

LEOK-22

Fiber Optics and Communication Experiment Kit



- *Complete solution*
- *14 experiments*
- *Innovative design*
- *Flexible solution for different level of students*
- *Extensive literature support*

This kit will provide an overview of fiber optic technology and basic skills needed to work with fiber optics. The most commonly used optical elements and their parameter measurements are introduced in this kit, together with prime techniques, such as WDM and coupling. Student will understand characteristics of isolator, attenuator, optical switch, transmitter, amplifier etc.

Upon completing the experiments, you will have gained a better understanding of some fiber optic processes with so many fascinating characteristics from having worked with real fiber optics hardware and from gaining hands-on experience and laboratory techniques.

With this carefully designed kit, students will feel like real professionals, exploring the exciting world of fiber communication. This kit is really a must for every one wishing to learn how our Fiber Optic works.

Features

- 14 basic experiments required for students with majors in communication.
- Enables students to characterize major components of optical fiber communications systems.
- Allows students to investigate the prime issues of attenuation and dispersion.
- Determine what factors influence performance of optical fiber communications system.
- Quick installation, includes necessary optical elements and optoelectronic instrumentation.
- Time saving and no preparation for the tutor, extensive literature support provided.
- Competitive price with innovative design.
- Suitable for different student levels.
- Straightforward to reconfigure for open ended projects.

Experiment Examples

1. Fundamentals of fibre optics
2. Optical fibre coupling
3. Numerical aperture (NA) of a multimode fibre
4. Optical fibre transmission loss
5. M-Z optical fibre interference
6. Optical fibre temperature sensing principle
7. Optical fibre pressure sensing principle
8. Optical fibre beam splitting
9. Variable optical attenuator (VOA)
10. Optical fibre isolator
11. Fibre-based optical switch
12. Wavelength division multiplexing (WDM) principle
13. Principle of EDFA (Erbium-doped Fibre Amplifier)
14. Transmission of analogue audio frequency signal in free optical space

Parts List

| Light Sources | | Fibers and Fiber Optic Components | |
|---|---|--|---|
| 650nm Transmitter | 1 | 1550nm EDFA module | 1 |
| 1310nm/1550nm hand-held laser source meter | 1 | 10m Erbium-doped fiber (built inside) | 1 |
| Detecting Equipment | | 980nm Pump laser (built inside) | 1 |
| LEPO-61 Optical power meter | 1 | 980/1550nm WDM (built inside) | 1 |
| Dual channel oscilloscope | 1 | 1m Fiber patch cable | 4 |
| Handheld laser optical power meter | 1 | 3m Fiber patch cable | 1 |
| Audio decoder | 1 | 1310nm Single-mode fiber splitter | 1 |
| Infrared detector | 1 | 1310nm Optical isolator | 1 |
| Fiber interference demonstrator | 1 | 1550nm Optical isolator | 2 |
| White screen | 1 | 980nm/1550nm WDM | 1 |
| Aligning aperture | 1 | 1310nm/1550nm WDM | 2 |
| Fiber holder (Large) | 1 | Variable optical attenuator | 1 |
| Fiber holder (Small) | 1 | 1×2 Optical switch | 1 |
| Fiber holder clamp | 1 | Mechanical Hardware & Miscellaneous | |
| Mounted collimating lens | 1 | DC regulated power supply | 1 |
| LLL-2 He-Ne laser (with power supply) | 1 | Post holder stand | 1 |
| Fiber spool (1km) | 1 | Pocket radio receiver (with batteries) | 1 |
| 1m 633nm Single-mode fiber (FC/PC at one end) | 1 | Speaker | 1 |
| 1m 633nm Single-mode fiber | 1 | Power cord | 4 |
| 1m 633nm Multi-mode fiber | 1 | BNC Cable | 1 |
| 633nm Single-mode fiber splitter (built inside) | 1 | Mating sleeves | 5 |
| Fiber scribe | 1 | Tape measure | 1 |
| Wire stripper | 1 | 4-pin Push-Pull and 2-pin terminator cable | 1 |

Subject to change without notice