



Express
madison
Commercial . Industrial . Wholesale

Fibre Optic Cables & Connectivity.

Short Form Catalogue

develop / distribute / support

Who we are.

Madison Express specialises in the distribution of quality cable, connectivity and a range of Madison Group products primarily to the electrical wholesale market.

Alongside our own Garland brand, we represent a range of leading cabling and connectivity product lines including LEONI, R&M and 3M. We provide expert advice and care across all our products and can assist with all aspects of pre and post-sales support.

Our experience supporting viable connectivity solutions across key market sectors is underpinned by over 30 years of insights and customer understanding.



People.

Our team is dedicated to finding the best possible solution for every project.

The team at Madison Express is committed to connecting everyone through our reliable cable and associated products. We work closely with customers, get to know their projects and help find solutions to their connectivity challenges. The support of our customers and suppliers over the years, has allowed us to truly understand our partners' needs and provide professional and friendly service.

Distribution.

Connecting you to world-leading brands.

We efficiently connect customers with leading, state of the art solutions. We have large warehouses, logistics and sales teams in Australia, offering responsive service and fast access to products. Our lower MoQs provide added flexibility and reduced costs.



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Contact Us.

View more of our extensive range:
www.madisonexpress.com.au

Making Networks Easy.



Infrastructure Networks.

Our fibre specialists are on hand to help so you can trust that a fibre optic solution from Madison Express will work the way you need it to. We are ready to support your project with smart service, trusted brands and quality products.



Outdoor Loose Tube Optical Fibre Cables.



Garland Loose Tube (GLT series) optical fibre cables have been designed in Australia by Madison Express to meet Australia's harsh environmental conditions. Based on 2.0mm tubes stranded around a central FRP strength member and available in fibre counts from 6 all the way up to 144 fibres, these cables can be supplied in different jacket finish options thereby allowing you to select the best cable for your application.



Construction Table*									
Part Number	Jacket Finish	Resistance			Sacrificial Jacket	Non Metallic	Expansive Soils	Tensile Strength	OD (mm)
		UV	Termite	Rodent					
GLTfffABxxxBE	PE/NY	Yes	Yes	-	-	Yes	-	2 KN	10.5
GLTfffADxxxBK	CSTA/PE	Yes	-	Best	-	-	-	2 KN	11
GLTfffAGxxxBK	PE/NY/PE	Yes	Yes	-	Yes	Yes	-	2 KN	13
GLTfffAHxxxBK	PE/NY/ CSTA/PE	Yes	Yes	Best	-	-	-	2.5 KN	15.5
GLTfffAixxxBK	PE/NY/GLS/ PE	Yes	Yes	Moderate	-	Yes	-	2.5 KN	15.5
GLTfffAMxxxBK	PE/NY	Yes	Yes	-	-	Yes	Yes	6 KN	15.5
GLTfffASxxxBK	PE/NY/FRP/ PE	Yes	Yes	Better	-	Yes	-	3.5 KN	16

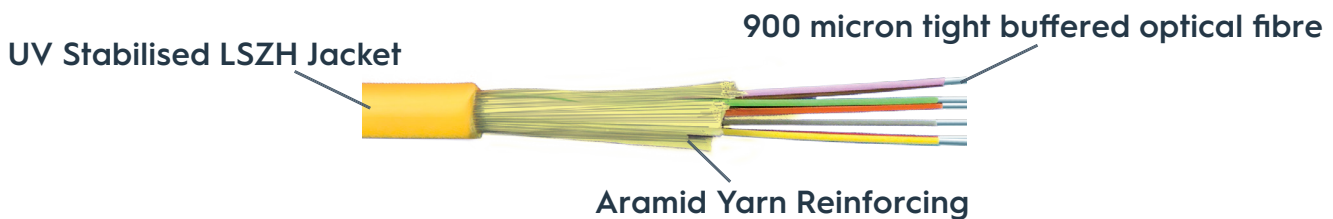
Coding Sheet					
GLT	fff	A	Jacket(s)	xxx	Colour
Garland Loose Tube	Fibre Type	A for 6 to 72 fibres	Refer to Construction Table (above)	Number of fibres eg: 012 for 12	BE for Blue BK for Black
	SM1 for G652.D	B for 144 fibres			
	OM1				
	OM3				
	OM4				

*Refer to Cable Selection Criteria in Technical section at the end of the catalog.

Indoor/Outdoor Tight Buffer Optical Fibre Cables.



The Garland Tight Buffered (GTB-AC series) of optical fibre cables has been designed for use both indoors and in protected outdoor environments. Featuring 900 micron tight buffered optical fibres with aramid strength members and a LSZH jacket, these cables are ideally suited for indoor applications. For short range outdoor applications in protected environments, these cables also feature water blocking and a UV stabilized jacket. Single mode versions feature G657.A1 bend insensitive fibre which is compatible with G652.D fibre and reduces the risk of point losses during installation. Available in core counts up to 24 fibres and with a colour coded outer jacket to make it easier to identify the type of fibre in the cable, they are available in cut-to-order lengths.



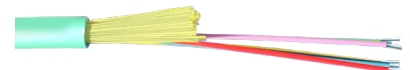
G657.A1 Single mode Yellow Jacket¹

Part Number	No. of Fibres*	Tensile Strength	Cable OD
GTBSM2AC06YE	6	600 N	5.2 mm
GTBOM3AC12YE	12	800 N	6.2 mm
GTBOM3AC24YE	24	1200 N	9.0 mm



OM3 Multimode Aqua Jacket¹

Part Number	No. of Fibres*	Tensile Strength	Cable OD
GTBOM3AC06AQ	6	600 N	5.2 mm
GTBOM3AC12AQ	12	800 N	6.2 mm
GTBOM3AC24AQ	24	1200 N	9.0 mm



OM4 Multimode Violet Jacket¹

Part Number	No. of Fibres*	Tensile Strength	Cable OD
GTBOM4AC06VT	6	600 N	5.2 mm
GTBOM4AC12VT	12	800 N	6.2 mm
GTBOM4AC24VT	24	1200 N	9.0 mm



Mechanical performance

Crush Test	1.0 KN/100 mm short term 0.5 KN/100 mm long term
Bend Radius	20 x OD
Temperature Range	-40°C to +75°C once installed
Water Penetration	No water leaks

*Higher fibre counts available upon request. MOQ and lead time restrictions may apply.

¹Non standard jacket colours available upon request. Lead time and MoQ may apply.

Pigtails.



Optical Fibre Pigtails are typically spliced in a tray and plug into the patch panel Through Adapters.

Optical fibre pigtails are available with ST, SC and LC connectors with tight buffered 900um OM1, OM3 or OM4 Multimode and Single mode fibre. Pigtails are supplied in a standard length of 2m. Other cable, connector types and configurations can be manufactured upon request. Contact Madison Express to discuss your specific optic fibre pigtail requirements or visit our website to use the code builder.

OM1 Multimode Pigtails

Part Number	Description	Length	Qty
GPTSSTOM1-2-12PK / GPTSSTOM1-2-6PK	Pigtail, ST (62.5/125), OM1, set 12 or 6	2.0 m	12 or 6
GPTSSCOM1-2-12PK / GPTSSCOM1-2-6PK	Pigtail, SC (62.5/125), OM1, set 12 or 6	2.0 m	12 or 6
GPTSLCOM1-2-12PK / GPTSLCOM1-2-6PK	Pigtail, LC (62.5/125), OM1, set 12 or 6	2.0 m	12 or 6

OM3 Multimode Pigtails

Part Number	Description	Length	Qty
GPTSSTOM3-2-12PK / GPTSSTOM3-2-6PK	Pigtail, ST (50/125), OM3, set 12 or 6	2.0 m	12 or 6
GPTSSCOM3-2-12PK / GPTSSCOM3-2-6PK	Pigtail, SC (50/125), OM3, set 12 or 6	2.0 m	12 or 6
GPTSLCOM3-2-12PK / GPTSLCOM3-2-6PK	Pigtail, LC (50/125), OM3, set 12 or 6	2.0 m	12 or 6

OM4 Multimode Pigtails

Part Number	Description	Length	Qty
GPTSSTOM4-2-12PK / GPTSSTOM4-2-6PK	Pigtail, ST (50/125), OM4, set 12 or 6	2.0 m	12 or 6
GPTSSCOM4-2-12PK / GPTSSCOM4-2-6PK	Pigtail, SC (50/125), OM4, set 12 or 6	2.0 m	12 or 6
GPTSLCOM4-2-12PK / GPTSLCOM4-2-6PK	Pigtail, LC (50/125), OM4, set 12 or 6	2.0 m	12 or 6

Single Mode Pigtails

Part Number	Description	Length	Qty
GPTSSTOS2-2-12PK / GPTSSTOS2-2-6PK	Pigtail, ST (9/125), OS2, set 12 or 6	2.0 m	12 or 6
GPTSSCOS2-2-12PK / GPTSSCOS2-2-6PK	Pigtail, SC (9/125), OS2, set 12 or 6	2.0 m	12 or 6
GPTSSCAPCOS2-2-12PK / GPTSSCAPCOS2-2-6PK	Pigtail, SCAPC (9/125), OS2, set 12 or 6	2.0 m	12 or 6
GPTSLCOS2-2-12PK / GPTSLCOS2-2-6PK	Pigtail, LC (9/125), OS2, set 12 or 6	2.0 m	12 or 6

Patch Leads.



Madison offers an off-the-shelf range of optical fibre Patch Cords to suit most common applications.

Other connector types, together with specific glass types such as OM2 and G655, may be available upon request. Visit our website for more information or to use the code builder.

The following information assists us in preparing an accurate quote.

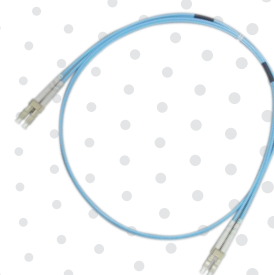
Patch Cords OM1 Available in 1m, 2m, 5m and 10m

Part Number	Description	Colour
GPCDSTSTOM1-**	Duplex ST-ST (62.5/125), OM1	Orange
GPCDSCSCOM1-**	Duplex SC-SC (62.5/125), OM1	Orange
GPCDLCLCOM1-**	Duplex LC-LC (62.5/125), OM1	Orange



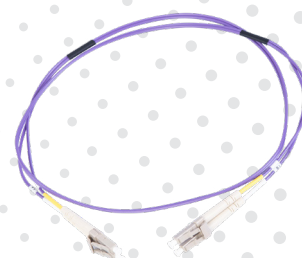
Patch Cords OM3 Available in 1m, 2m, 5m and 10m

Part Number	Description	Colour
GPCDSTSTOM3-**	Duplex, ST-ST (50/125), OM3	Aqua
GPCDSCSCOM3-**	Duplex, SC-SC (50/125), OM3	Aqua
GPCDLCLCOM3-**	Duplex, LC-LC (50/125), OM3	Aqua



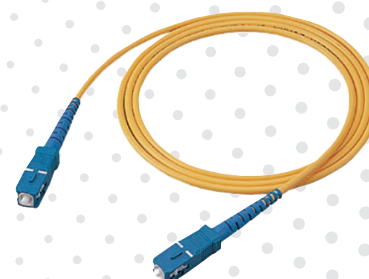
Patch Cords OM4 Available in 1m, 2m, 5m and 10m

Part Number	Description	Colour
GPCDSTSTOM4-**	Duplex, ST-ST (50/125), OM4	Violet
GPCDSCSCOM4-**	Duplex, SC-SC (50/125), OM4	Violet
GPCDLCLCOM4-**	Duplex, LC-LC (50/125), OM4	Violet



Patch Cords SM Available in 1m, 2m, 5m and 10m

Part Number	Description	Colour
GPCSLLCOS2-**	Simplex, LC-LC (9/125), OS2	Yellow
GPCSSCSCOS2-**	Simplex, SC-SC (9/125), OS2	Yellow
GPCSSCAPC5CAPCOS2-**	Simplex, SCAPC-SCAPC (9/125), OS2	Yellow
GPCDLCLCOS2-**	Duplex, LC-LC (9/125), OS2	Yellow
GPCDSCSLOS2-**	Duplex, SC-SC (9/125), OS2	Yellow
GPCDSCAPCSCAPLOS2-**	Duplex, SCAPC-SCAPC (9/125), OS2	Yellow



** Insert length (01, 02, 05 or 10)

Note: Other lengths and configurations available on request.

Fibre Trays.



Fibre Cable Protection and Management.

Madison Express provides industry-leading fibre cable protection and management solutions. The trays utilise an internal splicing system that creates a compact, high density solution, ensuring protection of bend radius and optimum management and protection of the fibre entering and exiting the panel.

MT30904A

Part Number	Description	Dimensions
MT30904A	Fixed FOBOT, 48 Port, 1RU, 19"	483 mm(w) x 350 mm(d) x 44 mm(h)

The fixed splice tray and cover is suitable for use with ST, SC or LC connectors and is supplied complete with adjustable mounting ears, 2 x Cable Glands, 2 x Strain Relief Posts, Cable Management Tray, 2 x SC Connector Panels, 2 x DSC Connector Panels, 1 x Blank Connector Panel, Cage Nut set and Blanking plugs for SC and LC openings.



MT30903A

Part Number	Description	Dimensions
MT30903A	Sliding Drawer FOBOT, 48 Port, 2RU, 19"	483 mm(w) x 350 mm(d) x 88 mm(h)

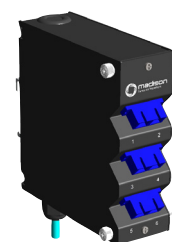
The sliding drawer splice tray and cover is suitable for use with ST, SC or LC connectors and is supplied complete with adjustable mounting ears, 2 x Cable Glands, 2 x Strain Relief Posts, Cable Management Tray, 2 x SC Connector Panels, 2 x DSC Connector Panels, 2 x ST Connector Panels, 2 x Blank Connector Panels and Cage Nut set.



MTIFTU

Part Number	Description	Dimensions
MTIFTU-ABC (up to 24 Port)	Din Rail Mount Industrial Fibre Termination Units (IFTU) supplied with splice combs, pigtailed and through adapters	274 mm(w) x 69 mm(d) x 150 mm(h)
MTIFTU-MINI-ABC (up to 12 Port)	Din Rail Mount Industrial Fibre Termination Units (IFTU) supplied with 6 x SC/ST ports or 12 x LC ports, 12 way splice tray as well as pigtailed, adapters, gland and splice protectors	64 mm(w) x 151 mm(d) x 172 mm(h)

The Madison range of IFTU's provide a unique solution to the space constraints often encountered in Industrial environments. The small footprint and DIN Rail mounting allow it to be mounted in the same enclosure as the active electronics, rather than a separate enclosure, whilst still providing all the functionality of a much larger FOBOT.



Through Adapters.



Madison Express offers an off-the-shelf range of Optical Fibre Through Adapters.

Other adapter types available on request. Visit our website for more information & to use the code builder.

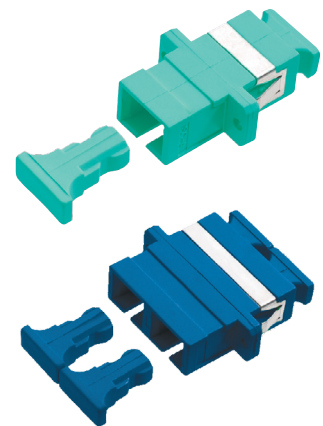
ST Through Adapter

Part Number	Description
GTASSTMMBK†	Through Adapter, Multimode
GTASSTSMRD	Through Adapter, Single Mode



SC Through Adapter

Part Number	Description
GTASSCMM**	Through Adapter, Simplex, Multimode
GTASSCSMBL	Through Adapter, Simplex, Single Mode
GTASSCAPCSMBL	Through Adapter, Simplex, Single Mode, Angled Polished
GTADSCMM**	Through Adapter, Duplex, Multimode
GTADSCSMBL	Through Adapter, Duplex, Single Mode
GTADSCAPCSMBL	Through Adapter, Duplex, Single Mode, Angled Polished



LC Duplex Through Adapters

Part Number	Description
GTADLCMMSC**†	LC Duplex, Multimode, Ceramic sleeve, Plastic Housing, SC Footprint
GTADLCMSMBL	LC Duplex, Single Mode, Ceramic Sleeve, Plastic Housing, SC Footprint



*LC & SC Multimode adapters available in Beige, Aqua, or Rose

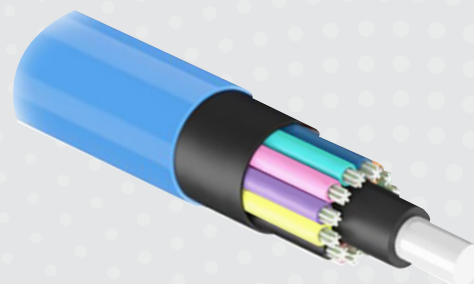
†MM adapters compatible with OM1, OM2, OM3 and OM4 fibre

Outdoor Loose Tube Optical Fibre Cables.



This loose tube dielectric optical cable is designed for external underground installations in micro ducts by pulling, blowing, or floating techniques.

Polyamide provides anti-termite protection. Optimized for blowing in mini ducts of 10mm diameter (internal).



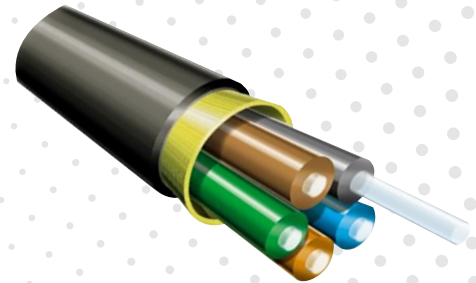
Part Number	Description	Jacket	No. of Fibres
R876219	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	01 x 06-fibres OM4
R876220	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	01 x 12-fibres OM4
R878452	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	01 x 24-fibres OM4

Part Number	Description	Jacket	No. of Fibres
R878453	Loose Tube, PE/Nylon, Blue SM Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	01 x 06-fibres OS2
R878454	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	01 x 12-fibres OS2
R878455	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	02 x 12-fibres OS2
R878456	Loose Tube, PE/Nylon, Blue SM Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	04 x 12-fibres OS2
R878457	Loose Tube, PE/Nylon, Blue SM Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	06 x 12-fibres OS2
R878458	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	08 x 12-fibres OS2
R878459	Stranded Mini-Loose-Tube Cable, outside plant	UV stable PE sheath and PA sleeve - blue	12 x 12-fibres OS2

Indoor/Outdoor Tight Buffer Riser Optical Cables.



This Light Duty Riser Optical Cable is a tight buffered multi-fibre optical cable and is suitable for many indoor applications including the distribution within Multi-Dwelling Unit (MDU) or office buildings or LAN and central office interconnections. The cable is longitudinally water blocked and features a UV stabilised, water and moisture resistant LSZH sheathing.



Yellow Jacket

Part Number	Description	Jacket	No. of Fibres
R876211	Light Duty Riser Cable, universal use	UV stable LSZH sheath - Yellow	6 fibres OS2
R876213	Light Duty Riser Cable, universal use	UV stable LSZH sheath - Yellow	12 fibres OS2
R876214	Light Duty Riser Cable, universal use	UV stable LSZH sheath - Yellow	24 fibres OS2

Aqua Jacket

Part Number	Description	Jacket	No. of Fibres
R876206	Light Duty Riser Cable, universal use	UV stable LSZH sheath - Aqua	6 fibres OM4
R876208	Light Duty Riser Cable, universal use	UV stable LSZH sheath - Aqua	12 fibres OM4
R876209	Light Duty Riser Cable, universal use	UV stable LSZH sheath - Aqua	24 fibres OM4

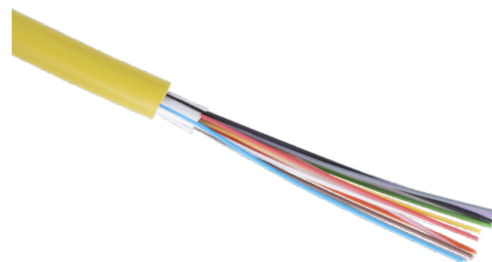
Magenta Jacket

Part Number	Description	Jacket	No. of Fibres
R876201	Light Duty Riser Cable, universal use, OM4	UV stable LSZH sheath - Magenta	6 fibres
R876203	Light Duty Riser Cable, universal use, OM4	UV stable LSZH sheath - Magenta	12 fibres
R876204	Light Duty Riser Cable, universal use, OM4	UV stable LSZH sheath - Magenta	24 fibres

Indoor/Outdoor Tight Buffer Mini Breakout Fibre Cables.



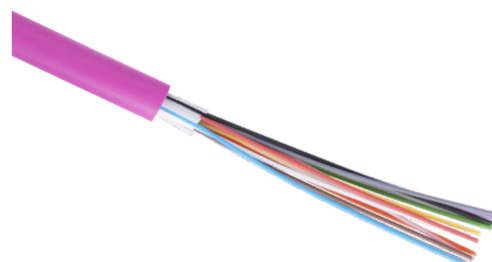
The mini breakout cable is the ideal fibre to the desk solution for direct connector fitting. Due to its compact design, it is easy to install, where space is limited, it is perfect and economic solution. The 900µm tight buffers are individually coloured and surrounded by glass yarns.



Yellow Jacket, LSZH

Single Mode (SM) E9/125			
Part Number	Description	Jacket	No. of Fibres
R795828	Mini Breakout Cable I-V(ZN=B) H, G.652.D	LSZH - Yellow	6 fibres
R795829	Mini Breakout Cable I-V(ZN=B) H, G.652.D	LSZH - Yellow	12 fibres
R795830	Mini Breakout Cable I-V(ZN=B) H, G.652.D	LSZH - Yellow	24 fibres

The mini breakout cable is the ideal fibre to the desk solution for direct connector fitting. Due to its compact design, it is easy to install, where space is limited, it is perfect and economic solution. The 900µm tight buffers are individually coloured and surrounded by glass yarns.



Magenta Jacket, LSZH

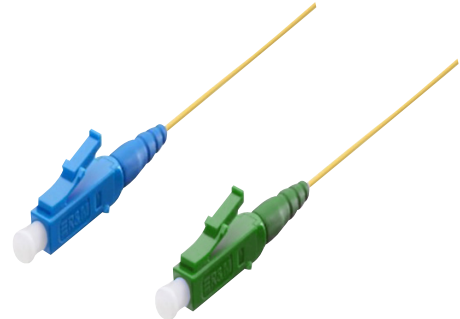
Multimode (MM) G50/125			
Part Number	Description	Jacket	No. of Fibres
R795834	Mini Breakout Cable I-V(ZN=B) H, OM4	LSZH - Magenta	6 fibres
R795820	Mini Breakout Cable I-V(ZN=B) H, OM4	LSZH - Magenta	12 fibres
R795896	Mini Breakout Cable I-V(ZN=B) H, OM4	LSZH - Magenta	24 fibres

Pigtails.

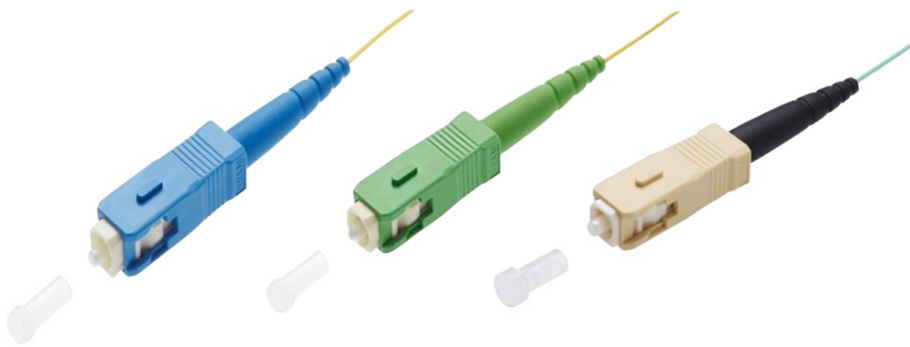


Metal free, zero halogen.

From OS2 to OM4, LC/SC-UPC and APC variants in packs of 12. Comes in red, green, blue, yellow, white, grey, brown, violet, turquoise, black, orange and pink, in the length of 2.5m / 8 ft 2 in. Conductor type FO, dry semi-tight buffer with strip ability > 1.5m and with LSZH Jacket.



Part Number	Description
R795702	Pigtail-om4-lcpcm-2.5 tight buffer (PU: 12 colors/set)
R812515	Pigtail SC PC, beige, OM4 turquoise, Am/2, 2.5 m
R795609	Pigtail-os2-lc-pcc-2.5 tight buffer (PU: 12 colors/set)
R31014	Pigtail SC PC, blue, G.652.D + G.657.A1 yellow, C/2, 2.5 m



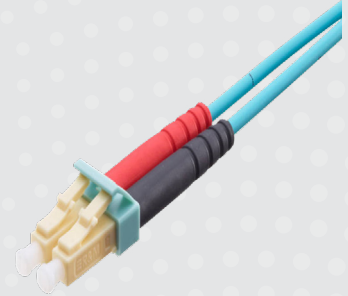
Patch Leads.



Multimode LC Duplex

Patch cord with LSZH jacket, F8 2.0x4.1 mm, turquoise (aqua), multimode G50 50/125 µm (OM4), bend optimised.

Mounted on both sides with LC-Duplex connectors in acc. with IEC 61754-20. Zirconia (ceramic) ferrule with a PC polished end face geometry, connectors qualified in acc. with IEC 61753-1 for category U (uncontrolled environment). Beige connector housing (multimode), turquoise duplex clip, material PC / UL 94 V-0, 1 x black and 1 x red strain relief, white plastic dust cover.



Patch Cords OM4

Part Number	Description	Colour ¹	Length ¹
R802250	Patch cord FO OM4 LCD/LC	Aqua	1 m
R802251	Patch cord FO OM4 LCD/LCD	Aqua	2 m
R802252	Patch cord FO OM4 LCD/LCD	Aqua	3 m

Multimode LC-QR Connector

Patch cord with LSZH jacket, twin fiber 2.1mm, OM4 fiber.

Mounted on both sides with LC-QR connector, IEC 61754-20 compatible, Zirconia (ceramic) ferrule with a PC polished (0°) endface geometry, connectors qualified in acc. with IEC 61753-1 for category C (controlled environment), black connector housing (multimode), HVT (heather violet) unlocking clip, material PC / UL 94 V-0, black strain relief, material PP, white plastic dust shutter.



Patch Cords OM4

Part Number	Description	Colour	Length
R839890	Patch cord FO OM4 LCQU/LCQU, 2 mm	heather violet	1 m
R836226	Patch cord FO OM4 LCQU/LCQU, 2 mm	heather violet	2 m
R838894	Patch cord FO OM4 LCQU/LCQU, 2 mm	heather violet	3 m

¹Other lengths and jacket colours available on request.

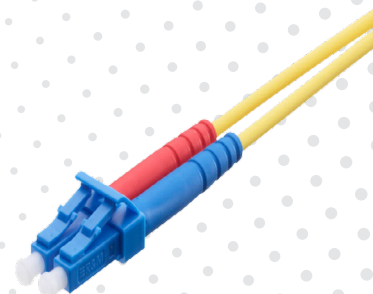
Patch Leads.



Single Mode LC Duplex

Duplex figure "8" Patch cord, polarity A-A , with cable Single Jacket F8 2.0 x 4.1mm (±0.15) FRLSZH, fiber Single mode (SM) G.657.A2 (covers G.652.D, G.657.A1+B2, OS1, OS2), length 1.0m / 3ft 3in.

Assembled side A with LC-Duplex / PC, connector housing blue, side B with LC-Duplex / PC, connector housing blue. Zirconia (ceramic) ferrule, according to IEC 61755-3-1/2 and patch cord qualified according to IEC 61753-1 category C (controlled environment), material UL 94 V-0.



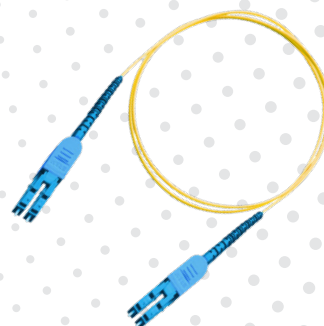
Patch Cords SM OS2 G.657.A2

Part Number	Description	Colour ¹	Length ¹
R817668	Patch cord FO, LC-Duplex PC/UPC Grade C - LC-Duplex PC/UPC Grade C, Duplex Figure 8 (2.0 x 4.2), Eca (LSZH)	Yellow	1 m
R817669	Patch cord FO, LC-Duplex PC/UPC Grade C - LC-Duplex PC/UPC Grade C, Duplex Figure 8 (2.0 x 4.2), Eca (LSZH)	Yellow	2 m
R817670	Patch cord FO, LC-Duplex PC/UPC Grade C - LC-Duplex PC/UPC Grade C, Duplex Figure 8 (2.0 x 4.2), Eca (LSZH)	Yellow	3 m

Single Mode LC-QR

Patch cord, polarity A-A , with cable Twin Fiber 2.1mm LSZH, fiber Single mode (SM) , length 1.0m / 3ft 3in.

Assembled side A with LC-QR / PC, connector housing, side B with LC-QR / PC, connector housing. Zirconia (ceramic) ferrule, according to IEC 61755-3-1/2 and patch cord qualified according to IEC 61753-1 category C (controlled environment), material UL 94 V-0.



Patch Cords SM OS2 G.657.A2

Part Number	Description	Colour ¹	Length ¹
R844557	Patch cord FO, LC-QR Uniboot PC/UPC Grade C - LC-QR Uniboot PC/UPC Grade C, Simplex 2.0 mm, Eca (LSZH)	Yellow	1 m
R836224	Patch cord FO, LC-QR Uniboot PC/UPC Grade C - LC-QR Uniboot PC/UPC Grade C, Simplex 2.0 mm, Eca (LSZH)	Yellow	2 m
R844559	Patch cord FO, LC-QR Uniboot PC/UPC Grade C - LC-QR Uniboot PC/UPC Grade C, Simplex 2.0 mm, Eca (LSZH)	Yellow	3 m

¹Other lengths and jacket colours available on request.

Fibre Trays and Accessories.



Fibre Cable Protection, Feed and Access.

1U-FibereasyRack2 Empty, Also suitable for LC-Duplex, SC simplex, MPO & E2000 adapters. Comes in 19 inch 1U sliding and Fixed unit, with fastening material, labeling strips and installation manual. One 2 x 15mm radius guard and front panel has 24 holes for max. 24 adapters. Cable entrance is 2 x 20mm & 2 x 25mm. Patch panel's mounting depth is 225mm, continuously depth-adjustable up to 55mm; rear cable feed, cable entry is possible from three different angles. Tray at full extension can be inclined 10° forwards for optimum access and can be fully detached from the box by release lever.



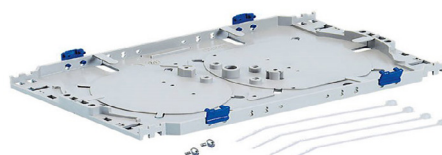
Part Number	Description	Dimensions
R818429	1U-FibereasyRack2 24 x SC-Duplex Empty	43.6 mm x 482.6 mm x 225.0 mm / 1.717 in x 19 in x 8.858 in (W x H x D)
R822810	1U-FibereasyRack2 24 x LC-Duplex Empty	43.6 mm x 482.6 mm x 225.0 mm / 1.717 in x 19 in x 8.858 in (W x H x D)
R795926	1U-FiberRack2-for24-IR-0-for-LSH/SC/LC R&M inteliPhy ready (AIM)	43.6 mm x 482.6 mm x 225.0 mm / 1.717 in x 19 in x 8.858 in (W x H x D)

FOBOT Accessories.

Part Number	Description
R308448	FO Splice Holder ANT/Fujikura R40
R308444	Splice Tray R40 24 Fibre Additional Set
R320246	Splice Holder R30/R40, 12x shrink splice protection



R308448



R308444



R320246

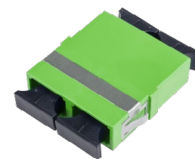
Adapters and Accessories.



Duplex adapter SM-MM in acc. with IEC 61754-4. Flangeless body and integrated quick-mounting clip. Zirconia (ceramic) alignment sleeve, plastic housing / UL 94 V-0, plastic dust covers. Adapter qualified in acc. with IEC 61753-1 for category U (uncontrolled environment).

Part Number	Description	Fibre Type	Colour
R823204	Adapter LC-Duplex PC, OM3/4, flangeless	Ceramic Multimode	Turquoise
R823206	Adapter LC-Duplex PC, OM3/4, flangeless	Ceramic Multimode	Violet
R821235	Adapter SC-Duplex PC, OM3/4, flangeless	Ceramic Multimode	Beige

Part Number	Description	Fibre Type	Colour
R820419	Adapter LC-Duplex PC, C, flangeless	Ceramic Single Mode	Blue
R820418	Adapter LC-Duplex APC, C, flangeless	Ceramic Single Mode	Green
R821236	Adapter SC-Duplex PC, C, flangeless	Ceramic Single Mode	Blue
R821237	Adapter SC-Duplex PC, C, flangeless	Ceramic Single Mode	Green



Part Number	Description	length
R30087-35	Heat Shrink Splice Protection	35 mm
R319212	Heat Shrink Splice Protection	45 mm
R30087	Heat Shrink Splice Protection	60 mm



Adapters and Accessories.



FO Field - an alternative to splicing.

Thanks to the superior IL and RL performance; usable in any application. Allows for easier training compared to splicing, therefore is the perfect solution for mass roll-out.

Durable solution

- FO Field is part of the R&M freenet program, we guarantee 25 years of lifetime
- Also applicable for outdoor Application
- High mechanical durability

Time and cost-saving

- Competitive pricing compared to pre-assembled pigtails and patch cords
- Installation in less than 1min
- Fewer tool costs to start with

*Other connector types and performance available on request.

Part Number	Description	Colour
R846317	FO Field LC, Grade Cf, APC, G657.A fibre stub, 250 µm fibres up to 0.9 mm fibres	Green
R846324	FO Field SC, Grade Cf, APC, G652.D fibre stub, 250 µm fibres up to 0.9 mm fibres	Green
R846320	FO Field LC, Grade Cf, PC, G657.A fibre stub, 250 µm fibres up to 0.9 mm fibres	Blue
R846326	FO Field SC, Grade Cf, PC, G652.D fibre stub, 250 µm fibres up to 0.9 mm fibres	Blue
R846322	FO Field LC, Grade Bmf, PC, OM4 fibre stub, 250 µm fibres up to 0.9 mm fibres 1 pc	Beige
R846327	FO Field SC, Grade Bmf, PC, OM4 fibre stub, 250 µm fibres up to 0.9 mm fibres	Beige



Adapters and Accessories.



Tool Kit FO Field - an alternative to splicing.

Scope of Supply

- Tool case
- Fibre fixation tool (R812786)
- Adapter for red light source reduction 2.5mm to 1.25mm (R823872)
- Red light source 650nm, 0.5mW (R504313)
- Dual hole fibre stripper (R813813)
- Stripping tool 0.6 - 2.6mm (R812543)
- Kevlar scissor (R810638)
- Bin for fibre piece
- Cleaning wipes
- Fibre marker, black
- Patch cord OM4, SC PC
- Patch cord OS2, SC PC to LC PC, 3m (R813285)
- Manual FO Field pigtail and patch cord



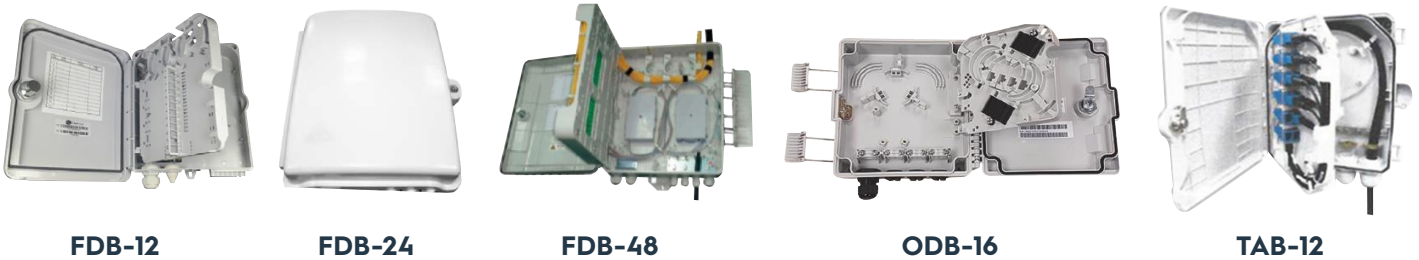
Part Number	Description	Main Benefit
R810212	Assembling tool for connector FO Field	Installation in less than 60 seconds

Distribution Boxes and Enclosures.



Floor Distribution

In medium and large sized MDUs, floor boxes are used as an intermediate connection point between the riser cabling and the customer drop cables. This reduces the length of the customer drops and makes it easier to manage the way in which these connections are made from a workflow point of view.



Part Number	Description
FDB-12	Provides 4, 8, or 12 SC ports; two-layer design - a rear splice area for cable slack and splice protection, and a front interconnect area for SC ports. Suitable for indoor/outdoor FTTx applications that support up to 12 subscribers
FDB-24	Suitable for indoor/outdoor FTTx applications that support up to 12 subscribers. Holds 24 mechanical or fusion splices plus 3 splitters; two PG16 ports with up to 24 SC adapters inside
FCB-48	IP55 rated; suitable for indoor/outdoor FTTx applications that support up to 48 subscribers; Cable entry from top and bottom with 6 PG gland input and output ports; wall or pole mountable; stackable splice trays for 96 mechanical or fusion splices
ODB16	Indoor ODB16 is a robust indoor enclosure designed for FTTH networks in SDU & MDU applications, where it serves as a distribution box for up to 16 subscribers. Internal swing panel design with a rear splice area that accommodates splitters, splices and excess fibre storage; easy to install and maintain; lock with 2 keys and protective cap
TAB-12	The TAB-12 provides 4, 8, or 12 ports in a traditional two-layer design - a rear splice area for cable slack and splice protection, and a front interconnect area for SC ports; Holds 12 mechanical or fusion splices plus 2 splitters; 3 PG16 ports with up to 12 SC adapters inside

Wall / Pole Mounted Enclosure

This successful solution has been widely adopted overseas because it removes the need for skilled fibre engineers; removes the need for air-blown last-mile installations; removes the need to field splicing and expensive repair work; and is proven to increase speed of installation by 3-5 times per day per team deployed.



ODT24R

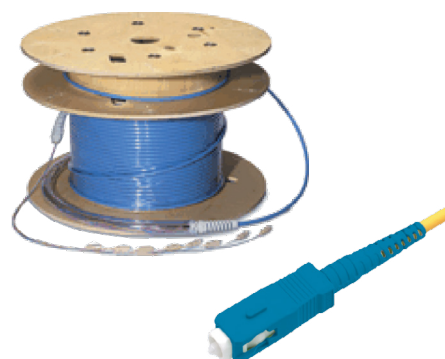
Part Number	Description
ODT24R	Ruggedised outdoor design, IP-68, IK-10; Weather resistant; Suitable for PON and P2P applications; Suitable for splice only, splice + patch or pre-terminated cables; Integrated holders for PLC splitters; Integrated fibre management

Pre-terminated Fibre Cables.

Fully tested and ready to install.

Madison Express offers a large range of optical fibre cabling solutions. The range includes a variety of multimode and single mode optical fibre cables and connectivity products for in-building and inter-building applications.

The following information assists us in preparing an accurate quote.



Optical Fibre Checklist

Cable Checklist		☑ Tick your selection and enter details where applicable			
Type of Fibre	<input type="checkbox"/> Single Mode	<input type="checkbox"/> G652D	<input type="checkbox"/> 9/125um		
	<input type="checkbox"/> 62.5/125um	<input type="checkbox"/> OM1 Multimode	<input type="checkbox"/> OM2 Multimode -Obsolete		
	<input type="checkbox"/> OM3 Multimode	<input type="checkbox"/> OM4 Multimode	<input type="checkbox"/> OM5 Multimode		
Number of Fibres	<input type="text"/>				
Length (metres)	<input type="text"/>				
Cable Type	<input type="checkbox"/> Indoor	<input type="checkbox"/> Outdoor	<input type="checkbox"/> Indoor/Outdoor		
	<input type="checkbox"/> Riser	<input type="checkbox"/> Tight Buffer	<input type="checkbox"/> Loose Tube		
Non Metallic/All Dielectric?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Don't Know		
Armouring?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Rodent Protection?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Termite Protection?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Sacrificial Jacket?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
LSZH Jacket?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Pre-term?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Connector at Inner End (Pre-terms only)	<input type="checkbox"/> LC Simplex	<input type="checkbox"/> LC Duplex	<input type="checkbox"/> SC Simplex		
	<input type="checkbox"/> SC Duplex	<input type="checkbox"/> LC/APC Simplex (SM only)	<input type="checkbox"/> LC/APC Duplex (SM only)		
	<input type="checkbox"/> SC/APC Simplex (SM only)	<input type="checkbox"/> SC/APC Duplex (SM only)	<input type="checkbox"/> ST	<input type="checkbox"/> None	
Connector at Outer End (Pre-terms only)	<input type="checkbox"/> LC Simplex	<input type="checkbox"/> LC Duplex	<input type="checkbox"/> SC Simplex		
	<input type="checkbox"/> SC Duplex	<input type="checkbox"/> LC/APC Simplex (SM only)	<input type="checkbox"/> LC/APC Duplex (SM only)		
	<input type="checkbox"/> SC/APC Simplex (SM only)	<input type="checkbox"/> SC/APC Duplex (SM only)	<input type="checkbox"/> ST	<input type="checkbox"/> None	
Hauling Eye Inner End (Pre-terms only)	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Hauling Eye Outer End (Pre-terms only)	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Heavy Duty Protection of Pre-term ends?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Applicable		



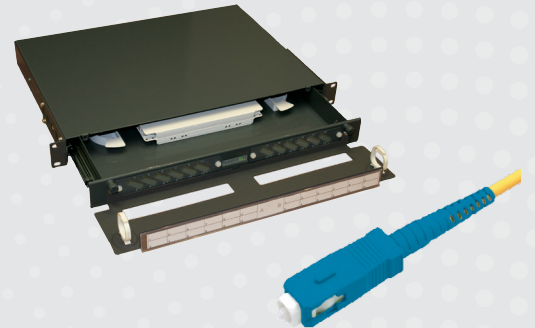
Fibre Accessories.

Fully tested and ready to install.

Madison Express offers a large range of optical fibre cabling solutions and connectivity products for in-building and inter-building applications, including accessories to match the cables range.

You may need the following with your optical fibre cable purchase.

The following information assists us in preparing an accurate quote.



Fibre Accessories Checklist

Component	Parameter	<input checked="" type="checkbox"/> Tick your selection & enter details where applicable			
FOBOT	Style	<input type="checkbox"/> Fixed	<input type="checkbox"/> Sliding		
	Number of ports/fibres	<input type="checkbox"/> 12	<input type="checkbox"/> 24	<input type="checkbox"/> 48	
		<input type="checkbox"/> 96	<input type="checkbox"/> 144		
	Connector style	<input type="checkbox"/> LC Simplex	<input type="checkbox"/> LC Duplex	<input type="checkbox"/> SC Simplex	
		<input type="checkbox"/> SC Duplex	<input type="checkbox"/> ST		
Height	<input type="checkbox"/> 1RU	<input type="checkbox"/> 2RU	<input type="checkbox"/> 3RU		
Through Adapters	Fibre type	<input type="checkbox"/> Single Mode	<input type="checkbox"/> Multimode OM3	<input type="checkbox"/> Multimode OM4	
	Connector style	<input type="checkbox"/> LC Simplex	<input type="checkbox"/> LC Duplex	<input type="checkbox"/> SC Simplex	
		<input type="checkbox"/> SC Duplex	<input type="checkbox"/> ST		
Polish	<input type="checkbox"/> Standard (UPC)	<input type="checkbox"/> Angled (APC)			
Pigtails	Fibre type	<input type="checkbox"/> Single Mode	<input type="checkbox"/> Multimode OM3	<input type="checkbox"/> Multimode OM4	
	Connector style	<input type="checkbox"/> LC Simplex	<input type="checkbox"/> SC Simplex	<input type="checkbox"/> ST Simplex	
	Polish	<input type="checkbox"/> Standard (UPC)	<input type="checkbox"/> Angled (APC)		
	Number of fibres/Pack size	<input type="checkbox"/> 6	<input type="checkbox"/> 12		
Patch cords	Fibre type	<input type="checkbox"/> Single Mode	<input type="checkbox"/> Multimode OM3	<input type="checkbox"/> Multimode OM4	
	Connector style	<input type="checkbox"/> LC	<input type="checkbox"/> SC	<input type="checkbox"/> ST	
	Polish	<input type="checkbox"/> Standard (UPC)	<input type="checkbox"/> Angled (APC)		
	Length	<input type="text"/> (write in metres)			
	Jacket colour	<input type="checkbox"/> Yellow (SM)	<input type="checkbox"/> Aqua (OM3)	<input type="checkbox"/> Violet (OM4)	
<input type="checkbox"/> Other		<input type="text"/> (write colour needed)			

Technical Information.



Fibre Identification

Fibres in an optical fibre cable are identified by their colour. Garland uses the standard TIA-598-A colour code which is the industry norm in Australia.

GLT series loose tube cables have up to 12 fibres per tube and the fibre colours repeat in each tube. The same colour coding is used for the tubes so that the combination of tube and fibre colour forms a unique combination to allow for each fibre to be identified.

Fibre or Tube Number	Colour
1	Blue
2	Orange
3	Green
4	Brown
5	Grey
6	White
7	Red
8	Black
9	Yellow
10	Violet
11	Rose
12	Aqua

GTB tight buffered fibre cables apply the colour to the tight buffer. Since there can be up to 24 fibres in a single cable, fibre colours between 13 and 24 feature a stripe or ring mark referred to as a trace.

Fibre Number	Colour	Fibre Number	Colour
1	Blue	1	Blue + Black trace
2	Orange	2	Orange + Black trace
3	Green	3	Green + Black trace
4	Brown	4	Brown + Black trace
5	Grey	5	Grey + Black trace
6	White	6	White + Black trace
7	Red	7	Red + Black trace
8	Black	8	Black + White trace ²
9	Yellow	9	Yellow + Black trace
10	Violet	10	Violet + Black trace
11	Rose	11	Rose + Black trace
12	Aqua	12	Aqua + Black trace

²The trace may also be yellow in some cases.

Cable Selection Criteria

Selection of the proper cable for the applicable environment is the key to long term survival of the cable. Several factors come into play when deciding which cable is best suited to your particular application.

Location

The two options here are indoor or outdoor. For outdoor, loose tube constructions are preferred. The main reason being that these cables are typically stronger and more robust than their indoor counterparts. Tight buffered designs are preferred for indoor applications due to their lighter weight, smaller diameter and improved flexibility which makes them easier to install in tight spaces.

Garland Tight Buffered (GTB series) cables meet the AS/CA S-008 requirements for an outdoor cable but are not as robust as their loose tube counterparts so if used outdoors, they must be protected from physical attack and excessive exposure to the environment.

Termite Resistance

Termites are a major problem throughout Australia and it is common to protect outdoor cables from termite attack. Australia also has some of the most aggressive termites on the planet and has developed unique approaches to address termite attacked. Used for over 40 years and accepted as the standard method of termite protection, the use of Nylon 12 as a termite barrier has been proven time and time again and is the method recommended by Garland for Termite protection.

Rodent Resistance

Rodents such as mice, rats and some marsupials can also attack a cable. Rodent protection is harder to implement and is normally in the form an armour or barrier. Two common methods are used.

Corrugated Steel Tape Armours (CSTA) offer the most secure option to resist rodent attack. Used in Australia and overseas to defend against rodents such as moles, gophers and common rats, this is the most secure method of rodent protection. Resistance is offered by the inability of the rodent to penetrate the steel tape. Steel tapes used by Garland for rodent protection have an electrolytic chrome coating to help prevent rusting of the tape.

Whilst CSTA is the most robust approach to rodent protection, where optical fibre cables are laid close to power cabling, there is a preference to use a non-metallic armouring in order to eliminate the risk of voltages being induced in the armour. This makes it necessary to ground the armour and involves additional labour and design effort in the grounding circuit. For these situations non-metallic rodent protection is preferred and two common approaches are used.

For areas where there is a low incidence of rodent attack, the use of glass yarns may supply sufficient rodent resistance. Glass yarns do not offer any additional mechanical strength to the cable but can repel rodents since they don't like to chew it. Where there is a higher incidence of rodent attack glass yarns may not suffice and in such instances FRP rods are laid around the cable to provide both mechanical and rodent protection. Irrespective of which type of non-metallic rodent protection is offered, repeated attack by rodents over several generations may result in an eventual breakthrough of a rodent barrier.

Flame Retardancy

For indoor applications, it is a requirement of AS/CA S-008 that a flame retardant cable be used. In such applications a PVC or LSZH jacket is required. Over the past decade, the use of PVC for cable jackets has been on the decline due to the toxic and corrosive gases that are generated when PVC is burned. As a result, Garland uses Low Smoke Zero Halogen materials for the jackets on its indoor cables thereby meeting the flame retardancy requirements but without the risks associated with PVC when under fire conditions.

UV Stabilisation

UV present in sunlight can degrade the plastic used for jacketing optical fibre cables. To help address this various UV stabilisers and blockers are added to the jacket compounds used in Garland optical fibre cables.



Water Blocking

When installed underground, cables can sit in conduits, channels or ducts that can become filled with water. Over time this water can permeate into the cable effecting its performance. In addition, damage to the outer jacket as a result of installation or repeated attack from pests or vandals opens up the cable core and provides a path for water to travel along the cable, effectively making it a hose for water to travel along and enter the cable termination equipment at the end of the cable. To address this, several techniques are used. For loose tubes, jelly is injected into the tube along with the fibres to prevent water coming into direct contact with the fibres and to block the tubes. In between the tubes, water swelling compounds are applied. These expand when in contact with water providing an effective barrier to water traveling along the cable. Similar water swelling compounds are also used in the tight buffer cable constructions.

Cable Selection Guide

Cable Series	GLT-AC	GLT-AG	GLT-AI	GLT-AS	GLT-AH	GLT-AM	GTB-AC
Loose Tube	o	o	o	o	o	o	
Tight Buffer							o
Indoor							o
Outdoor	o	o	o	o	o	o	o ³
Flame Retardant							LSZH
Sacrificial Jacket		o					
Termite Resistance	o	o	o	o	o	o	
Rodent Resistance			Moderate	Good	High		
Non Metallic	o	o	o	o		o	o
UV Stabilised	o	o	o	o	o	o	o
Water Blocked	o	o	o	o	o	o	o
Expansive Soils						o	

³If used outdoors, tight buffered cables must be protected from the environment and from insect, animal and vandal attack. It is recommended that a loose tube construction be employed where possible.

Garland Optical Characteristics

Single Mode Fibres

Characteristic	G652.D*
Typical Mode Field Diameter @1310 nm	9.2 ± 0.4 µm
Typical Mode Field Diameter @1550 nm	10.4 ± 0.5 µm
Cladding Diameter (µm)	125 ± 2 µm
Max Mode Field Concentricity Error	0.8 µm
Cladding Non-Circularity	≤ 1%
Fibre Coating Diameter	250±10 µm
Attenuation 1310 nm (dB/km)	0.35
Attenuation 1383 nm (dB/km)	NA
Attenuation 1550 nm (dB/km)	0.22
Zero Dispersion Wavelength (nm)	1300 -1324
Slope @ Zero Dispersion Wavelength (ps/nm.km)	0.092
PMD (ps/km)	0.1

*G652.D fibre represents >90% of the single mode fibre installations. Other types of single mode fibre such as G655 and G656 Non Zero Dispersion Shifted (NZDS) for long haul are also available upon request. Lead times and MOQ may apply.

Multimode Fibres

Characteristic	62.5 µm (OM1)	50 µm (OM3)	50 µm (OM4)
Typical Core Diameter (µm)	62.5 ± 2.5	50.0 ± 2.5	50.0 ± 2.5
Max Core-Clad Conc Error (µm)	1.5	1.5	1
Cladding Diameter (µm)	125 ± 1	125 ± 1	125 ± 1
Fibre Coating Diameter (µm)	250 ± 10	250 ± 10	250 ± 10
Min G-Ethernet Transmission Distance at 850/1300 nm (µm)	275/550	920/600	970/600
10Gbit distance @ 850 nm†	N/A	300 m	550 m
Attenuation 850 nm (dB/km)	3.5	3.0	3.0
Attenuation 1300 nm (dB/km)	1.5	1.0	1.0
Min Overfilled Bandwidth 850 nm (MHz.km)	200	1500	3500
Min Overfilled Bandwidth 1300 nm (MHz.km)	500	500	500
Numerical Aperture	0.275 ± 0.015	0.200 ± 0.015	0.200 ± 0.015

† Actual distance dependent on installation conditions



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