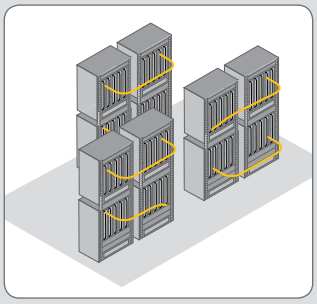
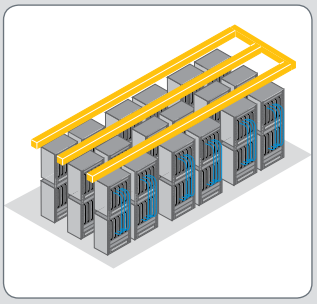
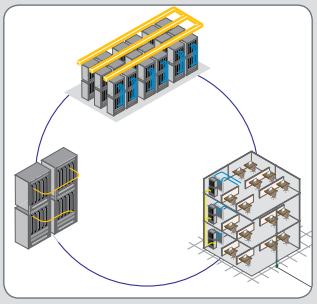
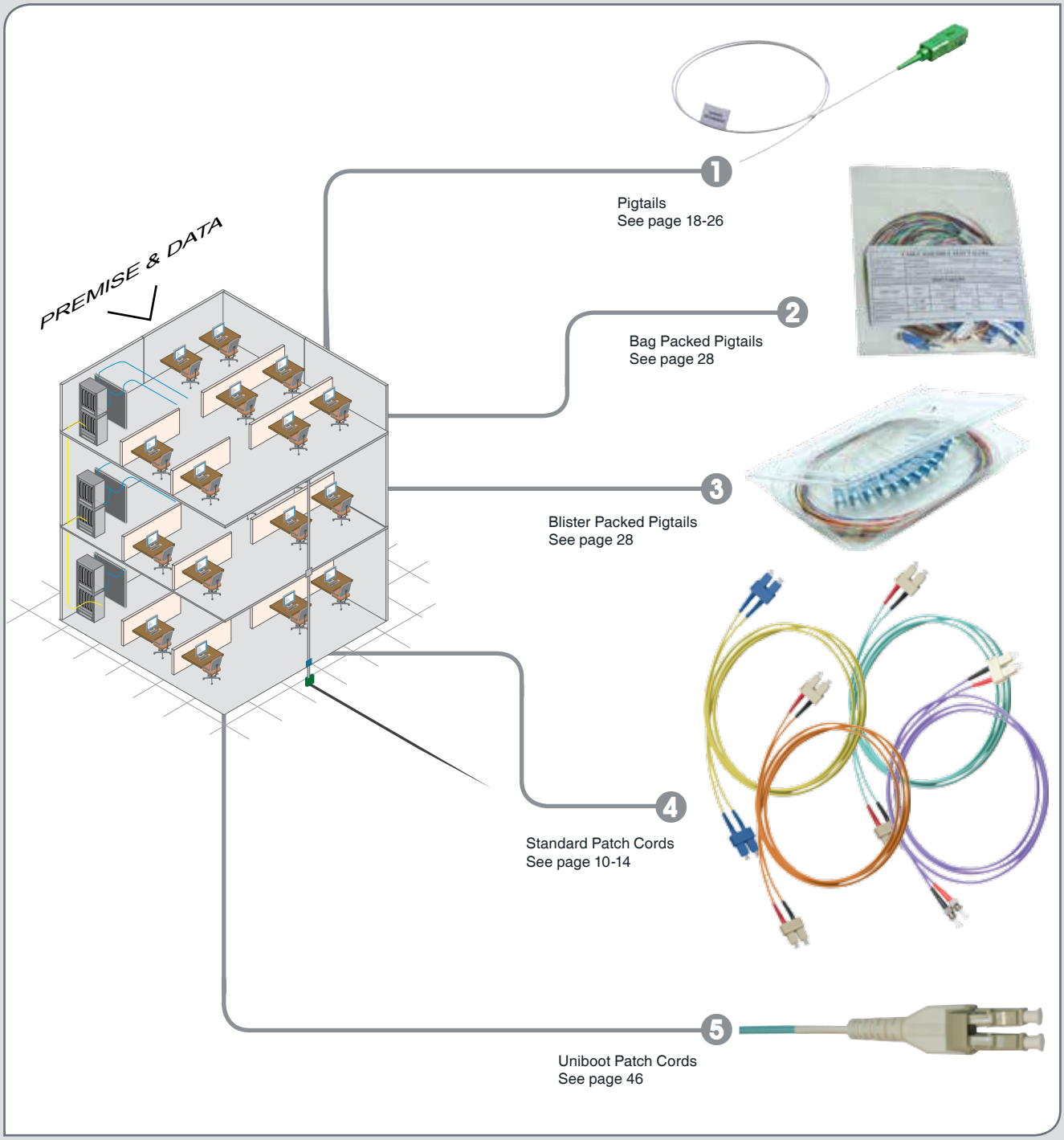





Patch Cords

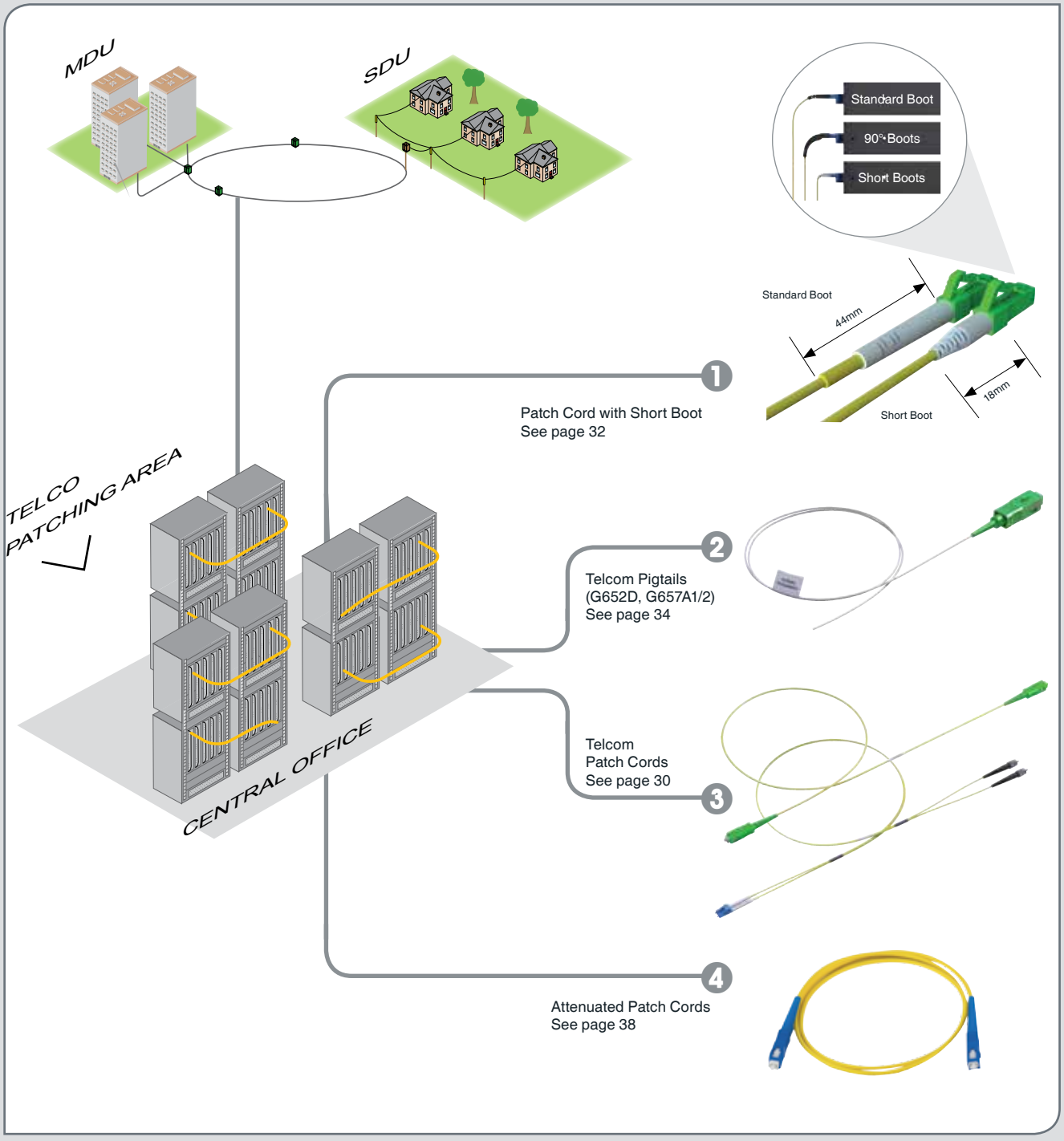
For Premise/Data Environments



Our extensive range of pigtails and patch cords cater for premise and data environments with a full range of multimode and single mode fibre types supporting OM1, OM2, OM3, OS1 and OS2 applications. A wide range of connector types are available for brand new state of the art installations to expantion of legacy networks.

Patch Cords

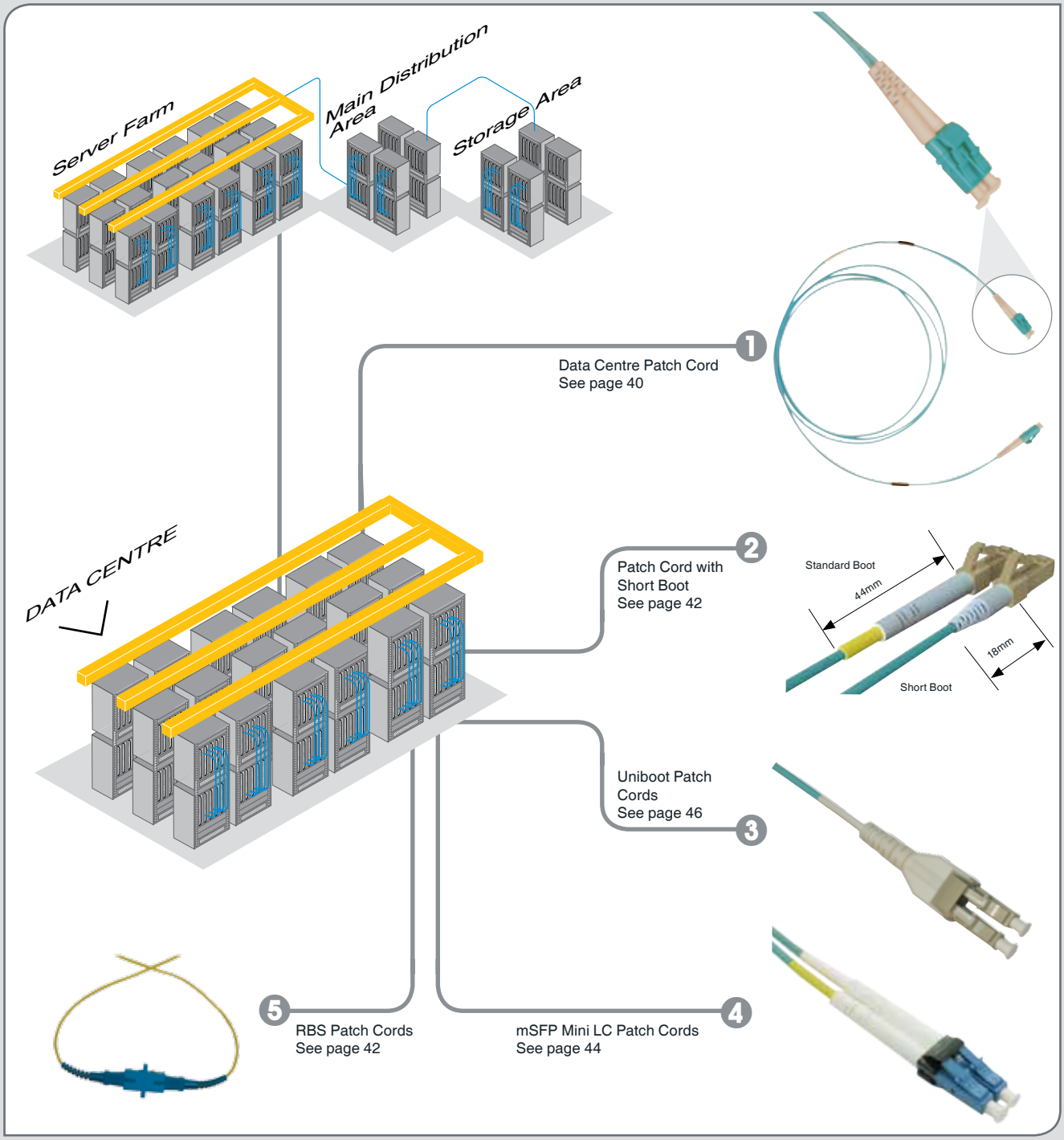
For Central Office / Telcom



Our Telcom Grade pigtails and patchcords with a full range of singlemode optical fibre types including G652D, G657A1/A2/ B3 and G655 C/D/E. The low loss termination grade offered is specifically designed for critical telcom applications.

Patch Cords

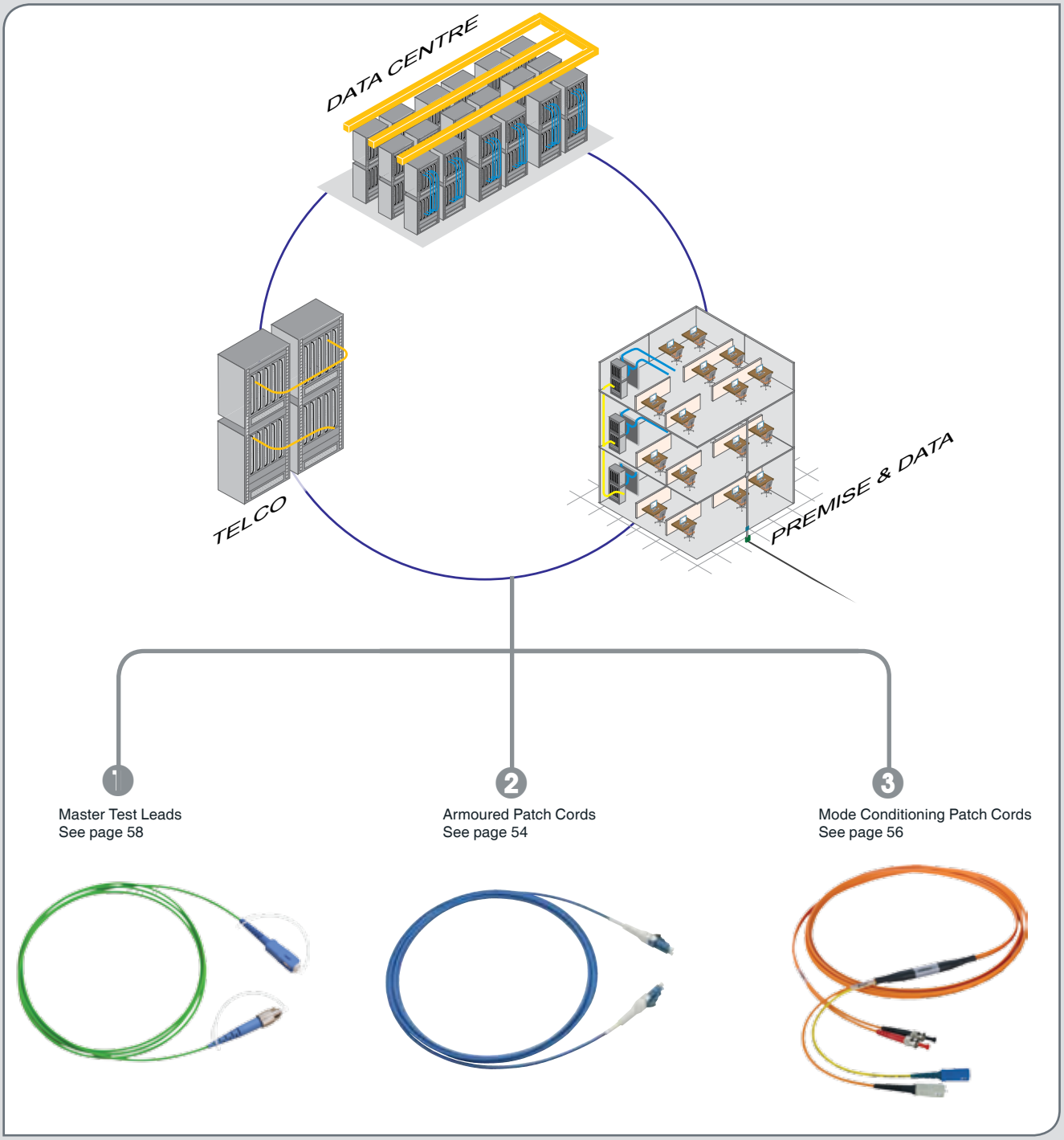
For Data Centres



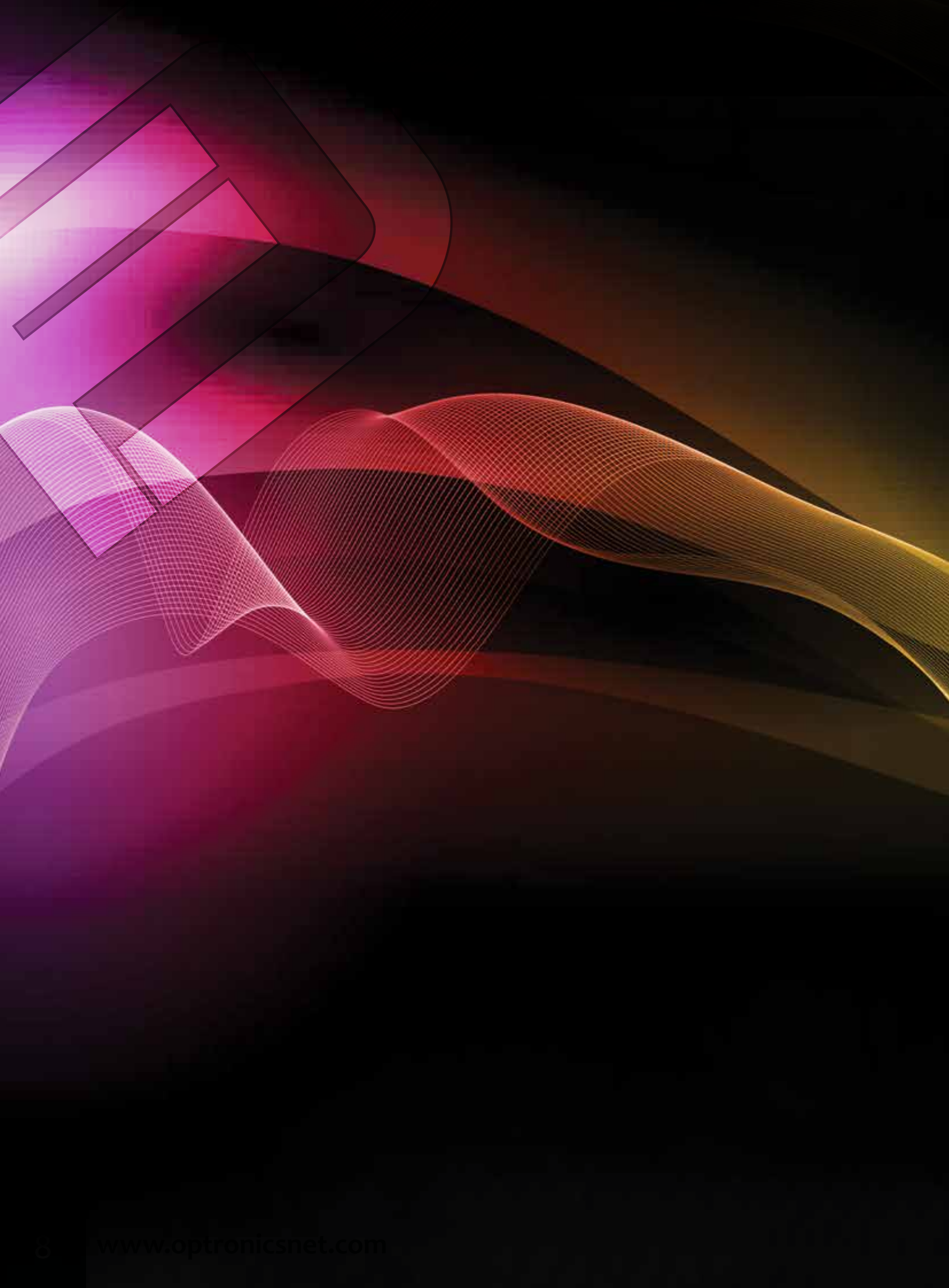
Our Data Centre Grade patchcords are complimented with a full range of high performance multimode optical fibre types supporting OM3 and OM4 applications with standard and reduced bend sensitivity. The low loss termination grade is offered specifically designed for critical datacentre applications.

Patch Cords

For Specialist Applications



Our extensive portfolio also includes a range of specialised patchcords for use in a wide range of applications. The target applications shown in this brochure are are test and measurement, extreme environment and legacy networks.



Premise/Data Environments

9/125 (OS1-OS2) Optical Fibre Patch Cords	*10*
62.5/125 (OM1) Optical Fibre Patch Cords	*11*
50/125 (OM2) Optical Fibre Patch Cords	*12*
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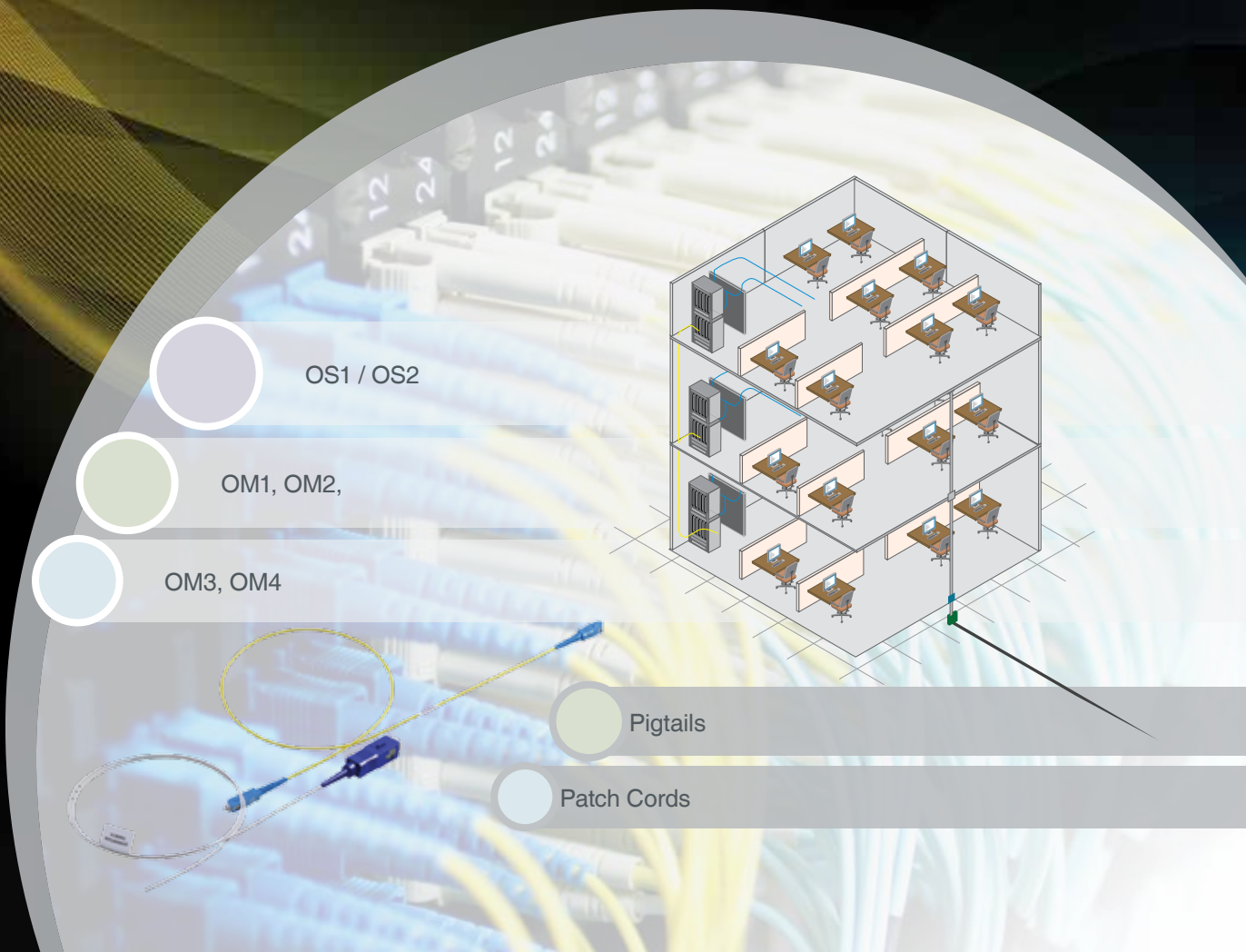
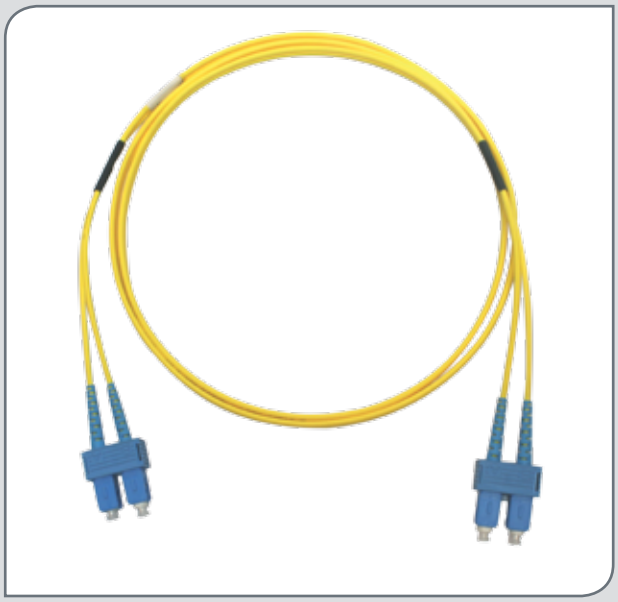
50/125 (OM4) Optical Fibre Pigtails	*26*
Blister Packed Pigtails	*28*



9/125 (OS1-OS2)
Optical Fibre Patch Cords
For Premise / Data Environments

OS 1|2 9/125 | OS 1|2 G.657.A1 | OS 1|2 G.657.A2

Singlemode patch cords are used for telcom networks and also used for high speed metropolitan and access network. Our singlemode patch cords are manufactured using LSZH cables which conform to IEC, EIA TIA and Telecordia standards.
OS1/OS2 patch cords are terminated with our standard connector which gives optimum optical performance.



Features

- SC, LC, ST, FC, MU and E2000 connectors
- Low smoke zero halogen (LSZH) jacket in yellow colour
- 900µm tight buffer
- OS1/OS2 fibre conforms to ITU-652.D, TIA/EIA 492 CAAA
- Simplex and duplex assemblies
- Duplex assemblies available with clips (SC and LC)
- Different connector performance range for specific application
- Armoured option also available

Applications

- CATV / VIDEO
- Passive Optical Network PON
- WDM / DWDM
- FTTH
- Data centres - Support high speed multi channel video, data and voice services in metropolitan and access networks
- ATM, SONET and WDM

Connector Specification

Optical Performance	Singlemode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.18 dB	IEC 61300-3-4
Ave/Random*	0.18 dB	IEC 61300-3-34
Return Loss UPC/APC	55/65 dB	IEC 61300-3-6

Fibre Specification

Characteristics	
Attenuation (dB) / km	0.38 @ 1310nm / 0.25 @ 1550nm
Chromatic Dispersion (ps/nm x km)	3.0 @ 1310nm / 18.0 @ 1550nm

Cable Specification

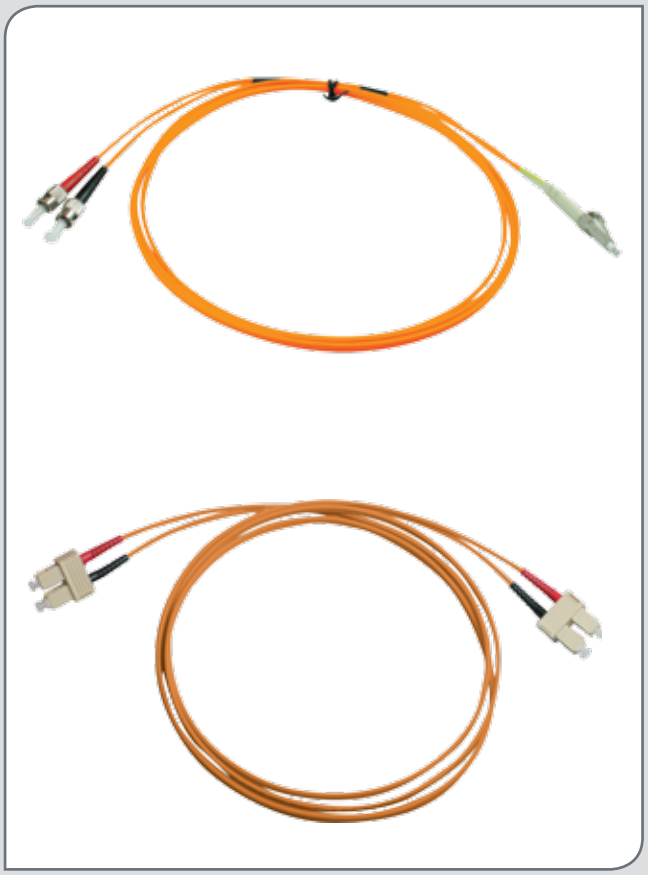
Characteristics	Simplex	Duplex
Cable Material	LSZH	LSZH
Strength Member	Aramid	Aramid
Crush (N)	1000	1000
Operating Temperature (˚C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1	

...for part number generator see page 15

62.5/125 (OM1)
Optical Fibre Patch Cords
For Premise / Data Environments

OM1 62.5/125

Multimode patch cords are used to connect high speed and legacy networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode patch cords are manufactured using LSZH cables which conform to IEC, EIA TIA and Telecordia standards.
OM1 patch cords are terminated with our standard connector which gives optimum optical performance.



Features

- SC, LC, ST, FC and MTRJ connectors
- Low smoke zero halogen (LSZH) cable in orange colour
- 900µm / 600µm tight buffer
- OM1 fibre conforms to TIA/EIA 492AAAA, IEC60793-2-10
- Simplex and duplex assemblies
- Duplex assemblies available with clips (SC and LC)
- Different connector performance range for specific application
- Armoured option also available

Applications

- Gigabit Ethernet in high speed LAN networks over an indicative 275 m link length at 850 nm (SX) wavelength
- Legacy networks including Ethernet, Fast Ethernet and FDDI
- Data centres
- Premises cabling in data networks including backbone, riser and horizontal
- Supports video, data and voice services

Connector Specification

Optical Performance	Singlemode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Fibre Specification

Characteristics	
Attenuation (dB) / km	3.0 @ 850nm / 0.8 @1300nm
Bandwidth OFL (MHz x km)	200 @ 850nm / 500 @1300nm

Cable Specification

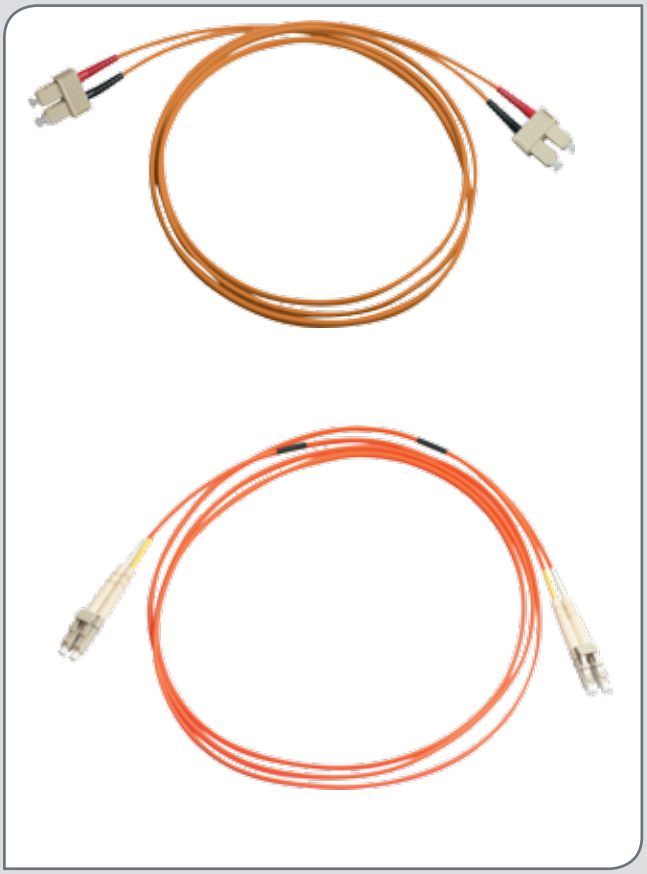
Characteristics	Simplex	Duplex
Cable Material	LSZH	LSZH
Strength Member	Aramid	Aramid
Crush (N)	1000	1000
Operating Temperature (˚C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1	

..for part number generator see page 15

50/125 (OM2)
Optical Fibre Patch Cords
For Premise / Data Environments

OM 2 50/125

Multimode patch cords are used to connect high speed and legacy networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode patch cords conform to IEC, EIA TIA and Telecordia standards. OM2 patch cords are terminated with our standard connectors giving optimum optical performance.



Features

- SC, LC, ST, FC and MTRJ connectors
- LSZH cable or PVC
- 900µm tight buffer
- OM2 fibre conforms to ITU-T G.651.1, TIA/EIA 492AAAB, IEC60793-2-10
- Simplex and duplex assemblies
- Duplex assemblies available with clips (SC and LC)
- Armoured option also available

Applications

- For use in 1 Gb/s high speed LAN networks over a 550 m indicative link length at 850 nm wavelength using a laser launch
- High speed and legacy networks including Gigabit Ethernet, Fast Ethernet and Ethernet
- Data centres
- Premises cabling in data networks including backbone, riser and horizontal
- Supports video, data and voice services

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4

*MTRJ - 0.4 dB

Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @1300nm
Bandwidth OFL (MHz x km)	500 @ 850nm / 500 @1300nm

Cable Specification

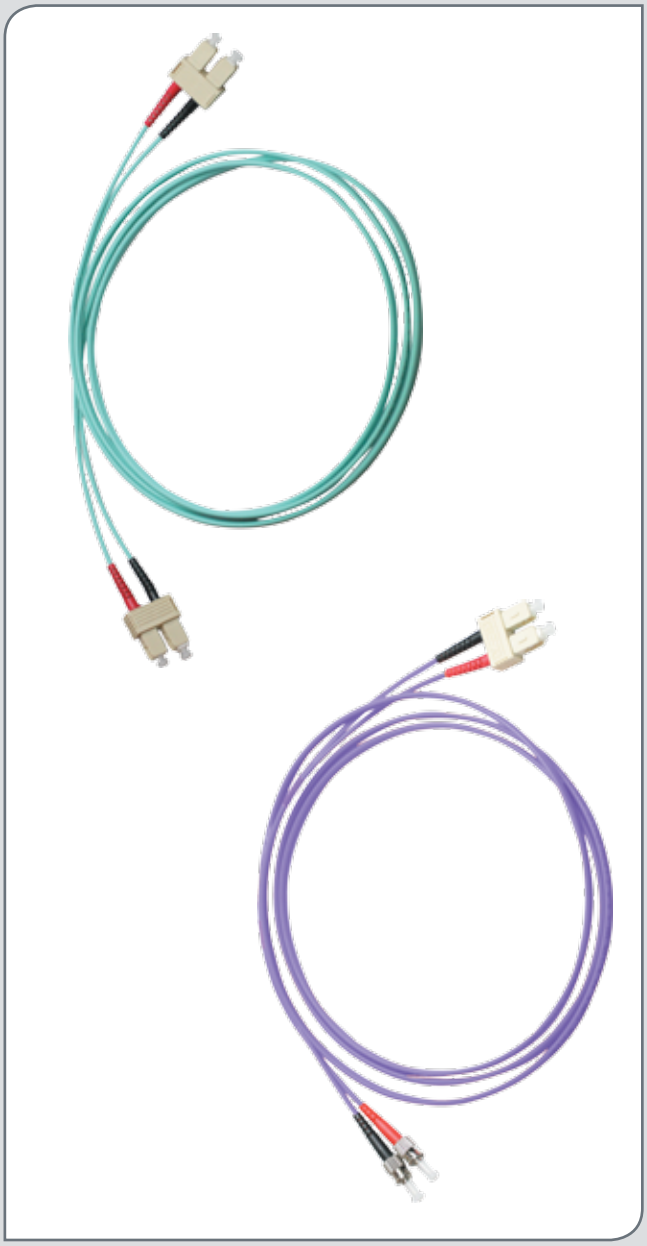
Characteristics	Simplex	Duplex
Cable Material	LSZH	LSZH
Strength Member	Aramid	Aramid
Crush (N)	1000	1000
Operating Temperature (˚C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1	

...for part number generator see page 15

50/125 (OM3)
Optical Fibre Patch Cords
For Premise / Data Environments

OM 3 50/125

Multimode patch cords are used to connect high speed and legacy networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode patch cords are manufactured using LSZH cables which conform to IEC, EIA TIA and Telecordia standards. The OM3 patch cords are terminated with our standard connector which gives optimum optical performance.



Features

- SC, LC, ST and FC connectors
- Low smoke zero halogen (LSZH) cable in aqua or purple colour
- 900µm tight buffer
- OM3 fibre conforms to ITU-T G.651.1, TIA/EIA 492AAAB, IEC60793-2-10
- Simplex and duplex assemblies
- Duplex assemblies available with clips (SC and LC)
- Different connector performance range for specific application
- Armoured option also available

Applications

- For use in 10 Gb/s high speed LAN networks over a 300 m indicative link length at 850 nm (SX) wavelength using a laser launch
- For use in 1 Gb/s high speed LAN networks over a 1000 m indicative link length at 850 nm (SX) wavelength using a laser launch
- High speed and legacy networks including Gigabit Ethernet, Fast Ethernet and Ethernet
- Data centres
- Premises cabling in data networks including backbone, riser and horizontal
- Supports video, data and voice services

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

*MTRJ - 0.4 dB

Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @1310nm
Bandwidth OFL (MHz x km)	1500 @ 850nm / 500 @1310nm
Bandwidth LEMB (MHz x km)	2000 @ 850nm

Cable Specification

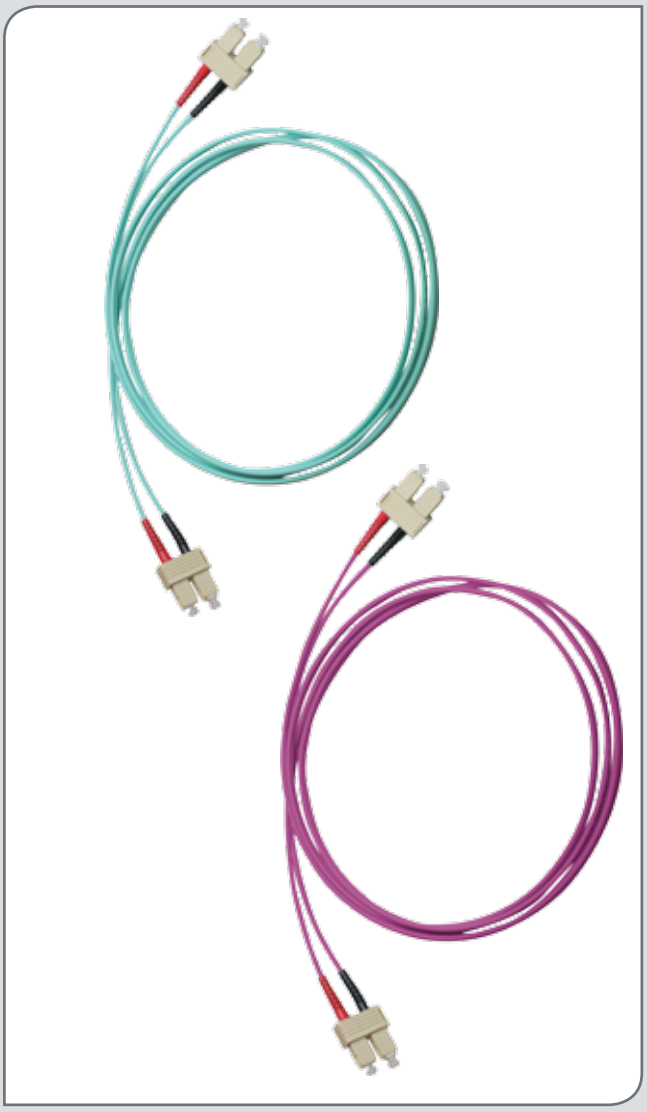
Characteristics	Simplex	Duplex
Cable Material	LSZH	LSZH
Strength Member	Aramid	Aramid
Crush (N)	1000	1000
Operating Temperature (˚C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1	

...for part number generator see page 15

50/125 (OM4)
Optical Fibre Patch Cords
For Premise / Data Environments

OM4 50/125

Multimode patch cords are used to connect high speed and legacy networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode patch cords are manufactured using LSZH cables which conform to IEC, EIA TIA and Telecordia standards. The OM4 patch cords are terminated with our standard connector which gives optimum optical performance.



Features

- SC, LC, ST and FC connectors
- Low smoke zero halogen (LSZH) cable in aqua colour or erika violet
- 900µm tight buffer
- OM4 fibre conforms to ITU-T G.651.1, TIA/EIA 492AAAB, IEC60793-2-10
- Simplex and duplex assemblies
- Duplex assemblies available with clips (SC and LC)
- Different connector performance range for specific application

Applications

- For use in 10 Gb/s high speed LAN networks over a 400m indicative link length at 850 nm (SX) wavelength using a laser launch
- For use in 1 Gb/s high speed LAN networks over a 2000 m indicative link length at 850 nm (SX) wavelength using a laser launch
- High speed and legacy networks including Gigabit Ethernet, Fast Ethernet and Ethernet
- Data centres
- Premises cabling in data networks including backbone, riser and horizontal
- Supports video, data and voice services

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @1310nm
Bandwidth OFL (MHz x km)	3500 @ 850nm / 500 @1310nm

Cable Specification

Characteristics	Simplex	Duplex
Cable Material	LSZH	LSZH
Strength Member	Aramid	Aramid
Crush (N)	1000	1000
Operating Temperature (˚C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1	

...for part number generator see page 15

Patch Cord Part Number Generator
For Premise / Data Environments

Part Number Generator

Connector End A		Connector End B		Mode		Cable Configuration		Cable Colour		Length		/Z
FC	FC	FC	FC	OS1/OS2	09	Simplex LSZH	S	Yellow	YE	1 Mtr	1	
FCA/ APC	FCA	FCA/ APC	FCA	OM1	62	Duplex LSZH	D	Orange	OR	2 Mtr	2	
SC	SC	SC	SC	OM2	50	Flat Duplex	FD	Grey	GY	3 Mtr	3	
SC/APC	SCA	SC/ APC	SCA	OM3	OM3			Purple	PU	5 Mtr	5	
ST	ST	ST	ST	OM4	OM4			Aqua	AQ	10 Mtr	10	
LC	LC	LC	LC							xx* Mtr	XX	
LC/APC	LCA	LC/APC	LCA									
MU	MU	MU	MU									
MTRJ[1]	MTRJ	MTRJ[1]	MTRJ									
E2000	E2	E2000	E2									

*Other lengths available
[1] MTRJ is only available in MiniZip

Example Part Number: FC FC 09 S YE 1 /Z

FCFC09SYE1/Z will configure an OS1/OS2 FC-FC simplex patch cord, 1 metre - Yellow

Patch cord cables are available with alternative jacket materials including PVC, UL listed riser or plenum and polyurethane.

DID YOU KNOW?

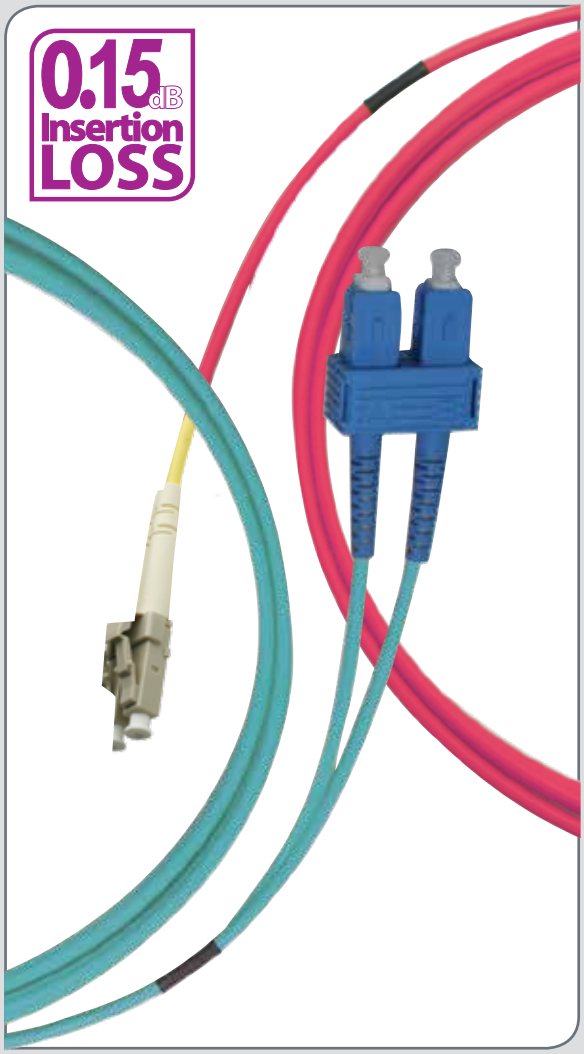
Optronics also offers an extensive range network infrastructure components including pre-terminated assemblies, patch panels, cabling and cabinets

Visit www.optronicsnet.com for more details.

Premium Patch Cords
For Premise / Data Environments

Description

Premium range patch cords are suitable for low loss telcom, datacom, data centre and some critical applications. Our patch cords provide flexible interconnection to active equipment, passive optical devices and cross-connects. They are terminated with premium range physical contact (singlemode & multimode) and angled physical contact (singlemode) zirconia ferrule connectors which are manufactured with precision factory mounting and polishing techniques to assure high transmission quality.



Features / Benefits

- Conform to IEC, EIA-TIA, and Telecordia performance requirements
- Available in different fibre types
- Available with different connector types
- Available in standard and custom lengths
- RoHS, REACH & SvHC compliant

Applications

- Data centre
- Telecommunication networks
- CATV
- LAN and WAN
- FTTX
- Broadband network

Part Number Generator

						P/Z
Connector End 1	Connector End 2	Cable Type	Cable Configuration	Cable Colour	Length (m)	

Connector End 1		Connector End 2		Cable Type		Cable Configuration		Cable Colour		Length (m)
FC	FC	FC	FC	OS1/2	09	Simplex LSZH	S	Yellow	YE	1
FC/APC	FCA	FC/APC	FCA	OM1	62			Orange	OR	2
SC	SC	SC	SC	OM2	50	Duplex LSZH	D	Aqua	AQ	3
SC/APC	SCA	SC/APC	SCA	OM3	OM3			Purple	PU	5
LC	LC	LC	LC	OM4	OM4	Flat Duplex	FD	Erika Violet[1]	EV[1]	10
LC/APC	LCA	LC/APC	LCA	G.657.A1	7A1					xx
E2000	E2	E2000	E2	G.657.A2	7A2					
E2000/APC	E2A	E2000/APC	E2A							

[1]OM4 Only

Example Part Number: SC SC OM4 D AQ 2 P/Z

SCSCOM4DAQ2P/Z will configure a 2 metre SC to SC OM4 duplex premium patch cord with an aqua jacket

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

Connector Specification

Optical Performance	Singlemode	Multimode	Conformance
Insertion loss (Max/Acceptance)	0.15 dB	0.15 dB	IEC 61300-3-4
Insertion loss (97%)	0.30 dB	0.25 dB	IEC 61300-3-34
Ave/Master*	0.12 dB	0.08 dB	IEC 61300-3-4
Ave/Random*	0.12 dB	0.10 dB	IEC 61300-3-34
Return Loss	55/65 dB	-	IEC 61300-3-6
MECHANICAL PROPERTIES	CRITERIA*		CONFORMANCE
Mechanical endurance	500 matings		IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude		IEC 61300-2-1
Drop	Drop height 1m, 5 drops		IEC 61300-2-12
Cable retention	Magnitude 50 N		IEC 61300-2-4
Cable torsion	1.5 kg - 2.5 kg for 2mm-3mm cable diameter		IEC 61300-2-5

* The change in attenuation for all the above listed criteria shall be a maximum of 0.20dB

Standards Compliance

TIA/EIA 568C
TIA/EIA 492AAAP
IEC11801

Connector Type	Conformance	Singlemode	Multimode	SM Duplex	MM Duplex
SC connector	IEC 61754-4	SM PC- Blue APC-Green	MM PC- Beige	SM PC- Blue APC-Green with clips	MM PC- Beige with clips Boot -Red & Black
LC connector	IEC 61754-20	SM PC- Blue APC-Green Boot-White	MM PC- Beige Boot-White	SM PC- Blue APC-Green with clips Boot-White	MM PC- Beige with clips Boot-White
ST connector	IEC 61754-2	SM PC- Yellow boot	MM PC- Black boot	SM PC- Yellow boot	MM PC- Red & Black boot
FC connector	IEC 61754-13	SM PC- Blue boot APC-Green boot	MM PC- Black boot	SM PC- Blue boot APC-Green boot	MM PC- Black boot

IMP: Please note that the LC 2mm connectors will be heat shrunk for cable retention. C clips will be provided for channel identification of duplex FC and ST Patch Cords.

Cable Specification

Characteristics	Units	Simplex	Duplex
Cable Material		LSZH	LSZH
Strength Member		Aramid	Aramid
Crush	N	1000	1000
Operating Temperature	˚C	-20 to +60	-20 to +60
Secondary Buffer Diameter (2.0mm, 2.4mm and 3.0mm)	µm	900±50	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	µm	600±50	600±50
Minimum Bending Radius	mm	10D (installed) 20D (loaded)	10D (installed) 20D (loaded)

IMP: The patch cords are available in standard length of 1m, 2m, 3m, 5m, and 10m. For other lengths please contact Optronics for the actual lead times.

See our Data Centre catalogue for a complete range of infrastructure products

9/125 (Singlemode) Optical Fibre Pigtails

For Premise / Data Environments

Singlemode pigtails are used in telcom, datacom networks and also used for high speed metropolitan and access network. Our singlemode pigtail buffer conforms to IEC, EIA TIA and Telecordia standards. They are terminated with our standard connector which gives optimum optical performance.

Features

- SC, LC, ST, FC and E2000 connectors
- UPC and APC interface
- Low smoke zero halogen (LSZH) secondary buffer
- 900µm tight buffer or easy strip
- ITU G.652.D, TIA/EIA 492CAAB
- Bend insensitive ITU G.657.A1 or ITU G.657.A2
- Different connector performance range for specific application
- Available in standard white colour buffer and also in standard 12 colours as per IEC 60304
- Available in standard and blister packing

Applications

- Telcom and datacom application
- Patch panels, wall boxes, ODFs and splice cassettes
- Easy strip pigtails for on site installation
- Supports high speed multi channel video, data and voice services in metropolitan and access networks
- ATM, SONET and WDM

Connector Specification

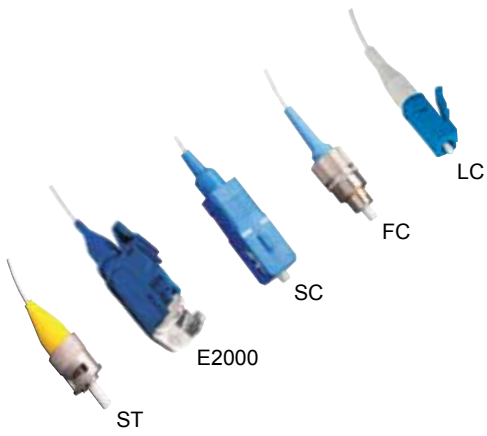
Optical Performance	Singlemode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.18 dB	IEC 61300-3-4
Ave/Random*	0.18 dB	IEC 61300-3-34
Return Loss	50/60 dB	IEC 61300-3-6

Fibre Specification

Characteristics	
Attenuation (dB) / km	0.38@1310nm / 0.25 @1550nm
Chromatic Dispersion (ps/nm x km)	3.0@1310nm / 18.0@1550nm
Polarization Mode Dispersion (ps/√km)	≤ 0.2

Cable Specification

Characteristics	Units	Simplex
Crush	N/100mm	500
Operating Temperature	˚C	-20 to 60
Nominal buffer Diameter	µm	900+50
Max Tensile Load	N	6



Bag Packed

Blister Packed

Technical information
For Premise / Data Environments

Part Number Generator

		B			/Z

Connector	
SC	SC
SCA	SCA
LC	LC
LCA	LCA
FC	FC
FCA	FCA
ST	ST
E2000	E2
E2000A	E2A

Mode	
OS1/2	09
G.657.A1	A1
G.657.A2	A2

Length	
1 Mtr	1
2 Mtr	2

Cable Construction and Packaging Style	
Tight Buffer	Leave Blank
Tight Buffer Pack of 12	12/1B
Tight Buffer Blister pack of 12	12BP
Easy Strip	EASY
Easy Strip pack of 12	E-12/1B
Easy Strip Blister pack of 12	E-12BP

Example Part Number: LC 09 B 1 /Z

LC09B1/Z will configure a 1 metre LC OS1/2 tight buffered pigtail

62.5/125 (OM1) Optical Fibre Pigtails

For Premise / Data Environments

Multimode pigtails are used to connect high speed networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode pigtail buffer conforms to IEC, EIA TIA and Telecordia standards. They are terminated with our standard connector which gives optimum optical performance.

Features

- SC, LC, ST, FC connectors
- Low smoke zero halogen (LSZH) buffer
- 900µm tight buffer or easy strip
- OM1 pigtail is available in standard white colour
- Multimode fibre conforms to TIA/EIA 492AAAA
- Different connector performance range for specific application
- Available in standard 12 colours as per IEC 60304
- Available in standard and blister packing

Applications

- Networks including Ethernet, Fast Ethernet and GBE
- Internal inter-connect
- Ideal for a wide range of telcom, datacom and process control applications where ruggedisation is required
- Suitable for repeated handling in patch panels and racks

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Fibre Specification

Characteristics	
Attenuation (dB) / km	3.0 @ 850nm / 0.8 @ 1300nm
Bandwidth OFL (MHz x km)	200 @ 850nm / 500 @ 1300nm

Cable Specification

Characteristics	Units	Simplex
Crush	N/100mm	500
Operating Temperature	˚C	-20 to 60
Nominal buffer Diameter	µm	900+50
Max Tensile Load	N	6

Bag Packed

Blister Packed

Technical information
For Premise / Data Environments

OM1 62.5/125

Part Number Generator

		B			/Z
Connector	**Mode**		**Length**	**Cable Construction and Packaging Style**	

Connector		Mode		Length		Cable Construction and Packaging Style	
SC	SC	OM1	62	1 Mtr	1	Tight Buffer	Leave Blank
LC	LC			2 Mtr	2	Tight Buffer Pack of 12	12/1B
FC	FC					Tight Buffer Blister pack of 12	12BP
ST	ST					Easy Strip	EASY
						Easy Strip pack of 12	E-12/1B
						Easy Strip Blister pack of 12	E-12BP

Example Part Number: LC 62 B 1 /Z

LC62B1/Z will configure a 1 metre LC OM1 tight buffered pigtail

See our *Fibre Optic Connectors and Adaptors* catalogue for our complete range

Up to date information is also available at www.optronicsnet.com

50/125 (OM2) Optical Fibre Pigtails
For Premise / Data Environments

Multimode pigtails are used to connect high speed networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode pigtail buffer conforms to IEC, EIA TIA and Telecordia standards. They are terminated with our standard connector which gives optimum optical performance.

Features

- SC, LC, ST, FC connectors
- Low smoke zero halogen (LSZH) buffer
- 900µm tight buffer or easy strip
- OM2 pigtail is available in standard white colour
- Multimode fibre conforms to ITU-G651, TIA/EIA 492AAAA
- Different connector performance range for specific application
- Available in standard 12 colours as per IEC 60304
- Available in standard and blister packing

Applications

- Networks including Ethernet, Fast Ethernet and GBE
- Internal inter-connect
- Ideal for a wide range of telcom, datacom and process control applications where ruggedisation is required
- Suitable for repeated handling in patch panels and racks

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @1310nm
Bandwidth OFL (MHz x km)	1500 @ 850nm / 500 @1310nm

Cable Specification

Characteristics	Units	Simplex
Crush	N/100mm	500
Operating Temperature	˚C	-20 to 60
Nominal buffer Diameter	µm	900+50
Max Tensile Load	N	6

FC SC LC ST

Bag Packed

Blister Packed

Technical information
For Premise / Data Environments

OM2 50/125

Part Number Generator

		B			/Z
Connector	**Mode**		**Length**	**Cable Construction and Packaging Style**	

Connector		Mode		Length		Cable Construction and Packaging Style	
SC	SC	OM2	50	1 Mtr	1	Tight Buffer	Leave Blank
LC	LC			2 Mtr	2	Tight Buffer Pack of 12	12/1B
FC	FC					Tight Buffer Blister pack of 12	12BP
ST	ST					Easy Strip	EASY
						Easy Strip pack of 12	E-12/1B
						Easy Strip Blister pack of 12	E-12BP

Example Part Number: LC 50 B 1 /Z

LC50B1/Z will configure a 1 metre LC OM2 tight buffered pigtail

50/125 (OM3)
Optical Fibre Pigtails
For Premise / Data Environments

Multimode pigtails are used to connect high speed networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode pigtail buffer conforms to IEC, EIA TIA and Telecordia standards. They are terminated with our standard connector which gives optimum optical performance.

Features

- SC, LC, ST, FC connectors
- Low smoke zero halogen (LSZH) buffer
- 900µm tight buffer or easy strip
- OM3 pigtail is available in standard purple or aqua colour
- Multimode fibre conforms to ITU-G651, TIA/EIA 492AAAA
- Different connector performance range for specific application
- Available in packs of 12 standard colours as per IEC 60304
- Available in standard and blister packing

Applications

- Networks including Ethernet, Fast Ethernet and GBE
- Internal inter-connect
- Ideal for a wide range of telcom, datacom and process control applications where ruggedisation is required
- Suitable for repeated handling in patch panels and racks

Connector Specification

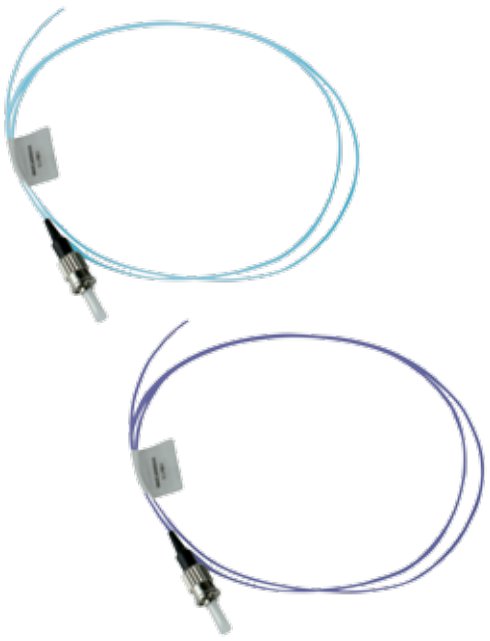
Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @ 1300nm
Bandwidth OFL (MHz x km)	1500 @ 850nm / 500 @ 1300nm / 2000 @ 850nm

Cable Specification

Characteristics	Units	Simplex
Crush	N/100mm	500
Operating Temperature	˚C	-20 to 60
Nominal buffer Diameter	µm	900+50
Max Tensile Load	N	6



FC SC LC ST

Bag Packed

Blister Packed

Technical information
For Premise / Data Environments

OM3 50/125

Part Number Generator

		B			/Z
Connector	**Mode**		**Length**	**Cable Construction and Packaging Style**	

Connector		Mode		Length		Cable Construction and Packaging Style	
SC	SC	OM3	OM3	1 Mtr	1	Tight Buffer	Leave Blank
LC	LC			2 Mtr	2	Tight Buffer Pack of 12	12/1B
FC	FC					Tight Buffer Blister pack of 12	12BP
ST	ST					Easy Strip	EASY
						Easy Strip pack of 12	E-12/1B
						Easy Strip Blister pack of 12	E-12BP

Example Part Number: LC OM3 B 1 /Z

LCOM3B1/Z will configure a 1 metre LC OM3 tight buffered pigtail

DID YOU KNOW?

Optronics also manufacture a wide variety of cabling assembly solutions.

...for more information visit www.optronicsnet.com

50/125 (OM4)
Optical Fibre Pigtails
For Premise / Data Environments

Multimode pigtails are used to connect high speed networks like Gigabit Ethernet, Fast Ethernet and Ethernet. Our multimode pigtail buffer conforms to IEC, EIA TIA and Telecordia standards. They are terminated with our standard connector which gives optimum optical performance.

Features

- SC, LC, ST, FC connectors
- Low smoke zero halogen (LSZH) buffer
- 900µm tight buffer or easy strip
- OM4 pigtail is available in standard aqua colour
- Multimode fibre conforms to ITU-G651, TIA/EIA 492AAAA
- Different connector performance range for specific application
- Available in standard 12 colours as per IEC 60304
- Available in standard and blister packing

Applications

- Networks including Ethernet, Fast Ethernet and GBE
- Internal inter-connect
- Ideal for a wide range of telcom, datacom and process control applications where ruggedisation is required
- Suitable for repeated handling in patch panels and racks

FC SC LC ST

Bag Packed

Blister Packed

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @ 1300nm
Bandwidth OFL (MHz x km)	3500 @ 850nm / 500 @ 1300nm / 4700 @ 850nm

Cable Specification

Characteristics	Units	Simplex
Crush	N/100mm	500
Operating Temperature	˚C	-20 to 60
Nominal buffer Diameter	µm	900+50
Max Tensile Load	N	6

Technical information
For Premise / Data Environments

OM4 50/125

Part Number Generator

		B			/Z
Connector	**Mode**		**Length**	**Cable Construction and Packaging Style**	
SC SC	OM4 OM4		1 Mtr 1	Tight Buffer — Leave Blank	
LC LC			2 Mtr 2	Tight Buffer Pack of 12 — 12/1B	
FC FC				Tight Buffer Blister pack of 12 — 12BP	
ST ST				Easy Strip — EASY	
				Easy Strip pack of 12 — E-12/1B	
				Easy Strip Blister pack of 12 — E-12BP	

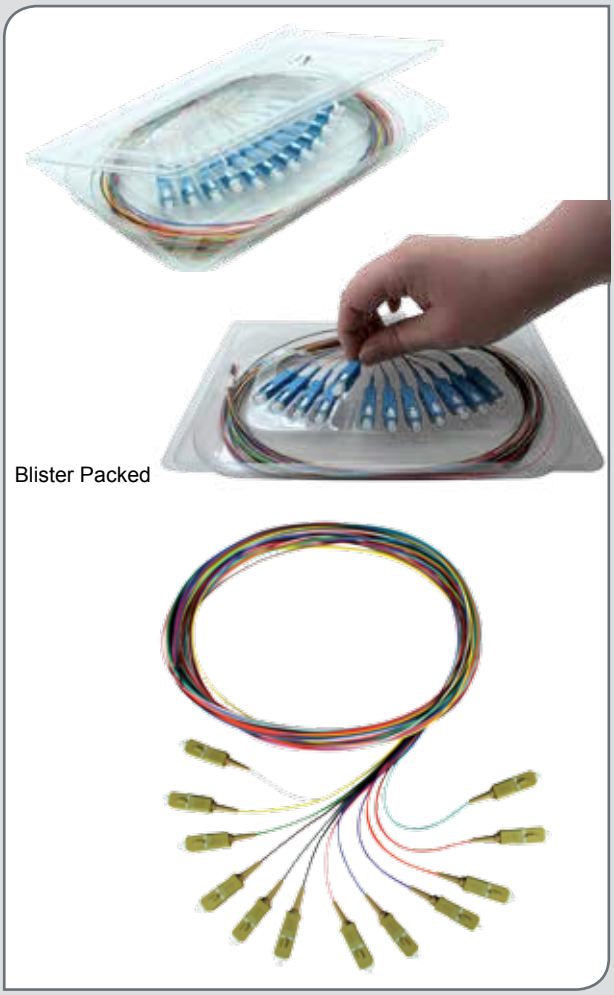
Example Part Number: LC OM4 B 1 /Z

LCOM4B1/Z will configure a 1 metre
LC OM4 tight buffered pigtail

Blister Pack Pigtails
For Premise / Data Environments

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

We can now offer you a more convenient and cost effective way to purchase pigtails. You get our usual high quality pigtails but now with a reduction in the amount of packaging and paperwork, saving costly engineers' time unpacking on-site.


Blister Packed

Features

- Blister packed pigtails include FC,LC,SC & ST variations
- Easy strip
- IEC and DIN colour codes available (IEC as Standard)

Benefits

- Convenient space saving shipping & storage
- Blister pack offers superior transport protection
- Environmentally friendly, generating less waste from packaging and certification

Technical Specification

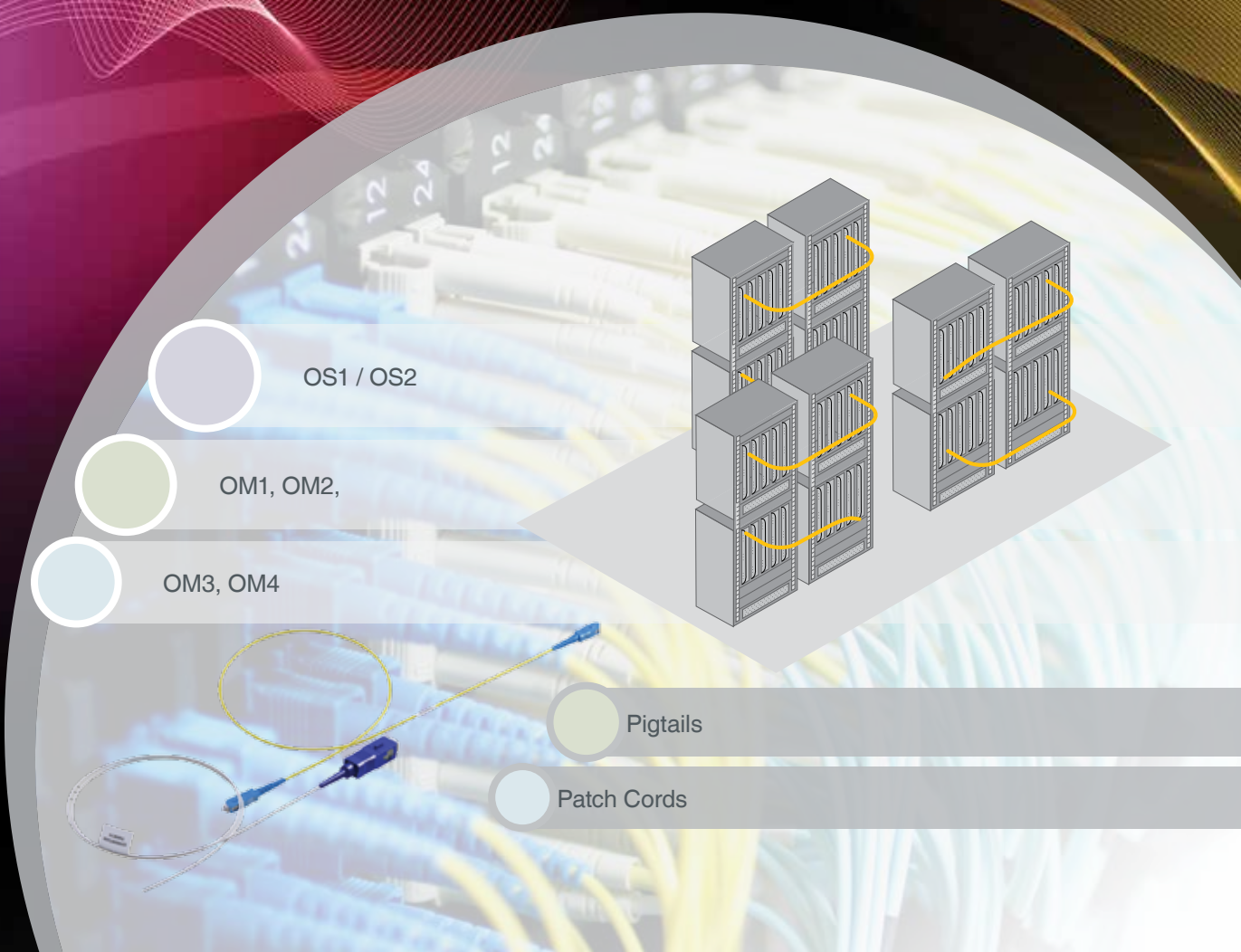
	Max
Insertion Loss	0.25dB
Return Loss (SM UPC)	>55dB
Return Loss (SM APC)	>65dB
Operating Temperature	-20˚C to + 60˚C
Intermateability	Compatible with all equivalent connectors as per IEC 61754

Ordering Information

DESCRIPTION	PART NO.
Pack of 12 SC/UPC Pigtail 1.5mtr - 9/125 900um (12 Colours) Blister Packed	**SC09B1.5BP12/Z**
Pack of 12 SC/UPC Pigtail 1.5mtr - 62.5/125 900um (12 Colours) Blister Packed	**SC62B1.5BP12/Z**
Pack of 12 SC/UPC Pigtail 1.5mtr - 50/125 900um (12 Colours) Blister Packed	**SC50B1.5BP12/Z**
Pack of 12 SC/UPC Pigtail 1.5mtr - OM3 900um (12 Colours) Blister Packed	**SCOM3B1.5BP12/Z**
Pack of 12 ST/UPC Pigtail 1.5mtr - 9/125 900um (12 Colours) Blister Packed	**ST09B1.5BP12/Z**
Pack of 12 ST/UPC Pigtail 1.5mtr - 62.5/125 900um (12 Colours) Blister Packed	**ST62B1.5BP12/Z**
Pack of 12 ST/UPC Pigtail 1.5mtr - 50/125 900um (12 Colours) Blister Packed	**ST50B1.5BP12/Z**
Pack of 12 ST/UPC Pigtail 1.5mtr - OM3 900um (12 Colours) Blister Packed	**STOM3B1.5BP12/Z**
Pack of 12 FC/UPC Pigtail 1.5mtr - 9/125 900um (12 Colours) Blister Packed	**FC09B1.5BP12/Z**
Pack of 12 FC/UPC Pigtail 1.5mtr - 62.5/125 900um (12 Colours) Blister Packed	**FC62B1.5BP12/Z**
Pack of 12 FC/UPC Pigtail 1.5mtr - 50/125 900um (12 Colours) Blister Packed	**FC50B1.5BP12/Z**
Pack of 12 FC/UPC Pigtail 1.5mtr - OM3 900um (12 Colours) Blister Packed	**FCOM3B1.5BP12/Z**
Pack of 12 LC/UPC Pigtail 1.5mtr - 9/125 900um (12 Colours) Blister Packed	**LC09B1.5BP12/Z**
Pack of 12 LC/UPC Pigtail 1.5mtr - 62.5/125 900um (12 Colours) Blister Packed	**LC62B1.5BP12/Z**
Pack of 12 LC/UPC Pigtail 1.5mtr - 50/125 900um (12 Colours) Blister Packed	**LC50B1.5BP12/Z**
Pack of 12 LC/UPC Pigtail 1.5mtr - OM3 900um (12 Colours) Blister Packed	**LCOM3B1.5BP12/Z**

Central Office / Telcom

Telcom Patch Cords	30
OS1/OS2 G657 LC short Boot Patch Cords	32
9/125 Telcom Pigtails	34
MTP® Ruggedised Pigtail	36
Attenuated Patch Cords	38



Telcom Patch Cords
For Central Office / Telcom

Description

Telcom patch cords are designed for low loss telecommunication applications.

Our patch cords provide flexible interconnection to active equipment, passive optical devices and cross-connects. They are terminated with premium grade zirconia ferrule connectors which help assure high transmission quality and low optical power loss.

Features / Benefits

- Enhanced optical performance to meet tight Telcom power budgets
- New flexible boot allows connection in compact spaces
- Standard LC and SC connector types
- Standard and bend insensitive Singlemode Fibre types, G652D, G657 A1, G657 A2
- Cable available with IEC 60332-3-24 fire performance
- Available in standard and custom lengths
- IEC, EIA/TIA and Telecordia compliant
- RoHS, REACH and SvHC compliant

Applications

- Telcom
- High Bandwidth Ethernet and Fibre Channel
- Storage Area Networks (SANs)

Connector Specification

Optical Performance	Singlemode	Conformance
IL Max/Master (Acceptance)	0.15 dB	IEC 61300-3-4
Max IL/Random	0.30 dB	IEC 61300-3-34
Ave/Master	0.12 dB	IEC 61300-3-4
Ave/Random	0.12 dB	IEC 61300-3-34
Return Loss UPC/APC	55/65 dB	IEC 61300-3-6

Mechanical Properties	Value	Conformance
Mechanical endurance	500 matings	IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude	IEC 61300-2-1
Drop	5 drops at 1m	IEC 61300-2-12
Cable retention	50N	IEC 61300-2-4
Cable torsion	1.5kg-2.5kg for 2mm-3mm cable diameter	IEC 61300-2-5

Connector Type	Conformance	Singlemode	Singlemode Duplex
SC Connector	IEC 61754-4	SM PC – Blue, Blue Boots APC – Green, Green Boots	SM PC – Blue, Blue Boots APC – Green, Green Boots
LC Connector	IEC 61754-20	SM PC – Blue, White Boots APC – Green, White Boots	SM PC – Blue, White Boots APC – Green, White Boots

LOW LOSS
0.15dB
INSERTION LOSS

HIGHER FIRE
PERFORMANCE
JACKET AVAILABLE

Technical information
For Central Office / Telcom

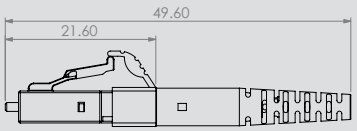
OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

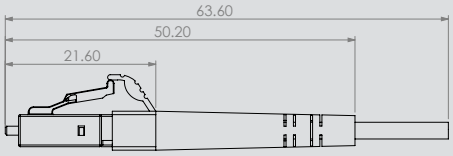
Cable Specification

Characteristics	
Cable Material	LSZH*
Strength Member	Aramid
Crush (N)	1000
Operating Temperature (°C)	-20 to 60
Fire Specification	IEC 60332-1
Secondary Buffer Diameter (2.0mm) µm	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	600±50
Minimum Bend Radius (mm)	10D (installed) - 20D (loaded)

*Also available in PVC

Technical Specification





Part Number Generator

Connector End A		Connector End B		Cable type		Cable Configuration		Cable Colour		Cable Diameter		Cable Length		
LC	LC	LC	LC	OS2	09	Duplex LSZH	D	Yellow	YE	1.6mm	1.6MM	1m	1	TC/Z
LCAPC	LCA	LCAPC	LCA	G.657.A1	7A1	Simplex LSZH	S			1.8mm	1.8MM	2m	2	
LC Short Boot	LCS	LC Short Boot	LCS	G657.A2	7A2	Duplex LSZH-3	DL			2.0mm	2.0MM	3m	3	
SC	SC	SC	SC			Simplex LSZH-3	SL					5m	5	
SC APC	SCA	SC APC	SCA									10m	10	
												XX*m	XX	

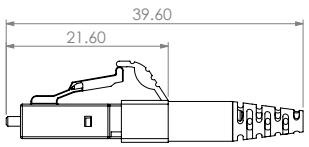
Example Part Number: LCS LC 7A1 D YE 1.6MM 1 /Z

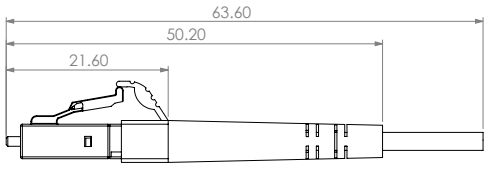
*Other lengths available

LCSLC7A1DYE1.6MM1TC/Z will configure a 1 metre LC duplex Patch cord made with 1.6mm zip cable G.657.A1

OS1/OS2 G657
LC short Boot Patch Cords
For Premise / Data Environments

LC patch cords supplied with a short boot are ideal for high density applications with tight space requirements. The connector length from tip to boot assembly is only 40mm, compared to 66mm for standard LC – 40% shorter!
Our patch cords have the added benefit of being supplied with reduced bend sensitivity ITU-T G657 singlemode optical fibre which exhibit much lower optical power loss under bend conditions while remaining compatible with conventional cabling.
Our LC Short boot patch cords are designed to meet IEC, EN and Telcordia GR 326 requirements.





Features

- Short length – allows up to 40 mm space between rack and closed cabinet door – 25mm extra!
- Enhanced flexibility of the boot maintains minimum bend radius
- No heatshrink system – improved cable flexibility
- Cable dimensions of 2.0mm, 1.8mm, 1.6mm for optimising air flow space

Applications

- Central Office
- Passive Optical Networks (PON)
- FTTx
- CATV / VIDEO
- WDM / DWDM
- Data centres
- LAN and WAN

Connector Specification

Optical Performance	Singlemode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master	0.18 dB	IEC 61300-3-4
Ave/Random	0.18 dB	IEC 61300-3-34
Return Loss UPC/APC	55/65 dB	IEC 61300-3-6

Cable Specification

Characteristics	Simplex/Duplex
Cable Material*	LSZH
Strength Member	Aramid
Crush (N)	1000
Operating Temperature (˚C)	-20 to 60
Fire Specification	IEC 60332-1

* PVC (RISER) also available

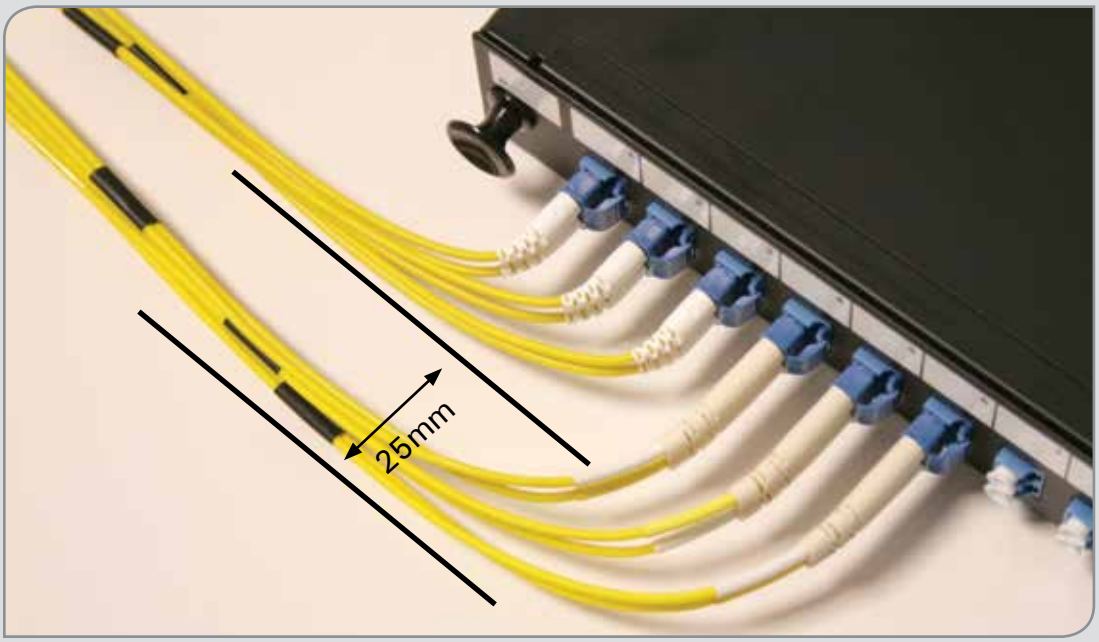
HIGHER FIRE PERFORMANCE JACKET AVAILABLE

Fibre Specification

Characteristics	
Attenuation (dB) / km	0.38 @ 1310nm / 0.25 @ 1550nm
Chromatic Dispersion (ps/nm x km)	3.0 @ 1310nm / 18.0 @ 1550nm

Technical information
For Premise / Data Environments

OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2



Part Number Generator

							/Z
Connector End A	**Connector End B**	**Cable type**	**Cable Configuration**	**Cable Colour**	**Cable Diameter**	**Cable Length**	
LC Short Boot – LCS	LC Short Boot – LCS	G.657.A1 – 7A1	Duplex LSZH – D	Yellow – YE	1.6mm – 1.6MM	1m – 1	
LC/APC Short Boot – LCAS	LC/APC Short Boot – LCAS	G657.A2 – 7A2	Simplex LSZH – S		1.8mm – 1.8MM	2m – 2	
	LC – LC	G657.B3 – 7B3	Duplex LSZH-3 – DL		2.0mm – 2.0MM	3m – 3	
	LC/APC – LCA		Simplex LSZH-3 – SL			5m – 5	
	FC – FC		Flat Duplex – FD			10m – 10	
	FC/APC – FCA					XX*m – XX	
	SC – SC						
	SC/APC – SCA						
	ST – ST						

Example Part Number: LCS LC 7A1 D YE 1.6MM 1 /Z

*Other lengths available

LCSLC7A1DYE1.6MM1/Z will configure a 1 metre LC duplex Patch cord made with 1.6mm zip cable G.657.A1 RBS with short boot at one end

9/125 Telcom Pigtails
For Central Office / Telcom

Telcom pigtails are used in telcom, datacom networks and also used for high speed metropolitan and access network. Our singlemode pigtail buffer conforms to IEC, EIA TIA and Telecordia standards. They are terminated with our standard connector which gives optimum optical performance.

Features

- SC, LC, ST, FC and E2000 connectors
- UPC and APC interface
- Low smoke zero halogen (LSZH) secondary buffer
- 900µm tight buffer or easy strip
- ITU G.652.D, TIA/EIA 492CAAB
- Bend insensitive ITU G.657.A1 or ITU G.657.A2
- Different connector performance range for specific application
- Available in standard white colour buffer and also in standard 12 colours as per IEC 60304
- Available in standard and blister packing

Applications

- Telcom and datacom application
- Patch panels, wall boxes, ODFs and splice cassettes
- Easy strip pigtails for on site installation
- Supports high speed multi channel video, data and voice services in
- metropolitan and access networks
- ATM, SONET and WDM

Connector Specification

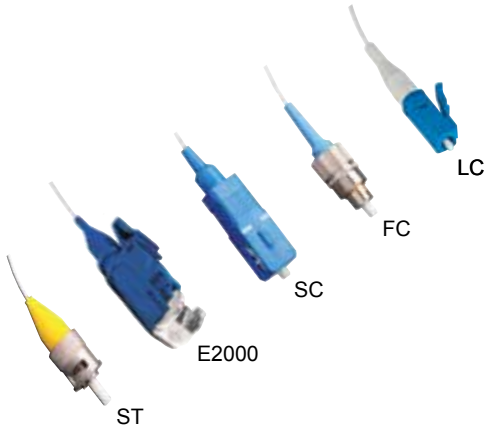
Optical Performance	Singlemode	Conformance
IL Max/Master (Acceptance)	0.15 dB	IEC 61300-3-4
Ave/Master*	0.12 dB	IEC 61300-3-4
Ave/Random*	0.12 dB	IEC 61300-3-34
Return Loss	55/65 dB	IEC 61300-3-6

Fibre Specification

Characteristics	
Attenuation (dB) / km	0.38@1310nm / 0.25@1550nm
Chromatic Dispersion (ps/nm x km)	3.0@1310nm / 18.0@1550nm
Polarization Mode Dispersion (ps/√km)	≤ 0.2

Cable Specification

Characteristics	Units	Simplex
Crush	N/100mm	500
Operating Temperature	˚C	-20 to 60
Nominal buffer Diameter	µm	900+50
Max Tensile Load	N	6



Bag Packed

Blister Packed

Technical information
For Central Office / Telcom

Part Number Generator

		B			/Z
Connector	**Mode**		**Length**	**Cable Construction and Packaging Style**	

Connector		Mode		Length		Cable Construction and Packaging Style	
SC	SC	OS1/2	09	1 Mtr	1	Tight Buffer	Leave Blank
SCA	SCA	G.657.A1	7A1	2 Mtr	2	Tight Buffer Pack of 12	12/1B
LC	LC	G.657.A2	7A2			Tight Buffer Blister pack of 12	12BP
LCA	LCA					Easy Strip	EASY
FC	FC					Easy Strip pack of 12	E-12/1B
FCA	FCA					Easy Strip Blister pack of 12	E-12BP
ST	ST						
E2000	E2						
E2000A	E2A						

Example Part Number: LC 09 B 1 TC/Z

LC09B1TC/Z will configure a 1 metre
LC OS1/2 tight buffered pigtail

See our *Fibre Optic Connectors and Adaptors* catalogue for our complete range

Up to date information is also available at www.optronicsnet.com

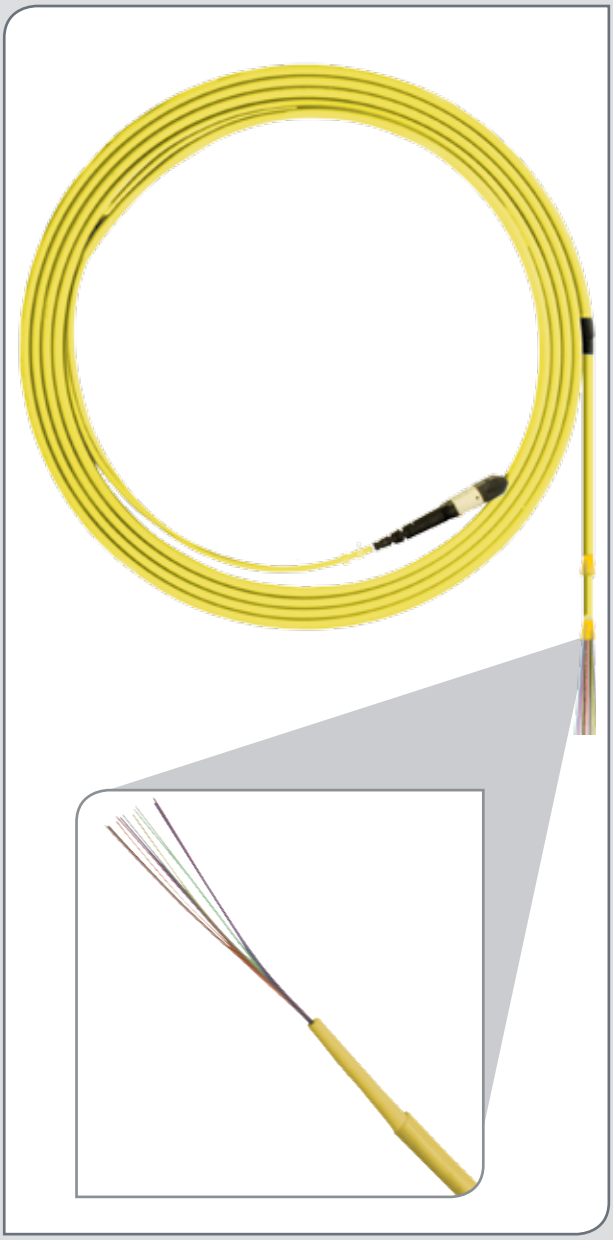
MTP® Ruggedised Pigtail
For Central Office / Telcom

Our MTP® ruggedised pigtail enables rapid deployment of a high density backbone / horizontal cabling, reduceing installation time and cost.

The small footprint of the MTP® interface simplifies and reduces the amount of front patch panel adaptor space compared to traditional discrete connectors. The ruggedised 5/3mm construction allows for longer pigtail lengths enabling splice management to be located outside the patch panel racks.

These MTP® pigtail assemblies feature colour coded fibres for easy splice identification.

The MTP® interface is compatible with next generation networks and parallel optics protocols, making any network utilising this product future proof.



Features

- Multifibre MTP® connector interface
- Fibres are colour coded as per IEC 60304 MTP® interface
- OS1/2 (OM1, OM2, OM3 and OM4 fibre grades available)
- Ruggedised 5/3mm Microcable pigtail construction with 250µm fibres in 3mm tube
- Low smoke zero halogen LSZH, Plenum OFNP, Riser OFNR buffer
- Factory terminated and tested

Benefits

- MTP® interface reduces front panel adaptor space
- Increased speed of installation
- Ruggedised pigtails allow for splicing to be done remotely away from the equipment zone
- Next generation networks proof

Applications

- Telcom and datacom application
- Patch panels, wall boxes, ODFs and splice cassettes
- Supports high speed multi channel video, data and voice services in metropolitan and access networks
- ATM, SONET and WDM, ETHERNET, FIBRE CHANNEL

Standards Compliance

- TIA/EIA-568-C.3 and ISO/IEC 11801
- IEC-61754-7 & EIA/TIA-604-5
- IEC 60332
- Compliant to Directive 2002/95/EC (RoHS) and REACH SvHC
- IEC-60793

Cable Performance

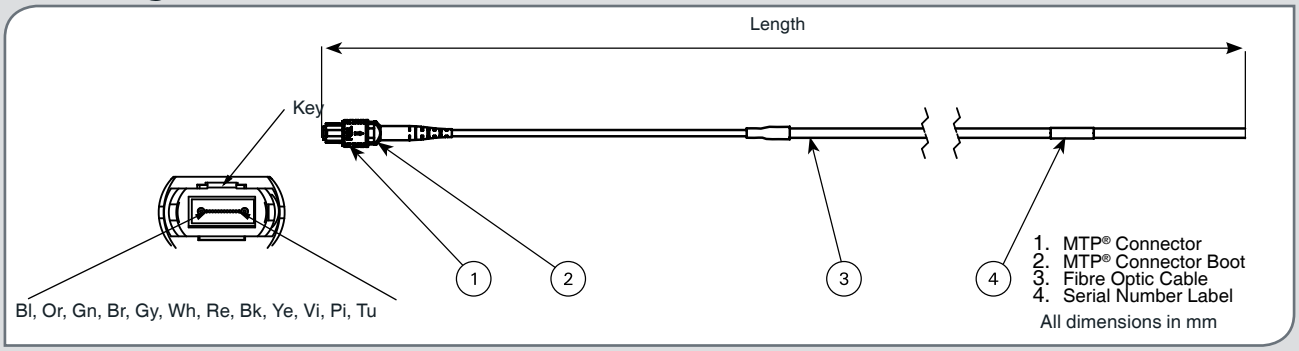
Fibre Type (ISO/IEC 11801)	OS1/OS2
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)
	≤ 0.25 Max (1300nm)
	≤ 0.34 Typ (1550nm)
	≤ 0.19 typ (1550nm)
Minimum Bandwidth: Overfilled Launch [Mhz-km]	NA
Minimum Bandwidth: Laser Effective Modal Bandwidth [Mhz-km]	NA

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1

Connector Performance - MTP

IL MAX Premium	Return Loss	IL MAX	Return Loss
MTP® Elite (SM)	0.18 dB	0.25 dB	>60dB
MTP® (SM)	0.25 dB	0.75 dB	>60dB
LC, SC (SM)	0.18dB	0.25dB	>55/65dB*
LC, SC Premium (SM)	0.12dB	0.15dB	>55/65dB*

Drawings



Part Number Generator

		MC			/Z

Connector Type		Fibre type		Pigtail length (m)	Jacket Type	
MTP® Standard Male	MTPM	OS1/OS2 G652D	09	1	LSZH standard	Leave Blank
MTP® Elite Male	MTPEM	G657A1	7A1	2	OFNR	RI
				3	OFNP	PL
				5		

NB: coloured splice protectors are available upon request

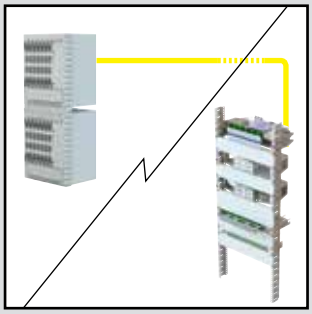
Example Part Number: MTPM 09 MC 3 /Z

This part number will configure a 3 metre singlemode OS1/2 G652D MTP® ruggedised pigtail with a standard MTP® male connector

On-site MTP® splicing system

Flexible on site termination

Long ruggedised MTP® pigtail



Splice management outside equipment zone

Reduce size of patching interface

Cost effective compact system size

No dedicated site survey required

Fast, economic installation

Attenuated Patch Cord
For Central Office / Telcom

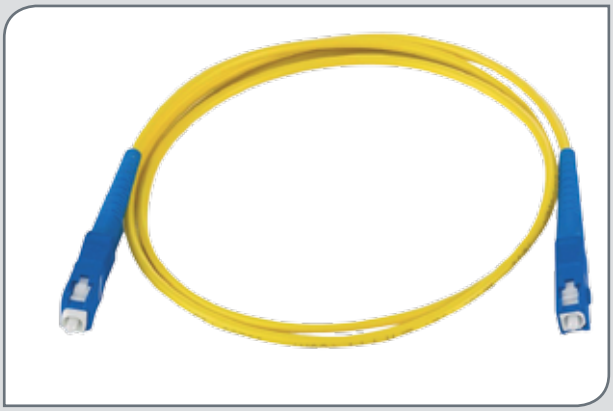
Description

Our high performance attenuated patch cords are used to attenuate the optical signal in a link. They can be installed in place of conventional patch cords fixed attenuator combination to provide a constant level of attenuation with a return loss of >50 dB.

It is a compact, multipurpose passive device designed to operate at the 1310 and 1550nm wavelengths.

They can be provided with various connector styles LC, SC, ST, MU and FC to meet customer requirements.

The cable and connectors meet all relevant standards.



Features & Benefits

- Provides the functions of attenuator and cable assembly simultaneously
- Low Back Reflection
- 100% Insertion Loss Testing
- Connector varieties available
- Conforms to the requirements of EIA/TIA standards

Applications

- Telecommunication Networks
- CATV
- LAN and WAN
- Attenuation values available: 01= 1dB, 02= 2dB, 03= 3dB, 04= 4dB, 05= 5dB 06= 6dB, 07= 7dB, 08= 8dB, 09= 9dB, 10= 10dB 15= 15dB, 20= 20dB

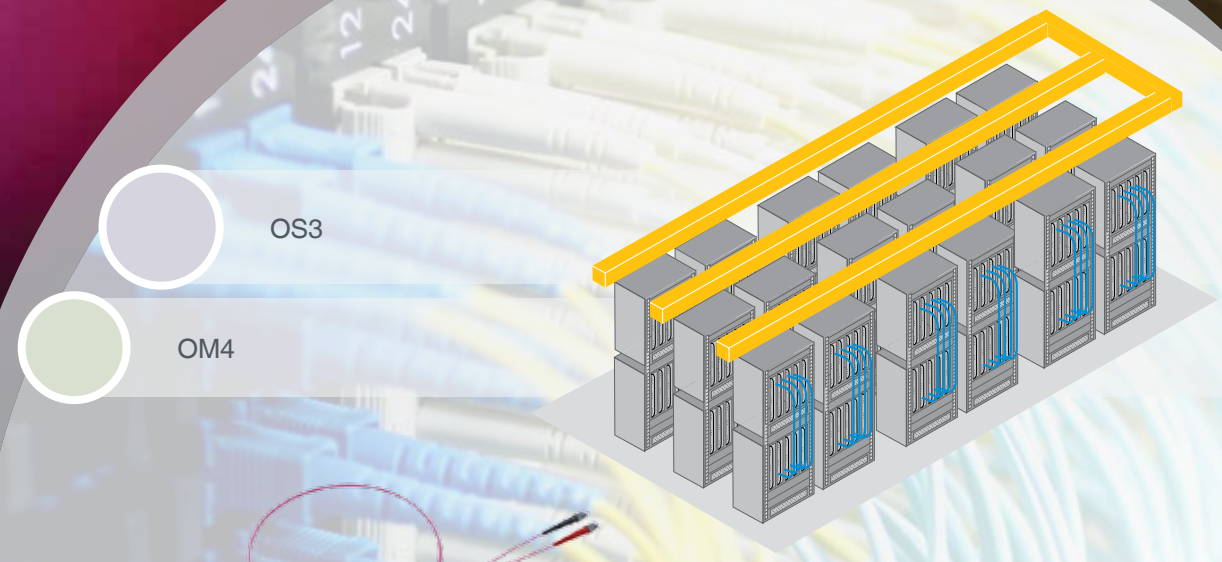
Technical Specification

Description	
Available Attenuation	1.0 to 30 dB with 1dB increments
Attenuation Tolerance	1-10 dB : ± 0.5 dB; For >10 dB : ± 10% of nominal value
Back Reflection	>50 dB(UPC) >60dB (APC)
Operating Wavelength	1310 and 1550nm
Connectorization	LC, SC, FC, ST & MU
Length	1m, 2m Other lengths available on request
Fibre type	Singlemode

Also available	
LC Attenuator	
ST Attenuator	
SC Attenuator	
FC Attenuator	

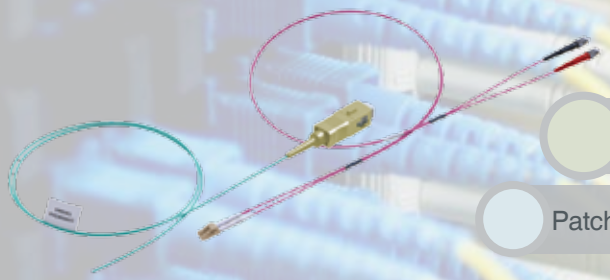
Data Centres

Data Centre Patch Cords	40
OM3/OM4 RBS LC short Boot Patch Cords	42
mSFP Mini LC Patch Cords	44
Uniboot Patch Cords	46
MTP® Ruggedised Pigtail	48



OS3

OM4



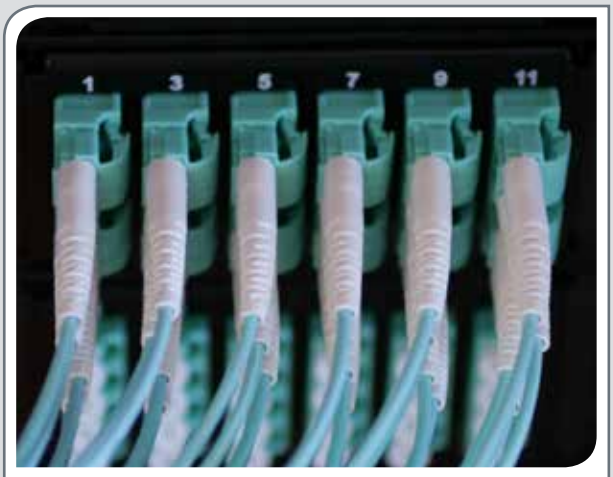
Pigtails

Patch Cords

Data Centre Patch Cords
For Data Centres

Description

Our data centre patch cords are designed for low loss data centre applications. They provide flexible interconnection to active equipment, passive optical devices and cross-connects.
Our patch cords are terminated with premium grade zirconia ferrule connectors which help assure high transmission quality and low optical power loss.



Features / Benefits

- Enhanced optical performance to meet tight data centre power budgets
- New flexible boot allows connection in compact spaces
- Standard LC and SC connector types
- Standard and Bend Insensitive OM3, OM4 and OS2 Fibre types
- Available in standard and custom lengths
- IEC, EIA/TIA and Telecordia compliant
- RoHS, REACH and SvHC compliant

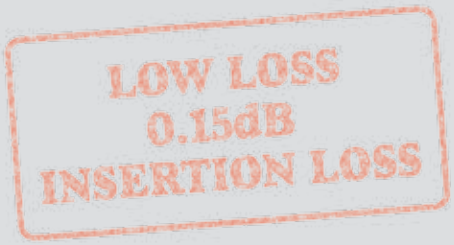
Applications

- Data Centres
- High Bandwidth Ethernet and Fibre Channel
- Storage Area Networks (SANs)
- Any critical network

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.15 dB	IEC 61300-3-4
Max IL/Random	0.25 dB	IEC 61300-3-34
Ave/Master	0.08 dB	IEC 61300-3-4
Ave/Random	0.10 dB	IEC 61300-3-34
Return Loss	>28dB	IEC 61300-3-6

Mechanical Properties	Value	Conformance
Mechanical endurance	500 matings	IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude	IEC 61300-2-1
Drop	5 drops at 1m	IEC 61300-2-12
Cable retention	50N	IEC 61300-2-4
Cable torsion	1.5kg-2.5kg for 2mm-3mm cable diameter	IEC 61300-2-5



Connector Type	Conformance	Singlemode	Multimode	Singlemode Duplex	Multimode Duplex
SC Connector	IEC 61754-4	SM PC – Blue, Blue Boots APC – Green, Green Boots	MM PC – Aqua, Aqua Boots	SM PC – Blue, Blue Boots APC – Green, Green Boots	MM PC – Aqua, Aqua Boots
LC Connector	IEC 61754-20	SM PC – Blue, White Boots APC – Green, White Boots	MM PC – Aqua, White Boots	SM PC – Blue, White Boots APC – Green, White Boots	MM PC – Aqua, White Boots

Technical information
For Data Centres

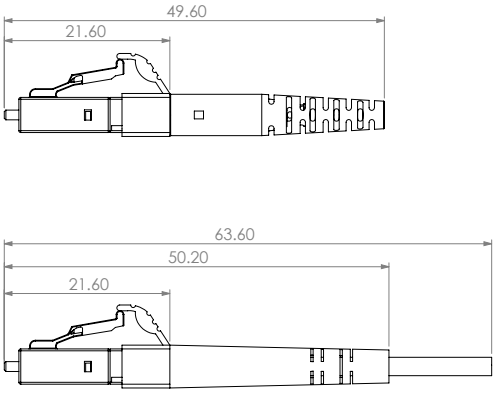
OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

Cable Specification

Characteristics	
Cable Material	LSZH*
Strength Member	Aramid
Crush (N)	1000
Operating Temperature (°C)	-20 to 60
Fire Specification	IEC 60332-1
Secondary Buffer Diameter (2.0mm) µm	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	600±50
Minimum Bend Radius (mm)	10D (installed) - 20D (loaded)

*Also available in PVC

Technical Specification



Part Number Generator

Connector End A		Connector End B		Cable type		Cable Configuration		Cable Colour		Cable Diameter		Cable Length		DC/Z
LC	LC	LC	LC	OS2	09	Duplex LSZH	D	Yellow	YE	1.6mm	1.6MM	1m	1	
LCAPC	LCA	LCAPC	LCA	G.657.A1	7A1	Simplex LSZH	S	Aqua	AQ	1.8mm	1.8MM	2m	2	
LC Short Boot	LCS	LC Short Boot	LCS	G657.A2	7A2	Duplex LSZH-3	DL	Erika Violet	EV	2.0mm	2.0MM	3m	3	
SC	SC	SC	SC	OM3	OM3	Simplex LSZH-3	SL					5m	5	
SC APC	SCA	SC APC	SCA	OM3 RBS	RM3							10m	10	
				OM4	OM4							XX*m	XX	
				OM4 RBS	RM4									

*Other lengths available

Example Part Number: LCS LC RM3 D AQ 1.6MM 5 DC/Z

LCSLCRM3DAQ1.6MM5DC/Z will configure a 5 metre LC duplex Patch cord made with 1.6mm zip cable OM3 RBS with short boot at one end

Patch cord cables are available with alternative jacket materials including PVC, UL listed riser or plenum and polyurethane.

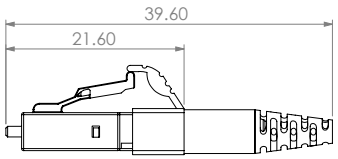
HIGHER FIRE PERFORMANCE JACKET AVAILABLE

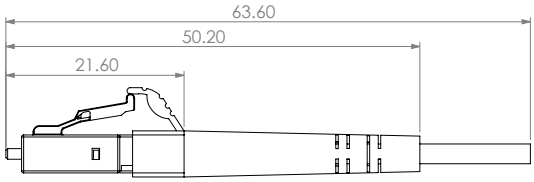
OM3/OM4 RBS
LC short Boot Patch Cords
For Data Centres

Our LC patch cords are supplied with a short boot and are ideal for high density applications with tight space requirements. The connector length from tip to boot assembly is only 40mm, compared to 66mm for standard LC patch cords with heatshrink, this provides 40% more space.

These patch cords have the added benefit of being supplied with reduced bend sensitivity OM3 or OM4 optical fibre which exhibits much lower optical power loss under bend conditions while remaining compatible with conventional cabling.

Our LC short boot patch cords are designed to meet IEC, EN and Telcordia GR 326 requirements.





Features

- Short length – allows up to 40 mm space between rack and closed cabinet door – 25mm extra!
- Enhanced flexibility of the boot maintains minimum bend radius
- No heatshrink system – improved cable flexibility
- Cable dimensions of 2.0mm, 1.8mm, 1.6mm for optimising air flow space

Applications

- Data centres
- FTTx Multi dwelling unit (MDU)
- LAN and WAN

Connector Specification

Optical Performance	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	IEC 61300-3-4
Ave/Master	0.15 dB	IEC 61300-3-4
Ave/Random	0.20 dB	IEC 61300-3-34
Return Loss	28 dB	IEC 61300-3-6

Cable Specification

Characteristics	Simplex / Duplex
Cable Material*	LSZH
Strength Member	Aramid
Crush (N)	1000
Operating Temperature (˚C)	-20 to 60
Fire Specification	IEC 60332-1

* PVC (RISER) also available

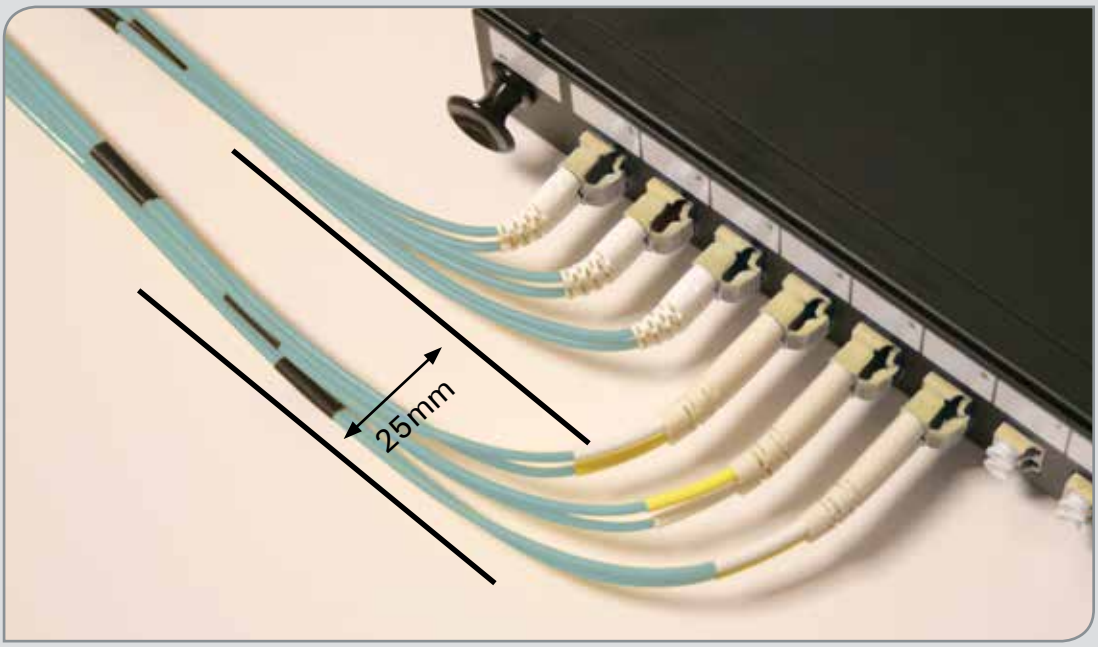
Fibre Specification

Characteristics	
Attenuation (dB) / km	2.8 @ 850nm / 0.8 @ 1300nm
OM3 Bandwidth (MHz x km)	1500 @ 850nm / 500 @ 1300nm / 2000 @ 850nm
OM4 Bandwidth (MHz x km)	3500 @ 850nm / 500 @ 1300nm / 4700 @ 850nm

HIGHER FIRE PERFORMANCE JACKET AVAILABLE

Technical information
For Data Centres

OM3 50/125 OM4 50/125



Part Number Generator

Connector End A		Connector End B		Cable type		Cable Configuration		Cable Colour		Cable Diameter		Cable Length		/Z
LC Short Boot	LCS	LC Short Boot	LCS	OM3 RBS	RM3	Duplex LSZH	D	Aqua	AQ	1.6mm	1.6MM	1m	1	
		LC	LC	OM4 RBS	RM4	Simplex LSZH	S	Erika Violet	EV	1.8mm	1.8MM	2m	2	
		FC	FC			Duplex LSZH-3	DL			2.0mm	2.0MM	3m	3	
		SC	SC			Simplex LSZH-3	SL					5m	5	
		ST	ST			Flat Duplex	FD					10m	10	
												XX*m	XX	

Example Part Number: LCS LC RM3 D AQ 2.0MM 5 /Z

*Other lengths available

LCSLCRM3DAQ2.0MM5/Z will configure a 5 metre LC LSZH duplex patch cord made with 2mm zip cable OM3 RBS with short boot at one end

Patch cord cables are available with alternative jacket materials including PVC, UL listed riser or plenum and polyurethane.

mSFP Mini LC Patch Cords
For Data Centres

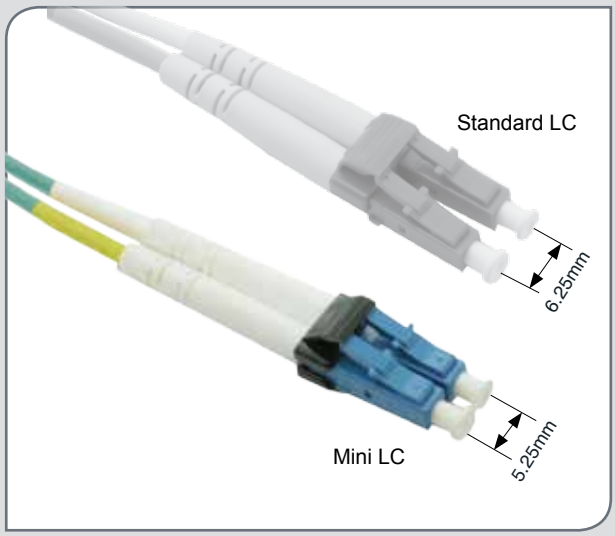
For use with

64-port 8Gb SAN Director Fibre Channel Blades

Description

Our mini-LC patch cords are designed to provide flexible interconnection between specialist high density equipment and patch panels, particularly for use in Storage Area Networks (SAN).

They are designed to fit mSFP LC transceivers and have a pitch of 5.25mm instead of 6.25mm, allowing up to 64 channels in a 1U blade.



Features / Benefits

- Conform to IEC, EIA-TIA, and Telcordia performance requirements
- Available in different fibre types
- Available with LC and SC connectors
- Available in standard and custom lengths
- RoHS, REACH and SvHC compliant

Applications

- Storage Area Networks
- Brocade: FC8-64 blades used in DCX and DCX 8150 family SAN Backbones
- IBM: FC#3864 blades used in SAN768B and SAN384B Backbones
- HP: 64-port 8Gb Fibre Channel Blades used in SN8000B SAN Director
- Data centres

Compatible with:

Connector Specification

Optical Performance	Singlemode	Multimode	Conformance
IL Max/Master (Acceptance)	0.25 dB	0.25 dB	IEC 61300-3-4
Ave/Master	0.18 dB	0.15 dB	IEC 61300-3-4
Ave/Random	0.18 dB	0.20 dB	IEC 61300-3-34
Return Loss UPC/APC	50/60 dB		IEC 61300-3-6

Mechanical Properties	Value	Conformance
Mechanical endurance	500 matings	IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude	IEC 61300-2-1
Drop	5 drops at 1m	IEC 61300-2-12
Cable retention	50N	IEC 61300-2-4
Cable torsion	1.5kg-2.5kg for 2mm-3mm cable diameter	IEC 61300-2-5

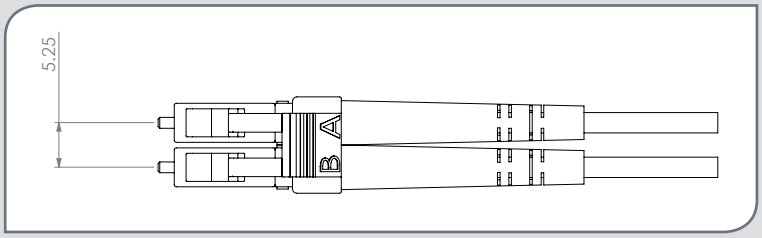
Connector Type	Conformance	Singlemode Duplex	Multimode Duplex
LC Connector	IEC 61754-20	SM PC – Blue, White Boots APC – Green, White Boots	MM PC – Beige, White boots

All trademarks are the property of their respective owners

Technical information
For Data Centres

OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

Technical Drawing



HIGHER FIRE PERFORMANCE JACKET AVAILABLE

Cable Specification

Characteristics	
Cable Material	LSZH*
Strength Member	Aramid
Crush (N)	1000
Operating Temperature (°C)	-20 to 60
Fire Specification	IEC 60332-1
Secondary Buffer Diameter (2.0mm) µm	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	600±50
Minimum Bend Radius (mm)	10D (installed) - 20D (loaded)

*Also available in PVC

Part Number Generator

Connector End A		Connector End B		Cable type		Cable Configuration		Cable Colour		Cable Diameter		Cable Length		
mSFP LC (mini)	LCM	LC	LC	OS2	09	Duplex LSZH	D	Yellow	YE	1.6mm	1.6MM	1m	1	/Z
		LCAPC	LCA	G.657.A1	7A1	Duplex LSZH-3	DL	Aqua	AQ	1.8mm	1.8MM	2m	2	
		LC Short Boot	LCS	G657.A2	7A2			Erika Violet	EV	2.0mm	Leave Blank	3m	3	
				OM3	OM3							5m	5	
				OM3 RBS	RM3							10m	10	
				OM4	OM4							XX*m	XX	
				OM4 RBS	RM4									

*Other lengths available

Example Part Number: LCM LC OM3 D AQ 5 /Z

LCMLCOM3DAQ5/Z will configure a 5 metre mSFP LC to LC duplex patch cord made with aqua OM3 2mm zip cable

Uniboot Patch Cords
For Data Centres

As the networking environment of today becomes increasingly dependent on high speed and high density solutions, effective cable management is a real issue. The key concern is how to manage more cable in a smaller amount of space.

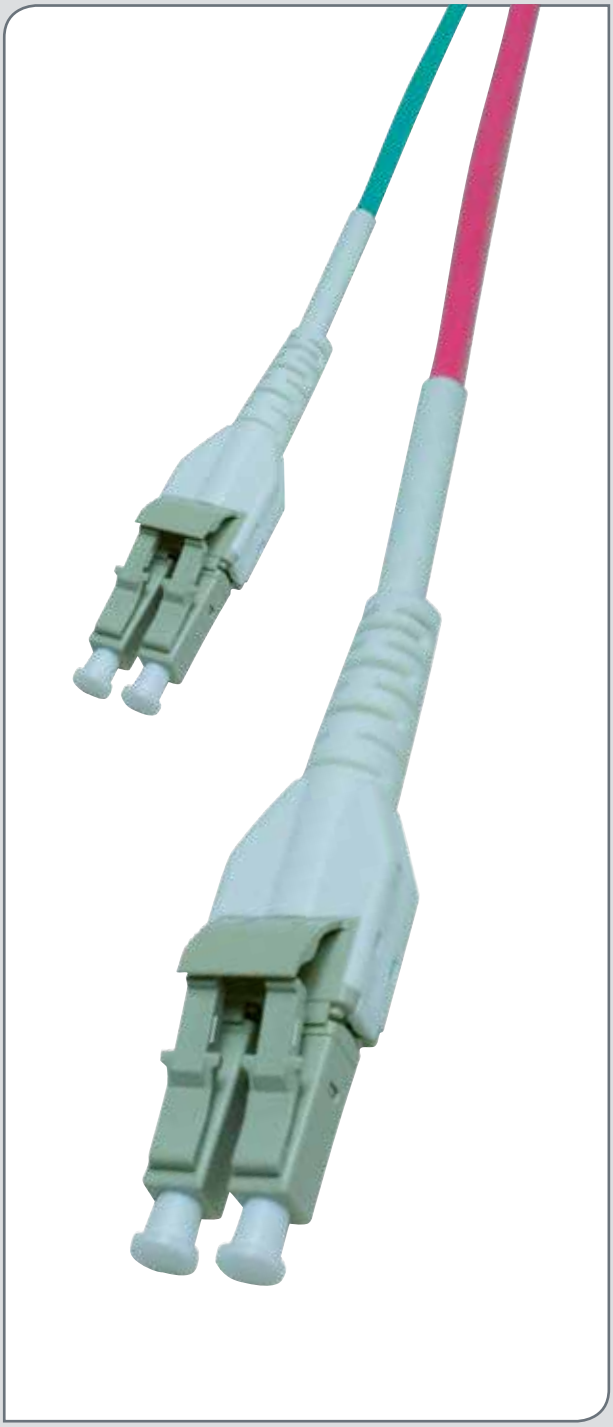
Our uniboot fibre patch cord reduces cable management space by 50% compared to standard patch cords.

The body of the connector also prevents users from altering the polarity of the patch cord. The patch cord utilises a special “round duplex” cable that allows duplex transmission within a single 3mm cable. As a result of these unique features our uniboot patch cord offers improved airflow and visibility of equipment within a high density network environment.

Our uniboot patch cord is available in a wide variety of cable styles including LSZH, Plenum and Riser.

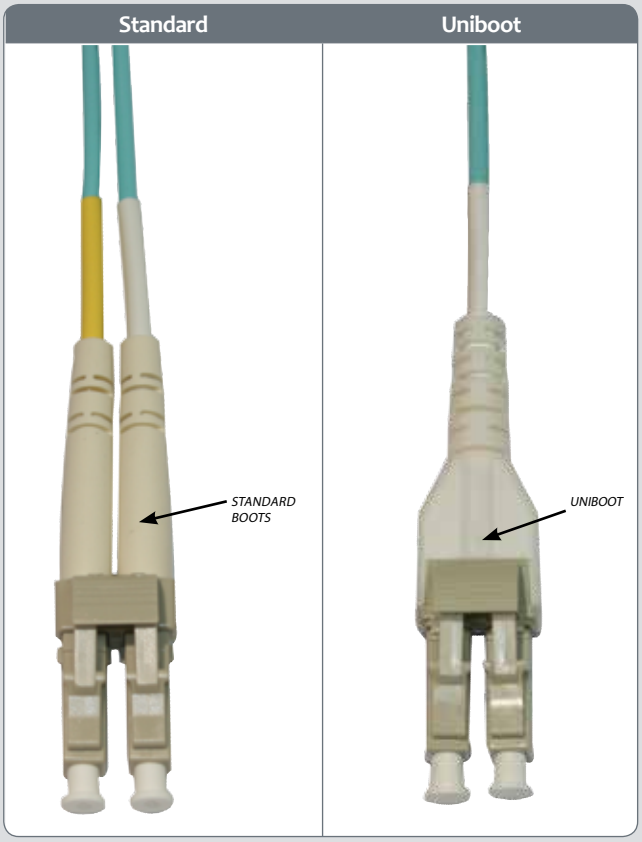
Standards Compliance

TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801



Features & Benefits

- Full duplex in a single 3mm cable
- Available in OM1, OM2, OM3, OM4 and OS1/OS2 cabled fibre types
- Available with LSZH, Plenum and riser rated cable
- Cost effective
- Save 50% of space in cabinets and cable ways
- Protects network polarity



OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

Connector Specification

Optical Performance Multimode	Singlemode	Multimode	Conformance
Insertion loss (Max/Acceptance)	0.25 dB	0.25 dB	IEC 61300-3-4
Insertion loss (97%)	0.40 dB	0.40 dB	IEC 61300-3-34
Ave/Master	0.18 dB	0.15 dB	IEC 61300-3-4
Ave/Random	0.18 dB	0.20 dB	IEC 61300-3-34

Cable Specification

Characteristics	UNITS	Round Duplex
Cable Material		LSZH
Strength Member		Aramid
Crush	N	1000
Operating Temperature	˚C	-20 to 60

Part Number Generator

						UNI/Z

Connector End 1	
LC	LC
SC	SC

Connector End 2	
LC	LC

Cable Type	
OS1/2	09
OM1	62
OM2	50
OM3	OM3
OM4	OM4
G.657.A1	7A1
G.657.A2	7A2

Cable Configuration	
Duplex LSZH	D

Cable Colour	
Yellow	YE
Orange	OR
Aqua	AQ
Purple	PU
Erika Violet*	EV*

*OM4 Only

Length (m)
1
2
3
5
XX

Example Part Number: LC LC OM4 D EV 1 UNI/Z

LCLCOM4DEV1UNI/Z will configure a 1 metre LC to LC OM4 duplex uniboot patch cord in Erika Violet

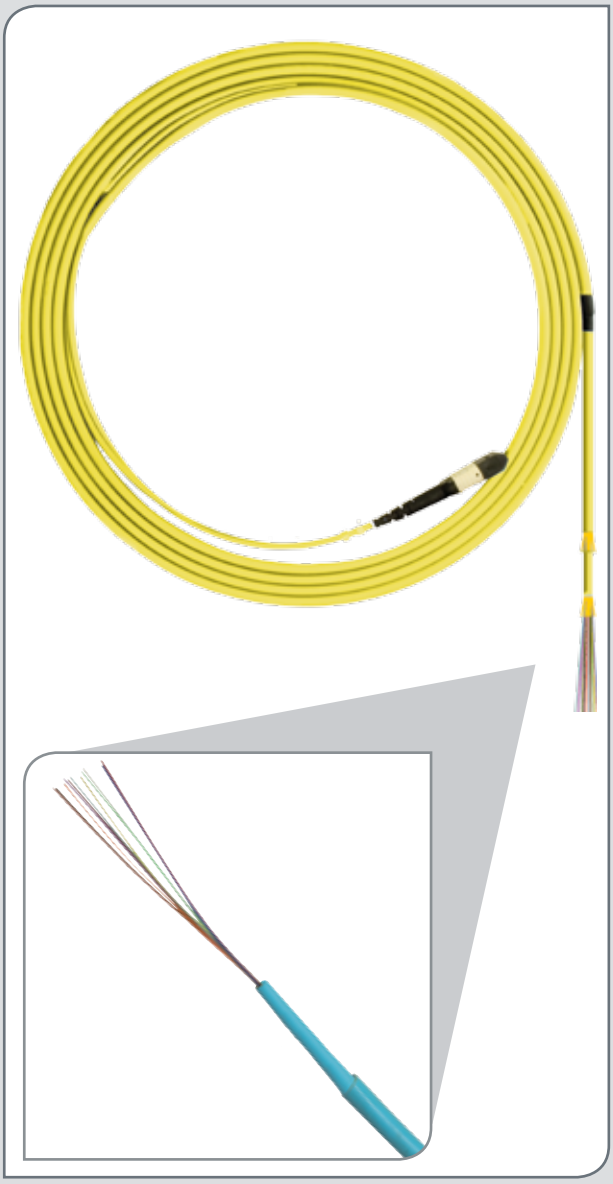
MTP® Ruggedised Pigtail
For Data Centres

Our MTP® ruggedised pigtail enables rapid deployment of a high density backbone / horizontal cabling, reduceing installation time and cost.

The small footprint of the MTP® interface simplifies and reduces the amount of front patch panel adaptor space compared to traditional discrete connectors. The ruggedised 5/3mm construction allows for longer pigtail lengths enabling splice management to be located outside the patch panel racks.

These MTP® pigtail assemblies feature colour coded fibres for easy splice identification.

The MTP® interface is compatible with next generation networks and parallel optics protocols, making any network utilising this product future proof.



Features

- Multifibre MTP® connector interface
- Fibres are colour coded as per IEC 60304 MTP® interface
- OS1/2, OM3, OM4 fibre grades (OM1 and OM2 available)
- Ruggedised 5/3mm Microcable pigtail construction with 250µm fibres in 3mm tube.
- Low smoke zero halogen LSZH, Plenum OFNP, Riser OFNR buffer
- Factory terminated and tested

Benefits

- MTP® interface reduces front panel adaptor space
- Increased speed of installation
- Ruggedised pigtails allow for splicing to be done remotely away from the equipment zone
- Next generation networks proof

Applications

- Telcom and datacom application
- Patch panels, wall boxes, ODFs and splice cassettes
- Supports high speed multi channel video, data and voice services in metropolitan and access networks
- ATM, SONET and WDM, ETHERNET, FIBRE CHANNEL

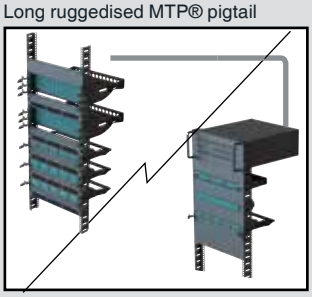
Standards Compliance

- TIA/EIA-568-C.3 and ISO/IEC 11801
- IEC-61754-7 & EIA/TIA-604-5
- IEC 60332
- Compliant to Directive 2002/95/EC (RoHS) and REACH SvHC
- IEC-60793

On-site MTP® splicing system

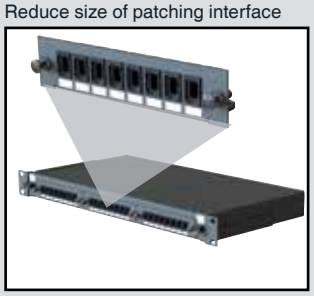
Flexible on site termination

Long ruggedised MTP® pigtail



Splice management outside equipment zone

Reduce size of patching interface



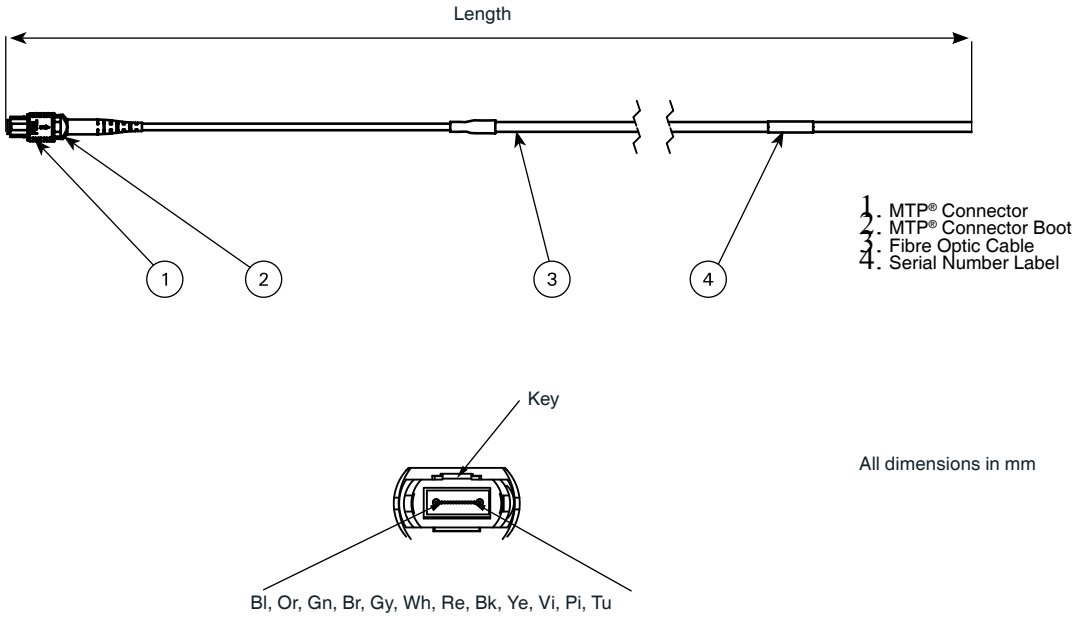
Cost effective compact system size

No dedicated site survey required

Fast, economic installation

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1

Drawings



Part Number Generator

		MC			/Z
Connector Type	Fibre type		Pigtail length (m)	Jacket Type	

Connector Type		Fibre type		Pigtail length (m)	Jacket Type	
MTP® Standard Male	MTPM	OS1/OS2 G652D	09	1	LSZH standard	Leave Blank
MTP® Elite Male	MTPEM	G657A1	7A1	2	OFNR	RI
		OM1	62	3	OFNP	PL
		OM2	50	5		
		OM3	OM3			
		OM4	OM4			

Example Part Number: MTPM 09 MC 3 /Z

This part number will configure a 3 metre singlemode OS1/2 G652D MTP® ruggedised pigtail with a standard MTP® male connector

NB: coloured splice protectors are available upon request

MTP® Ruggedised Pigtail Technical Information
For Data Centres

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1300nm)	≤ 1.5 Max (1300nm)	≤ 1.5 Max (1300nm)	≤ 1.5 Max (1300nm)	≤ 1.5 Max (1300nm)
	≤ 0.34 Typ (1550nm)	≤ 2.9 Typ (850nm)	≤ 2.7 Typ (850nm)	≤ 2.7 Typ (850nm)	≤ 2.7 Typ (850nm)
	≤ 0.19 typ (1550nm)	≤ 1.2 typ (1300nm)	≤ 0.9 typ (1300nm)	≤ 0.9 typ (1300nm)	≤ 0.9 typ (1300nm)
Minimum Bandwidth: Overfilled Launch [Mhz-km]	NA	≥ 200 (850nm)	≥ 500 (850nm)	≥ 1500 (850nm)	≥ 3500 (850nm)
		≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm
Minimum Bandwidth: Laser Effective Modal Bandwidth [Mhz-km]	NA	NA	NA	≥ 2000 (850nm)	≥ 4700 (850nm)

Connector Performance - MTP

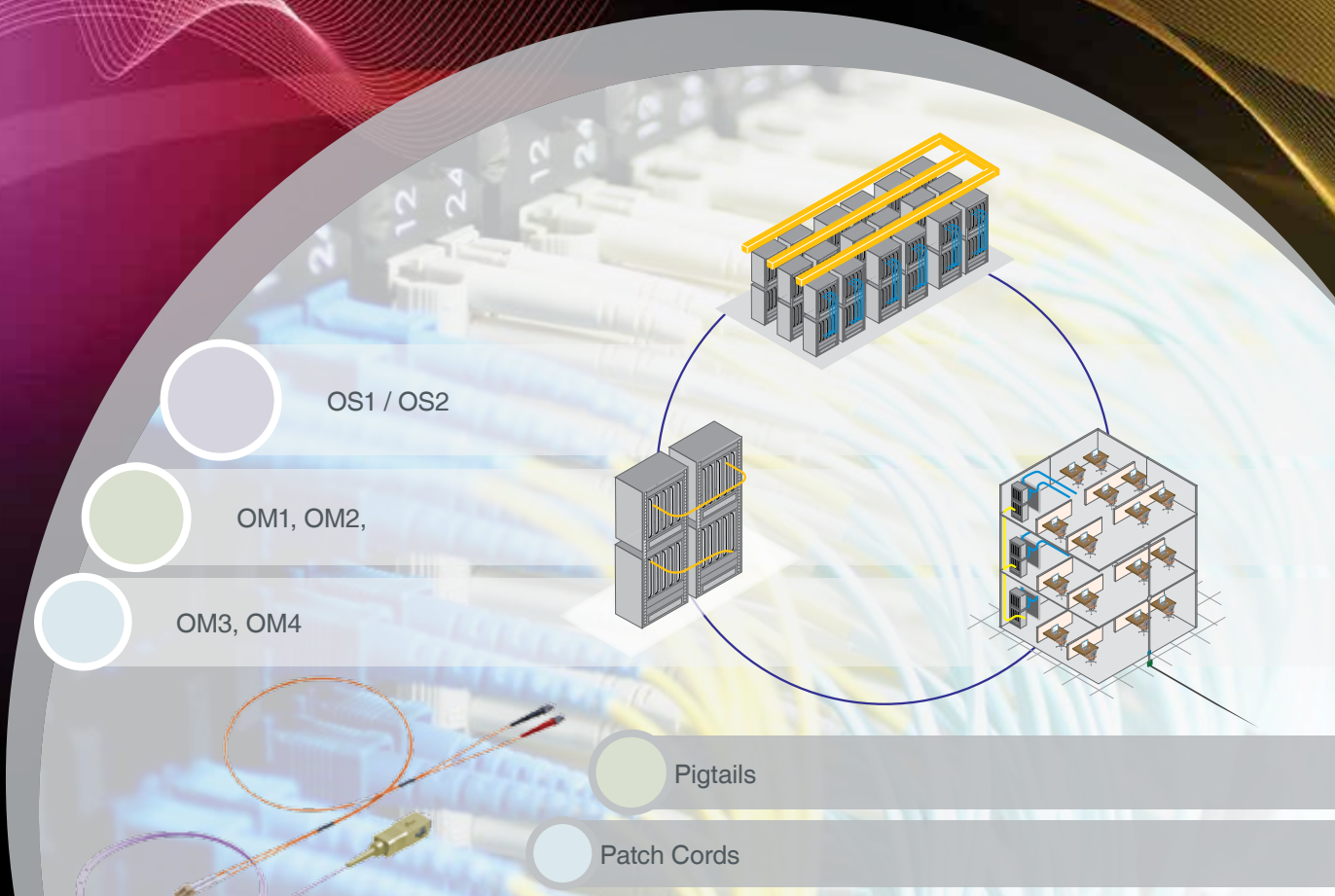
Connector Mating	IL Average Standard	IL MAX Standard	IL Average Premium	IL MAX Premium	Return Loss	IL MAX	Return Loss
MTP® Elite (MM)	0.20 dB	0.35 dB	NA	MTP® Elite (SM)	0.18 dB	0.25 dB	>60dB
MTP® (MM)	0.35 dB	0.60 dB	NA	MTP® (SM)	0.25 dB	0.75 dB	>60dB

See our *Data Centre* catalogue for a complete range of infrastructure products

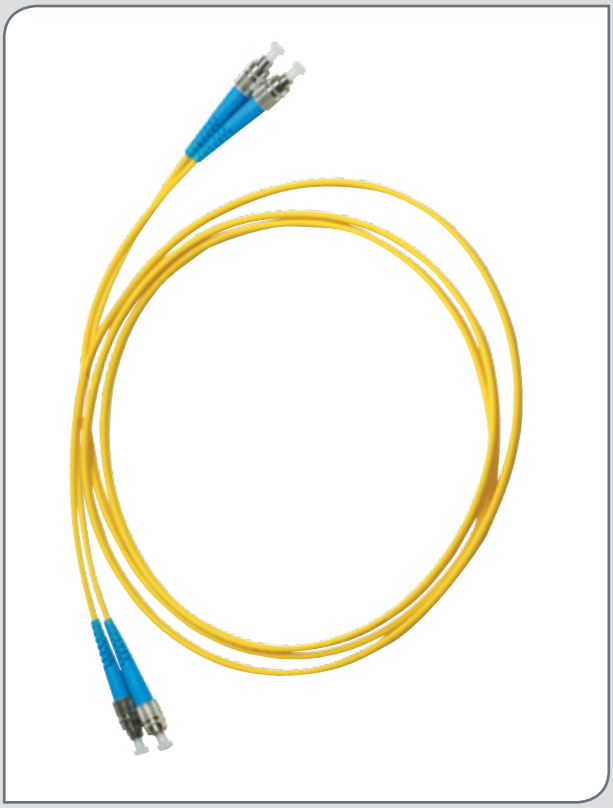
Up to date information is also available at www.optronicsnet.com

Specialist Applications

High Performance Patch Cords 52
Armoured Patch Cords 54
Mode Conditioning Patch Cords 56
Master Test Leads 58



High Performance Patch Cords
For Specialist Applications



Description

High Performance Patch Cords are a range of “best in class” patch cords employing highest grade components, manufacturing processes and test methods they offer excellent performance for demanding telecommunications and data centre applications. Our high performance patch cords are used where low loss budgets are essential and may be considered for splice replacement.

Features / Benefits

- Conform to IEC, EIA-TIA, and Telecordia performance requirements
- Grade A singlemode connector class applied
- Special high accuracy G.652D photonics fibre
- End face geometry result data included
- RoHS, REACH & SvHC compliant

Applications

- Data Centre
- Telecommunication networks
- High bandwidth 40G & 100G networks
- CATV
- LAN and WAN
- FTTx
- Broadband network

Termination Specification

Optical Performance	Singlemode	Conformance
IL MAX/ Master (Acceptance)	0.10 dB	IEC 61300-3-4
MAX IL/Random	0.20 dB	IEC 61300-3-34
Ave/Master*	0.08 dB	IEC 61300-3-4
Ave/Random*	0.08 dB	IEC 61300-3-34
Return Loss	55/70 dB	IEC 61300-3-6
Mechanical Properties	**Crtieria***	**Conformance**
Mechanical endurance	500 matings	IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude	IEC 61300-2-1
Drop	Drop height 1m, 5 drops	IEC 61300-2-12
Cable retention	Magnitude 90 N	IEC 61300-2-4
Cable torsion	1.5kg-2.5 kg for 2mm-3mm cable diameter	IEC 61300-2-5

* The change in attenuation for all the above listed criteria shall be a maximum of 0.10dB

See our Data Centre catalogue for a complete range of infrastructure products

Technical information
For Specialist Applications

OS1/2 9/125 OS1/2 G.657.A1

Cable Specification

Characteristics	Units	Simplex
Cable Material		LSZH
Strength Member		Aramid
Crush	N	1000
Operating Temperature	˚C	-20 to 60
Secondary Buffer Diameter (2.0mm, 2.4mm and 3.0mm)	µm	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	µm	600±50
Colour		SM – Yellow MM – Orange(OM1,OM2) MM – Aqua (OM3, OM4)

Fibre Specification

Characteristics	Units	Singlemode
Cladding Diameter	µm	125±0.3
Core/Cladding Concentricity Error	µm	≤0.3
Cladding Non Circularity	%	≤0.7
Polarization Mode Dispersion (PMD)	Ps/(km)½	≤0.06
Mode Field Diameter (mfd) @ 1310nm	µm	9.2±0.4
Mode Field Diameter (mfd) @ 1550nm	µm	10.4±0.5

Part Number Generator

Connector End A	
FC	FC
FC/APC	FCA
SC	SC
SC/APC	SCA
ST	ST
LC	LC
LC /APC	LCA

Connector End B	
FC	FC
FC/APC	FCA
SC	SC
SC/APC	SCA
ST	ST
LC	LC
LC /APC	LCA

Cable type	
OS1/22	09
G.657.A1	7A1

Cable Configuration	
Duplex LSZH	D
Simplex LSZH	S
Flat Duplex	FD

Cable Colour	
Yellow	YE

Cable Diameter	
1 Mtr	1
2 Mtr	2
3 Mtr	3
5 Mtr	5
10 Mtr	10
XX* Mtr	XX

HP/Z

*Other lengths available

Example Part Number: FC FC 09 D YE 5 HP/Z

FCFC09DYE5HP/Z will configure a 5m FC duplex OS1 high performance patch cord

Armoured Patch Cords
For Specialist Applications

Standards Compliance
TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801

Description

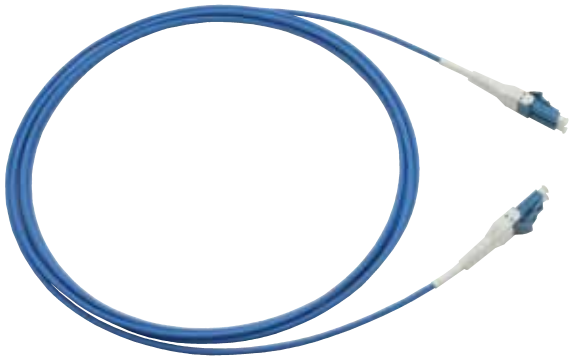
Armoured patch cords are used in customer premises, central offices and in harsh environments. These patch cords provide flexible interconnection to active equipment, passive optical devices and cross-connects. Our armoured patch cords are constructed with an helical stainless steel tape over a buffered fibre surrounded by a layer of aramid and stainless steel mesh with an outer jacket. Our patch cords are terminated with our standard range of connectors, all quality tested to meet our own and international standards.

Features

- SC, LC, ST and FC connectors
- Available in low smoke zero halogen (LSZH) jacket
- Conforms to IEC, EIA-TIA and Telcordia performance requirements
- Available in different fibre types
- Available in standard and custom lengths
- RoHS, REACH and SvHC compliant

Applications

- CATV / VIDEO
- Passive Optical Network PON
- FTTX
- ATM, SONET and WDM
- Military applications



LC-UPC 9/125
Uniboot Patch Cord
Armoured

SC-PC 50/125
Simplex Patch Cord
Armoured

Connector Specification

Optical Performance	Singlemode	Multimode	Conformance
IL Max/Master (Acceptance)	0.25dB	0.25dB	IEC 61300-3-4
Ave/Master*	0.18dB	0.2dB	IEC 61300-3-4
Ave/Random*	0.18dB	-	IEC 61300-3-34
Return Loss Singlemode UPC/APC	50/60 dB	-	IEC 61300-3-6

Fibre Specification

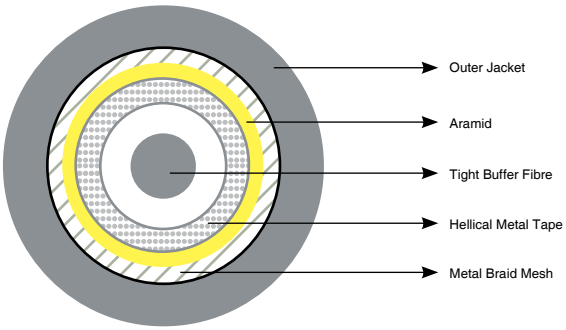
Characteristics	
Attenuation (dB/km) Singlemode	0.38@1310nm / 0.25 @1550nm
Chromatic Dispersion (ps/nm x km) Singlemode	3.0 @ 1310nm / 18.0 @1550nm
Attenuation (dB/km) Multimode	2.8@850nm / 0.8 @1300nm

Cable Specification

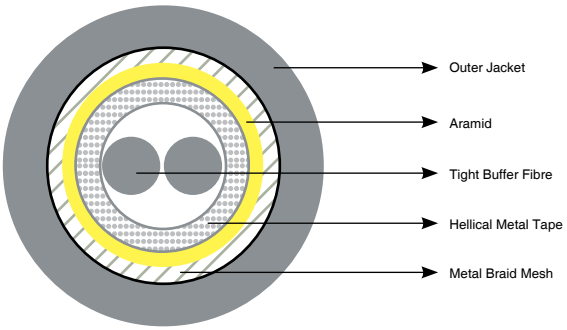
Characteristics	Simplex	Duplex
Cable Material	LSZH	LSZH
Strength Member	Aramid	Aramid
Crush (N) short term	3000	3000
Crush (N) long term	200	200
Operating Temperature (°C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1	IEC 60332-1

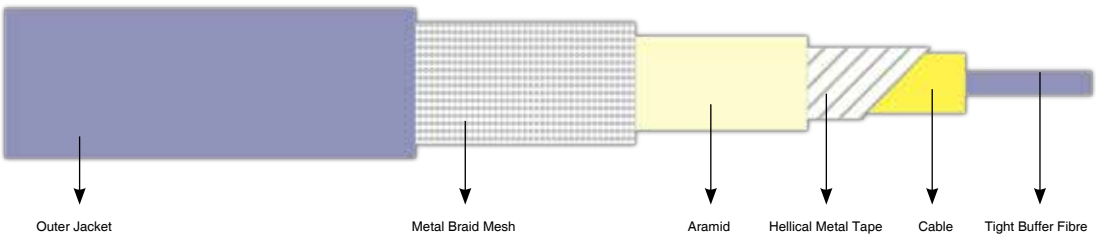
OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS 1/2 9/125

Simplex Patch Cord Armoured



Duplex Patch Cord Armoured





Part Number Generator

Connector End A		Connector End B		Cable type		Cable Configuration		Cable Colour		Cable length (m)	
FC	FC	FC	FC	OS1/ OS2	09	Duplex 3.3mm	D	Blue	BL	XX	
FCAPC	FCA	FCAPC	FCA	OM1	62	Simplex 3mm	S	Grey	GR		
SC	SC	SC	SC	OM2	50			Aqua	AQ		
SCAPC	SCA	SCAPC	SCA	OM3	OM3						
ST	ST	ST	ST	OM4	OM4						
LC	LC	LC	LC								

ARM/Z

Example Part Number: FC FC 09 D BL 10 ARM/Z

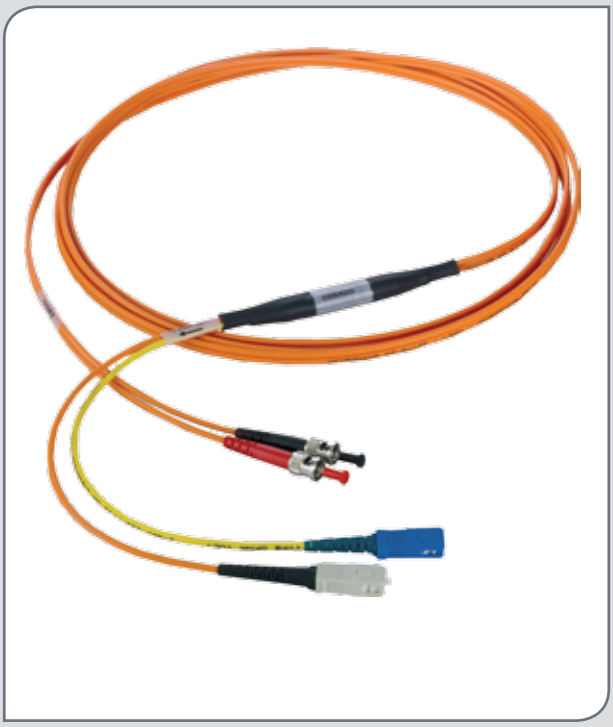
FCFC09DBL10ARM/Z will configure a 10 metre, FC to FC, OS1 duplex, armoured patch cord with a blue jacket

Mode Conditioning Patch Cords
For Specialist Applications

Description

Our Mode Conditioning Patchcords provide an effective launch platform for 1310 nm Laser switches being used in multimode cabling systems.

Mode conditioned patchcords can allow a much higher operational bandwidth by precisely aligning a single mode termination at the laser transmitter and providing an off-centre launch into the multimode fibre core. This is essential for networks using legacy 62.5/125 and 50/125 multimode optical fibre and may be specified for current multimode networks depending upon the system requirements.



Features & Benefits

- Increased transmission bandwidth by as much as 4 times
- Reduced modal noise
- Low insertion loss (< 1dB)
- Easy installation
- Various connector options

Technical Specification

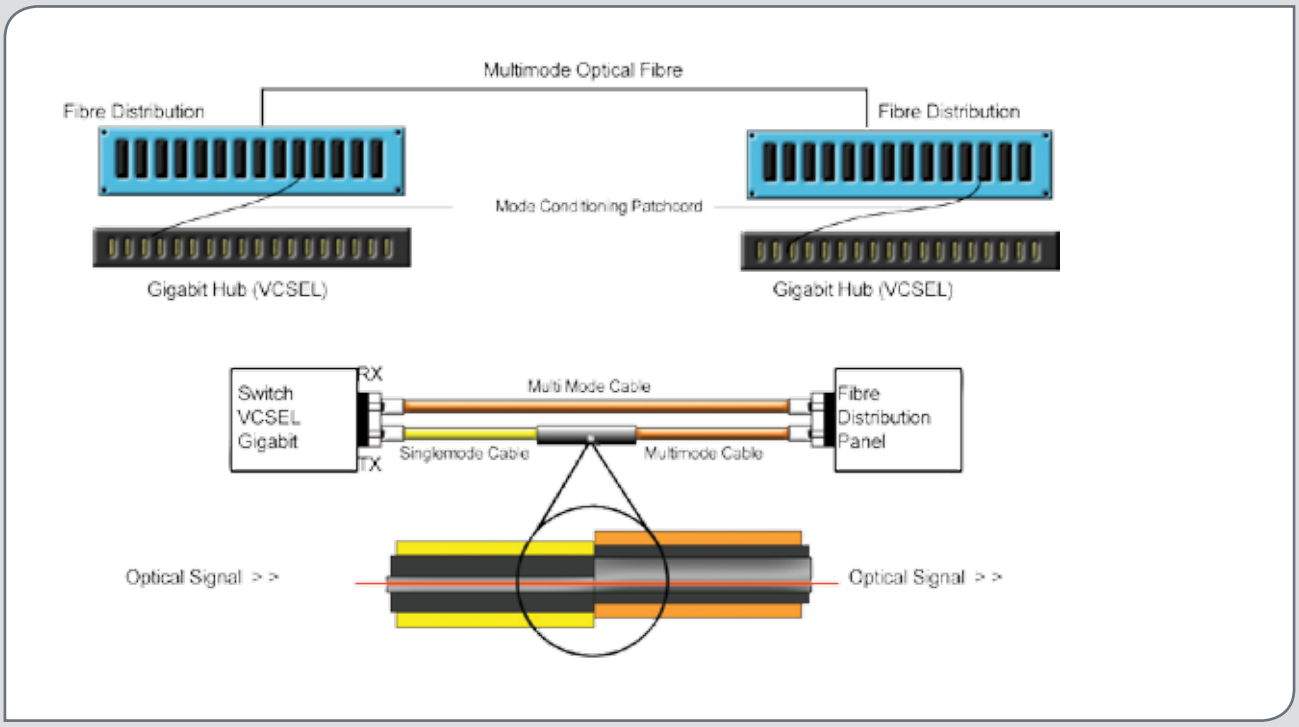
Description	62.5µm MMF	50µm MMF
Operating wavelength	1300nm	
Maximum insertion loss	0.5dB	
Coupled power ratio (CPR)	28 to 40dB	12 to 20dB
Back reflection S/M channel	30dB	
Back reflection M/M channel	20dB	
Connector finish	PC or APC	
Ferrule radius of curvature	10 to 25mm	
Fibre height	-50 to 50nm	
Maximum angular offset	1°	
Sheath colour	Orange (yellow for SM leg)	

Description	
Temperature Cycling	(IEC 61300-2-22) -40 to +75°C, 40 cycles =0.2dB Change
Damp Heat	(IEC 61300-2-19) 60°C at 95% RH, 96 hours =0.2dB Change
Vibration (Mated Pair)	(IEC 61300-2-1) 10-55 Hz, 1.5mm P to P =0.3dB Change
Mating Durability	(IEC 61300-2-2) 1000 mating cycles Clean every 25 < 0.2 dB Change
Operating Temperature	(IEC 61300-2-22) -20°C to + 60°C

Patch cords Specifications	
Connectors available	Types: FC, ST, SC, LC
Product Packaging	Each patch cord is packaged individually and individually identified for traceability, test certification is supplied for each assembly.
Length	2000mm ± 10mm Other lengths available to order

Technical information
For Specialist Applications

OM1 62.5/125 OM2 50/125



Part Number Generator

Connector End A Singlemode		Connector End B		Mode		Gigabit	Cable length (m)	/Z
FC	FC	FC	FC	OM1	62		XX	
SC	SC	SC	SC	OM2	50			
ST	ST	ST	ST					
LC	LC	LC	LC					

Example Part Number: LC ST 62 Gigabit 1 /Z

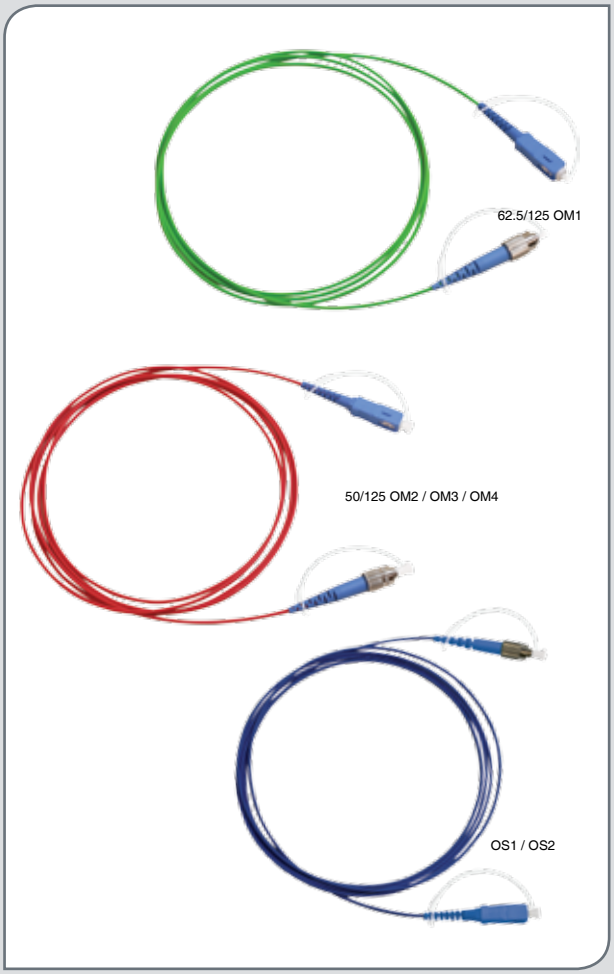
LCST62GIGABIT1/Z will configure a 1 Metre 62.5/125 Gigabit duplex ethernet patch cord (LC is 9/125 OS1/OS2)

Master Test Lead
For Specialist Applications

Description

Our range of Master Test Leads are ideal for high precision and high performance optical test applications. The test leads are terminated with the highest quality physical contact (singlemode) A grade zirconia ferrule connectors.

The connectors are manufactured with precision mounting and polishing techniques which ensure excellent mating characteristics and optimised optical performance.



Features & Benefits

- Optimised geometry of fibre, cable and connector providing reduced installation time and cost through improved accuracy and reliability of measurement
- Conforms to IEC, EIA-TIA, and Telecordia performance requirements
- Supplied with ultra tight geometry ITU-T G.652D (LWP) singlemode and multimode optical fibres
- Available with FC, SC, LC, & ST high performance connector types to suit majority of applications
- Available in standard lengths
- RoHS, REACH & SvHC compliant
- Optional foam lined storage case for added protection
- Tethered dust caps for protection of the connector end face
- End face geometry, concentricity and IL / RL test report provided

Applications

- Optical network testing
- Testing Labs
- Critical telcom and data centre applications
- Instrumentation
- Termination houses

Description

Optical Performance	Singlemode	Multimode	Conformance
IL MAX/ Master (Acceptance)	0.10 dB	0.10 dB	IEC 61300-3-4
MAX IL/Random	0.20 dB	0.25 dB	IEC 61300-3-34
Ave/Master*	0.08 dB	0.08 dB	IEC 61300-3-4
Ave/Random*	0.08 dB	0.10 dB	IEC 61300-3-34
Return Loss	55/65 dB	-	IEC 61300-3-6
Concentricity / Eccentricity Max fibre to ferrule OD finished product	0.8µm Max / 0.4 µm Max	1.5 µm Max / 0.75 µm Max	
Apex Offset	50 µm Max	50 µm Max	
Radius of curvature (ST, SC, FC)	10mm Min / 20mm Max		
Radius of curvature (LC)	5mm Min / 12mm Max		
Mechanical endurance	500 matings		IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude		IEC 61300-2-1
Drop	Drop height 1m, 5 drops		IEC 61300-2-12
Cable retention	2mm = 70N		IEC 61300-2-4
Cable torsion	1.5kg-2.5 kg		IEC 61300-2-5

* The change in attenuation for all the above listed criteria shall be a maximum of 0.10dB **APC available on request

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1|2 9/125 | OS1|2 G.657.A1 | OS1|2 G.657.A2

Cable Specification

Characteristics	Units	Simplex
Cable Material		LSZH
Strength Member		Aramid
Crush	N	1000
Operating Temperature	˚C	-20 to 60
Secondary Buffer Diameter	µm	900±50
Colour	µm	OS1/2 ITU-T G.652D SM – Blue OM1 62.5/125 – Green OM2, OM3, OM4 50/125 – Red

Hard Carry Case

Fibre Specification

Singlemode Characteristics	Units	Singlemode
Cladding Diameter	µm	125±0.4
Core/Cladding Concentricity Error	µm	≤0.3
Cladding Non Circularity	%	≤0.3
Mode Field Diameter (mfd) @ 1310nm	µm	9.0±0.4
Mode Field Diameter (mfd) @ 1550nm	µm	10.1±0.5

Multimode Characteristics	Units	Multimode OM1	Multimode OM2, OM3, OM4
Cladding Diameter	µm	125±1	125±1
Core Diameter	µm	62.5±1	50±1
Core/Cladding Concentricity Error	µm	< 1.0	< 1.0
Cladding Non Circularity	%	< 1.0	< 1.0
Numerical Aperture		0.275±0.015	0.2±0.015

Part Number Generator

			S	2	L			TL/Z
Master Side	Equipment Side	Cable type	Cable Configuration	Cable Diameter	Jacket Type	Colour	Length (m)	Test Lead
FC FC	FC FC	OS1/OS2 9T	Simplex LSZH S	2mm 2	LSZH L	Green OM1 G	1m m	
SC SC	SC SC	OM1 1T				Red OM2/OM3/OM4 R	1.5m 1.5	
LC LC		OM2 OM3 OM4 3T				Blue OS1/2 B	2m 2	
ST ST								

Example Part Number: FC FC 1T S 2 L G 1.5 TL/Z

FCFC1TS2LG1.5TL/Z will configure a 1.5 metre, FC to FC, OM1 simplex, LSZH test lead with a green jacket

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