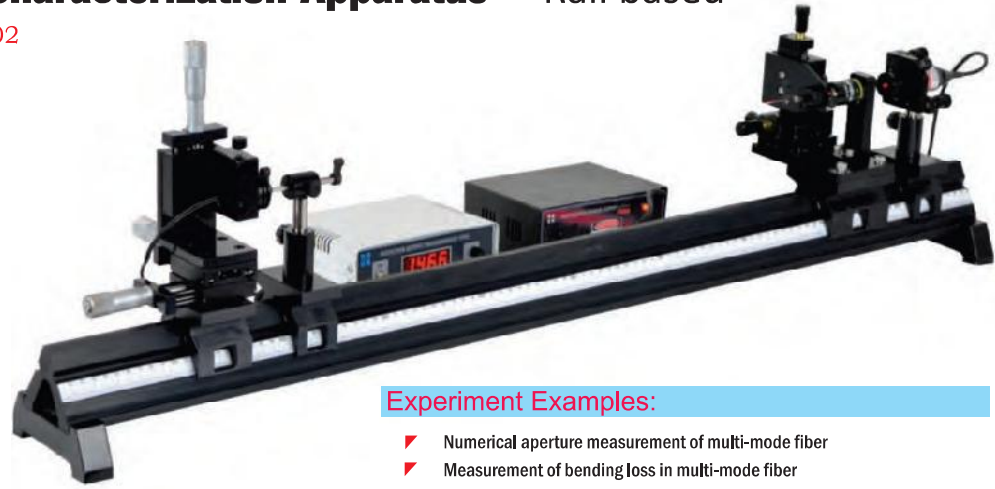


Optical Fiber Characterization Apparatus - Rail based

Model No: HO-ED-F-02

In this apparatus, both single mode and multi-mode fibers are used for the experiments. The apparatus makes use of rail and carriage system for mounting and adjusting the optical components required for experiments. Diode laser is used as light source. Laser fiber coupler is used to couple light from laser to fiber input end efficiently. There are mounts to hold input and output ends of the fiber firmly. Detector is placed on an XYZ stage. Distance between each component can be adjusted using the rail and carriage mechanism.



Features:

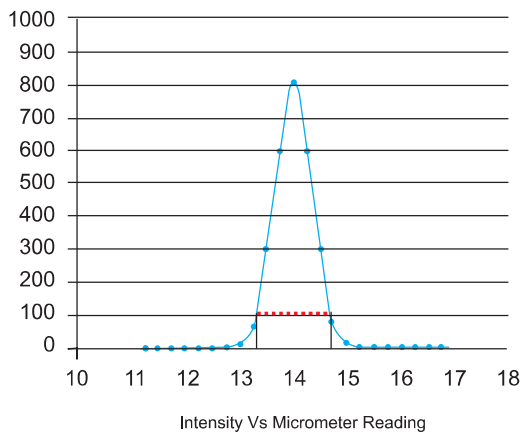
- Single mode and multi-mode fibers
- Diode laser is used as light source
- High precision Laser coupler
- Highly sensitive photo detector

The experiment helps students to understand concepts of numerical aperture, bending loss, splice loss etc. The laser light is coupled to optical fiber with the use of an objective lens for maximum coupling efficiency. Numerical aperture is found out by scanning the far field of the optical fiber using a photo detector mounted on a translation stage. Corrosion resistant materials like stainless steel and aluminium alloys are used for the construction of all components used in this apparatus.

OPTICAL FIBER CHARACTERIZATION- Related Topics

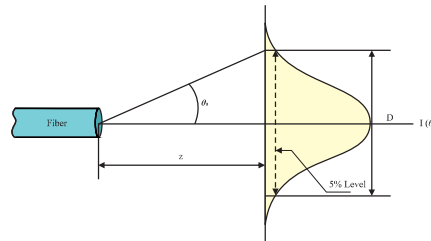
- Total internal reflection
- Numerical aperture of fiber
- Splice loss
- Single mode and Multi mode fiber

NA of Multimode fiber



Experiment Examples:

- Numerical aperture measurement of multi-mode fiber
- Measurement of bending loss in multi-mode fiber
- Relative measurement of splice loss in multi-mode fiber
- Numerical aperture measurement of single mode fiber
- Calculation of normalized frequency or V-number of single mode fiber
- Calculation of mode field diameter of single mode fiber.



Scope of supply

Quantity

Optical rail(Length 1000mm)	1 no.
Kinematic laser mount	1 no.
Detector mount	1 no.
XYZ translation stage with mount (Micrometer controlled)	1 no.
Laser fiber coupler with mount(Magnification 10X)	1 no.
Fiber holder with angular tilt(Resolution 2°)	1 no.
Fiber chuck holder	1 no.
Bending loss apparatus(Step diameter 35,45,55,65mm)	1 no.
Fiber chuck (Diameter 30mm)	1 no.
Single mode optical fiber (Numerical Aperture 0.11)	1 no.
Multi-mode optical fiber(250 & 750 micron)	1 no each.
Diode laser with power supply (Red) (Wave length 650nm)	1 no.
Detector with output measurement unit.....	1 no.

