

**Product:**

Fiber Solutions

**Family**Optical Fiber Cables,  
Cable Types,  
Optical Fiber Connectors**Tech  
Tip****7****Fiber Optic Cable Colors.  
Realities and Myths.**

There has been a need to differentiate optical cables in the field, and color has been an easy way to do it.

In this document, we briefly review the common practice related to the use of coloring for the identification of optical cables in the Telecom Industry.

The following table shows the sheath or jacket colors used for identifying the type of fiber core used in optical fiber cables utilized in **patchcords or zipcords**.

*This scheme **DOES NOT APPLY** when the cables are for interior or exterior environment distribution. Some manufacturers use bright colors that differentiate them from copper cabling, and could also be black or black with colored stripes. The legend printed on the sheath or jacket should be read in order to know the exact type of cable dealt with. In a distribution cable, the color has no practical meaning.*

TYPE OF FIBER CORE BY CABLE SHEATH COLOR (as per the TIA-598-C Standard)
Singlemode Optical Fiber Core (Os1, OS2)
Multimode Optical Fiber Core (OM1, OM2)
Multimode Optical Fiber Core 50/125 $\mu$ m Optimized for 10 Gbps Laser (OM3, OM4)
Not used in new systems for Multimode fiber cores
Maintained Polarization Singlemode Fiber Optic Core

**THE INTERNAL OR EXTERNAL DISTRIBUTION FIBER CABLES DOESN'T NEED TO COMPLY WITH A PARTICULAR SHEATH COLOR. A DISTRIBUTION CABLE COULD BE BLACK COLORED LIKE THE POLYETHYLENE JACKET CABLES USED IN OUTDOOR OR THE COLOR USED BY THE MANUFACTURER OR FROM THE CUSTOMER'S CHOICE.**

Depending on the fiber core contained in the cable, some manufacturers use non common colors like violet or color combinations with color stripes.

In the same token, connectors also help in the identification of fiber cores as shown in the following table:

Color Code for Connectors	
PC, 0°	Mainly used for singlemode Fiber, but some manufacturers use it also for multimode.
APC, 8°	Singlemode only
PC, 0°	Multimode 50/125 $\mu$ m Fiber
PC, 0°	Multimode 62.5/125 $\mu$ m Fiber
PC, 0°	Singlemode Fiber
	High Optic Power Laser connection

The connector's color coding refers mostly to the color of the boot which is shown in the next photo.

Some manufacturers don't follow this scheme and use their own colors.

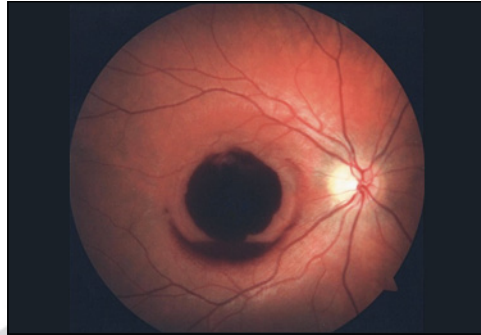


The red color is used by Telecom Companies to warn on high optical power signals that serve many customers in a distribution scheme.

### Warning

**Never observe a fiber optic connector if you ignore if there is a signal output through it. Invisible light doesn't mean it is not dangerous to the human eyes. Red colored connectors output optical power is high enough to burn and damage a large zone of the retina, causing permanent burn and irreversible blindness.**

**In the following photo, a severe retina burn is shown caused by a high power laser. Though the light cannot be seen, it is capable of this type of damage.**



Finally, a color coding also exist in the individual cores inside the cable, being them inside of loose tubes or embedded in the cable jacket, the TIA-598 is the most accepted color coding as is shown in the following table:

Individual fibers color (As per the TIA-598-C)			
Position	Color	Position	Color
1	Blue	13	Blue with black stripe
2	Orange	14	Orange with black stripe
3	Green	15	Green with black stripe
4	Brown	16	Brown with black stripe
5	Grey	17	Grey with black stripe
6	White	18	White with black stripe
7	Red	19	Red with black stripe
8	Black	20	Black with yellow stripe
9	Yellow	21	Yellow with black stripe
10	Violet	22	Violet with black stripe
11	Rose	23	Rose with black stripe
12	Aqua	24	Aqua with black stripe

After the 12th core, the 13th repeats the sequence again (blue), like the number 1.