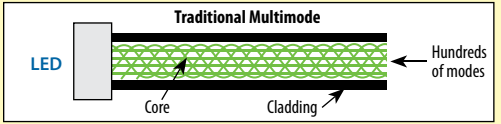
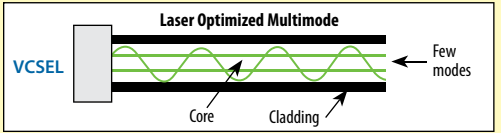
Tip Explaining regular and 10 Gig Multimode fiber



OM1 62.5/125 and OM2 50/125 multimode fiber is typically attached to communications equipment that use LED (light-emitting diode) transceivers that output hundreds of modes into the cable.



OM3 and OM4 50/125 10 Gig or higher rated multimode fiber uses VCSEL (vertical cavity surface emitting laser) transceivers that use only a specific set of modes instead of the hundreds of modes of traditional multimode fiber.

When transmitting light through a fiber cable a phenomenon known as Modal Dispersion occurs, causing different modes of light to arrive at the receiving end of the cable at different times. The degree that this happens is determined by the fiber's Refractive Index which is defined during the fiber manufacturing process.

A multimode fiber cable's bandwidth is dictated by the combined performance of all its modes. For a traditional LED driven OM1 or OM2 cable, if several modes fall behind or get ahead, it has little influence or effect on the cable's total bandwidth since it is few modes out of many.

As the need for increased speeds and bandwidth grew, 10 Gig VCSEL's were developed. These low cost lasers use only a specific set of modes. Since there are fewer modes, Modal Dispersion can have a great effect on a cable; since there are less modes, it takes fewer getting ahead or falling behind to degrade a fiber cable's performance and bandwidth capacity. 10 Gig and 100 Gig, Laser optimized OM3 and OM4 fibers were developed with enhanced Refractive Indexes specifically to achieve higher speeds over longer distances than traditional multimode cables.