

## High Energy Optics & Optical Technologies

**B Sreenivasulu\***

Department of Chemistry, Jawaharlal Nehru Technological University India

**Corresponding Author:** B. Sreenivasulu Professor, Department of Chemistry, Jawaharlal Nehru Technological University India, E-mail: [srinivasulu.bathula@yahoo.com](mailto:srinivasulu.bathula@yahoo.com)

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### Editorial

The optical fibers are laid out in ITU-T with regard to the geometrical, optical, transmission and mechanical attributes listed in Table 1-1. However, as shown within the same table, for a few attributes there's not the specification of a worth or limit. Fiber attributes are people who are retained throughout cabling and installation. Among the fiber attributes only those providing a minimum essential design framework for fiber manufacture are recommended (e.g. mode field diameter, cladding diameter, cut-off wavelength, macrobending loss). Chromatic dispersion coefficient is additionally included in these attributes. Cable attributes are recommended for cables in factory lengths as they're delivered. The attenuation coefficient and therefore the polarization mode dispersion (PMD) coefficient are included among the cable attributes since they will be suffering from the cabling process. Link attributes are characteristic of concatenated cables. A concatenated link usually includes variety of spliced factory lengths of optical fiber cable. The transmission parameters for concatenated links must take under consideration not only the performance of the individual cable factory lengths, but also the statistics of concatenation. The transmission characteristics of the factory length optical fiber cables will have a particular probability distribution which frequently must be taken under consideration if the foremost economic designs are to be obtained. Link attributes are suffering from factors aside from optical fiber cables by such things as splices, connectors and installation.

Various "professional" laser recordable products were developed, starting within the mid 1980's. the primary products were developed in large format (12-inch disks) soon followed by the event of smaller formats initially led by small start-up companies. However, the long-term survivors within the 5¼-inch market were supported Japanese led designs. Of these, far and away the foremost successful is that the ISO MO series of drives in both 5¼ and 3½-inch formats. The 5¼-inch series was launched with a capacity of 650MB within the late 1980's. Using Magneto Optic technology, the format was standardized through ECMA and ISO. Following the 650-MB (or 1x product), new formats were introduced at approximately two-year intervals that have seen the capacity rise to 9.1 GB (14x) at this time. Additionally to re-writable MO media, two different write-once options have always been available the primary (known as CCW-worm) is predicated on MO media; during which re-writing is barred by drive firmware that detects the special code within the pre-mastered format. Secondly, 'True WORM', initially using Tellurium ablative media and more recently phase transition or alloying films, has been strongly promoted by IBM.

There is currently much debate over the elemental limits on both optical and magnetic storage medium. Magnetic recording areal density has increased by approximately 2.5 million times since 1957 but researchers are now debating the last word limits imposed by super paramagnetic effects and media limitations like grain size. On the optical side, new advances in recording films like "super resolution" and more sophisticated encoding/decoding schemes are extending fundamental limits imposed by the available laser technologies. consider optical fibers as pipes that carry light. Lenses can bend light and mirrors can deflect it, but otherwise light travels in straight lines. The working of optical devices, from our eyes to large telescopes and sensitive microscopes, depends on light getting into straight lines. Yet sometimes it's nice to be ready to pipe light around corners and appearance into inaccessible places. the primary steps therein direction were taken within the nineteenth century. In 1880, William Wheeler, a young engineer from Concord, Massachusetts, filed for a patent on how to pipe light through buildings. Edison had already made the primary incandescent light bulbs but hadn't gotten all the bugs out.

But nobody fully grasped how briskly the web was growing. For a quick period around 1996, Internet traffic appeared to be doubling every three months. WorldCom kept quoting that number for years until it became an online myth, widely believed although its origins were dubious. Telecommunications carriers checked out that tremendous rate of growth and decided they'd need more fibers to handle the projected traffic. They didn't know that actually Internet traffic was doubling just one occasion per annum, a fact hard to determine because the traffic was divided among many various carriers.