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## Mode Conditioning Cable (MCC)

Design A



Mode conditioning cables are employed to prevent problems arising from the use of singlemode lasers for transmissions over multimode fibres. They induce higher modes thus limiting differential mode delay. This is done by injecting the single-mode laser systematically outside the centre of the MM fibre's core.

### Applications

MCCs are mainly used for Gigabit Ethernet 1000BASE-LX at 1300 nm, when high-speed routers and switches shall be used together with optical multimode networks

The MCCs from FOC fulfil the requirements of IEEE 802.3 and can be delivered with all connector types.

### Dimensions

Enclosure length	max. 75 mm
Enclosure diameter	max. $\varnothing$ 10 mm
Fibre type SM	Corning SMF28e (9/125)
Fibre type MM	Corning GI50/125 Corning GI62.5/125
Pigtail design	$\varnothing$ 2,8 mm
Patch cord length (standard)	2000 mm

### Options

- other pigtail and enclosure designs

### Port designation

Port	Colour code	Port number
SM 9/125	yellow	1
MM	orange	2

### Product identification

Each MCC bears a serial number (to be read from the single-mode to the multimode side).

### Qualification and measurement values

The measurement report includes the following information:

- Insertion loss 9/125 → 50/125 @ 1300 nm or 9/125 → 62.5/125 @ 1300 nm
- Serial number
- Colour code of the ports

### Connectors

MCCs can be delivered with different connectors. Different combinations of connector standards and polishing types on the input and output sides are possible.



**Optical parameters**

Parameter	min.	typ.	max.	unit
Wavelength 1 ( $\lambda_1$ )	1260	1300	1340	nm
Insertion Loss 9/125 → 50/125 <sup>(1)</sup>		0,3		dB
Return Loss 9/125 → 50/125 <sup>(1)</sup>	50	50		dB
Temperature range (operation and storage) <sup>(2)</sup>	-25		+70	°C

<sup>(1)</sup> without connectors

<sup>(2)</sup> Temperature range depending on cable/pigtail design

**Functional principle**

