# Fibre-types

1 Jonathan Mon, Jul 24, 2017 Ethernet / MPLS 3014

**SX** uses multimode (grey connector jacks)

**LX** typically uses singlemode (blue connector jacks) for <5km , or multimode (grey connector jacks) <550m

## There are two basic fibre families

**Singlemode (Blue connector jacks )** (SM, OS1.OS2)

Sheath options are generally indoor PVC or LSZH and external Nylon with CST or GRP armouring

Singlemode is fairly straightforward in the smallest of the traditional fibres and is mode not always has a yellow outer jacket (pvc or lszh) and can be used for links up to 100km.

**Multimode (Grey connector jacks)** (MM defines four types OM1, OM2, OM3 and OM4)

transmit many rays (modes) of light simultaneously and has 4 types and is made with larger cores of 62.5 and 50 microns.

**OM1** (optical mode 1) is the original of the species and rarely used today. It has the recommended for new installations as it has no benefits over 50 micron fibres.

**OM2** has a core size of 50 microns and was introduced in the 1990's with 1Gb laser optimised multimode fibres. Again not recommended for new installations.

**OM3** is the most widely used multimode fibre today, it also has a 50 micron core and is identified by its distinctive aqua colour. With 40Gb applications up to 100mtrs

**OM4** is the newest of the suite has low insertion loss and an EMB of 4700. It also becomes the choice for data centre applications but with little cost difference over OM3 its likely to be default choice.

| | 62.5/125 OM1 | 50/125 OM2 | 50/125 OM3 | 50/125 OM4 | 9/125 OS1 |
|---|---|---|---|---|---|
| 100Mb | 2km | 2km | 2km | 2km | 100km |
| 1Gb | 275mtr | 550mtr | 800mtr | 1100mtr | 100km |
| 10Gb | 33mtr | 82mtr | 300mtr | 550mtr | 40km |
| 40Gb/100Gb | N/A | N/A | 100mtr | 150mtr | 40km |

From reading the above table it gives us reasons why we should be looking to deploy the best 10Gb transmissions speeds and higher to cater for future requirements. is will guarantee

Online URL: https://kb2.ic.uk/article.php?id=1