

# Telecommunication Products



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**Media Converters**  
**Couplers / Splitters**  
**WDM**  
**CWDM**

# Telecommunication Products

## Media Converters



The media converter is the most economical way to deploy fibre into your network. This media converter will take your copper signal and send it over fibre to distances of up to 120km. The unit benefits from being able to specify the type of connector you require with single or dual fibre networking. The diagnostic lights you can tell when your network is functioning correctly.

### Features

- ▶ Low cost
- ▶ Supports auto MDI-MDIX function on ethernet
- ▶ Supports link fault pass through function
- ▶ LED display for link/activity, full/half 10/100
- ▶ Supports converter or switch mode
- ▶ Built in universal AC/DC power supply or external power supply depending on model

### Applications

- ▶ LAN
- ▶ FTTx
- ▶ Telecommunication Networks

### SPECIFICATIONS

Complies	IEEE 802.3 10 Base-T, 802.3u 100Base-TX and 100Base-FX standards	
6 LED	Power, Ethernet and fibre link and work status	
Operating Temperature	°C	0-50
Storage Temperature	°C	0-70
Operation Humidity		20-80%
Storage Humidity		10-90%
Power Consumption	W	<2W
Dimensions (LxWxH)	mm	191.7x85.6x30
Weight (g)	g	340
Compliance	FCC part 15 classA, CE	
MTBF	hours	38000



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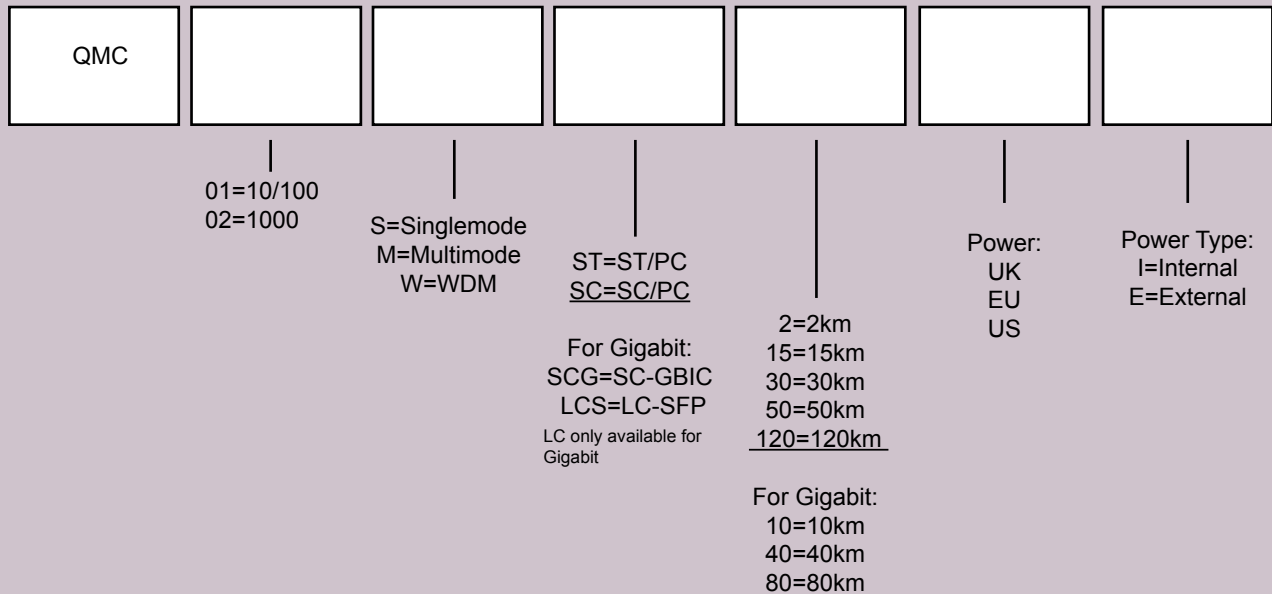
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## Media Converters

### Ordering Information

#### Media Converter



### SPECIFICATIONS

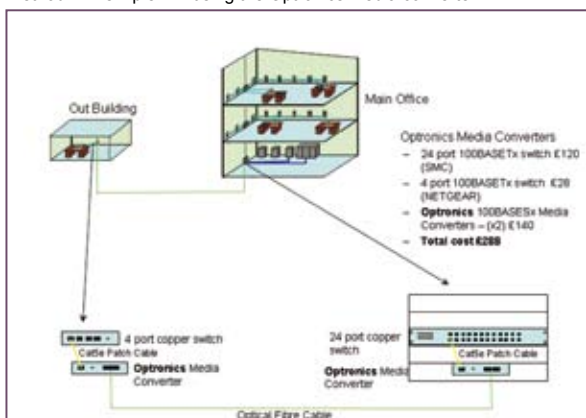
Standards	IEEE 802.3, IEEE802.3u, IEEE802.3x, 10/100BASE-Tx
Twisted Pair Connection	Two port 10/100BASE-Tx with RJ45 connector Auto negotiation for 10/100 port speed and PC/switch operation
Twisted Pair Cable	Cat 5 EIA/TIA 100ohm UTP/STP, up to 100m
Fibre Connection	Duplex Multimode SC connector , 50/125µm or 62.5/125µm Cables to 2 km
One port 100BASE-Fx	Duplex Singlemode SC connector, 9/125µm cables up to 20km, 40km or 60km, 1310nm wave-length
Data Transfer Rate	Fast Ethernet 100mbps (200mbps in full duplex)
Power Requirement	85-265VAC 50/60Hz

### 100BASE Tx/Fx Switched Link

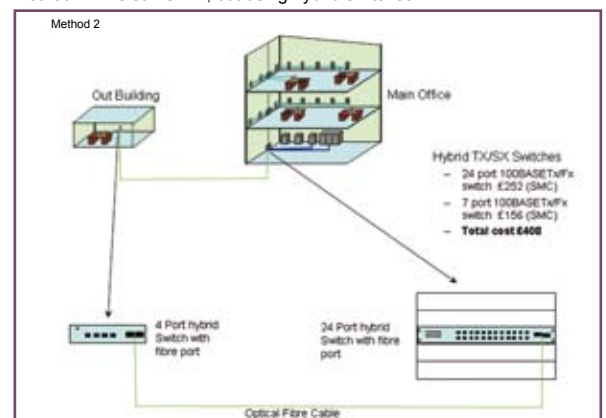
Installing fibre between two buildings using switches with a built in fibre port is very expensive and inflexible especially if you ever require expansion. Using fibre converters and standard copper switches can save you 30%. We have estimated the cost to an installer of a simple fibre link from a main building to a small outbuilding.

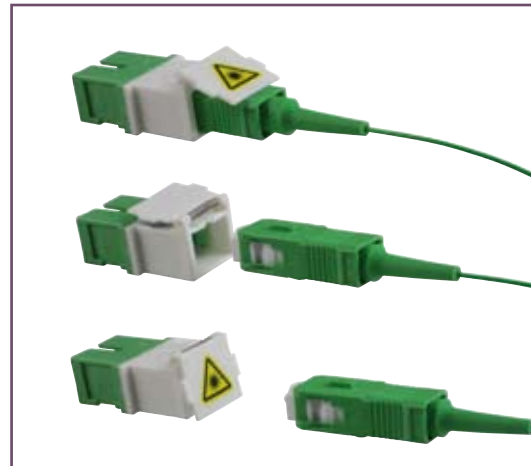
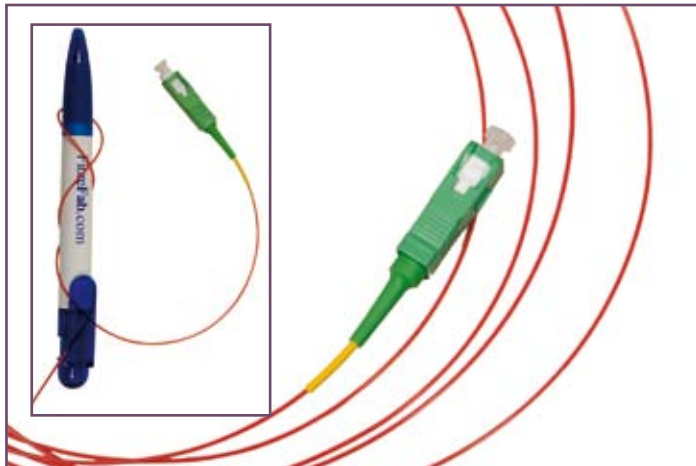
If an all copper 24 port switch was already in place, the savings in method 1 for the fibre link would be far greater.

Method 1. A simple link using the Optronics media converter.



Method 2. The same link, but using hybrid switches.





## Connectors, Adapters & Attenuators

We offer a range of high performance connectors, adapters and attenuators suited for the FTTx environment. We have specifically designed the compact SC/A shuttered adapter for safe use within the home outlet.

Often in high density applications space saving becomes critical – therefore We have launched a range of 45° and 90° angled boots, for use in these vital patching applications.

## Bend Insensitive Purelight™ Pigtails

A growing need for fibre with a tighter bend radius is becoming apparent. We offer a range of pigtails and patchcords using G657.A and G657.B Fibre, which is fully compatible with standard G652 and G652.D fibre. We supply a range of patchcords that can be terminated with any connector; early deployments have indicated SC/A as the favoured connector type within the FTTx environment.

# Telecom Products

## Splitters

### 1x2 Splitter



1x2 Splitter standard wavelength windows are centered at 1310nm and 1550nm. The high performance Fused BiConical Taper process (FBT) bidirectional singlemode 1x2 splitters, are designed for ease of use in optical systems, to split the signal from one fibre into two output fibre lines with ultra low loss. These devices can also be used to combine two signals into one. Fabricated using the state-of-the-art FBT process the splitters operate over a wide range of wavelengths. These splitters are available in both 1x2 and 2x2 configurations. Single window and broadband 1x2 splitters are available on request.

#### Applications

- ▶ FTTX
- ▶ Power Splitting
- ▶ CATV Networks
- ▶ Power Monitoring
- ▶ Fibre Optic Sensors
- ▶ PON
- ▶ Fibre communication systems

#### Features

- ▶ Near zero excess loss
- ▶ Low back reflection
- ▶ Thermally stable
- ▶ Low PDL
- ▶ Accurate split ratio
- ▶ All-fibre technology FBT
- ▶ Excellent uniformity
- ▶ Qualified to GR1209 and GR1221 Telecordia standards
- ▶ Available in single, dual window or broadband

#### Packaging and Capability

The range of couplers are fabricated in a world class manufacturing facility fully equipped with clean rooms and cutting edge fabrication equipment. This facility has the capability to manufacture over 1M couplers per annum.

The splitters are available with various packaging options and a variety of connector options to meet customer requirements.

#### Specification

PARAMETRE	UNITS	WIDEBAND (±40NM)
Operating Wavelength	nm	1310, 1550, 1570
Typical loss 2	dB	0.1
50/50		3.4
60/40		2.5/4.4
70/30		1.8/5.6
80/20		1.2/7.5
90/10		0.7/11.0
95/5		0.5/14.0
99/1		0.3/22.1
Directivity	dB	>50
Operating temperature	°C	-40 to 85
Fibre type		Corning SMF 28

1 Loss of high power port/Loss of low power port.



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# Telecommunication Products

## Splitters

### 1x4 Splitter Monolithic Fused Splitter



The truly fused 1x4 1x2 splitters are specifically designed and optimised for Fibre to the Home (FTTH) applications. Manufactured using the state-of-the-art Fused BiConical Taper process (FBT), these splitters exhibit uniform performance over the entire optical band from 1260-1630nm with near zero excess loss. The epoxy free optical path of the monolithic fused splitter, provides good power handling capability.

#### Applications

- PON
- Telecommunications networks
- CATV
- Fibre test and sensor equipment

#### Features

- All fibre technology
- Thermally stable
- Broadband performance
- Low back reflection
- Excellent uniformity
- Qualified to GR1209 and GR1221 Telcordia standards
- Compact packaging

#### Packaging and Capability

The range of couplers are fabricated in a world class manufacturing facility fully equipped with clean rooms and cutting edge fabrication equipment. This facility has the capability to manufacture over 1M couplers per annum. The splitters are available with various packaging options and a variety of connector options to meet customer requirements.

#### Specifications

PARAMETRE	UNITS	WIDEBAND 1X2	FTTH	ULTRA BROADBAND
Wavelength	nm	1310±40nm 1550±40nm	1310±40 1490±10 1550±40	1260-1630nm
Excess loss	dB	0.2	0.2	0.2
*IL max (25/25/25/25)	dB	7.1	7	7.2
*IL max (40/20/20/20)	dB	5.0/7.8	4.9/7.7	5.1/7.9
Uniformity (25/25/25/25)	dB	1.5	1.4	1.7
PDL max*	dB	0.3	0.3	0.3
Directivity	dB	> 50		
Operating temperature	°C	-40 à 85		
Storage temperature	°C	-40 à 85		
Fibre Type		SMF 28e		

\* Values given are maximum, please contact us for typical and minimum values.



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# Telecommunication Products

## Splitters

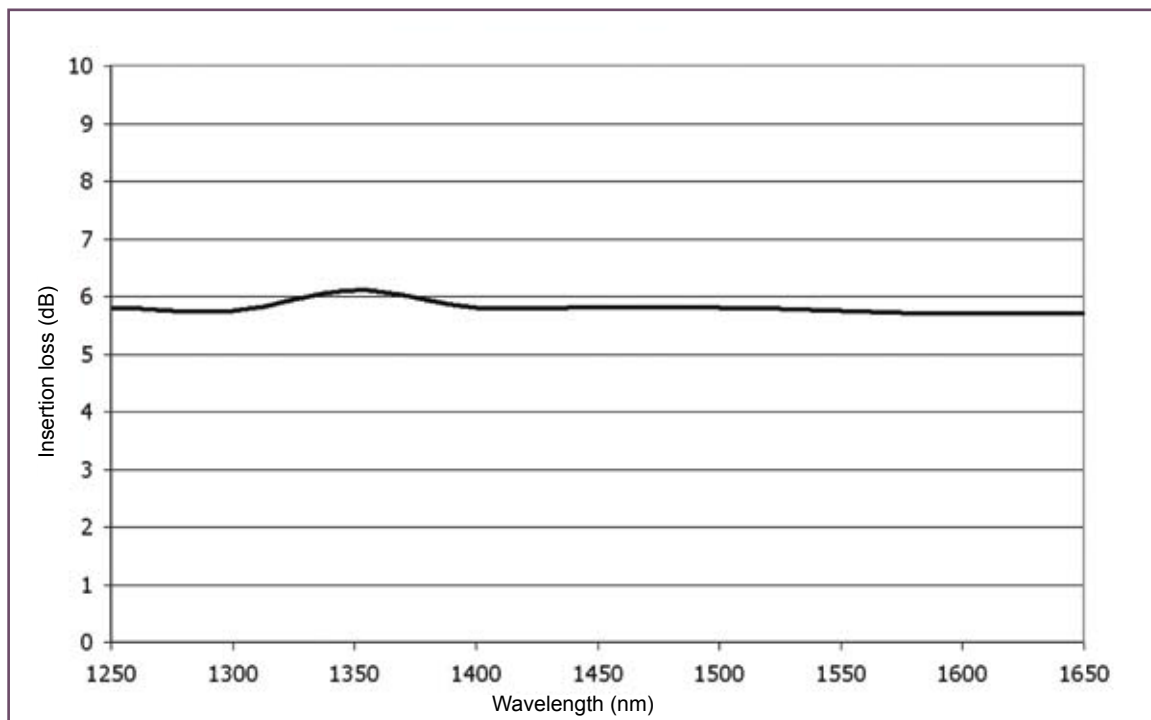
### 1x4 Splitter Monolithic Fused Splitter

#### Specifications

PARAMETRE		NARROWBAND	WIDEBAND	FTTH	ULTRA BROADBAND
Wavelength	nm	1310±20 1550±20	1310±40nm 1550±40nm	1310±40 1490±10 1550±40	1260-1630nm
Excess loss	dB	0.2	0.2	0.2	0.2
*IL max (25/25/25/25)	dB	7	7.1	7	7.2
*IL max (40/20/20/20)	dB	4.9/7.7	5.0/7.8	4.9/7.7	5.1/7.9
Uniformity (25/25/25/25)	dB	1.2	1.5	1.4	1.7
*PDL max	dB	0.3	0.3	0.3	0.3
Directivity	dB	> 50			
Operating temperature	°C	-40 à 85			
Storage temperature	°C	-40 à 85			
Fibre Type		SMF - 28			

\* Values given are maximum, please contact us for typical and minimum values.

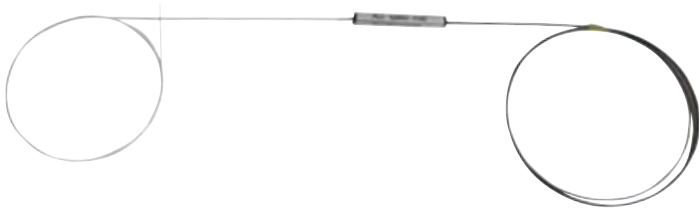
#### Spectral response for FTTH couplers



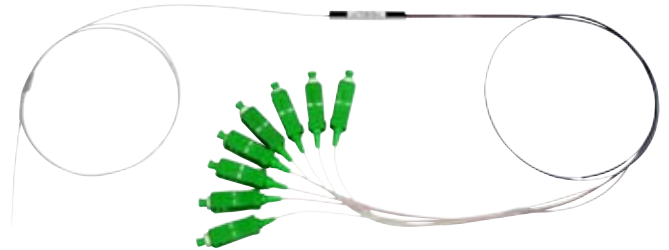
# Telecom Products

## Splitters

### 1xN and 2xN PLC Splitters



1x32 PLC



1x8 SCA

Growth in today's broadband applications demand reliable, high performance splitters, for use within a variety of environmental conditions and packaging options. A move towards PON's within the FTTX arena calls for a device offering low insertions loss, linear uniformity and low return loss. The splitters provide excellent specifications as well as complying to, and exceeding, Telcordia GR-1221-CORE and GR-1209-CORE standard.

#### Features

- Designed to meet Telcordia standards
- Low IL and PDL
- Excellent uniformity
- Range of packaging options available
- High specification connectors available

#### Applications

- FTTx deployments
- CATV networks
- PON's
- WAN's

### Part Number Generator

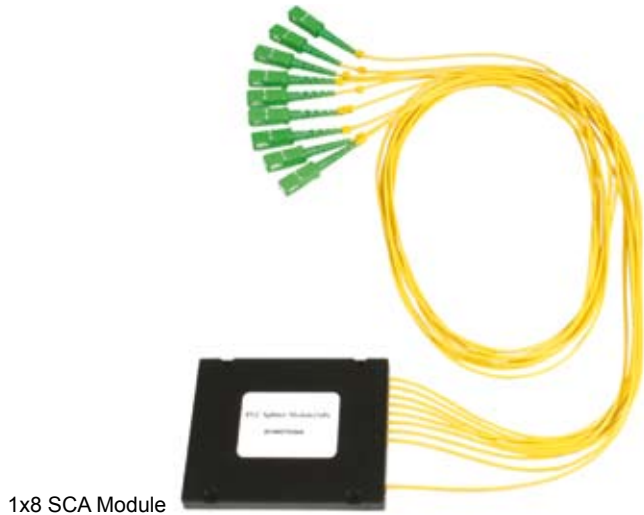
Type	Configuration	Wavelength	Cable Type	Package Style	Input Connectors	Output Connectors	Fibre Type	Lead length
S								
S	PLC	A 1x2 B 1x4 C 1x8 D 1x16 E 1x32 F 1x64 G 2x2 H 2x4 I 2x8 J 2x16 K 2x32 L 2x64	A 1310/1550mm B 1310/1490/1550mm C Broadband 1260-1625mm  *Splitters requiring 2mm & 3mm cable will be supplied in a plastic module with flying pigtails	A Case ribbon B Breakout unit C 2&3mm module	A None B E2000/UPC C E2000/APC D FC/UPC E FC/APC F LC/UPC G LC/APC H MU/APC I MU/UPC J SC/APC K SC/APC L ST/UPC	A None B E2000/UPC C E2000/APC D FC/UPC E FC/APC F LC/UPC G LC/APC H MU/APC I MU/UPC J SC/APC K SC/APC L ST/UPC	D G652D A G657A	1 1m 15 1.5m 2 2m 25 2.5m 3 3m



# Telecom Products

## Splitters

### 1xN and 2xN PLC Splitters



1x8 SCA Module



1x16 SCA LGX Splitter

### Technical Specification 2xN

Perametes		1x2	1x4	1x8	1x16	1x32	1x64
Operating Wavelength (nm)		1260 ~1650					
Insertion Loss without connector (dB)	Max (P/S)	3.8/4.0	7.2/7.4	10.5/10.7	13.5/13.7	16.5/16.9	20.5/21.0
Insertion Loss with connector (dB)	Max (P/S)	4.3/4.5	7.5/7.7	11.0/11.2	14.0/14.2	17.0/17.5	21.0/21.5
Loss Uniformity without connector (dB)	Max	0.6	0.6	0.8	1.2	1.5	2.5
Loss Uniformity with connector (dB)	Max	0.6	0.8	1.0	1.4	1.7	2.5
Polarization Dependent Loss (dB)	Max	0.2	0.2	0.3	0.3	0.3	0.4
Return Loss (dB)	Min (P/S)	55/50					
Directivity (dB)	Min	55					
Operating Temperature (°C)		-40 to 85					
Storage Temperature (°C)		-40 to 85					
Fibre Type		G652.D compliant or customer specified					
Fibre Length (Bare Splitter) (m)		1.0					
Connector Type		Customer specified					

### Technical Specification 1xN

Perametes		2x2	2x4	2x8	2x16	2x32
Operating Wavelength (nm)		1260 ~1650				
Insertion Loss without connector (dB)	Max (P/S)	3.9/4.2	7.5/7.8	11.2/11.5	14.2/14.5	17.4/17.7
Insertion Loss with connector (dB)	Max (P/S)	4.4/4.7	8.0/8.3	11.7/12.0	14.7/15.0	17.9/18.2
Loss Uniformity without connector (dB)	Max	0.8	1.5	1.5	1.8	2.0
Loss Uniformity with connector (dB)	Max	0.8	1.7	1.7	2.0	2.5
Polarization Dependent Loss (dB)	Max	0.2	0.2	0.4	0.4	0.4
Return Loss (dB)	Min (P/S)	55/50				
Directivity (dB)	Min	55				
Operating Temperature (°C)		-40 to 85				
Storage Temperature (°C)		-40 to 85				
Fibre Type		G652.D compliant or customer specified				
Fibre Length (Bare Splitter) (m)		1.0				
Connector Type		Customer specified				

### Wavelength Division Multiplexer



The high performance WDMs have been specifically designed for multiplexing two different signals into a single fibre, or splitting two signals for separate wavelengths from an incoming fibre. The 1310/1550nm WDM can be integrated in single fibre bidirectional systems.

#### Applications

- ▶ FTTX
- ▶ Telecommunication Networks
- ▶ CATV Networks
- ▶ Fibre Optic T&M equipment
- ▶ Fibre Optic Sensor
- ▶ PON
- ▶ Fibre communication systems

#### Features

- ▶ Near zero excess loss
- ▶ Low back reflection
- ▶ Thermally stable
- ▶ Low PDL
- ▶ All-fibre technology FBT
- ▶ Excellent uniformity
- ▶ Qualified to GR1209 and GR1221 Telcordia standards
- ▶ Compact packaging

#### Packaging and Capability

The range of couplers are fabricated in a world class manufacturing facility fully equipped with clean rooms and cutting edge fabrication equipment. This facility has the capability to manufacture over 1M couplers per annum.

The splitters are available with various packaging options and a variety of connector options to meet customer requirements.

#### Specifications

PARAMETRE		1310/1550	1310/1490	980/1550
Operating Wavelength	nm	1310/1550 ±15	1310/1490 ± 10	980/1550 ± 10
Maximum Insertion Loss*	dB	0.2	0.3	0.2
Isolation	dB	20	17	20
Directivity	dB	≥ 50		
Operating Temperature	°C	-40 to 85		
Storage Temperature	°C	-40 to 70		
Fibre Type	Corning SMF-28			Corning 1060
DIMENSIONS				
Light	3.0mm (dia) x 55mm (L), 250µm coated fibre			
Medium	3.05mm (dia) x 65mm (L), 900µm tube			
Heavy	Plastic Housing, 96.5mm (L) x 12mm (B) x 10mm (H), 3mm Jacketed Cable			

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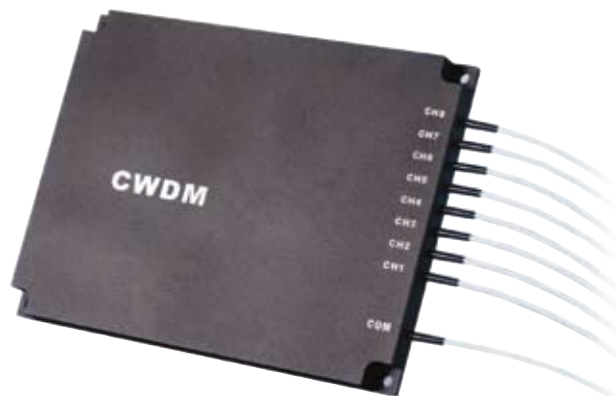
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# Telecom Products

## CWDM

### 8 Channel CWDM



CWDM (Course Wavelength Division Multiplexing) can use up to 18 separate channels for transmission of optical signals. The CWDM offers the provider the opportunity of a low cost upgrade option to increase the bandwidth of the network. The CWDM can be supplied as a discrete and rack mounted solution.

#### Applications

- ▶ OADM
- ▶ PON
- ▶ Telecommunication network

#### Features

- ▶ Telcordia approved
- ▶ Low cost
- ▶ RoHS approved

#### Packaging and Capability

These splitters are available with various packaging options and a variety of connector options to meet customer requirements.

This range of couplers are fabricated in a world class manufacturing facility fully equipped with clean rooms and cutting edge fabrication equipment. This facility has the capability to manufacture over 1M couplers per annum.

### 8 Channel CWDM

#### Specifications

PARAMETRE	VALUE				UNIT
Centre Wavelength	1270nm ~ 1610 nm every 20nm channel spacing				nm
Centre Wavelength Accuracy	CWL $\pm$ 2				nm
Max Power handling	300				mW
Bandwidth @ -0.5dB	> 15				nm
Bandwidth @ -25dB	< 23				nm
Max. Passband Insertion Loss	2 ch	4 ch	8 ch	16 ch	dB
	1.5	2.0	2.5	4.0	
Passband Ripple	< 0.3				dB
Uniformity	<1.5				dB
Return Loss	>50				dB
Directivity	>50				dB
Channel Isolation	>30				dB
Non-Adjacent Channel Isolation	>40				dB
Polarisation Dependent Loss	<0.15				dB
Mass Tensile Loss	5				N
IL for Temp. Dependence Loss (-10 °C - 70 °C)	2 ch	4 ch	8 ch	16 ch	dB
	0.3	0.3	0.5	0.5	
Operating Temperature	-10 ~ 70				°C
Storage Temperature	-40 ~ 85				°C
Fibre Type	Corning SMF-28 (9/125/250 micro)				
Fibre Diametre	900 micro loose tube				
Pigtail Lengths	1				Metre
Connector Type	FC,ST,SC, LC, MU				
Connector End Face	PC, APC				

\* IL including connector loss.