

# Fibers

## Multimode MM

Core diameter 50 or 62,5 micron. Lower cost of LED sources and lasers operation at 850nm and 1300nm.

- OM1 62.5/125um (up to 622Mbit / 10Gbit @33 meters) - obsolete
- OM2 50/125 um (up to 622Mbit / 10Gbit @82 meters) - popular
- OM3 50/125 um (850nm laser optimized up to 10Gbit/s / 10 Gbit @300 meters)
- OM4 50/125 um (850nm laser optimized up to 100Gbit/s / 10 Gbit @550 meters)

## Single Mode SM

Wavelength 1310 or 1550 nm.

- OS1 ITU-T G.652A or ITU-T G.652B
  - Indoor (tight-buffered construction)
  - max att 1.0 db/km
  - max distance 1km
  - cheaper
- OS2
  - Outdoor (loose-tube design)
  - are only compliant with ITU-T G.652C or ITU-T G.652D standards.
  - which means OS2 is explicitly applied to the low-water-peak fibers. These low-water-peak fibers are usually used for CWDM (Coarse Wavelength Division Multiplexing) applications.
  - appropriate for outdoor cases like street, underground and burial
  - max att 0.4db/km.
  - max distance 10 km
- G.652D
  - full spectrum fibers (no high loss in 1360 – 1460 nm)
  - suitable for WDM

## Transmit Window

- 850 nm - I (MM)
- 1300 nm - II (MM)
- 1310 nm - II (SM)
- 1550 nm - III (SM)
- 1625 nm - IV

# cable color

- Yellow - single mode
- White - for end user home installation - single mode
- Orange - multimode OM1/OM2
- Turquoise - multimode OM3
- Turquoise / Violet - multimode OM4

## Connector

Square Connectors:

- ST - obsolete - looks like RF BNC connector. Push and rotate to lock.
- SC - bigger (more popular, older)
- LC - smaller, half size of SC (Lucent, less popular, license fees)
  - popular for SFP adapters as full duplex pairs with plastic lock mechanism
- E2000

Fiber polishing:

- APC (Angled Physical Contact) - face of fiber is filed by 8 or 9 degree. Less attenuation. (-70dB)
  - Marking (plug) color: GREEN.
- UPC/PC (Ultra Physical Contact) - polished diagonally (-40dB).
  - Marking (plug) color BLUE or BEIGE.

## Pigtails

End user:

- green rectangle plugs - FO SM SC/APC-SC/APC SIMPLEX

End user (Orange):

- green rectangle plugs and yellow cable - single mode, APC polishing

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