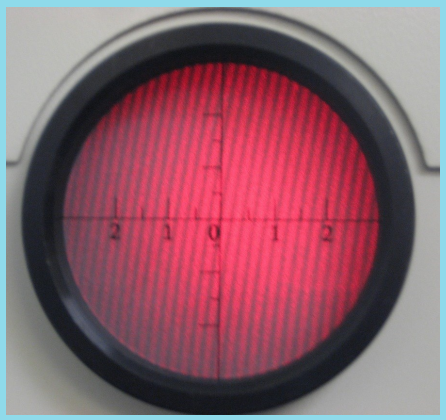
Construct, Conduct & Comprehend Physics Experiments

LEOK-22 Optical Fiber Information and Communication Experiment Kit - Enhanced Model

Note: oscilloscope not included

- *15 fundamental experiments*
- *Flexible solution for different levels of students*
- *Hands-on skill training*
- *Innovative design with quality components*



Interference pattern on ground glass screen

This kit provides an overview of fiber optic technology and basic skills needed to work with fiber optics. It is made up of a number of laboratory experiments. The most commonly used fiber optical components and their parameter measurements are introduced in this kit, together with prime techniques, such as WDM and coupling. Student can understand the characteristics of isolators, attenuators, optical switches, transmitters, amplifiers etc. Upon completing the experiments, one can gain a better understanding of fiber optic fundamentals with hands-on experience in real fiber optic components and techniques. With this carefully designed kit, students will gain a powerful tool to explore the exciting world of fiber communication. This kit is really a must for those wishing to learn fiber optics with related techniques.

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Note: product information is subject to change without notice.

Experimental Contents

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

Part List

Description	Part No./Specs	Qty
He-Ne laser	LLL-2 (2.5 mW@632.8 nm)	1
650 nm transmitter	with audio modulation input port	1
Dual-wavelength handheld light source	1310 nm/1550 nm	2
Light power meter	LLM-2	1
Hand held light power meter	1310 nm/1550 nm	1
Fiber interference demonstrator	633 nm beam splitter	1
Power supply	DC regulated	1
Audio demodulator	with built-in speaker	1
IR receiver	FC/PC connector	1
Erbium-doped fiber amplifier module		1
Single-mode fiber	633 nm	2 m
Single-mode fiber	633 nm (FC/PC connector on one end)	1 m
Multi-mode fiber	633 nm	2 m
Fiber patch cord	1 m/3 m (FC/PC connectors)	4/1
Fiber spool	1 km (9/125 μm bare fiber)	1
Single mode beam splitter	1310 nm or 1550 nm	1
Optical isolator	1550 nm	1
Optical isolator	1310 nm	1
WDM	1310/1550 nm	2
Mechanical optical switch	1×2	1
Variable optical attenuator		1
Fiber scribe		1
Fiber stripper		1
Mating sleeves		5
Radio		1
CCTV camera		1
LCD display	4.3"	1
Fiber optic video transmitter	with 12 VDC output for CCTV camera	1
Fiber optic video receiver	with 12 VDC output for LCD display	1