



### Automated Optical Attenuator

The KI 7010A series Optical Attenuator is an easy to use instrument for testing optical transmission equipment. It combines superb accuracy with high productivity.

### Optical Communications Test Applications

Transmission Equipment Commissioning  
Maintenance  
Quality Assurance  
R&D

### Features

High optical power capability  
High absolute accuracy  
Low wavelength sensitivity  
Good ORL, PDL & PMD performance  
Long battery life  
Interchangeable connectors  
User defined sequencing  
Remote control PC software



A High Precision Hand Held Instrument  
for Testing Fiber Optical Communications

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LABORATORY



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# KI 7010A Optical Attenuator

## KI 7010A SERIES

V20031010

### Applications

This attenuator provides optimum performance for testing fiber optic transmission systems, sub systems and components.

A combination of optical characteristics enables confident testing of high speed, high power systems which require superior power handling, ORL, PMD and PDL characteristics.

Very flat wavelength response enables confident testing of CWDM / DWDM systems. The instrument wavelength setting is irrelevant in most practical situations.

Excellent linearity and absolute accuracy enables precision linearity testing of sub systems and components.

### Specifications

	Singlemode	Multimode
Fiber type	9.5 / 125 $\mu$ m	50 $\mu$ m or 62.5 $\mu$ m
Range	2 ~ 60 dB	2 ~ 60 dB
Resolution	0.05 dB	0.05 dB
Linearity <sup>1</sup> /Repeatability	0.03 dB	0.1 dB
Absolute uncertainty <sup>1,2</sup>	0.3 dB	0.3 dB
Power capability	+30 dBm	+30 dBm
Optical return loss <sup>3</sup> (ORL)	60 dB	60 dB
Polarisation dependent loss (PDL)	< 0.1 dB	< 0.1 dB
Polarisation Mode Dispersion (PMD)	< 1 ps	N/A
Operating $\lambda$ range	1200 to 1650 nm	700 to 1400 nm
Calibration $\lambda$	1310 & 1550 nm	850 & 1300 nm
$\lambda$ dependence at up to 20 dB attenuation	< 1 dB	< 1 dB
$\lambda$ dependence factor <sup>4</sup>	-0.0002 dB/ $\Delta$ nm/dB	-0.0002 dB/ $\Delta$ nm/dB
Thermal stability over temp	$\pm$ 0.02 dB	$\pm$ 0.02 dB

Note:

1. At calibration wavelength.
2. Accuracy achieved in use will depend on connector performance.
3. Using APC connectors, or limited by connector performance, which is typically 45 dB for singlemode PC or 28 dB for multimode PC connectors.
4. For example: Wavelength is 1470 nm, attenuator is set to 1310 nm and 25 dB.  
Actual attenuation is = 25 - 0.0002 x (1470 - 1310) x 25 = 24.2 dB.

15 programs can be stored & recalled.  
Step mode allows user to select any step size.  
Program mode gives automated start / step / period / end values.

The patented metal free interchangeable connectors avoid critical contamination of connectors used in high power applications.

Operational modes include: manual, relative, step, program, and remote control via a PC. The instrument can be pre-programmed with up to 15 different user programs for improved productivity.

The PC software is used to provide external control, and is available free from [www.kingfisher.com.au](http://www.kingfisher.com.au)

Superior reliability is backed with 3 ~ 7 year warranty. The combination of features provides superior value to the user.

Battery life	200 - 600 hrs
Size	190 x 130 x 70 mm, 7.9" x 5.4 x 2.9"
Weight	750 gm, 1.6 lb. Shipping 1 Kg, 2.2 lb
Operating	-10 to 55 °C
Storage	-25 to 70 °C
Power	2 alkaline C cells or external 9V DC with 2.3mm +ve pin. Selectable auto-off, low battery indicator, backlit display.
Hidden keypad	For setting advanced functions
Case	Polycarbonate, 1 metre drop tested
RS232	3.5 mm jack connector, default baud 9.6 K

### Ordering Information

Instrument	p/n
1310/1550 nm singlemode attenuator, PC	KI 7010A
1310/1550 nm singlemode attenuator, APC	KI 7010A-APC
850/1300 nm multimode attenuator, 50 mm	KI 7020A
850/1300 nm multimode attenuator, 62.5 mm	KI 7021A

### Standard Accessories

ST, FC, SC optical connector adaptors, PC software and cable, manual, batteries, AA-to-C size battery converter, NATA traceable calibration certificates, carry strap or tilt bail, leather pouch & protective holster.

### Interchangeable Connector Options

This instrument is supplied with metal-free optical interchangeable connector adaptors, which avoid critical contamination of connectors used in high power applications. The ferrule type is fixed and customer specified as either PC or APC. Green is associated with APC. You can order any number of connector adaptors. Order quantity two of each type.

### Optional Interchangeable Connector Adaptors

E2000/LSH, green	OPT060G	E2000/LSH	OPT060
LSA / DIN47256	OPT071	MU	OPT080
LC / F3000	OPT072	Metal free	OPT090

To order metal free optional connector, specify: connector style + OPT090

### Optional Accessories

Carry case for 2 instruments	OPT153
Power pack, 90 ~ 240V IEC	OPT103B
USB-RS232 converter	OPT188

Australian and international patents. Technical data is subject to change without notice as part of our program of continuous improvements.



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